

24 May 2019

Ben Hetherington  
Manager, Project Management  
Cardno  
PO Box 19  
ST LEONARDS NSW 1590

Dear Ben,

**Re: Jacaranda Ponds Flood Evacuation Evaluation**

This letter sets out my consideration of the revised design of the Jacaranda Ponds development to further reduce flood risks.

**Background**

The Department of Planning and Environment has approved the rezoning of the land to permit 580 large residential lots at 213 and 361 Spinks Road, Glossodia. Cardno has undertaken a flood study and confirmed that the land is above the reach of any flooding of the Hawkesbury River and is only affected by local flooding within Currency Creek.

Even the local flooding would not impact on the proposed residential area in a 1% AEP flood and only a handful of lots would be impacted by the PMF.

In a letter dated 22 November, 2018 I undertook a detailed analysis of direct and indirect flood risks to people living in the proposed development and concluded:

*“The site can be rezoned and developed so that all dwellings can be constructed above the 1% AEP local flood level and most residential lots would be immune from any significant overland flows in such an event.*

*Under the current layout about 20 properties could experience above floor flooding in a PMF although flood hazard in the buildings wouldn't be life threatening. Of these about 16 would be able to walk on a rising gradient to the property next door or the one next to that to reach land above the PMF. About four may not be able to reach flood free ground without walking through floodwaters in the most extreme floods. They would be isolated in their homes for less than two hours.*

*Most of the people whose homes are flooded in an extreme event should be able to find temporary accommodation with neighbours. At most it would be 50 or 60 people. Those that cannot find accommodation with friends or family would be able to access an official evacuation centre at either Hawkesbury High School or Colo High School although they may have to wait until Currency Creek flood levels drop to below the crest of Spinks Road.*

*Access from the site to Hawkesbury or Nepean hospitals would be cut if the Hawkesbury River exceeds about 7m AHD at Windsor Bridge. Riverine flooding would not cut access from the site to Katoomba Hospital which is an 80 minute drive. In this regard the site is in a similar situation to all other development north of the Hawkesbury River.”*

**Revised Design**

In your email of 21 May, 2019 you have provided an update with regards to the design of the two areas which are flood affected.

*North*

With regards to the area in the north of the development you have confirmed that it is proposed to build these blocks up so that only the front 6 or 7m of the block will be below the PMF level and the houses will all be above the PMF, so that there is no need to residents to evacuate for the short period that floodwaters will be running down the street.

### *South*

In the southern area you have advised that Cardno's engineering design levels for the road and lots along Currency Creek involve elevation from the existing surface by about 1.2-3.5m in the PMF affected areas. This means that the lots along the southern boundary will no longer be flood affected from the creek during a PMF event.

### **Life Risk Assessment**

In light of these design modifications I conclude that:

- No houses will experience above floor flooding in a PMF
- There would be no imperative for any house to have to be evacuated in any flood
- Only about a dozen houses in the north of the site would ever be isolated by local flooding and this would only ever be for a few minutes in events much larger than the 1% AEP flood
- The proposed development does not pose a significant direct or indirect risk to life

Yours faithfully

For [Molino Stewart Pty Ltd](#)



Steven Molino

Principal

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