

Water Floodplains and Coast (WFC)
Floodplain Risk Management
Brisbane Grove Subdivision Planning Proposal Update
Date: 18 April 2023

We have reviewed the updated planning proposal report (Planning Proposal to rezone and amend Minimum Lot Size on Lots along Brisbane Grove Road, Goulburn (March 2023)) in relation to the planning proposal on 137 Brisbane Grove and we offer the following advice for consideration by council.

Floodplain Risk Management Comments:

We acknowledge the additional flood information provided in this updated report and that Council has provided sub-sections in the report on how each Local Planning Direction for 4.1 Flooding has been addressed in this proposal. We also acknowledge the evacuation assessment including evacuation route maps that were provided for the 5% AEP, 1% AEP and PMF events. The information provided in this report utilises the information presented in the 2022 *Goulburn Floodplain Risk Management Study and Plan (FRMS&P)*. The report however lacks a thorough flood risk assessment of the safety of occupants and emergency management across the full range of flood events, specifically in the rarer events (i.e. larger than the 1% AEP).

Safe occupation and emergency management

The planning proposal should address the safe occupation of the development for the full range of floods. We note that Lots 2, 3 and 4 DP62157, which are proposed to be rezoned as R5 are completely inundated in the PMF. The primary strategy for emergency management requires residents to be able to evacuate to an area above the PMF that has adequate facilities. However, the proposal states that a safe, flood free evacuation route to Goulburn Urban Area cannot be provided as the roads are severely inundated during the PMF.

As an alternative to site evacuation, the proposal examines a shelter in place strategy for the PMF affected lots but was deemed unsuitable due to the significant depth of inundation. The report states a PMF flood depth range up to 0.8 to 8.5 m deep across the site which varies from 6 m to 9 m above the 1% AEP flood. The planning proposal needs to demonstrate how emergency management services will be provided including access to all proposed residential lots including those planned to be located above the PMF. Based on the short warning time, flood isolation presents a significant risk to life that could be managed through better subdivision design including any road and bridge design requirements and upgrades that are required for flood access.

Due to the large differences in flood levels, depths and consequently extents between the 1% AEP and PMF, Council would benefit from further assessment of flood evacuation that considers events the full range of floods up to the PMF including the 0.5% and 0.2% AEP. The assessment should examine the period of isolation across the range of flood events up to and including the PMF and assess areas within or closer to the proposal site that is outside the PMF as a potential refuge area. Consultation with the State Emergency Service is necessary in ensuring public safety criteria meet emergency response requirements for this planning proposal.

Further guidance for the flood evacuation risk assessment can be found in section A2.5.1 to section A2.5.3 of the in the Department of Planning and Environment Support for Emergency Management Planning - Flood Risk Management Guide EM01

(<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Floodplains/flood-risk-management-emergency-management-planning-support-220055.pdf>).

Flood boundary and planning constraints

Upon reviewing the Flood Planning Constraints Categories (FPCC) boundaries in the planning proposal, it appears that Lot 2 DP62157, Lot 3 DP62157 and Lot 4 DP62157 have been categorised as a FPCC4. However, based on the PMF hazard mapping shown on Figure 04 of the 2022 Goulburn FRMS&P, flooding across these lots is classified as H6 hazard and therefore *'unsafe for vehicles and people. All building types considered vulnerable to failure'*. Due to the nature of the hazard, it does not appear that the risks on these lots have been adequately considered.

The planning proposal as presented is therefore considered to be inconsistent with local planning direction 4.1(3)(c) and we recommend that Council revise the planning constraints category mapping and update its Flood Impact and Risk Assessment in the planning proposal to account for both riverine and overland flow flooding including consultation with the State Emergency Service.

Other floodplain matters

The updated planning proposal report has now been structured to contain sub-section that demonstrate details on how the proposal addresses each of the Local Planning Direction for 4.1 Flooding. We note however that the heading to address Direction 4.1(3)(d) to (g) have been incorrectly referenced in the report. We recommend that Council review the headings under section 3.6.7 *Direction 4.1 Flooding* to reflect the correct local planning direction.

Additionally, we recommend that the use of probability in analysing the flood risk specifically during the PMF should include focus on the consequences as well and the probability of occurrence, particularly as the consequences relate to public safety risk and cannot be ignored.

Summary

As the proposal fails to provide effective evacuation up to the PMF and demonstrate the safe occupation on several fully inundated lots in the PMF, there is a significant flood risk posed to future occupants of the flood prone land. The large differences in flood levels and depths between the 1% AEP and PMF warrants Council to undertake a flood risk assessment for the planning proposal that considers the range of floods up to the PMF. This could include the 0.5% and 0.2% AEP to establish if the flood related public safety risk can be managed and any modifications necessary to the planning proposal to achieve this outcome. The flood risk assessment should explicitly establish consistency with the principles of the Floodplain Development Manual and requirements of the relevant flood related local planning direction. Given the high potential of risks to life in a flood emergency we consider that council should consult with the State Emergency Services and include their inputs into finalising the flood impact risk assessment for this planning proposal.