

Report on

FLOOD RISK MANAGEMENT

FOR PROPOSED ALTERATIONS AND ADDITIONS AT

No. 8 Walker Avenue, Narrabeen



November 2024

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1. Introduction

This report is prepared to support the proposed development at 8 Walker Avenue, Narrabeen. It has been proposed by the owner of the property to carry out alterations and additions to the existing dwelling. It is acknowledged that the owner of the property has proposed to construct a timber deck on the lower ground level and extend the existing deck to the east and enclose the existing north facing balcony adjoining the kitchen area on the ground floor area

According to Northern Beaches Council's Flood Advice dated 05.11.2024, the site is affected by mainstream flooding. Therefore, a Flood Risk Management Report must be prepared and submitted for Council's review.

The Flood Enquiry Information issued by the Council has shown that 1:100 year ARI (or 1% AEP) flood is RL 3.05m AHD. The Probable Maximum Flood (PMF) level in this area is RL 5.02 m AHD.

Adopting a 500 mm freeboard above the 1:100 year ARI flood level, the Flood Planning Level for the construction of any new floors is 3.55m AHD.

NITMA Consulting has been engaged to assess the flood risk emergency associated with the proposed works as per architectural plans by Northern Beaches Designs dated 08.11.2024 for the development.

This report will show our flood risk emergency assessment, particularly in relation to the evacuation strategies and flood risk to life. The assessment has been carried out in accordance with requirements of Warringah Development Control Plan 2011, Part E and Flood Information Report provided by Northern beaches council from Narrabeen Lagoon Flood study 2013.

2. Flood Risk Identification and Assessment

The subject site is located within the Warringah LFP in the Northern Beaches Council's area (**Figure 1**).

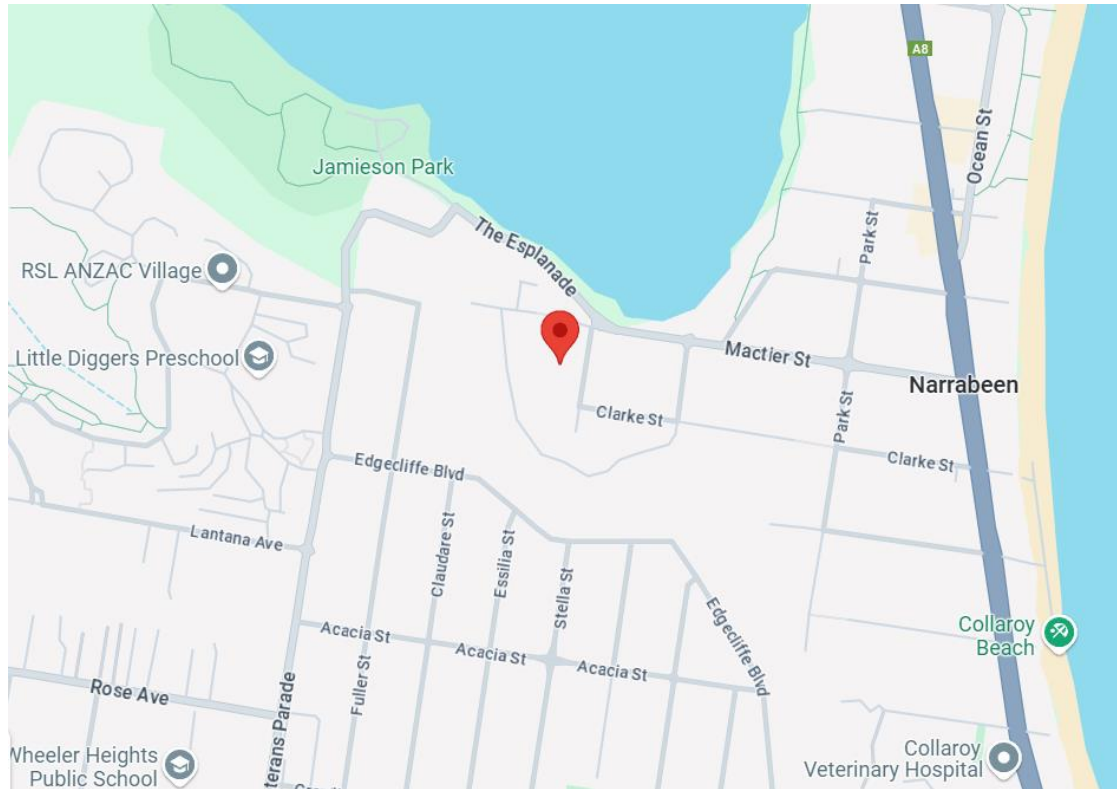


Figure 1. The locality of 8 Walker Av, Narrabeen

According to Council's Flood Advice, the site is subject to 1:100 year ARI flooding (**Figure 2**). The Flood Risk Precincts (**Figure 3**) shows the subject property resides in Low-Medium flood risk precinct. The Flood Life Hazard Map (**Figure 4**) also shows the subject property resides in category H1-H4 (considered unsafe for all pedestrians and vehicles).



Figure 2. 1% AEP Flooding Extent

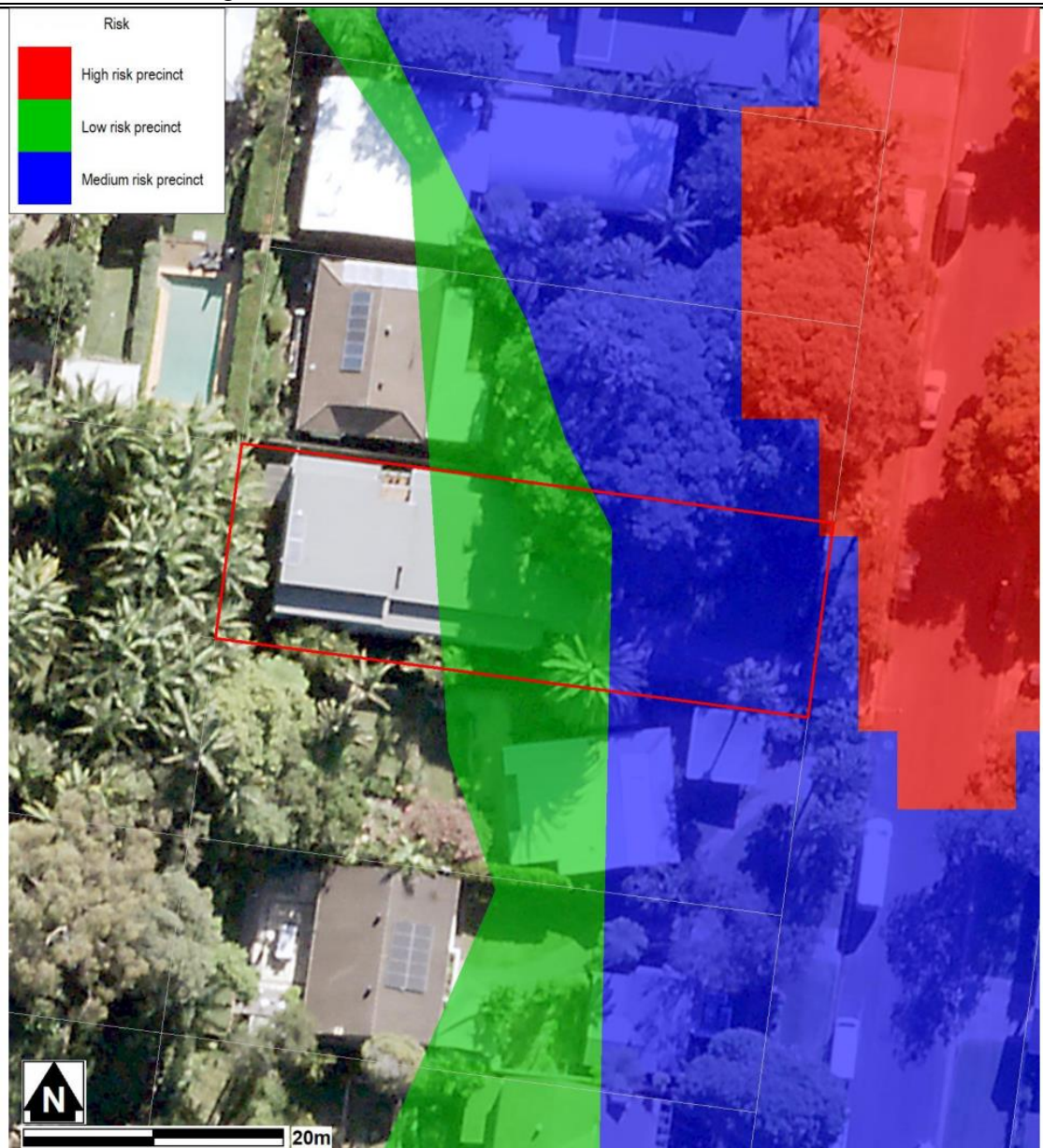


Figure 3. Flood Risk Precincts

According to Hazard Category – Response matrix (**Figure 4**), adopting a ‘Shelter-in-Place’ emergency response poses tolerable risk.

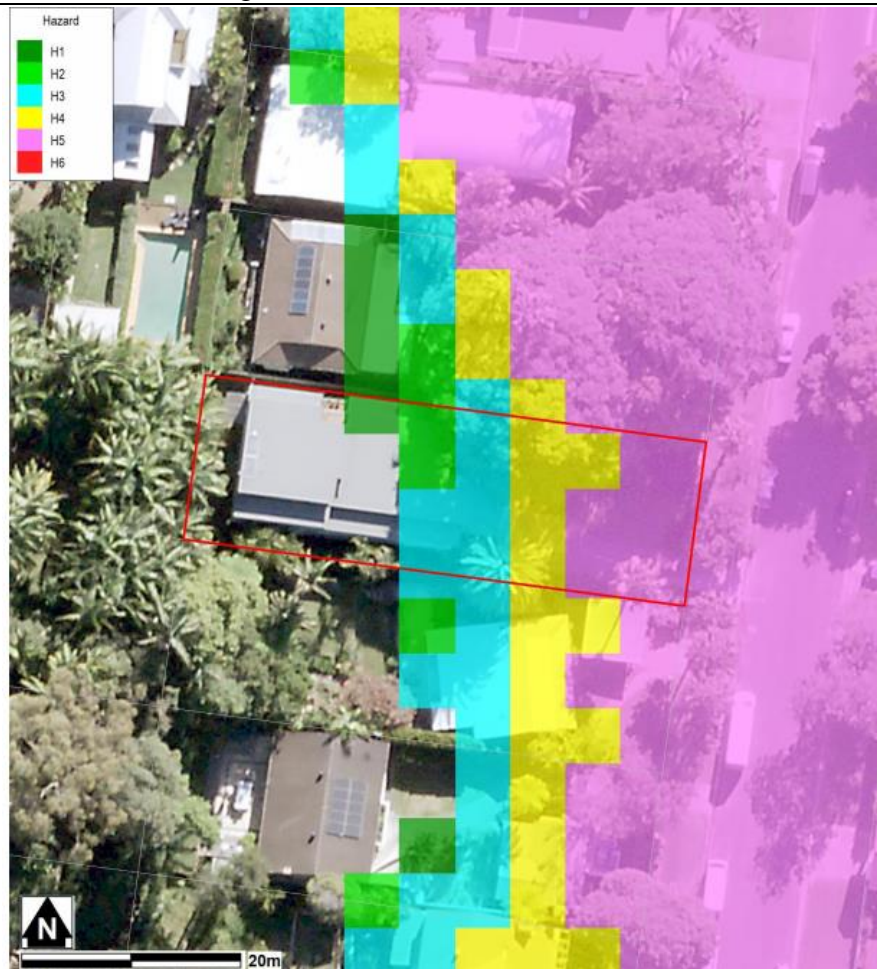


Figure 4. Flood Life Hazard Category in PMF

Adopted Emergency Response	Flood Life Hazard Category			
	H1 - H2	H3 – H4	H5	H6
Evacuation				
Shelter-in-Place				

Where, Green = Acceptable risk, flood emergency response planning policy does not apply;
 Yellow = Tolerable risk, flood emergency response planning policy applies for all development; and,
 Orange = Unacceptable risk, no development should be permitted in these areas due to severe flood risk.

Figure 5. Hazard Category – Response matrix

It is noted that the proposed additions are situated on the lower ground and ground levels. In case of a major storm event, both the ground floor and the first floor can be used for refuge.

3. Flood Risk Emergency Strategies and Assessment

3.1. Flood Evacuation

As the flood level approaches the habitable floor level:

- (i) gather medicines, special requirements for babies or the elderly, mobile phones, first aid kit, special papers and any valuables into one location.
- (ii) put on strong shoes, raise any items within the home that may be damaged by water to as high a level as possible, with electrical items on top. Turn off and disconnect any large electrical items such as a TV that cannot be raised.
- (iii) place wet towels across the bottom and lower sides of external doors to slow down the entry of water through the door.

Occupants should then remain within the ground floor and first floor utilising the shelter-in-place approach detailed in this plan. If outside the building, the shelter can be accessed via stairs.

Do not evacuate the home unless instructed to do so by the SES or the Police. In the case of a medical emergency, ring 000 as normal, but explain about the flooding.

3.1. Occupant Safety

The proposed deck on the lower ground level resides at RL 4.27 m, or 720mm above the Flood Planning Level (3.55m AHD) and is unlikely to cause any flood hazard to occupants. Access to services such as medical, food, water and communication should be stored and made available at all times.

3.2. Evacuation Awareness

Flood warning systems are considered non-essential due to the unlikelihood of flood water entering the building without notice.

A laminated copy of this report should be permanently attached (glued) on an inside cupboard door in the kitchen and laundry and to the inside of the electrical meter box.

This emergency response plan should be reviewed every 5 years.

4. Shelter-in-Place Compliance

4.1. Minimum Floor Level for Shelter in Place

The existing ground floor level (RL 7.24m) is higher than the Probable Maximum Flood level (RL 5.02m) and therefore meets the requirement of minimum floor level for shelter in place.

4.2. Floor Space and Accessibility

The available floor space on the first floor exceeds 100m² can cater for up to 100 people for short durations (less than 6 hours in PMF), and up to 50 people for longer durations (greater than 6 hours in PMF).

The shelter can be easily accessed via stairs inside the building.

4.3. Building Stability

It is required that the structural stability of the refuge building is to be verified by a suitably qualified structural engineer considering lateral flood flow, buoyancy, suction effects and debris lad impact on 1% AEP design flood depths and velocities.

The shelter is to comply with Building Code of Australia requirements with external components rated appropriately for storm, wind and moisture.

4.4 Serviceability

The owner must provide and store a first aid kit, portable radio as well as torch with spare batteries within the shelter at all times.

5. Conclusions and Recommendations

The proposed additions at 8 Walker Avenue, Narrabeen have been found to be located within the 1:100 year ARI flood zone.

Site investigation has found the site to be located within the Warringah LGA at Northern Beaches Council's area. In major storm events, Narrabeen Lagoon may overflow and floodwaters may enter the property via the front boundary.

In the event of a major flood event, occupants should utilise the ground floor and first floor as a "shelter-in-place" and may be accessed via the stairs. Occupants are to remain there until granted clearance by SES or other emergency services to evacuate the home. Access to essential services should always be stored and made available in the shelter to ensure occupant safety.

The shelter-in-place is found to be sufficient to accommodate the occupants and is higher than the Probable Maximum Flood level.

While significant evacuation difficulties are not expected, it is recommended that the occupants of the dwelling monitor of the water level at the front of the property during a heavy rainfall.



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