



Environment,
Climate Change
& Water



GUNNEDAH COUNCIL

BLACKJACK CREEK FLOODPLAIN RISK MANAGEMENT STUDY

APPENDIX C

COMMUNITY NEWSLETTER AND RESPONSES TO QUESTIONNAIRE

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ATTACHMENTS

- 1. Newsletter and Community Questionnaire**
- 2. Responses to Community Questionnaire**

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C1. INTRODUCTION

At the commencement of the *Blackjack Creek Floodplain Risk Management Study and Plan*, the Consultants prepared a combined Newsletter/Questionnaire which was distributed by Council to residents located on the floodplain of Blackjack Creek. (refer to **Attachment 1**)

The purpose of the Newsletter was to introduce the objectives of the Study and provide information on flooding conditions so that the community would be better able to respond to the Questionnaire and contribute to the Study process.

The Newsletter contained the following information:

- A Plan of the study area showing the indicative extents of flooding for the 100 year and Probable Maximum Floods.
- The objectives of the Study, namely the assessment of options for reducing the impacts of flooding on existing development and the preparation of guidelines for future development in accordance with best floodplain management principles.
- The objectives of the Plan, namely the reduction of flood risk and minimising the long-term impact of flooding on the community and the recommendation of appropriate flood management measures.

The Questionnaire was structured with the objectives of:

- Obtaining local information on flood experience and behaviour at residents' properties.
- Determining residents attitudes to controls over development in flood liable areas in the Blackjack Creek catchment.
- Inviting community views on possible flood management options which could be considered for inclusion in the *Floodplain Risk Management Plan*.
- Obtaining feedback on any other flood related issues and concerns which the residents cared to raise.

This **Appendix** discusses the responses to the 12 questions included in the Questionnaire and comments made by respondents. **Section C2** deals with the residents' experience with historic flooding; determining residents' views on the relative importance of classes of development over which flood-related controls should be imposed by Council; and whether residents are aware of the advice Council currently provides regarding the potential flood affectation of existing properties. **Section C3** nominates and seeks residents' opinions on potential measures which could be incorporated in the *Floodplain Risk Management Plan* for Blackjack Creek.

Section C4 summarises the attitude of the respondents to flooding issues, existing flood policy and potential floodplain management measures which could be incorporated in the *Floodplain Risk Management Plan* for Blackjack Creek which will be developed during this Study.

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C2 RESIDENT RESPONSES

C2.1 General

The Consultants received 57 responses to the Questionnaire as of the requested date (end of April 2010). About 40 respondents (optionally) provided their addresses, which allowed the Consultants to cross reference information they provided about flooding on their properties to the property survey which the Consultants used to assess the economic impacts of flooding. To provide basic data for the property survey, the Consultants had a surveyor provide natural surface and floor levels of residences.

The Consultants have collated the responses, which are shown in graphical format (**Attachment 2**). About 30 respondents had lived in the study area for more than 20 years (Question 2) and some were able to provide useful information on the flooding conditions experienced in both the January 1984 and November 2008 floods. These floods are the highest to have occurred in the past 30 years on Blackjack Creek. Both floods are classified as major flood events and resulted in damaging flooding to residential property. Rainfalls experienced during the January 1984 storm approached the 100 year intensity for the 2 to 3 hour period likely to maximise flows on Blackjack Creek. The November 2008 storm rainfalls had a return period between 20 and 50 years.

Where respondents provided information on the depths of flooding reached on their properties, as well as their addresses, this information was used to cross check with flood level data included in the Blackjack Creek Flood Study, prepared by LACE in 2005. In general the information provided by the respondents confirms modelled and historic flood information (mainly on the January 1984 event) contained in the LACE, 2005 study.

C2.2 Experiences of Flooding

The first seven questions assessed resident information such as; property ownership, length of time in the study area, whether the respondent had any experience of flooding and if so, which particular flood and whether they had experienced above-floor inundation.

Twenty two respondents reported that they had experienced flooding on their property, with 12 nominating the January 1984 flood and 9 the November 2008 event. One resident advised that he had experienced above-floor inundation in a flood in 1974.

As far as the source of flood warnings to the Blackjack Creek population is concerned (**Question 8**), 26 respondents advised that they had received no warnings of impending flooding. Two respondents advised that they been warned by neighbours, friends or relatives and 6 by their own observations. None reported that they had received warnings from Police or SES. Some respondents received warnings from multiple sources.

C2.3 Controls over Development in Flood Prone Areas

The residents were also asked to rank from 1 to 6 the classes of development likely to occur on the Blackjack Creek floodplain which they consider should receive protection from flooding (**Question 9**). These rankings were added for each response to achieve a total score for the survey. The lowest score identified the most important class overall for the residents.

The six classes, in decreasing order of importance, ranged from residential (which was considered the most important category to protect), to flood-vulnerable residential development such as aged persons' accommodation, minor extensions to existing houses, existing outbuildings, new residential sub-divisions and lastly and least important, new outbuildings such as garages.

C2.4 Awareness of Advice Council Provides about Potential Flood Affection of Properties

Question 10 asked about residential awareness of the advice Council provides about the potential flood affectation of individual properties (in practice this is achieved by providing flood related wording on Section 149 Certificates) and advice available from Council regarding measures to mitigate impacts of flooding. The response was evenly divided, with 23 respondents advising they were aware of Council's advice, versus 22 who were unaware.

C3 POTENTIAL FLOOD MANAGEMENT MEASURES

The respondents were also asked for their opinion on potential flood management measures which could be included in the Floodplain Risk Management Plan, by ticking a “yes” or “no” to the 12 options provided in **Question 11**.

The options comprised a range of structural measures (e.g. management of vegetation in Blackjack Creek to maximise the hydraulic capacity of the floodplain, channel enlargement, detention basins to reduce downstream flood peaks, levees to contain floodwaters) and non-structural measures (e.g. voluntary purchase of residential properties, house raising, planning controls, improvements to flood warning and response procedures, community education on flooding, etc). The options were not mutually exclusive, as the *Floodplain Risk Management Plan* adopted could, in theory, include all of the options set out in the Questionnaire, or indeed, other measures to be nominated by the respondents.

The most popular measure was the continuation by Council of the management of vegetation in Blackjack Creek and cleaning debris from the channel after flooding. In comments attached to their Questionnaires, residents commented on the need for creek maintenance to maintain the capacity of the waterway and hence minimise flood levels. Several respondents reported instances of blockage of the creek channel by cars, vegetation and other debris conveyed by the flow. Another popular structural flood mitigation measure was the enlargement of the creek channel to increase hydraulic capacity. The construction of permanent levees to contain floodwaters was also favoured.

Development controls, improved flood warning procedures, evacuation and emergency plans, community education, Council’s provision of advice regarding flood affectation (e.g. via Section 149 certificates) and the use of flood markers to show the extents of inundation were also favoured by the respondents.

Respondents were evenly divided on the implementation of a residential Voluntary Purchase scheme (to be administered by Council and designed by Government to allow residents on a wholly voluntary basis to vacate high hazard areas in the floodplain). A similar lukewarm response was given to the provision of subsidies for raising the floor levels of existing residential properties located in less hazardous zones of the floodplain.

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C4 LOCAL FLOODING ISSUES

A number of respondents complained about surcharges of the piped local stormwater system in the residential areas on the eastern part of the catchment, particularly in the View Street area.

Residents reported that during several recent storms the stormwater system had surcharged. The problem appears to be caused by a lack of capacity in the drainage system possibly aggravated by recent sub-division development. Residents also reported overland flows from the direction of the golf course due to surcharges of the dams.

The *Blackjack Creek Floodplain Risk Management Study and Plan* covers main stream flooding issues resulting from surcharges of the creek channel when catchment-wide major storms occur. Issues resulting from overflows of the piped stormwater system due to localised storms are, strictly speaking, outside the scope of the present investigation. Main stream flooding and surcharges of the piped stormwater system both occur as a result of intense rainfalls on the respective catchments and are therefore, likely to be closely correlated. Gunnedah Council has recently developed a computer based hydrologic model of the piped system to assist with planning of improvements. It is intended that the results of Council's work will be taken into account in the present investigation when planning measures to mitigate the effects of main stream flooding.

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C5 SUMMARY

A large number of responses were received relative to the number of Newsletter/Questionnaires distributed by Council. The responses amounted to about 30 per cent of the total distributed, which is well in excess of the typical 10 per cent return. This fact demonstrated the considerable interest by the Blackjack Creek community in the study. The information on residents' experiences of historic flooding provided useful data to the Consultants and demonstrated that there is a real flood problem in the residential area with several properties experiencing above-floor inundation and numerous allotments flooded below floor level.

C5.1 Issues

The issues identified by respondents in their responses to the Questionnaire support the proposed objectives of the Study, as nominated in the Newsletter and the activities nominated in the Study Brief. No new issues were identified in regard to main stream flooding which is the primary subject of the Study. Several residents did however provide information on surcharges of the piped stormwater system due to local storm events which will be of assistance to Council in planning improvements to the system.

C5.2 Flood Management Measures

The non-structural flood management measures such as planing controls over new development in flood liable areas, as well as improvements to flood warning and emergency management measures appear to be the most popular of the potential measures set out in the Questionnaire. Of the structural measures, management of vegetation and clearing the creek of debris following flood events and enlargement of the channel to increase hydraulic capacity were the most popular. There do not appear to be any new measures raised by the respondents in their responses to **Question 11**.

C5.3 November 2008 Storm

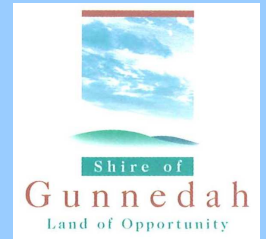
In view of the awareness of this flood event by the respondents, the Consultants will carry out an investigation of the November 2008 storm and resulting flood flows on Blackjack Creek. This investigation will involve collection and analysis of rainfall data, assessment of likely flows and levels and the return period of this event.

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ATTACHMENT 1

NEWSLETTER AND COMMUNITY QUESTIONNAIRE

Blackjack Creek Floodplain Risk Management Study and Plan



To Residents bordering Blackjack Creek

Gunnedah Shire Council has engaged Lyall & Associates Consulting Water Engineers to prepare a Floodplain Risk Management Study and Plan for Blackjack Creek, located on the western fringes of the catchment in the Wandobah Road area. Council and the Department of Environment, Climate Change and Water are jointly funding the study.

The primary objectives of the Study will be to assess options for reducing the impacts of flooding on existing development and to prepare guidelines for future development in accordance with best floodplain management principles. The Plan has the objective of reducing the flood risk and minimising the long-term impact of flooding on the community, through assessment and recommendation of appropriate flood management measures.

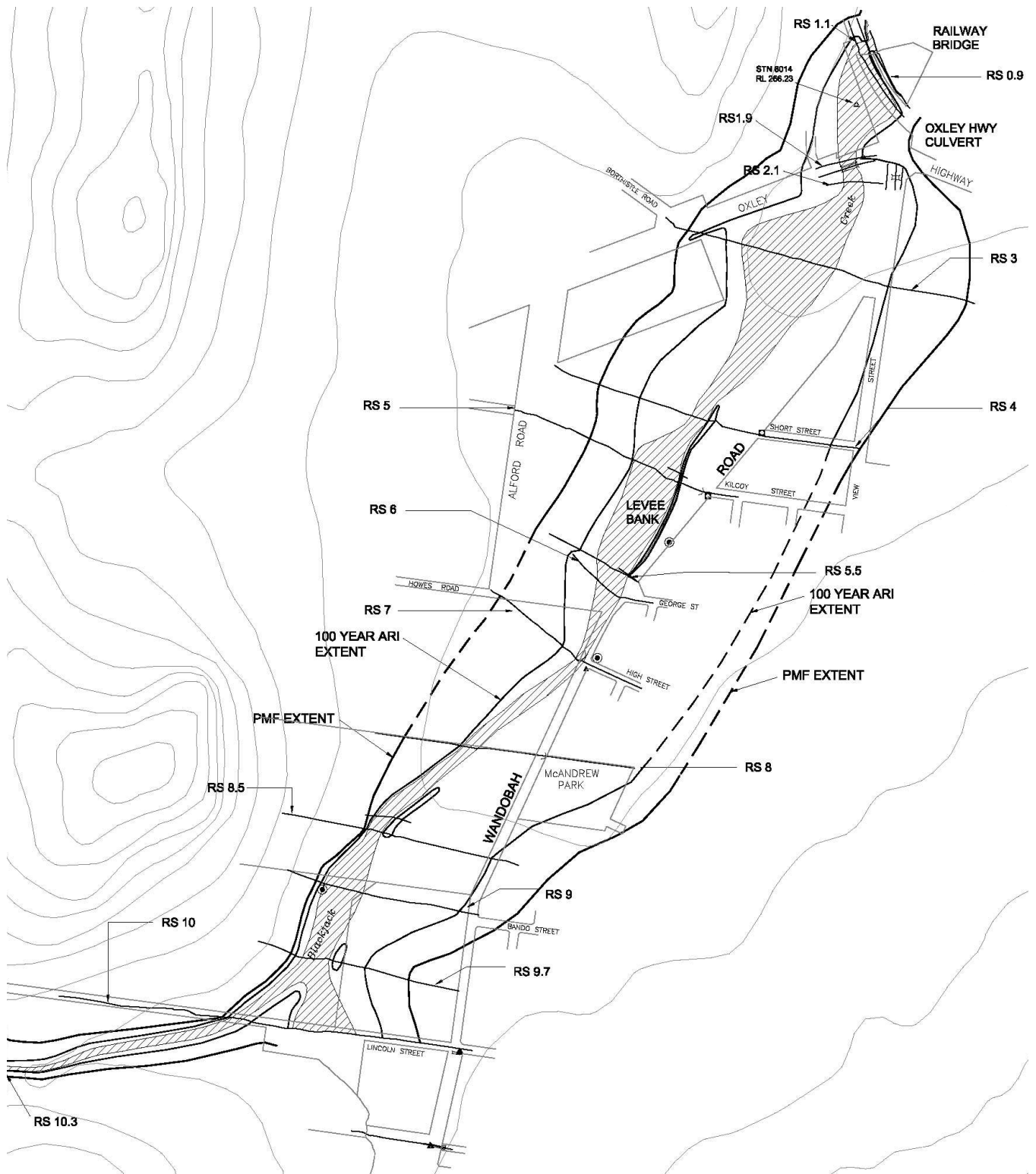
Have Your Say on Floodplain Management

The Study and Plan are set to run to mid-2010. An important step in the preparation of the Study is the compilation of a database of community expectations and preferences on ways of reducing the flood risk within the Study area. The attached questionnaire will be provided to selected residents and businesses, but any interested person is invited to complete it. All information provided will remain confidential and for use in this study only.

Please return the completed questionnaire in the reply paid envelope provided by the end of April 2010.



Blackjack Creek Upstream of Oxley Highway



PLAN OF STUDY AREA

Blackjack Creek Floodplain Risk Management Study and Plan

Community Questionnaire

TO RESIDENTS BORDERING BLACKJACK CREEK

This questionnaire is part of the Blackjack Creek Floodplain Risk Management Study, currently being undertaken by Consultants on behalf of Gunnedah Shire Council. It will help us determine the flood issues that are important to you.

Please return your completed questionnaire in the reply paid envelope provided by the end of **April 2010**. No postage stamp is required. If you have misplaced the supplied envelope or wish to send an additional submission the address is:

Lyall & Associates Consulting Water Engineers
Reply Paid 78855
NORTH SYDNEY NSW 2060

Your name and address (optional): _____

About your property

1. Please tick as appropriate:

- a. I am a resident
- b. I own the property
- c. I rent the property
- d. Other (please specify _____)

2. How long have you owned or lived at this address?

- a. Less than 1 year
- b. 1 year to 5 years
- c. 5 years to 20 years
- d. More than 20 years (... years)

3. What is your property?

- a. House
- b. Villa/Townhouse
- c. Unit/Flat/Apartment
- d. Vacant land
- e. Other (_____)

Your flood experience

(If you have experienced a flood, please answer Questions 4 to 7, otherwise go to Question 8)

4. Do you have any information about flooding at the property?

- a. Yes
- b. No
If yes, what information do you have?
- c. Own experience
- d. Flood levels from Council
- e. Council planning certificate
- f. Information from State Emergency Service (SES).
- g. Photographs
- h. Other (_____)

5. Have you ever experienced flooding at the property?

- a. Yes
- b. No
If yes, which floods?
- c. November 2008
- d. January 1984
- e. Other (_____)

6. In the biggest flood you have experienced, was the property flooded above floor level of the main residence?

- a. No
- b. Yes

If yes, what was the depth of water over the floor?

What year? _____

7. In this biggest flood, did you receive any warning, and if so, from where?

(Tick one or more boxes)

- a. No warning whatsoever
- b. TV
- c. Radio
- d. Own observations
- e. Police
- f. State Emergency Service (SES)
- g. Neighbours, relatives or friends
- h. Other (_____)

Your attitudes to Council's development controls

8. Please rank the following development types according to which you think are the most important to protect from floods (1=highest priority to 8=least priority)

- a. Residential
- b. Essential community facilities (eg. Hospital)
- c. Critical utilities (eg. Telephone Exchange)
- d. Minor development and additions (eg. house extension)
- e. New residential subdivisions

9. Are you aware of the controls Gunnedah Council currently places on development in flood prone areas?

- a. Yes b. No

Comment: _____

10. Are you aware of the advice Gunnedah Council currently provides about the potential flood affectation of individual properties?

- a. Yes b. No

Comment: _____

Your opinions on floodplain risk management measures

11. Below is a list of possible options that may be looked at to try to minimise the effects of flooding on Blackjack Creek.

This list is not in any order of importance and there may be other options that you think should be considered. For each of the options listed, please indicate "yes" or "no" to indicate if you favour the option. Please leave blank if undecided.

- | | <u>Yes</u> | <u>No</u> |
|--|--------------------------|--------------------------|
| a. Maintenance programs to clear creek of vegetation and debris impeding flows. | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Enlarge the creek channel. | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Construct detention basins. | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Construct permanent levees to contain floodwaters. | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Voluntary scheme to purchase residential property in high hazard areas. | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Provide funding or subsidies to raise houses above major flood level in low hazard areas. | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Specify controls over future development in flood-liable area (eg. controls on extent of filling, on site detention policies, controls on site imperviousness, floor level requirements, etc) | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Improve flood warning procedures both before and during a flood. | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Improve evacuation and emergency assistance plans. | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Community education, participation and flood awareness programs. | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Provide a certificate to purchasers in flood prone areas stating that the property is flood affected and to what extent. | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Install flood markers (eg. on power poles) to act as reminders of heights of previous floods. | <input type="checkbox"/> | <input type="checkbox"/> |

Other Information

12. What do you think is the best way for us to get input and feedback from the local community about the results and proposals from this study? (Tick one or more boxes)

- a. Council's website
- b. Articles in local newspaper
- c. Open days or drop-in days
- d. Through Council's Floodplain Risk Management Committee
- e. Other (please specify _____)

13. If you wish us to contact you so you can provide further information, or you have ticked items a) or b) of Question 12, please provide your details below:

Name: _____

Address: _____

Phone (Home) _____

Best time to call is _____

Fax No. _____

Email: _____

Who can I contact for further information?

Gunnedah Shire Council

Lachlan Johnson

Phone: 6740 2126

Lyall & Associates

Consulting Water Engineers

Scott Button

Phone: 9929 4466

Copies of this questionnaire can be obtained from:

www.infogunnedah.com.au

Please write your comments on the next page

COMMENTS

Please write your comments here:

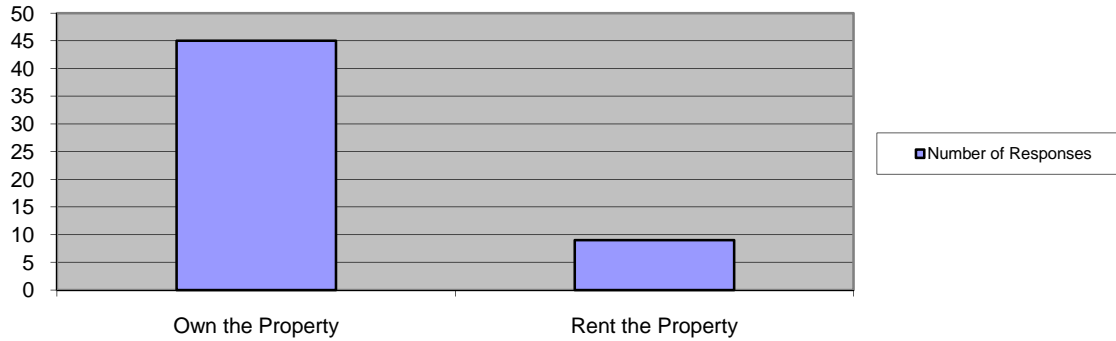
Thank you for your participation in this study

ATTACHMENT 2

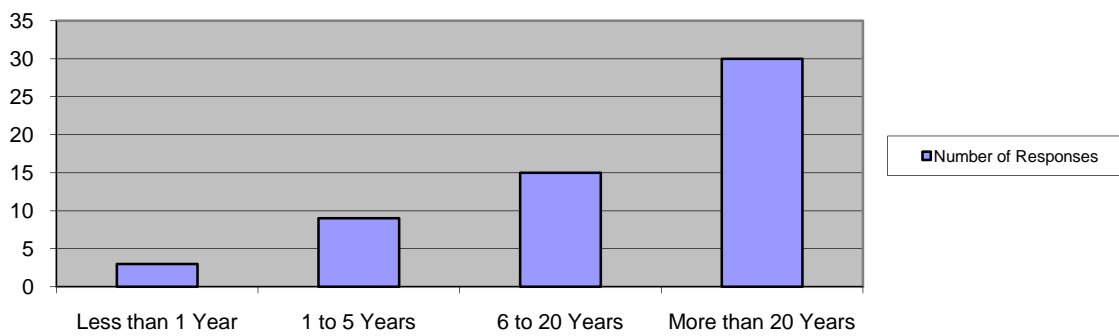
RESPONSES TO COMMUNITY QUESTIONNAIRE

ABOUT YOUR PROPERTY

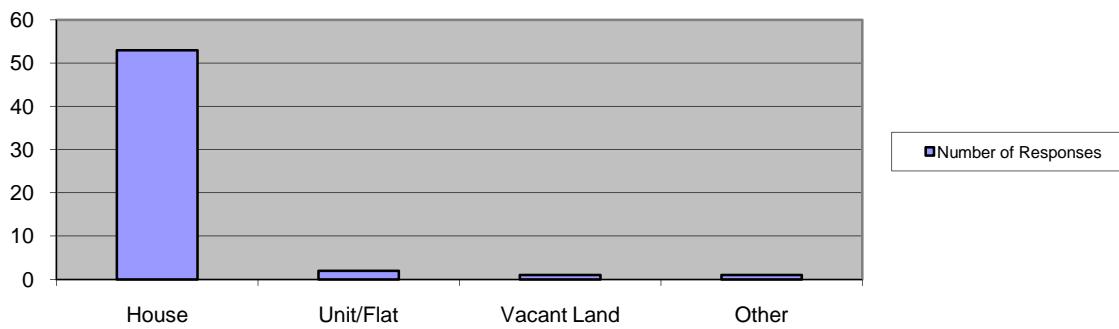
Question 1 - Residential Status?



Question 2 - Time at this Address?

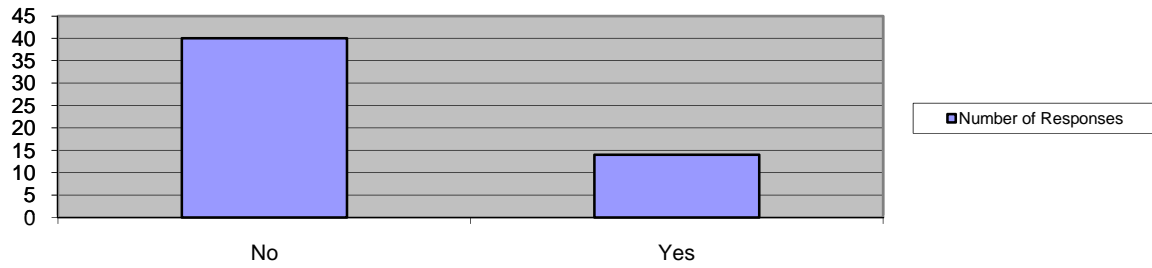


Question 3 - Type of Property?

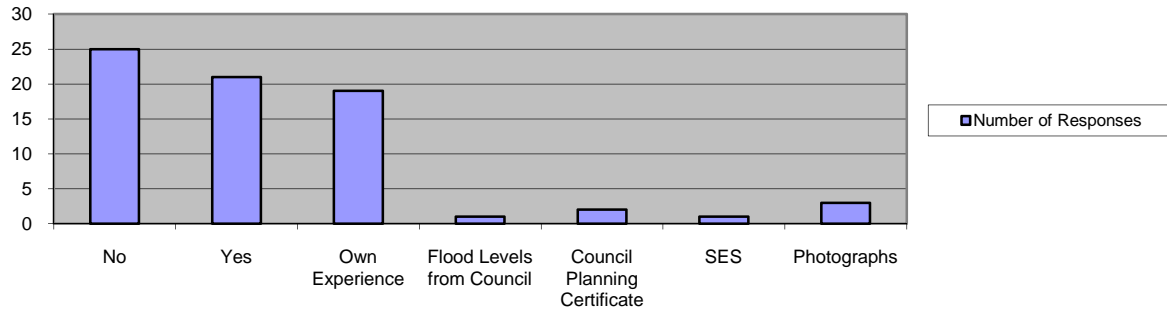


YOUR FLOOD EXPERIENCE

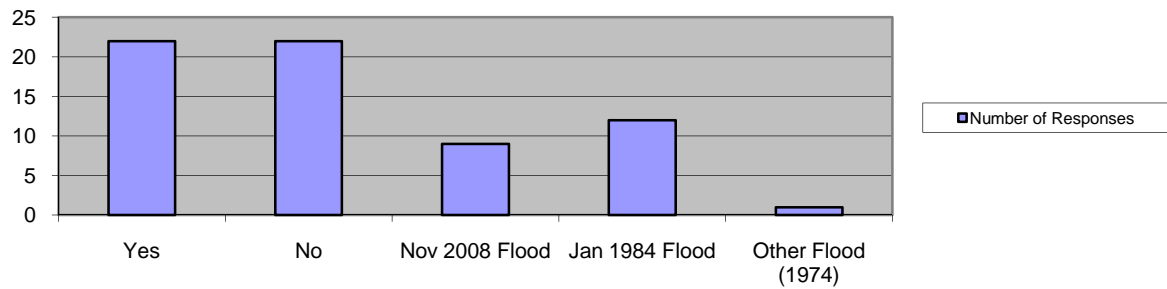
Question 4 - Aware that the Property may be Flooded?



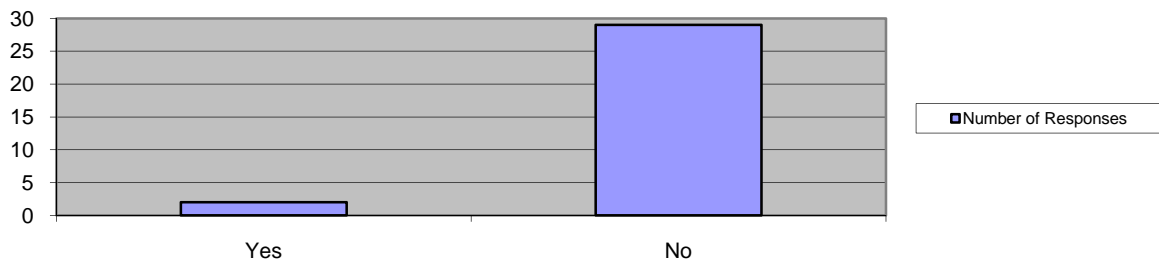
Question 5 - Any information about Flooding at the Property?



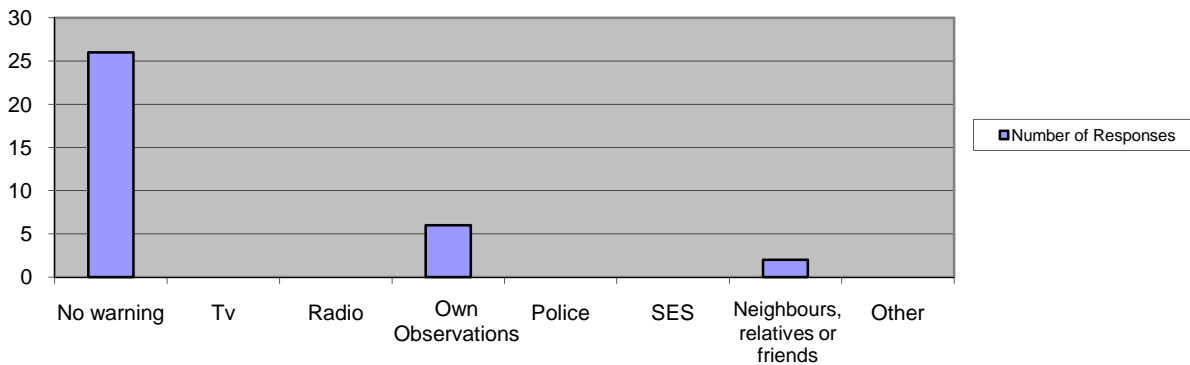
Question 6 - Flood Experienced on Property?



Question 7 - Flooding Above Floor Level?

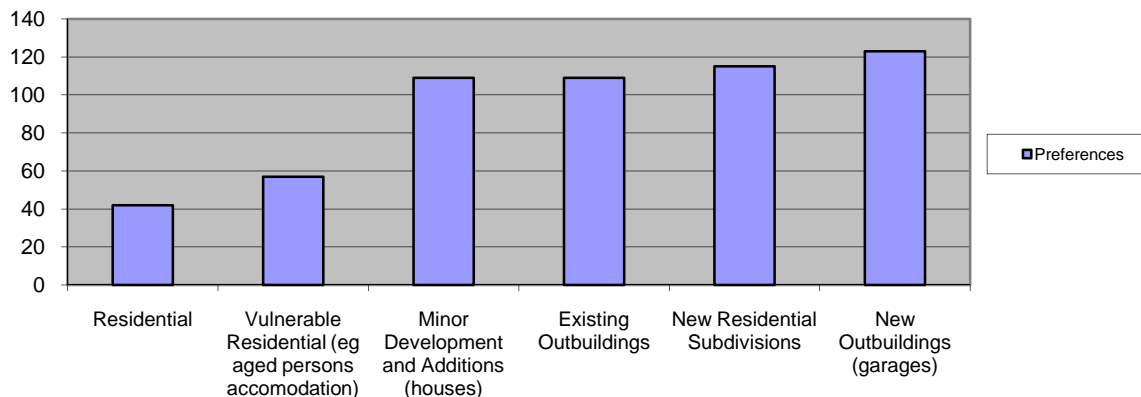


Question 8 - Where did the Flood Warning Come From?

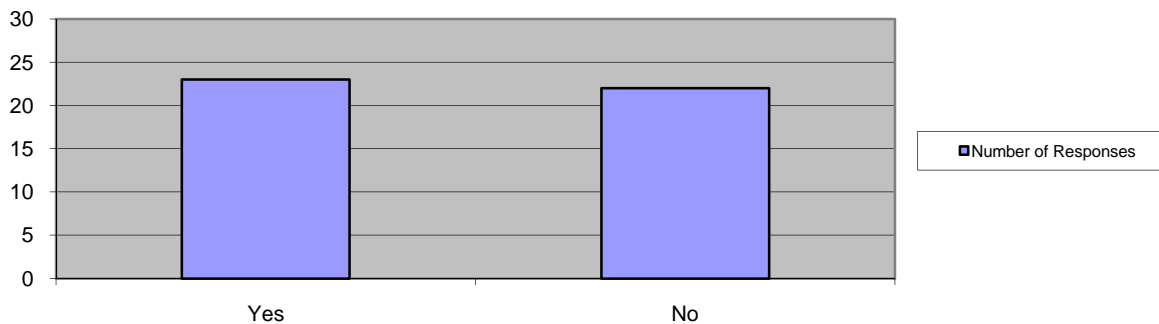


YOUR ATTITUDE TO COUNCIL'S DEVELOPMENT CONTROLS

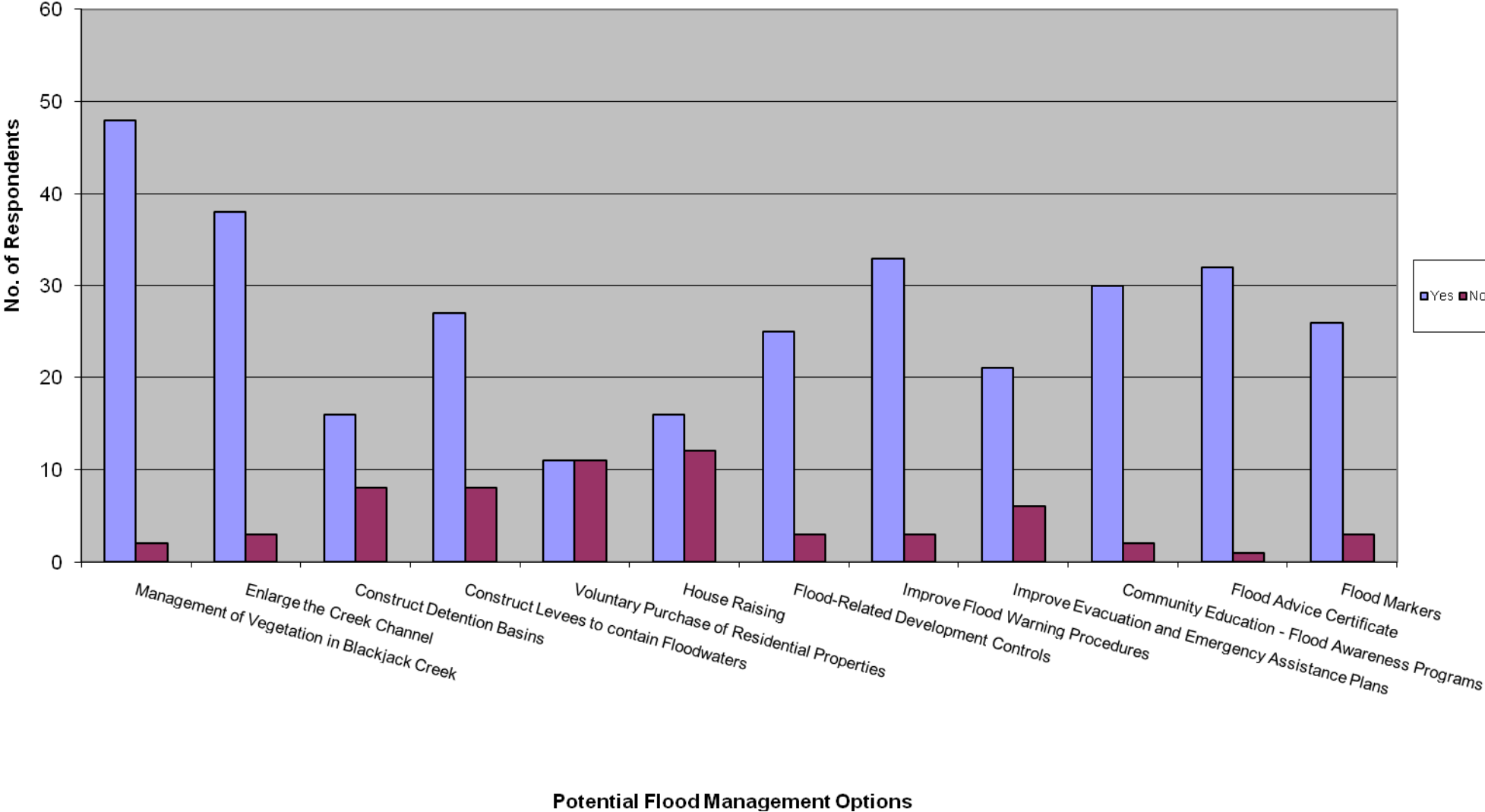
Question 9 - Ranking Development for Protection
(Note: lowest score = most important)



Question 10 - Aware of Advice Currently Provided by Council Regarding Flooding?



Question 11 - Flood Management Options



Question 12 - Best Methods to get Input and Feedback from the Local Community

