



## Appendix A

# North Byron Floodplain Management Study and Plan

## Introduction

Flooding can have devastating impacts on a community. Most recently, the North Byron catchment experienced a major flood event in March 2017 as a result of Ex-Tropical Cyclone Debbie. This event saw homes inundated, residents forced to evacuate, roads closed and thousands of people without power.

Byron Shire Council has engaged WMA Water to prepare a Floodplain Risk Management Study and Plan for the North Byron catchments. The North Byron study area (Figure 1) includes the towns of Mullumbimby, Brunswick Heads, Ocean Shores, New Brighton, South Golden Beach and Billinudgel. The aim of this plan is to improve our understanding of flood behaviour and its impacts in order to develop a long term strategy for managing our flood risk, now and into the future.

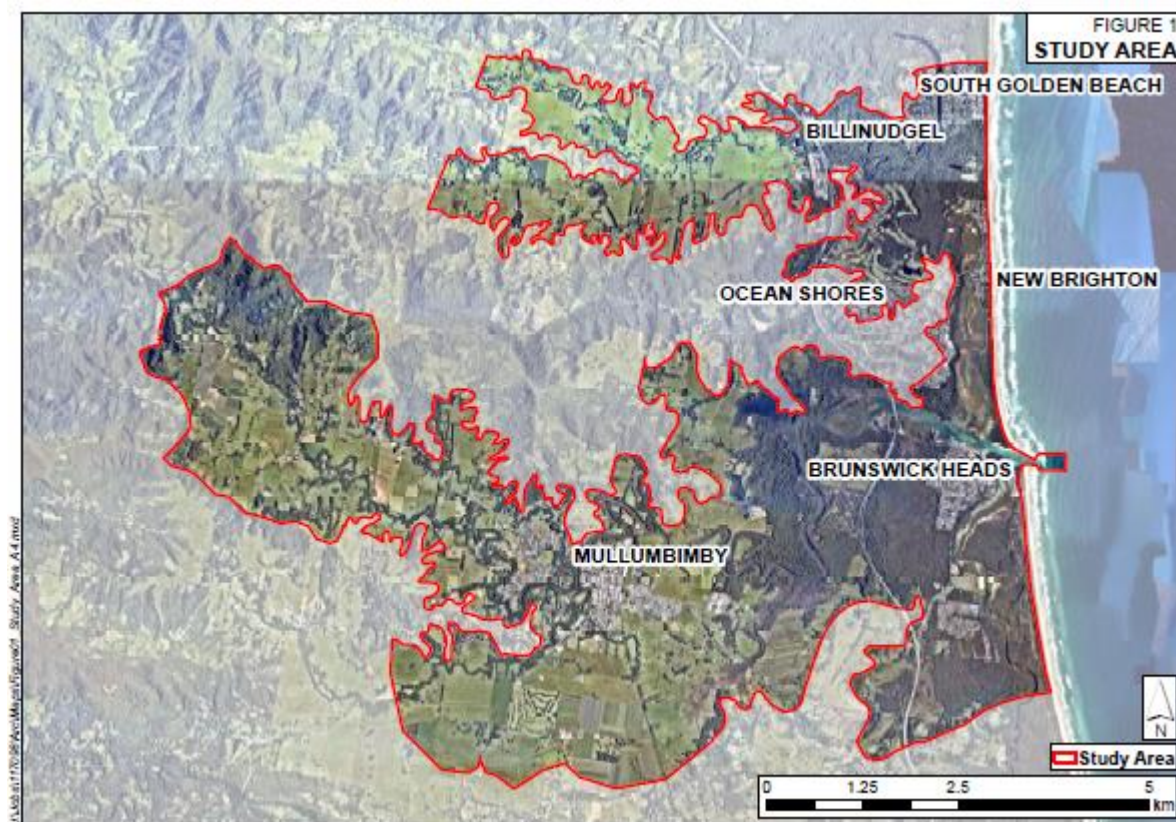


Figure 1: North Byron Floodplain Management Study and Plan - Study Area

Currently, we are in the initial phases of this project and we believe an important first step is to engage with the community and draw on your extensive local knowledge. We are seeking your input on:

- Any information you may have on past flood events
- How you would like to see flood risk managed in the North Byron catchments
- How you would like to receive flood information during a flood event

The following survey is expected to take 15 minutes to complete. We thank you for your time and value your input.

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## Demographics

### Q1. Which town do you live in?

- ☐ Mullumbimby
- ☐ Brunswick Heads
- ☐ Ocean Shores
- ☐ New Brighton
- ☐ South Golden Beach
- ☐ Billinudgel
- ☐ Other (please specify)

### Q2. How long have you lived in the area?

- ☐ Less than 1 year
- ☐ 1 – 5 years
- ☐ 5 – 10 years
- ☐ More than 10 years
- ☐ Not sure

### Q3. How many people are within the following age brackets in this household?

Less than 5 years of age	<input type="text"/>
6 – 15 years of age	<input type="text"/>
16 - 64 years of age	<input type="text"/>
Over 64 years of age	<input type="text"/>

### Q4. Do you have internet access at home?

- ☐ Yes
- ☐ No

### Q5. Do you have a mobile phone, landline or both?

- ☐ Mobile phone only
- ☐ Landline only
- ☐ Both
- ☐ None

### Q6. Do you have mobile phone reception at home?

- ☐ Yes
- ☐ No

### Q7. How many vehicles at this address?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ More than 3

### Q8. Do you work in the North Byron catchment?

- ☐ Yes
- ☐ No
- ☐ Not applicable

## Previous Flood Events

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

- ☐ My yard was flooded (this may include sheds).
- ☐ My house was flooded.
- ☐ I was unable to access my usual travel routes.
- ☐ My workplace was flooded.
- ☐ Not applicable.
- ☐ Other (text box)

## March 2017 Flood Event

The community of North Byron has been very helpful in providing extensive information on the March 2017 flood event. This information has been valuable and has been extremely useful in better understanding flooding in the North Byron catchment.

We are still looking for more information and are keen to hear if anyone noticed any large trees or debris caught underneath Federation Bridge at Mullumbimby that may have caused water to back up behind Federation Bridge.

### Q9. Did you see any large trees or debris caught underneath Federation Bridge, reducing flows under the bridge in the March 2017 flood event?

- ☐ Yes
- ☐ No

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**Q10. If yes, do you have any photographs?**

- ☐ Yes
- ☐ No

## **Floodplain Risk Management Measures**

The NSW Floodplain Development Manual prepared by the NSW Office of Environment and Heritage discusses three approaches for increasing our resilience to flooding:

- 1. Property Modification Measures** which looks at modifications to existing properties and land use planning including zonings and development controls.
- 2. Response Modification Measures** increases the community's resilience through better preparedness, improved warning and recovery planning
- 3. Flood Modification Measures** alters the flood behaviour using structures such as detention basins and levees.

**Q11. From the list below, choose three factors that you consider to be the most important for managing flood risk in the North Byron catchment.**

- ☐ Land Use Planning including zoning and development controls
- ☐ Voluntary house purchase in high hazard areas of the floodplain
- ☐ Voluntary house raising of suitable properties
- ☐ Using flood resilient design and building materials to flood-proof buildings
- ☐ Evacuation plans and evacuation centres
- ☐ Bridge works or road-raising
- ☐ Community education and awareness initiatives e.g. school education programs and flood information leaflets
- ☐ Early flood warning (e.g. mobile phone alerts)
- ☐ Structures such as detention basins and levees
- ☐ Removal of blockages and debris from streams

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

- ☐ Low establishment costs
- ☐ Low ongoing costs
- ☐ Increases community safety during floods
- ☐ Reduces the cost of floods
- ☐ Does not disadvantage other parts of the community
- ☐ Does not impact local plants, animals and their habitat
- ☐ Does not impact water quality
- ☐ Other (please specify)



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## Structural Mitigation Options

**Q13. Which of the following structural options would you support for reducing flooding?**

### Permanent Levees

Levees are wall like structures used to prevent floodwaters inundating areas of the floodplain. While they are designed to protect areas up to a certain sized flood, they can still offer additional warning time by delaying inundation in larger flood events. Levees can be made with manmade material like concrete or can be constructed using earthen materials as a way to blend in with the surrounding landscape.

Typically levees displace water from one area to another and this can increase flood impacts to other areas of the floodplain. They can also trap local drainage behind the levee and may require associated drainage to reduce this. There is the potential for levees to impact on natural floodplain process such as the movement of sediment and nutrients.

Levees can inhibit river and creek views and can reduce access to waterways. Ongoing maintenance is required to maintain structural integrity.

**How supportive are you of the building of flood levees in the North Byron catchment?**

1 – very supportive      2      3      4      5 – strongly oppose

### Temporary levees

Temporary levees are similar to permanent levees and are used to prevent floodwaters inundating areas of the floodplain. The main difference is temporary levees are short term structures and require assembly prior to a flood event. Warning time is essential so temporary levees are not suitable for areas prone to flash flooding. Other requirements include a location nearby to store the temporary levee and people available to construct prior to a flood event.

**How supportive are you of the temporary levees in the North Byron catchment?**

1 – very supportive      2      3      4      5 – strongly oppose



*Figure 2: Permanent flood levee in Charleville. The image was sourced from the ABC and was photographed by Luke Kleidon on February 2, 2012.*



*Figure 3: Temporary levee in Rockhampton. This image was sourced from the Courier Mail and was photographed by Dan Peled.*

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## Floodgates

Floodgates are used to control the release of water or prevent backflow of water up to a certain sized flood. These are usually installed at the entrances to creeks and waterways to prevent backflow of floodwaters upstream. It is possible to construct both large or small scale floodgates that are and are useful in reducing floodwaters in some areas of the floodplain.



Figure 4: An example of a closed floodgate. This image was sourced from the NSW Department of Primary Industries.

There are some associated impacts with floodgates including regular maintenance and monitoring, impact on fish passage through waterways, blockage of debris and in some cases, increase in local flooding upstream when closed. As is with structural options that displace floodwaters such as levees, flood gates can decrease flooding in some areas but cause an increase in others.

**How supportive are you of the installation of flood gates in the North Byron catchment?**

1 – very supportive                      2                      3                      4                      5 – strongly oppose

## Landscape management

This option focuses on restoring the catchment to its natural landscape. This includes re-vegetation of the catchment and along the riverbank and removal of manmade structures such as farm levees which inhibit the natural floodplain behaviour. There are numerous social and environmental benefits from landscape management such as:

- Improved biodiversity.
- Restoration of natural landscape.
- Reduction in bank erosion and a decrease in silting of downstream waterways.
- Reduction and delay of peak flows.



Figure 5: An example of river bank rehabilitation at Mockers Road, Fernvale. This image was sourced from the Mid-Brisbane Catchment Action Plan delivered by the Council of Mayors (SEQ) Resilient Rivers Initiative.

While it is thought landscape management may significantly reduce flow for smaller size flood events, there will be little impact on larger sized flood events. These works can impact communities upstream by reducing land available for agriculture and can cause upstream areas to be inundated for longer.

**How supportive are you of landscape management as a strategy to manage flooding in the North Byron catchment?**

1 – very supportive                      2                      3                      4                      5 – strongly oppose

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## Detention Basins

Detention basins are designed to temporarily store floodwaters during a flood event and reduce nearby flooding. Often detention basins have an outlet that can control the outflow of water. They are designed as either wet or dry detention basins and can act as multipurpose uses such as parks, sporting fields or water bodies. They are only designed to detain water up to a certain sized flood event and if additional land is required to construct new detention basin there may be community impacts.



*Figure 6: The detention basin at Garnett Lehmann Park, Toowoomba. This image was sourced from ABC Southern QLD and was photographed by David Illiffe.*

**How supportive are you of detention basins as a strategy to manage flooding in the North Byron catchment?**

1 – very supportive

2

3

4

5 – strongly oppose

## Dredging

Dredging is the removal of debris and sediment from the bed of a waterway. This temporarily increases flow conveyance in a creek or river and can decrease flood levels. However, it is not a long term solution and regular dredging is required to maintain the performance. Dredging is expensive and can have economic impacts on the community. The dredged material can be contaminated and consideration should be given to the safe disposal of the material.



*Figure 7: Dredging at the mouth of the Coffs Harbour boat ramp. This image was sourced from the Hitachi website.*

While dredging can reduce the impacts of flooding it has the potential to increase bank erosion, affect the natural ecosystem and impact on community waterway activities.

**How supportive are you of dredging as a strategy to manage flooding in the North Byron catchment?**

1 – very supportive

2

3

4

5 – strongly oppose



# North Byron Floodplain Management Study and Plan

## Dams

Dams are designed to store large volumes of water for a long period of time. They are aesthetically pleasing and can offer multipurpose including:

- Water supply
- Recreational activities such as fishing, water sports and camping
- Flood mitigation
- Generation of electricity.



*Figure 8: The Nepean Dam in New South Wales. This image was sourced from WaterNSW.*

While dams can reduce the effects of flooding, they become less effective in large scale floods and can only detain water that has travelled from upstream of the dam. Dams disrupt the natural behaviour of waterways and can impact on the ecosystem and migration of aquatic species. There are considerable associated construction and maintenance costs associated with dams and should additional land be required in the construction, this can impact on local communities.

**How supportive are you of dams as a strategy to manage flooding in the North Byron catchment?**

1 – very supportive

2

3

4

5 – strongly oppose

## Stormwater pipe, street gutter and drain upgrades

Upgrades of current drainage networks and the installation of new pipe networks can decrease localised flooding. They are effective flood mitigation options for small sized flood events and typically do not offer significant flood protection during larger sized flood events. However, drainage networks can disrupt natural water systems and can affect migration of aquatic species and impact the natural behaviour of the floodplain. There are installation and maintenance costs associated and these can be expensive depending on the size of the network.



*Figure 9: This figure shows stormwater flowing into the stormwater drainage network. This image was sourced from the City of Shoreline in Western Australia.*

**How supportive are you of stormwater pipe, street gutter and drain upgrades as a strategy to manage flooding in the North Byron catchment?**

1 – very supportive

2

3

4

5 – strongly oppose



# North Byron Floodplain Management Study and Plan

## Rock wall alterations

Construction of the rock walls at Brunswick Heads began in 1959. Since then, there have been suggestions to consider the removal or alterations to the rock walls at the mouth of Marshall Creek.

We would like to understand the community's opinions on the rock walls at Brunswick Heads.

**Q14. Which of the following options do you support?**

- ☐ Changes to the rock wall at the mouth of Marshall creek.
- ☐ Maintaining the rock walls as they are presently.
- ☐ None
- ☐ Other alterations to the rock walls (please specify)



Figure 10: Aerial imagery of the rock walls at Brunswick Heads. This image was captured from Google Earth on 12 April, 2018.

## Flood Outlets

Past imagery indicates that there once may have been an outlet from Marshall's creek to the ocean through the dune system (Figure 11). Interviews of residents by Bruce Butt in 1988 indicate that this outlet may not have been natural. However this project could investigate the flood mitigation potential of an ocean outlet through the dune system. While outlets may reduce flood levels they have the potential to cause environmental impacts.

**Q15. Would you support the construction and management of flood outlets through the dunes?**

- ☐ Yes
- ☐ No
- ☐ Other (please specify)

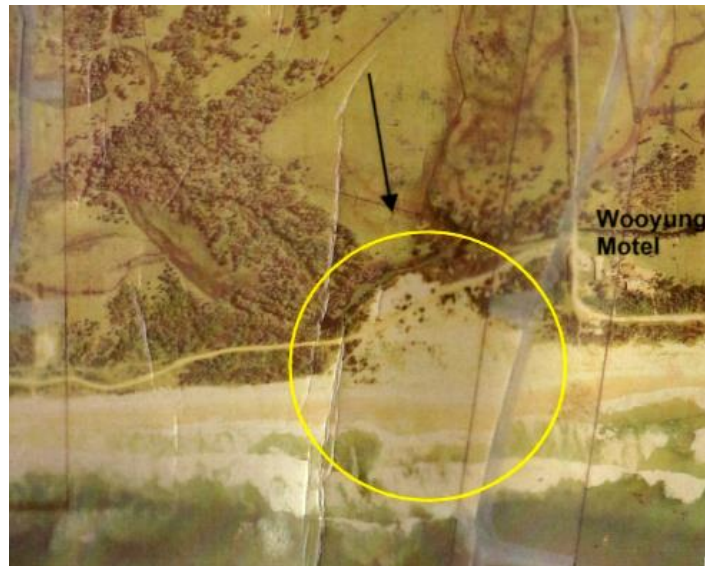


Figure 11: Historic imagery of the closed outlet at Wooyung. The source of this image is unknown, however was provided by Byron Shire Council.

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

## **Before a Flood Event**

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

**Q18. How has your household prepared for flood events?**

- ☐ Appropriate level of insurance
- ☐ I have sourced more information about my flood risk (obtained a Section 149 certificate, contacted council etc.)
- ☐ Savings to cover emergency costs
- ☐ I have prepared an emergency kit
- ☐ I have an emergency plan ready
- ☐ I know my evacuation route
- ☐ I have radio and batteries
- ☐ I have candles and torches ready
- ☐ I have modified my property (e.g. flood proofing or house raising)
- ☐ I keep/can easily move my valuables higher up
- ☐ Other (please specify)

## **During a Flood Event**

**Q19. Who do you trust to provide accurate information during a flood event?**

- ☐ SES
- ☐ Other Emergency services like Police
- ☐ Council
- ☐ Bureau of Meteorology
- ☐ Community groups
- ☐ Social media e.g. Storm chasers
- ☐ Friends and family
- ☐ Neighbours
- ☐ ABC Radio
- ☐ Television
- ☐ Other (please specify)

**Q20. How would you prefer to receive flood warnings?**

- ☐ Emergency SMS
- ☐ TV
- ☐ Radio
- ☐ Social media
- ☐ Land line
- ☐ Email
- ☐ Newspaper
- ☐ Face to face
- ☐ Other (please specify)

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**Q21. When do you think it is most useful to receive flood information? The following options are listed in increasing accuracy of information.**

- ☐ As early as possible (this option provides the most amount of warning time)
- ☐ When there is a chance my suburb may get affected
- ☐ When there is a chance my street may get affected
- ☐ Only when I need to act (this option provides the least amount of warning time)

**Q22. During a flood event, what sort of information do you need?**

- ☐ Road closure information
- ☐ Location of evacuation centres
- ☐ Safe evacuation routes
- ☐ Warning times
- ☐ Flood levels at key locations
- ☐ Expected flood levels at my property
- ☐ Expected flood levels at my workplace
- ☐ Comparison to past floods (e.g. bigger than 2017)
- ☐ Potential school and child care closures
- ☐ Safe refuge location for my pets
- ☐ Location for collecting sandbags
- ☐ Impacts to power and water supplies
- ☐ Other (please specify)

**Q23. When would you evacuate?**

- ☐ You receive an early flood warning via media or social media
- ☐ You receive more than one early flood warnings via media or social media
- ☐ Flood warning specifically name your suburb
- ☐ Flood warnings specifically name your street
- ☐ Your neighbours or friends and family warn you
- ☐ You see others in your neighbourhood evacuating
- ☐ You receive a call from Council/Emergency Services or community groups warning you
- ☐ Council or Emergency Services knock on your door
- ☐ Flood waters start to inundate your property
- ☐ Flood waters start to inundate your home
- ☐ I would never evacuate

**Q24. Why would you never evacuate?**

**Q25. Have you ever received conflicting information during a flood event?**

- ☐ Yes
- ☐ No

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

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

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

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

The following questions are optional and are only to understand where in the catchment your comments relate to. This information will not be shared without your consent and alternatively this survey can be filled in anonymously.

**Could you please provide us with the following details?**

**Name**

**Address**

**Phone Number**

**Email**

**Do you give permission for someone from WMA Water or Byron Shire Council to contact you to discuss some of the information you have provided?**

- ☐ Yes  
☐ No





## Appendix B

## APPENDIX B – SURVEY COMMENTS

<b>Q8: Have you previously been affected by flooding?</b>
<b>Comments from those who answered Other (please specify)</b>
<i>I live in a block of 4 home units on the corner of the Old Pacific Highway and Newberry Parade Bruns. Water backed up in Newberry Parade from the highway up around the corner toward Pandanus Court. It also flooded back yard Here it entered garages and was within 22cm of entering the 2 ground floor units. Something like 20 units from 1 to 11 Newberry Parade were likely to flood if the High Tide expected on 31/3/17 had reached it's peak about midday. I made a submission re possible contributing factors and sought some action re ensuring stormwater drains were clear but have heard nothing. Flood levels were marked advised to the folk doing that survey.</i>
<i>Multiple answers, yard was flooded, access routes were affected, adjoining properties were badly damaged and impacted by flooding (Debbie).</i>
<i>My yard and home were flooded</i>
<i>my yard was flooded, AND I was unable to access my usual travel routes.</i>
<i>Close but no</i>
<i>Cyclone Debbie = extensive flooding. My entire suburban block was covered in floodwater as were the streets. Rapids in North Head Road! It was surreal!</i>
<i>Yard and bottom section of non habitable area of house [garage/laundry/storage] were flooded - by 1 metre in garage after "Debbie" in March 2017</i>
<i>150mm through dwelling</i>
<i>When I lived on Orana Rd, my home was flooded in ?2004/5/6</i>
<i>No direct flooding over more than twenty years, but insurance quotes of \$29,000 per year for flood insurance has caused heart attack and fiscal pain? No flooding, s149 certificate indicates no flood risk, insurance companies are making a killing when the risk is relatively low?</i>
<i>not being able to walk around</i>
<i>I get cut off and cannot get out of my street</i>
<i>water up to front and back fence</i>
<i>The SGB area has been subject to floods for past years surrounding our house</i>
<i>Several of the above: my yard was flooded, my lower floor garage was slightly flooded, I was unable to access my usual travel routes.</i>
<i>Why only one option? My front yard was flooded and I could not access balemo drive. I do have photographic evidence of lack of access on the golf course side of the house.</i>
<i>The creek at the bottom of our back garden rose 1.5 metres and flooded the golf course and part of our back garden. Balemo Drive flooded and the water came up part of our front garden.</i>
<i>We own property in Billinudgel Industrial Estate</i>
<i>Non existent of the above. High and dry</i>
<i>Balemo Drive was flooded in I think, 1987, and access was unavailable for a short while.</i>
<i>1 PORTLA WAY os I'm ON THE CORNER OF pORTLA &amp; bELEMO mY STREET SIDE HAS BEEN FLOODED MANY TIMES BUT NOT THEHOUSE (IIVED HERE 35 YEARS)</i>
<i>House / yard / work routes flooded</i>
<i>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.</i>
<i>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.</i>

<i>Have been cut off going to work</i>
<i>No</i>
<i>I was flooded in and unable to go to work</i>
<i>I was unable to access one of my normal travel routes but I was still able to come and go by another route.</i>
<i>Yard was flooded Garage was flooded My entire street was flooded My workplace was flooded</i>
<i>rural property which was my workplace was flooded. I was unable to access my usual travel routes.</i>
<i>Lived here 40 yrs been affected travel sewage land flood. More flooding occurs now. Too many walls and barriers have restricted flow and siltation.</i>
<i>Flooding occurred in the property/house next door.</i>
<i>In South of Tweed Shire in Darwin - and rising water to garage doors in Bruns</i>
<i>Yard ,house and car flooded</i>
<i>We have lived in this property for over 22 years. This rain event in March 2017 saw the canal level rise the quickest in 22 years. Had the rain continued for another day I have no doubt our home would have been inundated with floodwater.</i>
<i>my yard was flooded my workplace was flooded I was unable to access my usual travel routes my my neighbour saw large trees underneath federation bridge during the march 2017 flood as he was out walking he has no photos</i>
<i>The lane at the rear of our property collects a lot of water and will not drain away. When vehicles drive up and down the lane water is forced into our shed. We previously never had this problem as the water drained down to Park Street. With new developments council has forced the owners when doing the curb and guttering to put it to high therefore causing water to back up halfway along the lane. This water remains in the lane until it slowly soaks away which takes days. The Memorial Hall has just had some work done on the building and a whole lot of sand has been dumped into the gutter causing the water to back up further. This act I feel is very irresponsible of the workers employed to do the work. I do have photos of this flooding problem. We don't need a lot of rain to cause this problem</i>
<i>Road closures in 2017 meant unable to return home. Landslips on property (i.e not flooding) due to extreme weather.</i>
<i>If this question means refers to flooding prior to March 2017 then 'No'. Our house and sheds were flooded in March 2017.</i>
<i>2010(?) 30/June I filmed our boat rescue from South Golden Beach to the Ocean Shores Country club.</i>
<i>Both workplace affected by flooding and entrance to and exit from home affected by floods</i>
<i>Car</i>
<i>Also our storage shed that had work materials that we rented at Billinudgel was flooded. No one advised us</i>
<i>You should have made this open for multiple answers. My yard, shed and garage was flooded from Cyclone Debbie. I was unable to access my usual travel routes, as Mullumbimby was an island for three days. My workplace was also flooded. AND I lost my car to the flood too, so I wouldn't have been able to get anywhere anyhow!</i>
<i>Access often cut off during floods over Lacks Creek at Chinamans Hill Road,</i>
<i>My yard was flooded, my business was flooded and I was unable to access travel routes at all</i>
<i>ALL OF THE ABOVE.</i>
<i>Yes yard and up to top step of my house and shed was flooded</i>
<i>Causeway floods if I piss in due to it being badly maintained</i>
<i>I work at council in Mullum.</i>
<i>My yard was a lake, my garage had nearly a metre of water through it, I could not get out to go to work.</i>

<i>I am an emergency services worker that has extensive experience with flooding and flood rescues in the Northern part of Byron Shire</i>
<i>My access to leave my property was flooded.</i>
<i>No, not until the March 2017 flood.</i>
<i>Power Outage, Car Written off</i>
<i>Riverside Creek</i>
<i>Re. Q8 - In 2017 my garage laundry was affected because water backed up from the town drainage and came up through the drain in the laundry.</i>
<i>at old address, (address has been redacted) 1974 1978 1987 2006</i>

<b>Q12: From the list below choose three outcomes most important to you when considering flood management measures.</b>
<b>Comments from those who answered other:</b>
<i>free flow/escape of water in reserve across the road to the north</i>
<i>Discourages investment below PMF flood levels.</i>
<i>Prevention rather than cure</i>
<i>Focus on reopening natural water outlets to the ocean in the most direct way. South golden used to have openings, which would release floodwaters</i>
<i>this is a silly question and i only answered it cos i have to to go on</i>
<i>removal of man made structures such as levees in Sth Golden beach that force water to flow through New Brighton and not escape via natural routes to the ocean</i>
<i>Effective at mitigating flood waters entering properties</i>
<i>Ocean outlet</i>
<i>Make sure there are is more development on flood prone land</i>
<i>flood outlets to be opened</i>
<i>Make sure the pumps are WORKING....</i>
<i>Have the State Government acknowledge that South Golden Beach and villages are part of the Byron Shire and were affected by the March Flood and any future flood so you can claim financial relief</i>
<i>Prepare for retreat, natural sea level rise + storm surge</i>
<i>prevent floods by opening up creeck outlets to sea</i>
<i>Clean out drains</i>
<i>The floods that we have in Balemo Drive are subject to tidal rise and fall.</i>
<i>That the flood at new Brighton/south golden beach are left open and maintained</i>
<b>NOT SURE</b>
<i>clear storm water inlets of debris regularly in fine water to prevent blockages causing flood water over roads creating hazardous situations</i>
<i>Re-establishes natural drainage of waterways (eg sand dredging)</i>
<i>Shortens cleanup time and supports those most affected</i>
<i>dredge Marshall's creek and the mouth of the Brunswick river. Remove the north rock wall and reopen the natural outflows to the sea near South Golden Beach</i>
<i>More dtaff are put on overtime and oncall to make sure pumps are working as they should be</i>
<i>Does not cause my property value to drop</i>
<i>open those blocked waterways that we have 40 years ago</i>
<i>Lower the flood levels by reintroducing a controlled ocean outfall to make up for the 2 that were blocked by man and remove eastern part of Readings wall to restore original ou tflow</i>



Open outlet north of South Golden Beach
removal of man made blockages that prevent flood waters from escaping to the ocean
Replace blocked easements with underground pipes
Prevent the flood .Be proactive....there is now a lot of concrete / structures where once water could be absorbed or escape
Measure I would suggest needs to happen is 1) Removal of training wall at Brunswick Heads 2) Dredging Marshalls Creek and Capricornia Canal 3) Reopen ocean outlets that were closed by Byron Shire Council in the 1980's.
Flood management must include no development in flood prone areas
firstly have depth indicators on all crossings to reduce the death toll stop building up the land for example council chambers and car park displacing water from one place therefor affecting another do not create housing in flood areas because it is not just houses that are affected cars are written of and for a lot of people unable to afford insurance it mean they lose there car and mode of transport to work or school causing ongoing hardship .
Council to rectify the cause of this flooding which they have caused to happen
To acknowledge information showing clogged drains, creeks, rivers
Take proactive steps to reopen floodplain access to sea as it was prior to housing development especially as it applies to the flood plain immediately north
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
Clear the canals. Remove break wall at Brunswick so that water can recede. Restore original outflow of man made canals Outflo
this sounds a bit 'council', not really clear questions for householders
Better maintenance of drains
DECREASES THE RISK OF FLOODING
New development not impacting existing dwellings
If the river had the sand removed to where it was 30+ years ago there would be room for the flood water to escape quicker into the creeks that supply the Brunswick River
Drains must be clear at all times
Low Cost Housing' proposed for land next to community gardens in Mullumbimby should not even be considered being on a flood plain and can only add to potential flooding
Do not build on the floodplain, remove obstructions i.e. rail corridor additional pipe work King Creek + high school bridge
Clear all the outlets
Stop council approved fill on the floodplain. Stop illegal fill on the floodplain.
Calculated and sensible planning on areas ear marked for residential zoning (by council) where flooding has been significant over previous years!!
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.
Maintain drains, gutters etc so flood water can get away quicker. Our roads flood quicker due to blockages of drains etc.
1) Enough food in house for 3 days. 2) Warning of high floods due along road signs. 3) Candles + torches ready for electricity cuts.

1) Remove rock wall at Readings Bay.
2) Replace build with bridge at Kallaroo Cct.
3) Open 4 creeks + allow flood waters to escape into ocean via dunes.
Byron Council be required by law to clean out local drainage canals by removing debris, silt and weeds on a regular basis. Oceans Shores Golf Club be required by law to follow similar measures including opening the flood gates to release excess water from main lake in event of flood threat.
Remove rock walls
I believe all water ways in and around Mullumbimby need intense clearing and follow up care taken as well as drain clearance and possibly larger pipes laid. Infill of blocks should be not allowed, climate change is very evident and one would assume having a green council this would be of prime concern.
Dredge Brunswick River
Permanent solutions and maintenance/instalment of storm water pipes under raised train tracks at the Nth end - The water level flood was the height of the train tracks nth of woolies and west of the train line near + towards the old industrial estate. The train line is still over grown + blocking flow through under train line at Nth Station St. Please clear. Maintenance of track storm water pipes if they have them. Clear the railway track, it needs more storm drains as the properties flooded to the height of the railway tracks in Mullumbimby Station St + Train St.

<b>Rock wall alterations</b>
<b>Q14: Which of the following options do you support?</b>
<b>Comments from those who answered Other alterations to the rock walls (please specify):</b>
Sorry I am not an engineer.
Remove the wall impeding the flow of water just west of Harry's Hill so that the direction of the bulk of the flow from Marshalls Creek and the flood plain up from Billinudgel and The Pocket etc is not forced to the exit opposite the Boat Harbour thus joining the river at the artificial choke point there and impeding the full free flow of the Brunswick River barely 700m from its mouth. Remove the curved wall opposite the Boat Harbour to close off that Marshalls Creek junction with the river so that, together with the above changes, all that creeks flow joins the river further downstream where the level of the township is higher. This should allow water build from the reserve south of the old highway and north of Newberry Parade to more easily flow down existing drainage to join the river and not so easily back up to start flooding the most low lying part of the town.
reducing or removing rock walls in general.
Any alterations to improve the flow from upstream should be considered as the man made subject is probably easier to manipulate than other ideas
Remove all rock walls to allow water to flow directly to ocean
I don't know enough to have an opinion
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
Need more information here to make a proper assessment
Seek professional hydrological advice and implement all recommendations to maintain flood protections and at the same time habitat protection for native flora and fauna.
Whatever is best in reducing flood levels.
Remove them.
If the rock walls are to be maintained as they are now then it is common sense that dredging needs to occur in the river mouth on a regular basis

<i>Removal of walls at mouth of Marshall Creek</i>
<i>Remove rock walls!!</i>
<i>Do we know that any alterations to the wall will affect flooding and where this will occur</i>
<i>Unsure without further information on what is planned and what the impact would be.</i>
<i>Remove from northern side of Bruns River into Marshall's creek to increase water flow and reduce mangrove growth which is quickly closing the width of the creek &amp; allowing sediment build up and large sand bars which decreases the amount of water able to be held within the creek banks and adds to the flooding problem.</i>
<i>Remove rock walls to allow water to access river rather than creating a dam affect</i>
<i>It appears the rock walls have caused saltation towards the Mouth of the catchment. They may need re alignment and dredging may be necessary</i>
<i>remove them completely</i>
<i>I'm unsure what the result would be for either scenario so don't know how to answer this question</i>
<i>South main wall needs to be extended to prevent sanding up of the Brunswick bar and allow flood waters out .</i>
<i>Would need expert input - how would this affect beach, boat harbour etc?</i>
<i>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.</i>
<i>Only alter the rock walls if it is proven to improve flooding without causing major affects to the river system.</i>
<i>The man made rock wall at the mouth of Marshalls Creek should be removed as soon as possible. It is the main reasons sand is building up preventing property water flow in and out of Marshalls Creek,</i>
<i>Totally remove the walls which are causing sand to build up behind the walls as identified in Professor Warners Report</i>
<i>changes to rock wall need to a allow water to flow naturally - i think this involves break/s in the wall</i>
<i>Having lived in the area for 39 years I have witnessed first-hand the siltation of the river system at Brunswick Heads. The rock walls at Brunswick Heads need to be completely removed in order to facilitate flow that is strong enough to pull silt and debris out to sea. This is a natural occurrence which took place during flood times for hundreds of years. Removing the walls will also make a significant difference to the silting that is occurring up stream at New Brighton. There was a time when prawn trawlers travelled up to the site of the New Brighton Store to take part in the "Blessing of the Fleet" ceremony at Easter time. The river was naturally deep in this area until the rock walls caused major siltation problems between Brunswick Heads and Nth Ocean Shores.</i>
<i>Remove the rock wall at the mouth of Marshalls Creek.</i>
<i>I do not have enough information to answer this question</i>
<i>i said none because i don't understand the impliations of flooding caused by rock walls</i>
<i>Engineers input as to best outcome</i>
<i>Removal of the rock wall</i>
<i>Remove Readings Bay inner rock wall, remove large volume of the rock wall on the east side and west side of the main rock wall that was built across the whole Marshalls Creek (North Arm Brunswick River) and remove the spur wall which together with the rock wall built across the whole Marshalls Creek mouth into the Brunswick River that stops the flow from the North Arm.</i>
<i>No idea</i>
<i>Unsure (but there wasn't an option listed to be unsure)</i>
<i>I don't even understand what this is</i>
<i>This is a stupid question! Do you support "changes"? What changes?! Be specific so that people can respond accordingly...</i>

<i>if removing the Marshall's Creek wall doesn't impact the channel or the marine nursery then I would remove it.</i>
<i>This decision should be made by suitably qualified personnel.</i>
<i>Remove</i>
<i>?</i>
<i>I am not qualified to state</i>
<i>Gradual or staged removal to gauge impact and easily reverse removal if this process makes things worse. More research!</i>
<i>If the rock wall at the mouth of the Marshall Creek is not causing flooding leave it be.</i>
<i>Other alterations to the rock walls</i>
<i>Need more information regarding impacts + benefits</i>
<i>Removal of the North/South Rock wall to open channel to Brunswick River beside North Head</i>
<i>The rock walls at Readings Bay Ocean shores (Not Brunswick Heads) have to be removed</i>
<i>Remove Marshall Creek rock wall</i>
<i>Remove the rock wall and redesign + build the southern bar break wall so that sand flows on its natural course north+ not into the river</i>
<i>Remove them so water can flow out to recede!?</i>
<i>My Question: Why was this google dark photo used when a perfect photo was in the BSC 29.2.16 flood study?</i>
<i>I don't live at Brunswick Heads so know nothing about their problems</i>
<i>Insufficient information! I live in Mullum</i>
<i>Buy one of the frigate ships (there are 3 for sale) and sink it off the coast line (as in Waikiki Beach, Hawaii) The sand will not be washed away.</i>
<i>Don't know enough about the impact of any change to rock wall</i>
<i>Walls are not the problem. 1934 and 1953 floods were just as large as the floods after the walls were built. The only difference was the river was deeper and the dunes were lower along the shore at New Brighton and Golden Beach.</i>

<b>Q15: Would you support the construction and management of flood outlets through the dunes?</b>
<b>Comments from those who said Other (please specify):</b>
<i>See comments earlier re Marshalls Creek junction with the river.</i>
<i>I dont know enough to comment</i>
<i>Yes, only on detail being satisfactory</i>
<i>This would cause further damage to fragile dunes.</i>
<i>Send the water to farmers or put in it bigger tanks and filter it for the years to come when in water droughts. last year people could not get water it was frustrating!!!.</i>
<i>Yes, with minimal impact to the wildlife.....if this is a definite fix to our problem</i>
<i>If this type of construction helps with flood levels then I would support it.</i>
<i>If this outlet was natural, then yes. I believe that the core problem with flooding in this area is due to man-made structures &amp; developments that interfere with the natural flow of systems, including during floods.</i>
<i>the design details are needed to understand what if any works are required</i>
<i>Tentatively supportive if an impact assessment suggest environmental impacts would be manageable for this and other areas of the nature reserve.</i>
<i>Yes most definately. I understand that there was also a "breakthrough point" at New Brighton and also further up at North Ocean Shores in front of the now Billinudgel Nature Reserve. The original plans for</i>



<i>North/South Golden Beach subdivision was for the canal system to flow through a marina and out to the sea. The subdivision was commenced on that basis but not completed and the canal system as it currently exists is not appropriate.</i>
<i>Not clear enough photo didn't come through</i>
<i>it depends</i>
<i>not sufficiently informed to comment</i>
<i>Not sure what would happen to sand.</i>
<i>If proven to be something that would improve flooding.</i>
<i>Don't know enough</i>
<i>I would like to see the old ocean outlets that Council closed to be reopened.</i>
<i>Open all original outlets including Wooyung, North Ocean Shores ordered closed by Council in 1976, Golden Beach where the Council has a community Hall. Put the necessary Bridge across Capricornia Canal instead of the illegal Bund. Why did you include Bruce Butt's comment when there is plenty of evidence available that proves he did not know what he was alleging?. See Brunswick Valley Flood History by Jim Mangleson who is the owner of the photograph which you claim is from a source unknown taken from his Flood History internet post.</i>
<i>I do not have enough information onthis!</i>
<i>this sounds like a good idea but have to say i have no real knowledge of unexpected results ..</i>
<i>TBD</i>
<i>Unsure</i>
<i>More research needed to determine efficiency</i>
<i>Not educated enough at this time but will talk to colleagues at SES.</i>
<i>Support only if in flood times in conjunction with a large storm surge from the ocean will not increase flood levels</i>
<i>So long as in a flood event allied with a storm surge on the beach this will not result in higher flood levels.</i>
<i>More research!</i>
<i>Yes' if this reduces water to the north Ocean Shores and the New Brighton low area.</i>
<i>Creek moths/river systems to be cleared there by making better outlets and enhancing natural outlets</i>
<i>Reopen all original outlets</i>
<i>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.</i>
<i>Have to open these outlets to stop flooding</i>
<i>Maybe - needs significant study and gathering of as much historical evidence as possible</i>
<i>I don't know anything about Marshalls Creek</i>
<i>See above - I live in Mullum</i>
<i>Enviro impact??</i>
<i>The dunes were not as high as they are now and the river was much deeper (dredging).</i>
<i>Not Sure</i>
<i>Unsure</i>

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

*See above. It would seem that the beach retreat west south of New Brighton and joining up with the creek north of Harry's Hill will occur naturally as it has almost done with cyclonic activity within the last 50 years. This would create a creek flow/mouth somewhat like that of Belongil Creek to ease flood flows from Pocket etc floodplain.*

<i>all structural efforts are fiddling at the edges / shifting the deck chairs. There should be none. Insated, low lying areas (below PMF levels) need a moratorium on investment, coupled with encouragement to occupy higher ground.</i>
<i>The council must throughout all planning phases keep the community abreast of all changes/mitigations in consideration of flood management.</i>
<i>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</i>
<i>Removal ( or at least substantially modifying, to allow greater water flow)of bund at Kallaroo Circuit across Yelgun Creek/Capricornia canal would reduce flooding in cane areas north, obviate need for dune outlet at Wooyung, and allow water and early rising floodwater to get from Marshals Crk to sea earlier.</i>
<i>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.</i>
<i>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.</i>
<i>I really don't think you've though about the impact on local flora and fauna also the fact that there are a lot of local aboriginal heritage sites in that area. The aboriginal community would not support this.</i>
<i>Build aquifers, underground storage</i>
<i>Need more information thanks</i>
<i>Expansion of basin and retention structures should not increase cane toads or mosquito breeding habitat. Reliance upon pumped systems such as SGB only as a last resort. Need clearly accessible local maps to indicate flooding risks and evacuation routes / centre locations.</i>
<i>You can fight nature, but no amount of money will "proof" a community. Plan, plan, plan for a managed retreat.</i>
<i>The most effective way to disperse floodwater is to get into the sea as quick as possible. Such features could knock the edge of the peak flood levels, such as to protect houses.</i>
<i>I would have concerns if it allowed brackish water to move further inland</i>
<i>start by improving drainage, if needed, to the residential sectors of the area</i>
<i>Old locals will tell you that prior to the building of the breakwaters Marshal Creek was a lot deeper thru New Brighton than it is today and therefore capable of carrying much more water. It is said that the building of the breakwater at Bruns slowed down the system and leading to silting. Opening the other Marshal Ck chanell at Wooyung and the planned dredging of the river entrance may be a good consideration</i>
<i>I am not qualified to answer this question - I don't have the knowledge to suggest a location</i>
<i>Locate the outlet in the most geographically favourable location (where natural watercourse runs closest to dunal systems N of Sth Golden Beach.</i>
<i>This one is a no brainer. Reopening this outlet would reduce upstream pressure on the entire Marshall Creek system.</i>
<i>Just protect the ratepayers from flood events.It is the councils responsibility to think residents first. If council rates are charged for a property the council should protect that property, there can be no arguments to this.</i>
<i>We are in Eloura Court. Whilst the water rises in the back garden abutting the canal we are not ourselves threatened. Because of this we do not have the same worries that many residents do and therefor our views are not based on fear of floods.</i>
<i>No</i>
<i>Provided that Flood Engineers support the concept</i>

remove the rockwalls at the brunswick river mouth and allow the sand to return. then allow water to the ocean via old natural exit points eg Sth Golden Beach
South main wall comment
I thought there could also be a over flow outlet through the dunes closer to South Golden beach, just north of Fern Beach Estate that diverts excess flood water directly to the ocean. I have an option that the lakes north of Hardy Avenue could be diverted to such outlet during floods
how sincere is your survey ? long time ago after the mother's day flood there was a referendum to dredge those water canals and the community unanimously in favor of the dredging but the shire council turn a BLIND EYE
There is a simple strong rectangular concrete /1 way letterbox style design on the save Marshalls creek website that would be simple to install and low maintenance allowing flood water out but no saltwater in. Would make a huge difference to floodlevels
No new housing estates to the north of Mullumbimby as it is already a delicate flood area when any rain comes.
At last council is asking the Ocean Shores and northern communities practical questions about mitigation of their flood disasters. It is a man made artifical situation. There is a levy in the form of a high road construction built in the 1950's by the sand miners along the coast from South Golden Beach to the Wooyung right hand turn on the coast road. Wooyung creek was blocked and still is. It back fills all the low lying areas of Ocean Shores, New Brighton, Billinudgel etc with flood waters. A small little box like this is ridiculous to explain the whole situation. Please arrange a meeting with the Ocean Shores Community Association to receive further information. The maps are from our website <a href="http://www.brunswickvalley.com.au/flood-history/current_updates.htm">www.brunswickvalley.com.au/flood-history/current_updates.htm</a> . Also much more information to assist this survey.
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
New Brighton is a small community that is flooded because of poor management of waters from other areas Too much infrastructure where once there was land so water absorption is limited Water management had not happened since I have lived here (over23yrs) but much development has happened . We as a group have been calling for action for many years and the action is based on science and quite simple Restore water flows that have been blocked and manage the water flows. Control the amount of non water absorbing construction. Take away or better manage the water blockages . Stop water creeks and rivers from silting up . Remove structures( or parts of structures) that cause sand to be removed or force sand to the north of our shire Don't do things that are good for a part of the community that negatively affect other parts of the community . Control sewerage ( amount of people ) so when we have a major wet event , sewerage doesn't spill out into the waterways Control numbers of people / buildings in our community so that we can cope with major weather events and the effects of them
In our time living next to the Capricornia Canal we have noticed a massive build up of sand. We used to swim in the canal but would not contemplate doing so now as the water quality is poor due to lack of water flow caused by siltation. Dredging needs to be undertaken ASAP.
The removal of all of these impediments proved conclusively that flood levels are reduced significantly. See Brunswick Valley Flood History
Outlet to the sea in South Golden beach area. Suggested outlet south of Redgate Road.
blockages of marshall's creek and natural outlets need to be restored and the creek dredged to allow water to flow - everything else isa fiddling whilst Rome burns
I'd like to see all the water from the north (including North Byron Parklands and Wooyung) allowed to flow out to sea rather than flowing south to add to the flooding problems already occurring in North Ocean Shores, South Golden Beach and New Brighton. During the June 30 Flood in 2005, water from the north

<i>was gushing over a metre into the air from the gutters on the side of the road in Kallaroo Circuit. The shear volume of water coming from the north was too immense for local infrastructure to cope with.</i>
<i>Flood outlets at North Ocean Shores, New Brighton and Ocean Shores.</i>
<i>This survey forces comments/answers to get to the next question. The result is that answers may not be based on real knowledge or understanding thus deminishing the value of this survey</i>
<i>Engineers input as to best result for all residents</i>
<i>I would like someone to come and inspect the problem we have in Fingal Lane with the flooding. This has been brought to councils attention numerous times.</i>
<i>As per the original outlet plans for the subdivision of planning for Ocean Shores and North Ocean Shores and stated this was to allow for building construction and stated by Deputy Premier and Minister for Public Works and Ports, L.J.Ferguson in a letter 8th December 1982 to Mr C.J.Shevellar, Shire Clerk, Byron Shire Council Byron Bay NSW.</i>
<i>The council engineer appear in the past to conveniently rely on some dubious computer modeling that suggests this would have little impact for major flood events. This is questionable. As natural outlets to sea from the were closed during the sand mining operations of the 50s/60s surely this must be the obvious and cheapest avenue to mitigate major flooding to the south. It might not make any difference to the water from Marshall's creek but would certainly affect a reduction fro the flood plain to the north. The placement/location of a relief channel is obvious if you take the time to look.</i>
<i>I strongly suggest that Coucil staff study the possibility of extra alternative dirt roads from the ocean to the highway. Either for flood control or possible tsunami. People are strained as it is. Not safe at all.</i>
<i>Love that upstream vegetation/creek management has so many other community benefits!</i>
<i>A big picture approach is needed: from upstream to sea. Drains are blocked with debris. Marshall's Creek has had significant silting. Previous storm drains have been closed. The natural water course of water flowing out through Marshall's Creek to the Brunswick River and out to sea has been blocked by readings wall. So not one mitigation approach is necessary. A number of different approaches are needed.</i>
<i>Clean gutters more, particularly in areas where the roads constantly crumble and end up in the gutters and drains, blocking them. THAT was the real reason that some areas of Mullum flooded, blocked and neglected drains.</i>
<i>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.</i>
<i>More information is required - as per most of this survey - before responses can be accurate. This survey has really obvious bias..</i>
<i>Given that many natural outlets were blocked or replaced with culverts that were not maintained, any new outlets would be beneficial.</i>
<i>The flooding in New Brighton is caused by overflow from Marshalls Creek that breaks through its banks to the west of the village, which used to be discharged into the swamp that is now South Golden Beach, or through natural ocean outfalls between New Brighton and South Golden Beach. I have 3D models of the area from 1947 and later which show these very clearly. These have been closed by dune works and the levee surrounding SGB. The water accumulates in this area now during flooding, and then flows back south over the New Brighton oval to join the already full channel at New Brighton shop. This water then overtops the river below and causes the flooding through the village. If this water was discharged to the ocean, flooding in New Brighton would be minimal. - 1947: <a href="https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1947a/App/index.html">https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1947a/App/index.html</a> 1971: <a href="https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1971/App/index.html">https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1971/App/index.html</a> - 1987: <a href="https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1987/App/index.html">https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1987/App/index.html</a> - 1991: <a href="https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1991/App/index.html">https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1991/App/index.html</a> - 2004: <a href="https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/2004/App/index.html">https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/2004/App/index.html</a> These were produced by the Spatial Services team as a proof of concept using Bentley systems it seems, and (name redacted)</i>

<i>(below) would be the person to talk to for further information. I suspect we are talking about the same technology. If so, there are already some great models been done for our area. This is amazing technology to visualise what things looked like 60 years ago and how they have changed. Note that because the models are modelled from aerial imagery, dense vegetation will appear as a high point, so you get the false visual of creeks raised from the surrounding floodplain where riparian vegetation is dense. Basic instructions: 1. Double click on a spot to center the model 2. Use the scroll wheel to tilt the model 3. Click and drag to spin the model.</i>
<i>Stop allowing building in flood prone areas. Stop effecting transfers of property in flood prone areas. Buy back flood prone properties.</i>
<i>As per the previous flood management plan. Automation of SGB pump and alternative power source for pump if a blackout</i>
<i>Pull more of the disused rail line (which acts as a levee) down at the Marshall Creek junction</i>
<i>Maintaining of all drainage systems in streets</i>
<i>More drainage at bridge sites, Removal of rail corridor</i>
<i>Landscape management - When I first moved into the town of Mullumbimby (from Koonyum Range Rd) all the gullies at the end of Ann St were cleaned of all vegetation. Stormwater pipe, street gutter and drain upgrades - Rain got away much quicker. As stated earlier under water ? drains were cleared about 12 years ago?</i>
<i>Certain options may be suitable for different parts of the shire - therefore a combination should be considered accordingly</i>
<i>No</i>
<i>Stop passing DA's that allow fill on the floodplain prosecute and remove illegal fill on the floodplain</i>
<i>No</i>
<i>Dredging Marshalls Creek - water is so low + silted up.</i>
<i>Please consider drought cycle too. Will a dam help us in our El-nino La nina weather and climate events.</i>
<i>Permanent Levees - Don't think this will work look at Lismore</i>
<i>N/A</i>
<i>Main Arm + Upper Main Arm always get flooded. Too much water going down creeks.</i>
<i>Bend outlets at South Golden Beach be enlarged and lowered so water can enter earlier and not be so tidal.</i>
<i>Check why council accepted liability for closing in 1976</i>
<i>Reinstate creek outlets to ocean at Wooyung, Yelgun and Billinudgel Creeks and Capricornia Canal</i>
<i>Council blocked these outlets and they must be opened again!</i>
<i>No</i>
<i>Reinstall the old flood outlets. I was a resident when it was open.</i>
<i>Re-open flood outlets at Wooyung North of Golden Beach. Remove Kallaroo Bund that blocks flood waters.</i>
<i>No</i>
<i>Don't do structure, Do water management</i>
<i>Dredge the river and lower the dunes at Marshall Creek for God sake.</i>
<i>Not sure how a levee system would help areas in Mullumbimby - could cause more problems downstream</i>

<b>Q17: If you were to check your flood risk ahead of the wet season, where would you look?</b>
<i>I would look at the BOM and Higgins storm chasing for an update on the future weather events.</i>

<i>I would ask for (i) better flood warning and (ii) better floodway maintenance, especially clearing of debris that is often locked at the entrances to road culverts for years after previous floods.</i>
<i>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>
<i>I don't know</i>
<i>I would look to the easement of the Water from the pond in water Lilly park into ocean shores golf club also the addition of bridges and elements of the water lily playscape which have recently been installed and there potential to have a negative effect on the water dissipating from my property</i>
<i>Bom weather, common sense</i>
<i>No idea</i>
<i>In the rain gauge!</i>
<i>Byron Council website, SES &amp; BOM</i>
<i>radio information state of drainage in the area council information</i>
<i>Bom</i>
<i>Our flood risk is very low because we live on top of the hill (next door Country Club, Ocean Shores)</i>
<i>BOM – radar</i>
<i>No Idea</i>
<i>www.byron.nsw.gov.au</i>
<i>should be emailed or booklets sent out if required but info should be displayed months ahead of time local shopping malls radio &amp; SMS. Newspapers, local and other.</i>
<i>Council records</i>
<i>Have no idea. Will google search it.</i>
<i>Creeks out the back of our property</i>
<i>Web, &amp; planning scheme overlays.</i>
<i>We are at flood risk in any major rain event. I look to Council to remove manmade blockages to the flow of Marshall's Creek and to provide egress points for floodwater into the sea.</i>
<i>I don't know</i>
<i>Online at the bom website</i>
<i>Effectiveness of local street drainage</i>
<i>newspaper and on line</i>
<i>In our backyard - once the water comes to a certain level and we see heavy rain on the radar then we know we will flood. Water comes up very quickly once it gets to a certain level.</i>
<i>Weather website</i>
<i>Mobile phone</i>
<i>Drainage channels near property - are they full or not, blocked or not, how high is the canal at SGB, how high is Marshall Creek.</i>
<i>Met Bureau</i>
<i>Check drains and pipes for blockages.</i>
<i>Media coverage.</i>
<i>BOM records</i>
<i>Council website</i>
<i>BOM</i>
<i>Position of house</i>
<i>Initially check the BOM website. If heavy weather indicated we would need to cross the road from our property and check the Council drains &amp; flap valves on the Redgate Road Bund as they are not regularly maintained and become more of a problem allowing water from the flood plain on the reserve to flow onto Redgate Road. This is further impacted by the fact that the owner of (address redacted) is bringing fill</i>



<i>onto his property to reduce flooding on his premises which only moves the water away from its natural path.</i>
<i>At the residents that live on lower land than us and hope that the council does all in its power to ensure flood gates are opened.eg. Redgate road, what a cock up!</i>
<i>BOM website</i>
<i>Don't know</i>
<i>BOM</i>
<i>No idea</i>
<i>A dedicated website</i>
<i>the BOM, news sources</i>
<i>SES website, BOM website</i>
<i>Stormwater pipes aren't blocked</i>
<i>Wooyung to North Ocean Shores</i>
<i>Weather zone</i>
<i>Bsc website</i>
<i>Can only rely on weather forecast .</i>
<i>the sky, BOM website</i>
<i>Listen to the radio and TV</i>
<i>No idea</i>
<i>I have live in the area for 45 years plus so I have a little bit of local knowlage</i>
<i>On council website</i>
<i>ABS website</i>
<i>Yes</i>
<i>Byron Council</i>
<i>The Bureau of Meteorology website</i>
<i>Unsure</i>
<i>Council website</i>
<i>silly question</i>
<i>The bom</i>
<i>B.O.M.</i>
<i>I can only check my guttering for leaves, I keep my property maintained and hope the heavens don't open right up. Gutters and creeks are not clear and nothings ng seems to be to cope to clear the water, specially around east mullum town area.</i>
<i>a flood risk website</i>
<i>My adjoining golf course</i>
<i>BSC website</i>
<i>Council Records</i>
<i>Shire flood zones. BOM</i>
<i>Byron Council website</i>
<i>?</i>
<i>Local community page on Facebook and the Facebook SES page</i>
<i>BOM River Heights</i>
<i>Long term BOM predictions However, east coast lows don't give much warning !</i>
<i>SES website</i>
<i>At Councils previous liability for not carrying out the warnings for them causing the floods in the past and their reluctance to stop the floods. See B?V Flood History</i>
<i>appropriate facebook pages,</i>

<i>Internet flooding maps and BOM site.</i>
<i>Council, BoM, SES</i>
<i>As a result of my experience of the flood March 2017 I'm unsure where to get good advice. SES and the BOM had no information just a few hours before the flood occurred.</i>
<i>securing bins as they block the drains and get swept away have the ability to put my car up on blocks I lost money and my car in the floods this affected my ability to work causing stress and hardship.</i>
<i>we have no idea as to the best location to check to see if we are at risk of flooding</i>
<i>Bureau of Meteorology</i>
<i>Having lived at New Brighton 2yrs (name redacted) (who owned the shop at the time) near their house on the hill. Then to the (address redacted) (as we knew it as) for 5years. Moved to Billinudgel farm house owned by (name redacted) for 4years, then built our home on blocks which we bought, attached to their farm, so have lived here at Billinudgel 45years. I take notice of the rain, how many days raining, whether the grounds/valley have already been saturated from rains before a cyclone, western storm, a storm cell that can develop here. Prepare as we all did, stocking up on food, batteries, collecting children from school early, cleaning our drains on our hill, gutters cleaned before hand, listen to all the radio reports, TV reports, keep checking the height of the water in the creeks and drains before flowing over Brunswick Street into Billinudgel and if the floodwater just went around the corner on to Wilfred Street, kept watch on depth at the school, now Billi Lids. Solid shores, good raincoats but especially the drains - either in our back yard and down the hill. Insurance yes.</i>
<i>SES info</i>
<i>Bureau of meteorology</i>
<i>Ask older neighbours</i>
<i>The weather information.</i>
<i>On the fridge</i>
<i>Online</i>
<i>Don't know</i>
<i>Council flood map and area risk</i>
<i>Unclear question</i>
<i>exactly... where do we look?</i>
<i>Bom</i>
<i>BOM site</i>
<i>it is in the lap of the gods, but Mullumbimby particularly is a flood zone....so building anywhere in mullumbimby is risky unless on a hillside. If the council build more houses on the flat land, it will increase the flood damage next time the town goes under because the flood water will have less virgin ground to seep in to. The town does go under and will go under. I cannot get flood insurance at our place on Jubilee ave unless we pay \$700 a month. I would imagine that flood insurance would not be an option if council do the sportsfield development too.</i>
<i>Don't know where to look</i>
<i>It's guaranteed to flood so I wouldn't bother checking pre season but keep up to date on the ses and bom sites throughout the season if I can see it's raining a lot outside!!</i>
<i>Soil saturation level</i>
<i>Not sure</i>
<i>BOM</i>
<i>Our flood risk is reasonably low at the moment - the March flood combination of cyclonic conditions and huge tides is rare. We always check the Bureau of Meteorology website for flood warnings, but we look to Byron Shire Council to NOT INCREASE the flood risk to existing properties! Short-sighted development on the flood plain will have major and terrifying consequences for hundreds of existing homeowners on</i>

<i>the flat in Mullumbimby. WE SHOULD NOT HAVE TO PAY EXTRA INSURANCE OR PAY FOR MODIFICATIONS TO COVER YOUR DEVELOPMENT PLANS! Our home is brick, it cannot be raised.</i>
<i>Bom, Higgins Storm Chasers, North Coast Storm Chasers</i>
<i>BOM and know floor levels relative to 1 in 100 flood event.</i>
<i>Local knowledge. Development changes the path of flood much as i witnessed this on a neighbouring property that recently constructed a large dam. This caused the worst flooding to the property that i have seen in the past 40 years</i>
<i>Flood insur too expensive. If Marshalls Ck floods, it flows onto our property at New Brighton. Hence, all drainage systems outside our property should be working efficiently. Cyclone Debbie created bigger flooding on our property and it stayed on the property longer, indicating the flow off was not working as it should have. We could only think that drains to the river/creek were blocked.</i>
<i>SES</i>
<i>At risk</i>
<i>Don't know</i>
<i>Blocked drains, timber in creeks</i>
<i>When is flood season???</i>
<i>When is the 'wet season' these days? No idea how to check flood risk.</i>
<i>Don't know</i>
<i>To SES</i>
<i>Do not know</i>
<i>Not sure</i>
<i>Newspaper</i>
<i>Read paper, local knowledge + urgent emails sent</i>
<i>Bureau Meteorology, Manley Hydraulic lab, ABC TV online, ABC radio, Echo Newspaper.</i>
<i>Drains</i>
<i>Always ensure own property gutters are clear.</i>
<i>1) Papers to see Tides.</i>
<i>2) Listen to Radio.</i>
<i>3) Television.</i>
<i>Website</i>
<i>TV news + weather</i>
<i>SES NSW site, Byron Shire Council website</i>
<i>My drains + gutters. Tide charts</i>
<i>Not on council information</i>
<i>iPad</i>
<i>BoM Lone range forecasts and previous records</i>
<i>Website</i>
<i>Don't know, SES?</i>
<i>Websites</i>
<i>Weather sites on internet</i>
<i>Adjacent drainage canals and easement to see if they are clean and clear. Main Lake at Ocean Shores Golf Club to see if it is full.</i>
<i>My back yard</i>
<i>BoM</i>
<i>I have never flooded but my street floods.</i>
<i>It doesn't change.</i>
<i>Don't know where to look</i>

<i>Gutter on house + in street</i>
<i>BoM</i>
<i>Community information i.e. where previous floods have been</i>
<i>BoM</i>
<i>How do you know where water is going to go?</i>
<i>DREDGE</i>
<i>I don't know</i>
<i>TV News</i>
<i>I don't know</i>
<i>BoM website</i>
<i>BoM</i>
<i>Good except for problem with Laneway Chair</i>
<i>The shed + carpet - back drain</i>
<i>BoM site online</i>
<i>Debris in the creek</i>
<i>Any changes within the flood plain eg sub divisions and fill</i>

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

##### **Comments from those who said Other (please specify):**

*If there is: 1 a major flood flowing from heavy prolonged rainfall into a waterlogged catchment 2 it is co-incident with a deep low near the coast with attendant raised sea level 3 a cyclically high tide 4 a Storm surge pushing water against the coast, there is nothing I can do except get out as the whole township as well as New Brighton, South Golden etc will be inundated. I am aware from historical data on Richmond river and sea levels outside its bar at Ballina that that sea level can be 2 metres above the river level ! If the river flow is not heavy enough to keep that out - as it did there - heaven help us !*

*I store food including fresh food when a rain event is due. I share rainfall predictions with neighbours.*

*I have notified council as have the neighbours in Ann St Mullumbimby that we require gutters and drainage out the front of our properties, why there was none in the first places defies logic and sense !! Some of the street has these and half do not.....*

*what is a SECTION 149 certificate?*

*Prepare for power outages*

*If any concern of flooding, I move the vehicle to higher ground. Fortunately I did this prior to Cyclone Debbie, when floodwaters rose extremely quickly overnight!*

*Am selling our home due to internal flooding in march event. Raising is impossible as it is a brick home*

*All of the above*

*Insurance premiums are already so expensive in this area. There is no more money to support any flood events.*

*I moved from Orana Rd to Langi Place*

*I would like to have a supply of permanent sandbags*

*My neighbours are supportive and have local contacts to inform them of weather events and flooding risks*

*Cost to cover flood in Insurance absolutely out of reach for the average family*

*Built in a flood free zone in the first place.*

<i>We have rebuilt 2 houses in the last 3 years and flood proofed them. The only damage is the mud in the bottom of the house. Cupboards and walls are water proofed - doors swelled but then went back to normal after several months. Our car has to be moved to higher land in New Brighton - but our water, electricity and internet all worked.</i>
<i>Contact people at Billinudgel to treat every major wet weather event as a possible large flood event because reporting based from technology is still poor and not as good as on ground observation by long term locals.</i>
<i>My house was flooded in '74. Despite a NSW Govt grant offered, to assist in raising my house, council refused the development application to do so. Council are now liable for any flood damage to my house in any subsequent flood events, according to my legal advice.</i>
<i>Not effected by the flood too high</i>
<i>Our house is not at risk</i>
<i>My home is not impacted directly</i>
<i>MY PROPERTY IS WAY ABOVE FLOOD PLAIN.</i>
<i>Past flood levels reach about 1 meter below floor level and then the water overflows into South Golden area.</i>
<i>Household is at top of hill so not an issue</i>
<i>149 Certificate is useless. We purchased with Sec 149 Flood Free but are now recognised as being subject to flooding</i>
<i>We live on a high ridge line so our property will not flood but we may have access cut off.</i>
<i>My house luckily hasn't been affected by flood. The end of the culdesac yes. Water came just to the driveway last year</i>
<i>My house is high on a hill so flooding is highly unlikely.</i>
<i>do your job properly and not all talks</i>
<i>Flood cover is out of control some people get covered other people don't so wrong</i>
<i>Thankfully I have been hardly affected by flooding my house is built accordingly and flooding rarely lasts more than 24hrs at New Brighton never made a claim in 30 yrs for flood damage.</i>
<i>not prepared at all</i>
<i>My property was built in 2011 and is above any recorded flood levels.</i>
<i>I have sandbags filled and accessible</i>
<i>We live on a hill so our property is safe from flooding</i>
<i>Look after my neighbours, especially elderly ( even though I am old ) and their home Keep weekenders ( non permanents) aware</i>
<i>By making the community aware of the causes of the floods and Council's acceptance of their liability for causing the floods and the stacking by them of flood committees by non resident member of the flood affected community.</i>
<i>We have gotten sand bags from SES which may only help in minor flooding</i>
<i>I intend requesting the council to ensure that the drains are clear and in good working order, which currently they are not! And to get a hold on any further approvals for DAs in the flood affected areas until the Flood Plain Study is completed in about 12 months time.</i>
<i>My house is the first house in the street and has never been flooded to date , houses can be built up high but cars are always the thing to go people seem to think this is not a big deal but it causes especially to the uninsured and low income real hardship there is about 1 month without a car then trying to replace it. I never sleep well when it rains the emotional trauma that continues for ever , should always be considered when opening up new areas for development and housing please consider the future mental health of families and homeowner and renters in the byron shire. all river crossings should have depth indicators and have a danger zone indicated on them especially for our new residents and they should</i>

<i>be visible at night . people should know where they can park there cars in town to keep them out of the flood area ,, and where is a safe area to go should they be flooded</i>
<i>evacuation notice by text message came long after we were flooded!!!!</i>
<i>i live on a hill</i>
<i>See above.</i>
<i>High set house designed for floods</i>
<i>I have required empty sand bags to fill.</i>
<i>I've made friends with my neighbours and we work together well.</i>
<i>Appropriate insurance is unaffordable.</i>
<i>I</i>
<i>We cannot get insurance, they want over \$150 a week for insurance. So, we have raised up the electrical plugs in the walls and have our downstairs part of the house ready to be mobilised in the advent of a flood and have a place to drive our cars. But if we get another flood like March 2017 I dont think there is much you can do but clean up afterwards.</i>
<i>We have cleaned out drainage system on our property, but if Billinudgel floods, it flows onto our place at New Brighton. We have put shelving higher in our garage &amp; shed to try &amp; keep things dry. We move our cars to Ocean Shores Country Club as Cyclone Debbie flooded our garage.</i>
<i>N/A</i>
<i>I now have a stash of 66 filled sand bags</i>
<i>Last flood, water came into the garage + sheds, the house was ok.</i>
<i>Appropriate level of insurance - Cannot afford. Live on the floodplain. My car is vulnerable - need safe place to park it in Mullumbimby. Exit onto rear lanes not satisfactorily maintained.</i>
<i>Flood insurance is just too expensive. We need to look at preventing more floods or bigger floods.</i>
<i>Food for 3 days as each year we are flooded in. Creeks - Torrential rivers every year.</i>
<i>We live out of flood level but like many are affected by floods</i>
<i>As above.</i>
<i>I believe I would be safe to stay in my own home.</i>
<i>Do not know safe place to move vehicle</i>
<i>I am lucky my floor level is higher than the many other. I have never had water in my house. No worries.</i>

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

##### **Comments from those who answered Other (please specify):**

*accurate ? for my individual situation right here - my own observations , and. If it is available BOM web site and radar etc*

*Essentially all of the above, ticked are most relevant to me.*

*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*

*After 2017 who could trust media to not 'sex up' media releases from SES? Who would give any credence to SES HQ in Newcastle(?) anyway, after the nonsense of 2017. Police also need better training than trying to look important/cover their butts. Better to go with time honoured local knowledge.*

*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*



<i>categories mean on the ground so residents can get an idea of what to expect ...the word minor flooding has no practical meaning .</i>
<i>After Cyclone Debbie, not sure where accurate information would be obtained?? The floodwater rose so quickly! and SES phoned to evacuate when our neighbourhood at New Brighton (North Head Rd &amp; Brunswick St) was already underwater! Can't evacuate when the roads are covered in floodwater &amp; it's dark as well! (SES notification 5 hours too late!)</i>
<i>Any of the above but with a predicted level at a reasonable time frame factoring in tides etc</i>
<i>Hard for me to trust any, as (1) the flooding occurred in the middle of the night when people were asleep (except me!); (2) throughout the night, the BOM was posting only low to medium level of flooding predictions for Mullumbimby, when it had ACTUALLY reached serious level, and posting readings at Federation Bridge about 1m below what I was actually observing AT the Bridge (I have pictures of these actual bridge levels); (3) no essential services, SES or media were not able to get into Mullumbimby on Friday 31 March, so the flooding here was never witnessed and on public record; and (4) Byron Council staff had left Mullumbimby by mid-afternoon on 30 March.</i>
<i>The long term locals that live in the hills and understand the rainfall and river flows.</i>
<i>Wouldn't trust the council. They took weeks to declare Billinudgel as a disaster zone</i>
<i>local knowledge</i>
<i>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.</i>
<i>Bayfm</i>
<i>Facebook group "mullumbytes"</i>
<i>Local knowledge best of all</i>
<i>SES can get things very wrong especially if coordination happens from afar eg. Newcastle ! Some events happen very fast Where can we get sand bags for events that give us time to prepare ?</i>
<i>The lot. The more warning the better</i>
<i>Informed and dedicated community members</i>
<i>Notification came too late, despite listening to radio reports.</i>
<i>Taking note of all aspects of what is happening, being very watchful, helping people where needed and letting them know the height on the farm land and if they could get into Billinudgel or then go around the back way (the old highway, which also does go under in 2 places in a very big flood).</i>
<i>The SES should be the go-to source, but it online info can inadvertently confuse. Case in point ABC radio issued an evacuation warning for Billinudgel at approx 2pm Saturday 1st April (which then spread through social media) failing to realise that the warning was in place when flood waters in Marshalls Creek peaked at Billinudgel concurrent with high tide more than 12 hours earlier. The warning system on the SES refreshes 'current at' timestamp even if the content is no longer current. The SES operator had no explanation for why the warning had not been retired.</i>
<i>Myself</i>
<i>Also trust radio but don't listen to it</i>
<i>Council provided NO information.</i>
<i>OURSELVES BY RISKING GOING OUT IN THE MIDDLE OF THE EVENT TO MONITER WATER LEVELS</i>
<i>The old time farmers know when the floods are coming... local knowledge can not be over-ridden</i>
<i>SES was totally absent from Byron Shire during the floods. They had already been sent to Lismore and Tweed, leaving the whole of Byron Shire with no support. BOM didn't really get this one right either. Council could not be contacted. Social media such as facebook was the only real way that people could communicate about what was going on, road closures etc, and via the 'local community pages and groups'.</i>
<i>Most sources other than Council..</i>

<i>Council !</i>
<i>Too much info from the SES now comes from out of area crews that get it too wrong as they dont have local knowledge.</i>
<i>I don't trust the SES out of Wollongong as they did not know anything when I phoned them the day before Cyclone Debbie hit. The SES worked better when it was locally run and the volunteers usually knew the people and definitely knew the streets/area. I felt the SES ph contact was useless in Cyclone Debbie.</i>
<i>Fire Brigade, Brunswick Valley Coaches</i>
<i>Community disaster team</i>
<i>I/we, from our own experience, watchful, common sense are very aware</i>
<i>I would ring my son who lives nearby</i>
<i>SGB flooded due to the flood pump operated by BSC worker when it tripped out and stopped operating.</i>
<i>my husband</i>
<i>Me</i>

<b>Q20: How would you prefer to receive flood warnings?</b>
<b>Comments from those who said Other (please specify):</b>
<i>by knowing what website to look up when I actively want info, rather than passively waiting for an SMS.</i>
<i>Any, as per power outages etc permit. And are based of assessment by experienced locals. Not as occurred in 2017. See prior answer.</i>
<i>I live in Mullumbimby near the CBD ..the only way I would have known the flood was coming was by a siren ..eg in Mullumbimby the siren could be at the fire station or the SES depot ..the whole town could hear the siren from either of these locations ..the last flood came at 3.00am in Mullumbimby ,...I would not have received any message or warning by phone either land line or mobile as I would have been asleep and not heard the call ..I also do not regularly check my mobile phone and often switch it off especially at night time ..</i>
<i>many huge loud sirens that you can hear in each town to all the places that need to be warned.</i>
<i>Not at all</i>
<i>Flood in June 2016 had SES driving though the streets with loud speakers - this didn't happen in the March Debbie 2017 flood. In 2016 we knew it was coming but looked on the BOM radar to see the rain stopping so stayed in the house until the water went down the next morning. We felt very safe as the house was raised and there was no chance the water would get to that level.</i>
<i>Always remembering that a power source is required for modern technology</i>
<i>I monitor the weather event as it unfolds and I can predict the impact on my property 12 - 24 hours before the flood peaks. Monitoring BOM forecasts can give up to 48 hours warning of an event.</i>
<i>Emergency SMS is effective, but too often we are given misleading information</i>
<i>PHONE</i>
<i>Any way possible</i>
<i>If there is no power, what are the options?</i>
<i>prevent the flood by reducing the flood impact</i>
<i>special sirens indicating level of emergency</i>
<i>Door knock from emergency workers</i>
<i>Specific information Not generalised</i>
<i>Certainly not incompetent Council stooges</i>
<i>The only sure way ie, if no electricity, is a radio and batteries. Mobile ph needs to be charged, others - need power, newspapers may be not available, even if near a shop, face to face if need to &amp; in a town. If</i>

<i>all the drains, rivers, creeks, debris is cleaned out, the flood will not be as frantic for everybody. For people to be responsible and not drive into flood waters is a concern that should not happen.</i>
<i>For the last flood we were asleep. We would have had no idea if neighbour didn't doorknock.</i>
<i>SES hotline</i>
<i>Emergency SMS needs to be timely. Rang ses to be told nothing could be done til Morning.</i>
<i>people forget that 2017, 5 days before the flood the shearwater school was evacuated. So, the ground was already saturated. When debbie came down the coast it was clear to me that we were in for a massive flood. I felt prepared myself because I was paying attention. a SMS from the SES at 4pm the day before would have been advisable....but I have heard that Ocean Shores got one at midnight saying 'everyone to the golf course' and it was not required....so, I think people need to be informed and maybe the council can inform the public to a degree but in the end the axe falls on the individual to know their environs and be prepared.</i>
<i>The information must be accurate and not given when the event is happening, which is usually in the dark and dangerous. By the time I got the message, my property was already under and I couldn't/wouldn't walk through flood water in the dark, so just stayed in the house.</i>
<i>Test message</i>
<i>Road signs flashing "Flood Warning this evening" Danger up Highway + up Main Arm Rd. Wilsons Creek Rd near causeways. Solar signs.</i>
<i>Don't phone with wrong information</i>
<i>Loud Hailer</i>
<i>Mobile</i>
<i>Truck with a siren driving the streets!</i>
<i>I am deaf but have a home phone which is extra loud and takes a message and has a flashing light and keeps beeping if a message is left.</i>

<b>Q22: During a flood event, what sort of information do you need?</b>
<b>Comments from those who said Other (please specify):</b>
<i>estimates of flood duration, at various flood levels.</i>
<i>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.</i>
<i>High tide times</i>
<i>Impacts on shopping centres and other infrastructure</i>
<i>supply emergency flood no for overview of situation in local area</i>
<i>Some roads and streets need to be closed by council or some authorities as a lot of damage is caused by cars driving through floods waters making waves that enter houses and or properties that otherwise may have scraped through with little to no damage.</i>
<i>Accurate</i>
<i>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.</i>
<i>someone to deliver sandbags and help for the elderly and infirm</i>
<i>The more warning time about potential flood heights the better.</i>
<i>At what point is the latest you can get a car out of my street. I a culdasic we were trapped unless we drove thru water</i>
<i>Location for collecting sandbags needs to be elsewhere that Mullum SES headquarters</i>

<i>Time needed to move cattle</i>
<i>1987 Mother's Day flood was at least 10-15cm deeper than 2017 flood this end of town. When a flood 20-30cm and more over Argyle St, traffic should be stopped. Some people travel through at speeds that send waves crashing into buildings and car sheds forcing roller doors open and sending waves crashing into the back of sheds to their great joy by the smiles on their faces.</i>
<i>Warning signs flashing on roads.</i>
<i>Updated River levels at Federation Bridge and Chelmsford's Bridge. (Do you people even know where Chelmsford Bridge is?)</i>

<b>Q24: Why would you never evacuate?</b>
<i>I do not need to evacuate as I live and work above flood level. I do need to get home if flooding is going to last for days (as it can).</i>
<i>Many of the above answers are valid.</i>
<i>I would sooner stay to protect what i am able</i>
<i>Wont flood</i>
<i>The house is raised. I need to be at home to lift items and prepare for inundation.</i>
<i>The main living areas are above flood level and the water recedes with the tide</i>
<i>could die</i>
<i>I have a two storey home</i>
<i>My House is too high to be affected by flooding</i>
<i>If you dont see the danger in staying at your home</i>
<i>I know my place and expected flood levels. Rather be there to take action to save property.</i>
<i>if there was low risk for our safety</i>
<i>My floor of home is built at 3.9 AHD and should not flood according to the experts</i>
<i>No need</i>
<i>We have been through two floods and we are high enough to withstand the floods. We must move the car. Debbie was approx 600 cm though the laundry - it came up three stairs and was a metre through the garage - we would not venture out at that height as the water flows very fast. We didn't put sand bags around the house but have worked out that they would be very useful to stop the mud.</i>
<i>I am situated well out of reach of flood.</i>
<i>We have a two storey dwelling so there is no need.</i>
<i>I am personally not in a flood area</i>
<i>We live on a hill on top of the flood plane.</i>
<i>Unit is on hill, very unlikely to be affected</i>
<i>Only 10cm water in house during worst flood in 2005, and it went down quickly. Prefer to stay home to raise possessions as needed and protect property.</i>
<i>My property will never flood</i>
<i>During the 2016 &amp; 17 floods we were ordered to evacuate despite our house being 2 vertical metres above peak flood levels. We were given no information about safe evacuation routes or meeting places and ended up putting our family in danger by driving through flood waters. I am confident no flood waters will enter our home.</i>
<b>HOUSE WILL NEVER FLOOD</b>
<i>Exit from my street becomes impassable well before the house is inundated. It's best for me to carefully watch weather system on BOM and be aware of my catchment area and tides</i>
<i>We stay in the house upstairs</i>

<i>My house is not in a location where flooding would pose any significant risk</i>
<i>Dwelling not effected</i>
<i>I am not effected</i>
<i>When I see a boat at my front door</i>
<i>My house is high on a hill so it's unlikely I would ever really need to evacuate.</i>
<i>silly question</i>
<i>I am above flooding</i>
<i>By the time my property is innundated the roads are under the safest place by far is upstairs 2.3 metres above it. Trying to flee in flooding when unnecessary is foolhardy. Pre prepare stay put have a glass of red</i>
<i>If house was to be flooded</i>
<i>Have high house upstairs 3 meters above flood</i>
<i>I would put cars in safe place and be on property to lift and save anything I can but stay safe inside</i>
<i>My house is flood free</i>
<i>I live on a hill</i>
<i>Well, living on a hill, the priority is to prepare and check our drains are clear and working and be able to keep a check on whatever if happening, alerting others if requested.</i>
<i>House is designed for flood events</i>
<i>House is 340 metres above sea level.</i>
<i>If I thought I thought there was going to be damage to my property that I could otherwise prevent</i>
<i>My house is on stilts and I feel safer at home that trying to navigate flood waters.</i>
<i>High house, it's safe. I am prepared for it (food, water, electricity). Just need time to move some things to higher levels.</i>
<i>AS A BUSINESS OWNER IN BILLINUDGEL WE HALF PREPARE AND EVACUATE STOCK, IN THE LEAD UP AND CONTINUE TO MONITOR</i>
<i>no need. people who evacuate loose all</i>
<i>If I couldn't get out</i>
<i>By the time any warnings happen the roads to any evacuation option are flooded so there is literally no where to go!</i>
<i>Previous flooding has only come knee high and is slow. We are 2m off the ground.</i>
<i>My property is high on a hill.</i>
<i>I don't think it would be extreme enough to endanger our lives</i>
<i>Double storey house, would be safe upstairs</i>
<i>unless no water, house flood proof, dog, usually goes down quickly, able to react quickly. Do take car out.</i>
<i>If I evacuate I can't get back</i>
<i>House is above all recorded flood levels</i>
<i>Because the clean up needs to get started as soon as possible</i>
<i>Unlikely as house elevated. However if I have to move car and cannot return to house by foot I would seek council safe place.</i>
<i>Home is 2 storey</i>
<i>It would have to be the largest flood ever in Mullumbimby, Would move into the as yet unfinished dwelling above the back shed until the flood recedes, then back to clean up.</i>
<i>Have nowhere to go!</i>
<i>Because any flooding of house would be minor + desire to take protective measure</i>
<i>Unless other storm issues, I live high up.</i>
<i>See Q20</i>
<i>I live on a hill</i>

<i>Live above flood level</i>
<i>House OK</i>
<i>Read Q17.</i>
<i>We live on a high hill but we have our drainage system in order.</i>
<i>Last flood damage in June 2005, 100mL of water through house for 1 hr then recede. During flood in May 2017, water stopped 75mL from doorstep.</i>
<i>Not so much never as highly unlikely as when the water reaches a certain point it breaks over the railway line usually taking lowest etc. with it, the level then drops.</i>
<i>If it were too late to do so, seek higher ground, e.g. roof</i>
<i>I live in a two storey house</i>

<b>Q25: Have you ever received conflicting information during a flood event?</b>
<b>Q26: If yes, what was it?</b>
<i>The river rose so fast that the BOM could not keep up. Federation bridge height gauge was incorrect.</i>
<i>I was told by SES when I called at approx. 3am that there was no flooding in Mullumbimby on the night of flood in March, my house was surrounded by water at that point</i>
<i>Told by SES in Grafton that evacuation was mandatory. Both my mother and I refused to Evacuate to Coffs Harbour (SERIOUSLY?) and no floodwaters reached the Street let alone her yard.</i>
<i>Levels, peak time 2017</i>
<i>SES message to evacuate,when it was too late! Floodwater had already covered our neighbourhood &amp; roads. On another occasion,SES door knockers advised us to prepare to evacuate,when it actually didn't flood at all &amp; those who went to the evacuation centre,found it wasn't open!</i>
<i>SES telling neighbours to evacuate but not even ringing our bell</i>
<i>Moderate flood warning shortly before March 31 2018 flood when in reality it was sever. This was issued by BOM via internet. I understand faulty equipment at Pioneer Bridge, Mullumbimby has since been blamed.</i>
<i>As above: BOM postings conflicting with my own observations</i>
<i>Severity of flood was exaggerated</i>
<i>BOM lifts a flood warning while select people within local community told that record flooding is most likely to occur in the middle of the night.</i>
<i>Council said pumps were on but a plumber standing beside them (on the phone to council) said they were NOT operating. Council would not come out to check</i>
<i>Pumps were on when they were not.</i>
<i>A 3am call that I should evacuate. However, we were already totally flooded in and there was no route out.</i>
<i>Evacuation warning by doorknock or SMS but flood levels did not eventuate at this property. Evacuation warnings need to be very specific for each residence. Knowledge of Accurate previous flood levels by residence would be best option.</i>
<i>Very good information in June 2016 - but not good information with 2017 Debbie. We were not as prepared as most information we got said there was flooding but it came up very quickly at 2am - we have security footage showing no flooding at midnight - and severe flooding at 2am.</i>
<i>A call to evacuate for Ocean Shores that did not affect South Golden Beach as such</i>
<i>Flood warning vs local weather warning</i>
<i>SGB pump would manage flood levels. Inundation would be less than it was.</i>



An SES evacuation order in March 2017 that came AFTER the event and was therefore far, far too late and totally useless.
That low lying areas need to evacuate, but it was too late for them as they were already flooded.
Friends advised that "they had heard...." We moved valuables to higher ground, only to discover the anticipated flooding did not occur.
Sent an email to evacuate after streets were already flooded.
Evacuation SMS Notice. We could see the flooding from our house but could see that it would not inundate our end of the neighbourhood.
Not applicable
Automated telephone evacuation order received after the water level at our place had peaked and evacuation of our property was not needed.
Information about road closures later to find out they were not closed
See above
TOLD TO EVACUATE WHEN NOT NECESSARY
Road closure advised by Council on the internet and it wasn't
I found it hard to get useful information as websites often use the name of the waterway rather than practical information like suburbs.
Evacuation when there was no flooding
Warned to evacuate when there was no sign of flooding in our area.
In the past SES told us to evacuate when there was no flood to my property but I got no warning with March 17 until it had already flooded the property
told to evacuate when no water had entered our property.
Social media. Many people in Byron Shire are know-it-all clowns.
By the time we were advised to evacuate the street was flooded
Was told pump station was on and working at gloria st but it was not.
Pannicked over the top evacuation orders at 3 am in pitch black by ses. Arguably the dumbest thing to do pannicking many newer aged residents and another episode in which I and 1 other had to save an ses guy and an 80 yr old one legged woman who snapped the propellor on a water evacuation and was headed sideways for disaster. Again this womans house never got close to flooding.
Pannicked by wrong advice
The levels it was supposed to reach, over reacting
notice to evacuate immediately to a place that wasn't open.
Nature obviously makes it difficult to accurately predict.
BSC did not advise that pumps in Sth Golden were not adequate. Radio announced that suburb was under water.
SES asked us to evacuate years ago and there was no risk, but no one told us to evacuate in 2017 but there was significant risk.
Told to evacuate from SES based in Newcastle and then was no need Last year given warnings in middle of night but too late , already flooded as it happened quickly
Phone calls from SES
We were told to go the Evacuation Centre via text message, however, we felt there were too many other people who had a greater need to go to the evacuation centre, so we didn't go.
From the BOM and SES telling me there was nothing happening in Mullum when there was already a flood as evidence by a neighbour on watch at Federation Bridge
i have received no information during a flood
a recorded phone message telling me to evacuate when there was no need
When The Pocket School children were not sent home earlier enough, extreme stress & they were driven via Redhill to Mullumbimby but the last bus go through the crossing/flooding, the back wheel I think it

was, got caught around the wheel & pulled the fire truck into the deep side of the crossing, water rushed in & my about 8yr old granddaughter just grabbed her little sister by the scruff of the neck before she went under the water. The news said about the rescue from The School & all ok, but it was not, & 3 children (my granddaughter who had saved her sister being one) were missing when the others were back at the school, being eventually found, with all staying in the school for the night until able to leave the school. The information that all children were at the school was wrong and we were not told they were missing so the radio station had not been told the truth. After that, as it used to be, children were taken home early, if a flood was coming. So correct information and preparedness is a priority.
Too evacuate when no flooding in street local area. Evacuation centre unaware that people had been asked to evacuate
See example described earlier re 'current as' SES warning timestamps
never received information that my home would flood
Evacuate when the flood was at its peak.
2017 FLOOD, BOM HAD THE FLOOD LEVEL AT MINOR AND IT WAS IN OUR SHOP! NOT MINOR
Dont ask council go straight to ses
Evacuate messgae to landkine when my street did not flood ..when my street did flood at thevlast event I did not receive any evacuate orcwarning message at all. I did not see professional services and no one checked if we were ok. We did not receive any warning that our storage shed would or had flooded. Because it was up high we assumed it didn't flood. It was only days after we found out it had been inundated. All our work materials were ruined. We had no help offered at all to clear it out. I have a physical disability so my husband dealt with it all on his own.
Reports of evacuation centres that were then closed... road information not up to date
No one gave any information for Byron Shire, it was ALL about Lismore and Tweed expecting floods, NOT Byron at all. It was a travesty that left people here absolutely hopeless to be prepared for what happened.
Ses not fully aware of our situation at 1am when evacuation msg came through
everyone has an opinion...few actually know. The old farmers and old locals know more about floods around here than some upstart hydrologist at council and a regional meterologist in Lismore.
Every "flood" or "cyclone" episode since 2012.
No information via SES or SMS, Neighbours concerned, BOM information stating flooding very unlikely, watching visual of Marshalls Creek flooding over our acreage. Luckily I trusted my instincts and moved livestock the day prior to the flood event.
It's always conflicting
Whether pump is working or not at SGB - from council
water height, confusion re evacuation centres e.g. not open, without power
Actually received no warning of 2017 flood so, in a sense, this conflicts with the fact that my home was inundated
The flood in 2017 saw many conflicting messages. Mullum had flooded before any warnings went out. We knew it was going to flood and nobody had been told. We rescued a friend because we saw she had posted on social media she was inundated with water
No warnings
This usually occurs by 'word-of-mouth'
I just need a precise pane to call or read info.
Phone calls urging evacuation during cyclone Yahtze (2013)? And no flooding to property.
no flood warning and then a flood warning about 2 hrs after the water had blocked us in.
17 flood - Council rang regarding automatic pump not on, they said it was. Person standing next to it tried to tell them otherwise.
See Q20

<i>Told to evacuate when there was no need.</i>
<i>To evacuate when not needed</i>
<i>I have never received information about a flood from council or emergency services</i>
<i>We received several recorded phone calls on our landline telling us to evacuate immediately, the far end of our street (Balemo Dr) was flooded, however the water did not come near our property</i>
<i>It was too late! Evacuate centre had no power either.</i>
<i>Incorrect information saying it was going to flood.</i>
<i>Flood not bad when we knew that was wrong and/or was going to be bad - and Nothing!</i>
<i>Nothing new, will still lift belongings and furniture where possible. Move vehicles to higher ground.</i>
<i>The river won't rise higher' Well the river did rise very much higher and many lost their caravan homes. This was at Windsor.</i>
<i>BoM said OK neighbours</i>
<i>I have never received my flood warning!</i>
<i>Several times: 1) Told to evacuate - there was no need. 2) Told to evacuate - it was too late!</i>
<i>Social media and News reports conflicted our local knowledge. Social media and news reports were wrong!</i>
<i>Had no information received</i>
<i>Where water is over roads. Height of rising water</i>
<i>Incorrect or none</i>

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

<i>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.</i>
<i>The 2017 event right here - How to best attempt to keep an event say 1m worse than it out of this full brick ground floor home unit. To ensure my immediate neighbours are also prepared and if appropriate to retreat upstairs to them if it is not 'the perfect storm/flood' approaching.</i>
<i>I know exactly what gauge height at Durrumbul knocks out my access along Main Arm Road. I know about how much rain knocks out my access at Moari Creek on Coopers Lane. I also monitor the debris blocking the entrance to the culverts there - if unblocked, my access is cut by about 1-in-5-year events but, if blocked, it is about 1-in-3-months.</i>
<i>understanding flood levels and peaks and how these maybe compared and reflected towards the devastation of 2017.</i>
<i>to have an emergency plan that includes evacuation routes and phone numbers, to have documents and valuables ready to go</i>
<i>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</i>
<i>Be responsible for your own safety, pay attention to weather forecast, common sense, evacuate early when necessary</i>
<i>Charge phone, better torch</i>
<i>we now have a fire and flood proof safe</i>
<i>Do my own flood level watch and act accordingly.</i>
<i>Make my own assessments.</i>

<i>Trust my own intuition... &amp; move my car prior to extreme weather if concerned.</i>
<i>Flood levels were close to entering my shed. I need to raise my water pump and other items off the floor.</i>
<i>that if council has neglected to keep drains clear and waterways clean that the chance of flooding is possible.</i>
<i>that council hasn't been serious about addressing the flooding in New Brighton and seems pre-occupied with Byron Bay township</i>
<i>We have never had a flood event</i>
<i>Don't buy in a flood zone</i>
<i>We were prepared but more reliable warning of severity would be useful, either via SMS or radio.</i>
<i>Ensure items are secured not to flow away. I would like to be able to source a good supply of sand bags close to home.</i>
<i>Be aware of the amount of rain falling, checking local flooding areas. check BOM</i>
<i>Low lying levels of Ocean Shores are indefensible, so stay on high ground</i>
<i>Evaluate all information carefully</i>
<i>Floods are deadly, devastate homes, businesses and families and take a lot of cleaning up afterwards. Insurance companies do not assess the risk to the benefit of home owners, just for themselves, and see financial profit in not paying on claims. Home owners cannot argue with them without a definitive risk mapping resource. Post code risk ratings should not be applied!</i>
<i>Safety first.</i>
<i>Where the waters enter our property and the amount of time it takes to drain away</i>
<i>Level of water, where it rises and falls from.</i>
<i>Will make sure stuff at the garage is lifted high. Car should be parked in a higher location than my driveway</i>
<i>Keep checking the rainfall readings on the BOM</i>
<i>Need sufficient drinking water. Always pack the toilet paper.</i>
<i>Relocate vehicles</i>
<i>Mainly have food supplies if roads are inundated</i>
<i>Keep enough food in the house and water in jugs and containers</i>
<i>be ready</i>
<i>Only one flood experience when New Brighton flooded but my street was spared. In future, I would not wait for a 3am call that came too late - no route out.</i>
<i>Be prepared to get out of danger so that precious resources are not wasted in rescuing people</i>
<i>For our residence wait and see what actual flood is doing. Flood level at our property ( 2017 ) can be provided if needed.</i>
<i>flood free travel access routes are essential</i>
<i>Open gates ect to allow water to flow arrange for pets to be on high ground</i>
<i>Yes - sandbags and tarps around our doors</i>
<i>Nothing</i>
<i>I can't get out of Balemon Drive so I stay home.</i>
<i>Each flood is different. I feel it is necessary to check levels at various points provided by bom site.</i>
<i>Not to trust local area group responsible for evacuation warnings or flood iformation</i>
<i>i would get sand bags organised</i>
<i>Keep an eye on the weather. Don't trust the SES.</i>
<i>Nothing</i>
<i>Nothing.</i>

<i>In March 2017 flood, cooking oils from Yum Yum Tree were deposited by floodwaters into our front yard killing all plant life. In the future I would ensure that all oil containers from Yum Yum Tree cafe were firstly secured and secondly had lids/tops securely fastened to prevent oil spill into our yard.</i>
<i>We would prepare better flood kit to take with us eg food/clothing</i>
<i>I will keep an eye on BOM website and make my own decisions.</i>
<i>Pay attention to the warnings. If you go on holiday prepare your property re flooding before you go</i>
<i>Road closures, knowledge of alternative routes</i>
<i>Will not drive through streets flooded</i>
<i>I have a split level home. Monitoring the event tells me if or when I move items to the higher level.</i>
<i>Possible sandbagging of property facing Redgate Road.</i>
<i>N a</i>
<i>You can't rely on Council in the North of the shire.</i>
<i>Provided I have access to tide times, predicted rainfall etc, then I'm able to judge the risk to my property just as well as outsiders. Also, no two floods are the same - most say that 2017 was worse than 2005, but we had water in the hiuse in 2005, but not in 2017.</i>
<i>Just the amount of work to clean up after the event</i>
<i>Stay at home</i>
<i>We will not evacuate</i>
<i>N/A</i>
<i>I can't drive out of my street at the point Marshall creek is still 1metre from inundating my home.</i>
<i>Our house and several others at the end of my street were inundated by stormwater that could not escape due to the kerb inlet pit being damaged in my street and the stormwater pipes being badly blocked (as evidenced by the crew who spent several hours after the march 2017 flood cleaning it out). Next time I notice damage or poor maintenance to stormwater infrastructure I will be more vocal about council fixing the problem.</i>
<i>Be prepared</i>
<i>Through three or four big floods we know that the water escapes prior to threatening us.</i>
<i>I need to get bigger torches, a radio and a plan.</i>
<i>investigate levels myself as last waring was too late for evacuation and prior event warning was too early and not required</i>
<i>Dont drive thru flood waters</i>
<i>Refer to tidal information along with rainfall information. Realise how quickly action is required.</i>
<i>Which roads close first</i>
<i>Much of Ocean Shores subject to low level flooding. Need to keep sight seers away during floods</i>
<i>I am buying a rubber dinghy with a small outboard motor. now drive 4wd vehicle to have greater clearance. Also helps with the regular potholes</i>
<i>Making sure you have all essentials ie batteries food water check how neighbors are</i>
<i>I would prepare sandbags to help stop the Wave of water pushed in by cars driving through the floodwater</i>
<i>Keep listening to the ABC for updates - particularly about road closures as this indicates to me where the risk is and the level of risk.</i>
<i>Ensure have enough water, batteries/candles and tinned food, be aware of what is happening to friends and neighbors</i>
<i>Evacuation centre is OSCClub for ocean shores.</i>
<i>It wasn't as big as 2005 but the flood water seem to be higher for longer</i>
<i>no</i>
<i>How fast water rises &amp; not to drive through flood waters</i>

<i>How quickly the water can rise to dangerous levels.</i>
<i>My house thankfully is in a good position</i>
<i>I was not affected really.</i>
<i>Can usually evacuate through Billinudgel rd rather than Billinudgel town</i>
<i>The March 2017 flood was my first experience in a flood so I learnt to not ignore the text messages from the SES. I now have an emergency kit prepared.</i>
<i>Prepare early</i>
<i>Ring council to make sure enough staff are oncall to make sure pumps are on and working</i>
<i>flooding are not the same , silly question again</i>
<i>Nothing</i>
<i>Stay put pre prepare raise what needs to be dry dont drive it will be gone on low tide tomorrow</i>
<i>monitoring proximity to my local area</i>
<i>The house is raised. No valuable furniture or items is kept on the lower level. Furniture is raised on bricks when not in use. insurance is important. flood levels over roads can be dangerous, so prepare to leave early.</i>
<i>More batteries</i>
<i>To move electrical items up high where possible, charge mobile if possible and gather personal docts and medications.</i>
<i>Need to be more prepared and not to rely on emergency sources to provide flood updates.</i>
<i>Each event seems to be getting worse. My response is to ensure council doesn't put me at further risk by developing land which could increase the probability of being inundated with flood water.</i>
<i>Build levies and Channels around the property to redirect what flow</i>
<i>I will probably just head upstairs as I have adequate food and emergency supplies. I don't think I would evacuate unless there were catastrophic flooding ie much higher than 2017</i>
<i>Get my car to high ground at first sign/warning of flood. Clean easement pipe that goes under the road</i>
<i>Move cars earlier. Before it gets dark.</i>
<i>When to take car to higher ground</i>
<i>Prepare early Lift things up Try and access sandbags</i>
<i>Early warning to prepare.</i>
<i>how to chock up furniture, have precious things higher, where to park car nearby</i>
<i>Clear gutters and the yard of anything that might float away.</i>
<i>Keep updated with the rainfall levels in the catchment, local coastal and the incoming tide times.</i>
<i>there will always be a bigger flood</i>
<i>The need to be alert and preped</i>
<i>move my car somewhere sucure bins</i>
<i>we have sandbags on standby</i>
<i>N/A</i>
<i>Moved from Narooma Drive now live on hill</i>
<i>Mitigation action already taken</i>
<i>Nothing</i>
<i>Start preparing early</i>
<i>Yes</i>
<i>It comes up so quickly!</i>
<i>Don't rely on Byron Council for any pre, during and post flood help. Council needs to develop an emergency plan to improve internal and external communication and support for the community post flood: clean up, free rubbish collection, emergency accomodation for the vulnerable, and just making the community feel like they care!</i>



<i>It will flood again. Council is useless. Warnings were late, trust your own observations and friends.</i>
<i>WE ARE FAIRLY PREPARED IN THE LEAD UP TO A FLOOD, THOUGH THE OFFER OF MUSCLE HELP WOULD BE GREAT</i>
<i>all floods are different</i>
<i>Council was no help in the aftermath, unlike other councils. Don't bother trying to contact council, just get on with the clean up</i>
<i>got a plan ready,</i>
<i>Professional advice has been unreliable or non existent.</i>
<i>Council needs to utilise private businesses as evacuation points... many people were stranded when businesses out of flood reach could have been opened to accomodate people in need</i>
<i>Don't trust council or the local SES to get anything right about potential floods!</i>
<i>To evacuate rather than deal with the stress of not knowing how high inundation will be</i>
<i>move the cars</i>
<i>I have learnt that YES the water can go higher than 87!</i>
<i>Speed of inundation</i>
<i>I will trust my instincts and call my neighbours in lower lying areas of Billinudgel. I will invite my neighbours to move up to our home until the event has passed.</i>
<i>Move cars out if possible. Raise furniture as needs. Closely monitor road closures for school access etc, so my daughter doesn't get stuck in a different town during flooding.</i>
<i>Ensure I have fresh drinking water</i>
<i>I am Relocating to higher ground</i>
<i>Will move stuff off the ground earlier</i>
<i>Never drive into unknown depth of water on road.</i>
<i>Watch flood level at gauges on BOM</i>
<i>keep phone on and nearby.</i>
<i>To keep watch both ways the water is likely to come from. So know when to move to higher ground.</i>
<i>Get out early! Have back ups.</i>
<i>Can't trust authorities to issue appropriate warnings.</i>
<i>Trust what you see on the rain radar and not the official warnings</i>
<i>Need to have an emergency pack and plan. Need to tidy up!</i>
<i>prepare without relying on warnings</i>
<i>Not to listen to anyone else and only use my local knowledge and that of other locals. Don't depend on any government agency</i>
<i>We have done all we can since Cyclone Debbie and hopefully we won't lose so many things next time.</i>
<i>I have been with the SES for 12 years so I have been through many floods so I always pay attention to weather events.</i>
<i>Flood waters have never entered my home I always have ample food supplies</i>
<i>Move car to higher ground</i>
<i>No notification of potential flood events</i>
<i>Start preparing sooner</i>
<i>2017 was the 1st time water came in the garage I now know to keep items higher that may be affected.</i>
<i>Make sure I have food + water supplies and batteries are charged. Move car early - have gumboots + get removal stuff ready</i>
<i>To make sure you have flood insurance but at a reasonable price for pensioners.</i>
<i>Get more prepared when flood slowly appears.</i>
<i>Act early to lift possessions higher</i>
<i>Dredging the rivers and creek</i>

<i>To move my car because it was a right off as the flood water reached the number plate</i>
<i>Cannot reach evacuation centre at Ocean Shores Country Club because intersections at Balemo, Orana and Brunswick Valley Way flooded.</i>
<i>Wait to see what happens?</i>
<i>Respond + put things higher</i>
<i>Will move my car away faster, to dry land where flooding doesn't happen!</i>
<i>Take car to higher ground. Put mower up and put tools up.</i>
<i>Early action</i>
<i>Nothing, it is always the same. It pours and rain, we watch TV weather, + because it always floods in front of our house each year, we get food, candles and watch out creek turn into a fierce flooding river.</i>
<i>Nothing</i>
<i>1) To store water.</i>
<i>2) Park my car at higher ground.</i>
<i>3) Get a radio + batteries.</i>
<i>4) Prepare a flood emergency 'kit' + plan (SES site etc).</i>
<i>5) Got better lanterns/lights.</i>
<i>Watch tide charts. Keep under house area tidy and bring equipment inside. Park car at road adjoin end of street.</i>
<i>Get out when you can</i>
<i>Don't trust SES or Council</i>
<i>Not to evacuate on receiving first automated evacuation call on home phone. Check with neighbourhood people first.</i>
<i>To prepare a lobby strongly for removal of manmade infrastructure flooding my town</i>
<i>Flooding can happen quickly</i>
<i>Nothing</i>
<i>Don't rely on anyone's help other than family + friends</i>
<i>Knowing where to get some sandbag would be good</i>
<i>Early warnings</i>
<i>Get sand bags early</i>
<i>Read Q17.</i>
<i>I/We answered this previously</i>
<i>That the "run off" from heavy rains take a few days to recede.</i>
<i>Lift up belongings higher as water levels are increasing in height</i>
<i>Sell up and move!</i>
<i>Lobby council to clean gutters</i>
<i>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.</i>
<i>Lift small electronics</i>
<i>The March 2017 flood was the highest I have encountered. I have lived in my home for 44 yrs. I always check all areas around my house and shed are as high as possible and nothing will endanger anyone..</i>
<i>I have a gap under fence to stop water backing up</i>
<i>Try to source various information. Expect rapid clear response coordinated by SES and Council</i>
<i>I want the drains kept clean, sandbags for doors</i>
<i>That flood are quiet. SES drove through and did not have their siren on to wake/warn people at 3:45am. It would have saved people's cars + storage.</i>

<i>After the 2005 flood, I made many long, thin sandbags, it's put at the internal doors. I had a drain installed in the yard that had flooded. In 2017, the obviously all bags were discarded and I recently discovered that these I thought were dry became mouldy and had to be discarded as well. I am elderly with medical problems and might not have replaced them if we have a flood soon.</i>
<i>We never can predict how much rain is going to fall... always have emergency</i>
<i>Not to trust council with simple operations like manning the only flood pump in the suburb during a flood/ natural disaster. Prepare for the worst.</i>
<i>Every flood is different in Mullumbimby as to which catchment receives the most rain. One flood it could be Wilsons/Mullum Creek gets more than Main Arm/Marshalls or the other way around in the next flood. There are flood plains and flood ways and the proposed lot 22 is on a flood way. Slow or block that and it will find another easier path.</i>
<i>Up until the last 3 flood, I was able to judge it used to take one tide with it breaking the bank and then the next high tide it would flood. Adequate warning for Mill St residence as I watch the river from my dining room window</i>
<i>Not have anything on the ground floor, can be damaged by water - raised</i>
<i>Not to use flooded roads to get to or away from our house</i>
<i>The school hall was built up by 1 m that impacted by the water backing up and not getting away as quick. A house was built on (address redacted) on vacant block - that was where the water drained. The house now blocks the drainage - the picket fence @ the back stops even more. The concrete over the drain is too low - in the 2017 flood and other downpours can't get away and backs up on my property.</i>
<i>I have learnt that due to the Councils incompetence dealing with the community garden (e.g. cutting down trees and pushing them in to the creek) and had large trees debris rushing through flood water into my yard and demolishing fences on my property. Blocking the railway bridge and ease flood risk</i>
<i>I have learnt that every flood is different. Be prepared for the next flood to be bigger</i>

<b>Q28: What other information would you like council to provide before, during and after floods and other emergencies?</b>
<i>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?</i>
<i>For me - right here - a good assessment of how what is coming down the Bruns and its tributaries measures against the 2017 flow.</i>
<i>advise when it will clear the culverts, once locals have advised they are blocked.</i>
<i>Regular, efficient and timely news updates and information, offering expected/anticipated threats and support mechanisms to the community in such a flood event.</i>
<i>-the above information on evacuation routes phone numbers and expected flooding areas -current and accurate information on where flooding is actually happening and expected</i>
<i>Maintaining flood level awareness, measurements on bridges which are available online, bom etc, evacuation centres, road closures, estimated time of road openings</i>
<i>I feel that most people trust the ABC radio for up to date info at these times.</i>
<i>Tell people to stay home, its safer, unless in unprepared structure on floodplain</i>
<i>To please be aware of areas that have been affected! unlike last flood when our mayor didn't even know that the northern part of the shire had been devastated by cyclone Debbie!</i>
<i>Expected flood heights and road closures</i>
<i>where and when evacuation centres are and when it is safe to return home.that all drains have been kept clear.</i>
<i>what they are doing to fix the issue</i>
<i>In case of a power blackout we would like to know how long it will probably last (if possible)</i>

<i>Perhaps Council could assist in compiling a register of volunteers who can assist with certain faults, electrical, TV, tree lopping, general cleanup for vulnerable people.</i>
<i>Council to provide free debris removal [vegetation and water damaged items]</i>
<i>Street closure signs and barricades (make sure idiots do not drive through streets and flood houses).</i>
<i>Location of Emergency relief centres. How can I help my neighbours?</i>
<i>Road closure information kept current. Support for SES / RFS volunteers during flood. Maintain up to date planning to minimise loss or damage to Council assets. Program of resources, trained staff and information to assist clean up, waste removal and clean-up of public spaces quickly (roads, streets, bridges, beaches, parks, trees over roads, etc.). Assistance in applications for flood relief, if available.</i>
<i>Where to go for safety, cheap materials for rebuild</i>
<i>Ensure ALL areas are noted in the state government disaster list. As Sth Golden Beach was NOT listed (in 2017 floods) we were declined any compensation for our very large loss</i>
<i>When advising State Government ensure all effected villages/areas are listed.</i>
<i>Realistic information prior and during event and care and a modicum of interest in our welfare after.</i>
<i>When roads reopen</i>
<i>Signs that a road is cut by floodwaters need to go up quickly and come down quickly when a road is useable again</i>
<i>levels</i>
<i>More specific information sooner.</i>
<i>Accuracy and consistency of information before flood or emergency most important!</i>
<i>what should be done to rectify problems that have occurred</i>
<i>Expected water levels is the most important</i>
<i>Where to get sandbags and hopefully in time to put them around the house. Once the floods have gone then where to get rid of rubbish.</i>
<i>Local creek flood heights</i>
<i>possible control of vehicles driving up and down flooded streets causing waves to further inundate properties.</i>
<i>Accurate, timely, useful information.</i>
<i>Not sure</i>
<i>I believe they could report to the appropriate authorities on where the most effected properties and areas are for support for those effected.</i>
<i>Confirmation of accuracy of information.</i>
<i>Schedule for clean up.</i>
<i>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.</i>
<i>Clean up options - rubbish removal plans</i>
<i>If/when the flood has stopped rising</i>
<i>updates on road closures and flood levels.</i>
<i>Advise the thoughtless 4x4 drivers that although their vehicles may be able to drive through the flood water it in fact creates a wave &amp; wake which creates more damage to the flooded gardens &amp; properties which is infuriating &amp; causing more grief to the residents.</i>
<i>Assurance that staff are available to open or close floodgates.</i>
<i>Local road closures</i>
<i>Just the the availability of sand and bags early</i>
<i>Plans for new control measures</i>
<i>Accurate risk factors ad evacuation strategies</i>
<i>N/A</i>

<i>What you are doing about flood mitigation such as this survey and hopefully effective implementation of strategies.</i>
<i>Accurate information</i>
<i>street closures</i>
<i>That dumping can be free or flood damaged materials (had to pay \$700 in 2017 day after flood!)</i>
<i>Road closures, weather forecasts, support available, contact numbers etc</i>
<i>Expected Flood heights would assist</i>
<i>Road closures and updates on water levels</i>
<i>Close the road sooner so cars don't push water into the house</i>
<i>potential impact</i>
<i>Feedback on what needs to be fixed for next time. Not just a heart warming story about a dog being rescued.</i>
<i>Better drainage. Regular inspections. Free</i>
<i>Help available</i>
<i>Ongoing, up to date information on levels of floodwaters either rising or declining.</i>
<i>accuracy of the information</i>
<i>Stop cars from driving around the streets so backwash doesnt happen</i>
<i>Flood mitigation process and actual deeds completed flood comparison levels to previous events and obviously relief offered to affected residents</i>
<i>Special number to call in emergencies for situation reports</i>
<i>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.</i>
<i>Expected water levels</i>
<i>bridges impassable, food banks</i>
<i>Likely time that access roads to SGB will be closed, info re electricity supply, timely info re when flood damaged goods (rubbish) will be collected</i>
<i>Rain fall reading that resulted in flooding</i>
<i>Depends what causes the problem Eg. if wind is the main problem in a storm then roof may need attention What is happening and likely to happen Services provided Clean up services</i>
<i>notice when it intends to fix drains</i>
<i>Expected flood heights in relation to previous years' floods.</i>
<i>More accurate information about flood levels.</i>
<i>property specific flood information</i>
<i>I would like council to be better informed and responsive including having emergencies phone numbers. There was no one home @ council in March during the night when the flood was happening</i>
<i>that the rivers have been checked and that debris has been removed as much as possible prior to flood</i>
<i>N/A</i>
<i>When they plan to take steps to mitigate serious impacts.</i>
<i>Before- what the potential impact will be, when the peak impact during the event is likely to occur.</i>
<i>Access to safety, resources, "Community stations" etc</i>
<i>Cost effective flood strategies for home owners (eg raising houses)</i>
<i>A hotline for flood updates, emergency contact details, open evacuation centres, immediate response post flood with bull dozers, rubbish trucks etc to assist residents.</i>
<i>Council need to support the community after an event. Not sure they have learnt anything from the past. It takes time to recover, council need to develop plans for immediate and long term for the people affected, it will be the financially challenged that will need the most/longer term support.</i>

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
closer cooperation
Like other councils, Byron needs to act quicker in supplying free skips/debris rubbish collection. It took way too long for wet, potentially harmful debris, rubbish etc to be collected
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.
We need flood levels and road closures early... people will then have time to react
Bloody something. Nothing was given to Byron Shire residents, we were just left to deal with it all ourselves.
Whether they have someone on standby to turn in pumps which i am told didn't happen. Have emergency numbers to contact for reliable information on road closures
It would have been nice if council could give us a break on water bill after the flood, so much cleaning of house, garden etc....but I dont see it as councils responsibility to advise us that it is raining....i see your responsibility to keep the drains clear, repair the drains, keep the rivers/creeks clear of debris and in the case of a major flood like 2017 - offer us some understanding that we have a lot of cleaning up to do - maybe extra bin days for landfill etc.
I would like my Council to ensure flooding is minimised. Over the past 30 years, consecutive Councils have approved changes to our creek and rivers that have caused such extensive flooding.
I'm sorry but all my correspondence with Council has been negative and I do not trust what they have to say
roads and routes status
Just to keep us informed of the conditions in the area we live so we can act appropriately.
Open their office 24/7
House floor levels relative to 1 in 100 flood event. River levels at Federation Bridge and Flood level at Saltwater Creek near Museum. Road Closures.
Evacuation centres and emergency numbers
Where to get sandbags ahead of time. We had to get bags from Bunnings and fill ourselves when the "event" was happening.
We must have a huge amount of sand bags at the SES - I rang council the day before 'Debbie' and got a poor reason that they couldn't deliver them - when they finally did deliver them the flood had finished.
Warnings
Free disposal of flood damaged material. I was charged tipping fees after last flood
For 3 yrs before I had David Parkinson to my home/area to show him where rain water backed up he said he would go back and see his boss?? The run off at the end of the street was never worked on.
Estimated duration. Shop closures. Emergency Services contacts. Emergency Evacuation centres. Where to park my car.
Make sure all drains on roads are kept clean of vegetation all the time by sending someone to check regularly
Early warning info before the flood.
Early warnings
No
Needs more research.
Accept for stopping traffic going in and out of town, except for emergency vehicles. 'Not too much can be done'
Response quicker to help people
Notification by loud speaker in streets warning high floods
clean up asap - sand bags for shops



<i>After each flood, councils + locals clear up the mess, trees fallen on roads etc.</i>
<i>A valid reason for not being proactive</i>
<i>Confirmation to us that they will operate water pumps!</i>
<i>Sanitation issues. Level of expected flood + duration.</i>
<i>Evacuation procedures</i>
<i>The correct information</i>
<i>How to access clean up assistance.</i>
<i>When creeks can take flood waters to ocean, when is rock wall being removed.</i>
<i>What caused the flooding event</i>
<i>I'm not sure</i>
<i>Please ensure that information is correct. Thank you.</i>
<i>Collection of rubbish etc.</i>
<i>Correct information</i>
<i>Really take notice of community knowledge and warnings.</i>
<i>All information.</i>
<i>Council need to contact us and provide pick up of flood damaged items after the floods have subsided would be good, not leave it to us solely to get rid of</i>
<i>I'm not sure council can do a whole lot more other than provide information on roads, landslips etc.</i>
<i>Help to restore property - where to get help.</i>
<i>Provide/send a clear flow chart to all residents of steps to take, phone/social media to access information</i>
<i>Dredging</i>
<i>I would like to know how well informed council is to give me information</i>
<i>Emergency vehicles should wake the area with sirens as soon as they see streets + properties flooding. Lucky a baby did not drown in its cot.</i>
<i>Have sandbags ready that we can go and get. Make sure everybody knows where the evacuation centre is and they are ready to go. Be able to contact council and discuss matters.</i>
<i>Clean up solutions</i>
<i>Updated early warnings</i>
<i>Updated River levels at Federation Bridge (near St Johns) Chelmsford Bridge (near high school) for Mullumbimby. But if the lot 22 Affordable housing estate goes in it will back up Mullum Creek and choke the salt water creek outlet - which goes in reverse when in flood.</i>
<i>I think councils ok on all of that.</i>
<i>Height of river - at heritage bridge - options and places to take car - evacuate to?</i>
<i>I don't know what you can do - but on my walks I see many drains needing clean out. A neighbour has gone over and cleaned drains under a road near my place - he has at times contacted council.</i>
<i>future development planning by Council that filling of flood plains and rezoning will not effect private property. Lot 22</i>
<i>insurance that rezoning and filling of flood plains and wet lands will nto impact private property eg Lot 22</i>

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

*I hope you listen to the people and don't disregard everything everybody says. The Culvert drain under the railway line at Train St is washed out and needs widening. A river height gauge at saltwater Creek at end of Orchid place would help us monitor water levels. Removal of railway ballast and building more culverts would help alleviate flooding. Recommend Dredging of Saltwater Creek to increase water flow.*

*In this survey a couple of questions were ones I could not answer but the computer insisted on 3 options being chosen. I reluctantly eventually did so - choosing the first 2. Please ignore those answers. Please email me a copy of this completed survey. I could find no way to do so myself. Thankyou. Best wishes with your deliberations. (name redacted) 6th July 2018 PS I've plenty of photos of the 2017 event here.*

*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 !!*

*I was traumatized by this event and still worry whenever we have heavy rain. I have not heard from council or residents association at all following this event.*

*The water lily park drainage should be addresses there are old aerial photos of the area in the ocean shores country club which show the original drainage in the immediate vicinity of my house. Maybe these could be reviewed as they are in me estimation, at least 25 years old, and clearly show a significant improvement on the current status of the drains around my house. They will probably have deteriorated or incurred erosion and sediment to minimise their effect.*

*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)*

*My strongest belief is that opening the northern area to the ocean is the best defense but I am not sure how efficacious this would be for Billinudgel.*

*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.*

*Measures need to be put into place to alleviate flooding in New Brighton in particular. The necessary procedures suggested by (name redacted) for example.*

*Why does Council still allow further development on the floodplain- allowing granny flats to be built and allowing fill on some blocks. this pushes more water onto the floodplain and affects existing neighbours.*

*Fix the potholes*

*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.*

*I repeat, council should keep the road drains clear. I also would like to see a storm water plan developed starting with the construction of strategically placed swales leading to storm water infrastructure [pipes]*

*I have files to email, with photos of flood levels at Federation Bridge, compared to records I also have of lower BOM postings at identical times.*

*Yes Do not pass or allow any new developments on our local flood plains. Don't pass the buck to the Government act to support locals. We live near the flood plain, during the last flood we watched the back paddock become a raging river. Please do allow any development on the flat land around the entrance to Mullumbimby. The development may be safe but our houses won't be.*

*Waterways should be better managed in dry times eg replanting, de cluttering, Salvinia and weed removal, not permitting tree removals in floodplain areas*

*The floodgates in South Golden Beach apparently have been operated by the Byron Shire Council in an inefficient or possibly incompetent manner. This is commonly discussed in the area.*

*Collapsing road systems and unmaintained stormwater drainage will amplify and create localised flooding impacts upon residents and businesses. Why is it always cheaper to rebuild a failed road/drainage*

<i>network than it is to clean, repair and protect important public road and drainage infrastructure? If the sediment did not end up in the stormwater, Council would not have to consider the risk associated with dredging the river!</i>
<i>Get your act together please.</i>
<i>Council should be very careful on allowing developments occurring especially behind New City Road &amp; Anne Street!</i>
<i>Good luck</i>
<i>Queen St drainage is inadequate &amp; requires an upgrade. Localised flooding occurs even in lower rainfall bands</i>
<i>Solution is to prevent or minimize flooding in the first place by making sure water can flow as freely and unobstructed out to sea as possible. Look into and provide info to bund flood prone properties.</i>
<i>no</i>
<i>Stormwater drains and cleaning guttering would help with nuisance flooding</i>
<i>Dredge the river</i>
<i>No</i>
<i>It is unfortunate that the old flood management plan prevented new buildings from filling some of their yard to raise house levels. It seems difficult for residents if the rules change frequently and the past plan could have set a height of a 100 year flood level which would have prevented inundation on a number of SGB properties.</i>
<i>Recognise the reality of what happened in March 2017 and what man made conditions contributed to the flood. The value of real estate in the Northern part of the shire is now even greater than it was in March 2017 and is an huge asset to the council.</i>
<i>No</i>
<i>No</i>
<i>Listen to long standing residents who have experienced major flooding in the past.</i>
<i>No</i>
<i>Council drain Maintenance is very poor. Also this is a high rainfall area, when it rains heavily in the hills a lot of water moves quickly down to the ocean. This water will get to the ocean regardless. Blocked, overgrown drains and blocked ocean outlets just mean more hardship for our environment.</i>
<i>Don't develop structures in flood zones that change the flow of water and pre determined drainage systems - as in Waterlily Park Ocean Shores</i>
<i>Given the frequency of flooding in the Marshalls Creek floodplain, I am amazed that council do not have a database which would allow them to predict the severity of an event based on real time rainfall and tidal activity.</i>
<i>No</i>
<i>We need council to be pro active on this issue and inform the community the results of the survey and the action they will take as a result. Unfortunately I doubt any meaningful action will be taken.</i>
<i>No</i>
<i>NO</i>
<i>More information about insurance options</i>
<i>That council have people on standby when there is a serious rainfall event occurring, to provide information, collaborate with emergency services, monitor and maintain vital infrastructure e.g. I refer to the much discussed debacle of the South Golden Beach flood pumps</i>
<i>No</i>
<i>It is stated each time by long time residents that the water should be allowed to escape across the beach as was omnce the case many years ago.</i>
<i>Please just actually do something this time.</i>
<i>New dwellings in flood areas should be constructed so that they can be lifted if Flood levels increase. Ie no slabs</i>
<i>Please find attached letter to (details redacted) To whom it may concern, I was asked by Stacy Reece to prepare a review of some work that we have been compiling based on recently developed historical 3D models of the Marshalls Creek flood plain. These models were produced by the NSW Department of Finance, Services and Innovation by their Spatial Services team. Links to these models are provided</i>

below. 1947: [https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast\\_Historic/1947a/App/index.html](https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1947a/App/index.html) 1971: [https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast\\_Historic/1971/App/index.html](https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1971/App/index.html) 1987: [https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast\\_Historic/1987/App/index.html](https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1987/App/index.html) 1991: [https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast\\_Historic/1991/App/index.html](https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/1991/App/index.html) 2004: [https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast\\_Historic/2004/App/index.html](https://s3-ap-southeast-2.amazonaws.com/nsw-reality-models/NorthCoast_Historic/2004/App/index.html) The three images provided show the changes that have been made to the floodplain over time which have prevented waters that historically would have drained to the sea to be ponded to the low area to the north of New Brighton. Once the ponded water builds up to a certain level, the water now flows back into the village from the north across the New Brighton oval. This is evidenced by the flood debris on the northern side of the fence at the oval. The flood damage to the village is thus caused by ponded waters that have been blocked by man-made structures that have prevented this water from causing damage to New Brighton. Description of the flooding process Marshalls Creek catchment has been altered with development, but the channel to the west of New Brighton has largely been left untouched. Strong meanders present in 1947 are still present today, with the areas amongst the creek channels very low, and include areas of supra-tidal flats and mangroves. This is the point where high flows in the creek overtop the channel. What happens to this water has changed over time. In 1947, when Marshalls Creek overtops the main channel, the water flow either discharged through ocean outfalls to the ocean or to the large swamp area where South Golden Beach is now located, and then either through further ocean outfalls or into the Billinudgel swamp to the north (Figure 1). Sometime after 1947, these discharge flows were blocked, causing water to pond in the area to the north of the village. The flows were blocked by: Closure of the ocean outfalls through dune stabilisation works. Construction of roads and infrastructure for South Golden Beach removed the channel and closed the ocean outfall. Subsequent construction of a levee wall near the shop at South Golden Beach to prevent this water affecting South Golden Beach, causing the water to build up in the area to the north of New Brighton. When the ponded water filled the area to the north of the village to a critical level, the water then flowed to the south over the New Brighton Sports Fields. The water then re-joins the main channel, which is already at capacity and overflows into the village.

I hope that council keeps water ways and drainage maintenance done to prevent worsening of possible floods

Don't approve developments in flood prone areas, ensure that funding to emergency services can cover requirements for emergency situations especially considering the community is growing

I think the bridge on Kolora way at the southern end of the canal system should be up graded to allow more flow of flood water, then possibly the down stream water ways could be more self cleaning

no

Just seems that strategies stressed that no matter what is put in place a huge wet weather event has own life and not always be effective

New Brighton needs more flood attention

The waterways around Billinudgel require removal of debris more often

Only that when council know that floods are coming like in March 2017 that more work is done to have more staff oncall and available. I know that some houses would still have flooded but there were dozens of homes that could have avoided of being flooded if the pump at the end of Gloria st South Golden Beach was monitored by council staff. I know that there was only 1 water and sewer employee on call that morning for the whole shire. Poor form considering we all knew 5 days ahead of the flood that it was coming.

DO YOUR JOB

Dont let buildings happen on flood areas

I am in no doubt that reintroducing a controlled ocean outfall as described above and relatively small changes to Readings wall (remove 15 metres of eastern part of wall leave the rest) and possibly some dredging as done 2017 would significantly lower flood levels and durations for a low cost.

no

No new housing developments on flood plains, why let others suffer in their new properties when the older existing properties will suffer even more in wet times. Our streets and roads can't handle what is got already let alone more.

My observation from living in Brisbane pre 2010, was that information on flood levels didn't seem to be easily available to home buyers and certainly became less of a priority for new estates and developments. Without knowledge of previous events or the experience of older relatives who new the areas or had experienced the previous floods, information on flood inundated areas was not easily available. It would be good if the information on flood inundation was available to home owners and new home buyers in the North Byron area. It might have some bearing on town planning or release of land for development - but safety of people, property and livelihoods should be first priority. My family own a property at South Golden Beach since 1980 and in that time we have seen minor flooding in that area. However, my understanding is that other areas of the north byron area were much more heavily effected in the 2017 event.
Hopefully something real this time is done instead of nothing
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
I believe council should work on replacing above ground easements that lie between houses with underground pipes that cannot be blocked
Flooding at New Brighton will occur when Billinudgel starts to flood as water has to come down Marshalls Creek, That is why watching flood gauge at Billinudgel on the internet is iimportant
Prevention rather than focusing on what to do after the event !
Please undertake one or all of these measures 1) Remove training wall at the entrance of Marshalls Creek 2) Dredge Marshalls Creek and Capricornia Canal 3) Reopen ocean outlets that were closed by Byron Shire Council in the 1980's (I have personally seen photographs of these ocean outlets. They did exist and should not have been closed by Council)
Definitely needs another outlet to the sea in between SGB and New Brighton area
Because i am at the low point in the street, the water runs from the road directly into my garage - the council should not allow this as the first flooding does not come from the river - it comes from Pacific St
There have been studies conducted in the past by the Marshall's Creek Floodplain Committee but unfortunately no effective, long term action has taken place and, in fact, the outcomes have been that the flooding situation is getting worse. We need knowledgeable people who can be decisive and make a difference as flood mitigation in our area has been excruciatingly slow and ineffective.
Water travels from high to low to access the sea. We need to provide flood outlet to the ocean along the coastline from Wooyun to Brunswick Heads. Also remove the rock wall at Readings Bay.
DONT build more houses in a flood plane not even elevated ones it causes unnessary stress and hardship on all every house has one or two cars and gardens with bins and trampoling=es paint and timber all these things end up in the river causing even more problems and pollution and danger.
why were homes originally built in a known floodplain, this information must have been known at the time of constructions of these homes?
N/A
Please follow up with drain maintenance as promised after last flood. Issues in Pacific Street were reported at least 5 years ago.
I would like an explanation why nothing is being done.
New dirt roads from the coast towards the highway.
Rubbish collection straight after is so important. Also, Council wanted flood data after but no one came out looking for it. They should have come out to the flooded places and taken photos of where it came up to on houses. (Maybe they did? It felt like they wanted the info but the onus was on the home owners to send it in).
A concern that inside the council there is a bias to do nothing and that results will be skewed towards this.
no
Stop development in flood prone regions as the infrastructure can't support it in the case of emergency evacuation
I think someone needs to look at the dams constructed on the property just out of mullumbimby on coolamon Scenic Dr. I think the construction of these dams caused a diversion of water towards mullumbimby and had some effect on the flood levels around this side of town. They were constructed just prior to the flood event. More water seemed to be flowing in to town from this area. The water was up

<i>higher then I've seen it at the small bridge on main arm rd (chinbible crk) that them flows to the brunswick river near the Federation Bridge. Additionally the water under this bridge would run quite clearly &amp; could see fish &amp; turtles....it's now muddy &amp; dirty.</i>
<i>Council needs to ensure that development is not permitted on our flood plains... blocking our water flows will make the situation so much worse</i>
<i>What about plans for FREE dumping of items from flooded homes, in a time-frame that also includes all those who were told they had to leave everything as it was and were still waiting weeks and even months later for insurance companies to assess them.</i>
<i>I had to pay for rubbish removal afterwards as papers indicated council would not take rubbish then changed their minds. Cost me \$130 unnecessarily</i>
<i>the drain near the western side of the railway line near woolies to the river needs cleaning out now to allow flood waters to get away</i>
<i>No change in flood level at my property in 22 years.</i>
<i>Tallowood is a much better place for houses than the flood land in 'lot 22'. There is no amount of mitigation you can do in design that will stop it from flooding. The town has spread west to Tallowood and so it should, there are hills and infrastructure. Keep it simple. If you need the money from the sale of the floodplain, then sell the land to someone who can maybe, if they dare, put ONE house on it on ten foot high stilts. Putting 200 houses there is just short-sighted money grab that will ultimately leave anyone who buys a house there in distress when it floods next time..</i>
<i>Although I am concerned about further interference with our creeks and wildlife, it seems human intervention has caused the extreme events we have been experiencing. Every time we have a flood event, I spend the next week rescuing wildlife, so dredging and changes in rock walls will only help our wildlife.</i>
<i>Why would you build a new subdivision in the middle of it, namely Lot 22?</i>
<i>Good luck</i>
<i>While flooding is a natural phenomena, its magnitude has been affected by changes to the floodplain over the last 30 years. These changes cannot be undone, so engineering solutions are needed to compensate for the impact of those allowed changes.</i>
<i>Far too many homes in flood prone areas.</i>
<i>Why another plan when the options have been exhaustively addressed already in previous plan</i>
<i>maybe keep a checklist of residents who are handicapped and elderly</i>
<i>Don't you dare put existing properties at risk by developing Lot 22 in Mullumbimby. You have no idea how much contempt the community feels for the Council for even considering building on this Public Land.</i>
<i>Filling of land at Orchid Place has affected the surrounding area. Saltwater Creek needs to be cleaned up to increase flow. Concentrated flow from Tallowood appears to have increased flooding.</i>
<i>Look at the properties, talk to those that actually know something not those that have only been here a couple of years. 100 year old homes flooded in 2017. Look at what developers are doing that change the course of water such as building dams in river tributaries</i>
<i>Make sure all waterways a clear of debris, drains leading the river are not blocked, make sure pump at SGB is working and trust that a plumber living there can operate. Don't forget about this end of the shire because we did feel forgotten.</i>
<i>Taking sand out of the Brunswick River and creeks that feed the river is the only way</i>
<i>I live at the end of Rush Ct. This area has never flooded before because the water always broke on the other side of the river - I'm wondering if the Tallowood Estate is to blame because their catchment is smaller and what used to be grass is more concrete. Also drains must be kept clear at all times - many people got flooded from their drains shooting water into the house not from the flood itself. Heard from my members at the SES that there was debris caught under Federation Bridge.</i>
<i>N/A</i>
<i>Removal of rail levee + bridges which restrict water flow. Increased water flow under road bridges</i>
<i>I've lived here 37 years and been flooded three times. The council has never admitted any responsibiliyy regarding the flooding</i>
<i>As stated earlier all these run offs were cleared about 12 yrs ago and no matter how many times I had your people out nothing was cleared.</i>

<i>The 2017 flood in Orchid Place was at highest level (surging into few streets) that we had seen in over 45 years of living at the address below (Saltwater Creek) and all drains need regular cleaning.</i>
<i>I have repeatedly rung the council for requests to maintain lane-way (Ward Lane). I would like drainage to be underground as banks of open drains collapse, get blocked and even grow trees in them.</i>
<i>Council should stop allowing fill on the floodplain and prosecute illegal fill. I have lived here for 45 yrs and witnessed illegal fill and council approved fill hundreds of times. My protests disregarded.</i>
<i>No</i>
<i>Thank you for providing the survey.</i>
<i>Re. Q8 - I had house built June 1963. Yard flooded once a year. Still here 2018. Largest flood this side of town (Mothers Day 1987).</i>
<i>Re. Landscape management - Only banks in areas that have been stripped of vegetation causing bank erosion.</i>
<i>Re. Detention Basins - This may be of use for farmer with a small creek flowing through his property into a larger creek.</i>
<i>Re. Stormwater pipe upgrades - If done in the right investigated areas</i>
<i>Before Council build new subdivisions, consider where natural water flow goes. Building up land pushes water onto existing households.</i>
<i>Don't allow filling on blocks before houses/industrial sheds are put on land.</i>
<i>Council to employ independent engineers to look into relief via sand dunes north of North Byron. If the levee out bend of north O/S was constructed to mitigate effect from floodplain and Yelgun Ck catchment, and later removed and altered by Tweed Shire, someone must have believed it to have some effect on flooding of Ocean Shores.</i>
<i>Where does drainage go when new residential areas opened. Vegetation maintained in new housing estates.</i>
<i>clean up rubbish trees, mess stagnant water</i>
<i>What a waste everybody knows council is causing the flood</i>
<i>Do not delay</i>
<i>Make sure Marshall Creek is cleaned out and kept free of fallen trees and debris. Drains and culverts are free of debris prior to wet season. In town planning and development application process, do not allow major land filling which can impact surrounding areas in the future.</i>
<i>People on that committee should live on NB floodplain</i>
<i>Don't wait until there is more flooding</i>
<i>North Ocean Shores needs flood outlet opened up!</i>
<i>There are no short term low cost options - damage future cyclones should also be included. I was in Byron Bay when the cyclone flooded sea water right across the area south of Lawson St (Before its construction)</i>
<i>Why is it called North Byron?</i>
<i>No</i>
<i>No, person should build on flat ground. Every house needs to be above flood line, at least 2 ft and council is to blame for most of the damage</i>
<i>Not really</i>
<i>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.</i>
<i>Immediate remedial action</i>
<i>That the cleaning out of sand build up, debris, old rotten logs, mangrove takeover of our waterways - removal of rock walls, outlets opened post haste.</i>
<i>Re. Q9 - Why final federation Bridge? Billinudgel, Marshall Creek and drains, all the way to New Brighton.</i>
<i>Re. Q10 - These were included/documentation in BSC flood study 29.2.16 submission, and the trees/debris along the rail corridor and drains.</i>
<i>Please look at historical information and re-open or build more outlets for flood waters to escape.</i>
<i>It needs action of change.</i>

Clear, clean + keep clear all drains + gutters - badly neglected in recent years. Clear trees + rubbish from drainage each side of railway line. STOP turning almost every car shed into housing and all the excess with it. Plus too many cars parked on verge, as well as garbage bins permanently out there. Leave the rec. grounds for sport not for housing and it floods. That also applies to all other low lying areas. They would put too many lives at RISK.

The 2018 flooding was totally different to all others. Came up in the middle of the night unexpectedly, no chance to take precautions. Came from different angles. Swirled from one direction to another down one side and up the other of Paddocks, ponds etc. A large container was washed from the back of the road industrial estate and up the paddock, timed up ended against the railway embankment off the end of Mill Station streets, there were also garbage bins washed up with it. On normal floods if strong enough to move it, it would have gone over the mud bank it was standing on + into the river. However we've never before had a ferocious flood like that one so hard to judge by and have a thinker on why front of eyes still to show the depth there.

No

Please stop allowing developments on flood prone lands no matter if they are low or medium flooding. Don't allow ant areas to be filled of, don't allow in fill in areas Towers Estate has made a big difference to flooding in the Argyle St areas and Tollow was affected alot of areas in Azalea St.

I would like to see less run off from the showground into the drain opposite my property. These open drains are sloped into Chinbible Ave which is also across to my property. The camber is sloped toward properties not away.

I do not have faith in council - because there is no commitment to cleaning the drains or doing other measures or maintenance - i.e. keep river and creek clean + reliable

There are 3 frigates for sale in Sth Australia. I have seen many attempts to control water around the world. Holland and Hawaii are successful. Hawaii Waikiki beach survives and does not lose sand because they created a reef with sunken ships and have perfect waves all year round. Rock walls in Europe all end up with no beach only walls.

What can council do to improve the town drainage at Mullumbimby? What does the Council intend to do about it? Also will the \_\_\_ on the bend of the river before Fed. Bridge be cleaned.

Re. Q9 - A long time resident at the end of Rush (my street) Court told me about a build-up of debris on that bend.

I have been a resident of Mullumbimby for 50 yrs. The council needs to keep the maintenance done on drains and clean out everything. And stop people building on floodplain zones, there is not enough study done and discuss with community.

stop development on our floodplains. The water will always find its way and it has to go somewhere.

It will be great if something actually gets done.

As a fourth generation local of Mullumbimby I strongly oppose any building or filling of floodway land such as the lot 22 proposal or any other congestion on any other flood way in the town area.

I would like to meet and show the drain in my lane way Strudall Lane cnr of Mill St opposite park. As I've gone to a lot of expense to build a rock wall as since I've been here I lost part of my land due to the lane way not being straight it has been altered by neighbours.

Re. Permanent levees - I was on the Mullumbimby Council community when they looked at levees at Mullumbimby finding where it would hold water.

Re. Q9 - I was in Melbourne at the time of the flood) I was informed it did have debris blocking flow

Yes. It is my strong opinion based on 16 yrs of flood observation around my area and streets that Tallawood Ridge Development water run-off due to high density housing and small blocks is significantly impacting the flooding of properties along (add numbers) houses along Hottentot Cres, Mullumbimby. This needs further serious investigation and measures taken to address issue!!!

Re. Q11 - Landscape management + stormwater/pipe upgrades

Stop development on floodplains - building up for house etc. - Adversely affect the home owners around e.g. school hall and 33A Queen St affect my home



*listen to the people. We might just know something that councilors don't*

*removal of existig railway line - northern end of station st to allow extra flow and southern side of salt water creek*