

Natural Environment Referral Response - Flood

Application Number:	DA2024/1079
Proposed Development:	Community title subdivision into five (5) lots and civil works
Date:	09/07/2025
To:	Adam Richardson
Land to be developed (Address):	Lot 3 DP 1115877 , 53 B Warriewood Road WARRIEWOOD NSW 2102 Lot 3 DP 942319 , 53 Warriewood Road WARRIEWOOD NSW 2102 Lot 2 DP 1115877 , 53 A Warriewood Road WARRIEWOOD NSW 2102

Reasons for referral

This application seeks consent for the following:

- All Development Applications on land below the 1 in 100 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 proposed development at 53, 53A and 53B Warriewood Rd is for subdivision, including a private internal road, a future public reserve, the extension of Lorikeet Grove, the widening of Pheasant Place, civil works and tree removal to facilitate the future residential development of the Subject Site.

It has been assessed against:

Pittwater LEP (2014) - Clauses 5.21, 5.22

Pittwater 21 DCP - Clauses C6.1, B3.11, B3.12, A1.9

Warriewood Valley Urban Land Release Water Management Specification (WVULRWMS) (2001) - Section 4.5.

All design flood levels include consideration of climate change.

This referral is based on review of the Flood Impact Assessment (FIA) for 53A & 53B Warriewood Rd, Warriewood (March 2025), by Catchment Simulation Solutions.

It includes review of the shared pathway as shown on Drawing 220122-00-DA-C11.01 (issued 4.07.25), which is to be paved and constructed at grade.

Pittwater LEP - Clauses 5.21, 5.22:

The proposed development complies with all parts of the LEP clauses, as outlined in Section 4.1 of the FIA.

Pittwater 21 DCP - Clauses C6.1, B3.11, B3.12, A1.9:

The proposed building platform for each additional lot is at or above the Flood Planning Level

(including climate change), which complies with Clause C6.1 of the PDCP.

The proposed works would reduce flood storage by 2,517m³. However, this loss of flood storage does not translate into any adverse impact on peak flood levels on properties outside of the development site. This complies with the statement in Clause C6.1 of the PDCP: "The filling of land will only be permitted where it can be demonstrated within the Water Management Report that:

- there is no net decrease in the floodplain volume of the floodway or flood storage area within the property, for any flood event up to the 1% AEP flood event and the PMF event including climate change considerations for both design events; and/or
- 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".

Whilst the proposed works are not predicted to have any adverse impacts on flood levels for properties outside of the development site, there are flood level impacts along the Warriewood Road frontage. Maximum increases in Warriewood Rd range from 0.08 metres in the 2-year ARI event, 0.23m in the 1% AEP event and over 0.6m in the PMF. However, these changes are a direct result of alterations to the underlying topography, ie the higher terrain along the site frontage (which largely prevents overland flow entering the site), formation of kerb and gutter, as well as reformation of the southern travel lane of Warriewood Road. From the FIA, these increases are attributed to the increase in elevation of the road and frontage rather than an increase in depth, and are therefore acceptable.

In all design events up to the 1% AEP event, velocities on neighbouring properties to the east are predicted to decrease. However in the PMF, there are some very small patches where the velocity is predicted to increase by more than 10%, which is defined in Clause A1.9 of the PDCP as adverse. In this case, this is considered acceptable because these very small patches occur at locations where the velocity is only 0.5-1m/s, which is not high enough to cause erosion, and in areas impacted by overland flooding only, with areas subject to mainstream flooding not predicted to experience any significant increase in velocity. In addition, the flood hazard category in the residential areas of neighbouring properties is generally H1, which is defined as "generally safe", and hazard is not predicted to significantly increase.

Flood emergency response complies with Clause B3.11 of the PDCP. Most of the residential lots have a flood hazard category of H1 in the PMF, however the rears of the 4 south-eastern lots have a flood hazard category of H3. Evacuation would be difficult for all lots in the PMF due to inundation of Lorikeet Grove. A Flood Emergency Assessment has been completed within the FIA and there is potential on all lots for a suitable shelter in place refuge above the PMF level.

Warriewood Valley Urban Land Release Water Management Specification (WVULRWMS):

The proposed development does not comply with the requirement for the 1% AEP event to be contained within the public space (inner) corridor (ie 25m from the centre of the creek). The proposed 1% AEP extent is shown in Figure 21 of the FIA, and extends outside the corridor as follows:

- The entire area between the creek and Lorikeet Grove is affected. Flood depths in the 1% AEP event are more than 1.2m for most of this area (and more than 1.2m for most of this area even in the 2 year ARI event). This is considered acceptable as ground levels in this area are to be reduced for flood storage purposes, and so as to not cause adverse impacts on neighbouring private properties. Also, the area between the creek and Lorikeet Grove is to be vegetated with wetland species (with no formal access to pedestrians or vehicles), and the wetland area will link with the wetland areas at the rear of the properties downstream.
- The north-eastern corner of the Lorikeet Grove roadway is slightly affected, with flood depths up to about 0.1m. This is considered acceptable because it is recognised that the road needs to tie in at both ends to existing roads so there is no flexibility on road surface levels or location.

The proposed development does not comply with the requirement for the 50% AEP (2 year ARI) flow to be carried in-bank. However, the inundation is much more closely restrained towards the main creek line than it is under existing conditions, as shown in Figure 18 of the FIA. This is considered acceptable as it lines up with the 2 year ARI extents upstream and downstream of the site. From Figure 18 of the FIA, it appears that there is a raised strip of land between the creek and the reserve area, where flood depths are not as much as in the reserve area.

The proposed shared pathway does not comply with the requirement for its level to be above the 5 year ARI (20% AEP) flood level, mainly for the section along the south-eastern boundary. In this area, during a 5 year ARI event, the peak flood level would be approximately 4.3m AHD and the pathway would be inundated by up to approximately 0.5m. This is considered acceptable because it is recognised that the pathway needs to tie in at both ends to existing pathways and the pathway is sited in the optimum location for minimising flood depths over it. The hazard category for the section of pathway along the south-eastern boundary is H2, which is defined as "unsafe for small vehicles". The existing pathway south-east of the property, with which the proposed pathway connects, has a similar flood depth and hazard category. It is however noted that not far from the north-western side of this part of the proposed pathway, the ground level drops off to an area with flood depths of more than 1.2m and a hazard category of H4, which is defined as "unsafe for people and vehicles". Simple railing with 2 or 3 rails (so as to allow the passage of floodwaters) should be installed along the north-western side of the pathway in this section, along with signage at the Lorikeet Grove end of this section of pathway to advise that the area is subject to inundation during or after very heavy rainfall (or similar wording).

The proposed development is supported, subject to conditions.

The proposal is therefore supported.

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 flood level, other than what has been approved in this development 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.

Floor levels

The building platform for the future dwelling on each lot is to be built as high at or above the Flood Planning Level, and large enough to provide adequate space for each dwelling particularly for the lots in the south-east corner.

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 TO BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

Flood effects caused by development

There is to be no stockpiling of materials or fill between the creek and Lorikeet Grove, in case of flooding during construction.

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 registered surveyor is to certify that the finished ground levels have been constructed in accordance with this consent and the approved plans.

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.

Shared pathway

The shared pathway is to be constructed at ground level. The section of pathway adjacent to the south-eastern boundary, where it is below the 5 year ARI flood level, is to have railing installed along the north-western side of the pathway for the safety of pedestrians. The railing is to be constructed with 2 or 3 rails so as to allow the passage of floodwaters.

Signage is to be installed at the Lorikeet Grove end of this section of pathway to advise that the area is subject to inundation during or after very heavy rainfall. Design of the sign and its specific wording are to be approved by Council prior to installation.

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

Reason: To reduce the flood risk for users of the shared pathway.

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

Flood Management

There shall be no filling of the land below the 1% AEP flood level, 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.