

Reference: 250709-Flood Impact Assessment – Rev1

Date: 24/07/2025

Kensit Architects

Attention: Dean Kensit

Dear Dean Kensit

RE: Flood/ Local overland flow Impact Statement for Proposed Mixed-Use Development at 187 Bourke St, Goulburn

The flood assessment is based on the flood advice letter from Goulburn Mulwaree Council (Ref: FWR/0007/252), dated 16 July 2025. This letter confirms that the site is not located within a designated floodway. Although the site is identified with a flood hazard classification of FPCC4, under H6 – Flood Planning Control, no specific flood control measures are required for this lot.

The proposed development proposal complies with is Council's flood related control and is consistent with Council's Development Control Plan for Flood Liable Land

For and on behalf of the LMJ engineering
consultants. Kind regards,



DINH LAN NGUYEN BE (Civil), MIE (Aust.), CPENG, NER

Senior Civil Engineer





Goulburn Mulwaree Council
Locked Bag 22
Goulburn NSW 2580

Civic Centre
184 - 194 Bourke Street
Goulburn NSW 2580
t (02) 4823 4444
e council@goulburn.nsw.gov.au
www.goulburn.nsw.gov.au

16 July 2025

Contact: Planning & Development

Kensit Architect Pty Ltd
155 Copland Drive
SPENCE ACT 2615

Dear Applicant,

SUBJECT: FWR/0007/2526 Flood Information Report
LOCATION: Lot 5 DP 778947
ADDRESS: 187 Bourke Street GOULBURN NSW 2580

Reference is made to your recent request to determine whether the above allotment is subject to flooding.

Based on information available to Council, the subject property is above Council's Flood Planning Level under the *Goulburn Floodplain Risk Management Study and Plan 2022*. New development or redevelopment at the site is subject to flood related development controls as per the below table.

Flood Category	Is the land affected?	Flood Hazard Category
1%	No	The land is subject to the 1% Annual Exceedance Probability (AEP) which is the probability of an event being equalled or exceeded within a given year. The 1% AEP flood is approximately equal to 1 in 100 year Average Recurrence Interval (ARI) flood event (or simply 100 year flood).
FPCC1	No	FPCC1 identifies the most significantly constrained areas, with high hazard or significant flood flow. Intensification of use in FPCC1 is generally very limited except where uses are compatible with flood function and hazard.
FPCC2	No (Subcategory a,b,c,e)	FPCC2 areas are the next least suitable for intensification of land use or development because of the effects of flooding on the land, and the consequences to any development and its users. FPCC is split into FPCC2 (Subcategory a,b,c,e) of FPCC2 (Subcategory d).
	No (Subcategory d)	
FPCC3	No	FPCC3 areas are suitable for most types of development. This is the area of the floodplain where more traditional flood-related development constraints, based on minimum floor and minimum fill levels, will apply.
FPCC4	Yes	FPCC4 is the area inundated by the PMF (extent of flood prone land), but outside FPCC1-3. Few flood-related development constraints would be applicable in this area for most development types. Constraints may apply to key community facilities and developments where there are significant consequences to the community if failed evacuations occur.

Additional flood mechanisms affecting Goulburn include overland flow.

Is the land subject to overland flow?	Overland Flow Notes:
Yes – the land is identified in a draft overland flow study not yet adopted by Council	Overland flow occurs when excess rainfall runoff is generated from impervious surfaces and flows towards a watercourse refer to Figure 1 (below). This type of flooding is often referred to as “stormwater” flooding due to short warning times. Typically, this type of flooding rises and recedes over a short period of time and the floodwaters are usually relatively shallow and fast moving. Land identified as being subject to overland flow, must assess and consider the potential environmental impacts in order to demonstrate the suitability of the site for its intended use.



Figure 1 - illustrative graphic of overland flow and mainstream flooding

Reference should be made to the following, which is not considered to be an exhaustive list:

- Chapter 3.8 Flood Affected Land of the Goulburn Mulwaree Development Control Plan 2009
- DCP Appendix J – Flood Policy
- Table 31: Flood Planning Constraint Categories (ADR 7-5) and Goulburn Riverine Flooding Considerations within the Goulburn Floodplain Risk Management Study and Plan 2022, and
- Flood Risk Management Manual (ISBN 978-1-923076-17-4) published by the NSW Government in June 2023.

For any further information please contact Council's Planning & Development Business Unit on (02) 4823 4444.

Yours faithfully,

Peter Malloy

Team Leader Development Assessment

Note:

1. This information is derived from the Goulburn Floodplain Risk Management Study and Plan 2022.
2. The link to the current flood study is available via: <https://www.goulburn.nsw.gov.au/Development/Plans-Strategies#section-7>
3. The individual extent of flooding can only be accurately determined by Australian Height Datum (AHD) survey.
4. A full copy of the Goulburn Floodplain Risk Management Study and Plan 2022 (including the models) is available free of charge on the NSW Flood Data Portal: www.flooddata.ses.nsw.gov.au.

Definitions:

- **Annual Exceedance Probability (AEP)**

The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, a 1% AEP flood has a 1% (1 in 100) chance of occurring in any one year.

- **Australian Height Datum (AHD)**

A common national surface level datum approximately corresponding to mean sea level.

- **Extreme event**

An extreme flood is one which has a very low probability of occurrence and can be used to consider flood damages and emergency management within a floodplain. In this study this event has been defined as one having three times the flow rate of the 1% AEP event, and an estimated probability of occurrence of 1 in 10,000.

- **Flood fringe**

Flood fringe is defined as the area/s that make up the remainder of the flood extent. Development in these areas is unlikely to alter flood behaviour in the surrounding area.

- **Flood Planning Level (FPL)**

The flood level which determines the flood planning area. In Goulburn, the FPL has been set as the 1% AEP flood event + freeboard of 0.8 metres. For unstudied catchments outside the Goulburn Floodplain Risk Management Study and Plan's study area, a freeboard of 0.5m shall be used.

- **Flood Planning Constraint Categories (FPCC)**

FPCCs group similar types and scales of flood-related constraints to support land-use planning activities.

- **Floodways**

Those areas where a significant volume of water flows during floods and are often aligned with natural channels. They are areas that, even if only partially blocked, would cause a significant increase in flood levels and/or significant redistribution of flood flow, which may in turn adversely affect other areas. They are often, but not necessarily, areas with deeper flows or areas where higher velocities occur.

- **High hazard areas**

High hazard areas, within Goulburn have, water depths greater than 1 metre. Houses can become completely inundated and evacuation is often difficult and dangerous. In flood fringe and storage areas, water is slow moving. In floodway areas, water has a high velocity and can cause significant damage to buildings.

- **Low hazard areas**

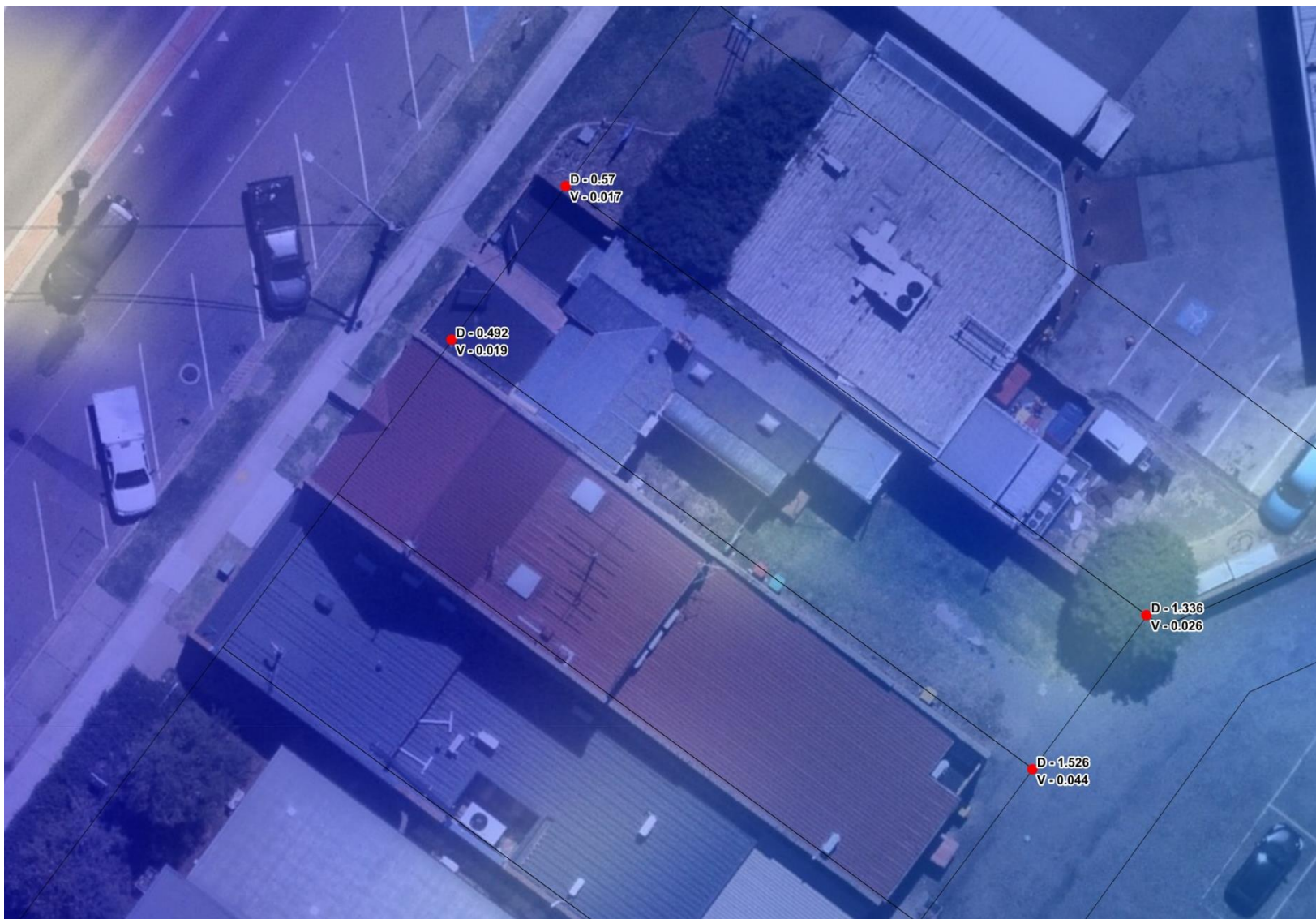
Low hazard areas, within Goulburn, are those areas where water depths do not exceed 1 metre. Waters are generally slow moving with lower potential for damage and evacuation is relatively safe and easy.

- **Probable Maximum Flood (PMF)**

The PMF is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain.







H6 - Flood Planning Controls

After determining the FPCC present at the site, and the land use category, the Flood Planning Controls are set out in Table 50. The full controls are listed below the table. FPCC are shown on Figure H 1.

Table 50: FPCC Development Controls Matrix

	FPCC 1					FPCC 2 (Subcategory a,b,c,e)					FPCC 2 (Subcategory d)					FPCC 3					FPCC 4				
	Critical Uses & Facilities	Sensitive Uses & Facilities	Lot Subdivisions	Residential Development	Commercial & Industrial	Recreation & Non-urban	Sheds & Outbuildings	Minor Additions	Critical Uses & Facilities	Sensitive Uses & Facilities	Lot Subdivisions	Residential Development	Commercial & Industrial	Recreation & Non-urban	Sheds & Outbuildings	Minor Additions	Critical Uses & Facilities	Sensitive Uses & Facilities	Lot Subdivisions	Residential Development	Commercial & Industrial	Recreation & Non-urban	Sheds & Outbuildings	Minor Additions	
						</																			

Unsuitable Land Use Not Relevant Potentially unsuitable. Significant risk management required to manage flood risk

Floor Level Controls

A1. All floor levels to be no lower than the 5% AEP flood unless justified by site-specific assessment.

A2. All floor levels to be equal to or greater than the FPL (1% AEP flood level plus 0.8 m freeboard). If significant access issues or other constraints are present, a reduced floor level no lower than the 1% AEP flood level may be considered if justified by a site-specific assessment.

A3. Additions with a habitable floor area of up to 30 m² may be approved with floor levels below the 1% AEP flood level if the applicant can demonstrate that no practical alternatives exist for constructing the extension above the 1% AEP flood level. For additions with habitable floor areas exceeding 30 m², floor levels are to be equal or greater than the FPL (1% AEP flood level plus 0.8 m freeboard).

A4. All floor levels to be equal to or greater than the FPL (1% AEP flood level plus 0.8 m freeboard).

A5. All floor levels to be equal to or greater than the PMF flood level.

A6. Entrance levels to underground spaces (basements, carparking etc.) are required to be above the level of the FPL (1% AEP flood level plus 0.8 m freeboard) or PMF level, whichever is higher.

Building Components

D1. All structures to have flood compatible building components below the FPL (1% AEP flood level plus 0.8 m freeboard).

D2. All structures to have flood compatible building components below the FPL (1% AEP flood level plus 0.8 m freeboard) or the PMF level, whichever is the highest.

Structural Soundness

E1. Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including the FPL (1% AEP flood level plus 0.8 m freeboard).

E2. Engineers report to certify that any structure can withstand the forces of floodwater, debris and buoyancy up to and including the FPL (1% AEP flood level plus 0.8 m freeboard) or a PMF, whichever is greater.

Flood Planning Controls (extract) – *Goulburn Floodplain Risk Management Study and Plan 2022*

Parking and Driveway Access

- F1. The minimum surface level of open car parking spaces or carports shall be as high as practical, but no lower than the 5% AEP flood or the level of the crest of the road at the location where the site has access. In the case of garages, the minimum surface level shall be as high as practical but no lower than the 5% AEP flood.
- F2. The minimum surface level of open car parking spaces, carports or garages shall be as high as practical. The driveway providing access between the road and parking space shall be as high as practical and generally rising in the egress direction.
- F3. Garages capable of accommodating more than three motor vehicles on land zoned for urban purposes, or enclosed car parking, must be protected from inundation by floods up to the FPL (1% AEP flood level plus 0.8 m freeboard).
- F4. The level of the driveway providing access between the road and parking space shall be no lower than 0.3 m below the 1% AEP flood or such that the depth of inundation during a 1% AEP flood is not greater than either the depth at the road or the depth at the car parking space. A lesser standard may be accepted for single detached dwelling houses where it can be demonstrated that risk to human life would not be compromised.
- F5. Enclosed car parking and car parking areas accommodating more than three vehicles (other than on Rural zoned land), with a floor level below the 5% AEP flood or more than 0.3 m below the 1% AEP flood level, shall have adequate warning systems, signage and exits. Restraints or vehicle barriers are to be provided to prevent floating vehicles leaving the site during a 1% AEP flood.

Evacuation and Refuge

- G1. Reliable access for pedestrians or vehicles required to a publicly accessible location above the PMF via a rising road.
- G2. Reliable access for pedestrians or vehicles required during a 1% AEP flood to a publicly accessible location above the PMF.
- G3. The development is to be consistent with any relevant flood evacuation strategy or similar plan.
- G4. The evacuation requirements of the development are to be considered. An engineer's report will be required if circumstances are possible where the evacuation of persons might not be achieved within the effective warning time.

Management and Design

- H1. Applicant to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accordance with this DCP.
- H2. Site Emergency Response Flood Plan required where floor levels are below the FPL (1% AEP flood level plus 0.8 m freeboard), except for single dwelling-houses.
- H3. Applicant to demonstrate that area is available to store goods above the FPL (1% AEP flood level plus 0.8 m freeboard).
- H4. No storage of materials below the FPL (1% AEP flood level plus 0.8 m freeboard) which may cause pollution or be potentially hazardous during any flood.
- H5. Finished land levels in new release areas shall be not less than the 1% AEP mainstream flood plus 0.5 m, unless justified by site specific assessment. A surveyor's certificate will be required upon completion certifying that the final levels are not less than the required level.

Flood Impacts

- J1. Provision of a report developed by an engineer who specialises in hydrology and floodplain modelling is required to certify that the development will not adversely affect flooding elsewhere. The report must show the:
1. Loss of storage in the floodplain. For sites located in areas of 1% AEP flood storage, assessment is to include consideration of the loss of storage resulting from cumulative development of the area.
 2. Changes in flood levels and flow velocities caused by alteration of conveyance of flood waters. The capacity and conveyance of existing flowpaths shall be maintained.
 3. Impacts of urbanisation on peak flood flows and volumes.

There is an exception to this requirement – no report is required for small developments such as a car port, in ground swimming pool or backyard shed less than 9 m², that do not alter the existing ground level.

