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Dear Paula,

### **Planning Proposal for 10-12 Boondah Road Warriewood – preliminary advice**

Thank you for the opportunity to provide comment on the Planning Proposal for 10-12 Boondah Road Warriewood. It is understood that the planning proposal seeks to:

- rezone the site from RU2 Rural Landscape to R3 Medium Density Residential and C2 Environmental Conservation
- increase the maximum building height from 8.5m to 15m over the R3 zoned land
- remove the minimum subdivision lot size
- amend the Urban Release Area Map and clause 6.1(3) to apply a dwelling yield range of 40-45 dwellings.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

The consent authority will need to ensure that the planning proposal is considered against the relevant Ministerial Section 9.1 Directions, including 4.3 – Flood Prone Land and is consistent with the NSW Flood Prone Land Policy as set out in the NSW Floodplain Development Manual, 2005 (the Manual). Attention is drawn to the following principles outlined in the Manual which are of importance to the NSW SES role as described above:

- **Zoning should not enable development that will result in an increase in risk to life, health or property of people living on the floodplain.** The proposal indicates the floor level is intended to be at the Flood Planning Level of 1% with climate change impacts plus 0.5m freeboard (4.4m AHD), with upper floor levels above the PMF.

- A significant portion of the site at 10-12 Boondah Road is subject to frequent inundation, that is, in a 50% Annual Exceedance Probability (AEP) flood. With the provided Water Management Report indicating that the road remains flood free to the north up to and including the 1% AEP event (contradicting the Narrabeen Lagoon Flood Study 2013).
- 6 Jacksons Road is almost entirely inundated in a 50% AEP flood, and the Reserve Fields 2, 3, 4, 6 and 7 are isolated by such event and completely inundated by the time the level of a 1% AEP flood is reached by high hazard flood water. This appears to be in line with the draft Ingleside, Elanora and Warriewood overland flow flood study referred to in the Flood Planning Assessment provided.
- **Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood.** Although the PMF is considered in the risk assessment, the Flood Planning Assessment should consider the risk from incremental floods below and above the 1% AEP flood, up to and including the PMF. It is identified that the velocity generally remains under 0.5m/s on the site, but increases to 0.5-1.0m/s on Boondah Road.
- Noting the proposal includes cut and fill and development in a floodway and flood storage area, this may have significant impacts on the flood behaviour and adjacent community. This should be consulted with the Environment and Heritage Group of the Department of Planning.
- **Risk assessment should have regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes.** The Flood Planning Assessment identifies 4.5 hour travel time as “significant”. Based on research, including [Oppen et al 2010](#) and a number of [publications](#) on the NSW SES website, 4.5 hours is generally an insufficient amount of time to enact evacuation successfully.
- This site is also not an area that is warned to by the Bureau of Meteorology. It is noted that a sensor is proposed to warn the community (Water Management Report). However, NSW SES does not support early evacuation as a strategy for future development.
- It is noted that the proposal includes an upgrade of the road to 3.2m AHD to allow evacuation north in a 1% AEP flood. This is based on the revised flood information in the Water Management Report provided, which identifies Boondah Road is not affected by 50% AEP flooding. However this does not appear to include climate change impacts (as noted in the Water Management Report).
- **In the context of future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES’s principles for**

**evacuation. Future development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community.**

- **Evacuation must not require people to drive or walk through flood water.**
- **Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water are not equivalent, in risk management terms, to evacuation.** Section 7.4 of the Flood Planning Assessment identifies the option for shelter in place and a complex and high risk strategy detailed on page 54 of the Water Management Report. 'Shelter in place' strategy is not an endorsed flood management strategy by the NSW SES for future development. Such an approach is only considered suitable to allow existing dwellings that are currently at risk to reduce their risk, without increasing the number of people subject to such risk. The flood evacuation constraints in an area should not be used as a reason to justify new development by requiring the new development to have a suitable refuge above the PMF. Allowing such development will increase the number of people exposed to the effects of flooding. Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to. IN addition, this particular site is adjacent to the sewer treatment works, which is likely to result in contaminated floodwater surrounding the development.
- Noting that this site is subject to flash flooding any development that does occur must be designed for the potential flood and debris loadings of the PMF so that structural failure is avoided during a flood. This should include not only velocity (as identified in the Water Management Report), but also depth. In addition, adequate services should be provided so people are less likely to enter floodwaters. This includes access to ablutions, water, power and basic first aid equipment. Consideration must be given to the availability of on-site systems to provide for power, water and sewage services for the likely flood duration of surrounding areas (which may exceed several hours) plus a further period to provide allowance for restoration of external services.
- **Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.**
- **The NSW SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound land use planning and flood risk management.** It is noted that an evacuation plan will be prepared for this. NSW SES encourages businesses and residences to be prepared through the creation of business and home emergency plans and kits and exercising them regularly. However, we have no role in reviewing or approving these, in accordance with sections 3.6, A-5, L-5, L-6.9.6 and N-7 of the NSW Floodplain

Development Manual, 2005. NSW SES has resources available on the [NSW SES website](#) that may assist.

- **NSW SES is opposed to development strategies that transfer residual risk, in terms of emergency response activities, to NSW SES and/or increase capability requirements of the NSW SES.**
- **Consent authorities should consider the cumulative impacts any development will have on risk to life and the existing and future community and emergency service resources in the future.**

You may also find the following Guidelines, originally developed for the Hawkesbury Nepean Valley and available on the NSW SES website useful:

- [Reducing Vulnerability of Buildings to Flood Damage](#)
- [Designing Safer Subdivisions](#)
- [Managing Flood Risk Through Planning Opportunities](#)

Please feel free to contact Elspeth O'Shannessy via email at [rra@ses.nsw.gov.au](mailto:rra@ses.nsw.gov.au) should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours Sincerely



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