

COMMUNITY CONSULTATION

- Summary of Questionnaire Responses
- Community Newsletter and Questionnaire – October 2020

DISCUSSION PAPER

Community Consultation Summary



Project: S20095 – Bonalbo Flood Study
Prepared for: Kyogle Council
Date and Rev: 13/01/2021 – For Client Review
Prepared by: Thomas Sigley
Reviewed: Laura Baxter

1 INTRODUCTION

Effective community consultation and participation, through valuing the experiences and opinions of the community can improve the collaboration between Council and the community enabling the achievement of project outcomes that are satisfactory to all stakeholders.

Community Consultation is ongoing throughout the Flood Study project. The purpose of this Summary Paper is to summarise the consultation undertaken to date and how the findings will be incorporated into the Flood Study. This Summary Paper will be updated at key stages during the project following community consultation phases.

2 COMMUNITY CONSULTATION PROGRAM

The Community Consultation Program involves:

- **Project Website** - A project website is being hosted at www.bgeeng.com/floodstudies/Bonalbo for the duration of the project. This provides the community with updates on the study progress, links to the community questionnaire and contacts to provide information and feedback.
- **Community Newsletter** – a newsletter was mailed to 280 property owners in September 2020. A copy is included as Appendix A. The newsletter informed of the objectives of the Bonalbo Flood Study and highlighted the study area. Kyogle Council also posted notices on their website to link to the community newsletter and project website at <https://www.kyogle.nsw.gov.au/council-engagement/council-business/on-public-exhibition/>.
- **Questionnaire** – a questionnaire accompanied the newsletter in September 2020 (copy provided in Appendix A). Residents were given until 31 October 2020 to respond. A copy of the questionnaire was also made available online. The findings of the questionnaire are useful to understand the community's experiences of past flooding, the level of flood awareness, highlight areas for flood mitigation and allow residents to provide flood information for use in calibration of the flood models. A project email address was also created to allow people to email photographs and addition information.
- **Community Information Sessions** – two information sessions are planned. At each session community input will be invited through on the day questions and answers or feedback forms and via the project website.
 - Due to the restrictions of COVID the first will be undertaken online if required. The first session will describe the preliminary findings of and seek feedback on the flood modelling undertaken.



It will also present how the results of the community questionnaire and other community feedback are being taken into account in the study.

- A second community consultation will be undertaken during the public presentation of the Draft Flood Study at start of the Public Exhibition period. This will present further additional information such as flood hazard, emergency classification of communities and consideration for the effect of the Bonalbo Dam with regard to flood behaviour and flood risk.
- **Public Exhibition** – the Flood Study will be placed on public exhibition for a period of at least 28 days to invite community feedback before Council adoption.

3 QUESTIONNAIRE FINDINGS

The questionnaire was mailed to property owners in and around the study area. A total number of 280 newsletters and questionnaires were mailed out. The purpose of the community questionnaire was to:

- Understand the level of flood affection and the numbers of people who have experienced flooding;
- Encourage the community to provide information about historic flooding which can be used in flood model calibration and understanding flood behaviour;
- Highlight areas where the community thinks flooding is a concern and requires management;
- Identify the level of flood awareness and the community perceptions on acceptable frequency of flooding.

3.1 Response Rate

A total of 1 responses were received online and 26 by mail. The total number of responses was 27 which equates to a 9.5% response rate. This was considered to be a reasonable response rate, given the size of Bonalbo and the number of residents who reside there. Response rates to surveys such as these tend to be more skewed to those who have experienced or are concerned with flooding.

One respondent requested to be contacted for further information. BG&E spoke called the resident who agreed to email through additional information (photos, flood depths etc.) At the time of collating community questionnaire findings and compiling this report this additional information had not been received.

3.1.1 Who Responded?

Identifying where respondents live can indicate where flooding is of a greater concern to residents. Typically, those in more flood prone areas are more likely to respond and provide feedback. Understanding how long residents have resided in the area can also be beneficial in determining a level of flood awareness in relation to the community i.e. the longer a resident has lived in the area, the more likely they might have experienced flooding. The location of respondents are depicted in Figure C1 in Appendix C.

3.1.2 Property Classification

Figure 1 identifies the residence classification of respondents. Over 80% of responses received were from residential properties or a residence classified as 'home'. Responses to this question outline that it is home owners or occupiers who may tend to feel more affected by flooding issues than non-residential owners or occupiers. However, results may be skewed, due to a larger tendency for home owners or occupiers to respond to the questionnaire.

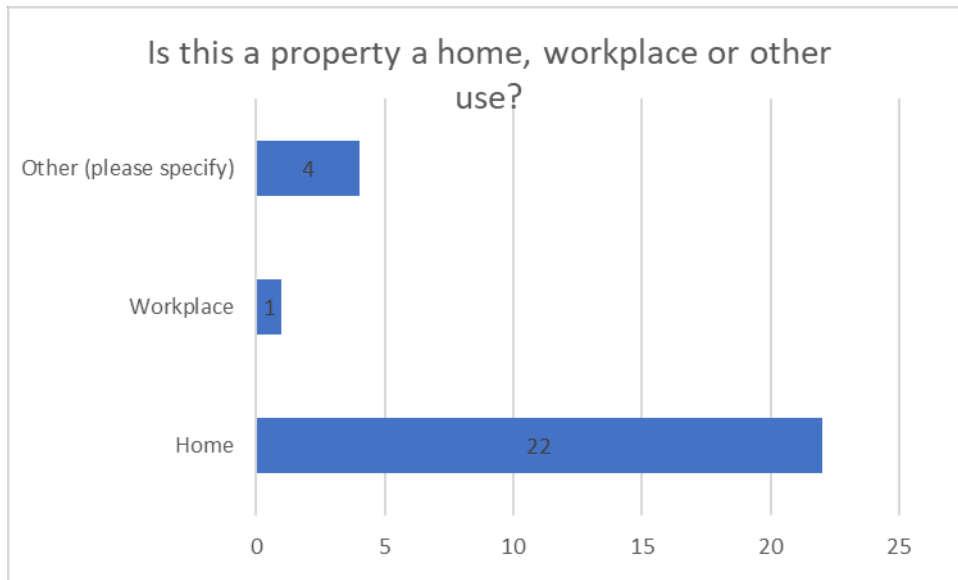


Figure 1: Classification of Residence

3.1.3 How Long Have Respondents Lived in the Area

Figure 2 presents the period of time during which respondents have lived or worked in the area or at their residence. 37% of respondents had recently moved into the area within the last 5 years, with this group least likely to be aware of the existing flood risks or be aware if their property or workplace could be subject to inundation.

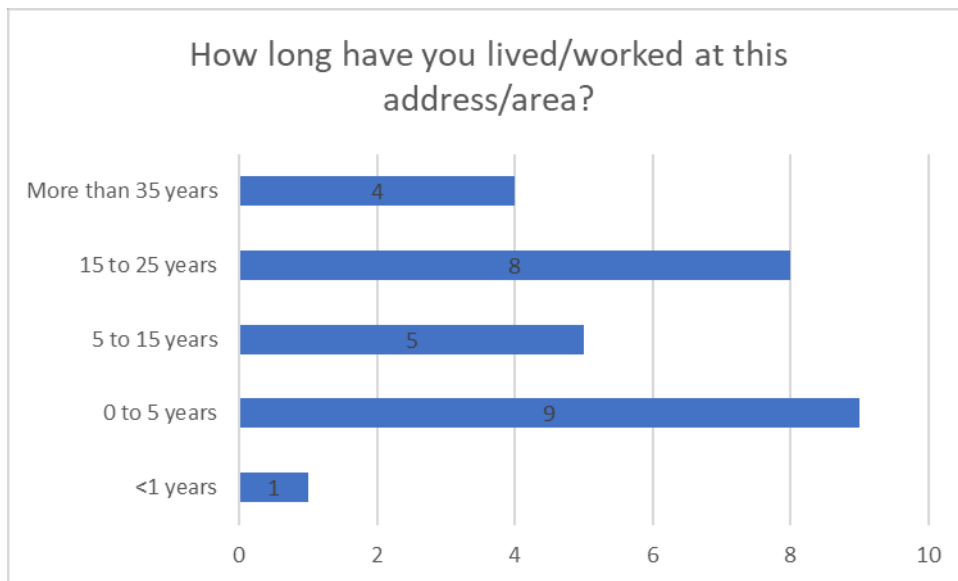


Figure 2: Period of Time Respondents Have Lived in the Area

3.2 Flood Awareness

Understanding the community's awareness of flood risk and their response allows for targeted flood awareness campaigns and can assist in flood emergency response planning.

3.2.1 Personal Property

The questionnaire asked respondents if they were aware if their property was flood affected and if it had flooded before. This type of question can often be skewed more towards a positive 'yes' response, as respondents who may respond are typically within flood prone areas or have been affected by flooding previously. People who have not experienced flood at their property have a greater tendency to not provide a response, as they feel the issue has not or will not affect them.

Figure 3 highlights that 59% of respondents nominated that their property was flood affected and that it had flooded before, with a further 15% acknowledging that their property was flood affected but had not flooded before.

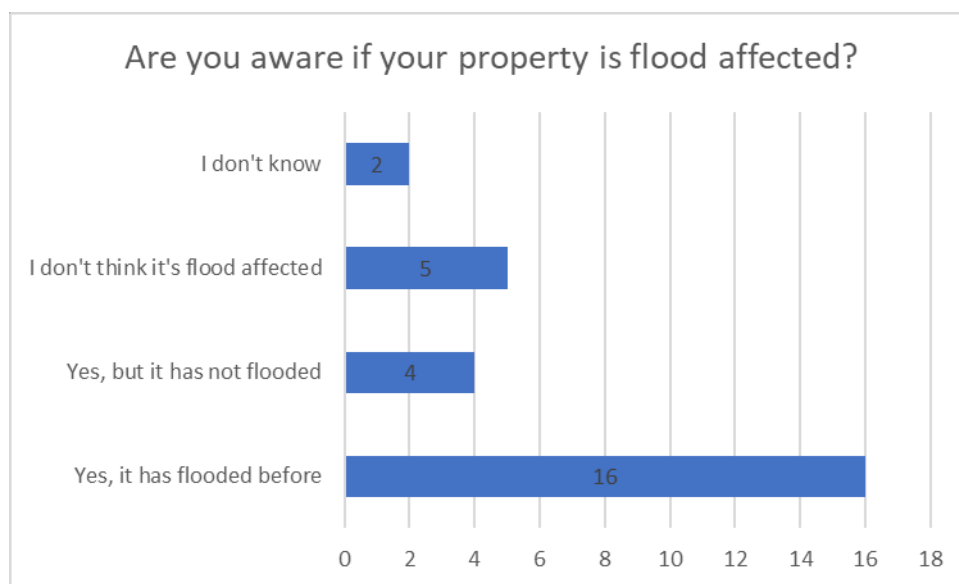


Figure 3: Respondents Affected by Flooding

Of the 16 respondents who elected that the property was flood affected and had flooded before, 11 of these had been isolated due to flooding. This suggests that respondents affected by flooding at their property were also isolated.

On 5 counts each, respondents made particular mention to the Sandilands Street Bridge crossing and the Woodenbong Road Bridge near intersection of Hospital Road.

Results relating to flooding experiences, particularly isolation and/or evacuation are presented in Section 3.3.1 below.

3.2.2 Responding to Flooding

Questions asked within this section of the questionnaire were aimed to understand the level of flood awareness of the community in terms of emergency response behaviour. Respondents were asked if they believed they would know what to do in the event of a flood.

Figure 4 highlights that 56% of respondents believed they would know what to do in the event of a flood. A further 25% indicated they 'think' they would know what to do, however had not previously experienced flooding. 10% of respondents were not sure or would not know what to do. Although the results indicated a high awareness to act during a flood (85%) this question can be skewed as those who have experienced in the past may feel like they would now know what to do in the event of another flood.

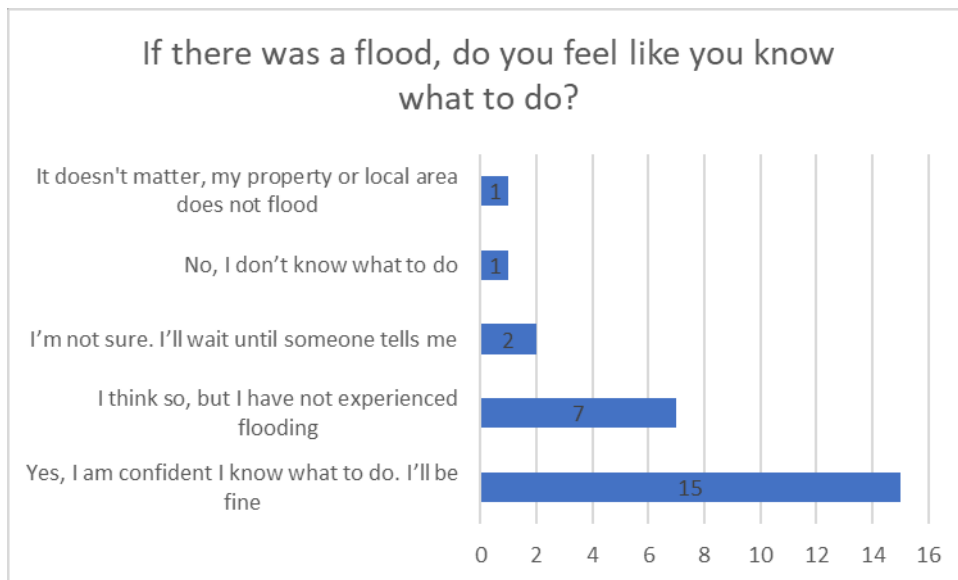


Figure 4: Flood Awareness of Respondents

Of the 15 respondents (56%) who believed they would know what to do in the event of a flood, all 15 had either experienced a flood at their property or in the local area. While people may believe they know what to do, based on one or more experiences, the floods experienced, notably in 2017 and in early 2020 (during months of January and February) were not considered to be extreme events (to be confirmed through the Flood Study). Should a larger flood occur requiring a different response such as evacuation, people may believe that there is no need for evacuation based on their past experiences. This is a challenge in flood emergency response management and the findings of the Flood Study will be able to assist in planning for and raising awareness of the community emergency response for larger floods.

Of the 7 respondents (26%) who indicated they 'think' they would know what to do in the event of a flood, 3 had either experienced a flood at their property or in the local area. The remaining 4, had no experienced a flood of any kind at their property or in the local area.

The results indicate that 44% of people are not confident they would know what to do during flooding. This shows the importance of the community consultation through the Flood Study program but also the importance of continued flood awareness and community flood education undertaken by Kyogle Council and the NSW SES.

3.3 Experience of Flooding

3.3.1 Evacuation and Isolation

Respondents were asked to outline if they had been evacuated or isolated during events of flooding. Again, this type of question can often be skewed more towards a positive 'yes' response, as respondents who may respond have typically been affected by flooding in some way.

Figure 5 highlights that 59% of respondents nominated that they (or other household members) had been isolated in the past due to flooding. The remaining 41% indicated that they (or other household members) had never experienced isolation or evacuation due to flooding. There were no inferences of any evacuation taking place during a flood event.

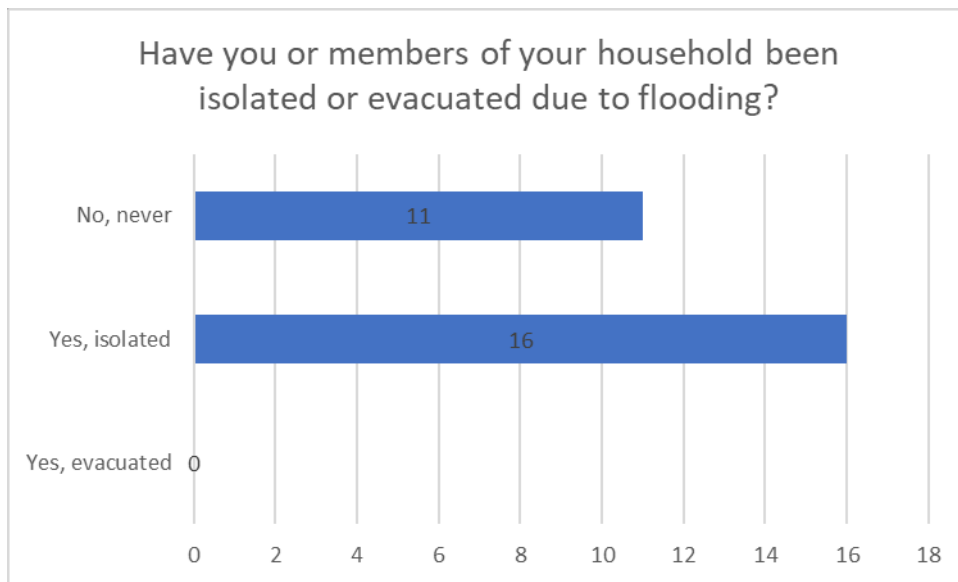


Figure 5: Respondents who have been Isolated or Evacuated from their Household

Of the 16 people (59%) who reported having been isolated during flooding:

- 10 of those reported having observed flooding from Peacock Creek
- 14 reported experiencing flooding from stormwater or smaller creeks.
- 4 resided on Sandilands Street, with a further 2 living along Clarence Street and Woodenbong Road respectively.

The flooding events in January and February 2020 were commonly noted as causing isolation; in particular the event on the 25th January, 2020. Similarly, the event experienced in March 2017 was also mentioned on numerous occasions.

3.3.2 Peacock Creek

The questionnaire asked respondents to acknowledge if they had ever experienced flooding from Peacock Creek. This question served to focus on areas subject to mainstream flooding from Peacock Creek only.

Figure 6 highlights that 59% of respondents elected that they had never experienced flooding from Peacock Creek. Of the 11 people reported having observed flooding from Peacock Creek, 4 people reported that flooding from Peacock Creek had directly affected their property. 2 of these 4 resided on the south-eastern end of Sandilands Street, within approximately 200m of Peacock Creek.

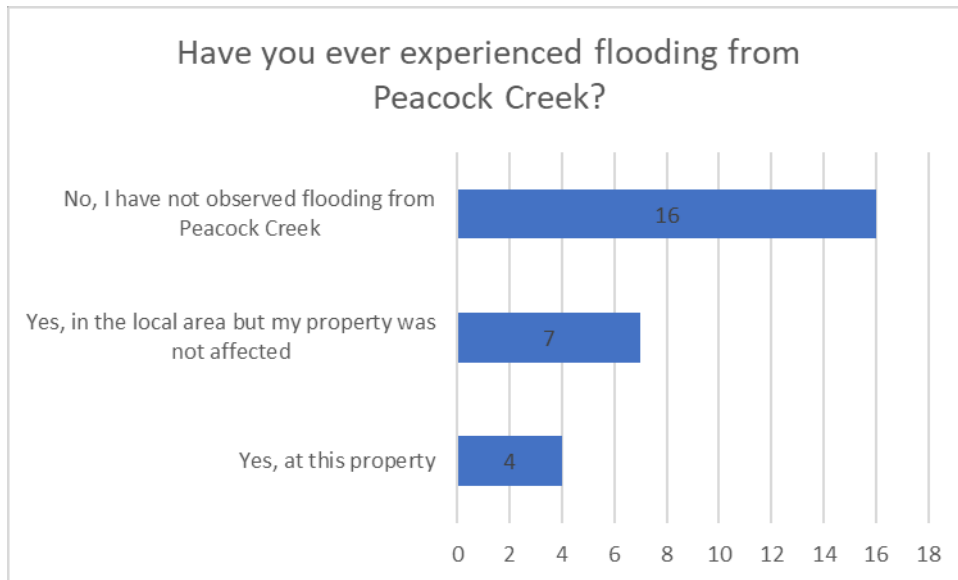


Figure 6: Percentage of Respondents who have experienced flooding from Peacock Creek

A higher proportion of 'No' responses may relate to the geographic location of Peacock Creek in relation to Bonalbo, where the majority of residences are located west of Peacock Creek.

3.3.3 Other Sources of flooding

The questionnaire asked respondents to acknowledge if they had ever experienced flooding from stormwater or smaller creeks. This question served to focus on areas subject to localised flooding, unrelated to Peacock Creek including smaller local creeks and local council-owned stormwater infrastructure such as channels, pits and culverts.

Figure 7 highlights that 12 respondents experienced local flooding at their property, with a further 7 electing they have experienced flooding in their local area, but not at their property. This equated to approximately 70% of respondents experiencing flooding at their property or in local area.

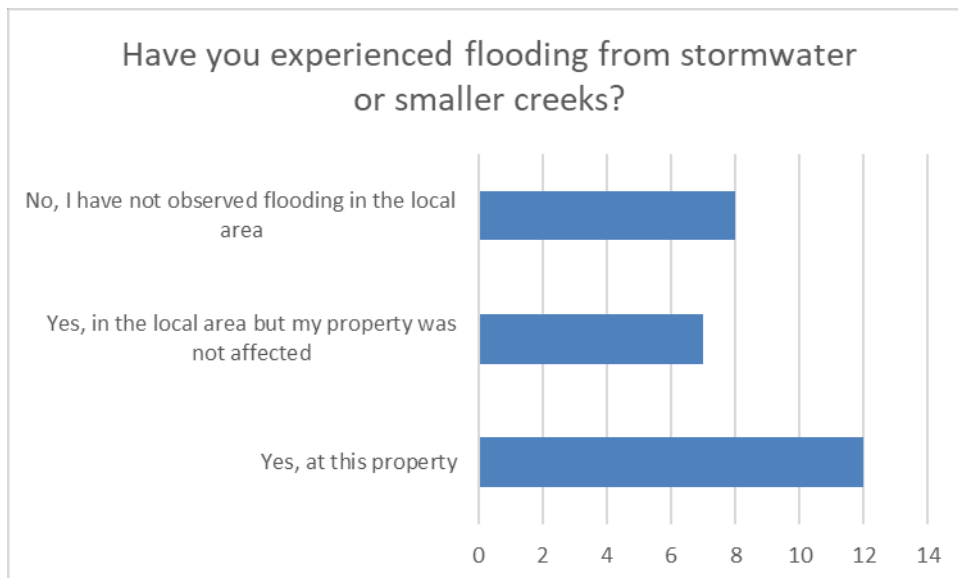


Figure 7: Number of Respondents who have Experienced Flooding from Stormwater or Smaller Creeks

Of the 12 respondents who had experienced flooding at their property, 6 pointed to the area around the open drainage channel that connected Woodenbong Road bridge (at the intersection of Hospital Road) and

Sandilands Street Bridge and drainage from the upstream catchment near the hospital/showground. 3 of these respondents referenced dates in early 2020; particularly January and February.

Additionally, of the 7 respondents who had experienced flooding in the area (but not at their property), 4 also referenced the same area; Woodenbong Road bridge (at intersection of Hospital Road), Sandilands Street Bridge and the upstream catchment near the hospital/showground.

3.3.4 Historic Flooding

Respondents were also asked to provide specific commentary on:

1. Date of observed flooding
2. Depth of observed flooding
3. Location of Observed Flooding

Results are summarised in Table 1.

Responses indicated that the most significant period of flooding occurred at the beginning of 2020 with 7 respondents referencing instances of flooding during months of January and February 2020. Although more respondents reported flooding in the current year (2020) than in previous years, this does not necessarily mean that incidences of flooding are increased. The higher number of reported flood observations is influenced by the more recent memory of people, coupled with the time in which people have lived in the area. It was seen that the more recent events (in January and February 2020) were inferred by respondents who had typically only resided in the area for 0 to 5 years.

Table 1: Summary of Flood Events where Dates were Provided

Date/Year Observed	Number of Respondents	Comments
2005	1	<ul style="list-style-type: none"> • Water over bridge at Peacock Creek Bridge at Gray Bridge
2011	1	<ul style="list-style-type: none"> • Water over bridge at Peacock Creek Bridge at Gray Bridge
March 2017	1	<ul style="list-style-type: none"> • Water over bridge at Peacock Creek Bridge at Gray Bridge • 2 – 3m of water over bridge for 3 – 4 hours. • Since 2017 event, a new bridge has been constructed so a flood is needed to see how high water gets
31 st March 2017	1	<ul style="list-style-type: none"> • Residential Property on Clarence Way, Tunglebung • Flood in Tunglebung Creek. • All 4 property fencelines along creek were damaged. • Water across all of lower flats and created deep channels causing erosion
Early 2020	1	<ul style="list-style-type: none"> • Cannot remember exact date, but referenced early in year of 2020. • During heavy rain the small creek near the store overflowed and water started coming up to the door, however drained away quickly.
January, 2020	1	<ul style="list-style-type: none"> • Flooding in area between hospital and shops • Flooded drains could not handle runoff from upstream catchment – water backed up at hospital turn-off at Woodenbong Road. Refer images 2 to 9 in Appendix B. • Water then flowed into CBD at a depth of at least 300mm

20 th January 2020	1	<ul style="list-style-type: none"> • Flooding on Woodenbong Road and at Golf course • Flooding blocked Woodenbong Road
25 th January, 2020	3	<ul style="list-style-type: none"> • Runoff from high street and the hill behind reservoir inundated property from Yabbra Street with a 20 cm sheet of water, running width of block. Caused flooding of property on Clarence Street. • Water overflowed Sandilands Street drain into Sandilands Street depositing flood debris opposite supermarket and pub. • Farm road cut-off at Golf course. 400mm depth of ponding estimated from photograph 12 in Appendix B. • Water over road at Woodenbong Road bridge and the Sandilands Street Bridge. Town was cut in half with no access to shops, healthcare and other services. Refer photograph 14 in Appendix B.
February 2020	1	<ul style="list-style-type: none"> • Flash flooding from town centre on residential property on Sandilands Street. • Approx. 1ft (300 mm) in depth in front yard.

3.4 Flood Mitigation

3.4.1 Flooding of Other Areas

To understand the local community’s priorities for flood mitigation, the questionnaire asked respondents to detail areas within the Bonalbo Flood Study which they thought flooding should be reduced. This question served to identify if there were potential priority or problem areas.

Figure 8 highlights that 19 respondents (70%) believed that other areas within the Bonalbo Flood Study were problem areas subject to flooding.

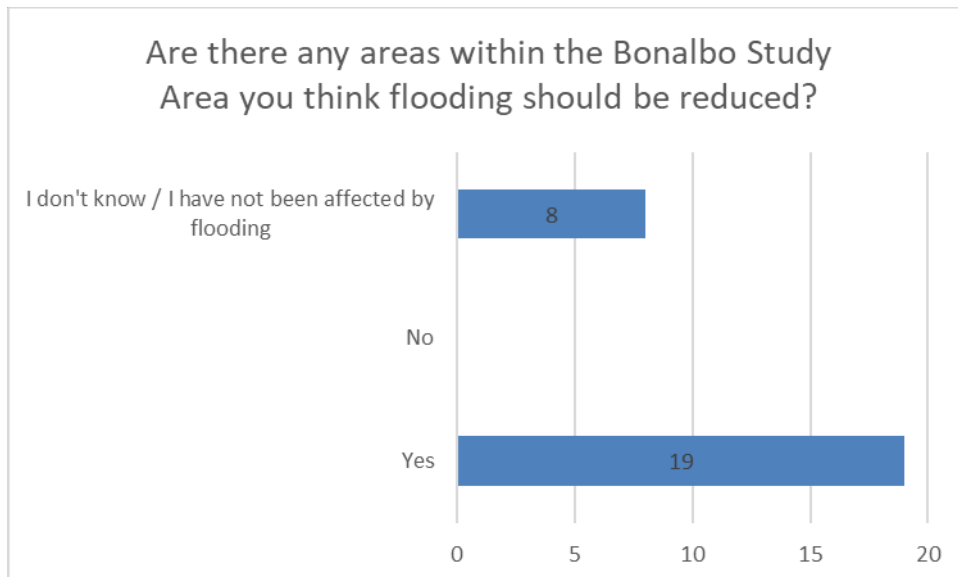


Figure 8: Number of Respondents Who Believed there are Areas where Flooding Should be Reduced

Of these 19 respondents:

- 9 referenced the area around the drainage channel running to Woodenbong Road Bridge and Sandilands Street Bridge and associated shops located along Sandilands Street.

- mentioned the turnoff to the hospital at the intersection of Woodenbong Road and Hospital Road

A further 8 respondents nominated they had not been affected by flooding or did not know of any other problem areas.

3.4.2 Priority Areas

Respondents identified a number of 'priority areas' where they noted flooding. These are summarised in Table 2. These areas are also depicted in Figure C2 in Appendix C.

Table 2: 'Priority' Areas

Street/Location	Number of Respondents	Comment
Sandilands Street	10	<ul style="list-style-type: none"> Residential Property – 6 Sandilands Street. Experienced 2 major floods where floodwaters rose to approx. 740mm causing major damage to properties and goods. Stormwater drain across rear boundary fence floods during heavy rain and overflows to corner adjoining 4 Sandilands Street. Causes soil erosion problems. Residential Property – 39 Sandilands Street. House on corner of Bonalbo Street and Sandilands Street was restumped to be above previous flood level. Residential Property – 37 Sandilands Street. Catchment from showground area and dam overflows through open gully. Has flooded on several occasions the highest being 400mm. Residential Property – 63 Sandilands Street. Localised flooding on block several times but since construction of levee bank on Oak street, instances of flooding decreased significantly. Flood evacuation from houses along Sandilands Street Creek that runs from Sandilands Street Bridge to Capeen Street Bridge. Residential Property – 1A Sandilands Street. Causeway at bottom end of Sandilands Street at Golf course. Water crosses Sandilands Street/Gill Street during heavy rains. Water enters shops. Along Sandilands Street, flooding of business premises. Flooding of hardware shop when water arrives from Sandilands Street bridge.
Woodenbong Road	5	<ul style="list-style-type: none"> Residential Property – 61 Woodenbong Road. For rain durations greater than 3 hours the property floods. When hospital was upgraded all stormwater now runs down the hill. No drainage upgrades as part of hospital upgrade causing flooding of drain at Woodenbong Road and Hospital Road intersection. Flash flooding from hospital and showground access from Woodenbong Road. Area between hospital and shops along Woodenbong Road. Water backs up at hospital road turnoff and flows into CBD at depth of 300mm.
Clarence Street	4	<ul style="list-style-type: none"> Residential Property – 18 Clarence Street. Gutters and drainage required at High/Yabba Street street junctions to prevent 'walls' of water running into properties downstream (particularly 16, 18 and 20 Clarence Street)

4 DATA FOR FLOOD MODEL CALIBRATION AND VALIDATION

Data that may be suitable for flood model calibration is summarised in Table 3. Where no time and dates are provided, the result of the flood modelling can be compared with the anecdotal evidence to validate the model performance.

Table 3: Calibration and Validation Data Summary

Date and Time	Location	Observation	Comment	Approach to flood model calibration / validation
Frequent occurrences	16, 18 and 20 Clarence Street	Unknown	"20cm wall of water coming down High Street" – likely to be shallow overland flows from High/Yabbra Street intersection	Review modelled flood behaviour against the anecdotal evidence
No date	6 Sandilands Street	740 mm depth	Comments states 2 "major floods" but dates not recorded. References "stormwater drain across from the rear boundary fence"	Review modelled flood behaviour against the anecdotal evidence
No date	37 Sandilands Street	400mm flood depth in open drainage channel at back of residence	Catchment from showground area and dam overflows through the gully/drain at back of residence	Review modelled flood behaviour against the anecdotal evidence
No date	61 Woodenbong Road	Flooding of open drainage channel adjacent to Bonalbo Street	When hospital was upgraded 'all' stormwater runs down the hill. No drainage upgrades as part of hospital upgrades. Causes flooding of drain located next to property.	Review modelled flood behaviour against the anecdotal evidence
January 2020	Woodenbong Road at intersection of Hospital Road	300mm depth in CBD	Area between hospital and shops. Drains flood which 'cannot handle runoff' with water backing up at hospital turn-off at Woodenbong Road.	Model storm events during January 2020.
25 th January 2020	Woodenbong Road Bridge and Sandilands Street Bridge	Refer photograph 14 in Appendix B	Town was 'cut in half'. Water was over road at Woodenbong Road Bridge and Sandilands Street Bridge.	Model storm events during January 2020.
25 th January 2020	Farm Road at Golf Course	Flooding over farm road	Farm road cut-off at floodwater near Gold course	Model storm events during January 2020.
February 2020	1A Sandilands Street	1ft (300 mm) of water in front yard	Flash flooding of town centre	Review modelled flood behaviour against the anecdotal evidence

5 SUMMARY

- The population within the Bonalbo Flood Study area are generally flood aware. However, it would appear that flood awareness may be skewed due to the more recent memory of flooding events that affected the town of Bonalbo in January/February 2020.
- About half of the people who response to the questionnaire believe they are aware of what they need to do during a flood. Given that those who have not experienced a flood are less likely to respond, it is likely that a large portion of the community is not aware of the flood risks during events such as a 1% AEP event. The survey responses indicate that further community education on preparing for flooding and evacuation would be beneficial, particularly for larger floods.
- Community data for the January 2020 flood will assist in flood model calibration.
- Key areas identified by the community as requiring flood mitigation or management include:
 - Sandilands Street Bridge
 - Woodenbong Road Bridge
 - Shops along Sandilands Street
 - Causeway at 'bottom end' (south-east) end of Sandilands Street, 'near the Golf course'
 - Woodenbong Road at Hospital Road turnoff
 - Clarence Street

Newsletter and Questionnaire – September 2020

BONALBO FLOOD STUDY

Kyogle Council have engaged engineering consultant BG&E to develop a Flood Study for Bonalbo. The study is being undertaken with financial and technical assistance from Council and Department of Planning, Industry and Environment (DPIE) through the NSW Government's Floodplain Management Program.



Planning,
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Environment



The Flood Study will help us understand the likely flooding scenarios for the town of Bonalbo including flooding from Peacock Creek and runoff from local catchments.

The Bonalbo Flood Study will:

- Develop flood models based on historic data and statistical analysis
- Identify the areas of flood prone land to assist with flood planning and risk management
- Consider effect of the Bonalbo Dam on flood risk
- Establish the likely flood risk and flood hazard for properties in the study area
- Develop flood mapping to assist in future planning and development
- Provide flood intelligence to the NSW SES to assist in flood emergency response

HOW CAN YOU HELP?

The local community is the best source of information on the flooding issues. We are asking for information such as your experiences, photos and observations of flooding. A Community Information Session will be held at a later date to present to the community the findings of the study.

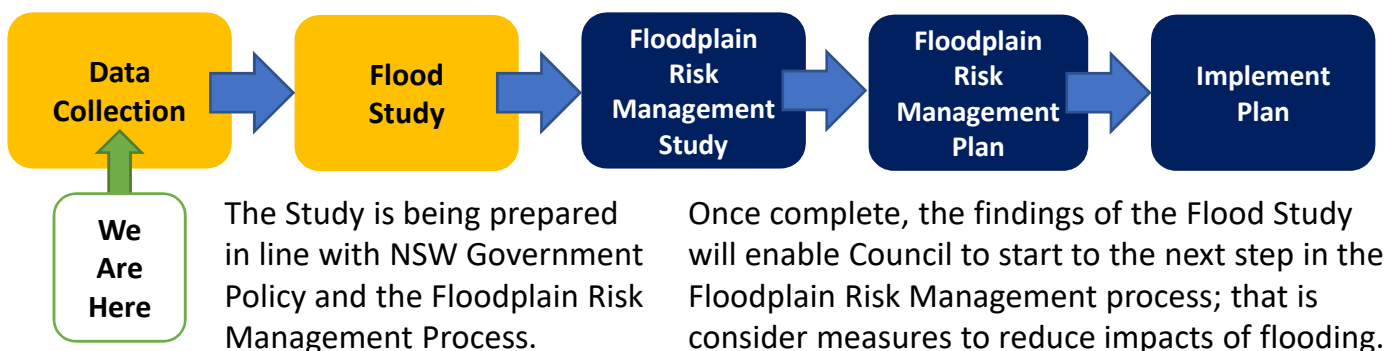
Please take a few minutes to complete the attached questionnaire and return by reply-paid mail before 30 October 2020.

Alternatively you can complete the questionnaire online using the QR code or by visiting www.surveymonkey.com/r/BonalboFloodStudy

If you have further information such as photographs these can be emailed to: BonalboFloodStudy@bgeeng.com.



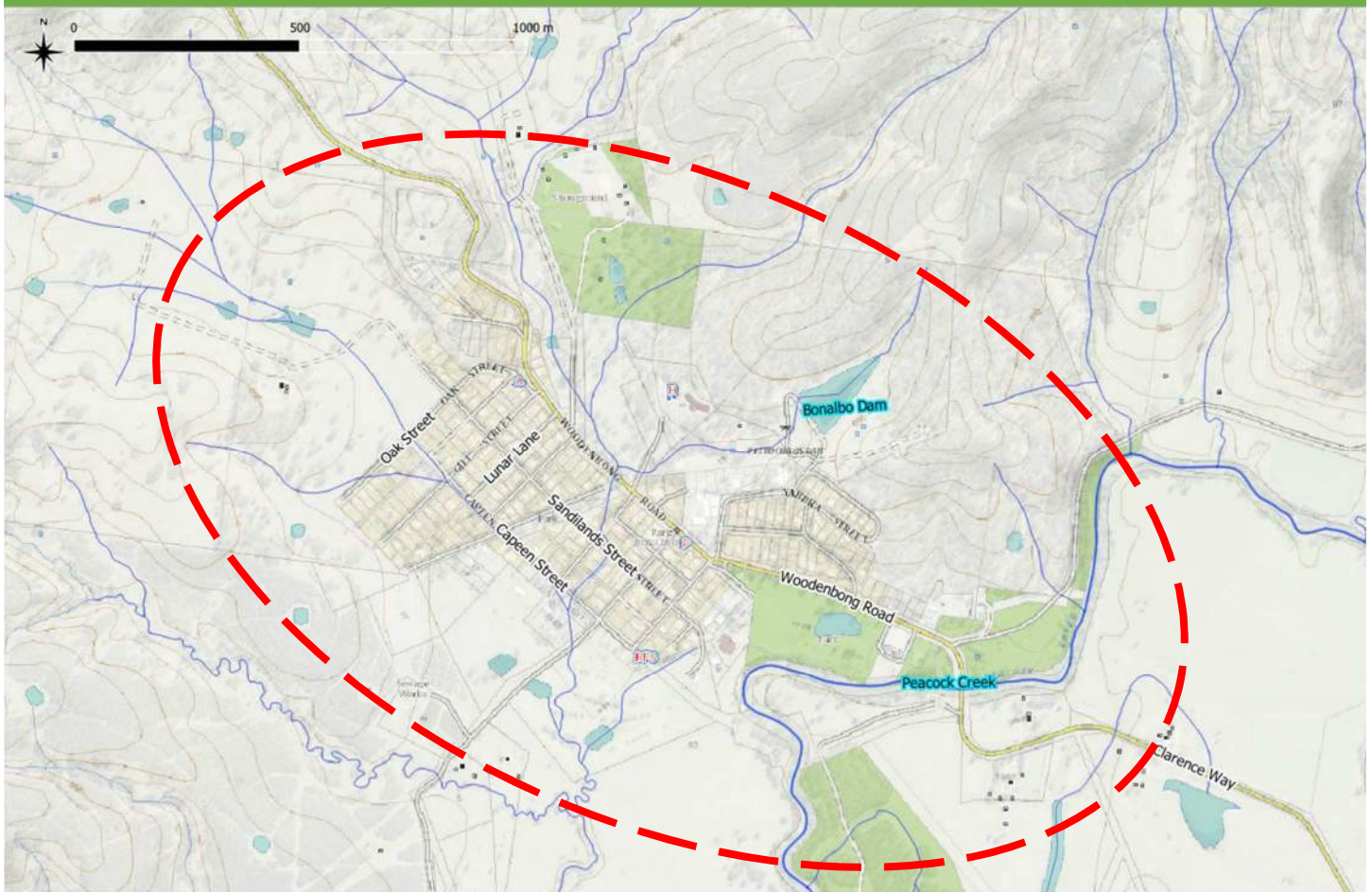
THE FLOODPLAIN RISK MANAGEMENT PROCESS



BONALBO FLOOD STUDY



STUDY AREA



CONTACT US

Project Website: www.bgeeng.com/FloodStudies/Bonalbo

Email: BonalboFloodStudy@bgeeng.com

Kyogle Council: Matt.Sorenson@kyogle.nsw.gov.au, 02 6632 1611



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BONALBO FLOOD STUDY QUESTIONNAIRE



Thank you for taking the time to answer this questionnaire. Your input provides useful information so that we can calibrate flood models to real-life flood data and helps us focus the study on areas and issues that are a priority to the community. Please return the questionnaire in the pre-paid envelope provided. Alternatively you can complete the questionnaire online: www.surveymonkey.com/r/BonalboFloodStudy

Q1. Your Details

Name _____

Address _____

Email _____

Telephone _____

Is this a property a home or workplace or other use? _____

All information provided will remain confidential and will only be used for the purpose of this study. Specific information on the respondents or their responses will not be made available or reported on.

Please provide your email or telephone number if you agree we can contact you in relation to this study.

Q2. How long have you lived/worked at this address?

0 to 5 years	5 to 15 years	15 to 25 years	More than 25 years	How Many? (if more than 25)

Please tick the box below.

Q3. How long have you lived/worked in the area?

0 to 5 years	5 to 15 years	15 to 25 years	More than 25 years	How Many? (if more than 25)

Please tick the box below.

Q4. Are you aware if your property is flood affected?

Yes, it has flooded before	Yes, but it has not flooded	I don't think it is flood affected	I don't know

Please tick the box below.

Q5. Have you or members of your household been isolated or evacuated due to flooding?

Yes, Evacuated	Yes, Isolated	No, never

If you answered yes, you can provide further information at the end of this questionnaire, such as when this happened and for how long.

BONALBO FLOOD STUDY QUESTIONNAIRE



Q6. Have you ever experienced flooding from Peacock Creek?

This question relates to flooding from the river only. This information helps us to calibrate the flood models to real-life data to get more accurate outcomes.

Yes, at this property	Yes, in the local area but my property was not affected	No, I have not observed flooding in the area

If Yes, please provide additional details such as where you observed flooding and the date and time that you experienced flooding. If you can, say how deep the water was or how high did it get? How far did the water go into your property? Was there any damage? Additional space for you response is provided at the end of this questionnaire if you need. If you have photographs these can be emailed to BonalboFloodStudy@bgeeng.com

Q7. Have you experienced flooding from stormwater or smaller creeks?

This question relates to flooding that is not from Peacock Creek. This may be from the drainage channels in the town, local creeks or after heavy rainfall events.

Yes, at this property	Yes, in the local area but my property was not affected	No, I have not observed flooding in the area

If Yes, please provide additional details such as where you observed flooding and the date and time that you experienced flooding. If you can, say how deep the water was or how high did it get? How far did the water go into your property? Was there any damage? Additional space for you response is provided at the end of this questionnaire if you need. If you have photographs these can be emailed to BonalboFloodStudy@bgeeng.com

Q8. Are there any areas within the Bonalbo Study Area you think flooding should be reduced?

This question helps us to identify priority areas. The study area was shown on the second page.

Yes	No	I don't know / I have not been affected by flooding

If Yes, please state where

BONALBO FLOOD STUDY QUESTIONNAIRE



Q9. If there was a flood, do you feel like you know what to do?

Yes, I am confident I know what to do. I'll be fine	I think so, but I have not experienced flooding	I'm not sure. I'll wait until someone tells me	No, I don't know what to do	It doesn't matter, my property or local area does not flood

The outcome of the Bonalbo Flood Study will assist Kyogle Council, emergency services and the local community in understanding flood behaviour in the area so that flood damages and risk to life can be reduced.

Q10. Do you have any further information you think may help?

Yes, please see below/attached	Yes, I will email some information	Yes, please contact me	No

Photographs and records of previous flooding and rainfall are very useful to help us develop flood models which represent real-life situations.

If Yes, please attach your feedback to this questionnaire, or email to BonalboFloodStudy@bgeeng.com. If you email, please make sure to include your name and address so we can match your survey results with the information you have provided.

THANK YOU

Thank you for taking the time to answer this questionnaire. Your input is valuable to the outcomes of the Bonalbo Flood Study.

Project Website:

www.bgeeng.com/FloodStudies/Bonalbo

Email: BonalboFloodStudy@bgeeng.com

Kyogle Council: Matt.Sorenson@kyogle.nsw.gov.au, 02 6632 1611



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Historic Flooding – Photographs



Location: Front of 49 Capeen Street, Bonalbo

Supplied by: Brett North

Date and Time Taken: No date or time.

Comments: This is why drain and should be kept clean or lined. This is a picture only after heavy rain.

Photograph 1: Front of 49 Capeen Street



Photograph 2: Looking North on Bonalbo Street towards Woodenbong Road, Bonalbo Petrol Station seen in distance



Photograph 3: Looking South on Bonalbo Street towards Post Office Ln.



Photograph 4: Piped culverts underneath Post Office Ln. Looking South



Photograph 5: Open Channel running adjacent to property at 61 Woodenbong Road

Location: Open Channel running parallel with Bonalbo Street, adjacent to property at 61 Woodenbong Road

Supplied by: Romana Daniels

Date and Time Taken: No date or time provided.

Comments: Around the base of the hospital when hospital was built ALL stormwater runs down the hill. There was no drainage upgrade which causes flooding of drain located next to 61 Woodenbong Road

Photographs 2 to 5: Open Channel running parallel with Bonobo Street, adjacent to property at 61 Woodenbong Road



*Photograph 6: Looking North up Hospital Road towards hospital.
Photos taken at intersection of Woodenbong Road and Hospital Road*



*Photograph 7: Looking North up Hospital Road towards hospital.
Photos taken at intersection of Woodenbong Road and Hospital Road*



*Photograph 8: Looking North up Hospital Road towards hospital.
Photo taken at upstream inlet of culvert which passes underneath
Woodenbong Road*



*Photograph 9: Looking North up Hospital Road towards hospital.
Photos taken at intersection of Woodenbong Road and Hospital Road*

Location: Looking north up Hospital Road towards hospital. Photos taken at intersection of Woodenbong Road and Hospital Road

Supplied by: Romana Daniels

Date and Time Taken: No date or time provided.

Comments: Around the base of the hospital when hospital was built ALL stormwater runs down the hill. There was no drainage upgrade which causes flooding of drain located next to 61 Woodenbong Road

Photographs 6 to 9: Intersection of Woodenbong Road and Hospital Road



Location: Intersection of Sandilands and Koreelah Street

Supplied by: Karen Webb

Date and Time Taken: 25/01/2020

Comments: Water overflowed stormwater drain onto Sandilands Street depositing branches and other detritus along Sandilands Street opposite the supermarket and pub.

Photograph 10 and 11: Intersection of Sandilands and Koreelah Street, 25th January 2020.



Location: Farm Road, street or address unknown

Supplied by: Karen Webb

Date and Time Taken: 25/01/2020

Comments: Farm road was also cut off at flooding near golf course

Photograph 12 and 13: Farm Road, 25th January 2020.



Location: Woodenbong Road Bridge to Bonalbo Street and Sandilands Street Bridge

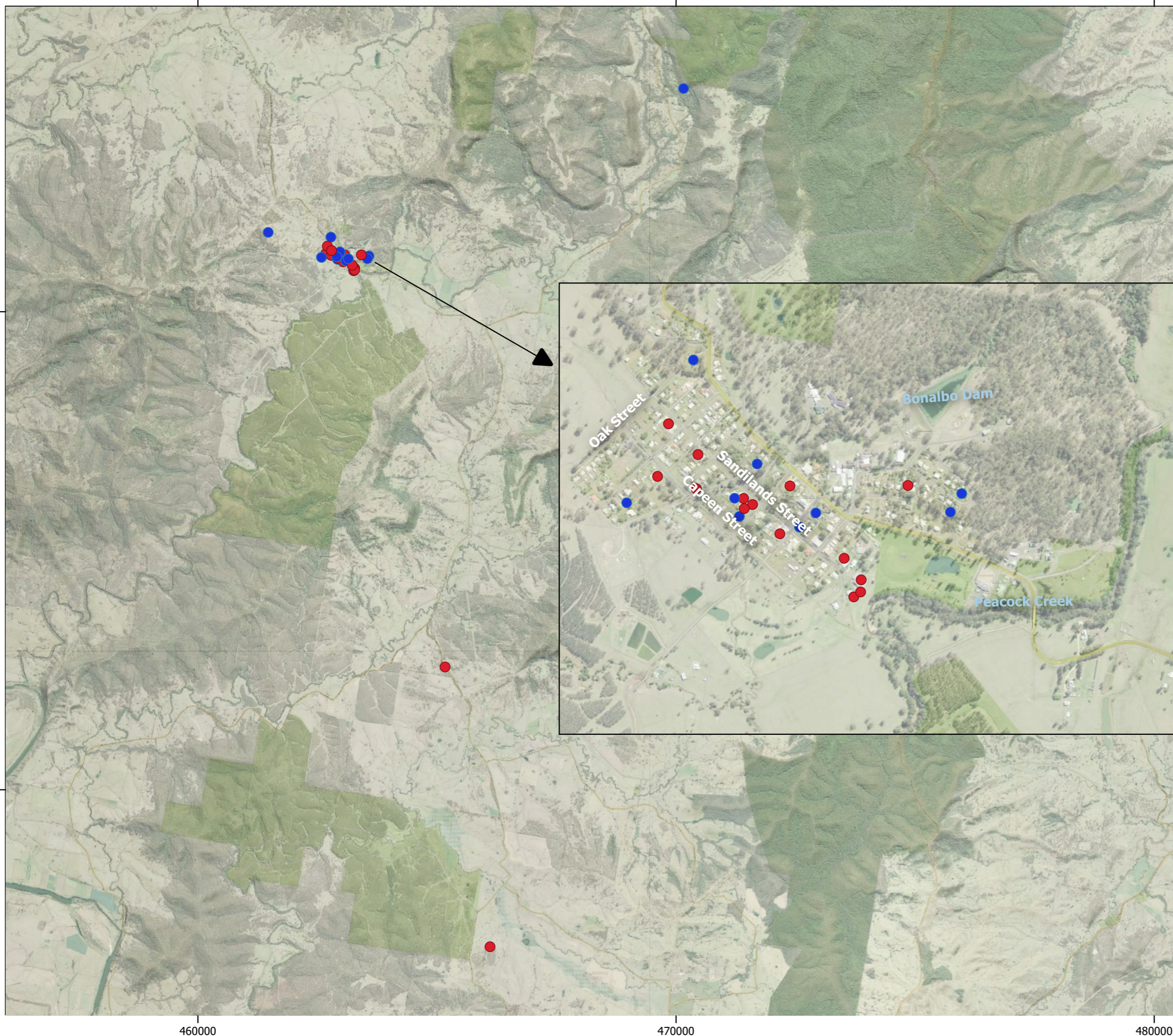
Supplied by: Sharon Wright

Date and Time Taken: 25/01/2020, 10:35am

Comments: Photo of 2.5hr flood water level. Creek water level from Woodenbong Road Bridge to Bonalbo Street and Sandilands Street Bridge

Photograph 14: Woodenbong Road Bridge to Bonalbo Street, 25th January 2020, 10:35am.

Mapping

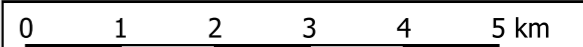


Legend

Bonalbo

Location of questionnaire responses

- Has experienced flooding at property
- Has not experienced flooding at property



SCALE 1:80000

DRAWN AS
 REVIEWED LB
 APPROVED LB
 DATE 26/11/2020
 PROJECT S20095



Bonalbo Flood Study

Figure C1 – Location of Questionnaire Respondents

DATUM GDA 2000 MGA Zone 56

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ACKNOWLEDGEMENT

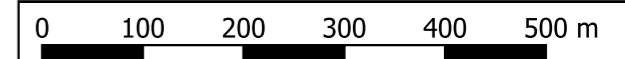




Legend

Bonalbo

 Priority Areas



SCALE 1:7500

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 DATE 26/11/2020
 PROJECT S20095



Bonalbo Flood Study

Figure C2 – Location of Priority Areas

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ACKNOWLEDGEMENT



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