

Natural Environment Referral Response - Flood

Application Number:	DA2023/0669
Proposed Development:	Demolition work and the construction of 28 dwellings, infrastructure, roadworks, tree removal, landscaping, community title subdivision and the dedication of the creekline corridor to Council.
Date:	13/03/2024
To:	Alex Keller
Land to be developed (Address):	Lot 4 DP 553816 , 16 Macpherson Street WARRIEWOOD NSW 2102

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 approval for the construction of 28 dwellings, infrastructure, roadworks, landscaping, community title subdivision and dedication of the creekline corridor to Council.

The proposed development includes earthworks such as filling to raise the building platform to the FPL and excavation in the creekline corridor for rehabilitation works.

The property and adjacent roads are affected by the 1% AEP flood event but the raised building platform will reduce the impact of flooding on the site. The submitted Flood Impact and Risk Assessment Report (FIRA) by Stantec provides results and mapping for the existing and proposed future scenarios, using a modified version of Council's TUFLOW model from the Ingleside, Elanora and Warriewood OFFS (2019).

The assessment of flooding includes consideration of the following documents:

- Pittwater 21 DCP - Sections C6.1, B3.11, B3.12, A1.9,
- Pittwater LEP 2014 - Clauses 5.21, 7.4,
- Warriewood Valley Urban Land Release Water Management Specification (2001) - Section 4.5.

In accordance with Control C6.1 of the Pittwater DCP, the building platform is permitted to be raised to the FPL provided that there "there is no additional adverse flood impact on the subject and surrounding properties and flooding processes for any flood event up to the PMF event including climate change impacts". Prior to lodgment of the DA, the Applicant was advised that for all events (which all include climate change impacts), they needed to show that the proposed development:

- Will result in less than 0.02m increase in the 1% AEP, 20% AEP and 50% AEP

- Will result in less than a 0.05m increase in the PMF
- Will result in less than a 10% increase in the PMF and 1% AEP peak velocities

Impacts on flood level are described in Section 4.2.1 of the FIRA and shown on the mapping in Figures D1, D2, D3 and D6.

There are no adverse impacts on flood levels within private property in the 20% AEP and 50% AEP events, but there are in the 1% AEP and PMF events (approximately 0.06 to 0.07m), at the rear of 14 Macpherson St.

Impacts on flood velocity are described in Section 4.2.2 of the FIRA and shown on the mapping in Figures D5 and D8.

There are adverse impacts on flood velocity within private property in both the 1% AEP and PMF events, along the western boundary of 14 Macpherson St adjacent to Brands Lane, at the rear of 14 Macpherson St, as well as scattered small patches on the former 18 Macpherson St, 10 Macpherson St, across the road at 1 Fantail Ave & 2 Fantail Ave and across the other side of the creek (east of Lorikeet Gr). In the 1% AEP event, the peak velocities remain below 1m/s. In the PMF event, peak velocities are above 1m/s (which may be of possible concern in relation to scour) but the actual values are not provided.

Some of these adverse impacts are only very small, however they are still outside the tolerances allowed under the definition of adverse impacts and therefore do not comply with the Pittwater DCP. The plans should be updated so as to not cause adverse impacts on private property, and provision of the following additional information is requested to assist with assessment:

- 1) If removal of the adverse impacts on private property is not possible, justification as to why not,
- 2) Mapping of the difference in Velocity x Depth product for the 1% AEP and PMF events,
- 3) Clarification of how the buildings have been modelled, eg have footprints of any structures been blocked out (Section 3.2 mentions footprints of houses at 18 Macpherson St),
- 4) Clarification on whether any of the new drainage modelled for future cases includes drainage works to be undertaken by Council,
- 5) Specific confirmation on whether each of the requirements in Table 4.3 of the Warriewood Valley Urban Land Release Water Management Specification (2001) have been met.

If/when the FIRA is updated, the following updates are requested:

- 8) The same colour scheme is used consistently for flood hazard mapping, for instance Category H4 is yellow in most figures, but green (similar to H3) in Figures F4, F20, F24. Could H4 please be mapped as yellow in all cases,
- 9) Cadastre boundaries are plotted on top of the flooding extents rather than underneath, to make it easier to determine the extent of flooding encroaching across the boundary,
- 10) Hydraulic category mapping for the 1% AEP and PMF in Appendix E of the FIRA (for the Flood Information Report provided by Council) are updated to the correct maps which were provided to the Applicant by Council on 2.12.2022.

The development application does not currently demonstrate compliance with flood related development controls and therefore cannot be supported.

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:

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

Flood effects caused by development

There is to be no filling of the land or any other reduction of the available flood storage which results in a net loss of storage below the 1% AEP, other than what has been approved as part of this consent.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Building components and structural soundness

B1 - All new development below the Flood Planning Level shall be designed and constructed from flood compatible materials.

B2 - All new development must be designed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, debris load, wave action, buoyancy and immersion.

B3 - All new and existing electrical equipment, power points, wiring and connections must be located above the Flood Planning Level, protected from flood water or have residual current devices installed to cut electricity supply during flood events.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Fencing

Any new fencing must be designed to allow for the unimpeded movement of flood waters, with a minimum of 50% open area along any straight length, from the natural ground level up to the 1% AEP flood level.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE

Certification of Works as Executed

A suitably qualified engineer and/or registered surveyor is to certify that the completed works have been constructed in accordance with this consent and the approved plans with respect to the following:

1. Floor levels are set at or above the required level
2. There has been no filling on the land other than what has been approved

3. Openings are provided in fencing where required for the free passage of flood waters

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of the Occupation Certificate.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Building Components and Structural Soundness

B2 - A suitably qualified structural engineer is to certify the structural integrity of the new development up to the Flood Planning Level. The depth, velocity, debris load, wave action, buoyancy and immersion must all be considered.

B3 - A suitably qualified electrician or contractor is to certify that all new and existing electrical equipment, power points, wiring and connections are located above the Flood Planning Level, are protected from flood water or have residual current devices installed to cut electricity supply during flood events.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of the Occupation Certificate.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

ON-GOING CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

Flood Management

Flood Effects Caused by Development (A2)

There is to be no filling of the land or any other reduction of the available flood storage which results in a net loss of storage below the 1% AEP, other than what has been approved as part of this consent.

There is to be no new fencing, other than what has been approved as part of this consent.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.