

Measuring community flood awareness and preparedness in the Maitland area and Lower Hunter Valley, NSW

N Duffy¹, A Hyde², D Webber², I Berthold³, E Armstrong¹

¹Molino Stewart Pty Ltd, Parramatta, NSW

²NSW State Emergency Service

³Hunter Local Land Services

Abstract

The Hunter River of NSW has a long history of flooding. February 2015 was the sixtieth anniversary of the 1955 Hunter Region flood, the largest flood in the region's recorded history. In conjunction with the commemoration, the NSW State Emergency Service (NSW SES) and the Hunter Local Land Services commissioned consultants Molino Stewart to extend previous social research in Maitland by surveying participants about the status of their own flood awareness and preparedness.

The 2015 study and previous social research found that in Maitland flood-prone communities there appears to be a relatively low perception of personal flood risk. On the other hand, a large proportion of residents are willing to evacuate, even though those having emergency plans are less than half this level.

The majority of the flood-prone residents believe they know enough about flood risk and what to do about flooding. However, those residents that want to learn more about flooding wish to do so via 'traditional' means such as radio, television and interacting with the NSW SES. The interest in learning using social media is low, most probably due to older cohort of residents surveyed.

Introduction

The Hunter Region experienced its largest flood in recorded history during February 1955. Maitland, located in the Lower Hunter Valley, was severely impacted by this flood. Since 1955, only three major floods have been recorded on the Hunter River at Maitland, including the June 2007 flood that followed the 'Pasha Bulker' storm (Keys, 2008).

Maintaining a high level of flood awareness and preparedness is critical for building flood resilient communities in Maitland and the Lower Hunter Valley. In 2005, the former Hunter-Central Rivers Catchment Management Authority and the NSW SES embarked on a community flood education strategy that implemented a range of initiatives to involve local at-risk community members, raise awareness and preparedness for flooding, and raise the profile of the function and limitations of the Lower Hunter Valley Flood Mitigation Scheme. The project included a five year social research program that concluded in 2010. The research indicated that the level of community awareness and preparedness had increased during this time (Micromex Research, 2005; Micromex Research, 2007; Micromex Research, 2010).

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Methodology and limitations

Five hundred hard copy surveys were distributed to properties in high risk flood-prone parts of Maitland. The survey was also promoted online and was provided to participants at a 1955 flood commemoration workshop. There were 111 responses to the survey of which 94 originated from the hard copy survey distribution.

The following limitations with the study should be acknowledged:

1. The population sampled is not large enough to provide any degree of statistical confidence. The results should only be considered as indicative.
2. Five respondents lived outside the Hunter floodplain (responded to the online survey). These responses were eliminated from the survey results.
3. The population is most likely to be different to that sampled in previous social research studies and is thus not a longitudinal study. Therefore, only general comparisons can be made with previous results.
4. Maitland experienced moderate flooding in April 2015 immediately prior to the distribution of the hard copy surveys. The flood most likely would have increased respondents' awareness of flood risk and preparedness. Unfortunately, with only 15 people completing the survey prior to the 2015 flood, it is impossible to test this hypothesis and all responses have been amalgamated in the results.

Results

Flood risk awareness

Respondents were asked to rate their risk of flooding to their personal safety and to the Maitland area.

As shown in Figure 1, the majority of respondents (67%) viewed flooding as a low or moderate risk to their safety. Interestingly, the main reason for viewing flooding as a high or very high risk was previous flood experience, including during the 1955 flood.

When asked to rate the risk of flooding to the Maitland community, respondents tended to rate the risk higher than for their own safety (Figure 2). The most common factor that influenced the respondent's perception of the risk of flooding to Maitland was their knowledge of previous floods in the area. They obtained this knowledge mainly through historical information, local council information, and television broadcasts.

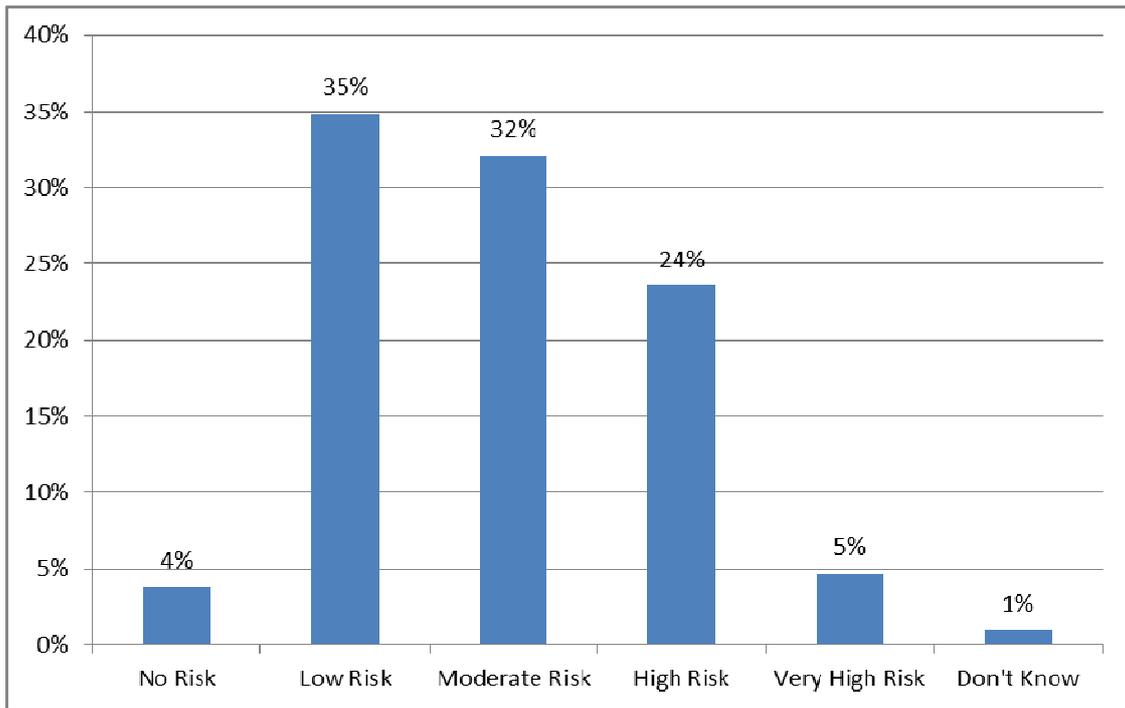


Figure 1: Perceived risk of flooding to safety

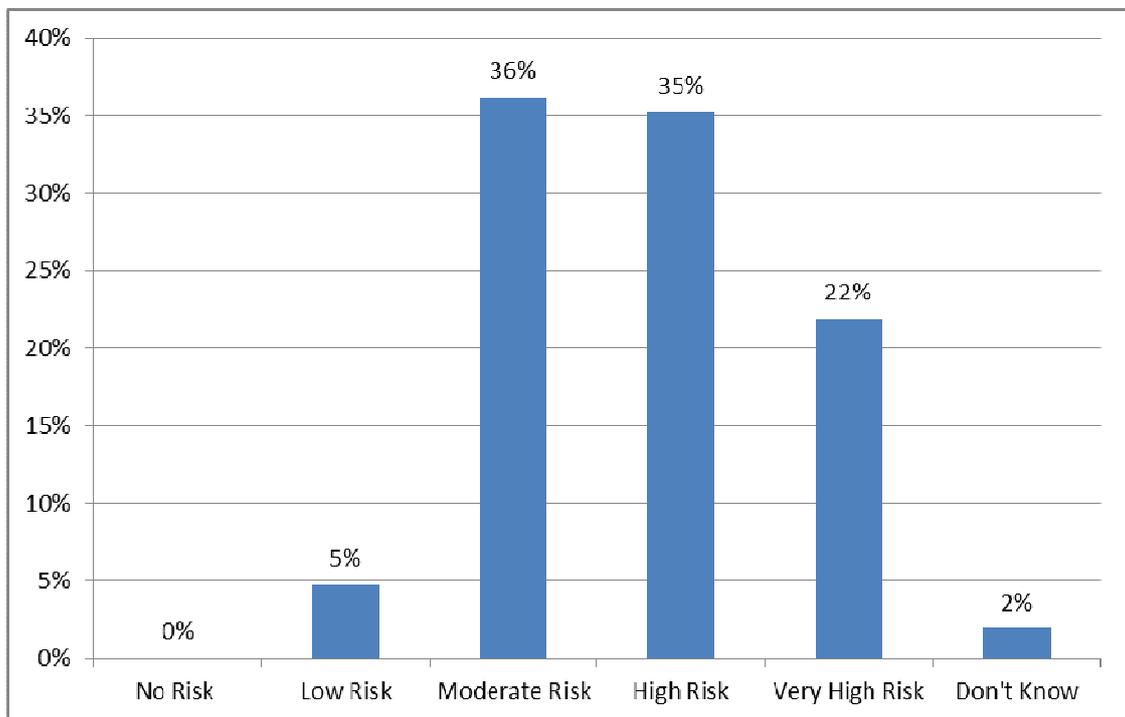


Figure 2: Perceived risk of flooding to the local community

Flood preparedness

Respondents were asked about how well they thought they could keep themselves and others in their home safe during a flood. As shown in Figure 3, over a half of the respondents answered 'fairly well', whilst about one-third thought 'very well'. Having an evacuation plan was a major factor in this confidence in keeping themselves and others safe. Of concern is that one respondent said that having a boat made them confident in saving themselves, whilst another felt that having a 'family of good swimmers' would help ensure their safety.

'Old age' and 'disability' were major factors for those that did not believe they could keep themselves and others safe.

The levels of perceived preparedness were not high with only 13% rating themselves as 'very well' prepared for a flood (Figure 4). The majority thought they were 'fairly well' prepared, whilst about one-quarter thought they were 'not well' prepared.

About 40% of respondents said they had emergency plans and emergency kits, although most of these thought they were only 'fairly well' prepared for a flood.

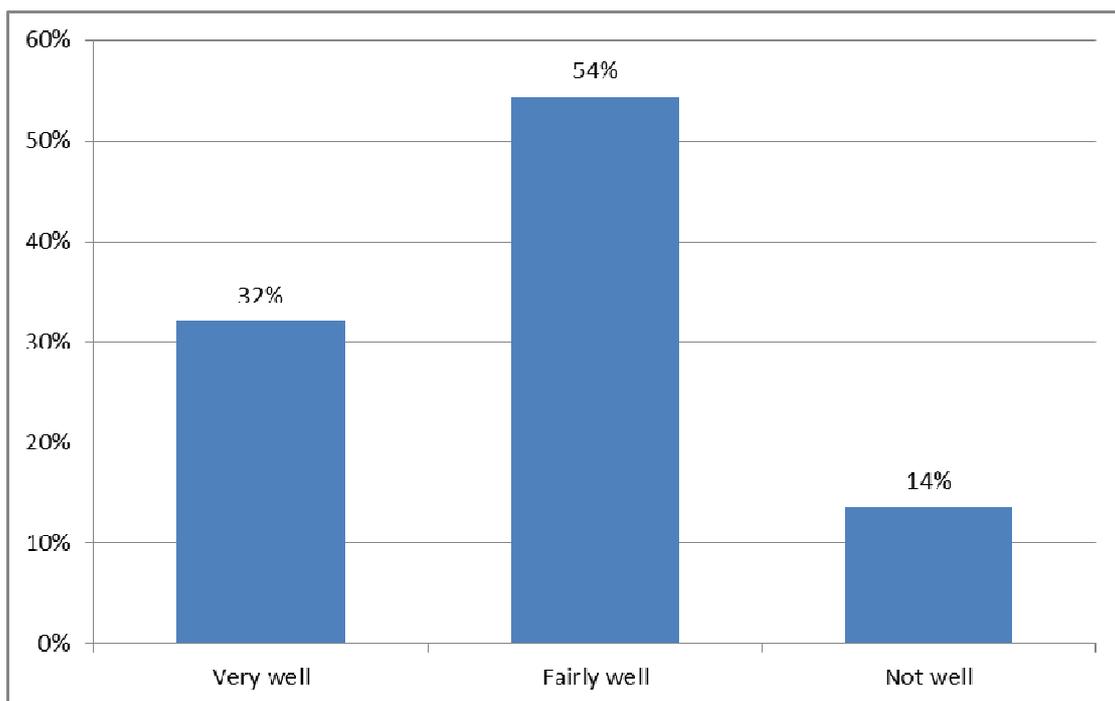


Figure 3: How well respondents could keep themselves and others in their home safe

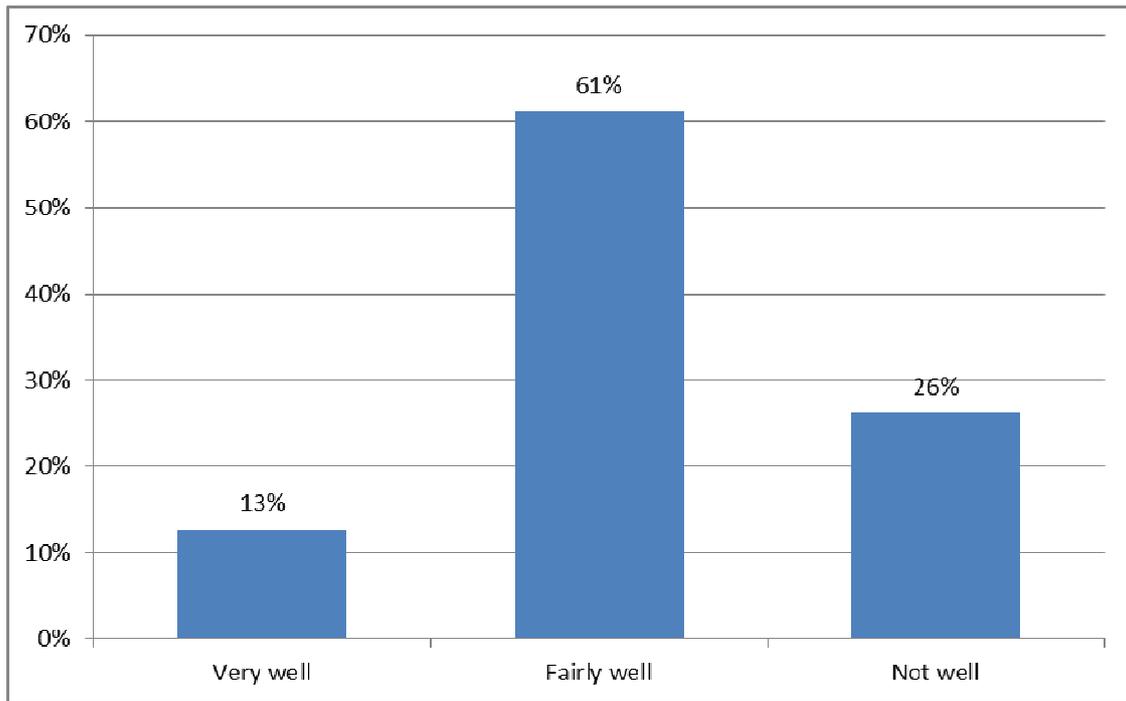


Figure 4: Perceived levels of preparedness

Response actions

A critical response action is to evacuate out of the floodplain if flooding is likely. About 80% of the respondents said they would evacuate if there was a chance of a flood in their street (Figure 5). Being told to evacuate by the NSW SES or Police raised this figure slightly to 90% of respondents.

The majority of respondents identified 'safety' as the main reason for intending to evacuate, with previous flood experience also being significant.

There were several reasons for not being willing to evacuate including:

- Confidence that the house would not flood (even though it is in a high flood risk area)
- Staying to avoid extra damage
- Lack of trust in the NSW SES and Police regarding evacuation
- Concern about theft if they evacuated.

Over half of the respondents said they would evacuate to friends or relatives (presumably out of the floodplain), whilst only about 10% said they would go to an evacuation centre. About 13% did not know where to go.

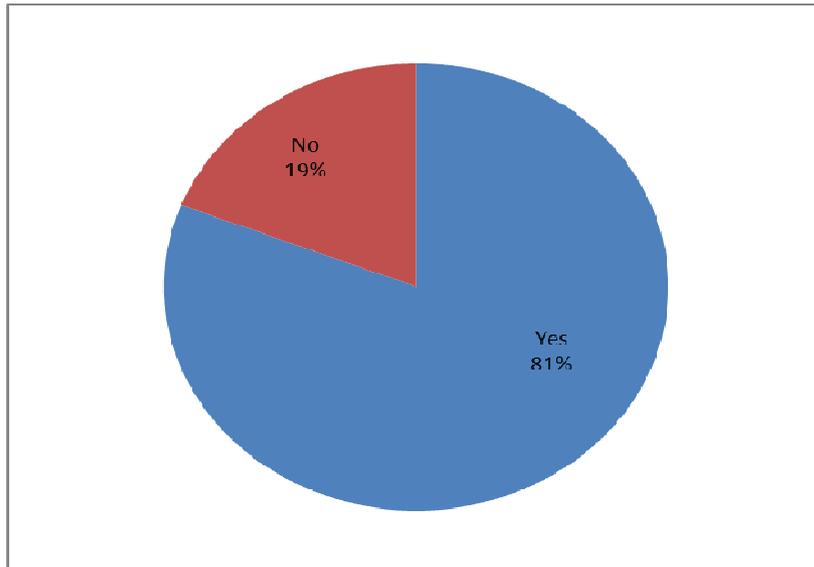


Figure 5: Willingness to evacuate

Learning more

Respondents were asked how they would learn more about what to do before, during and after a flood. They could provide more than one answer. As shown in Figure 6, radio and the NSW SES website were the two main ways to learn more. Interestingly, social media was one of the least popular learning mechanisms with only 17% of respondents.

Twenty-seven percent of respondents said they wished to be involved in FloodSafe activities (the NSW SES community flood engagement program) to learn more.

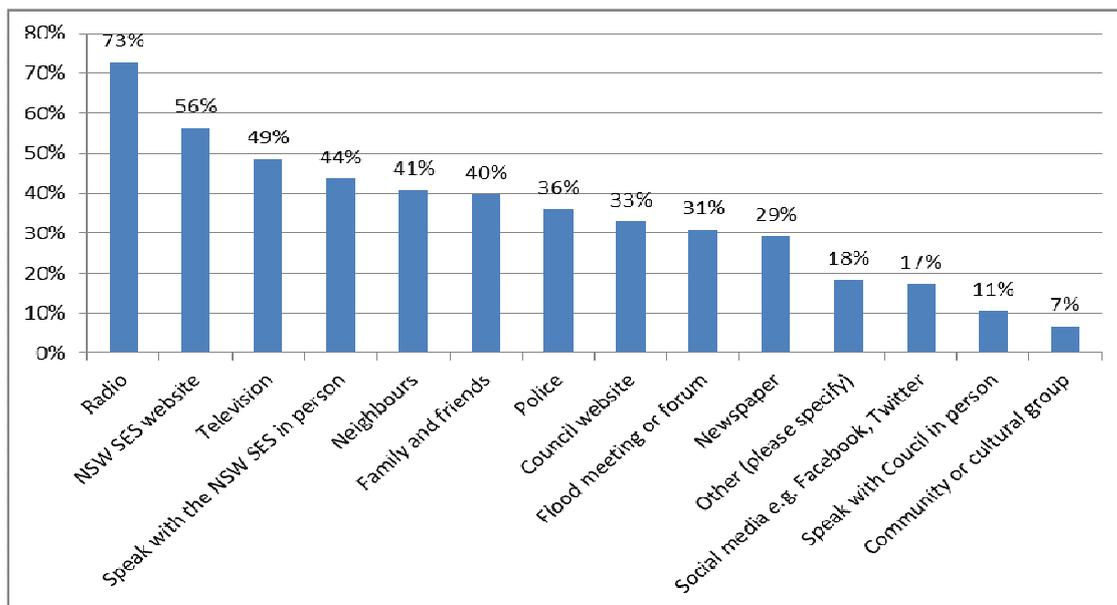


Figure 6: Ways to learn more about flooding

Discussion

Comparison with previous studies

Keeping in mind the limitations identified above, some general comparisons can be made with the previous social research conducted in flood-affected Maitland communities.

Previous studies (e.g. Micromex Research, 2010) show that there is a relatively low level of concern about flooding, although there was a significant rise after the June 2007 flood. From this study, the concern about flooding continues to be low to moderate. On the other hand, as before, respondents believe that there is a moderate to high risk of flooding in the Maitland area.

The previous studies showed that on average about 20% of residents had carried out some type of preparedness activities. This study showed that this rate may have risen, with about 40% saying they had emergency plans and emergency kits.

In the previous studies about 80% said they knew what to do in a flood, with about 50% saying they would evacuate. This figure for evacuation appears to have risen to about 80% according to the current study. This is consistent with evacuation rates of 76% for the June 2007 flood (Molino Stewart, 2007).

Radio, television and the NSW SES were identified in previous studies as the main ways to learn more about flooding which is consistent with the findings of this study.

Learnings for community flood engagement

There are several learnings from this research that can help inform the design of community flood engagement activities for the Maitland area.

1. About one-quarter of people in the area say they wish to be involved in FloodSafe activities. This represents a reasonably high percentage of 'early adopters' (O'Neill, 2004), most probably due to the success of previous community flood education programs in the area. On the other hand, lack of interest could be because about 80% think they know what to do in a flood and know enough about flood risk (Micromex Research, 2010). It also could be due to the lack of understanding about the benefits of programs such as FloodSafe.
2. The community interest in involvement can be further focussed toward:
 - Recognising, supporting and developing champions/ambassadors for building community flood resilience in Maitland
 - Encouraging the more able (e.g. neighbours) to connect with and support the 14% of people (mainly older and disabled) that believe that they need assistance to stay safe in a flood
 - Increasing the self-efficacy and coping levels of flood-prone residents to raise their confidence and potential resilience
 - Encouraging all people to evacuate based on the flood warnings received
 - Helping all people identify evacuation routes.

3. These communities appear to learn from the more 'traditional' engagement/communication methods such as radio, television and from the NSW SES (website, speaking in person). As noted previously, social media was one of the least popular learning mechanisms - this may be due to the age of the respondents with a high percentage of respondents over 75 years.
4. It may be more useful to focus on the above suggestions rather than trying to encourage people to write emergency plans as most people appear to know what to do in a flood including evacuate.

Conclusion

This social research study asked some similar questions to previous studies in the Maitland flood-prone communities. Although there are limitations in comparing this study with the previous studies, some general comparisons can be made. For example, there appears to be a relatively low perception of personal flood risk. On the other hand, a large proportion of residents are willing to evacuate, even though those having emergency plans are less than half this level.

Continued social research should be encouraged to help to further inform and refine community flood engagement activities in the Maitland area, and to unpack the results from these studies.

References

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