

Coming, ready or not! – Perceptions of flood risk in the Launceston community

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Abstract

Launceston is a flood prone municipality. The last major flood occurred in 1929. In this flood, approximately 4000 people were made homeless overnight. Three similarly large floods occurred between 1852 and 1893. If a similar flood to the 1929 flood occurred today, it may affect around 640 homes in the flood area. However, all of the low-lying suburbs of Invermay/Inveresk could remain inaccessible with service interruptions that might prevent occupation of homes. Major roads would also be closed. This means that somewhere around 3000 residents and 270 commercial properties would be affected. In addition, it is envisaged that a flood of this magnitude would cause significant damage to infrastructure of state significance such as Aurora Sports Stadium, the Queen Victoria Museum and Art Gallery, and the University of Tasmania's Inveresk Campus. Such damage would incur significant financial loss and require both immediate and long term economic recovery. The state of the flood levee protection has received considerable Council (and media) attention, with Council attempting to secure state and federal funding to upgrade the levee system. It is estimated that without flood levee protection, 40% of Invermay/Inveresk could be under water during high tide every day. The water could be over 1 metre deep at some locations. This could continue twice a day until any breaches in the levee banks are fixed and flood waters are pumped back into the river. Recent engineering advice indicates that in the event of a 'modest flood', there could be significant damage to property and interference to land use, commercial activity, employment and people's lives for an extended period. Despite the fact that this is a high profile issue in the Launceston community, there is little knowledge about the perceptions and beliefs of the residents most likely to be affected in the event of a major flood. This paper reports on a research collaboration between the Launceston City Council and the University of Tasmania aimed at finding out more about community flood risk perceptions. Taking a sociological approach to risk perception, the project aims to examine in detail the demographic composition of the affected area, and a study of residents' perception of, and readiness for, a major flood event. It is intended that the information gained from this study will assist the Launceston City Council to develop effective risk communication strategies, and to develop appropriate policies for emergency management should a major flood event occur.

1. INTRODUCTION AND BACKGROUND

The suburbs of Invermay and Inveresk, built on a floodplain, are significant flood prone areas in Launceston. The most recent sizable flood occurred in 1969 with little damage to property. In 1929, however, a major flood made around 4,000 people homeless overnight. Today, if a similar flood were to occur in the Invermay/Inveresk area, it is estimated to affect around 640 homes and around 270 commercial sites, in addition to infrastructure including Aurora Stadium, Queen Victoria Museum and Art Gallery and the University of Tasmania's Inveresk Campus. Importantly, in such an event, major roads would be closed, and all of

Invermay/Inveresk could remain inaccessible with service interruptions preventing home occupation and commercial activity. Significant financial loss arising from a flood of this magnitude would require economic recovery in the immediate to long term.

Even a medium-level flood would cause significant damage to property, disruption to services, business and lives in the area and for Launceston in general (GHD report, 2006). A recent engineers report into the Launceston City Council Flood Protection Scheme, including the levees surrounding Invermay, found they pose a significant risk of failure in the event of even a medium-level flood. It is estimated 40% of Invermay could be under up to one metre of water during high tide each day, in the event of levee breach or failure.

Most attention has focused on the technical policies and solutions in the form of levee reconstruction, with particular political attention paid to which tier of government should fund work on the levees. While an important component of flood risk protection, any solution involving levees is projected to take up considerable time (with estimations varying from 6 to 30 years for levee protection to be effected). In the meantime, the Launceston City Council requires an improved understanding of other factors that will impact on response and recovery should a major flood event occur.

It is therefore important that the perceptions of the potentially affected community are understood. While attempts have been made to inform residents in the affected areas about the risk of flood potential, there is little knowledge about how residents understand the flood risk, and further who are the groups most likely to be affected in the event of a major flood. This project aims to inform policy development and associated program responses by focusing on community perceptions of flood risk, flood communication, and flood preparedness.

2. A SOCIO-CULTURAL APPROACH TO RISK

While research has shown the risk of flooding, and natural risks in general may not be a key concern for the public, comparative to other risks (Kunreuther & Slovic 1996:117; Douglas 1992), it is firmly on the agenda for government, emergency management and local councils (see MEM Plan 2004; GHD and Risk Frontiers 2006). These ideas are valuable in calculation of risk and consequent economic costs of flood prevention and management. However, approaches to risk that rely predominantly on quantifiable indicators do not take account of how groups that may be affected understand, and respond to, risk (Lupton, 1999). Where community risk perceptions are explored, policy approaches tend to reflect psychological accounts of risk perception, assuming that increased risk communication will increase, or direct the public's perception of risk (Reilly & Jones, 2003), yet increased knowledge does not necessarily dictate risk perception (Riad & Norris 1998:4). Understanding community risk perception requires a broader approach (see Rohrmann 1999:9). The work of Deborah Lupton (1999) exhorts hearing the social rationality of people, the nuanced understandings within people's risk perceptions and strategies for coping with risk. Thus a socio-cultural approach to risk perception entails a focus on how people themselves understand, think about, and act on the possibility of risk in their lives (see Lupton, 1999, Lupton and Tulloch, 2002). It draws attention to the broader social beliefs and attitudes that may also affect people's risk perception. Seeing risk as a complex social phenomenon provides policy makers with greater options for risk communication, and effective response and recovery strategies.

3. METHOD

In taking a socio-cultural approach to risk and risk perception, a qualitative interview study was designed. Qualitative methods allow a thorough exploration of the 'personal experiences, meanings and interpretations' (Sarantakos 2005:48) of residents living on a floodplain. Qualitative research is best suited to areas 'where there is a need to study reality from the inside...from the point of view of the subject' (Sarantakos 2005:134) and thus gain a deeper understanding of the beliefs, values and perceptions of residents.

Therefore the researchers undertook individual semi-structured interviews with 60 residents living in the suburbs of Invermay and Inveresk. The semi-structured interview format enabled researchers to gain residents' perceptions, while at the same time containing the amount of data that is collected. A broad cross section of the community were recruited for the study. The study aimed to interview people who are both owners and renters in the area, including a mix of older and younger people, and residents with varying levels of socio-economic status. The researchers were particularly keen to recruit 'difficult to reach' participants, particularly those living in Housing Commission units, recently arrived migrants, and participants who may have difficulties in evacuating. The interviews were audio recorded and transcribed. Interviews commenced in June and were completed in the 1st week of October.

The focus was on applying an *interpretive* approach to understanding community perceptions of flooding and flood risk. This approach sees that it is only through individuals' perceptions of events, the reasoning they apply to everyday life, and an understanding of the broader social context, that an understanding of beliefs and behaviours surrounding flood risk is possible. In this study, an interpretive approach was used to answer three interrelated questions:

- ~ What do people think about flood risk;
- ~ Why do they hold their beliefs and perceptions; and
- ~ What are the important influences on people's understanding of flood risk in Invermay and Inveresk?

Analysis of the interviews was both deductive and inductive. The focused nature of ascertaining risk perception, understanding responses to Council communication strategies, and risk preparedness required a deductive focus of analysis; however, the process of listening to participants' stories allowed an inductive focus. The themes generated in the inductive analysis helped contextualise the deductive findings as well as provide further insights into how residents in the area understand, and respond to, risk.

4. FINDINGS

The following is a preliminary presentation of findings, based on initial analysis of the data. As with many projects undertaking research in local communities and seeking a broad cross section of the population, there have been considerable delays in recruiting, interviewing, transcribing, and thus analysis of the interviews. As a small number of interviews are yet to be transcribed and analysed, information is not available for the total cohort. However, the findings presented below provide interesting initial insights into community perceptions about flood risk.

4.1. Who lives in Invermay/Inveresk and Why

Given that there is wide media coverage of the risk of flooding in Invermay and Inveresk, we were interested to understand from the residents' perspective, who live in these suburbs and why (or if) they choose to live there.

These suburbs represent a broad cross section of the population, but with a focus on the lower end of the property market.

Participants ranged in age from 19 to 93 years of age. Twelve participants were aged 30 years or younger, 16 participants were aged between 30 and 49 years, 18 participants were aged between 50 and 69 years and 12 participants were aged 70 years or older. Each age grouping comprised participants who were single, married, and apart from participants aged 70 years or older, living in families with children.

Over half the sample own, or are purchasing, their own home (32 participants). As one of the older suburbs in Launceston, the area has become a popular with renovators who wish to restore the older buildings there and nine participants were currently, or had recently,

renovated their home. A total of 23 participants rent their homes, with 16 participants in private rental properties and 7 participants in Housing Commission units.

When asked why they live in Invermay, participants cited a number of reasons for this being an attractive area to live. The suburb is flat (particularly important for elderly residents, the 5 participants who had disabilities that affected their mobility, and the small number of participants who do not have private transport). Participants also discussed the convenience of Invermay and Inveresk as a location – either being close to their workplace, or to the city centre and major amenities. They also discussed the broad range of local services that is provided within easy walking distance in the suburb. Younger participants, in particular, who had purchased homes in the area talked about how housing prices allow entry into the housing market. Older residents talked about their ties to the local community.

Those participants who talked about living for a long period in Invermay identified themselves as ‘swampies’ with some pride. For example, Jerry grew up in the area and stated: *We’ve lived here in this house for thirty odd years. It was our mother’s house before it was ours, we grew up here, we’ve always been swampies.* However, being a ‘swampie’ was not always highly regarded. Danni (aged 28), who had recently bought into the property market discussed how her family were concerned about her choice: *No, they were concerned about me being out in the swamp as well, you know, ‘Invermay, you don’t want to be out there, its all built on the old tip’.*

4.2. Perceptions of Risk

Most participants believed that Invermay and Inveresk are at risk of flooding. A minority of participants were very concerned about this, but generally, the risk of flooding is an inevitable part of choosing to live in this suburb.

For Danni, the risk was part of the choice that she made:

Well obviously there’s risk involved in it, but when you want to get into the property market I guess, then that was just one of those things that I don’t know, you look at it and you weigh it up, and I just decided to go ahead.

The inevitability of flooding was summarised by Pete in simply stating:

‘it’s just a swamp’.

However, participants also saw the risk in quite complex ways – rather than simply being about rainfall, for which levee protection may be one solution, they cited other issues as increasing the risk. These included siltation in the river, the fact that the suburb is built on swamp land, and that rising groundwater at times exposes their properties to flooding. Some participants saw changing environmental conditions as increasing the risk of flooding.

For example,

Um, out of ten, ten [Level of risk]. It’s just really prevalent. There’s no where for the water to go, there’s just so much silt in the river there. As far as it never used to be that high, they used to have the dredges going up and down, now I’ve hardly seen one go up and down so. (Jerry)

Thus participants were mixed in their perceptions about whether upgrading and maintaining the levees would alleviate the threat of flooding. Most agreed that upgrading levees was an important action that the Council should take, but many also argued that there are other factors that place the suburb at risk of flooding. Thus levees are only one solution to this complex problem.

I think upgrading the levees is probably one strategy, but I also think a major dredging program has to be put in place, a major one, not just the one machine that works around at Kings Wharf and Royal Park. (Matt)

Much of the community education about flood risk perception has cited probability figures such as the 'one in 100 year flood', Whilst this means that there is a 1% chance of such a flood occurring in a given year, and whilst some participants had a good understanding of what this would mean, most participants related the risk to the timing of the flood with comments such as:

Oh, yeah, its not very far off, really is it? What are we now, 2007, and that was 29, you said, that's not far off (Danni).

No, I haven't heard it. So they reckon it could come in the next hundred years? (George)

Every hundred years there's a flood. They predict there'll be a flood every hundred years. (Sheree)

Well just that I guess that we can expect one flood in every hundred years and the last one was 1929 I think, so there's a possibility that we could get another one. (Susie)

Ah, meaning that between the last flood and the next one, one hundred years. But, oh, I cant see it going that long! (Lyn)

I heard that, yes. But I like, you know (laughs). I don't think I'll be around then when the next one comes! (Claire)

Some participants also talked about how they live with the risk, often using humour:

We have jokes every time it rains. Is this a pack your bag rain, this is a put the food in the car rain, this is the final one (laughs), this is the one, quick, you know, pack the cat, so it's a normal thing. (Matt)

4.3. Risk Communication

Participants were asked about the ways that flood risk had been communicated to them. While there has been considerable media coverage about the flood risk, the focus of this has been on obtaining finances for levee protection. The two key strategies that were commented on were the flood marker poles that had been placed strategically in the suburb, and a flood information brochure letterboxed to all homes in the area.

Participants were ambivalent about the effect of the flood markers. It was notable that more owners than renters had noticed these markers. Many participants claimed that the effect of the flood marker poles was to raise anxiety, rather than impel thought or action about flood risk and where it did raise awareness, there were other effects, such as lowered house prices. Participants made comments such as:

Yeah, I doubt if that ring around the post here (the flood warning marker), I don't think (the 1929 flood actually got) is as high as they make it (out to be). (Robert)

Well we had things put up on power poles saying oh it'll be this level, this sort of (inaudible) that sort of brought up the anxiety a bit you know. Cause you don't know what the council's thinking.

[Interviewer] Like seeing the markers on the power poles, do you reckon that that is helping communicate the risk, make people aware?

It does, but it also brings down the price of your house. (Jerry)

Well I've noticed like the telegraph poles how they have the metres of the floods but that's about it, about a hundred year flood or something but no, haven't heard too much about it. (Steve)

Well, that means that its imminent, and one of the silliest things that I think the City Council have ever done is put those marker poles around this area because they have caused a lot of discussion amongst residents here, that they are quite a scare tactic, of every time we go to the shop we see markers of what we could be in tomorrow or next week, up to our neck or above our head. I see that as really quite a frightening strategy. (Matt)

Participants also commented on the brochure that had been distributed by the Council. Some participants discussed how useful it was, but these were generally people who were concerned about the risk of flood. Most participants could not recall the detail of the brochure, claiming that it was one more element in the proliferation of junk mail. Others did not see that the brochure contributed to assisting them at all.

Oh we get flyers here and there but nothing that'd make you feel safe about it. (Jerry)

While few people were as outraged as Matt about the brochure, his comments usefully point to the construction of responsibility in information provision:

Oh, yes, I mean that was I think a great reliever of their guilt, that here was the responsibility that YOU must do. And I felt like mailing it back to the Council, saying what about YOUR responsibility, as the engineers of this City to look after your residents and tax payers, and ratepayers who are employing you to provide good water and safe streets. So I thought that was a load of crap. And the bottom line was, oh, go and fill some sand bags or something for under the door, I thought that was a totally inadequate response. Lift everything high and put sandbags around, and stuff a sandbag down the toilet. I mean really, who gives a shit (laughs). It was really quite inappropriate and inadequate. A rather pathetic little gesture.

[Interviewer] Yes, so that's all you saw it as

Yep, some way to offload the blame from then onto us, we should look after ourselves. Well I don't see it that way at all.

At the conclusion of interviews participants who could not recollect the brochure were offered one, and most people were pleased to receive it. This also points to the way that the research interviews may also be seen as an intervention, in raising awareness through discussion of flood risk.

Participants were also asked the best way to find out about an imminent flood, and a range of responses emerged, pointing to the need for a multi-pronged media strategy. Strategies identified included use of television, radio or mobile phone messaging, a siren in the suburb, as well as the need for door-to-door information provision and assistance. Importantly, participants also discussed how they would draw on their existing knowledge in ascertaining the risk of an imminent flood. In particular, they discussed the importance of being aware, themselves of the weather.

The weather, the main thing. You know if it's been raining for say five or six days or something, say well, shit this water's got to be coming from somewhere, it's got to be coming into something, it's got to be, yeah. (George)

Well, we would assume that yeah, and we would all obviously be very aware of the deluge. (Matt)

4.4. Risk Preparedness

Participants were asked about whether they would be prepared for a flood, and what they could do to prepare. What was noteworthy was that few participants had a contingency plan in place, but many had a place they could go. Most participants had friends and family that they could go to, who live on higher ground. They assumed they would have time to get their valuable possessions to safety and evacuate themselves and their families. While assistance would be valued, many people saw getting to safety as their responsibility. However, while this was the main response, some people felt they would be quite vulnerable in the event of flood, either in losing their valuable possessions, or in their incapacity to reach a place of safety. A key point that emerged in these discussions is that, while participants may have thought of what they would do in the immediate term, very few had thought of the longer term consequences of flooding in the area. The range of responses in terms of risk preparedness can be illustrated with the following:

I've had shelving done in my bedroom and I've put all that up high. (Danni)

If a flood occurs, what kind of action or preparedness would you take?

Well, I'd get the boat out and start helping as many people as I possibly could. (George)

[discussing her high level of fear] 'Cause I don't know what they do to evacuate; to get you out of here! (Sally)

Yeah I had heard about it and I have thought about it. I haven't got a contingency plan or anything but I have thought about flooding. [later] Well, it just made me think of what I'd do and where we'd go and stuff. And we're the only ones in my family that live in Invermay, so if it flooded we'd move 'til it was over. (Sheree)

Mmm. And that makes me wonder whether they can get it all happening in time. You never see anyone practise. You know, I'd like to at least see them pull them out of the shed and at least try and put them in once in a while. Just to see, on Sundays, or do one bridge at a time you know, make people feel safe.

[Interviewer] So you think action like that would definitely help within the community?

Yep, well I mean, practise makes perfect and no practise makes disasters don't they. (Jerry)

4.5. Personal or Council Responsibility?

In reflecting on where responsibilities lie in the event of a flood, a range of responses emerged. Some participants thought that they were insured against flooding, but in those cases where they had investigated this with their insurance company, often did not obtain a clear response. Other participants simply stated that saving lives were much more important than worrying about possessions. Participants generally saw a role for themselves, council and other tiers of government should a major flood occur.

It depends on the capacity of how many people were affected, I think, that I don't know what classifies as a disaster, or you know, if it has to be a disaster for there to be funding or there is help, but its not just residents, obviously its going to be businesses and so, I think that the government are usually pretty good at stepping in situations like that. So you know I think its partially our responsibility to protect ourselves, you know you cant just blame other people if you're not going to take responsibility for yourself, but then I think it's also good if something did before the levees are done as well, that they recognise that. (Danni)

I don't know, the landlord I suppose. He'd be insured, I suppose (George)

[Interviewer] And are you insured? Who do you think should pay for flood damage? Council. (says uncertainly) (Laughter.) (Sally)

When discussing the one in one hundred year flood, James commented also on Council responsibility:

That means it's going to get awfully wet. You know, you take it as it comes. There's not much you can do about it but the council is in charge of that type of thing, to try and stop any flooding, and I really can't see why it's going to take them seven years because they've got the money already, why can't they get into it and get it done? (James)

5. DISCUSSION / CONCLUSIONS

While the findings that have been presented this far are tentative, they do point to the trends that are emerging from this data. Most people do believe that Invermay and Inveresk are at risk of major flood, but they vary greatly in the extent to which they worry about this. While some participants are worried by the risk, others see it as one of the factors that are a part of living in the suburb. People's experience either personally, or through the stories told to them, are important in shaping how they respond to the risk of flood. As part of this experiential knowledge, participants often talked about what is visible to them – stories about groundwater in their streets, and blocked pipes were often what made the risk of flooding real to them. Strategies for risk communication therefore need to take account of these realities. Statistical or probability estimates of flood risk in general, hold little meaning, for most participants. Flood risk preparation involves action only in the immediate term – with a focus on packing the car, moving possessions, and getting out.

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