

22 March 2024

Mashal Moughal  
Strategic Planner  
Lake Macquarie City Council  
mmoughal@lakemac.nsw.gov.au

**RE: PP-2022-3016 – 1377 Hue Hue Road, Wyee – Revised flood information**

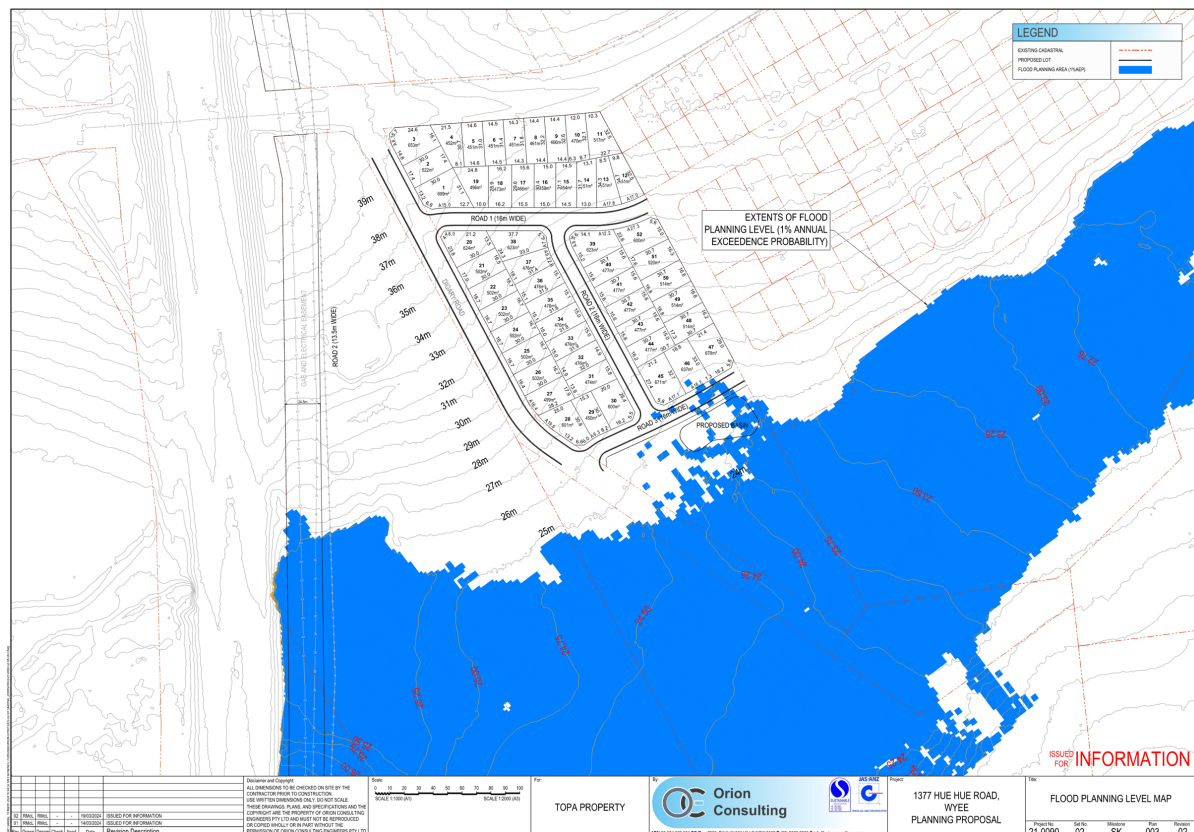
Dear Mashal

Orion has reviewed the recommendations issued by the Biodiversity and Conservation Division letter sent 7<sup>th</sup> March 2024 (letter in Attachment A) and we provide the following responses:

### **Recommendation No 1:**

**The report must clearly specify what FPL is proposed for the site. The rezoning boundary must be located above this level.**

The Flood Planning Level proposed for the site is the 1 in 100-year flood level. The 100-year flood level is shown on the following Flood Planning Level Map added to our revised report.



**Orion Group**

[info@theoriongroup.au](mailto:info@theoriongroup.au)  
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As per section 2.9 of DCP 2014 Part 8 Subdivision development, the new lots are located above the Defined Flood Event which is the 100-year flood level (also referenced as the 1% AEP Storm event) as shown on Figures 6 and 7 on page 25 and discussed on pages 26 and 27. The 1 in 100 year is our defined flood event. The rezoning boundary will be located above the flood planning level. Note that no development lots are proposed south of Road 3.

Note that the flood modelling is based on the existing site levels. The detailed design of the subdivision will include raising road 3 and Lots 45, 46 and 47 to be above 25.8m RL to be above the proposed basin crest and to connect to the existing Jarvis Street to the east and to Digary Road to the West

The proposed lots are to be outside the footprint of the 1 in 100-year flood extent. As per the Flood Planning Level Map, the adjacent Flood levels of 24.80 m RL in the west to 23.75 m RL in the east.

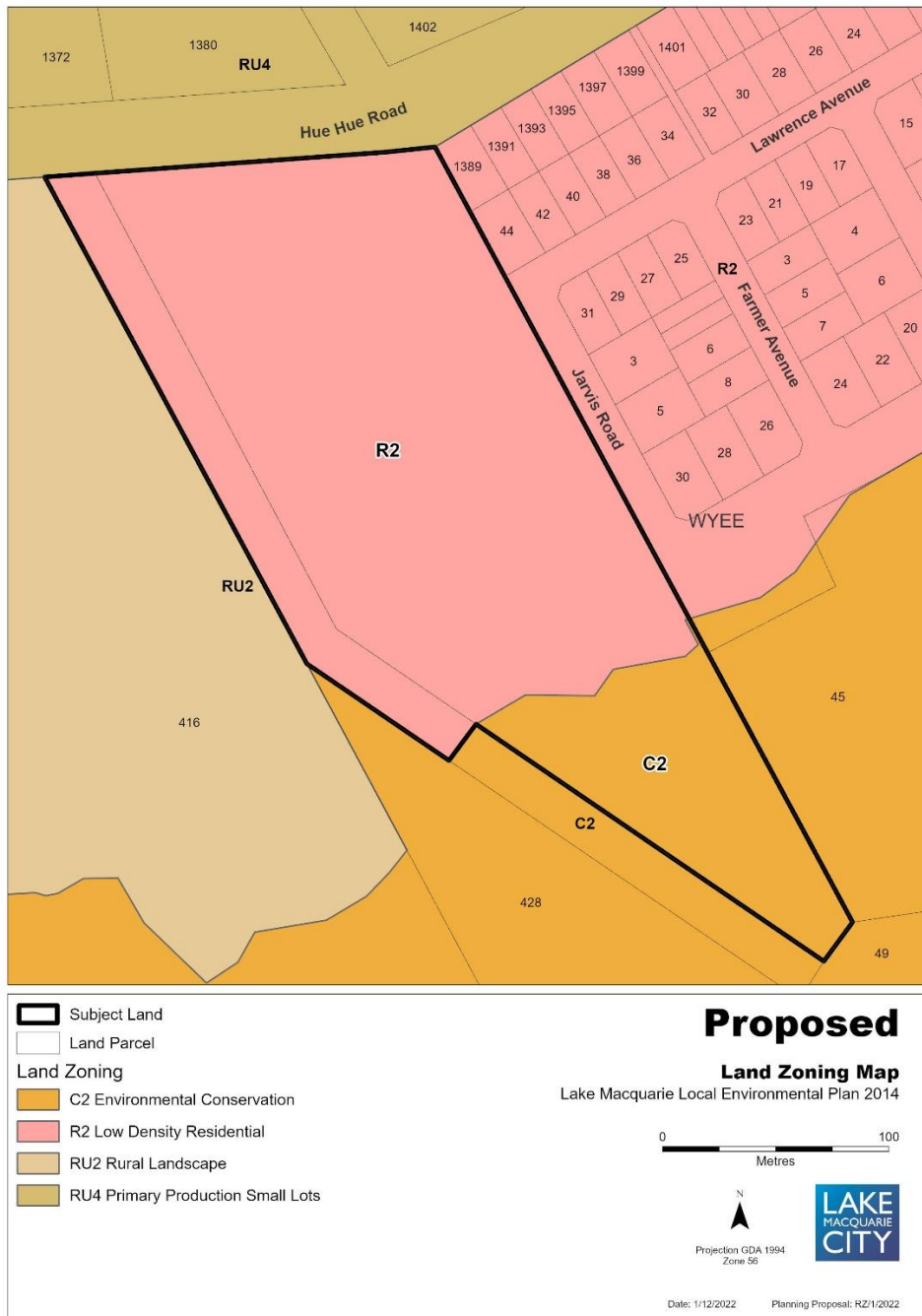
The proposal complies with the controls described in section 2.9 of DCP 2014 Part 8. We have ensured that development of the land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 and its requirements with respect to flood behaviour including consideration of the potential flood impacts on and off the subject land.



## Recommendation 2

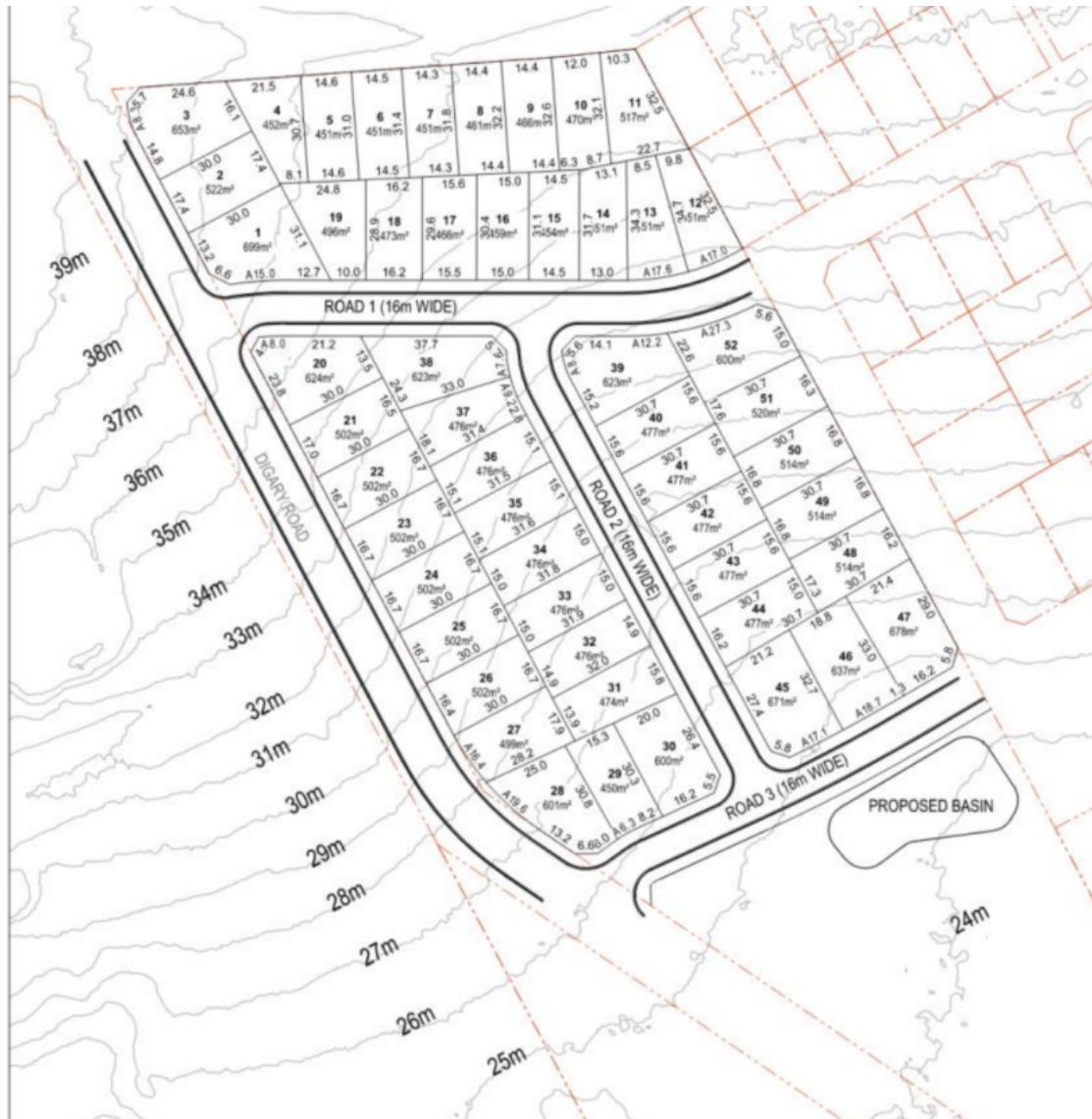
### Mapping presented in the report should be updated to show the correct subdivision layout.

The subdivision layout in Appendix C of the integrated water management and flood report has been updated to show the current layout. A link to the updated report is provided in Appendix A of this response letter.



## Land Zoning Map





Subdivision Layout overlaid on survey.

## **Recommendation 3**

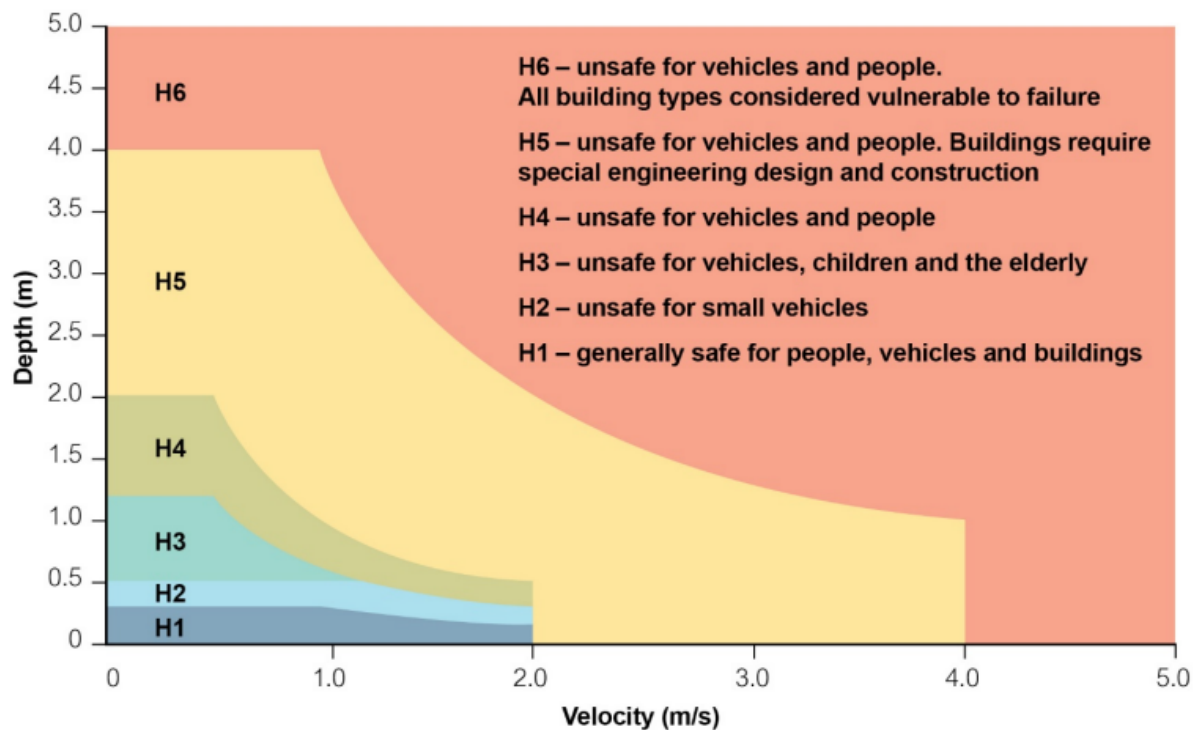
### **Post-development flood modelling is required to understand flood hazard and emergency response requirements during the PMF event.**

We believe the existing analysis provides a good understanding of the flood hazard and emergency response requirements for the PMF Flood event.

The flood modelling shows the minimal extent of PMF flood depth and velocity impact for the subdivision for lots 45, 46 and 47.

The modelling shows the current PMF depth is less than 200mm and the velocity less than 1.0m/s.

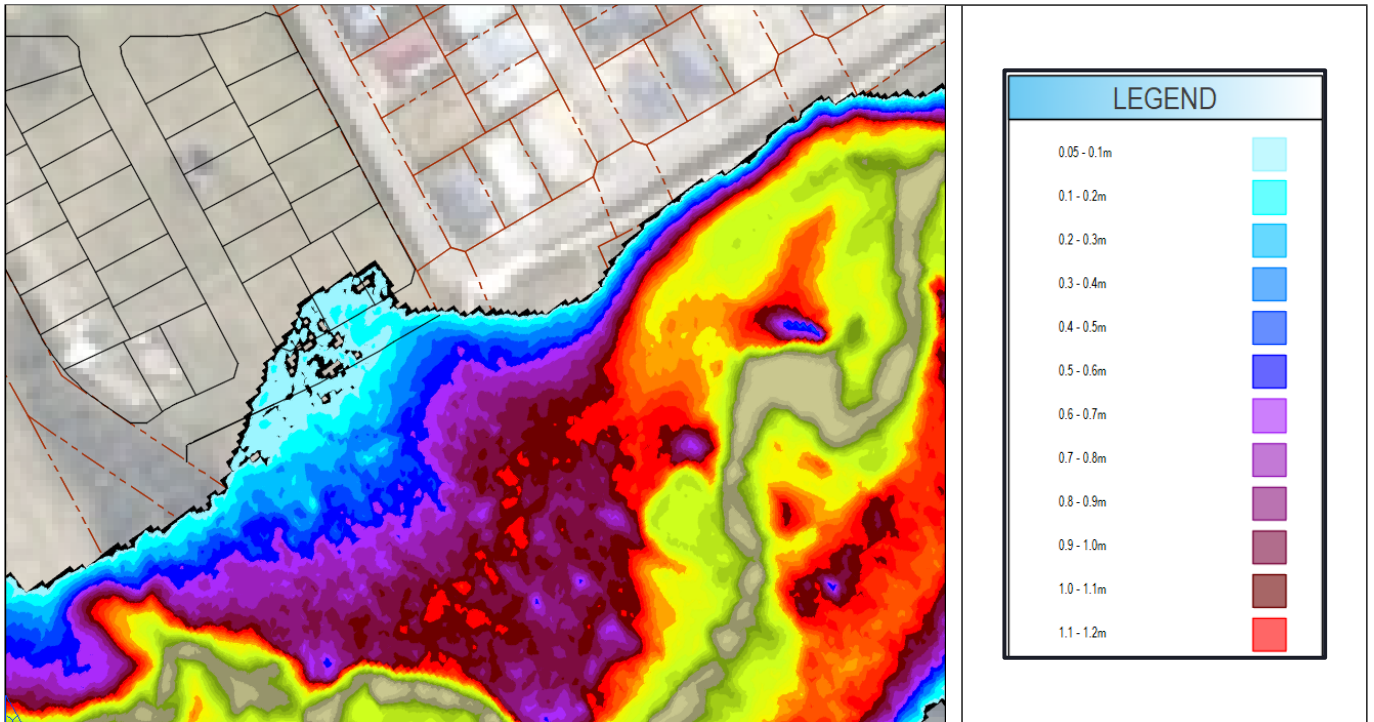
This gives a depth velocity figure of 0.2, which is in the H1 Flood Hazard zone for the PMF flood event which is generally safe for people vehicles and buildings as per the Hazard Category figure below from DPE's Flood risk management guideline FB03.



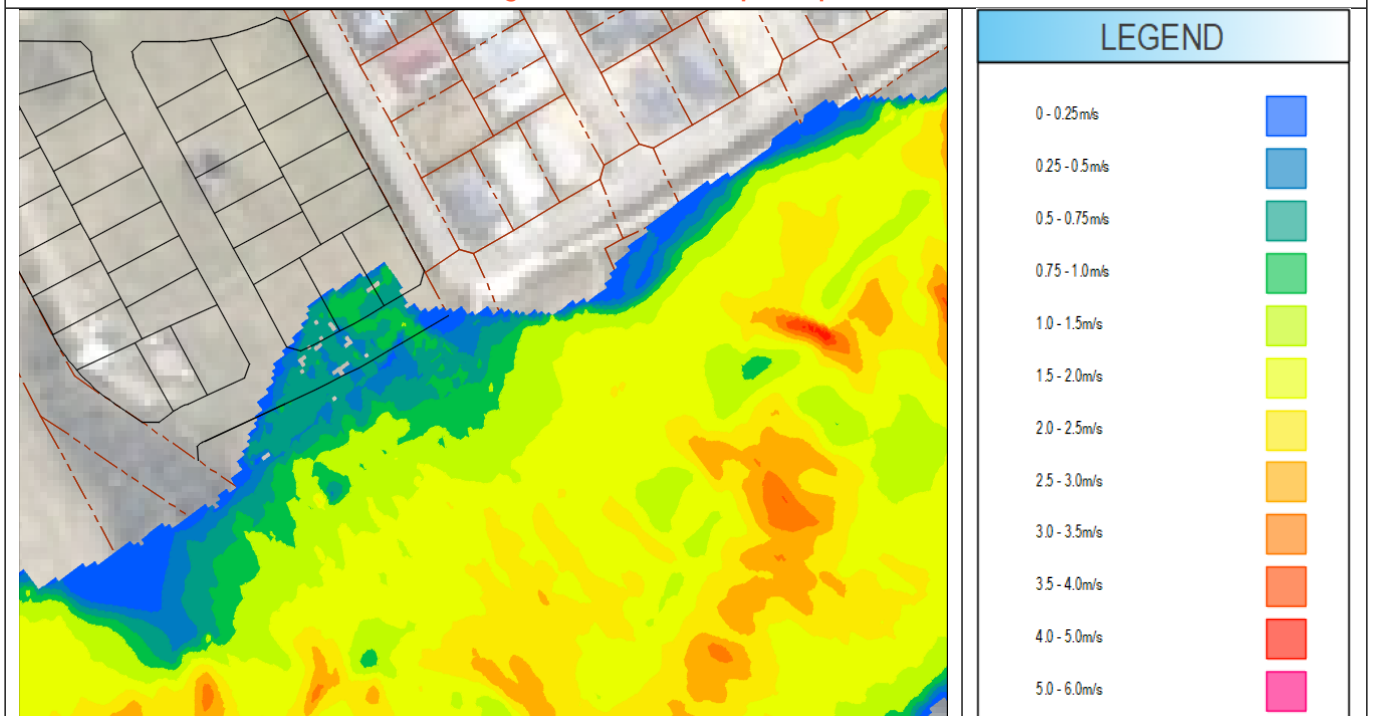
**Figure 1 General flood hazard vulnerability curve**

Note: Categories H1 to H4 in this guideline are equivalent to low hazard and H5 to H6 equivalent to high hazard in the 2005 *Floodplain development manual* (DIPNR 2005).

Source: Figure 6 AIDR 2017b.



**Figure 1: PMF Event Depth Map**



**Figure 2: PMF Event Velocity Map**

Note that the flood modelling is based on the existing site levels. The detailed design of the subdivision will include raising road 3 and Lots 45, 46 and 47 to be above 25.8m RL to connect to the existing Jarvis Street to the east and to Digary Road to the West.

These proposed development levels will further reduce the PMF depths and extents.

As the PMF flood effect on lots 45, 46 and 47 is localised backwater ponding. This localised filling is not likely to have any significant effect on the upstream or downstream flood conditions up to and including the PMF flood event.

We recommend the emergency response appropriate for this subdivision to be shelter in place, as the final floor levels of all dwellings will effectively be above the Probable Maximum Flood level and the 1 in 100-year level plus 500mm freeboard, especially considering that evacuation to a shelter elsewhere may present a higher level of risk.

Kind regards,



Orion Consulting Engineers Pty Ltd  
Stephen Brain | Technical Director (Civil Infrastructure)

Link for updated Integrated Water and Flood Report follows:

[23-0842 - Topa Property - Hue Hue Road 240322 Merge.pdf](#)



## Attachment B

