

Natural Environment Referral Response - Flood

Application Number:	DA2022/1252
Proposed Development:	Construction of a dwelling house including swimming pool
Date:	06/01/2023
To:	Adam Croft
Land to be developed (Address):	Lot 32 DP 7090 , 20 The Esplanade NARRABEEN NSW 2101

Reasons for referral

This application seeks consent for the following:

- All Development Applications on land below the 1 in100 year flood level;
- All Development Applications located on land below the Probable Maximum Flood levels.

And as such, Council's Natural Environment Unit officers are required to consider the likely impacts on drainage regimes.

Officer comments

The development application seeks consent for the demolition of the existing improvements and construction of a new two storey dwelling. An in-ground swimming pool with spa and landscaping works are also proposed. However it does not comply with Section E11 of the Warringah DCP.

The property is flood affected, with High Flood Risk Precinct at the front, Medium Flood Risk Precinct in the middle and Low Flood Risk Precinct at the rear. The majority of the property is affected by Flood Life Hazard Category H4-H5.

Relevant flood levels are:

1% AEP level: 3.05m AHD

Flood Planning Level (FPL): 3.55m AHD

Probable Maximum Flood (PMF) level: 5.02m AHD

The Flood Impact Assessment Report by Prime Consulting Engineers (7/10/2022) has been updated but it is still inadequate, and still does not address the flood related development controls listed in Section E11 of the Warringah DCP. The updated report uses HEC-RAS to assess flood impacts but HEC-RAS is only a 1D model and is not appropriate for this site. The modelling only considers overland flow from the higher ground at the rear of the property, and completely ignores the flooding from Narrabeen Lagoon, which is the major source of flooding on this property. For instance, the HEC-RAS model indicates a 1% AEP flood level at the front of the property of 1.59m AHD, but the 1% AEP flood level determined by Council's much more comprehensive TUFLOW model (a 2D model) is 3.05m AHD.

As per Council's previous comments on 26/09/22, the proposed development results in a loss of available flood storage below the 1% AEP flood level of 3.05m AHD, with the excavated material from the new pool being deposited at the front of the property, filling for the driveway and the dwelling extending into the 1% AEP flood storage area without being open below the 1% AEP flood level.

This is noncompliant with Controls A2 and C3, which are as follows:

A2: "Development shall not be approved unless it can be demonstrated in a Flood Management Report that in all events up to the 1% AEP event there is no net loss of flood storage. Consideration

may be given for exempting the volume of standard piers from flood storage calculations. If Compensatory Works are proposed to balance the loss of flood storage from the development, the Flood Management Report shall include detailed calculations to demonstrate how this is achieved." C3: "All new development must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no net loss of flood storage in all events up to the 1% AEP event.

For suspended pier/pile footings:

- (a) The underfloor area of the dwelling below the 1% AEP flood level is to be designed and constructed to allow clear passage of floodwaters, taking into account the potential for small openings to block; and
- (b) At least 50% of the perimeter of the underfloor area is of an open design from the natural ground level up to the 1% AEP flood level; and
- (c) No solid areas of the perimeter of the underfloor area would be permitted in a floodway".

The proposed development needs to be modified so as to comply with all relevant controls listed in Section E11 of the Warringah DCP. The plans and the Flood Impact Assessment Report need to be updated correspondingly.

The proposal is therefore unsupported.

Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Natural Environment Conditions:

Nil.