

# Memorandum



TO: James Flockton  
FROM: Ella Harrison  
DATE: 28 August 2018  
SUBJECT: Community Survey Results  
PROJECT NUMBER: 117098

## 1. INTRODUCTION

A key component of the floodplain risk management process is to actively engage with the community. The community are a vital source of information and have local knowledge that is extremely valuable in developing a more informed understanding of flooding within the catchment. Furthermore, engagement with the community ensures they are informed about the ongoing study, allows them the opportunity to provide insight into their concerns and priorities for managing flood risk, and ultimately inform the management plan for the catchment they live in.

As part of the North Byron Floodplain Risk Management Study and Plan, an online community survey was opened in June 2018, with paper copies available at Council offices and libraries. Several Mullumbimby residents and the Ocean Shores Community Association were actively involved in ensuring paper copies were accessible to the community through letterbox drops and information tables. The Ocean Shores Community Association set up information tables at the Ocean Shores shopping centre on four separate occasions. 252 electronic and 89 paper responses were received, with a number of community members also sending through photos. This is an excellent response rate, particularly for a catchment of this size.

The following memorandum provides a summary of the responses received to the questionnaire (a copy of which is provided in Appendix A). All comments included throughout the report and in Appendix B have been transferred verbatim unless there were personal details included. This was to avoid altering the intended meaning of any of the comments.

## 2. SURVEY RESULTS

Some key findings relevant to the development of the North Byron Floodplain Risk Management Study and draft Plan are:

- The top three structural options the community support are:
  1. Stormwater pipes, gutters and drain upgrades
  2. Landscape management
  3. Dredging
- The three most important outcomes to the community when considering flood management options are:
  1. Increases community safety during floods

2. Reduces the cost of floods
  3. Does not disadvantage other parts of the community
- There were a significant number of comments requesting blockages within drains and streams are regularly cleared,
  - Respondents are generally supportive of alterations to the Marshalls Creek rockwalls provided appropriate investigation is carried out prior,
  - There is significant support for more investigations into the construction and management of ocean outlets,
  - The community are willing to support each other. The survey results included a number of comments saying neighbours have helped in past flood events or that past learnings are to check in on their neighbours, particularly the elderly,
  - Comments throughout the survey show the community trust the local knowledge within the catchment and would look to key community members during events,
  - Respondents are concerned about the increasing insurance prices in the area,
  - 13% of respondents would never evacuate their home,
  - 63% of respondents have received conflicting information during an event in the past, with a number of comments from people who did not receive any information at all,
  - 54% of respondents want flood information as early as possible and 81% of respondents would like this information via emergency SMS. A number of comments requested accurate and timely information during flood event,
  - In addition to assistance during flood events, respondents have indicated they require assistance to continue after the flood event has past, and
  - Respondents want to see appropriate development within the floodplain. There were a little under 50 comments relating to land use planning decisions, with a number of comments specifically about the potential development on Lot 22.

## 2.1. Demographics

Results from the survey show that the demographics within the catchment tend towards including older residents (31% over the age of 64) who have lived in the area for a significant amount of time, with 66% of respondents having lived in the area for more than 10 years. Some other statistics to note are as follows:

- 89% of respondents have internet access,
- 92% of respondents have mobile phone reception,
- 5% of respondents only have a landline and 1% have neither a landline or mobile phone, and
- 99% of respondents have at least 1 or more vehicles.

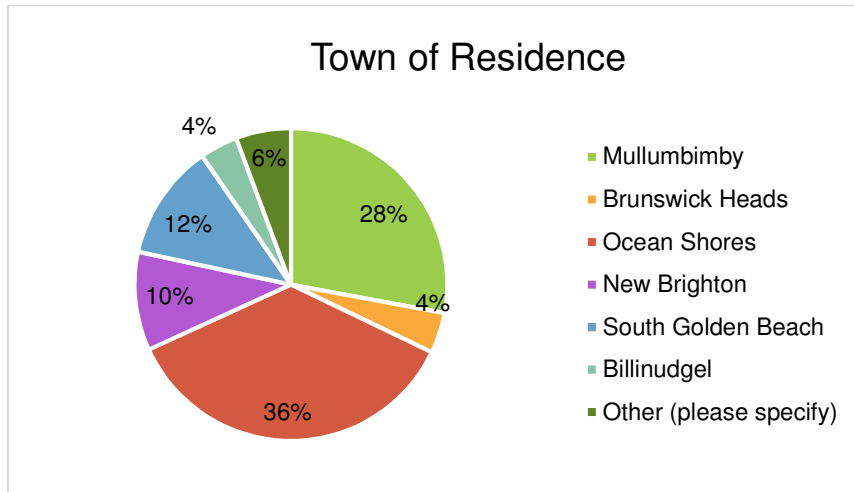


Figure 1: Percentage breakdown of responses per town.

Respondents who answered 'Other (please specify)' said:

- Main Arm and Upper Main Arm
- Homeless
- Myocum
- Bangalow
- North Ocean Shores
- The Pocket
- Durrumbul
- Suffolk Park
- Federal

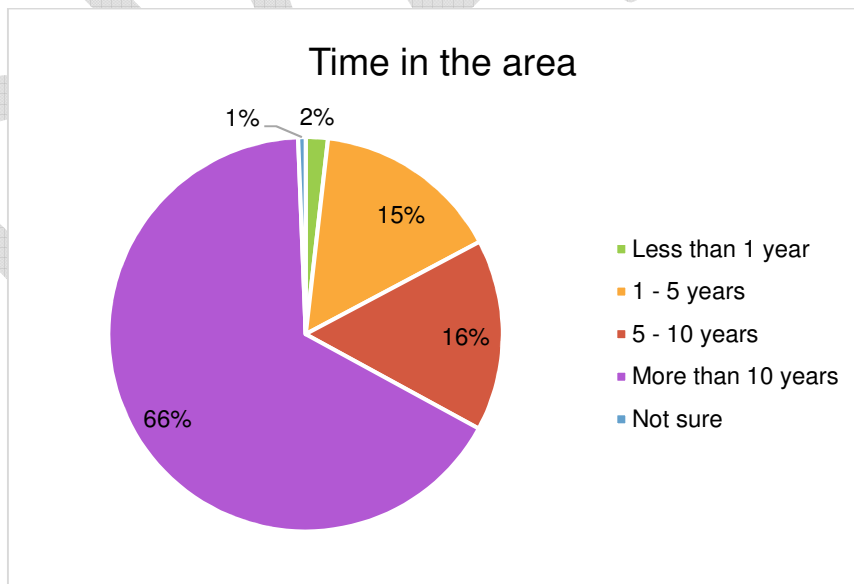


Figure 2: Length of time residents have lived in the area.

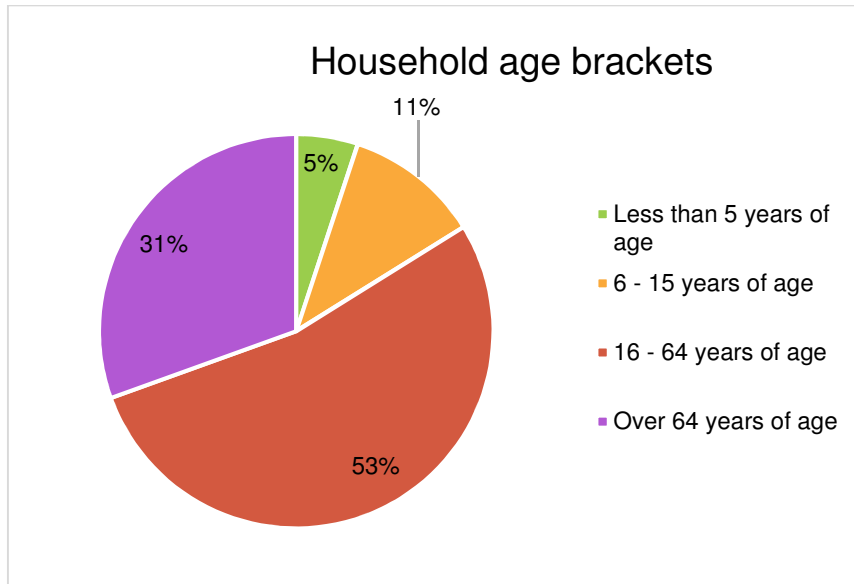


Figure 3: Percentage breakdown of household age brackets.

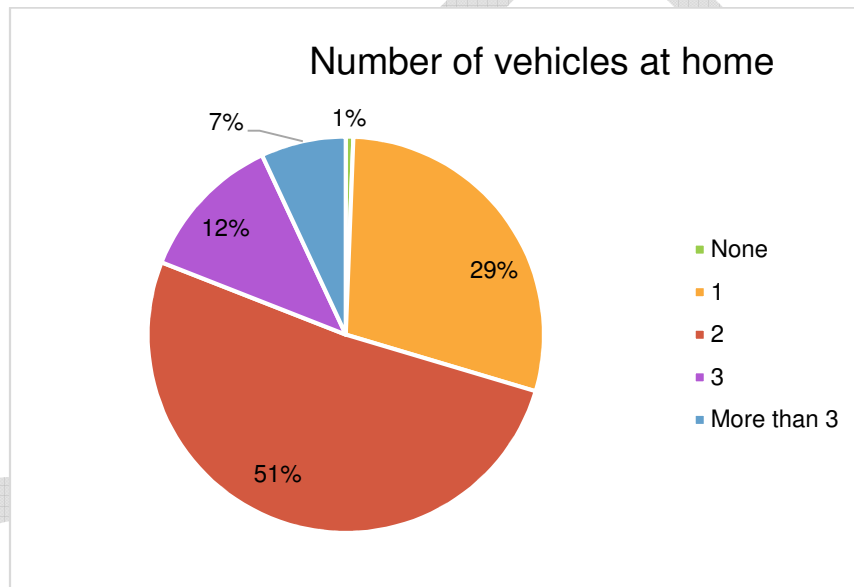


Figure 4: Percentage breakdown of the number of vehicles per household.

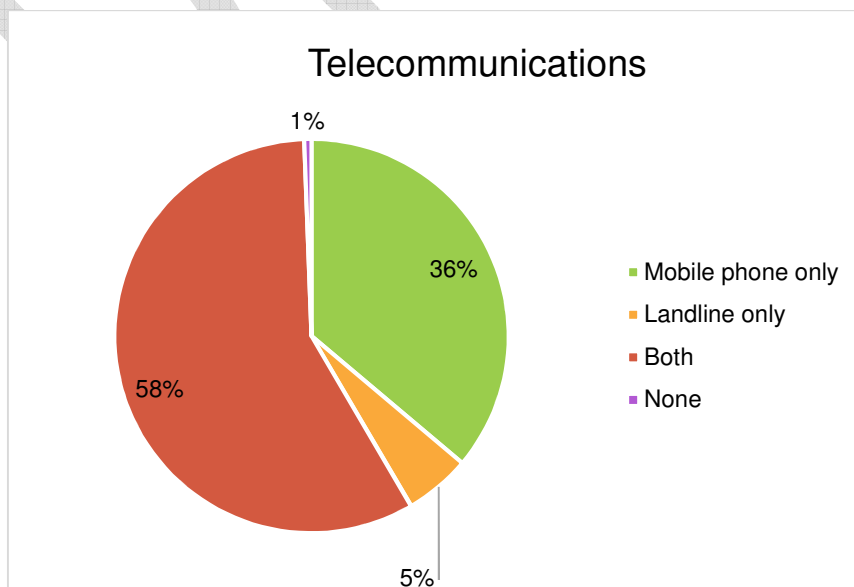


Figure 5: Percentage breakdown of available means of telecommunications.

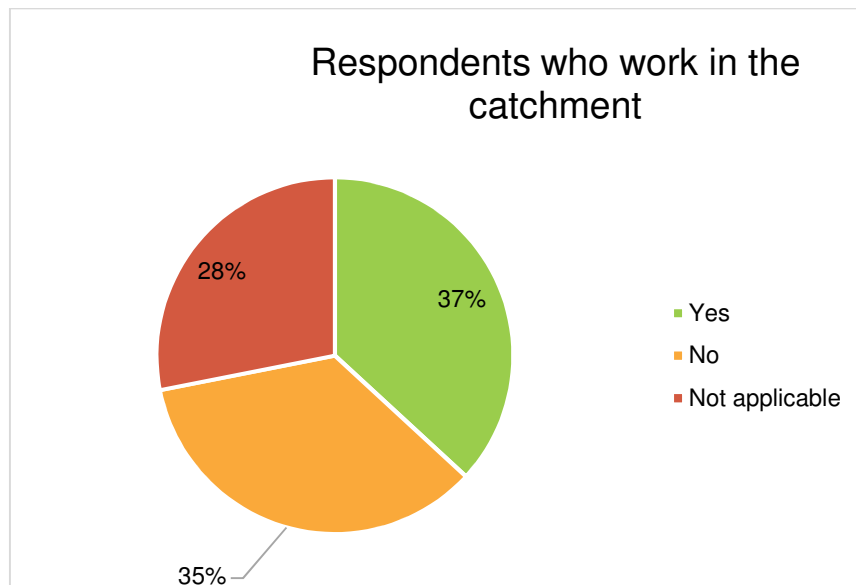


Figure 6: Percentage breakdown of respondents who work within the catchment.

## 2.2. Previous Flood Events

75% of respondents to this survey have been affected by flooding in some form, this may include flooding of homes or being unable to access usual travel routes. This statistic does not include respondents who answered 'Other' which would likely increase this percentage.

In response to a direct question regarding blockage of Federation Bridge in the 2017 event, 11% of respondents saw large trees or debris caught under Federation bridge, and 5 respondents said they had photos.

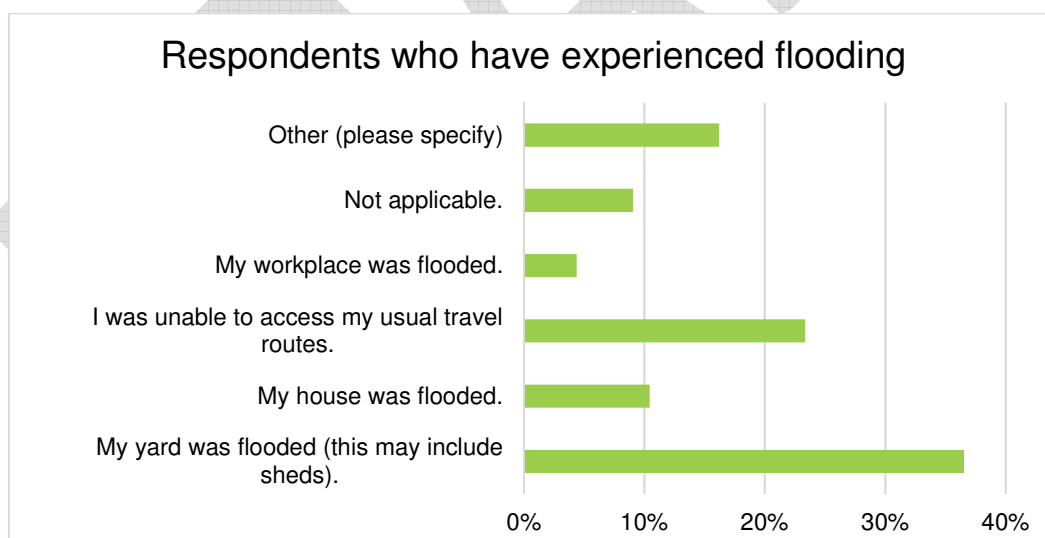


Figure 7: Percentage breakdown of flood experienced.

### Q8: Have you previously been affected by flooding?

A sample of comments from those who answered 'Other (please specify)':

- 'Multiple answers, yard was flooded, access routes were affected, adjoining properties were badly damaged and impacted by flooding (Debbie).'
- 'I was unable to access my usual travel routes (unable to leave New Brighton by road at all) and my storage units in Billinudgel were flooded.'
- 'Driveway flooded for a short time and we were able to drive out along Kolora Way, Shara Blvd to service rd. We have never had flood water in our house or garage.'

- *'Road closures in 2017 meant unable to return home. Landslips on property (i.e not flooding) due to extreme weather.'*
- *'My yard was flooded, my business was flooded and I was unable to access travel routes at all'*
- *'ALL OF THE ABOVE.'*
- *'Power Outage, Car Written off.'*

### 2.3. Floodplain Risk Measures

The top three factors the community believe are most important for managing flood risk are:

- Removal of blockages and debris from streams,
- Early flood warning (e.g. mobile phone alerts), and
- Structures such as detention basins and levees.

The top three outcomes the community believe to be most important when considering flood risk management options are:

- Increases community safety during floods,
- Reduces the cost of floods, and
- Does not disadvantage other parts of the community.

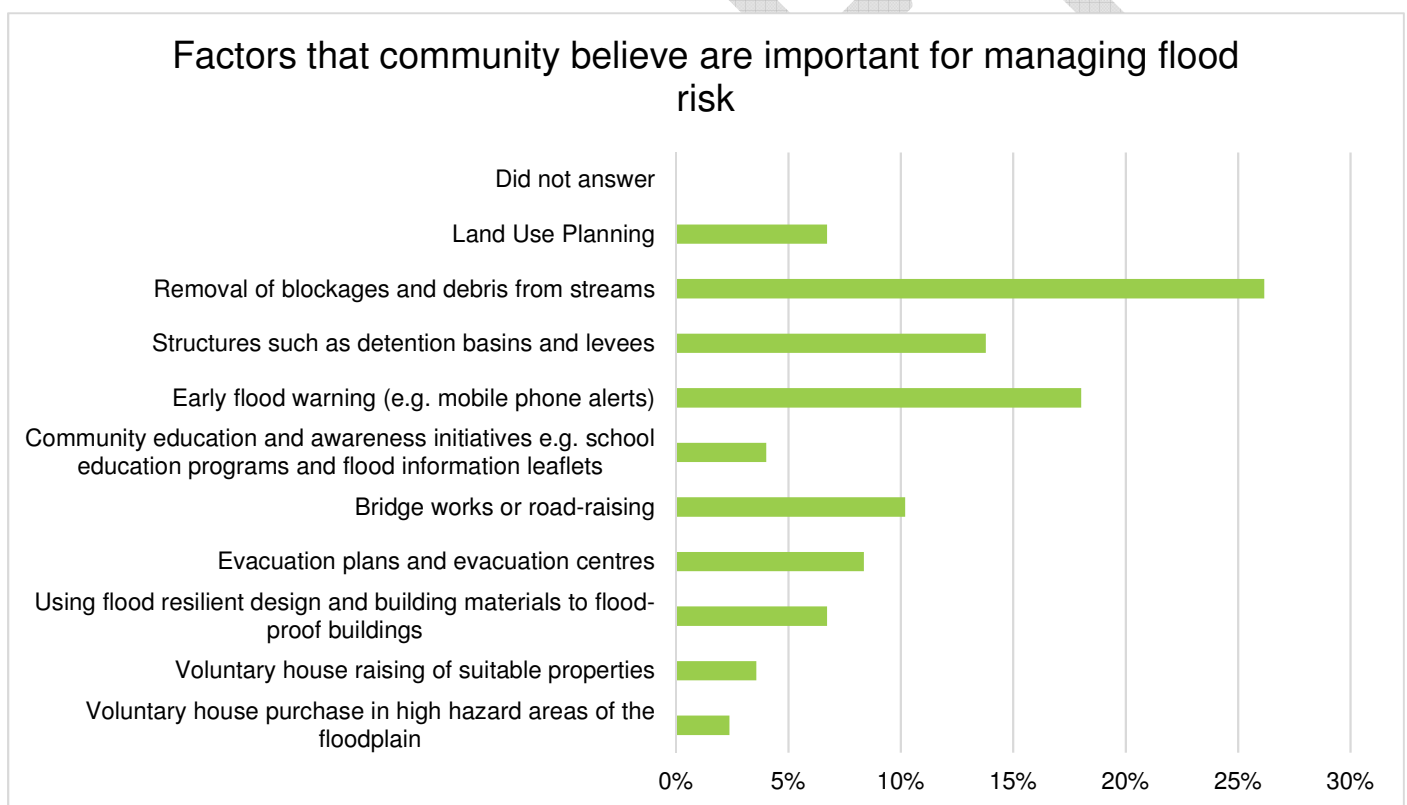


Figure 8: Percentage breakdown of factors believed to be most important to manage flood risk.

## Outcomes the community consider most important

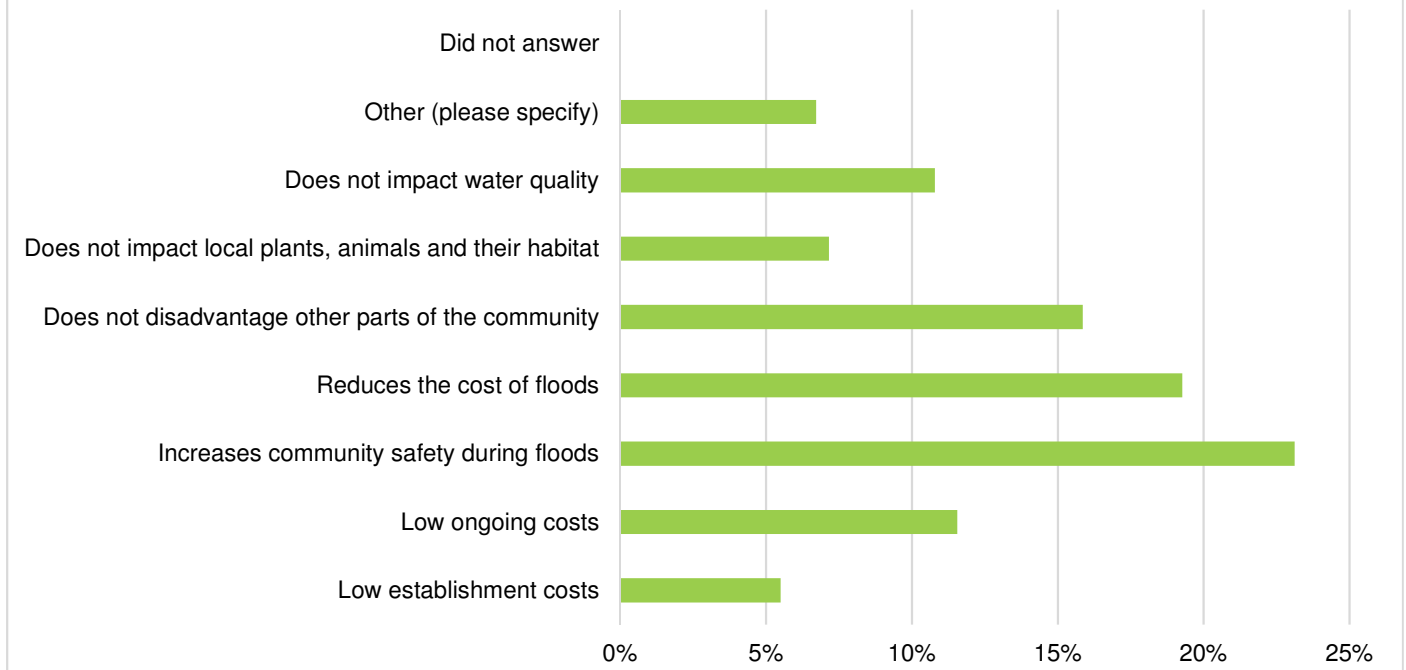


Figure 9: Percentage breakdown of outcomes the community considers most important.

### Q12: From the list below choose three outcomes most important to you when considering flood management measures.

A sample of comments from those who answered 'Other (please specify)':

- *'Discourages investment below PMF flood levels.'*
- *'Prevention rather than cure'*
- *'Shortens cleanup time and supports those most affected'*
- *'Flood management must include no development in flood prone areas'*
- *'Previous water paths for flood water be restored: Re opening storm water drains, dredging Marshall's Creek, removing Readings wall'*
- *'Implement actions that from "source to sea" every community benefits and does not cause more problems for those communities down stream.'*
- *'Does not disrupt my business'*
- *'New development not impacting existing dwellings'*
- *'Do not build on the floodplain, remove obstructions i.e. rail corridor additional pipe work King Creek + high school bridge'*
- *'Stop council approved fill on the floodplain. Stop illegal fill on the floodplain.'*
- *'To stop allowing "land fill" on the floodplain. Removal of illegal "land fill" on the floodplain. Don't continue to give permission for more houses being built on the flood plain.'*

## 2.4. Structural Options

Primary concerns of respondents relate to following:

- A need to clear blockages in drains and streams,
- The re-opening of ocean outlets,
- The silting up of Marshalls Creek, and
- For any structural options considered more research to be carried out.

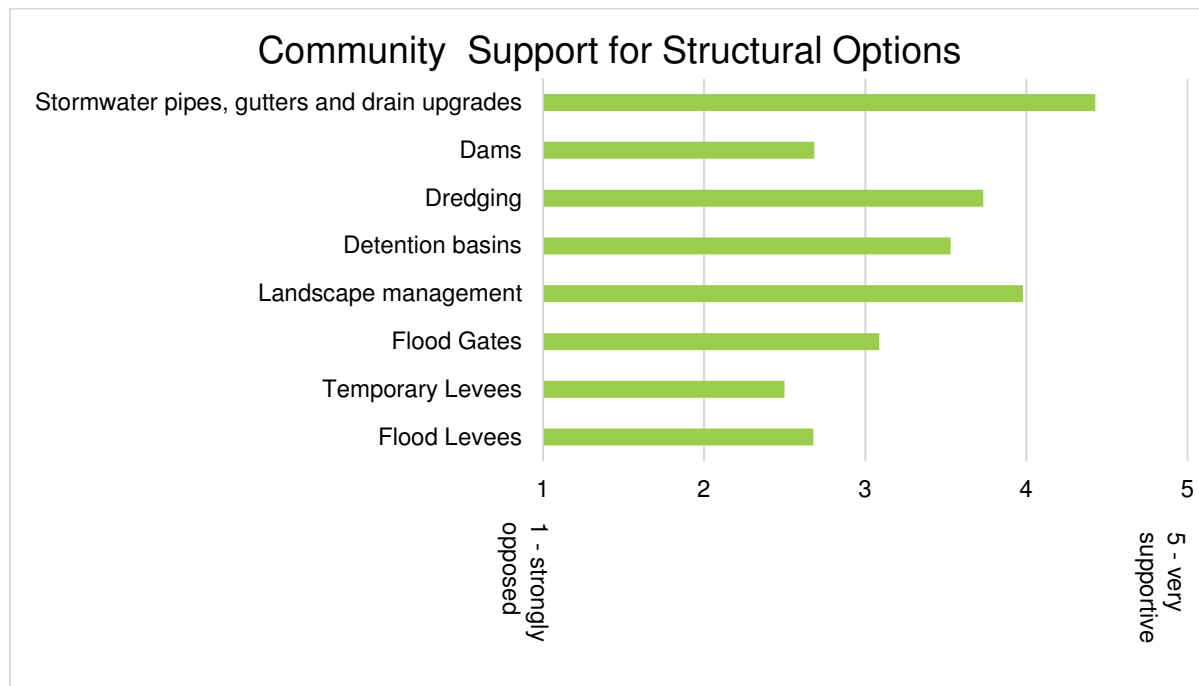


Figure 10: Average level of support for each structural mitigation option.

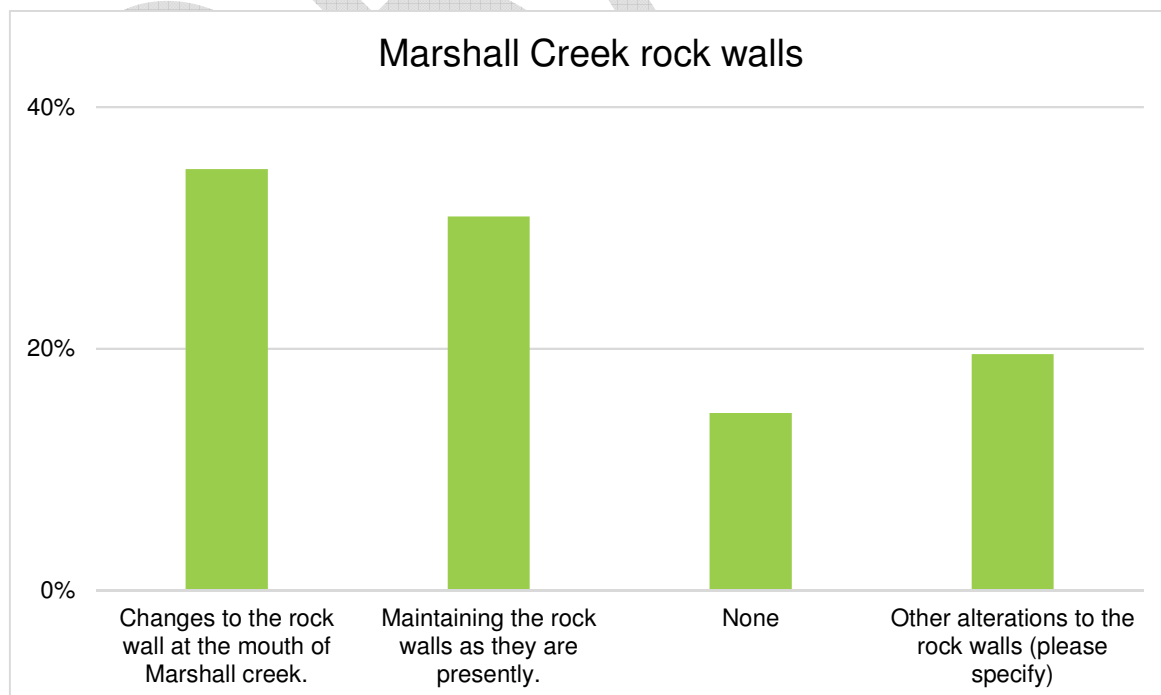


Figure 11: Percentage breakdown of community support for different options of alterations to the Marshall Creek rock walls.



## Rock wall alterations

### Q14: Which of the following options do you support?

A sample of comments from those who answered 'Other alterations to the rock walls (please specify)':

- *'reducing or removing rock walls in general.'*
- *'Remove all rock walls to allow water to flow directly to ocean'*
- *'I am unsure as to what purpose these rock walls were originally meant to serve, or what they presently serve, and so feel unable to comment.'*
- *'remove rock walls at entrance to marshalls creek and also at the mouth of Brunswick river'*
- *'Removal of walls at mouth of Marshall Creek'*
- *'In your photograph the rock walls can be seen blocking the entrance of Marshalls Creek to the Brunswick River. This causes huge flooding as the floodwaters cannot escape as they did before the rock walls were constructed. Please remove the rock walls.'*
- *'Only alter the rock walls if it is proven to improve flooding without causing major affects to the river system.'*
- *'Gradual or staged removal to gauge impact and easily reverse removal if this process makes things worse. More research!'*

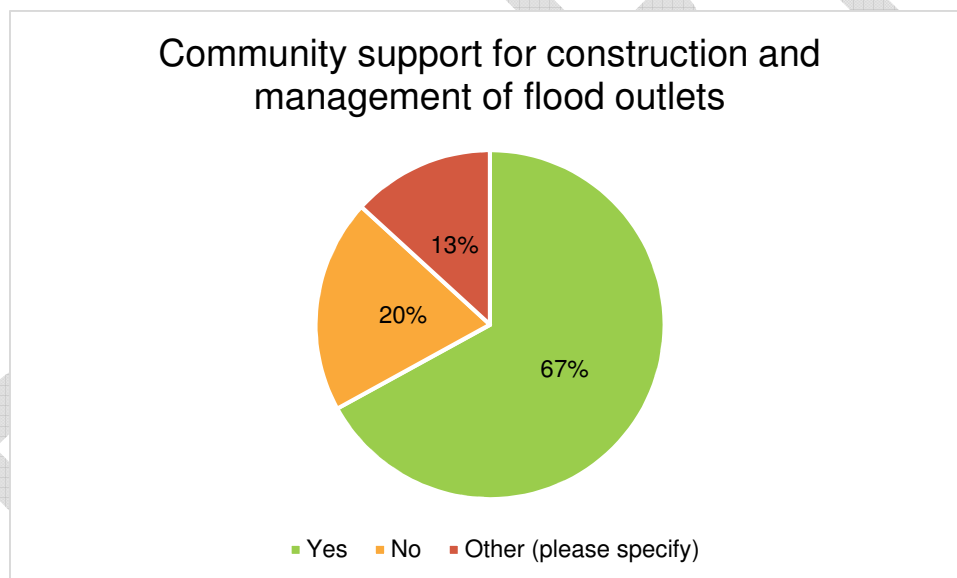


Figure 12: Percentage breakdown of community support for the construction and management of flood outlets.

### Q15: Would you support the construction and management of flood outlets through the dunes?

A sample of comments from those who said 'Other (please specify)':

- *'This would cause further damage to fragile dunes.'*
- *'If this type of construction helps with flood levels then I would support it.'*
- *'If this outlet was natural, then yes. I believe that the core problem with flooding in this area is due to man-made structures & developments that interfere with the natural flow of systems, including during floods.'*
- *'Tentatively supportive if an impact assessment suggest environmental impacts would be manageable for this and other areas of the nature reserve.'*
- *'Reopen all original outlets'*

- *'Particularly at North Ocean Shores from Yelgun Creek through the dunes to the ocean. This was originally a natural flood outlet which we believe was closed at sand mining decades ago.'*

**Q16: Do you have any other comments about the structural mitigation options above? This can include a suggested location, type, purpose etc.**

A sample of responses are included below:

- *'The council must throughout all planning phases keep the community abreast of all changes/mitigations in consideration of flood management.'*
- *'Flood outlets through the dunes are a key solution to North Byron flooding, this is an important and cost effective way of quickly allowing flood waters to reach the ocean. Of all the above mentioned methods of controlling flood water I believe this is the most effective, "give the water somewhere to go" Thanks for your support with this'*
- *'It would be beneficial if the existing waterways were kept clean. eg. the build up of weed on the lake in waterlily park and the soil build up at the drainage outlets causes blockage and means less area for water to fill before breaking its banks and flooding surrounding houses. Regular maintenance is needed.'*
- *'It would help if council started to regularly maintain [unblock and clear] the road drains that are located along New Brighton Road between Redgate Road and Park Street. Also in Byron Street.'*
- *'You can fight nature, but no amount of money will "proof" a community. Plan, plan, plan for a managed retreat.'*
- *'Open the flood outlets to the ocean from south golden beach to wooyung that's all that is required but the simple measures are over looked for more expensive ways o lived through the fifties and sixties with these out lets in place and flooding of farm lands and homes were not as bad as they are today'*
- *'keeping the rivers and creeks clean of debris is something that should be done to stop it clogging up bridges etc in the case of flood....saltwater creek, for example, is in need of some love.'*
- *'Stop allowing building in flood prone areas. Stop effecting transfers of property in flood prone areas. Buy back flood prone properties.'*
- *'Dredging Marshalls Creek - water is so low + silted up.'*
- *'Re-open flood outlets at Wooyung North of Golden Beach. Remove Kallaroo Bund that blocks flood waters.'*

## 2.5. Before a Flood Event

Results from this section of the survey indicate that the community aren't sure where they can look to understand their flood risk prior to the wet season. A number of respondents said they would check the Bureau of Meteorology's website or that they weren't sure where to look. Some respondents answered saying they would seek advice from knowledgeable locals.

Results to the questions asking how the community has prepared for future flood events show that while 50% have obtained the appropriate level of insurance, there are significant concerns regarding the cost of insurance.

### Q17: If you were to check your flood risk ahead of the wet season, where would you look?

A sample of responses are included below:

- *'I would conduct web engine searches and speak with the flood action group based in Mullumbimby where I live, they will be able to direct and assist me.'*
- *'I don't know'*
- *'Byron Council website, SES & BOM'*
- *'should be emailed or booklets sent out if required but info should be displayed months ahead of time local shopping malls radio & SMS. Newspapers, local and other.'*
- *'Web, & planning scheme overlays.'*
- *'Online at the bom website'*
- *'BOM website'*
- *'Weather zone'*
- *'Local community page on Facebook and the Facebook SES page'*
- *'we have no idea as to the best location to check to see if we are at risk of flooding'*
- *'Ask older neighbours'*

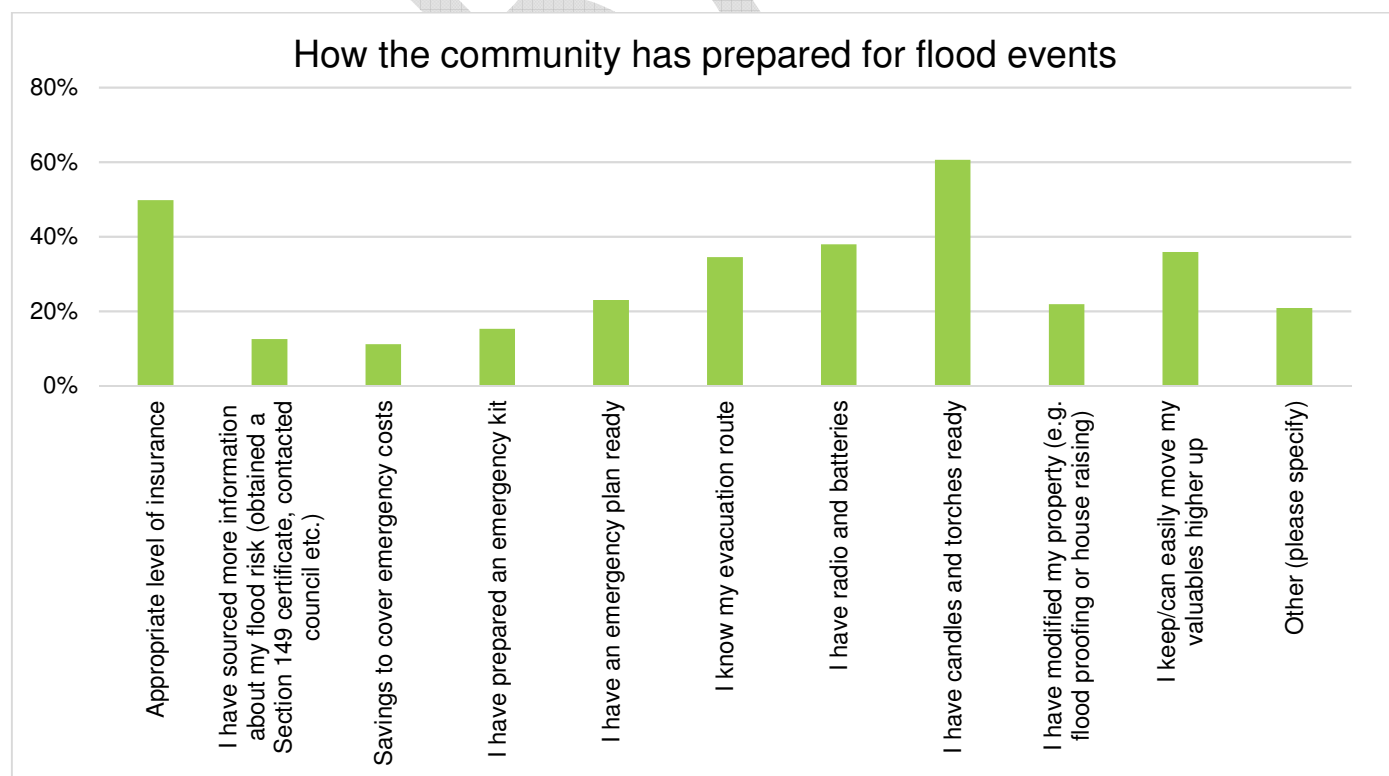


Figure 13: Percentage breakdown of how respondents have prepared for future flood events.

## Q18: How has your household prepared for flood events?

A sample of comments from those who said 'Other (please specify)':

- *'I store food including fresh food when a rain event is due. I share rainfall predictions with neighbours.'*
- *'what is a SECTION 149 certificate?'*
- *'Prepare for power outages'*
- *'Am selling our home due to internal flooding in march event. Raising is impossible as it is a brick home'*
- *'Insurance premiums are already so expensive in this area. There is no more money to support any flood events.'*
- *'Built in a flood free zone in the first place.'*
- *'I have sandbags filled and accessible'*
- *'Look after my neighbours, especially elderly ( even though I am old ) and their home Keep weekenders ( non permanents)aware'*
- *'I've made friends with my neighbours and we work together well.'*

## 2.6. During a Flood Event

Key findings from this section of the survey results show:

- 13% of respondents would never evacuate their home,
- The community want accurate and timely information,
- 63% of respondents have received conflicting information in the past,
- The community appear to have lost trust in the information they receive but 72% of respondents answered they would trust the SES for information,
- 75% of respondents want road closure information during flood event, and
- 59% of respondents want expected flood levels at their property and key locations within the catchment.

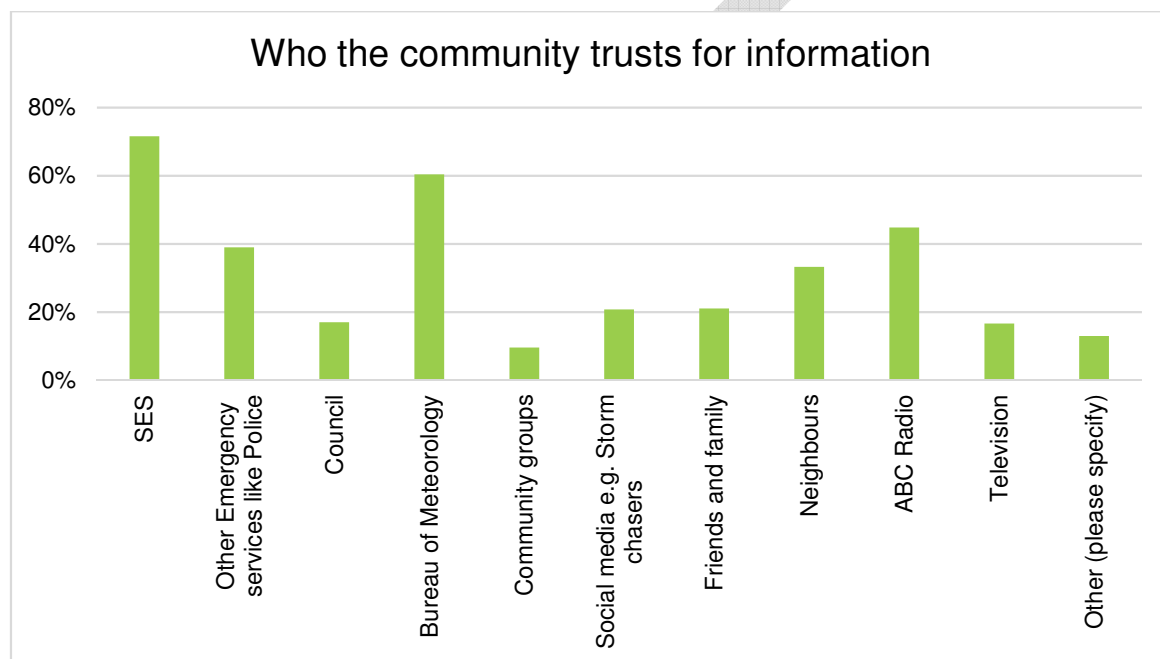


Figure 14: Percentage breakdown of who respondents trust for reliable information.

### Q19: Who do you trust to provide accurate information during a flood event?

A sample of comments from those who said 'Other (please specify)':

- *'no one was able to give me information about flooding in Mullumbimby that night. When the water came up in our street, I called SES and they told me there was no flooding in Mullum ..now I don't know who to trust'*
- *'I rely on BOM but their flood warning was inaccurate and too late ..their prediction stated a minor flood but this was a major flood at least for those who were effected ..the BOM need more categorires of warnings as the victroian govt has now done for bush fire warnings...also need clarification of what the categories mean on the ground so residents can get an idea of what to expect ...the word minor flooding has no practical meaning.'*
- *'The long term locals that live in the hills and understand the rainfall and river flows.'*
- *'SMS. Is it possible to send a blanket SMS to all mobile users connected to a particular tower? Our insurance company used to send us texts warning of possible rain damage.'*

- *'Facebook group "mullumbytes"'*
- *'Also trust radio but don't listen to it'*
- *'The old time farmers know when the floods are coming... local knowledge can not be over-ridden'*
- *'Too much info from the SES now comes from out of area crews that get it too wrong as they dont have local knowledge.'*

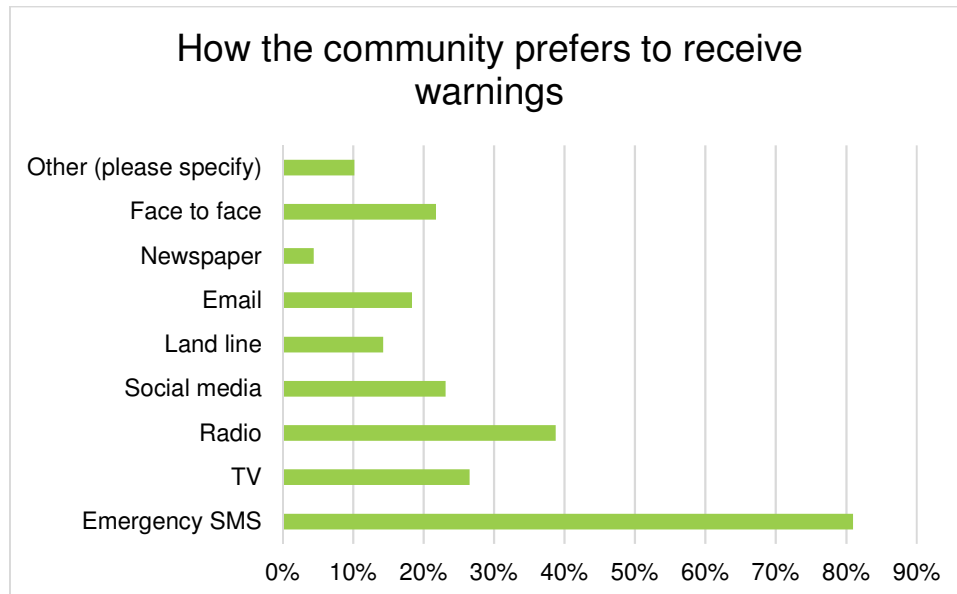


Figure 15: Percentage breakdown of how the community would prefer to receive flood warnings.

## Q20: How would you prefer to receive flood warnings?

A sample of comments from those who said *'Other (please specify)'*:

- *'by knowing what website to look up when I actively want info, rather than passively waiting for an SMS.'*
- *'many huge loud sirens that you can hear in each town to all the places that need to be warned.'*
- *'Emergency SMS is effective, but too often we are given misleading information'*
- *'Door knock from emergency workers'*
- *'For the last flood we were asleep. We would have had no idea if neighbour didn't doorknock.'*
- *'Emergency SMS needs to be timely. Rang ses to be told nothing could be done til Morning.'*
- *'Road signs flashing "Flood Warning this evening" Danger up Highway + up Main Arm Rd. Wilsons Creek Rd near causeways. Solar signs.'*
- *'Truck with a siren driving the streets!'*

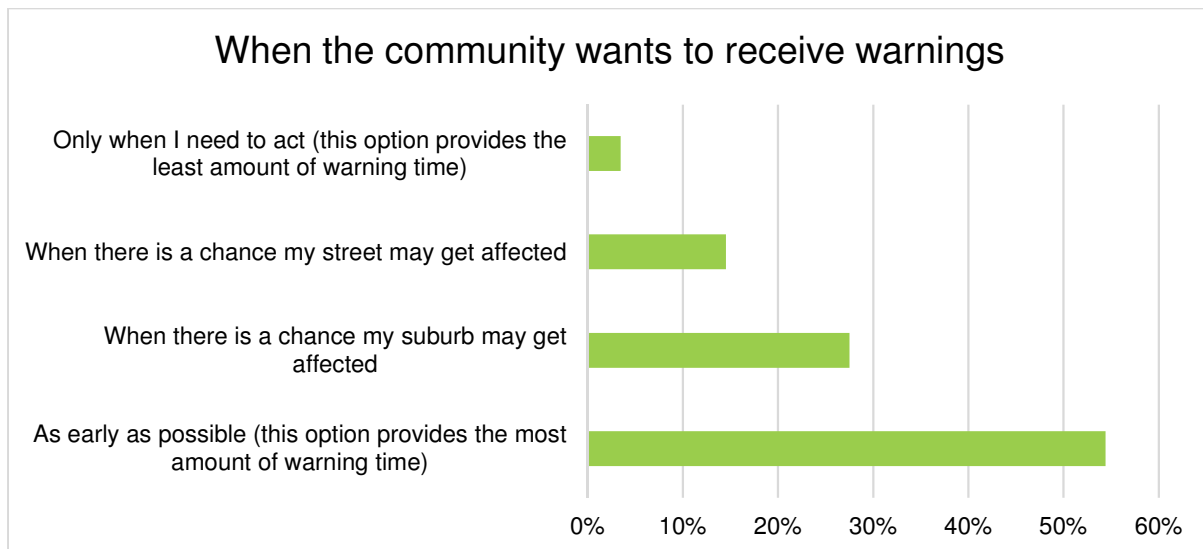


Figure 16: Percentage breakdown of when the community would prefer to receive warnings.

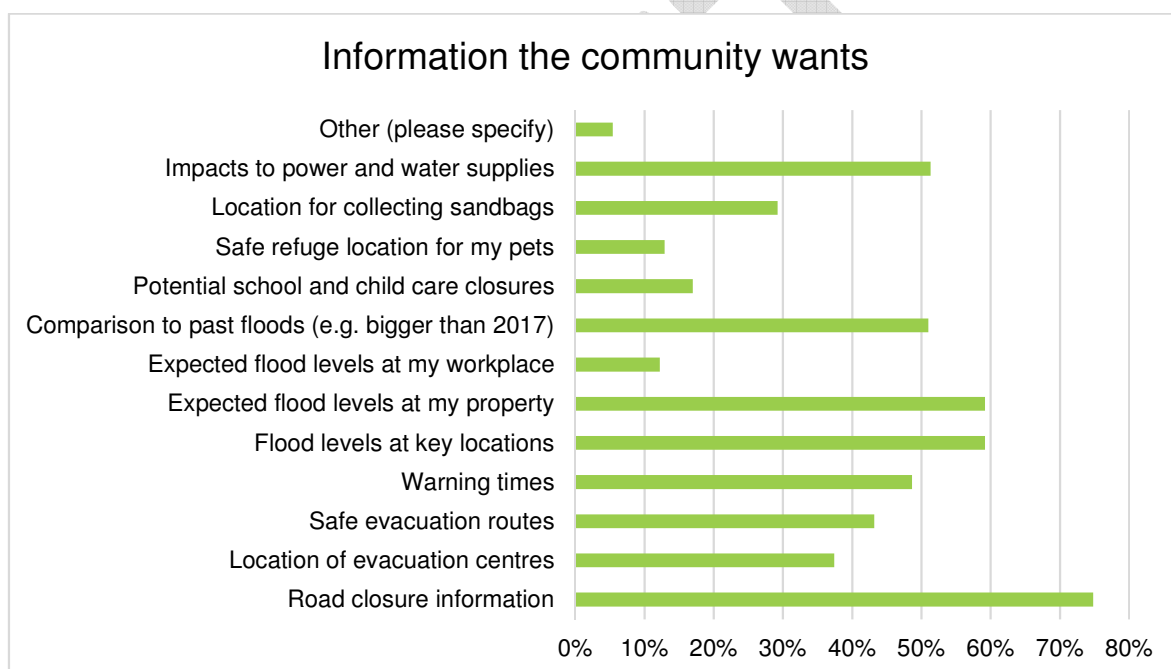


Figure 17: Percentage breakdown of what information the community wants during a flood event.

## Q22: During a flood event, what sort of information do you need?

A sample of comments from those who said 'Other (please specify)':

- 'estimates of flood duration, at various flood levels.'
- 'Please ask the media to stop sensationalizing every single weather event - because it is now impossible to tell if a normal wet day is a normal wet day or a potential flood disaster.'
- 'Impacts on shopping centres and other infrastructure'
- 'Back to more constant radio flood announcements and the flood siren that was always used at the start of each flood warning to be said.'
- 'Time needed to move cattle'
- 'Warning signs flashing on roads.'

## When the community would evacuate



Figure 18: Percentage breakdown of when respondents would choose to evacuate their homes.

### Q24: Why would you never evacuate?

A sample of responses are included below:

- *'I would sooner stay to protect what i am able'*
- *'could die'*
- *'If you dont see the danger in staying at your home'*
- *'By the time any warnings happen the roads to any evacuation option are flooded so there is literally no where to go!'*
- *'Previous flooding has only come knee high and is slow. We are 2m off the ground.'*
- *'I don't think it would be extreme enough to endanger our lives'*
- *'If I evacuate I can't get back'*
- *'Because the clean up needs to get started as soon as possible'*



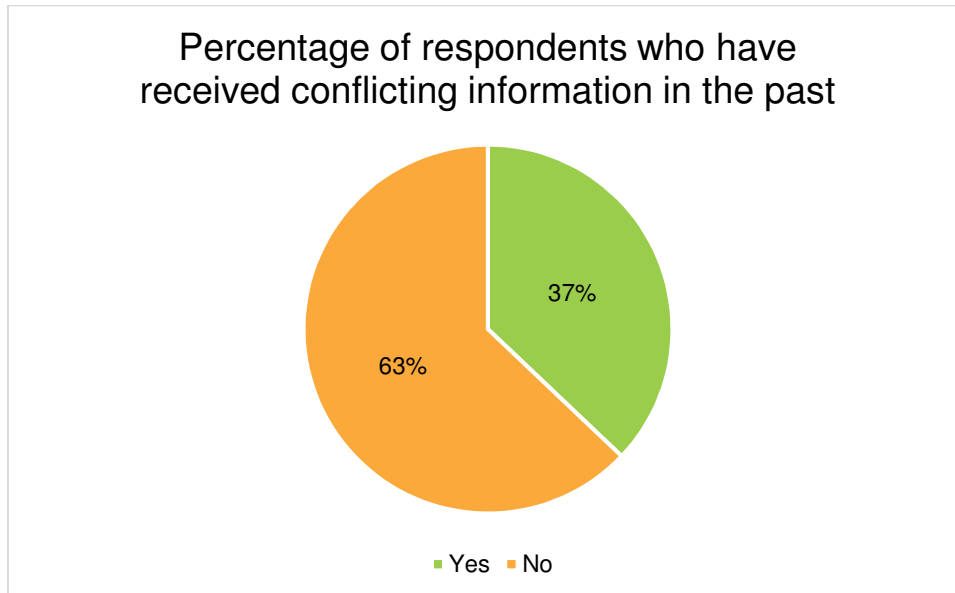


Figure 19: The percentage of respondents who have received conflicting information.

The following question is a follow up for those who answered 'Yes' to receiving conflicting information.

**Q26: If yes, what was it?**

- *'The river rose so fast that the BOM could not keep up. Federation bridge height gauge was incorrect'*
- *'SES telling neighbours to evacuate but not even ringing our bell'*
- *'Severity of flood was exaggerated'*
- *'Pumps were on when they were not.'*
- *'A 3am call that I should evacuate. However, we were already totally flooded in and there was no route out.'*
- *'Information about road closures later to find out they were not closed'*
- *'Road closure advised by Council on the internet and it wasn't'*
- *'Evacuation when there was no flooding'*
- *'I have never received my flood warning!'*

## 2.7. After a Flood Event

Some of the key themes in the answers to questions in this section are that:

- Respondents want to see less development on the floodplain and consider this important in managing flood risk,
- The community need continuing support after flood events with specific help in the cleanup, and
- Respondents want to see more being done prior to flood events including letter box dropping, clearing of drains, information on the Byron Shire Council website or an emergency checklist.

### **Q27: What have you learnt from past flood events that will change how you prepare and respond in the future?**

A sample of responses are included below:

- *'We are more aware and concerned now. We have had major filling of lots in our area, without proper drainage. Major filling of flood prone land. The Tallowood Estate, Orchid Place filling and Industrial area filling has increased flooding in other areas. Blocked drains and leaking sewer pipes are a major issue that need to be fixed BEFORE any new developments.'*
- *'The speed at which the water rises is surprisingly quick and irregular as my property is subject to tidal water rises So even when the rain ceases the water still rises significantly'*
- *'Charge phone, better torch'*
- *'that if council has neglected to keep drains clear and waterways clean that the chance of flooding is possible.'*
- *'Don't buy in a flood zone'*
- *'Mainly have food supplies if roads are inundated'*
- *'Road closures, knowledge of alternative routes'*
- *'Just the amount of work to clean up after the event'*
- *'I am Relocating to higher ground'*
- *'Get out early! Have back ups.'*
- *'Not to listen to anyone else and only use my local knowledge and that of other locals. Dont depend on any government agency'*
- *'Start preparing sooner'*
- *'To make sure you have flood insurance but at a reasonable price for pensioners.'*
- *'Not every flood is exactly the same, this later one was totally different to all others. They normally slowly rise as the tide come in, This one went in all directions and was ferocious. So have to learn to think differently, also we've not had once before which came up in the middle of the night. Totally unexpectedly.'*

### **Q28: What other information would you like council to provide before, during and after floods and other emergencies?**

A sample of responses are included below:

- *'What can council do. The drains are not maintained and are damaged. Don't fill and develop on flood prone land. We are between the hills and the ocean where is the water supposed to go?'*
- *'evacuation centres, road closures, estimated time of road openings'*

- *'In case of a power blackout we would like to know how long it will probably last (if possible)'*
- *'Council to provide free debris removal [vegetation and water damaged items]'*
- *'Location of Emergency relief centres. How can I help my neighbours?'*
- *'Expected water levels is the most important'*
- *'A once a year letter box drop at the start of the wet season reminding people to prepare for the wet season. And info on BSC website.'*
- *'Just the the availability of sand and bags early'*
- *'That dumping can be free or flood damaged materials (had to pay \$700 in 2017 day after flood!)'*
- *'clean up options and kerb side collections for any damaged items. Effectiveness of any flood mitigations put in place in previous year/s prior to flood event.'*
- *'IT IS AFTER A FLOOD EVENT WE NEED HELP FROM THE COUNCIL. IE CLOSING ROAD FROM TOURISTS, SKIP BINS, LARGE HOSES TO CLEAN OF THE STREET ETC'*
- *'Emergency checklist...such as turn off power before you leave...what to take? Where to go? We have a lots of dogs in this area. What evac points take dogs indoors.'*
- *'roads and routes status'*
- *'Early warnings'*
- *'How to access clean up assistance.'*
- *'Really take notice of community knowledge and warnings.'*

**Q29: Do you have any other comments that relate to the North Byron Floodplain Risk Management Study and Plan?**

A sample of responses are included below:

- *'please do not spend public money to reinforce poor development decisions to occupy flood prone land. Use it to discourage such occupation and to prohibit investment on flood-prone land.'*
- *'I hear rumours of further housing expansion ie Serenity development in Mullumbimby and another development near the show grounds, this would be a fool hardy concept taking into account the adjoining residential properties that are still fighting insurance companies etc... there simply cant be any merit in the go ahead of such touted projects/expansion. I dont know of anyone supporting these ventures !!'*
- *'Open the south golden overflow, let the water get to the ocean as quickly as possible'*
- *'consider clearing creeks/rivers after weed killing (not routine dredging, just after significant interventions that may lead to creek blockages/backlog)'*
- *'there is the possibility of a new development at the end of Stuart Street Mullumbimby opposite the high school ,,this land is very high/dangerous flood risk according to SES and State Govt mapping ..it is totally irresponsible to contemplate building on this site yet it is being promoted as low cost housing which is giving it some sort of political legitimacy. It seems that flood risk needs to be taken more seriously in future development assessments.'*
- *'I would advise Council to restrict building on flood plains around Mullumbimby. Development on such areas would severely impact flooding elsewhere in the town. This is an essential aspect for Council to act on if it is serious about flood mitigation.'*
- *'Council should be very careful on allowing developments occurring especially behind New City Road & Anne Street!'*
- *'Stormwater drains and cleaning guttering would help with nuisance flooding'*

- *'Don't develop structures in flood zones that change the flow of water and pre determined drainage systems - as in Waterlily Park Ocean Shores'*
- *'The proposal for Lot 22 to raise the land for affordable housing is very distressing. The current flood studies on the proposed land do not include potential flood impacts on properties to the North of the site. If'*
- *'Definitely needs another outlet to the sea in between SGB and New Brighton area'*
- *'Stop development in flood prone regions as the infrastructure can't support it in the case of emergency evacuation'*
- *'maybe keep a checklist of residents who are handicapped and elderly'*
- *'Removal of rail levee + bridges which restrict water flow. Increased water flow under road bridges'*
- *'Clean out open stormwater drains around OS Country Clubs golf course. We live on the course and the drain at the back of us has not been desilted in the last 20 years!! That I know of.'*

DRAFT