

Maudson Family
% Gartner Trovato Architects
suite 13, 10 Park Street,
Mona Vale, NSW 2103

17th July 2025

FLOOD INUNDATION & RISK ASSESSMENT REPORT PROPOSED ALTERATIONS & ADDITIONS 21 LISLE St and 15 TOURMALINE St NARRABEEEN

This report has been prepared in support of the proposed Development Application for alterations and additions (refer attached plans by Gartner Trovato Architects) at No 21 Lisle St and 15 Tourmaline St Narrabeen in respect to potential flood inundation / impacts and Northern Beaches Councils Water Management for Development Policy Section 10.0 Flood Risk Management and Pittwater 21 DCP Section B3.11 Flood Prone Land. The predicted flooding is associated with the rising of nearby Narrabeen Lagoon during sever storm events.

The extent of flooding is as summarized in the "Flood Information Request" data as supplied by Northern Beaches Council (refer attached).

For the 1% AEP event the site is classified -

Flood Level	NA
Flood Planning Level	NA
Flood Hazard	H1 / H2
Flood Hydraulic Category	NA
Flood Risk Precinct	low
Land Use Group	Residential – Dwelling House



Aerial Image of No 21 Lisle St and 15 Tourmaline St Narrabeen
(Northern Beaches Council web site)

Based on the available data the development site is not affected by the 1% AEP flood event, with insignificant effects during the PMF flood event (40mm inundation of garage).

It is therefore our opinion the requirements of Councils flood management policies (ie FFL > FPL, structural soundness etc) will be met with conventional building practices and that no specific flood impact mitigation works are required.

Assessment of Impacts Compliance Table

	Not Applicable	Compliance Yes	No
A Flood effects caused by Development	-	X	-
B Building Components & Structural	-	X	-
C Floor Levels	-	X	-
D Car Parking	-	X	-
E Flood Emergency Response	-	X	-
F Fencing	-	X	-
G Storage of Goods	-	X	-
H Pools	-	X	-

The proposed works if carried out in accordance with recommendations within this *Flood Inundation & Risk Assessment Report* by Barrenjoey Consulting dated July 2025 will satisfy the intent of Northern Beaches Councils Water Management for Development Policy Section 10.0 Flood Risk Management and the Pittwater 21 DCP Section B3.11 Flood Prone Land. Noting the following measures are to be implemented into the works –

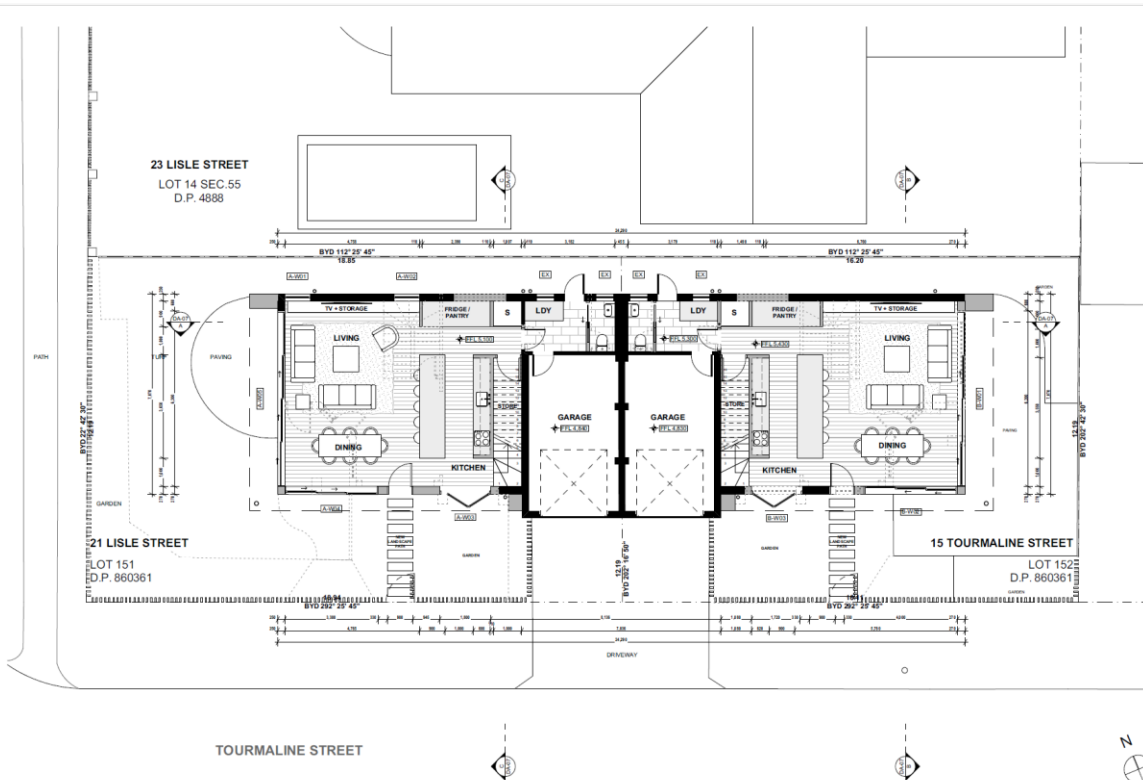
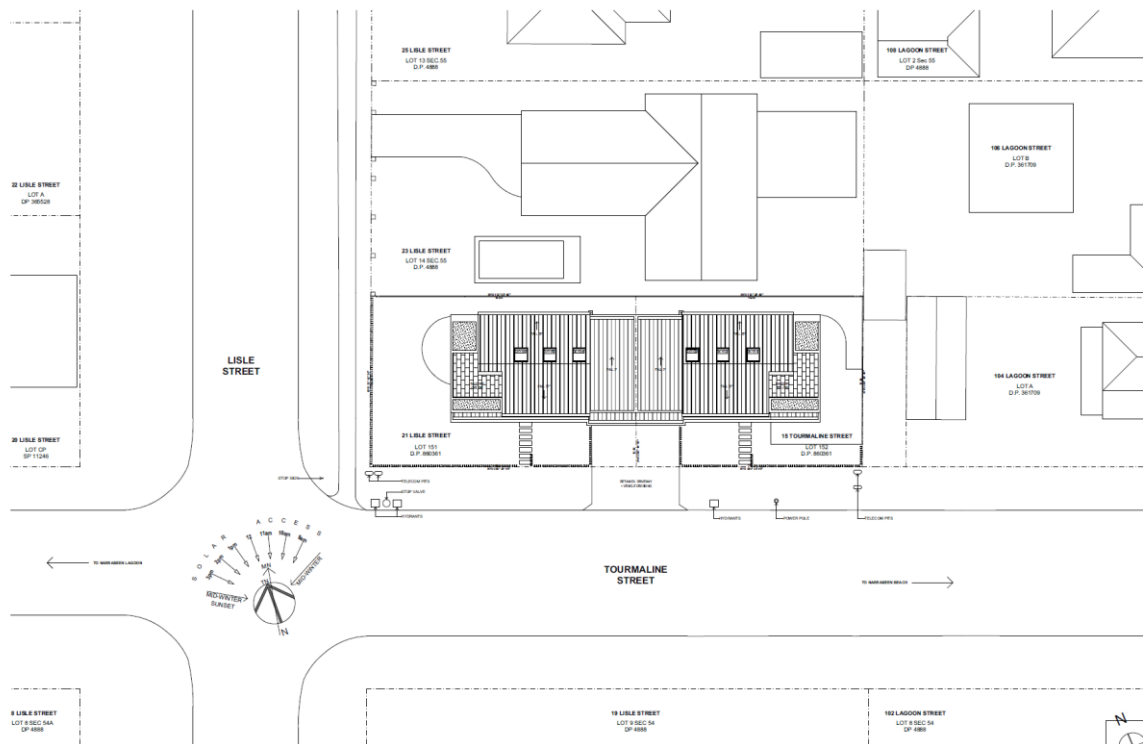
- **Due to the sites proximity to Narrabeen Lagoon all occupants are to be informed of the sites flooding potential / impact and available warning services (ie : Councils *Floodwatch*, SES services etc), safe evacuation route/s and requirements for goods / valuables storage etc.**

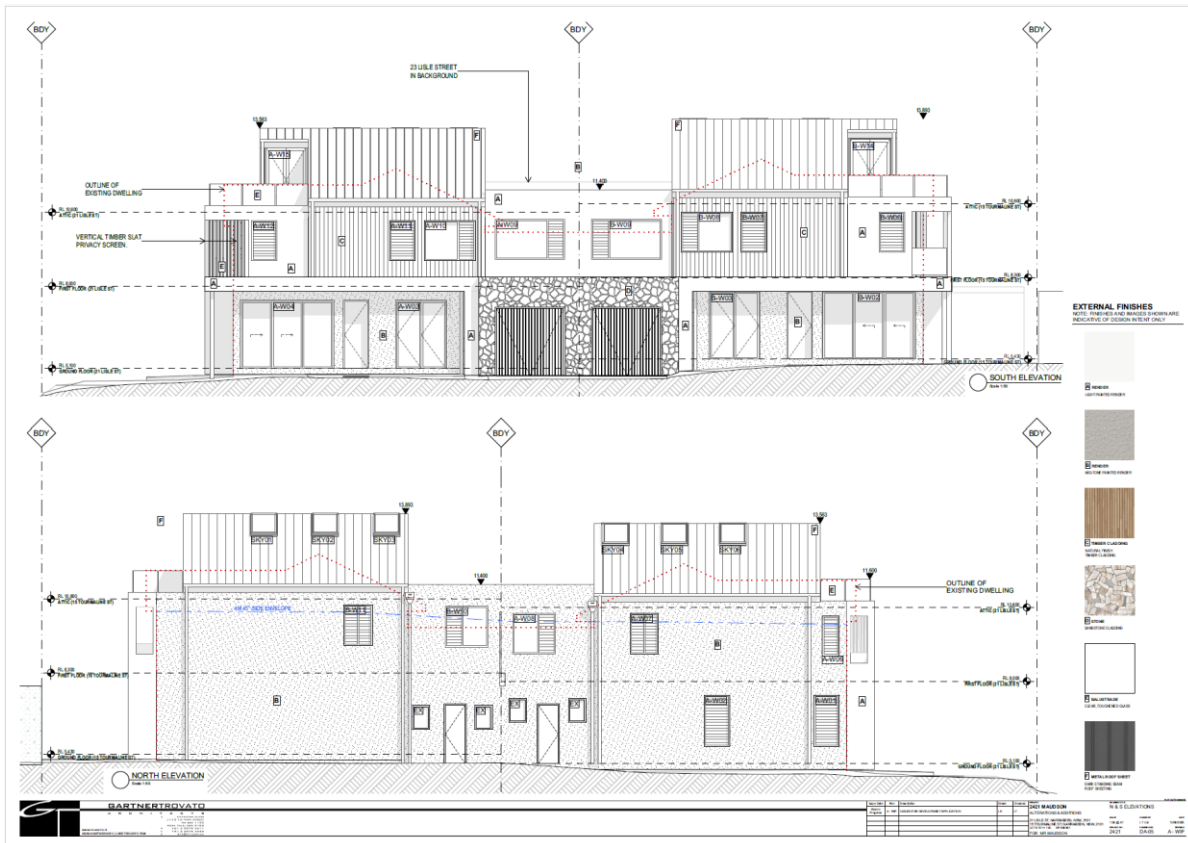
It is to be noted that, due to the many complex factors that can affect a site, the subjective nature of a risk analysis, and the imprecise nature of the science of flood analysis, the risk of persons being injured, to life and property cannot be completely removed. The recommendations within this Report do not remove the risk associated with the predicted flooding event, though lower those risks to an acceptable level reasonably anticipated by the community in everyday life.

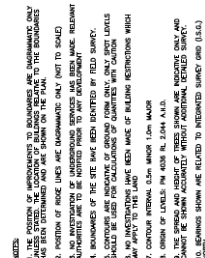
Should further information regarding this certificate be required please contact our office as outlined below.

Regards
BARRENJOEY CONSULTING ENGINEERS Pty Ltd

Per
Lucas Molloy (Director)
MIE(Aust) / CPEng / NER /
APEC / Engineer / IntPE(Aus)









COMPREHENSIVE FLOOD INFORMATION REPORT

Property: 21 Lisle Street NARRABEEN NSW 2101

Lot DP: Lot 151 DP 860361

Issue Date: 11/07/2025

Flood Study Reference: Narrabeen Lagoon Flood Study 2013, BMT WBM

Flood Information¹:

Map A - Flood Risk Precincts

Maximum Flood Planning Level (FPL) ^{2, 3, 4}: N/A m AHD

Map B - 1% AEP Flood & Key Points

1% AEP Maximum Water Level ^{2, 3}: N/A m AHD

1% AEP Maximum Depth from natural ground level³: N/A m

1% AEP Maximum Velocity: N/A m/s

Map C - 1% AEP Hydraulic Categorisation

1% AEP Hydraulic Categorisation: N/A

Map D - Probable Maximum Flood

PMF Maximum Water Level (PMF) ⁴: 4.87 m AHD

PMF Maximum Depth from natural ground level: 0.70 m

PMF Maximum Velocity: 0.69 m/s

Map E - Flooding with Climate Change

1% AEP Maximum Water Level with Climate change ³: N/A m AHD

1% AEP Maximum Depth with Climate Change³: N/A m

Map F - Flood Life Hazard Category in PMF

H3 – H1

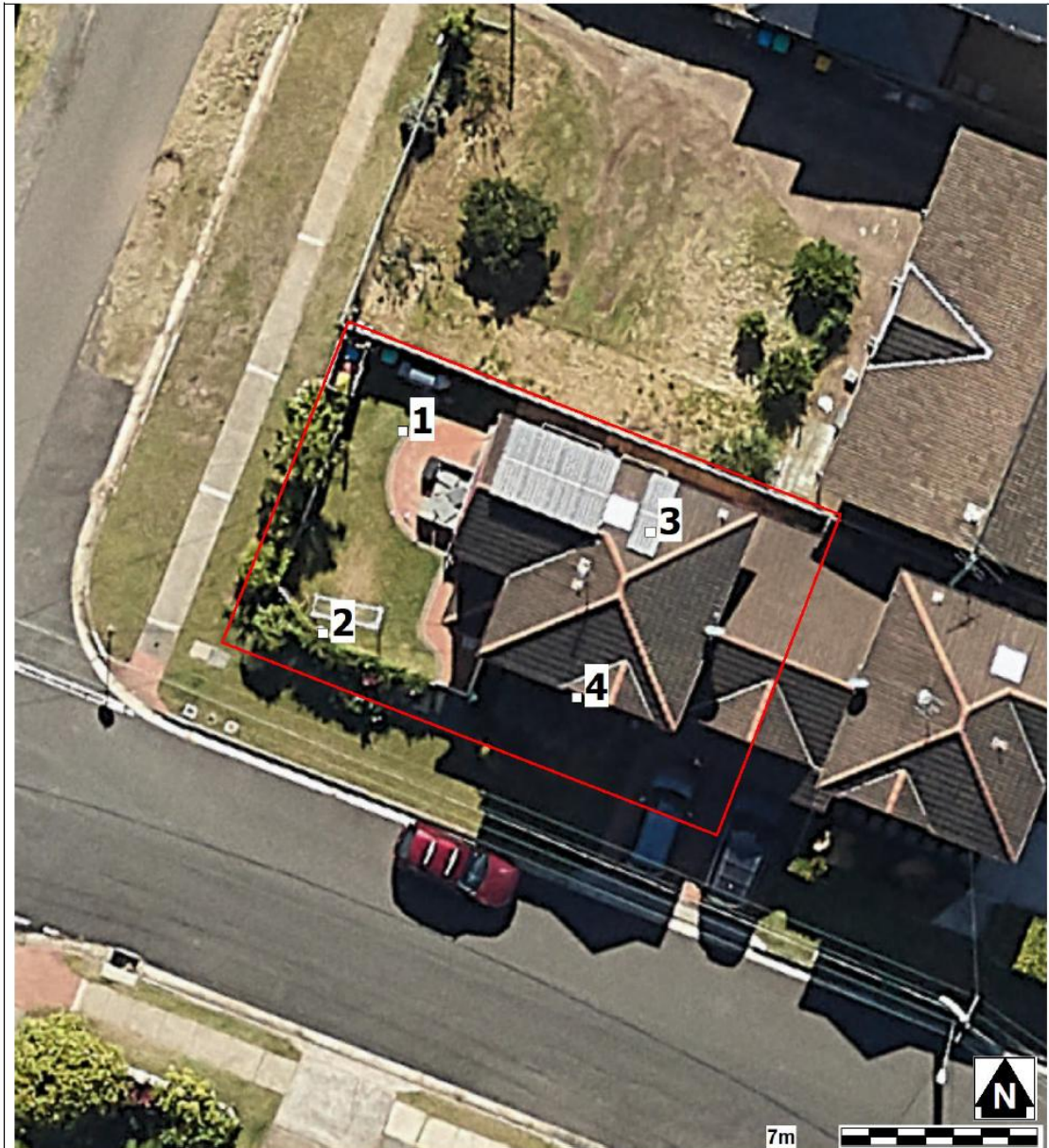
Map G - Indicative Ground Surface Spot Heights

- (1) The provided flood information does not account for any local overland flow issues nor private stormwater drainage systems.
- (2) Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/ flood planning levels across the site. The maximum Flood Planning Level may be in a different location to the maximum 1% AEP flood level.
- (3) Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels.
- (4) Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or FPL

Issue Date: 11/07/2025

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MAP B: FLOODING - 1% AEP EXTENT & KEY POINTS



Notes:

- Extent represents the 1% Annual Exceedance Probability (AEP) flood event.
- Flood events exceeding the 1% AEP can occur on this site.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

Flood Levels

ID	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	Flood Planning Level (m)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
1	N/A	N/A	N/A	N/A	N/A	N/A	4.85	0.23	0.13
2	N/A	N/A	N/A	N/A	N/A	N/A	4.87	0.50	0.43
3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A	N/A	4.87	0.08	0.11

Climate Change Flood Levels (30% Rainfall intensity and 0.9m Sea Level Rise)

ID	CC 1% AEP Max WL (m AHD)	CC 1% AEP Max Depth (m)
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A

WL – Water Level

PMF – Probable Maximum Flood

N/A - No Peak Water Level/Depth/Velocity Available.

Notes:

- The flood planning levels above are calculated by adding a 0.5m freeboard to the 1% AEP water level. However, if the depth of flow is less than 0.3m and a Velocity X Depth product is less than 0.3m²/s, a freeboard of 0.3m may be able to be justified for development.

**NORTHERN BEACHES COUNCIL
STANDARD HYDRAULIC CERTIFICATION FORM**

FORM A/A1 – To be submitted with Development Application

Development Application for: **Maudson family**

Address of site: **21 Lisle St and 15 Tourmaline St Narrabeen**

Declaration made by hydraulic engineer or professional consultant specialising in flooding/flood risk management as part of undertaking the Flood Management Report:

I, **Lucas Molloy** on behalf of **Barrenjoey Consulting Engineers p/l** on this the **17th July 2025** certify that I am engineer or a professional consultant specialising in flooding and I am authorised by the above organisation/ company to issue this document and to certify that the organisation/ company has a current professional indemnity policy of at least \$10 million.

Flood Management Report Details:

Report Title:

**FLOOD INUNDATION &
RISK ASSESSMENT REPORT
PROPOSED ALTERATIONS & ADDITIONS
21 Lisle St and 15 Tourmaline St Narrabeen**

Report Date:

July 2025

Author:

Lucas Molloy

Author's Company/Organisation:

Barrenjoey Consulting Engineers p/l

I: **Lucas Molloy**

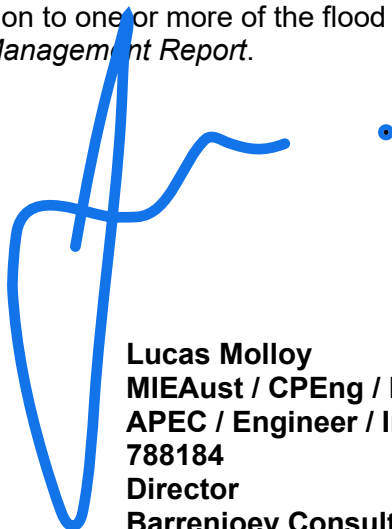
Please tick all that are applicable (more than one box can be ticked)

X have obtained and included flood information from Council (must be less than 12 months old)

X have followed Council's Guidelines for Preparing a Flood Management Report

na have requested a variation to one or more of the flood related development controls. Details are provided in the *Flood Management Report*.

Signature



Name

**Lucas Molloy
MIEAust / CPEng / NER /
APEC / Engineer / IntPE(Aus)
788184
Director
Barrenjoey Consulting Engineers p/l**

Curriculum Vitae 2025

Lucas Molloy

MIEAust / CPEng / NER / APEC / Engineer / IntPE(Aus)

Education -

- 1988 Higher School Certificate
Pittwater High School NSW Australia
- 1995 Bachelor of Engineering (Civil)
University of Wollongong NSW Australia

Employment -

- May 2007 to date
Barrenjoey Consulting Engineers Pty Ltd
Director / Engineer / Draftsman
- April 2003 to April 2007
Northern Beaches Consulting Engineers Pty Ltd
Director / Engineer
- Feb 1997 to April 2003
Northern Beaches Consulting Engineers Pty Ltd
Engineer
- Dec 1988 to Dec 1993
Jack Hodgson Consulting Engineers
Undergraduate trainee / Engineer

For last sixteen years Director / Engineer / Draftsman of the structural and civil engineering practice Barrenjoey Consulting Engineers Pty Ltd (est 2007). I am responsible for the structural and civil (including stormwater management) design, documentation, investigation and construction supervision of predominately residential developments.

The spectrum of projects I have consulted on, vary from a 6 square meter timber framed deck extension of a residential house (budget ~ \$1,500) to 8 storey commercial development (budget of ~ \$10,000,000).

During my career I have been active in the preparation and issuing of –

- 250+ stormwater management plans inc on site detention
- 50+ overflow / flood analysis using DRAINS / HECRAS / AR+R
- 25+ flood inundation & risk assessment reports

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