Community Involvement in Planning Design and Evaluation Report

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For NSW State Emergency Service

August 2016

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Acknowledgement

Funded by the NSW Government under the State Emergency Management Projects program. The views expressed herein do not necessarily reflect the views of the NSW Government.

Executive Summary

The objective of the project was to deliver and test an evidence-based framework for the application of engagement processes to enable community participation in emergency planning, and define a range of localised strategies to engage communities in NSW SES-led emergency planning.

Risk Frontiers and Molino Stewart Pty Ltd were engaged to assist NSW SES to undertake the project.

To achieve this objective a review of global literature and a series of interviews with subject matter experts were undertaken to develop a series of evidenced-based principles to base the design of engagement programs upon.

Based on the design principles, consultation with local stakeholders, social analysis and an understanding of local flood risks, a series of engagement strategies were designed for piloting across three different communities – Narrabri (North West NSW), Burringbar/Mooball (North Coast NSW) and Chipping Norton (South West Sydney). Pilot communities were identified by NSW SES based upon advice by NSW SES Regional staff.

The engagement activities were organised by NSW SES members. Activities were facilitated independently by Molino Stewart Pty Ltd, and were attended by community members and supported by NSW SES members.

Engagement activities were conducted across the three pilot areas from 27 April 2016 to the 8 May 2016. The following community attendance was registered as participating in the pilots:

- Narrabri – 15
- Burringbar/Mooball – 16
- Chipping Norton – 5

In addition to these activities a series of interviews were undertaken with NSW SES State Headquarters and Regional Staff to assess the capacity and culture of NSW SES to support and deliver community involvement in emergency planning.

Results

The pilot of the adoption of community participation practices in emergency planning and community engagement has been well supported by the NSW SES Regions and volunteers involved.

Significant benefits have been identified within the Narrabri and Mooball/Burringbar pilots including:

- Improved relationships between NSW SES and the community
- A wider appreciation by the community of flood risks and emergency management problems
- Improved awareness of NSW SES roles and of the NSW SES Local Flood Plans
- Possible improved awareness by community members of their roles
- Improved engagement capacity of NSW SES volunteers and staff, having gained awareness and experience of implementing methods involving community participation.

In both these pilots there appears to be enough momentum generated by the pilots to see relationships continue to develop and for local community initiatives to be built. There also appears potential for the engagement activities to inspire wider discussions within communities, with many community members either speaking with or intending to speak with neighbours, family members and friends following the activities. Further activities are planned in both Narrabri and Mooball.

Though not as successful due to issues relating to the limited time available and the inability to gain traction with the local community, the Chipping Norton pilot still provided benefits including:

- Improved knowledge of NSW SES members about local flood risks and community engagement techniques
- Confirmation of the challenges involved with engaging metropolitan communities, where community networks are diffuse, and not necessarily defined by a geographical area.

Benefits across the pilot areas are consistent with those that have been achieved in other case studies of community participation. The variable nature of success underpins the need to be able to work specifically with local communities to trial approaches to see what works best.

Face-to-face engagement in the context of Narrabri appeared to be more successful than online engagement. In the context of Chipping Norton both the opportunity to engage face to face and online did not generate significant community interest.

Community reference groups consisting of community leaders to assist in the design of engagement approaches have been found to be beneficial. However, it is important that members of these groups understand their roles and the purpose of the group.

Key challenges identified through the pilot process included:

- The need to allocate time based upon consultation with the community, and to not dictate timelines to the community. The time limitations imposed on this project were a significant barrier to the project's success. With more time it is likely that further community interest and engagement could have been generated.
- There needs be a critical awareness of flood risks by communities to enable them to engage. This has been best illustrated in the community of Burringbar where community leaders did not believe they had a flood risk, and subsequently did not engage in the pilot. This points to the need for participatory based approaches to be supported by engagement methods focused at raising the critical flood awareness of communities.
- Existing community conflict or issues can make it difficult to initially engage with communities. The role of the skilled independent facilitator was highly valued.
- Engagement with other agencies is important to gain support for initiatives. This can take time and a range of engagement methods to achieve support.

The culture and capacity of the NSW SES to support community participation in emergency planning and community engagement needs to be addressed. It is concluded that the current culture provides minimal support to true community engagement approaches and the capacity of NSW SES requires enhancement to effectively engage with communities and to facilitate the involvement of communities in emergency planning.

Recommendations to address conclusions and learnings identified are provided in this report.

Project Background

The objective of the project was to deliver and test an evidence-based framework for the application of engagement processes to enable community participation in emergency planning, and define a range of localised strategies to engage communities in NSW SES-led emergency planning.

Risk Frontiers and Molino Stewart Pty Ltd were engaged to assist NSW SES to undertake the project.

To achieve this objective, a review of global literature and a series of interviews with subject matter experts were undertaken to develop a series of evidenced-based principles to base the design of engagement programs upon.

Reference groups were established across the three pilot communities to assist in understanding the community and gaining ideas from the community about how best to engage. These groups were established with community participation in Narrabri and Burringbar/Mooball, but despite attempts no community (i.e. non-SES volunteer) representatives were successfully recruited in the Chipping Norton area.

Based on the design principles, consultation with local stakeholders, social analysis and an understanding of local flood risks, a series of engagement strategies were designed for piloting across three different communities – Narrabri (north-west NSW), Burringbar/Mooball (north coast NSW) and Chipping Norton (south-west metropolitan Sydney). Pilot communities were identified by NSW SES staff based upon advice by NSW SES Regional staff.

The engagement activities were organised by NSW SES staff and volunteers. Activities were facilitated independently by Molino Stewart Pty Ltd, and were attended by community members and supported by NSW SES members.

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- Narrabri – 15
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In addition to these activities, a series of interviews were undertaken with NSW SES State Headquarters and Regional Staff to assess the capacity and culture of NSW SES to support community participation in emergency planning.

This report consists of a series of sections outlining the following:

- Description of local flood risks in each pilot area
- Description of the demographic profiles in each pilot area
- The design of engagement strategies in each pilot area
- Evaluation of the program
- Assessment of NSW community engagement culture and capacity
- Conclusions
- Recommendations

Local Flooding and Flood History of Pilot Areas

Narrabri

Narrabri is a town located within the Namoi River floodplain. It is periodically inundated by flooding from Narrabri Creek and the Namoi River. Approximately 2.5 km upstream of Narrabri, the Namoi River splits into the Namoi River and Narrabri Creek. Both branches pass through the town and then join back together approximately 10km downstream of Narrabri. Under normal conditions, all flow goes down Narrabri Creek. A large sandbar in the Namoi River blocks water from entering the river until low-level flooding starts to occur.

The town of Narrabri has an extremely complex flood regime due to the flat topography and multiple tributaries that cross the town. Flooding in Narrabri is further complicated by the existence of a number of floodways which further fragment the town into about 12 islands during large floods (URS 2014). When this happens, each of the 12 islands (or precincts) become isolated. This isolation can last from several days to over a week (NSW SES 2006).

Major floods have occurred in the area on average once every ten years. These floods cause significant damage to property and severe disruptions to transport and communication. Devastating floods have occurred on average once every 40 to 50 years (URS 2014).

The most severe flood occurred in February 1955. In this event, floodwaters reached 9.4 metres at the Narrabri Creek gauge (NSW SES 2006). Roughly 80% of Narrabri properties experienced flooding in their yards and approximately 800 dwellings and businesses experienced above floor flooding (NSW SES 2006). There were also major floods in 1971, 1974, 1976, 1998, 2000, 2004 and 2012.

Because of the many floodways in the town, flooding can have high depths and/or velocities.

In the 1% AEP flood, which would be 8.5 metres, most of Narrabri would be inundated, including up to 1000 houses and 280 businesses which would experience above-floor flooding (NSW SES 2006).

Due to the long history of flooding in Narrabri, the people of Narrabri are generally very flood-aware and very flood experienced when compared to other areas of NSW (URS 2014).

According to the NSW State Flood Emergency Plan the target warning lead time for Narrabri Creek is 6 hours (NSW SES 2015).

Burringbar / Mooball

Burringbar and Mooball are small towns south-east of Murwillumbah in the Northern Rivers Region of NSW. Flooding in the towns comes from Burringbar Creek, which is within the Mooball Creek catchment.

Burringbar Creek has a well-defined creek channel and relatively narrow floodplain. This constrained topography means that the extent of flooding does not vary greatly between different floods, except for extreme events like the PMF (BMT WBM 2009). The nature of the topography also means that the floodwaters cannot spread out, which results in floodwaters which have high depths and/or velocities (BMT WBM 2009).

Overland flooding can occur in relatively frequent events such as the 5 year ARI design flood (BMT WBM 2009). Flooding of this frequency affects residential properties and can reach up to 2m in depth at the back of properties where creek breakouts create a major flow path.

In a 1% AEP event, many parts of the townships could be inundated by flooding from Burringbar Creek (BMT WBM 2009). In a PMF event, the entire area between Burringbar Creek and Burringbar Road is predicted to be inundated, and the railway line is predicted to be overtopped in two sections: near Greenvale Court entrance, and north of the Hunter Street / Tweed Valley Way junction (BMT WBM 2009).

According to the Tweed Shire Local Flood Plan, flooding can cause Burringbar and Mooball to be isolated for up to 3 days (NSW SES 2014). If this were to occur, up to 1,200 people would require resupply via helicopter (NSW SES 2014).

The NSW State Flood Emergency Plan details no target warning time for Burringbar and Mooball (NSW SES 2015). A floodplain risk management study and plan that covers Mooball and Burringbar (BMT WBM 2015) has recently been produced by Tweed Shire Council.

Liverpool (Chipping Norton)

The Liverpool LGA falls within the Georges River catchment. With approximately 1 million people, this is one of the most populated catchments in Australia (Bewsher 2004). Flooding in this area is a significant issue which could cause significant damage in areas adjacent to rivers, creeks and stormwater channels (Bankstown City Council). The LGA includes large areas of hard impervious surfaces such as driveways, roofs, and paving which reduces infiltration and increases the likelihood of local flooding during major storm events (Bankstown City Council). Climate change is likely to increase the intensity and frequency of major storm events which could increase the possibility of flooding (Bankstown City Council).

The April 1988 and August 1986 floods are the largest to have occurred on the Georges River in the last 30 years (Bewsher 2004). These floods are estimated to have been about 1 in 20 year events (Bewsher 2004). In the 1988 flood, over 1,000 residential properties were inundated and approximately $18 million in damage occurred (1988 values) (Bewsher 2004).

The majority of homes in the Liverpool Council area (62%) would be inundated by water more than 0.5m above floor level in a 1 in 100 flood (Bewsher 2004). The majority of commercial and industrial buildings in the Liverpool Council area (57%) would be inundated by water less than 0.5m above floor level in a 1 in 100 flood (Bewsher 2004).

Minor flooding can persist for up to 31 hours but significant flooding is more likely to be limited to less than 20 hours (Bewsher 2004).

According to the NSW State Flood Emergency Plan the target warning lead time for Liverpool is six hours for flooding greater than 2.0 metres and 12 hours for flooding greater than 4 metres (NSW SES 2015).

Community Profiles

Narrabri

Narrabri is a town in the Narrabri Shire Council area.

According to the 2011 Census data (Australian Bureau of Statistics, 2016), Narrabri had a total population of 5,890 in 2011. This was made up of 48.9% males and 51.1% females.

The population included 705 Aboriginal and Torres Strait Islander people. Of these, 328 (or 46.5%) were male and 377 (or 53.5%) were female. The median age was 21 years.

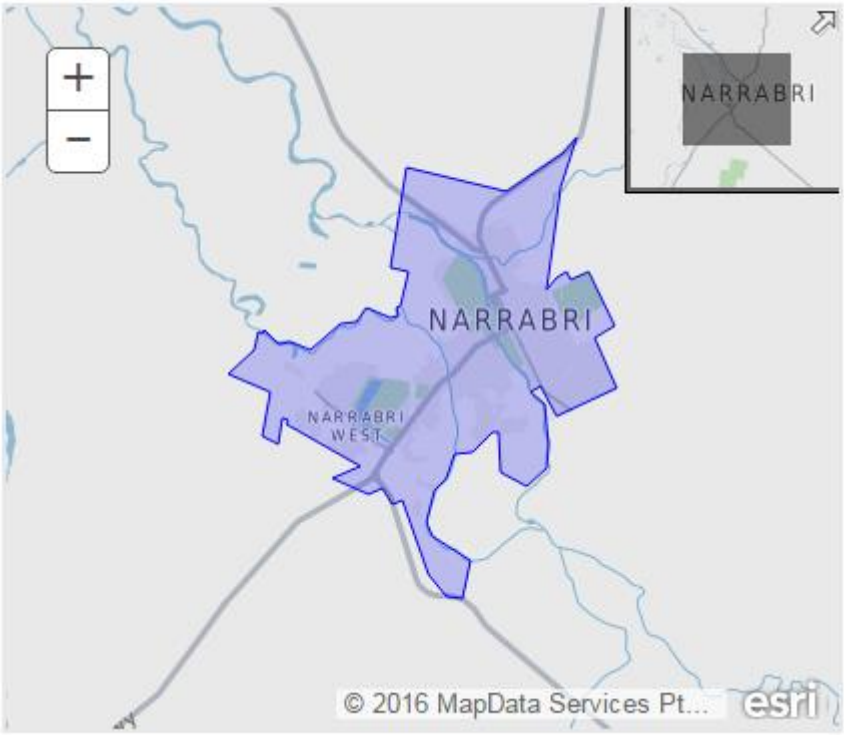

Figure 1: Narrabri State Suburb area in 2011 census (Australian Bureau of Statistics, 2016)

The median age of the Narrabri population was 37 years. This is on par with the NSW state median age of 38. Table 1 provides a breakdown of population for each age cohort.

Table 1: Narrabri population by age range (Australian Bureau of Statistics, 2016)

Age	Narrabri	%
0-4	491	8.3
5-14	796	13.5
15-19	364	6.2
20-24	364	6.2
25-34	727	12.4
35-44	716	12.1
45-54	764	13

Age	Narrabri	%
55-64	665	11.3
65-74	522	8.8
75-84	337	5.7
85+	144	2.4

In Narrabri, 57% of people had the same usual residence as 5 years prior to the census. Of the people who had a different usual address 5 years prior to the census:

- 42% lived within the same statistical area;
- 30% lived in another statistical area within NSW;
- 4% Lived in Queensland;
- 2% lived overseas; and
- 19% not stated.

In Narrabri, 75% of people lived within the same statistical area, even if not at the same address. This means that only a small portion of the population have lived in the area for less than 5 years. This suggests that most people are likely to be flood aware.

A large proportion of people in Narrabri (92.5%) only spoke English at home. Other languages spoken at home included Filipino 0.3%, Cantonese 0.3%, Spanish 0.2%, Mandarin 0.1% and French 0.1%.

Thirty-four percent of residences in Narrabri had no internet connection. This is well above the NSW average of 20% that have no internet connection.

Approximately 5% of the population has need for assistance in some form of core activity (e.g. due to disability, older age).

Of persons aged 15 years and older, 22% volunteer for an organisation or group.

Burringbar / Mooball

Burringbar and Mooball are small towns in the Tweed Shire Council area.

According to the 2011 Census data (Australian Bureau of Statistics, 2016), Burringbar Urban Centre had a total population of 544 in 2011. This was made up of 50.7% males and 49.3% females. Mooball had a population of 377 of which 53% were males and 47% were females.

The population of both towns included 26 Aboriginal and Torres Strait Islander people. The median age for both towns was 38 years.

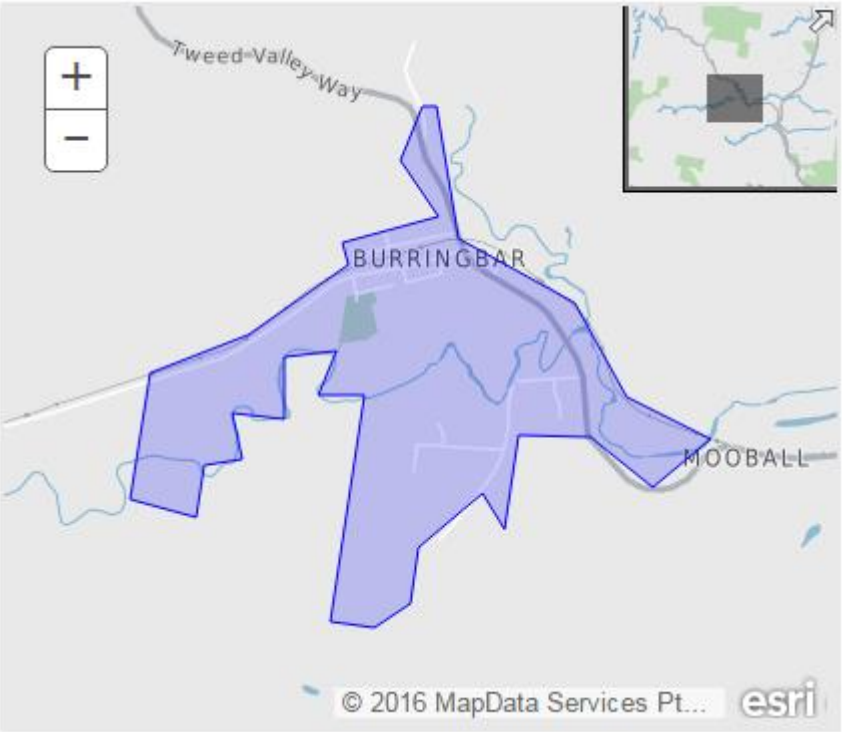

Figure 2: Burringbar State Suburb area in 2011 census (Australian Bureau of Statistics, 2016)

The median age of the Burringbar and Mooball populations was 41 years. This is a relative old population compared to the NSW state median age of 38. Table 1 provides a breakdown of population for each age cohort in Burringbar.

Table 2: Burringbar population by age range (Australian Bureau of Statistics, 2016)

Age	Burringbar	%
0-4	22	4
5-14	82	15
15-19	44	8.1
20-24	29	5.3
25-34	35	6.4
35-44	86	15.8
45-54	106	19.5

Age	Burringbar	%
55-64	71	13
65-74	41	7.5
75-84	28	5.1
85+	0	0

In Burringbar and Mooball, 65% of people had the same usual residence as 5 years prior to the census. Of the people who had a different usual address 5 years prior to the census:

- 15% lived within the same statistical area;
- 39% lived in another statistical area within NSW;
- 2% Lived in Victoria;
- 16% Lived in Queensland;
- 2% Lived in South Australia;
- 2% Lived in Western Australia;
- 5% lived overseas; and
- 20% not stated.

The large portion of the population who have lived in the area for less than 5 years means that they are less likely to have experienced local flooding. This means that these members of the community are less likely to be flood aware and less willing to be involved in planning.

A large proportion of people in Burringbar and Mooball (92%) only spoke English at home. The only other languages spoken at home were Italian 2.4%, Spanish 0.9%, Lithuanian 0.7% and Maltese 0.6%.

Twenty percent of residences in Burringbar and Mooball had no internet connection. This is consistent with the NSW average of 20% that have no internet connection.

Approximately 5% of the populations has need for assistance in some form of core activity (e.g. due to disability, older age).

Of persons aged 15 years and older, 20% volunteer for an organisation or group.

Liverpool

According to the 2011 Census data (Australian Bureau of Statistics, 2016), Liverpool LGA had a total population of 180,143 in 2011. This was made up of 49.6% males and 50.4% females.

The population included 2,677 Aboriginal and Torres Strait Islander people. Of these, 1,301 (or 48.6%) were male and 1,376 (or 51.4%) were female. The median age was 20 years.

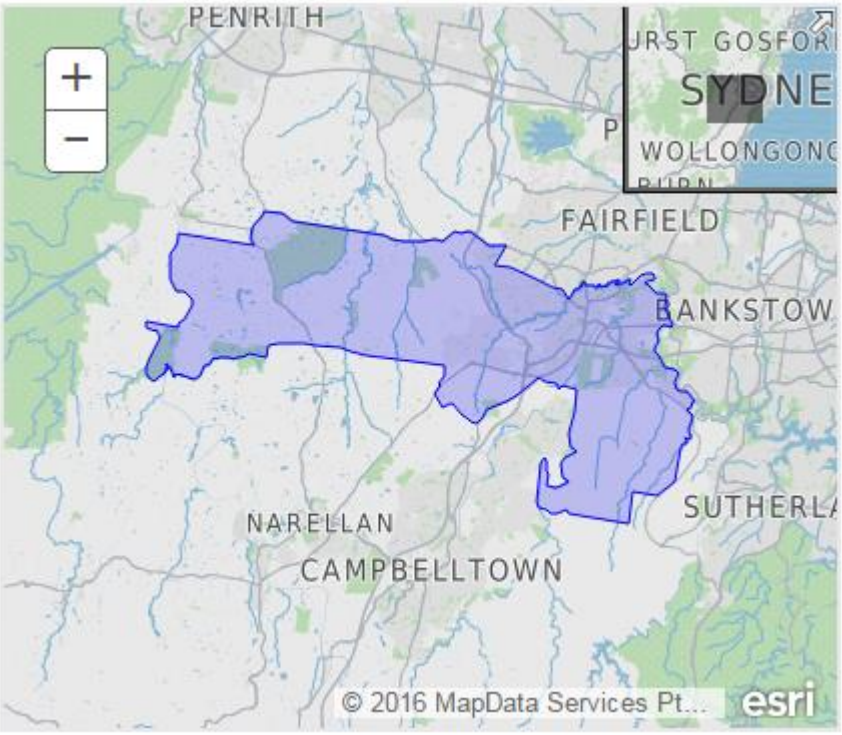

Figure 3: Liverpool LGA State Suburb area in 2011 census (Australian Bureau of Statistics, 2016)

The median age of the Liverpool LGA population was 33 years. This is a relatively young population compared to the NSW state median age of 38. Table 1 provides a breakdown of population for each age cohort.

Table 3: Liverpool LGA population by age range (Australian Bureau of Statistics, 2016)

Age	Liverpool LGA	%
0-4	14083	7.8
5-14	28161	15.6
15-19	13723	7.6
20-24	12487	6.9
25-34	26389	14.6
35-44	27016	15
45-54	24755	13.7
55-64	17037	9.5

Age	Liverpool LGA	%
65-74	9749	5.4
75-84	5184	2.9
85+	1558	0.9

In Liverpool LGA, 61% of people had the same usual residence as 5 years prior to the census. Of the people who had a different usual address 5 years prior to the census:

- 15% lived within the same statistical area;
- 51% lived in another statistical area within NSW;
- 1% lived in Victoria;
- 1% Lived in Queensland;
- 13% lived overseas; and
- 18% not stated.

The large portion of the population who have lived in the area for less than 5 years means that they are less likely to have experienced local flooding. This means that these members of the community are less likely to be flood aware and less willing to be involved in planning.

In Liverpool LGA only 44.4% of people only spoke English at home. Other languages spoken at home included Arabic 9.5%, Hindi 4.5%, Vietnamese 4.4%, Italian 2.8% and Spanish 2.8%

Nineteen percent of residences in Liverpool LGA had no internet connection. This consistent with the NSW average of 20% that have no internet connection.

Approximately 5% of the population has need for assistance in some form of core activity (e.g. due to disability, older age).

Of persons aged 15 years and older, 10% volunteer for an organisation or group.

Program designs

Based on a review of engagement theories and models, and an analysis of cases studies documented in the research report, a series of better practice principles were established to inform the design of engagement programs:

1. **Understand the community** - The implementation of community-based planning should be based on a thorough understanding of the full diversity of the at-risk population in terms of their needs, vulnerabilities and resiliencies. Stakeholders identified as relevant need to be well understood and represented within engagement processes.
2. **Engage early and often** - Community involvement should be considered as early as possible and throughout the engagement process.
3. **Allow sufficient time** - Timeframes should be identified with the community and not dictated to them.
4. **Be flexible and tailor approaches** - Participation methods should be tailored to the context. There will not be one single approach that works across all contexts or every time, the process needs to be flexible. A flexible approach is required to account for the complexities and the various commitments of community members, including time.
5. **Agree on objectives from the outset** - Objectives of any process involving the community need to be agreed among stakeholders, especially the community at the outset.
6. **Acknowledge the community as equals** - Community members must be acknowledged as equal partners in developing the plan, where their input is recognised as an important and equal contribution to decision making. Equality must also exist between participating community members.
7. **Engage in two-way dialogue** - Community participation should be based on mutual respect and trust and involve two-way deliberative dialogue dealing with the public value of propositions, resulting in decision-making being negotiated between all relevant stakeholders in a transparent manner. Community expectations need to be managed, where community members will not be able to influence a decision then participation is not appropriate and communities should be made aware of why.
8. **Utilise skilled facilitation expertise** - Skilled facilitation perceived as impartial, open to multiple perspectives, approachable and across technical details is essential to achieving an effective outcome.
9. **Utilise expert and local knowledge** - Institutional, scientific and local flood risk knowledge, including that provided by NSW SES members and local communities, must be utilised, and two-way learning between participants should be encouraged.
10. **Utilise and build social capital** - Strong social capital including local relationships and local capacity is as a critical enabler. Community involvement in planning should be designed to also build and support social capital.
11. **Evaluate programs** - A process of frequently evaluating and learning is essential to ensure the improvement of future programs. Communities should be involved in the evaluation process and evaluation design should be considered from the outset.
12. **Foster a culture of community participation** - An organisation's culture and leadership must champion the involvement of community members in decision making throughout the disaster management cycle.

Based upon the design principles, analysis of local flood risk and community profiles, and consultation with local community reference groups and NSW SES community engagement staff, detailed program designs were developed for each of the pilot areas. This section provides an outline of each of the pilot program designs.

Narrabri Design

Planning Sessions

Date: 27 April

Session 1 – Improving community preparedness and response (2PM-4PM)

References: Narrabri Local Flood Plan, Volume 1, Section 1.5.8 Community Preparedness; Section 2.5 Community Resilience; Section 3.4 Response Strategies

Objectives:

1. Identify vulnerable local communities and people
2. Explore ways in which people / local communities can prepare for floods including vulnerable communities
3. Identify ways in which communities can work together to respond to possible flooding
4. Assess local community resilience and how it can be further built

Engagement activities:

- Provide the Pre-Pilot Survey and ask participants to fill in – 5 mins
- Participants use local flood map (previous flood extents) to identify vulnerable communities and people in Narrabri (possibly in groups depending on numbers) – 25 mins
- In small groups (e.g. up to 4), participants brainstorm ways in which people and communities can prepare for floods. Results are recorded on sticky notes for all to see – 30 mins)
- A flood scenario is described (e.g. 2012 flood). Participants in total plan a community-based effective response through facilitated problem-solving. Ideas are recorded for further use – 30 mins
- Participants each write down their meaning of resilience on a sticky note. These are pasted on the wall and some read out. Group discusses current levels of resilience and ways to 'bounce back' or 'bounce forward', ways of sustaining this locally - 25 mins. Note: this does not involve utilising a formal measurement methodology.
- De-brief. Provide the Post-Pilot Survey and ask participants to fill in – 5 mins (only those not attending Session 2)

Session 2 – Evacuation (6.30PM-8.30PM)

References: Narrabri Local Flood Plan, Volume 1, Section 3.4 Response Strategies; Section 3.18 Managing Evacuation Strategies; Volume 3

Objectives:

1. Assess the need for people to self-evacuate and how this can be best achieved
2. Locate and assess current and possible flood evacuation routes
3. Locate current and possible flood evacuation centres
4. Identify ways in which communities can work together to evacuate including vulnerable people

Engagement activities:

- Provide the Pre-Pilot Survey and ask participants to fill in – 5 mins (if haven't done so in Session 1)
- In small groups assess the need for self-evacuation and how this can be best achieved. Write down responses on large sticky notes and attach to wall or display board for all to see – 25 mins
- Participants use local flood map (e.g. 1% AEP) to discuss and locate current and possible flood evacuation routes (possibly in groups depending on numbers) – 30 mins
- Participants use local flood map (e.g. 1% AEP) to discuss and locate current and possible flood evacuation centres (possibly in groups depending on numbers) – 30 mins
- Using knowledge of vulnerable people and flood risks, whole group through facilitated discussion brainstorms and then evaluates ways for the community to work together to evacuate – 25 mins
- De-brief – next steps for the project and community. Provide the Post-Pilot Survey and ask participants to fill in – 5 mins

Requirements:

- Copies of pre- and post-surveys
- Pencils
- Flood maps
- Marker pens to write on flood map
- Large sticky notes
- Display board
- Photos of 2012 Narrabri flood for visual stimuli for flood scenario

Social Media

Date: 27 April (plus 6 days after)

References: Narrabri Local Flood Plan, Volume 1, Section 1.5.8 Community Preparedness; Section 2.5 Community Resilience; Section 3.4 Response Strategies, Volume 3

Objectives:

1. Increase awareness of flood risk and the need for flood planning
2. Identify community views on ways to prepare for, respond to and recover from floods

Engagement activities:

- Use NSW SES Local Unit Facebook and Have Your Say page plus Council page if possible with a new post per day (7 posts)
- Ask participants to fill in pre-survey (give Survey Monkey link). As this at start of each post (note only to fill in if they haven't already)
- Explain at start of each post that this is about getting people's participation in local flood planning

Post 1 - Ask people to share photos of local flooding (may have to post a few to stimulate activity) and their flood stories (Crowdsourcing)

Post 2 - How can people and local communities better prepare for flooding?

Post 3 - What is the best way for you to receive flood warnings? Might give some prompts e.g. SMS messages, social media, radio, door knock

Post 4 - Would you evacuate if you knew flooding could happen? If so, where would you go?

Post 5 - If you were told to evacuate where would you go and how would you get there?

Post 6 - How can you and the community get back to normal after a flood?

Post 7 - How can the community be involved in planning for floods?

With the last post, encourage people to fill in the post-survey (provide Survey Monkey link)

Requirements:

A NSW SES person to post and manage responses for one week

Responses need to be recorded e.g. use screen shots, Have Your Say Page

Burringbar / Mooball Design

Planning Sessions

Date: 4 & 5 May

Session 1 – Flood risk and its impacts for flood planning (4 May 6PM-8PM)

References: Tweed Shire Local Flood Plan, Volume 2; Volume 1, Section 2.5 Public Education; Tweed Coastal Catchments Floodplain Management Study and Plan

Objectives:

1. Assess flood risk in Burringbar, Mooball and surrounding area to people and property
2. Identify vulnerable people and isolated areas
3. Assess implications of flash flooding in upper reaches of Burringbar Creek
4. Identify implications of flood risk for the Burringbar and Mooball communities

Engagement activities:

- Provide the Pre-Pilot Survey and ask participants to fill in – 5 mins
- Have maps in different location than where people are sitting – no seats near maps to encourage use of maps. Participants use local flood map (1% AEP extent and 1% AEP flood depths) and their

local knowledge to identify areas of the local community that will be impacted by flooding (possibly in groups depending on numbers) – 20 mins

- Participants use local flood map (1% AEP extent and 1% AEP flood depths) and their local knowledge to identify vulnerable people and isolated areas in the local community (possibly in groups depending on numbers) – 20 mins
- In small groups, participants do a problem solving exercise where knowing flood risks and issues, they experience a 1% AEP flood with less than six hours warning. What would they do to ensure safety of people and protection of property? Write down responses on sticky notes and then share with other groups – 45 mins
- Participants each write down on sticky notes implications of flood risk to Burringbar and Mooball communities. Share responses and discuss with a neighbour, then partners provide top two implications to whole group - 25 mins
- De-brief. Provide the Post-Pilot Survey and ask participants to fill in – 5 mins (only those not attending Session 2)

Session 2 – Local Flood Planning Solutions (5 May 6PM-8PM)

References: Tweed Shire Local Flood Plan, Volume 1, Part 2 Preparedness, Part 3 Response

Objectives:

1. Identify ways in which the community can prepare for flooding
2. Explore ways in which the community can work together to respond and recover
3. Evaluate the usefulness of the Uki response model in local flood planning
4. Develop a flood plan for Burringbar and Mooball

Engagement activities:

- Provide the Pre-Pilot Survey and ask participants to fill in – 5 mins (if haven't done so in Session 1)
- Participants in the small groups brainstorm ways in which the community can prepare for flooding. Write answers on sticky notes and affix to wall or board – 25 mins
- Participants in whole group construct 'social network map' on butcher's paper/white board showing linkages between business, clubs, progress associations etc. and how these could be mobilised for response and recovery – 30 mins
- The Uki model is introduced as a possible local response model. Participants read case study and then discuss its application to Burringbar/Mooball – 30 mins
- Using knowledge of flood risk (Session 1) and aspects of flood planning, participants discuss and list parts of a Local Flood Plan for Burringbar and Mooball – 25 mins
- De-brief – next steps for the project and community. Provide the Post-Pilot Survey and ask participants to fill in – 5 mins

Requirements:

- Copies of pre- and post-surveys
- Pencils
- Flood maps
- Marker pens to write on flood map
- Large sticky notes
- Butcher's paper or white board

- Display board (could use wall – get permission from Club)
- Copies of Uki case study plus visual of Uki web site

Chipping Norton Design

Planning Sessions

Date: 7 & 8 May

Drop-in Sessions – Planning for community preparedness and resilience (6PM-8PM 7 May, 10AM-1PM 8 May)

References: Liverpool City Flood Emergency Sub Plan, Volume 1, Section 1.5.8 Community Preparedness; Section 2.5 Community Resilience; Section 3.4 Response Strategies

Objectives:

1. Confirm flood risk
2. Explore ways in which people / local communities can prepare for floods
3. Identify ways in which communities can work together to respond to possible flooding including through flood warnings and evacuation
4. Assess local community resilience and how it can be further built

Engagement activities:

- As they arrive, provide the Pre-Pilot Survey and ask participants to fill in
- Participants use local flood map (1% AEP) to identify their flood risk
- Have seven questions around room (laminated and stuck on wall with blue tac) to stimulate discussion. Questions are:
    1. Who has responsibility for keeping people safe and protecting property in a flood?
    2. How would you prepare for a flood?
    3. How would you learn about an impending flood?
    4. What would you do if you knew your property was going to flood?
    5. If you had to evacuate, where would you go?
    6. How could you and the community recover well after a flood?
    7. How would you like to participate in flood planning in your area?
- Participants talk with NSW SES volunteers about these and any other aspects of flood planning.
- Might also have photos of Georges River floods laminated and affixed to wall/display boards to set the scene.
- De-brief. As they leave, provide the Post-Trial Survey and ask participants to fill in

Requirements:

- Copies of pre- and post-surveys
- Pencils
- Flood maps
- Marker pens to write on flood map
- Laminated questions and photos
- Display board

Social media

Date: 7 May (plus 6 days after)

References: Liverpool City Flood Emergency Sub Plan, Volume 1, Section 1.5.8 Community Preparedness; Section 2.5 Community Resilience; Section 3.4 Response Strategies, Volume 3

Objectives:

1. Increase awareness of flood risk and the need for flood planning
2. Identify community views on ways to prepare for, respond to and recover from floods

Engagement activities:

- Use NSW SES Local Unit Facebook and Have Your Say page plus Council page if possible with a new post per day (7 posts)
- Ask participants to fill in pre-survey (give Survey Monkey link). Add this at start of each post (note only to fill in if they haven't already).
- Explain at start of each post that this is about getting people's participation in local flood planning

  Post 1 - Ask people to share photos of local flooding (may have to post a few to stimulate activity) and their flood stories (Crowdsourcing)

  Post 2 - How can people and local communities better prepare for flooding?

  Post 3 - What is the best way for you to receive flood warnings? Might give some prompts e.g. SMS messages, social media, radio, door knock

  Post 4 - Would you evacuate if you knew flooding could happen? If so, where would you go?

  Post 5 - If you were told to evacuate where would you go and how would you get there?

  Post 6 - How can you and the community get back to normal functions after a flood?

  Post 7 - How can the community be involved in planning for floods?

With the last post, encourage people to fill in the post-survey (provide Survey Monkey link).

Requirements:

A NSW SES person to post and manage responses for one week

Responses need to be recorded e.g. use screen shots, Have Your Say Page

Evaluation

It is recognised that evaluation is essential component of community engagement program design and implementation. The process of evaluation enables both benefits to be identified and measured, and for lessons to be learnt.

Evaluation Methods

The evaluation of the pilot project in the three pilot sites has focused on the following:

- Assessing achievements against stated program objectives
- Identifying of benefits and challenges identified throughout the project
- Identifying unintended impacts both positive and negative
- Determining if the method of engagement has been suitable to meet the stated objectives
- Identifying the capacity and culture of the NSW SES to support community engagement including participatory approaches.

Primarily success indicators have been measured based upon perceived achievement of the objectives stated in the designs of each of the pilots.

The evaluation is summative in nature focused on the outcomes of the project and has been undertaken in a structured manner. Specific methods undertaken to evaluate the pilot project have included:

- Qualitative structured interviews with key stakeholders involved in the project including NSW SES, Local Government and Molino Stewart representatives. Interviews explored the key successes and challenges of the pilot, identified future opportunities and evaluated the achievements of the activities against the program objectives.
- Surveys of program participants to collect quantitative data to ascertain possible changes as a result of pilot activities. Participants completed a short survey either online or via hardcopy survey form before (pre) and after (post) the engagement activities in each of the pilot areas. Pre and post survey forms are provided at Appendix 1.
- Analysis of social media posts and associated analytics to ascertain levels of community engagement with questions posed by NSW SES.
- Qualitative structured interviews with NSW SES staff to review NSW SES capacity and culture to support community engagement programs including participatory approaches.

The evaluation has been conducted consistent with the NSW Government evaluation guidelines. Results of these evaluation activities are provided in the following sections.

Results - Interviews with key stakeholders

General Observations

It was acknowledged by NSW SES staff that the pilot project was a positive improvement to the approaches taken by the NSW SES to engage with communities and that it provided an opportunity to engage with senior NSW SES staff to build their buy-in. The project also received strong support from the NSW SES Regions and local Units involved.

The evidence-based approach through the establishment of a series of principles to inform the design of activities in each of the pilot areas was seen as important. The pilot confirmed the view that direct engagement with the community through two-way dialogue is both time consuming and complex. The

resource burden is also ongoing with the need to maintain an ongoing dialogue with communities to maintain their trust and confidence. The experiences highlighted the importance of understanding the pre-existing knowledge of the community and their values.

It was acknowledged by NSW SES that the establishment of local community reference groups were an important component of the program, allowing for direct consultation with local representatives about the tailored design of local community participation activities. The interaction with the reference groups enabled an understanding of community views and local politics upfront, and confirmed the need for flexible tailored approaches based upon local community needs. Experienced, independent facilitation was acknowledged as a necessity, at least in the initial engagement.

Timeframes were acknowledged throughout the project as a critical constraint, effectively limiting the potential for the program to engage with communities. A need was also identified in some pilot areas to improve the skills of NSW SES members to interpret and communicate flood risk information, and to maintain a deliberative process instead of one way information communication.

It is difficult to define the overall success of the pilot project without surveying residents involved post a flood event to identify how the project influenced community preparations and decision making. Though, it is possible to identify some immediate benefits that may contribute to improved community resilience.

Some specific observations for each of the pilot sites are detailed in the following sections.

Narrabri

Key benefits of the project from a local NSW SES perspective were the opportunity to strengthen relationships with the community, and meet some community members that NSW SES previously had not known. In particular, it was acknowledged that the activities provided the opportunity for the NSW SES to engage with senior leaders within the Narrabri community.

The activities allowed the opportunity to better understand the community and to identify some new methods to engage with the community, including social media networks that were not previously known.

The experience of sharing emergency management problems with the community participants was said to be a useful experience, so that these problems were understood. It was also acknowledged by the NSW SES that the community had some good ideas to share to contribute to solving problems.

It was identified that the activity has assisted to build community engagement capability of local NSW SES volunteers. There has been a noticeable change in the mindset where the local NSW SES Unit is now actively seeking to involve the community in its activities.

There was, however, a view that the wider impact of the project in terms of raising flood risk awareness and strengthening community preparedness was only limited to those involved in the activities, though it was acknowledged that at present there was no means to measure the wider impact of the project via the flow of information shared with other community members. The main limiting factor to gaining a greater impact across the community was simply that there was only a small group of people involved.

An independent facilitator was viewed as very beneficial to the process, and it was likely that the independence assisted to build community buy-in, and overcome possible local pre-conceptions of NSW SES.

The Unit is undertaking follow-up community engagement work, in the form of street meetings sponsored by NRMA. These meetings are largely aimed at encouraging the community to sign-up to flood alerts issued by the Narrabri SES Unit. These meetings were originally planned to go ahead prior to the community involvement in planning pilot, and hence are not considered an outcome of the project, though are a positive initiative nonetheless.

Figure 4 – flyer advertising follow-on Narrabri street meetings

There were some challenges acknowledged in implementing the activities, including:

- Time to advertise the activities was limited to less than a week, ideally the local Unit needed 2-3 weeks to get people on board.
- There was a view that many involved in the activities didn't understand their purpose. Many came expecting to talk about previous flood behaviour. It was thought that the initial brief to participants needed to be clearer.
- When implementing the community meetings it was observed that many participants were interested only in their own circumstances rather than the broader community circumstances.
- There was a need to overcome the bias of local residents that had previously experienced flooding.

Having a community reference group was acknowledged as a good approach and it was said that they came up with some good ideas to engage with the community. However, it was felt that not all members understood their role. To overcome this it was suggested that the group could have met a couple of times before undertaking the activities.

It was acknowledged that Narrabri Shire Council was a key stakeholder and needed to be engaged with early to ensure the purpose of the activity was clear, and their support and buy-in was obtained.

From the perspective of the local NSW SES Unit there was continued support for the initiative. There is a willingness to continue with the approach, but the local NSW SES Unit acknowledged that they required some support and direction to build a plan for follow-up engagement. Though the Narrabri SES Unit has embraced the initiative, with only 15 volunteers it was acknowledged that it is not easy to resource such activities.

From a NSW SES Region perspective the need to continue to build on the initiative and further strengthen and expand relationships was identified. It was acknowledged that this will take further resources to achieve, but the benefits were viewed as *"priceless".*

Table 4 provides a summary of program achievements against the objectives stated within program designs.

Table 4 – Achievements against stated objectives

Program objective	Achievement	Comments
Identify vulnerable local communities and people	Partial achievement	The need was discussed and acknowledged though no detailed answers were provided
Explore ways in which local communities can prepare for floods including for vulnerable communities	Partial achievement	The need to engage with the community was explore. It was acknowledged more effort is required to engage with the community and this activity was a starting point. Trying to develop solutions was seen as a bit *'pie in the sky'* given the limitations of time involved.
Identify ways in which communities can work together to respond to possible flooding	Achieved	Flood wardens were identified as a possible method.

Program objective	Achievement	Comments
Assess local community resilience and how it can be built	Achieved	Discussions were held about contacting community members about flooding.
Assess the need for people to self-evacuate and how this can be best achieved	Partial achievement	The activity didn't engage with enough people to achieve this fully. There is an acknowledged need to engage with the community further regarding this.
Locate and assess current and possible flood evacuation routes	Not achieved	A lot of uncertainty still remains and the problem remains unresolved.
Locate current and possible flood evacuation centres	Achieved	Identified that all sites get flooded, and it was proposed to use RFS Base Camp facilities.
Identify ways in which communities can work together to evacuate vulnerable people	Partial achievement	The need was recognised, though plans are only partially in place.

Mooball / Burringbar

Many benefits were noted in this area particularly in the Mooball community. Primarily the activities enabled a wider critical awareness of the flood risk within the area including within NSW SES members. At the commencement of the process there was some disagreement amongst those involved regarding the flood liability of the area. Utilisation of local community knowledge and maps from recent flood studies (BMT WBM 2015) were key to the process of increasing awareness (Figure 5). Subsequent to the activities being conducted flooding has affected the area in early June 2016 further confirming the flood risk.

It was acknowledged that there was good buy-in from the community but that it would have been nice to have more community members involved. It was noted that though attempts had been made to engage the Burringbar community, community members had been reluctant to engage due to a lack of critical flood awareness and that subsequently the engagement focus shifted to Mooball.

The targeted process to get people involved was seen as key, with attempts made to identify and have face to face conversations with influential people within communities, and involve key community group representatives in engagement activities.

Relationships have been enhanced through the process between the NSW SES and local residents, which has now led to the following benefits:

- NSW SES being invited to Mooball Progress Association meetings and the Progress Association has asked to keep the maps presented by NSW SES to distribute the knowledge further within their network.
- The local NSW SES Unit is now establishing a local telephone tree to provide information and warnings for local residents.
- The local community provided photos of flooding to the local NSW SES Unit during the most recent June 2016 flood event.
- An opportunity now exists for NSW SES to include local community groups on flood bulletin distribution lists.

There was a belief expressed that the process had improved awareness of agency roles and responsibilities with one stakeholder saying: *"They now know to call the NSW SES rather than the RFS".*

Key challenges that were identified in implementing activities included:

- There were pre-existing issues within the community most notably concerns about proposed land developments in the local area, and a cancer cluster linked by the community to soil contamination from mining. Some in the community may have seen the activities as an opportunity to advance these issues.
- Some of the interactions were said to have been feisty between community members due to conflict over existing issues. It was acknowledged that an independent facilitator had been key to leading these activities and moderating the conflict between participants - something that was acknowledged as being outside the skill set of a typical NSW SES Community Engagement Coordinator.
- Identifying who the community leaders were was sometimes challenging, as they are not always the ones with the loudest voices. There was also an acknowledged need to capture a variety of demographics (e.g. younger and older).
- It was perceived that due to its role in land development there was a negative perception towards Tweed Shire Council by parts of the local community. It was acknowledged though by the NSW SES that it was important to engage with and involve the Council from the outset.

The support from NSW SES State Headquarters Staff for the project was acknowledged as greatly beneficial in particular the extra resources that were made available including large maps and advertising in local papers to promote activities. The Tweed Shire Council representative praised those involved from the NSW SES and the independent facilitator, for their skills and commitment.

It was identified that there are other communities in the Tweed Shire that would benefit from a similar approach. Overall, the Council representative summarised the project as:

"Overall really good – something all communities could benefit from".

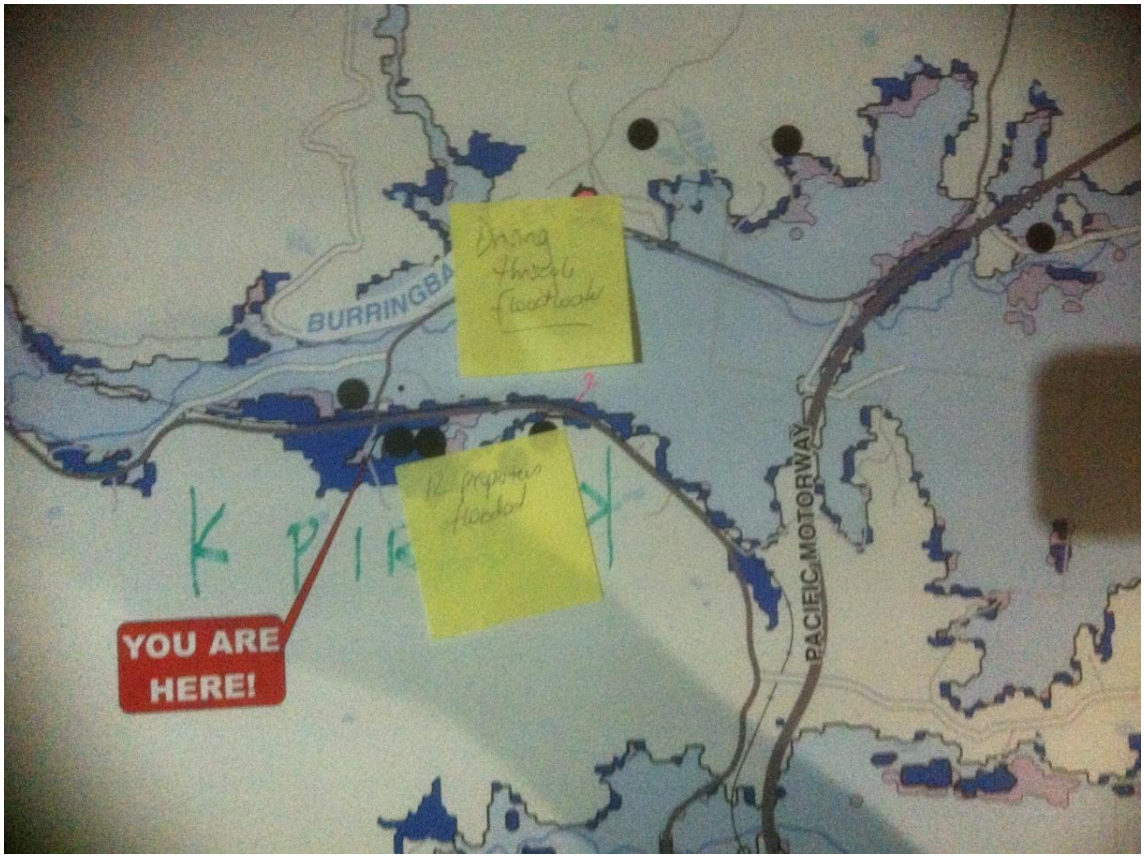

Figure 5 – Participatory mapping in Mooball

Table 5 provides a summary of program achievements against the objectives stated within program designs.

Table 5 – achievements against stated objectives

Program objective	Achievement	Comments
Assess flood risk in Burringbar, Mooball and the surrounding area to people and property	Partial achievement	Objective achieved in Mooball, however Burringbar community lacked critical flood awareness to engage. Effective use of maps noted.
Identify vulnerable people and isolated areas	Achieved	
Assess implications of flash flooding in upper reaches of Burringbar Creek	Achieved	
Identify implications for the Burringbar and Mooball communities	Achieved	
Identify ways in which the community can prepare for flooding	Achieved	
Explore ways in which the community can work together to respond and recover	Partial achievement	Community was said to be focused on other flood issues including the clearing out of a local creek.
Evaluate the usefulness of the Uki response model in local flood planning	Achieved	

Program objective	Achievement	Comments
Develop a flood plan for Burringbar and Mooball	Partial achievement	The Mooball community has expressed interest in further progressing activities to enhance preparedness.

Chipping Norton

The project group struggled to find an appropriate pilot area within the Liverpool LGA component of the Georges River floodplain. Attempts were made to form a local community reference group, though ultimately there was no input obtained from the community, and the reference group was formed with representatives of the local Liverpool SES, Liverpool Council and the NSW Police Force. As a consequence, the project team struggled to develop an in-depth knowledge of the community, though it was later acknowledged that the Liverpool SES Unit did have a greater knowledge of the community than initially appreciated by NSW SES Regional Staff.

Though there were only a small number of residents involved in the Chipping Norton pilot, anecdotally it was acknowledged by NSW SES that those involved seemed to improve their awareness of flooding. The co-design and implementation of activities also provided local NSW SES volunteers an improved appreciation of flood risk in the area, and an opportunity to become more aware of community engagement practices.

The NSW SES was also able to develop deeper relationships with a local flood 'champion' who is well acknowledged through the community for his flood knowledge. However, it was noted that he had been critical of NSW SES during the subsequent June 2016 flood event.

The limited time available was seen as a key challenge which led to the engagement event occurring on Mother's Day, a time that was not considered ideal. Without such limitation it was viewed that a greater appreciation of the community could have been established initially and community relationships built first before wider engagement occurred.

The Liverpool SES Unit distributed flyers promoting the engagement activities, however it was acknowledged that further efforts could be made for future activities through stories in the local newspaper.

The Liverpool City Council had been engaged from the initial reference group meeting as an acknowledgement of their importance. Council staff have been keen to engage through NSW SES with residents about a voluntary purchase scheme being conducted in the floodplain. The Unit is attempting to build relationships with the Council to improve the understanding of Council staff regarding the roles of NSW SES in particular those relating to community engagement.

The Chipping Norton pilot largely confirmed challenges that exist with engaging communities in a large metropolitan area, where defuse community networks exist, and communities are not as geographically definable as in rural areas. It was suggested that future attempts in the area may seek a social, faith based, cultural or business network engagement approach, rather than one based upon a fixed geographical area.

The Liverpool SES Unit has around 40 volunteers and has been growing in its interests and capacity with regards to community engagement. The Local Controller, and likely other Unit members are keen to continue the engagement process with the community.

Given flooding that has occurred in the area in early June 2016 there is an opportunity to re-engage with the community to see if there has been an increase in concern regarding flooding amongst residents. Though, it was acknowledged by the NSW SES Region that NSW SES does not view community engagement as a priority after flood events.

Table 6 provides a summary of program achievements against the objectives stated within program designs.

Table 6 – achievements against stated objectives

Program objective	Achievement	Comments
Confirm flood risk	Achieved	Effective use of participatory mapping, utilising flood risk maps.
Explore ways in which people / local communities can prepare for floods	Partially achieved	Feedback from community members was minimal as a whole, though those that did attend did provide feedback.
Identify ways in which communities can work together to respond to possible flooding including through flood warnings and evacuation	Partially achieved	Feedback from community members was minimal as a whole, though those that did attend did provide feedback.
Assess local community resilience and how it can be achieved	Partially achieved	Feedback from community members was minimal as a whole, though those that did attend did provide feedback

Figure 6 – Community engagement activity wall in Chipping Norton

Results - Community Survey

Surveys of program participants were conducted pre and post engagement activities. There were 41 responses to the pre-engagement survey and 17 to the post-engagement survey. Due to the small sample sizes it is difficult to make conclusions regarding the impact of the programs as no changes would be statistically significant. However, some anecdotal statements can be made. Due to the small sample it is not possible to provide comparisons between different pilot areas. Caution should be applied to making broader conclusions from these results.

The results of the surveys are outlined in the following sections.

Background and demographics of respondents

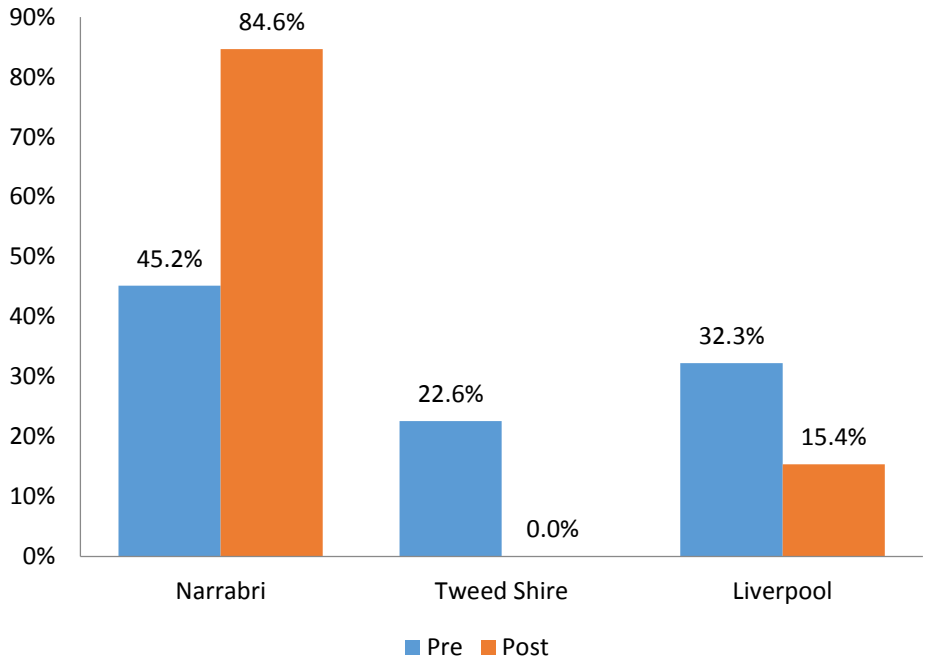

Figure 7 - LGA of respondents

As shown in Figure 7 almost 25% of pre-engagement and almost 25% of post-engagement respondents did not state their LGA. There were no known post-engagement respondents from Tweed Shire (Burringbar/Mooball), and only two from Liverpool (Chipping Norton).

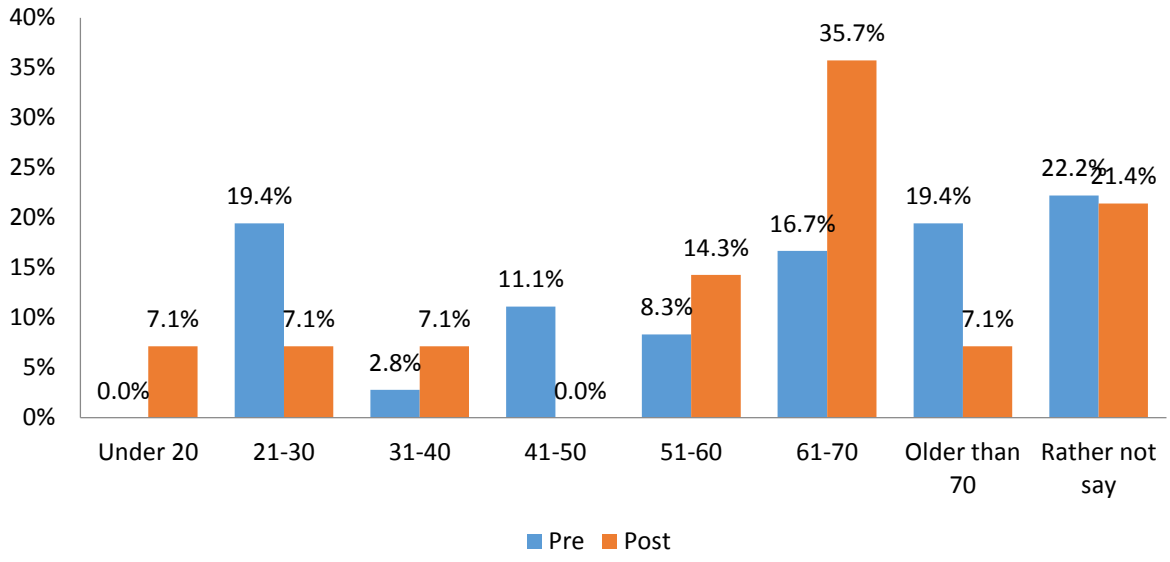

Figure 8 – Age of respondents

Most respondents were in the 50 and over age range. There were few younger respondents (Figure 8).

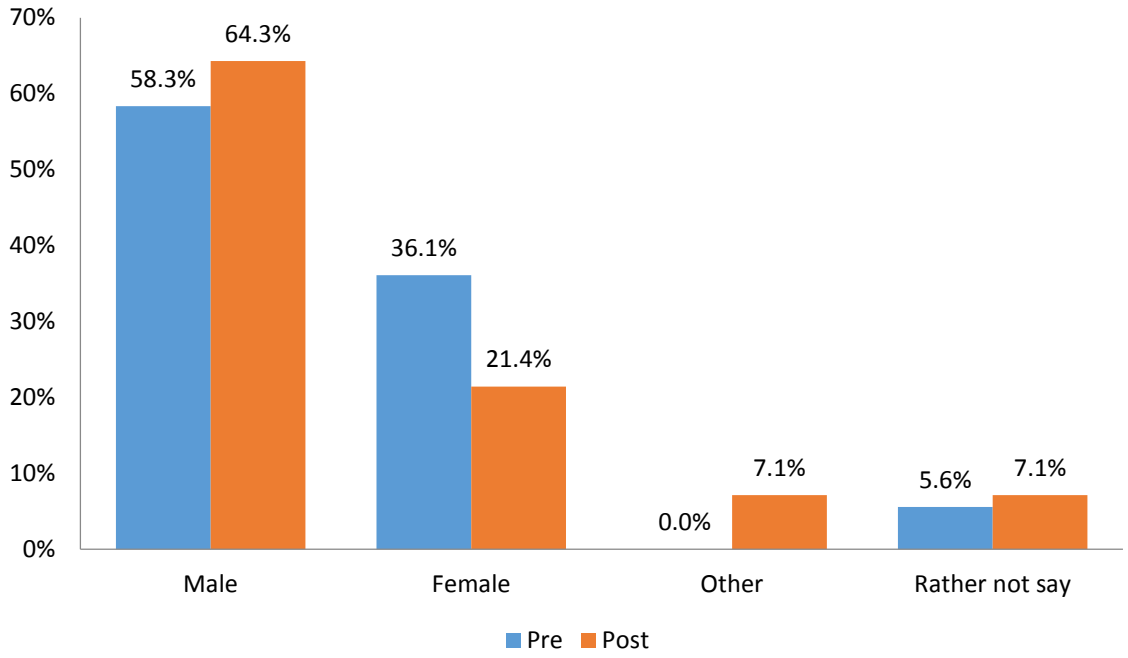

Figure 9 – Gender of respondents

Around two-thirds of survey respondents were male (Figure 9).

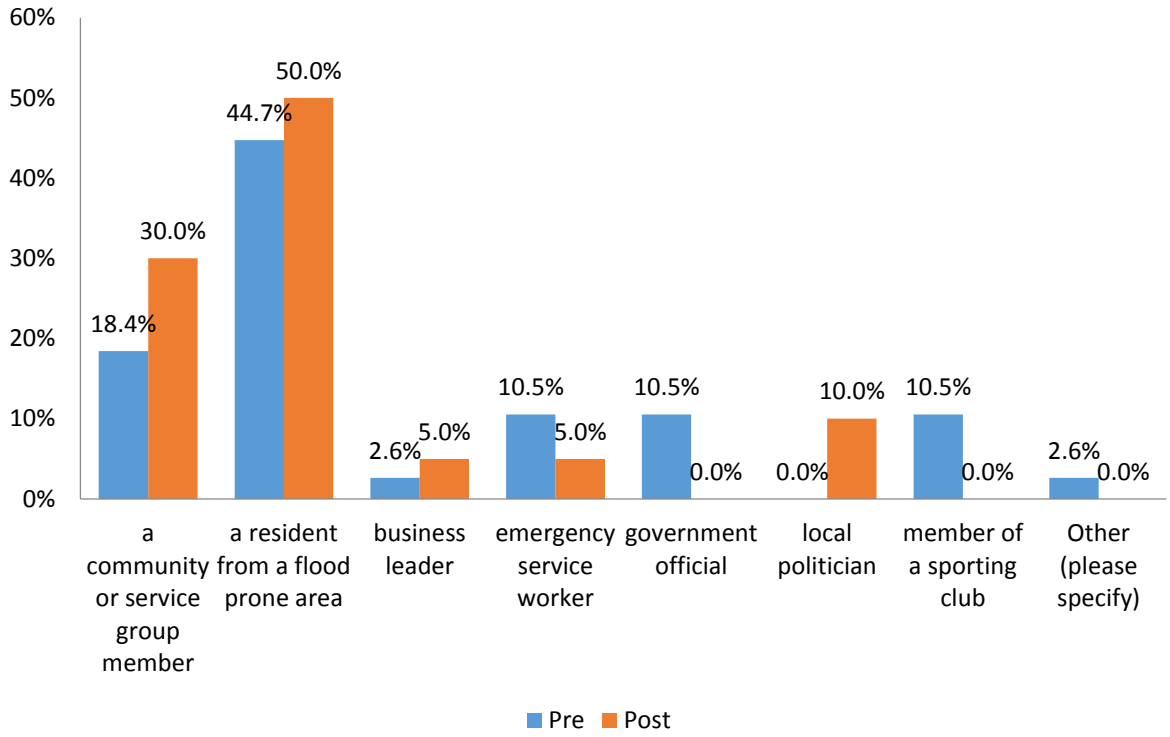

Figure 10 – self-description of respondents

Respondents mainly identified themselves as residents of flood-prone areas or a community service group member (Figure 10).

Knowledge and experience of flooding and of flood risks

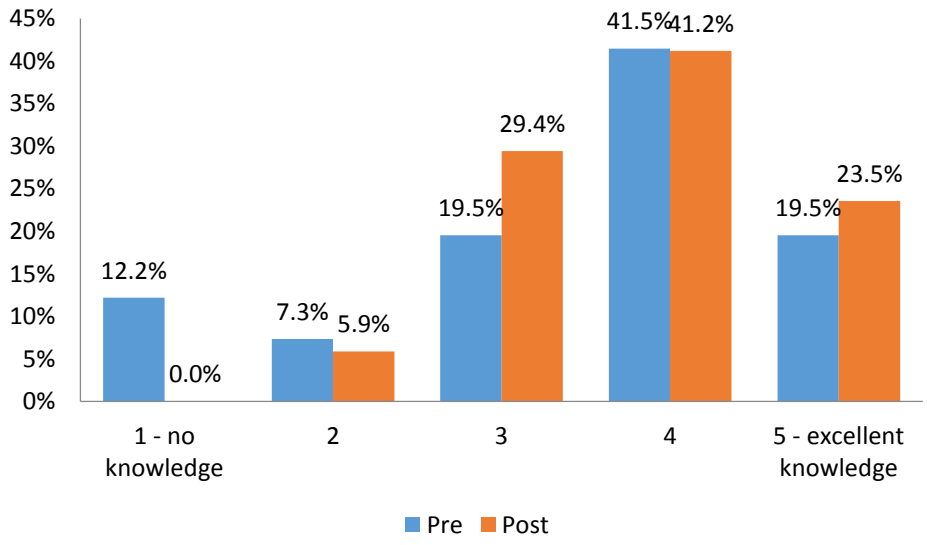

Figure 11 – community member rating of their knowledge about flood risks in their community

As shown in Figure 11 both pre and post engagement, respondents claimed to have a good knowledge of the flood risk in their community. This appeared to shift upwards a little post engagement.

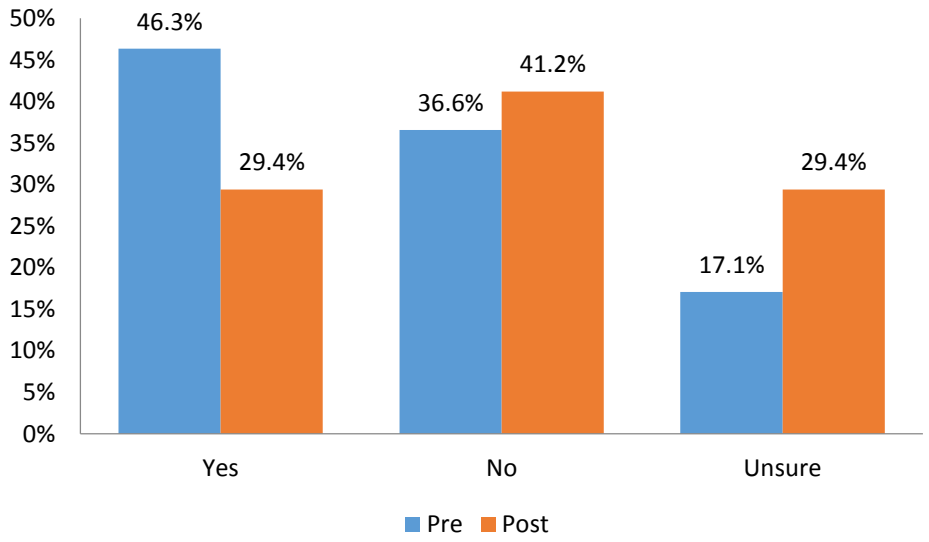

Figure 12– flood liability of respondent's properties

There was a fairly even split between respondents that thought their property was at risk of flooding and those that thought there was no risk. Quite a few respondents were still unsure of their flood risk post engagement activities (Figure 12).

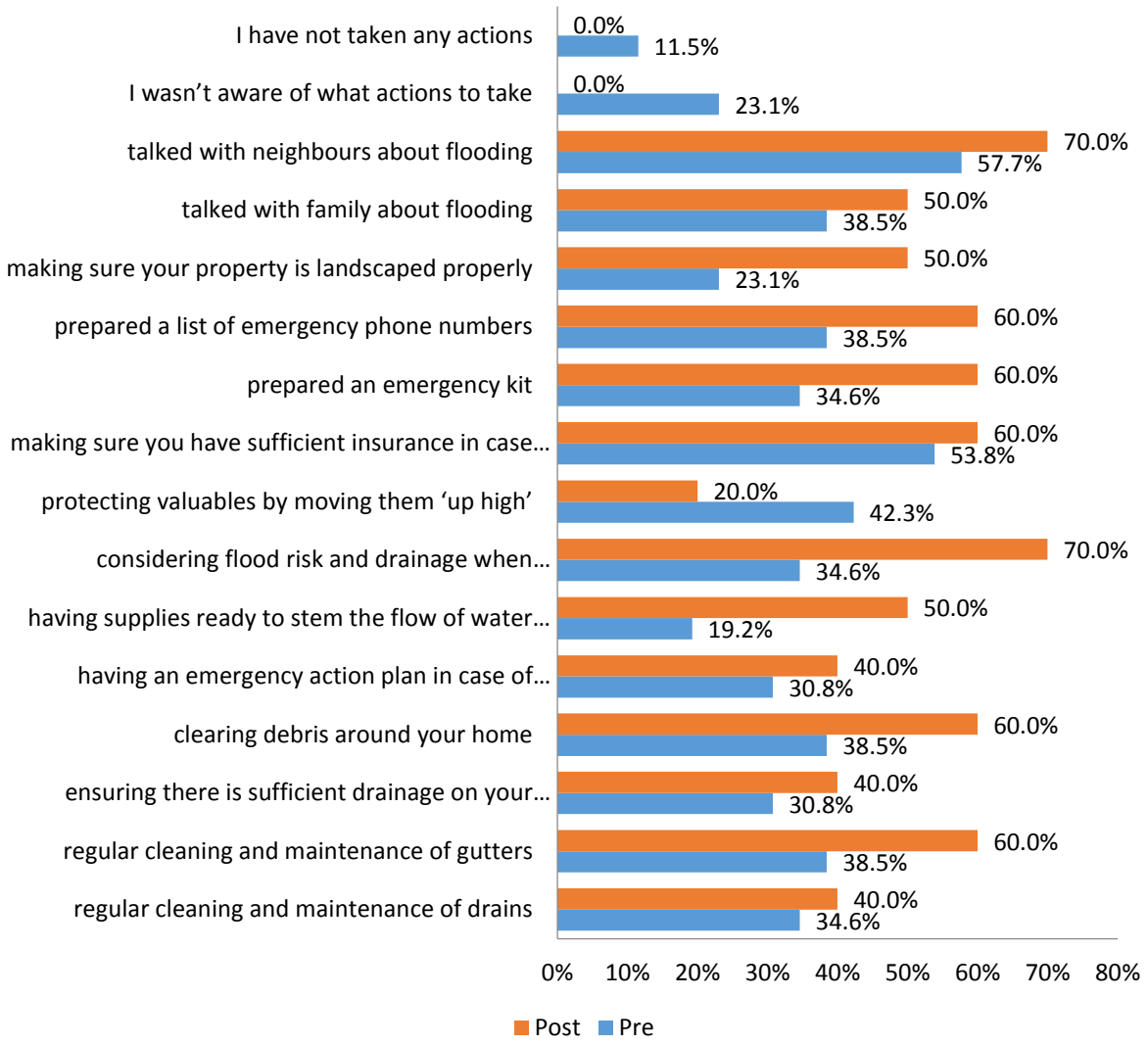

Figure 13 – actions taken by community members to minimise flood risk (Only answered if respondents knew they had a flood risk or where unsure)

Post engagement no-one responded stated that they had done nothing, or were unaware of what actions to take. The engagement could be said to be successful in making people aware of actions to take (Figure 13).

Pre engagement:

- Most common actions were
  - Talked with the neighbours about flooding
  - Made sure they had sufficient insurance to cover flooding
  - Moved valuables to a safer, higher place.
- A proportion had taken no action, or did not know what action to take.
- Apart from these respondents, almost everyone had taken some sort of action.

Post engagement:

- Everyone had taken some sort of action.

- The proportion of respondents that had taken each action was in every case larger post engagement compared to pre engagement (except for moving valuables higher up).
- This would point possibly to an increased awareness of flood preparedness actions in general.

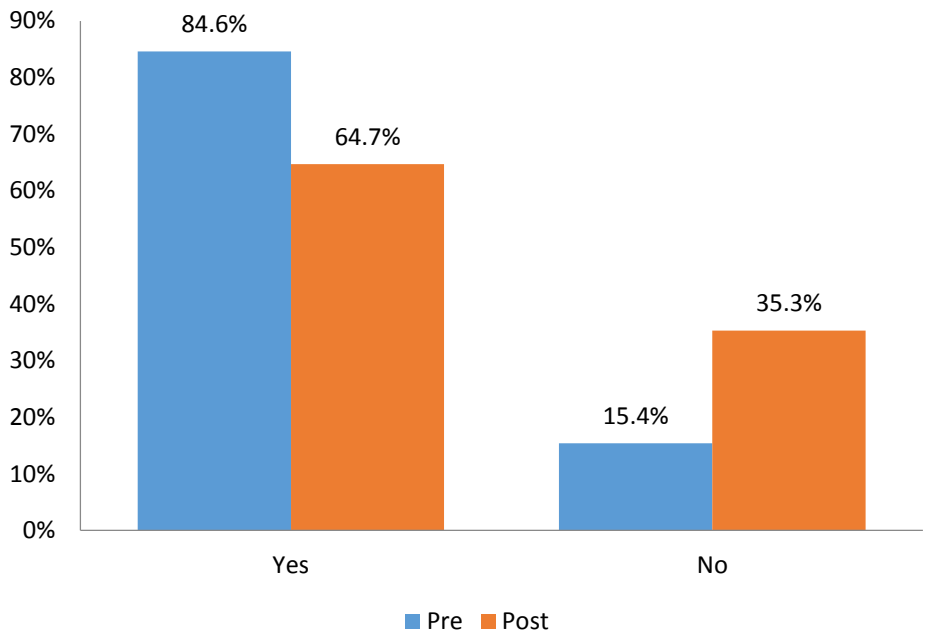

Figure 14 – community member experience with flooding

A very high proportion of respondents (two thirds or more) had actually experienced flooding before (Figure 14).

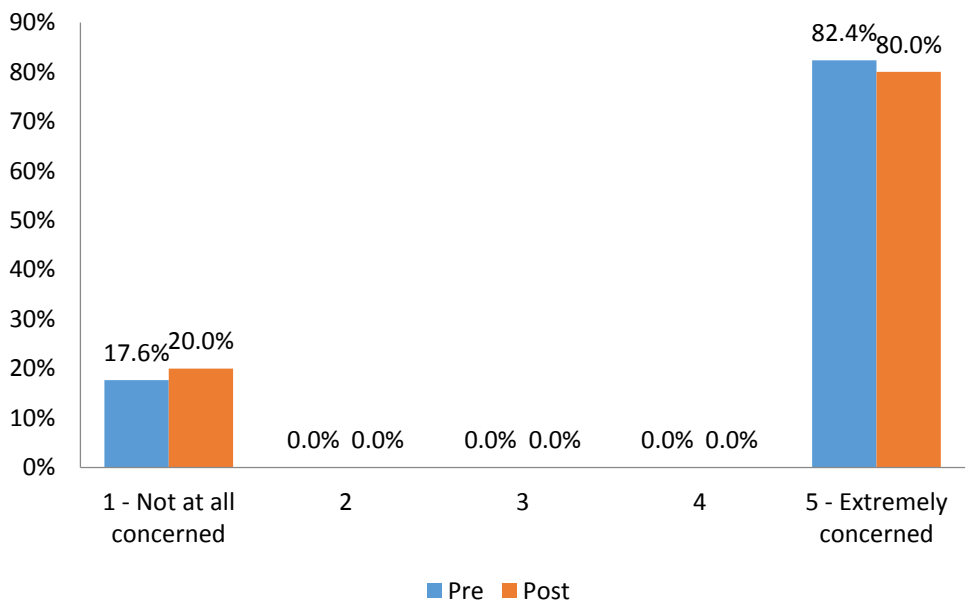

Figure 15 – community member concern about flooding

Respondents were wildly divided in their levels of concern – they either were extremely concerned (80% or more), or not at all concerned (20% or less). No change is observed from pre to post engagement (Figure 15).

Community relationships

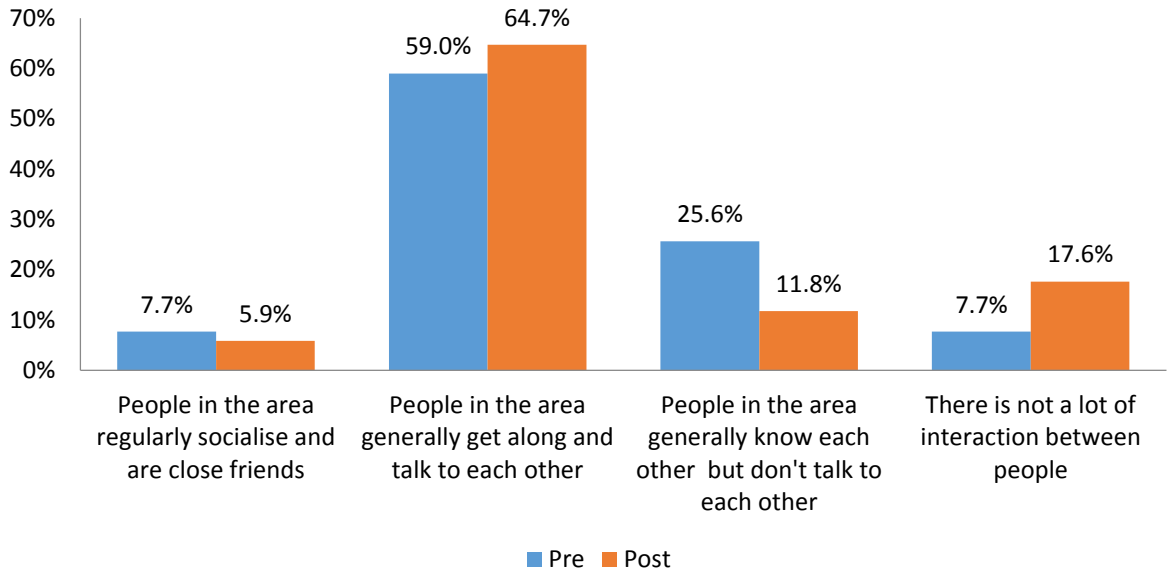

Figure 16 – community member perceptions of relationships within their communities

In the eyes of the respondents, people in these communities are friendly towards one another but don't live in each other's pockets, i.e. there is reasonable communication (Figure 16).

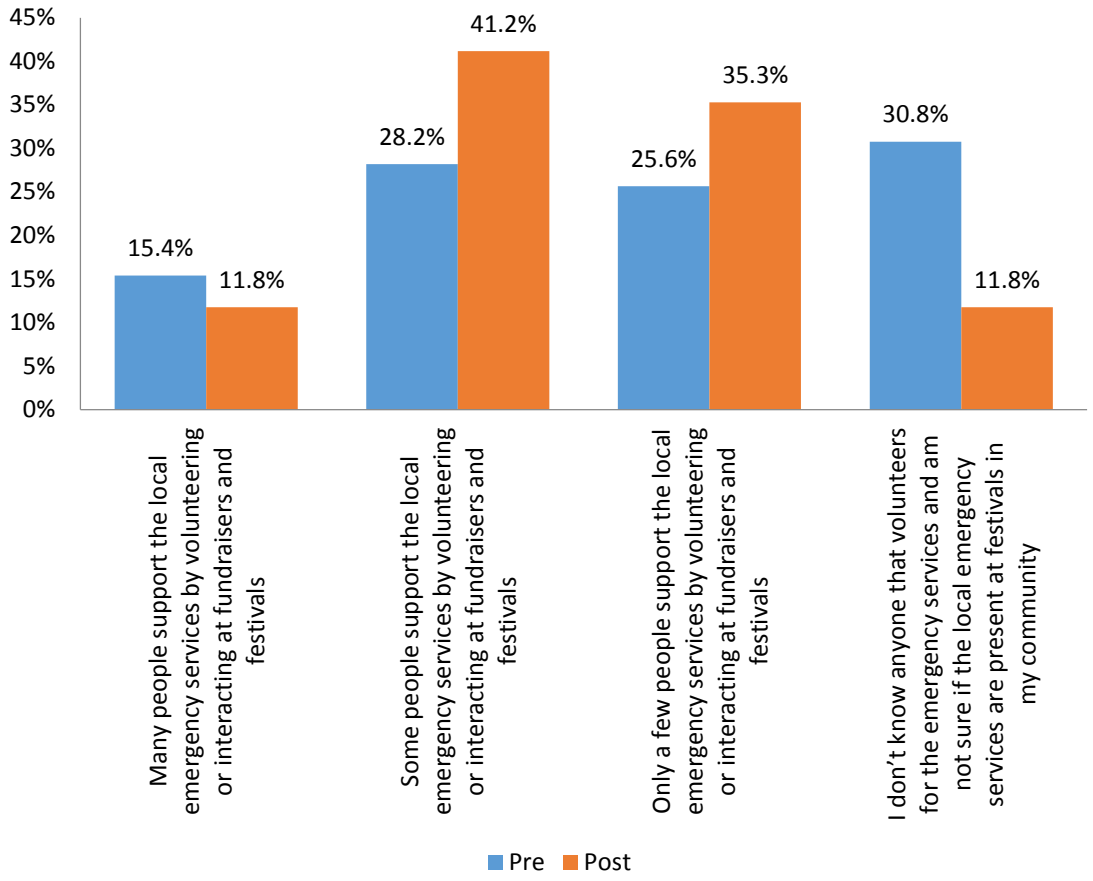

Figure 17 – community member description of relationships with emergency services

Pre engagement – there was a fairly evenly spread of responses from participants that didn't know volunteers and had little relationship with local emergency services to those that had a strong knowledge of local emergency service activities. Post engagement – more respondents knew about the activities of emergency services and the support they received from local communities (Figure 17).

Concerns regarding flooding

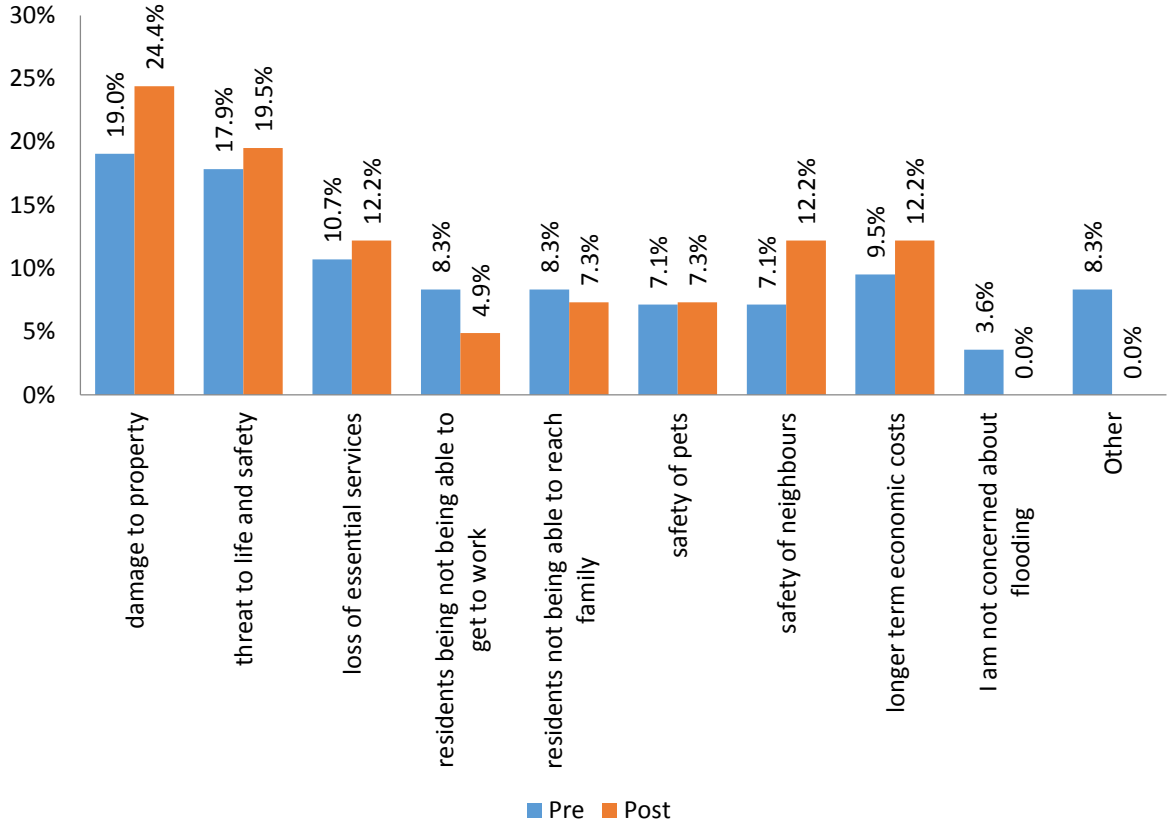

Figure 18 – characteristics of flooding that most concern community members

Few respondents had no concerns about flooding. Most were concerned about damage to property, threat to life and safety (including neighbours), longer term economic costs. There appears to be more concern amongst respondents post engagement, possibly reflecting that engagement has raised awareness (Figure 18).

Other concerns that were expressed pre-engagement reflect the wider values of the communities:

- *I am concerned about the people in town areas*
- *Also concerned about the people living in lower areas of Mooball.*
- *Medical reasons. My daughter has a life threatening condition and if roads cut the Ambulance can't get through if needed. Sure we're not the only one.*
- *Insurance increases due to flood impact*
- *The council approval of developments that change the course of the water*

Local NSW SES Flood Plan

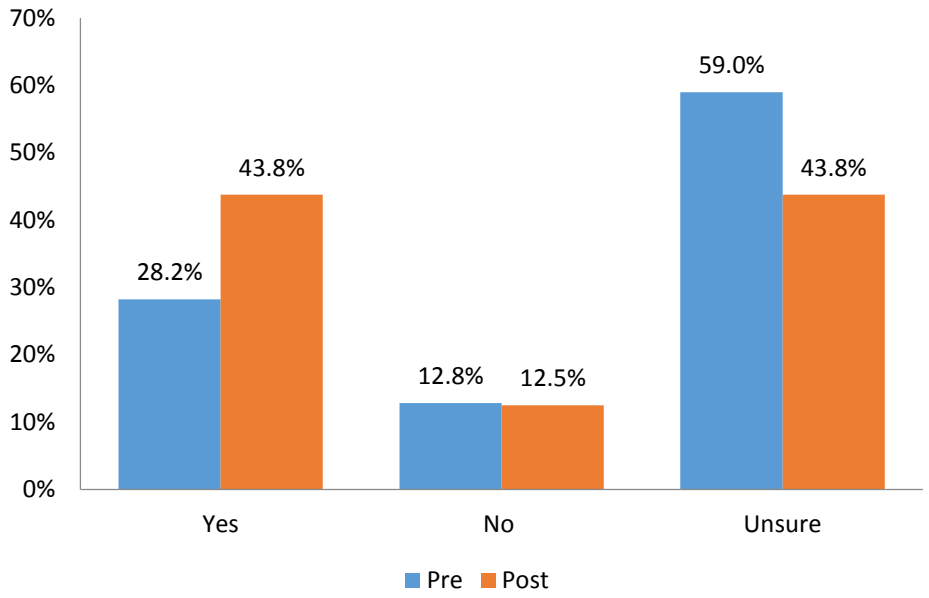

Figure 19 – community member awareness of Local Flood Plan

Comparison between pre and post results reflects a greater awareness of the relevant NSW SES Local Flood Plan post engagement – less respondents are unsure and more know of the plan (Figure 19).

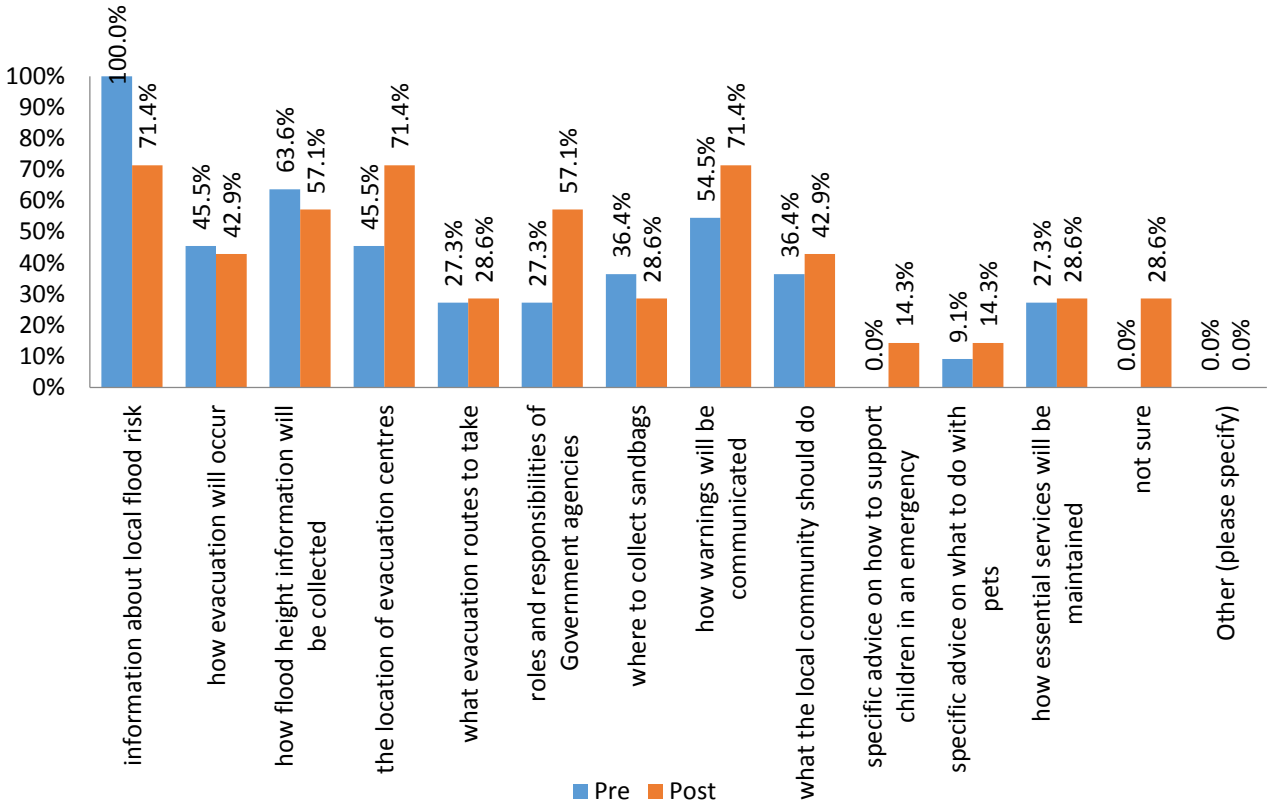

Figure 20 – community members views as to what a Local Flood Plan contains – only answered if they were aware of the Plan

Whilst respondents were aware of the flood plan there was little deep understanding of its contents, even post engagement (i.e. they knew something about it, but not much) (Figure 20).

Roles in relation to preparedness, response and recovery

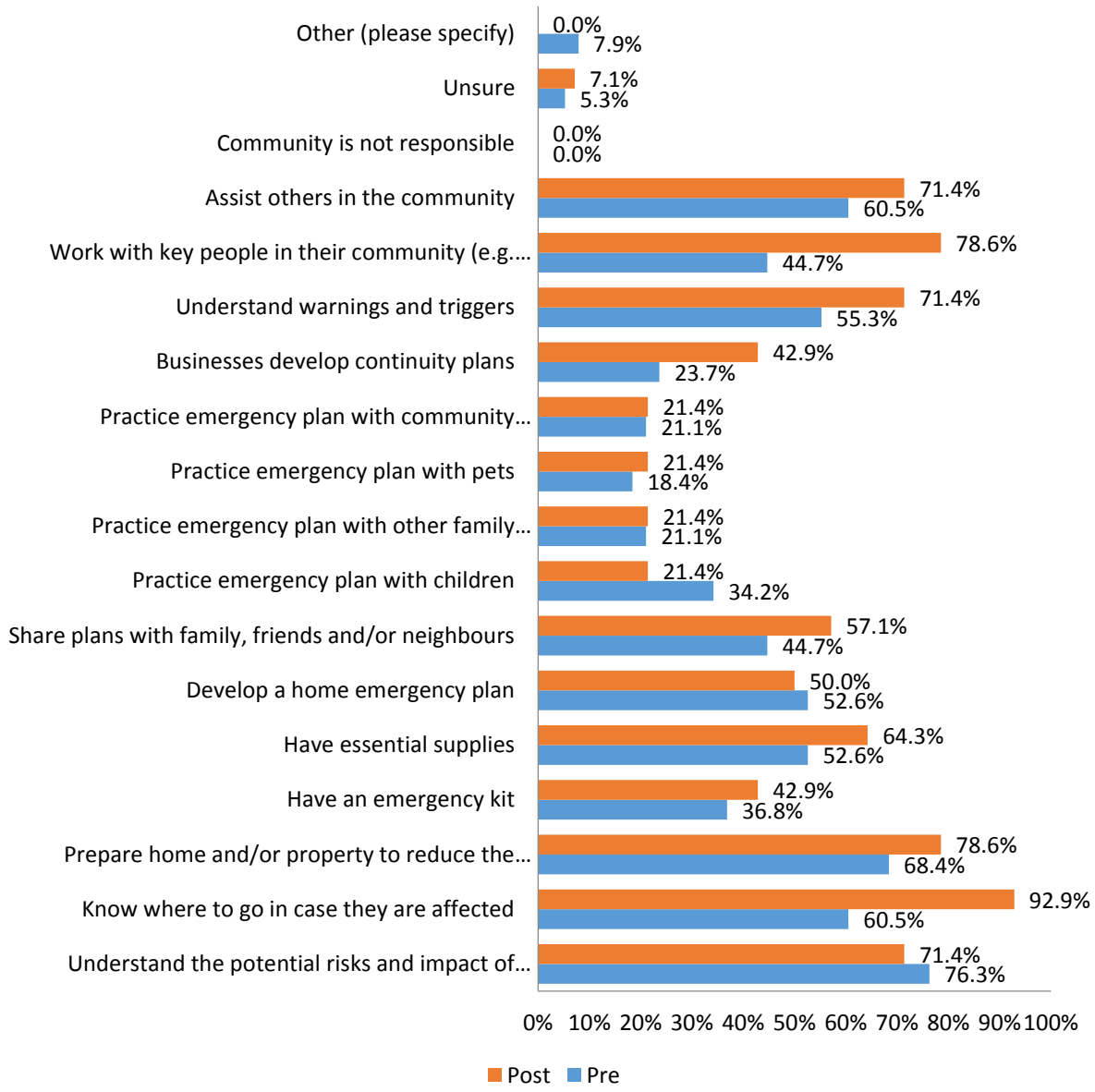

Figure 21 – community member views on roles the community performs in preparing for floods

As shown in Figure 21 the main community responsibilities identified in preparing for floods include:

- Assisting family, neighbours and others
- Emergency planning
    - Develop a plan, including understanding risks, evacuation shelters and routes
    - Collecting essential supplies
    - Assembling an emergency kit

Responses have increased for almost every option post engagement, reflecting a possible increase in community understanding of their roles as a result of engagement activities.

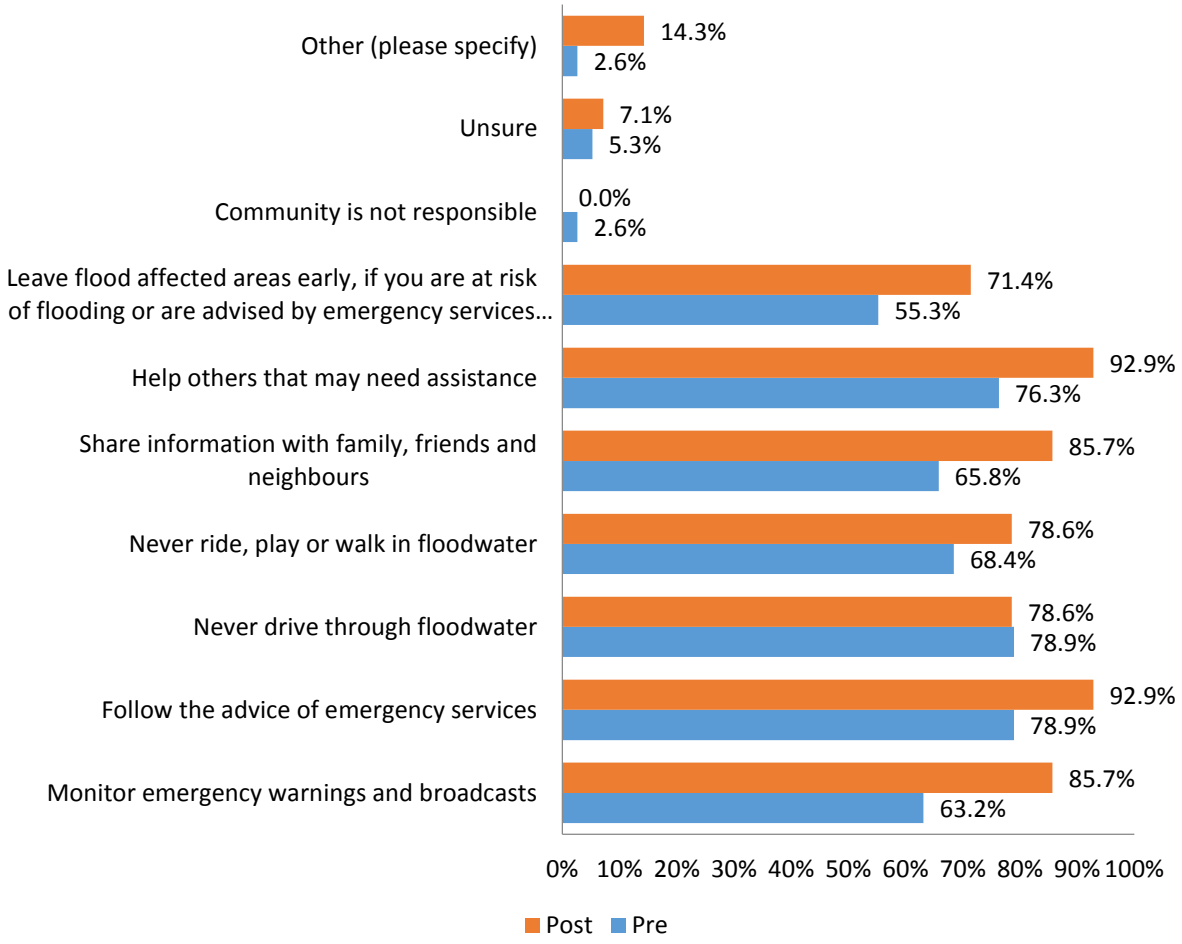

Figure 22 - community member views on roles the community performs in responding to floods

Responses to what community roles are in responding to floods are almost equal for every option indicating that during the response phase all options are deemed equally important. Responses have increased for every option post engagement reflecting a possible increase in community understanding of their roles as a result of engagement activities (Figure 22).

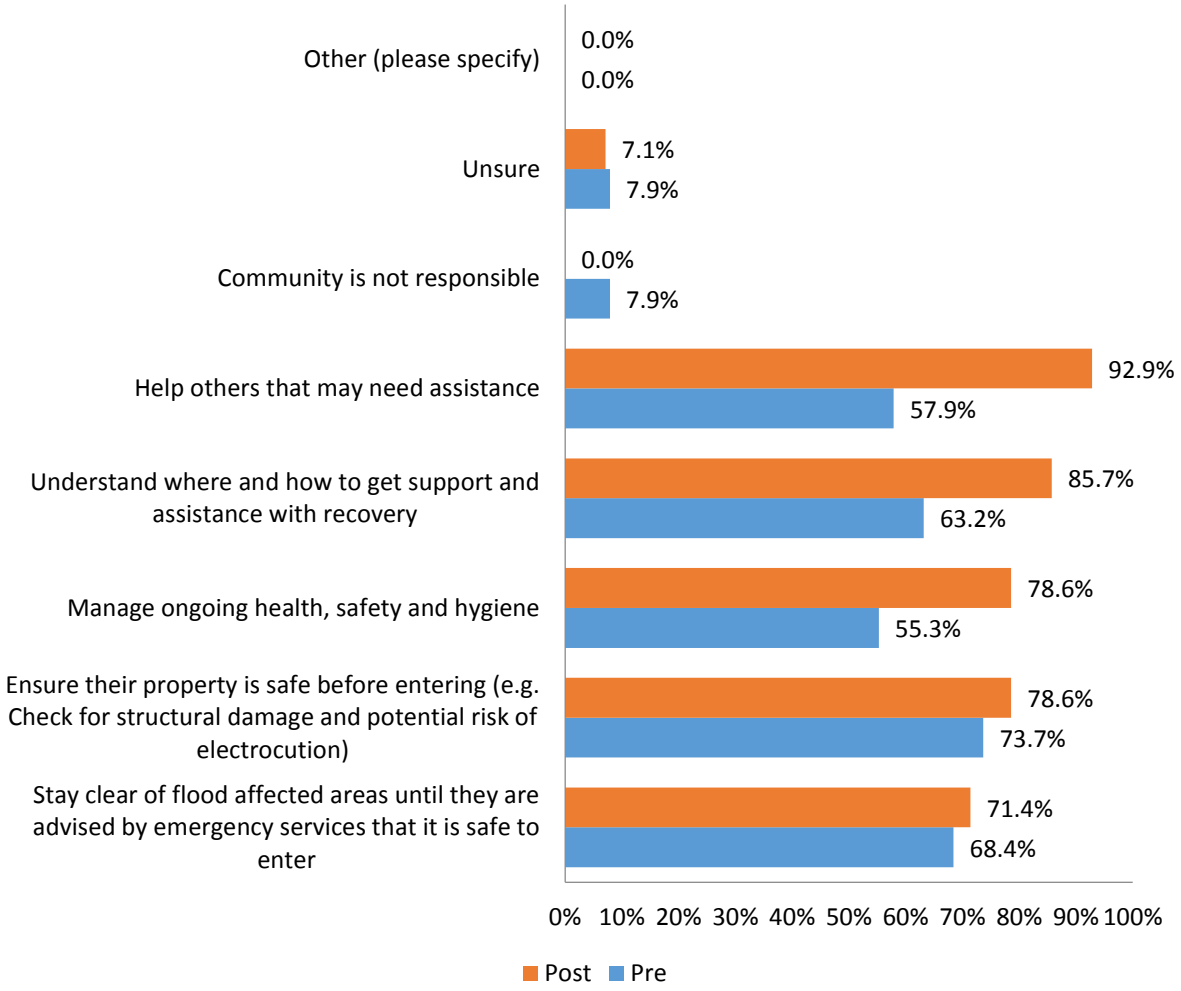

Figure 23 – community member views on the role the community performs in recovering from floods

Responses regarding roles performed by community members in recovering floods are almost equal for every option indicating that during the recovery phase all options are deemed equally important. Responses have increased for every option post engagement reflecting a possible increase in community understanding of their roles as a result of engagement activities (Figure 23).

Perceptions regarding preparedness, response and recovery

How best can the community **prepare** for flooding?

Responses provided are listed below. Main themes include being flood aware and having a Plan.

- *Be aware of home safety matters*
- *Be prepared & train responsible workers i.e. SES and Rescue Squad*
- *Be prepared, know your area*
- *Distribute evacuation procedures to all households. Familiarise with community plans.*
- *Early notification*
- *Education*
- *Ensure property is prepared, e.g. keep drains cleared*
- *Get a flood emergency kit prepared for if you have to leave the premises*
- *Get all information and prepare*
- *Have a plan and be prepared*
- *Have evacuation plan, supplies and batteries for radio to listen to emergency broadcasts*
- *Having clear written information available that is easy to share with friends. Include ideas on how to stay safe, who to contact and general advice from SES, Police etc.*
- *Keep in touch with flood levels*
- *Keep the house clean*
- *Know where to go in case they are affected*
- *No real need in this area*
- *Prepare their own properties, know who to ask for help & what resources area available*
- *Speak to SES*
- *Stock up. Open gates etc. when necessary*
- *Understand the priorities elderly sick disabled etc.*
- *Watch level of water in creek*

How best can the community **respond** to flooding when it occurs?

Responses provided are listed below. Main themes include helping one another, listen for/to warnings and listen to emergency services crews.

- *Assist one another. Don't leave it to the last minute.*
- *Be aware of how warnings are made and follow these warnings*
- *Combined effort*
- *Communication with responsible authorities*
- *Disconnect electrical appliances*
- *Don't go rubber necking around the town as it increases confusion and congests the streets more than they are already. We had a flood here years ago and I made sand bags for three days and half the people we delivered them to where able-bodied people with utes and they were not interested in going to make/get sand bags of their own accord which took us away from those who actually needed assistance.*
- *Follow all emergency services information and stay safe*
- *Follow directions of emergency services. Help themselves and their neighbours/friends.*
- *Follow directions of SES or local officials*
- *Follow the advice of emergency services*
- *help neighbours and avoid unnecessary travel*
- *Information immediately available through a key point contact.*

- *Keep monitoring emergency services and be prepared to evacuate*
- *Keep out of water*
- *Listen*
- *Listen to advice given and remain safe*
- *Listen to direction*
- *Listen to SES reports*
- *Listen to SES/radio/police and follow their advice if your area is flooded.*
- *Need information on levels. help people effected*
- *Try and keep to normal life*
- *Notify emergency services ASAP*
- *Take directions*

How best can the community recover from flooding?

Responses provided are listed below. Main themes include check up on one another, help each other/ team work, ensure homes are safe before entering and cleaning up.

- *A recovery plan needs to be implemented.*
- *Assist SES and other groups to clean-up and repair*
- *Be prepared, know your area*
- *Check on each other - friends & family*
- *Cleaning up*
- *Clean-up*
- *Community assistance*
- *Ensure their property is safe before entering*
- *Everybody getting in and helping each other*
- *Give a hand*
- *Get in and help each other*
- *Having a council that helps support the community and most vulnerable. Also having SES support. Even having clear written steps to follow after a flood from SES/Police.*
- *Help each other*
- *Help one another*
- *Rehabilitate closest pub*
- *Take notice of emergency services directions. Be careful of potential hazards.*
- *Team work*
- *Those who are not affected assist others who are*

Communication with others

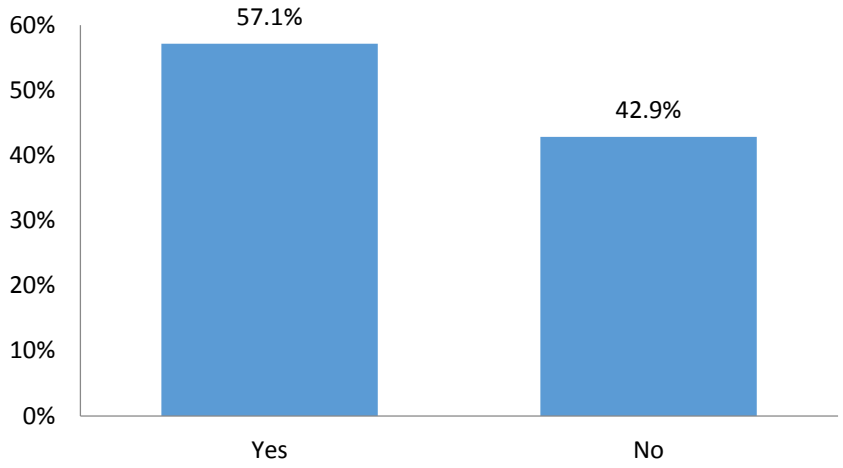

Figure 24 -– percentage of participants that communicated to others about flood risk and preparedness since participating in the engagement activities

More than half of participants had communicated to others since the engagement about flood risk/preparedness. Indicating the potential to achieve wider community benefits beyond those participants directly engaged with through activities (Figure 24).

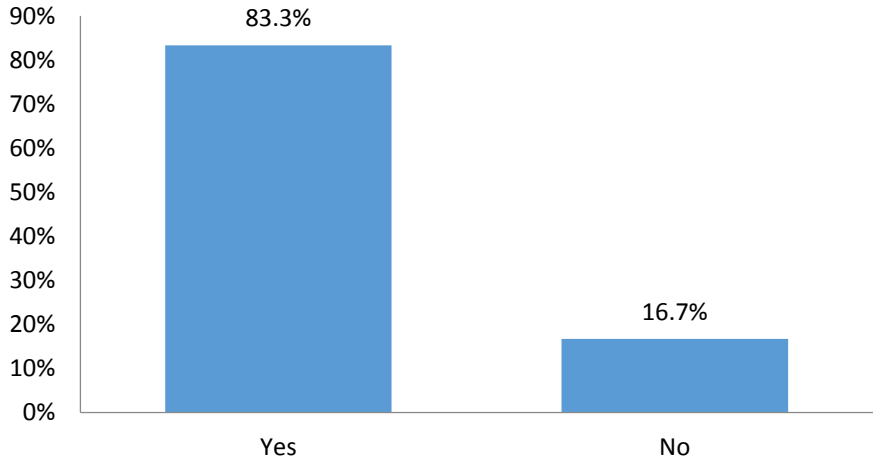

Figure 25 – percentage of participants that do intend on communicating to others about flood risk and preparedness (Answered only if they had not communicated to others)

If they had not communicated to others, almost all participants planned to communicate with others about flood risk/preparedness following the engagement activities, again reflecting the possible broader benefits of the programs (Figure 25).

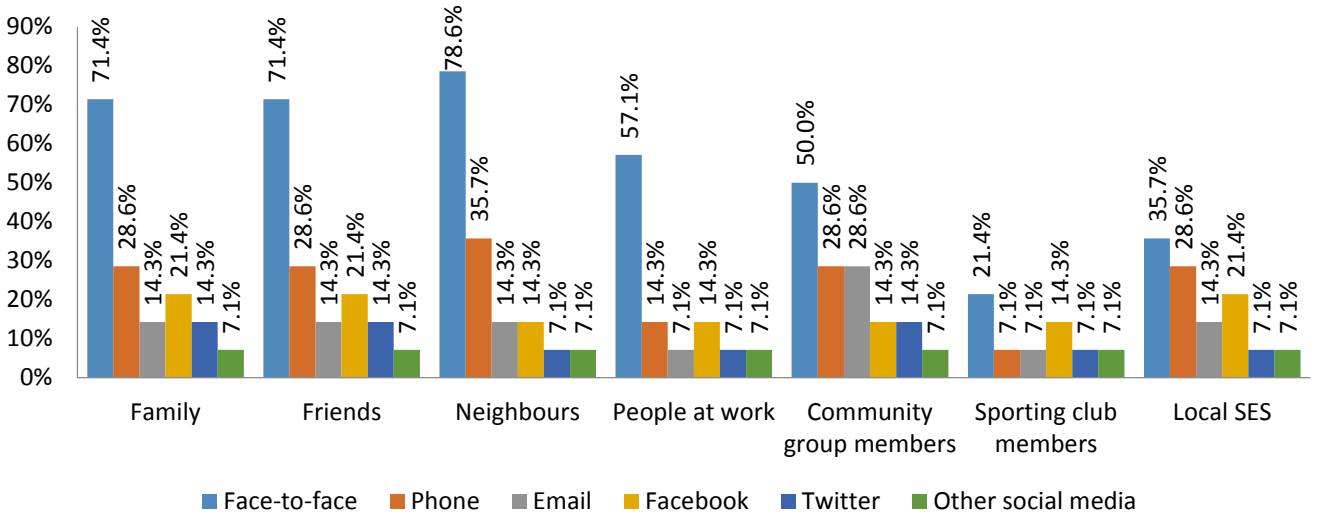

Figure 26 – Audiences community members have communicated with or intend to communicate with post the engagement activities, and the communication methods they have used or intend to use.

Family, friends and neighbours appear to be those most likely audiences for communication by participants. Face-to-face or telephone communication seems to be the most popular form of communication about flood risks. It must be noted that participants were mainly an older cohort; younger people may use social media/email much more (Figure 26).

In communicating with others respondents would encourage others to:

- *Have a flood plan, understand the risks to your property*
- *Be prepared*
- *Become aware of how flood prone their property is & understand what can be done for them in times of flood*
- *To be informed, before, during and after*
- *Being informed*
- *Stock up*
- *Advertise on Facebook*
- *Register with NSW SES Facebook page*
- *To be informed with the knowledge & information required regarding their own property & the rest of their suburb*

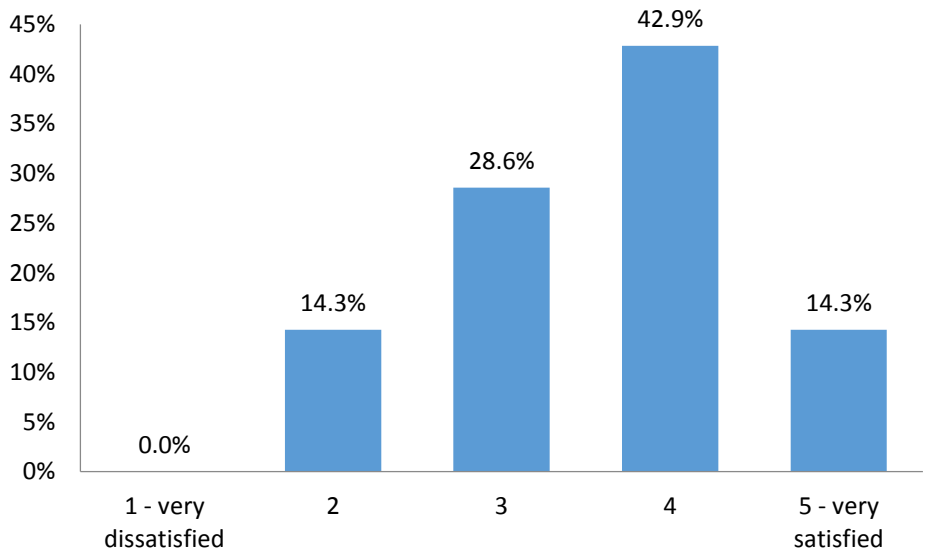

Figure 27 – participant satisfaction with the engagement activities and their involvement

Respondents were mostly very positive towards the engagement activities undertaken (Figure 27).

Main advantages of participating in local flood planning expressed by participants included:

- *Ensuring a range of viewpoints and experiences are included*
- *Ensuring hierarchy understand local situations, history and issues*
- *Local knowledge of flooding; gain info on what is available*
- *Knowing what to do*
- *To become informed.to help with local conditions*
- *Being informed*
- *Knowledge of options*
- *Relaying my experience to others (in 69 years of living in Narrabri, there have been a few floods)*
- *Teamwork*
- *Knowledge*
- *Awareness of community inundation*
- *Knowing what is going on!!!!*
- *Act on my concerns*

Main disadvantages of participating in local flooding planning were expressed as:

- *Time taken*
- *Not knowing outcomes*
- *Not enough of us in attendance - limited ability to help spread information*
- *Not being able to explain the local conditions and changes in flooding pathways*
- *Not covering everything properly*
- *Organising planning*
- *Procrastination*
- *Being away from home*
- *No disadvantage*
- *Not Knowing*

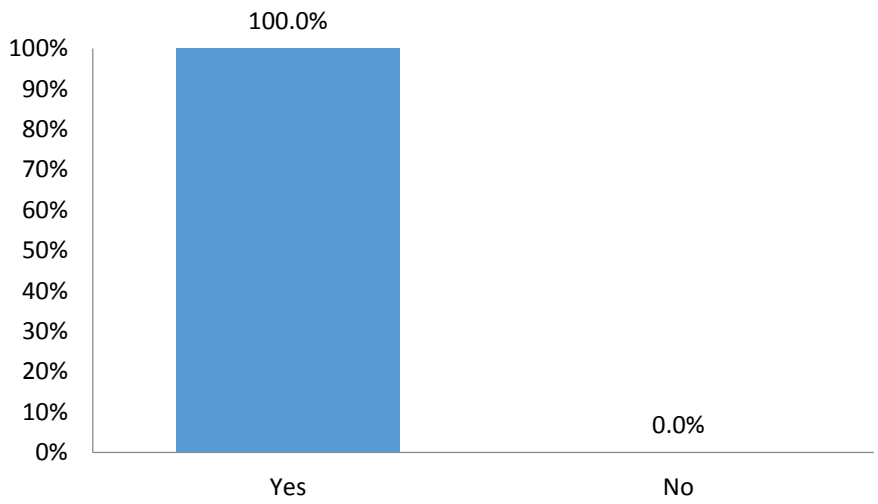

Figure 28 – percentage of participants that would encourage other community members to get involved in local flood planning activities

There was complete agreement to encourage others to get involved in community planning (Figure 28). When asked why they would encourage others responses included:

- *To get their viewpoints heard and to teach others knowledge/experiences*
- *Everyone will be affected if we get flooded - and there will be the usual helpers (in small numbers) and the majority will be in need*
- *So they know what to do*
- *To be prepared but the people in control must come from the local area and be from here for some time. Use people with first-hand knowledge*
- *To make a difference*
- *Would only advise some community members, too many would be bedlam*
- *The more knowledge the better*
- *Very hard to convince people - even though it affects them*
- *To know in general*
- *It's necessary to be involved as a community*

Results - Social Media Analysis

Narrabri

A series of nine social media posts were made through the Narrabri SES Facebook page from the 21st of April to the 4th of May. An example of one of the images utilised is provided at Figure 29. Pages were also established on the NSW SES Your Say website (Figure 30).

Key statistics relating to the reach of posts, like and shares are provided in Figures 31 and 32. Though the posts in Narrabri may have been useful to raise awareness of activities to engage communities, they did not generate significant community input into the questions asked by NSW SES, with only one direct response posted. It is also not possible to assess the effectiveness of the posts in raising wider community awareness without a detailed survey of the community.

Thirty six visits were made to the NSW SES Your Say website. Thirty three percent of visitors viewed multiple pages within the site, however no visitors engaged with the sites interactive functionality for example placing pins on the interactive map. Pages with historical flood photos appeared most popular.

Figure 29– Social Media creative

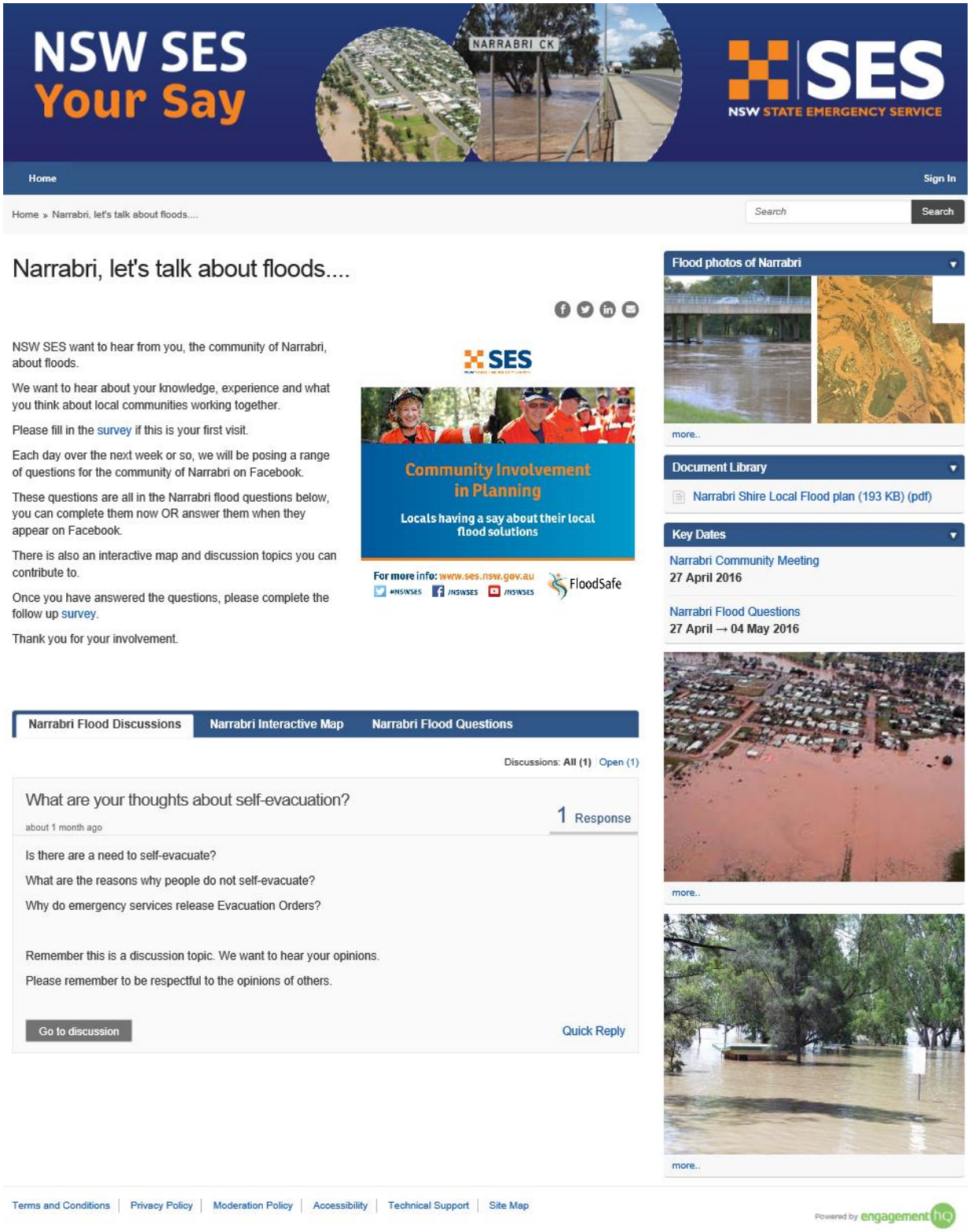

Figure 30 – NSW SES Your Say page for Narrabri

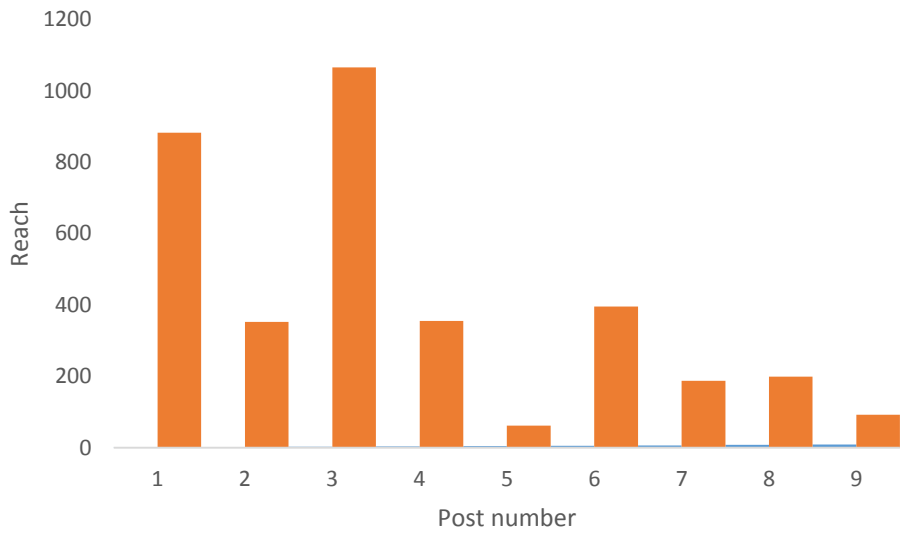

Figure 31 – reach of Facebook posts - Narrabri

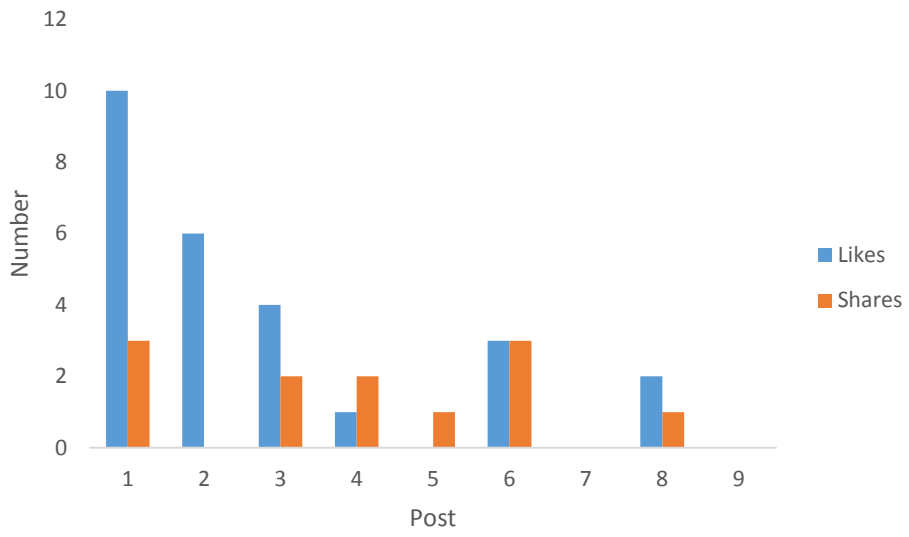

Figure 32 – likes and shares of Facebook posts - Narrabri

Table 7 - provides an assessment of the social media engagement strategies against the stated objectives

Table 7 – assessment of social media engagement strategies against the stated objectives

Program objective	Achievement	Comments
Increase awareness of flood risk and the need for planning		This cannot be assessed without a wider survey of the community
Identify community views to prepare for, respond to and recover from floods	Not achieved	Only one community member answered a question posed by NSW SES.

Chipping Norton

A series of twelve social media posts were made through the Liverpool SES Facebook page from the 6th of April to the 17th of May. Pages were also established on the NSW SES Your Say website (Figure 34).

Statistics regarding the reach, likes and shares of the posts are shown in Figures 33 and 35. Similar to Narrabri, though social media may have assisted in raising awareness of activities, it does not appear that it generated significant engagement with the questions that were posed to the community. However, engagement does appear to be better than in Narrabri with some 12 comments made against the questions posed. It is not possible to assess the effectiveness of the posts in raising wider community awareness without a detailed survey of the community.

There were 117 visits to the NSW SES Have Your Say website. Again 33% of visitors accessed multiple pages. Pages displaying flood photos appeared most popular. Only two visitors utilised the interactive content through placing pins on the interactive maps.

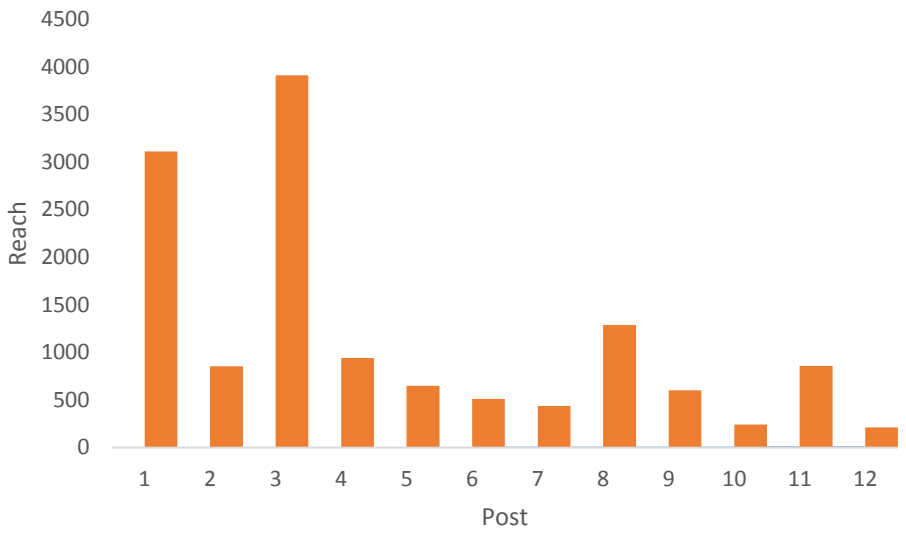

Figure 33– reach of Facebook posts – Chipping Norton

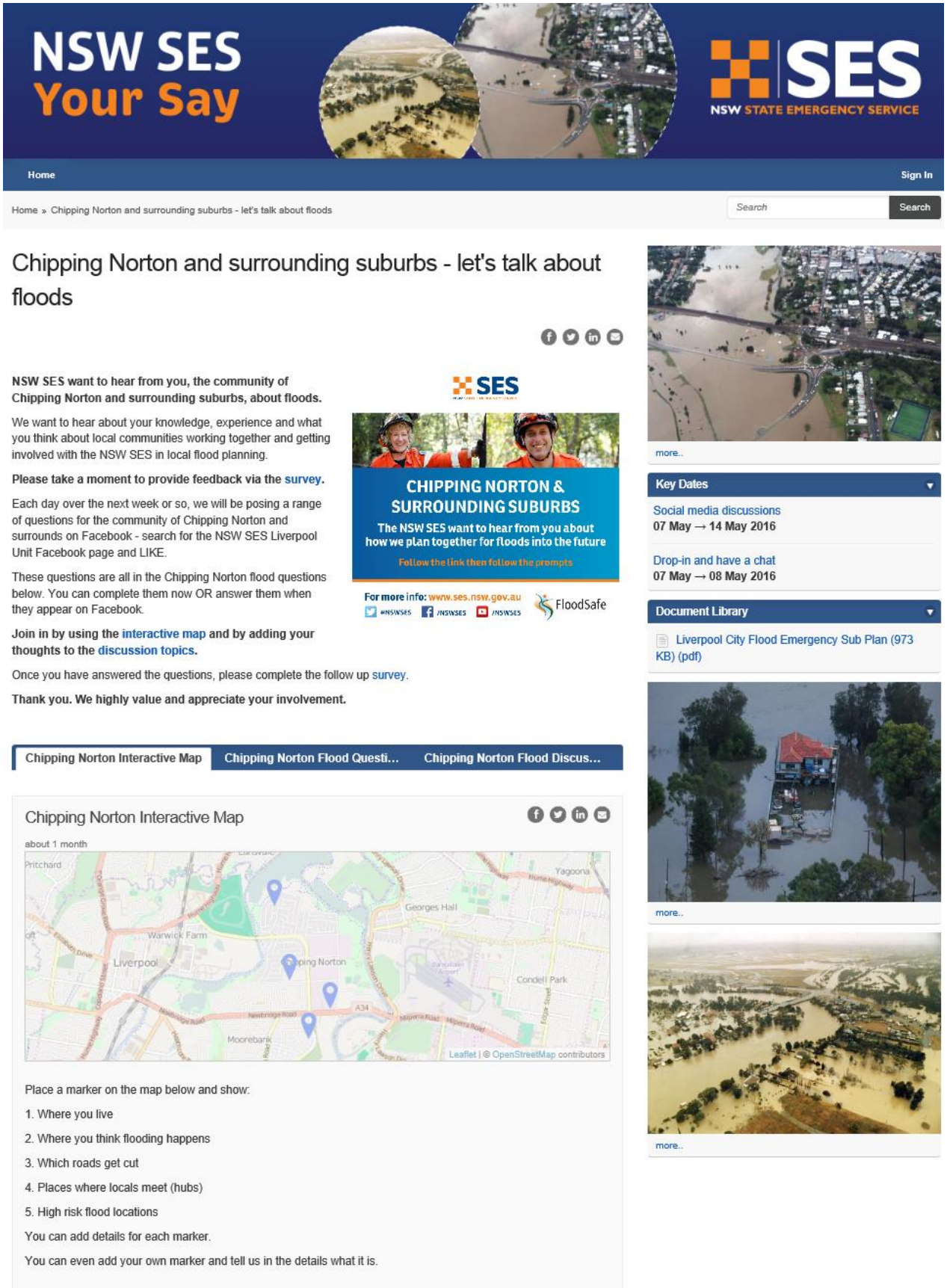

Figure 34–NSW SES Your Say page

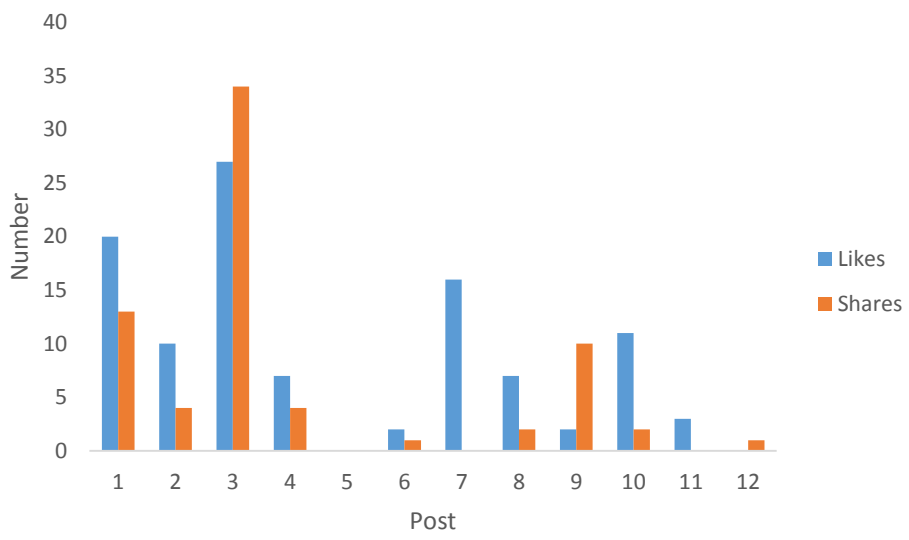

Figure 35 – likes and shares of Facebook posts – Chipping Norton

Table 8 - provides an assessment of the social media engagement strategies against the stated objectives

Table 8 – assessment of social media engagement strategies against the stated objectives

Program objective	Achievement	Comments
Increase awareness of flood risk and the need for planning		This cannot be assessed without a wider survey of the community.
Identify community views to prepare for, respond to and recover from floods	Partially achieved	Few community members answered questions posed by the NSW SES.

Overview of NSW SES Community Engagement Capacity and Culture

A series of interviews were conducted with seven NSW SES Regional and State Headquarters staff to ascertain insights into the capacity and culture to support community involvement in planning.

There is a degree of recognition within NSW SES that community engagement has an important role to play in building community preparedness and ultimately resilience. However, it is not accepted universally by all members as a key component of NSW SES' core priorities. There is no uniform culture supporting community engagement across NSW SES with support and approaches varying across Units and Regions. Some respondents suggest that NSW SES has paid 'lip service' to community engagement in the past and thoughts are mixed as to if this still is the case. It was said that there was no clear message from senior leadership about the importance of community engagement and that there is often a 'tick the box' mentality to community engagement, which may be associated with the lack of resources to effectively engage with the community. There is little understanding of the methodologies or requirements to deliver community engagement nor significant sustained effort to build capacity. Such a case likely leads to unrealistic expectations regarding what engagement/involvement strategies can achieve.

There is significant noise related to long standing organisational disruptions within the NSW SES at the time of writing which is believed to result in priorities being distracted away from community engagement programs. Moreover, respondents believe that the NSW SES culture remains focused on response rather than preparedness and is described by some as being dominated by a 'command and control' approach to doing business, which conflicts with effective engagement approaches.

There is acknowledgement and support for the need to involve community members in emergency planning, though for some, the concept requires further definition. Support for community involvement was seen as a method to build trust and partnerships with the community to enhance how the community may respond during operations. It was recognised that communities may be keen to be involved, but that NSW SES may not currently have the appropriate capabilities, culture and capacity to effectively support the process in most locations.

There is a view that NSW SES doesn't know what works best to effectively engage with communities, with existing methods perceived to lack robustness. Some members are said to be looking for a community engagement 'silver bullet' that will deliver successful community engagement on a region-wide scale, without the recognition of the heterogeneous nature of communities, and the vast challenges and inherent complexities in developing tailored local approaches. There is acknowledgement by some that NSW SES needs the resources to experiment with various options to see what works best in different communities, also acknowledging the need for different approaches between metropolitan and rural communities.

It was recognised by most that a joint approach characterised by collaboration across emergency services and local government is essential for effective community engagement. Cross-collaboration can also be beneficial to programs that involve communities in emergency planning. Though there have been some instances where joint approaches have been used, there is considerable scope to increase joint approaches to engagement, and how agencies work together strategically. This may be being hindered by some parochial viewpoints that discourage sharing with and learning from others. Silos within NSW SES were also suggested as hindering overall effectiveness and that greater sharing and integration of approaches across community engagement, planning, operations and regions was needed.

Resources are viewed as a limiting factor in implementing programs within Regions. It is recognised that community engagement if done well is resource and labour intensive. Regions claim to be over-worked with administration and that response operations dominate organisational priorities. Currently nine community engagement coordinators are employed within NSW SES Regions and supported by a team of four at State Headquarters (in comparison VICSES employs 14 regional community engagement coordinators and some three staff within its head office). This also stands in contrast to significantly greater flood risk faced by NSW in comparison to Victoria. Victoria SES also has a dedicated senior executive solely focused on a community resilience portfolio.

Volunteers are viewed as being time poor, with not enough volunteers available to undertake appropriate engagement activities on a large scale consistently across the state. Some volunteers are said to still not acknowledge the importance of community engagement, or have a misunderstanding of what true community engagement is, instead relating it more to public relations activities. Though, in contrast some Units have grown in their understanding and acceptance of the need for community engagement. The recent EY organisational review found that 68% of member's surveyed said their Unit offers community education. One regional staff member suggested that there was not a clear pathway for volunteers to be involved in community engagement, whilst another suggested that the Service's expectations of volunteers to participate in community engagement must be clear, as it is everyone's responsibility. Recruitment strategies were also viewed as focusing on response roles.

Some methods that were suggested to improve the cultural acceptance of community engagement and community involvement in planning included:

- Increasing human resources available to implement programs
- Targeted recruitment of volunteers to undertake community engagement within Units
- Forming Community Education Support Units, i.e. a Unit based on function rather than geographic area
- Work with other best practice agencies both in emergency management and across similar fields (research, community development, engagement, communications, etc.) to build awareness, recognition, reward and acceptance of engagement / involvement processes within NSW SES.
- Having a clear strategy and evidence base for engagement methods
- Having a small grants program available to support community-led initiatives
- Provision of training programs for volunteers to enhance their community engagement skills
- Having the shared understanding, support and buy-in from NSW SES senior leadership
- Continued evaluation of programs to measure success and provide evidence
- Take advantage of inquiries or similar experiences in other jurisdictions to demonstrate value proposition
- Frame community engagement as having conversations with the community to minimise the misunderstanding of true community engagement
- Mentoring of community engagement members to enhance capabilities.

It is recognised that the approach to involve communities in emergency planning must be sustainable, which is a significant challenge given that engagement must be ongoing and that significant resources are required to maintain a two-way dialogue with communities. Once a conversation has commenced with a community it is a conversation for life. There are some concerns that capabilities including community development, people, and communication skills may not be common place across NSW SES therefore limiting NSW SES's capability to effectively engage with communities. It is also

recognised that community engagement staff need to understand emergency planning and flood risk (e.g. being able to interpret flood studies and NSW SES Flood Plans).

It is acknowledged by some that the culture of involving communities must extend across other disaster management phases not just planning and preparation, with there being a risk of losing public trust if prior decisions made with community involvement are not respected in the response and recovery phases. It is also recognised though not necessarily acted upon, that there are obvious opportunities to engage and collaborate with communities after flood events to collaboratively debrief and develop plans for improvements.

It was recognised that the adoption of participatory based approaches was not without risk for NSW SES. One risk that was identified was the possible conflict between community wishes and NSW SES policy, for example the community wants to shelter in place and the NSW SES has a policy of evacuation. It was recognised that in such circumstances transparency is required to identify differences and how NSW SES works with communities to progress them.

Conclusion

There is evidence obtained from the pilots and wider research that there are benefits to adopting participatory-based approaches to emergency planning, and in building community resilience. Though only relatively small numbers of people were involved in the pilots, engagement occurred with community leaders, and there is evidence that these people have had / or intend to have discussions about the activities within their networks. The timeframes imposed on the project proved to be significantly limiting. Had this challenge not arisen it is likely that more interest could have been generated within communities.

The wider adoption of participatory-based approaches to engage with communities is encouraged throughout all phases of the disaster management cycle. However, the approach should not be seen as a silver bullet for generating behaviour change or building resilience. To be successful, approaches will need to be combined with other methods of community engagement and have the ability to experiment within individual communities to ascertain the most effective approach. There is not a standard one-size-fits-all approach to involving the community, however a series of evidence-based principles have been outlined to guide the development, implementation and evaluation of participatory based approaches to emergency planning. Fixed organisational based objectives should also be avoided as objectives will need to be negotiated with communities, and will need to reflect the individual concerns and values of communities.

A sudden change in direction by NSW SES, however, is not likely to be feasible as there are currently significant organisational capacity and cultural constraints. The adoption of participatory-based approaches more widely will require a significant increase in the number and capability of NSW SES community engagement staff and volunteers, utilising an integrated resourcing model. The NSW SES will need to adopt a community-centric approach to emergency management, recognising community engagement as equal to emergency response functions, and that the community is an equal and active participant in emergency management. Not only will its approach need to change before events, its engagement with the community will need to become more open, and foster community trust across all other elements of the disaster management cycle.

It was recognised that the adoption of the community involvement approach was not without risk for NSW SES. One risk that was identified was the possible conflict between community wishes and NSW SES policy, for example the community wants to shelter-in-place and the NSW SES has a policy of evacuation as its strategy.

Cultural change pathway

The below illustrates a pathway for influencing the NSW SES culture with the aim to improve member support and involvement in community engagement.

Establish a case for change with a clear value proposition

- Establish an evidence base that supports change
- Develop an evidence based strategy outlining the NSW SES strategic approach to community engagement, where community participation fits within the strategy and gain senior leadership support and endorsement.

Senior leaders champion community engagement

- Recognise community engagement as a core NSW SES priority in corporate strategy and that is central to an effective emergency management approach.
- Senior leaders actively promote community engagement as a core function and recognise its inherent complexities as a discpline.
- Ensure community engagement is recognised as a core role and priority in NSW SES induction programs for new members.
- Ensure community engagement is recognised as a core role and priority in NSW SES volunteer leadership development programs

Resource and build capability

- Consider options to improve resourcing. These may include targeted recruitment of volunteers into community engagement roles within Units, development of volunteer based community engagment support Units aligned to Region Headquaters and/or development of a business case to employ futher community engagement cooridinators.
- Develop a professional development strategy for NSW SES members focused on improving community enagagement skills and knowledge of flood risk and planning.
- Acknowledge community engagement as a responsibility of every member, though contextualised for specific roles

Work with others

- Engage with partners including other emergency services, NGO's, Local Government and community based organisations to identify areas of collaboration in engaging with the community through an all hazards all agencies approach and promote the benefits of collaboration.

Evaluate and learn

- Ensure community engagement programs are evaluated and results are promoted to provide an evidence base as to what works and what doesn't.
- Promote good community engagement practice across NSW SES and the wider sector, utlising the sectors communication networks

Conclusions

The pilot of the adoption of community participation practices in emergency planning and community engagement has been well supported by the NSW SES Regions and volunteers involved. Though the numbers of community members directly engaged through the process may be viewed by some as small, the process has engaged with leaders that have influence within their communities.

Significant benefits have been identified within the Narrabri and Mooball/Burringbar pilots including:

- Improved relationships between NSW SES and the community
- A wider appreciation by the community of flood risks and emergency management problems
- Improved awareness of NSW SES roles and of the NSW SES Local Flood Plans
- Improved engagement capacity of NSW SES volunteers and staff, having gained awareness and experience of implementing methods involving community participation.

In both these pilots there appears to be enough momentum generated by the pilots to see relationships continue to develop and for local community initiatives to be built. There also appears potential for the engagement activities to inspire wider discussions within communities, with many community members either speaking with or intending to speak with neighbours, family members and friends following the activities.

Though not as successful due to issues relating to the limited time available and the inability to gain traction with the local community, the Chipping Norton pilot still provided benefits including:

- Improved knowledge of NSW SES members about local flood risks and community engagement techniques
- Confirmation of the challenges involved with engaging metropolitan communities, where community networks are diffuse, and not necessarily defined by a geographical area.

Benefits across the pilot areas are consistent with those that have been achieved in other case studies of community participation. The variable nature of success underpins the need to be able to work with local communities to trial approaches to see what works best.

Face-to-face engagement in the context of Narrabri appeared to be more successful than online engagement. In the context of Chipping Norton both the opportunity to engage face to face and online did not generate significant community interest.

Community reference groups consisting of community leaders to assist in the design of engagement approaches have been found to be beneficial. However, it is important that members of these groups understand their roles and the purpose of the group.

Key challenges identified through the pilot process included:

- The need to allocate time based upon consultation with the community, and to not dictate timelines to the community. The time limitations imposed on this project was a significant barrier to the project's success. With more time it is likely that further community interest and engagement could have been generated.
- There needs be a critical awareness of flood risks for communities to enable them to engage, this has been best illustrated in the community of Burringbar where community leaders did not believe they had a flood risk, and subsequently did not engage in the pilot. This points to

the need for participatory based approaches to be supported by engagement methods focused at raising the critical flood awareness of communities.

- Existing community conflict or issues can make it difficult to initially engage with communities. The role of the skilled independent facilitator was highly valued.

Based upon these conclusions the design principles established through the initial research phase of this project appear to be supported.

It is important that evaluation results be shared with local communities involved in the pilot area. Following the recent flood event in June 2016 impacting Burringbar/Mooball and Chipping Norton communities there is a significant opportunity to maintain engagement with these communities and to discuss with them their experiences of recent flooding.

The culture and capacity of the NSW SES to support community participation in emergency planning and community engagement will need to be addressed. It is concluded that the current culture provides minimal support to true community engagement approaches and the capacity of NSW SES requires enhancement to effectively engage with communities and to facilitate the involvement of communities in emergency planning.

Recommendations to address conclusions and learnings identified are provided in the Final Project Report.

Recommendations

Based upon the conclusions and learnings of this project the following recommendations are made for consideration by NSW SES to further improve community engagement approaches.

Strategy

Recommendation 1 – That approaches to involve communities in emergency planning and in building community resilience be utilised by NSW SES more widely based upon the application of the twelve design principles. This should include recognising community involvement within local flood planning processes.

Recommendation 2 – That the NSW SES position community engagement as a core priority in its corporate strategy to build stronger community relationships and resilience.

Recommendation 3 – That NSW SES develop a Service-wide Community Engagement Strategy outlining strategic directions in community engagement, and where approaches to involve communities in emergency planning and in building community resilience fit within a broader framework of engagement techniques. The strategy should be commensurate with the flood risks faced by NSW and link to the Service's Corporate Strategy.

Recommendation 4 – That each NSW SES Region be required to develop an annual Region wide Community Engagement Plan commensurate with resources available in consultation with local NSW SES Units and the Community Engagement team outlining key strategies and targets. Performance against the Plan should be placed as an item in Regional Controller performance management agreements and monitored by their line manager. Plans should be consistent with the direction of a Service-wide Community Engagement Strategy.

Recommendation 5 – In line with the NSW Government Evaluation Guidelines, NSW SES incorporate evaluation as an essential component into its future engagement programs, to ensure lessons are identified and improvements made. This should include the development of a monitoring and evaluation framework, and longitudinal evaluations.

Recommendation 6– That NSW SES explore opportunities to partner with other emergency services, non-government organisations and local government, and take an all hazards all agencies approach to involving communities in local emergency planning.

Community Engagement Practice

Recommendation 7 – That NSW SES establish and utilise community reference groups comprising of community leaders and key partners to design and implement community engagement programs including approaches to involve community members in emergency planning. This may be done in partnership with other emergency services or leverage existing community groups, or may require NSW SES to establish these groups locally.

Recommendation 8 – That NSW SES consider the use of skilled and independent facilitators in approaches to involve community members in emergency planning where significant community conflict is likely or the NSW SES may not be perceived as credible.

Recommendation 9 – That NSW SES shares the evaluation results of this pilot program and future programs publically with communities involved and with other partners.

Recommendation 10 – That NSW SES routinely engage with communities after flood and storm events, including re-engaging with the communities of Mooball, Burringbar and Chipping Norton after the June 2016 floods.

Recommendation 11 – That the design principles be incorporated into a NSW SES practice guideline on participatory approaches available to the public and all members, which also provides a series of case studies on the application and benefits of participatory based approaches.

Recommendation 12 – The design principles be incorporated into NSW SES Community Engagement Facilitator Training.

Capability and Capacity

Recommendation 13– That NSW SES considers options for improving volunteer community engagement resourcing through investigating models for targeted recruitment and the establishment of community engagement support units aligned to Region Headquarters.

Recommendation 14– That NSW SES develops a business case to enable appropriate resources to implement a future NSW SES Community Engagement Strategy.

Recommendation 15 – That NSW SES develops a professional development strategy for all staff and volunteers to enhance community engagement skills and knowledge of flood risk and planning.

Culture

Recommendation 16 – That NSW SES ensures that community engagement is recognised as a core role and priority in NSW SES induction and leadership development programs.

Recommendation 17 – That the NSW SES Manager Community Engagement develops regular reporting for the NSW SES Senior Leadership Team, identifying progress against a Service wide Community Engagement Strategy and any issues arising.

Recommendation 18 – That members of NSW SES Senior Leadership Team and Regional Managers promote community engagement as a core role and priority of the NSW SES.

Recommendation 19 – That NSW SES develop a change management plan to support the implementation of a Service-wide Community Engagement Strategy.

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Appendix 1 – Survey forms