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18 April 2012

Byron Shire Council
jeff.begovic@byron.nsw.gov.au

Attention: Jeff Begovic

Dear Jeff

RE: LOW KEY PRIMITIVE CAMPING SITE AS REFUGE FOR THE HOMELESS AT LOT 4 DP 841856

We write in response to your request for advice regarding the proposed development of a Low Key Primitive Camping Site as a Refuge for the Homeless at Lot 4 DP 841856 Station Street, Mullumbimby. BMT WBM is pleased to offer this advice as a philanthropic initiative in Byron Shire at no cost to the council.

Typically, the 100 year Annual Recurrence Interval (ARI) flood event is used to assess the suitability of developments such the one in question. However, BMT WBM is currently developing a flood model for the catchment and the design flood event results are not yet available. To expedite a response to Council, BMT WBM has utilised preliminary flood model results of historical flood behaviour at the proposed site to assess the flood risk. Specifically, data from the May 1987 and June 2005 flood events have been examined.

The results of these analyses show that the site is flood prone, being partially inundated in 2005 and almost completely inundated during the 1987 flood event. It appears that significant flooding occurs through water backing up behind the railway embankment to the east of the site. Figure 1 shows the water level around the proposed development location during both historical events, indicating that not only is the site susceptible to inundation, but also that access to the site for evacuation purposes is compromised during major flood events. The proposed use of the rail corridor as an evacuation route is not feasible given that it becomes inundated during major flood events, as illustrated in Figure 1a.

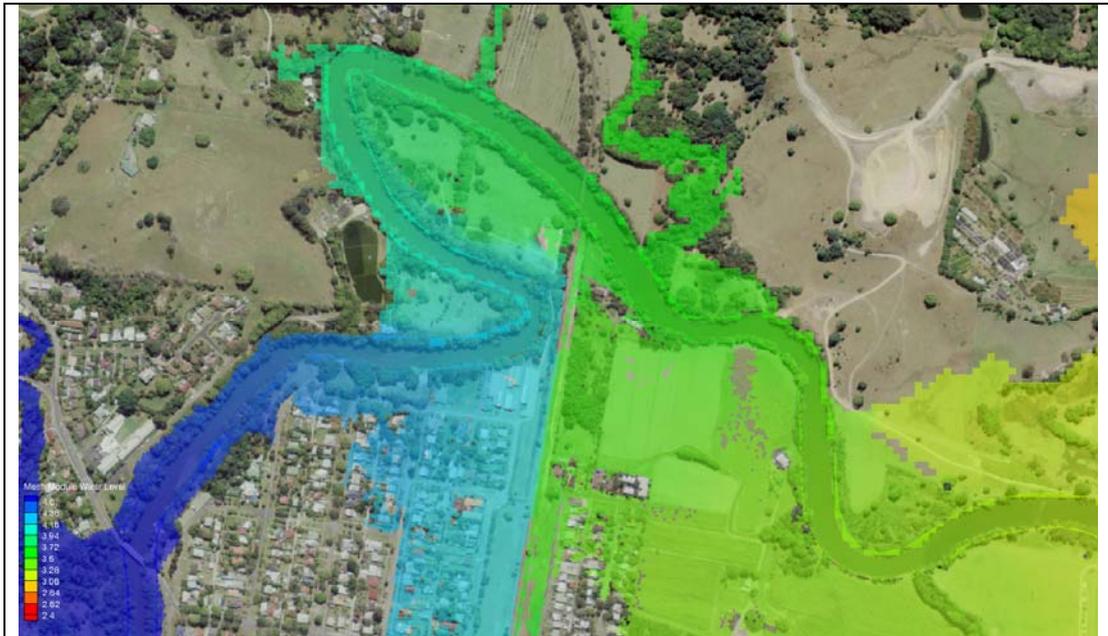


Figure 1 (a) – The site during the May 1987 event



Figure 1 (b) – The site during the June 2005 event

As a result of the analysis, BMT WBM recommends that the site not be developed without significant structural flood mitigation such as filling of the site above the 100 year ARI flood level. However, such interventions may exacerbate flood problems to other developed areas. A detailed flood impact assessment would need to be undertaken to ensure that proposed flood mitigation measures at the site do not increase flood levels elsewhere; which may not be possible to achieve. Aside from the risk of inundation, the site lacks critical evacuation routes in times of major floods, rendering it generally unsafe for permanent or semi-permanent inhabitation.

The maximum depth of flooding on the site was over 2m during the May 1987 event and approaching 1.5m during the June 2005 event, shown in Figure 2. With these large flood depths, filling the site may be economically impractical and may also lead to significant flood impacts due to displacement of flood waters.

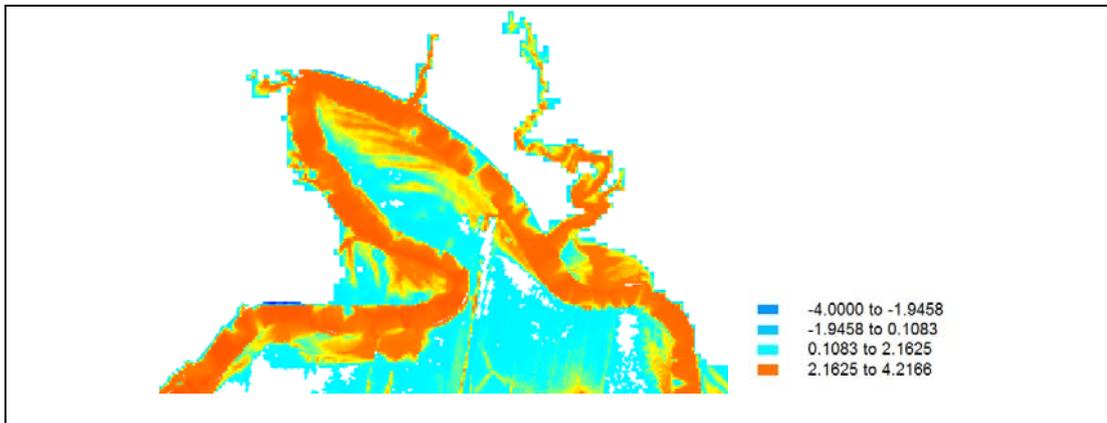


Figure 2 (a) – The depth of flooding onsite during the May 1987 event

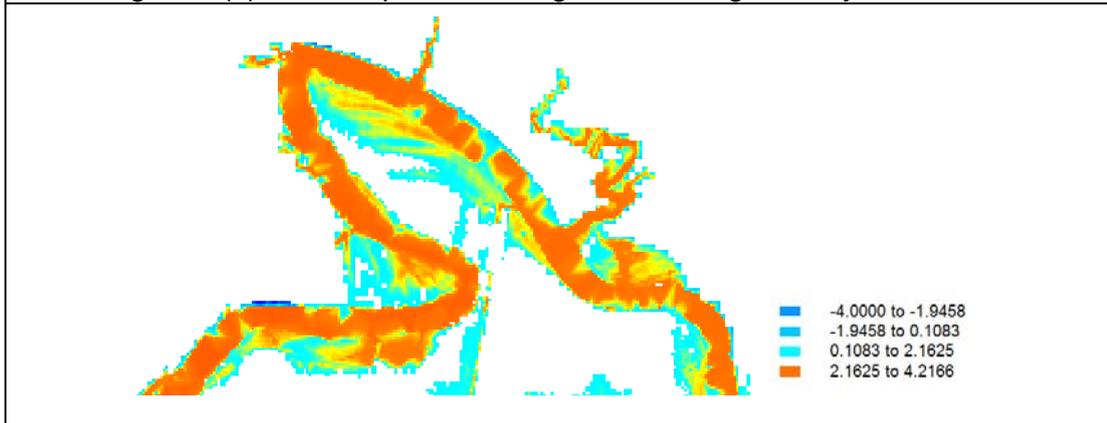


Figure 2 (b) – The depth of flooding onsite during the June 2005 event

BMT WBM's significant experience in floodplain risk management leads us to believe that the site, without flood mitigation measures, is unfit for the purpose expressed by Byron Shire Council, and such development would contravene the flood policy laid out in the NSW Floodplain Development Manual (DIPNR, 2005). It may be possible to explore flood mitigation options, but such mitigation may lead to adverse impacts on flooding to nearby development; a detailed flood impact assessment would need to be undertaken.

BMT WBM is currently assessing flood risk in the catchment as part of the North Byron Coastal Creeks Flood Study. This study will define the flood characteristics for numerous design flood events. It is recommended that the 100 year ARI flood characteristics at the site are examined when the results of the Flood Study become available, which is likely to reinforce the conclusion laid out in this letter.

Should you need any additional information or wish to discuss the contents of this letter, please do not hesitate to contact either myself or Jo Tinnion on (07) 3831 6744.

Yours faithfully

BMT WBM Pty Ltd

Richard Sharpe

Senior Flood Engineer