

FLOOD REPORT for

95 Wimbledon Avenue North Narrabeen NSW

Project No: 2019-0015

For DA 13 December 2019

Prepared For

Hosking Munro 3.09/55 Miller Street Pyrmont NSW 2009 Ph: 02 9660 1055

Akuna Engineering Pty Ltd W: akunaengineering.com.au E: p.smit@akunaengineering.com.au ACN: 636 447 866 M: 0456 785 125



# **Revision Control**

lssue/Rev	Date	Purpose of Issue/Nature of Revision	Issue Authorised by:	Signed
A	13.12.19	For DA	Logan English-Smith	Whit

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## **1.0 INTRODUCTION**

Akuna Engineering was engaged to assess the proposed Alterations and Additions at 95 Wimbledon Avenue, North Narrabeen in reference to potential risks and impacts connected with flooding. This report relies upon flooding information specific for the subject site provided by Council and uses architectural drawings to assess any impacts and risks.

### 1.1 Information Relied Upon

The following documentation has been used in the preparation of this overland flow assessment report:

- Survey and architectural drawings listed in Appendix A
- Council provided flood information in Appendix B
- Completed FORM 1 statement in Appendix C

### 1.2 Description of the Site and Proposed Development

The subject site is located at 95 Wimbledon Avenue, North Narrabeen. The property is identified in the hatched area of Figure 1 and has a total area of 645m<sup>2</sup>. The area of the existing ground floor is 140m<sup>2</sup> and the total existing impervious area is 333m<sup>2</sup>. The site slopes to the West, away from Wimbledon Avenue and down to Narrabeen Lagoon.



Figure 1: Site locality

The development proposes alterations and additions to the existing dwelling which include;

- Expanding the existing driveway, providing a new crossover and driveway to council details.
- Construction of a new carport closer to the street frontage over the existing driveway.
- New roofing over the existing carport.
- Extending the ground floor out from the rear of the dwelling by 23m<sup>2</sup>.

The proposed development will result in a total impervious area of 347m<sup>2</sup> (54%).

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### 2.0 FLOODING

Council flood information (Appendix B) for the site identifies the property as being flood affected during the 1% annual exceedance period (AEP) storm event. Council supplied flood information was used to determine flooding extents, impacts, and assess the associated risks to the development.

The development site is located within the High-Risk precinct flood hazard zone as identified within Northern Beaches (Pittwater) Council's Flood Hazard Map (Figure 2). Therefore, the site requires a Flood Management Report to be completed in accordance with Pittwater 21 Development Control Plan B3.11 Flood Prone Land to support the development.



Figure 2 - Northern Beaches Council, Flood Hazard Map

#### 2.1 Flood Characteristics

Council's flood data predicts that during the 1% AEP rain event the site will be completely inundated with floodwaters arising from Narrabeen Lagoon. The floodwaters on and surrounding the site are classified as High Hazard and Flood Storage (Map J & Map F respectively, refer to Appendix B).

Table 1 summarises the flood characteristics for the site.

Summary	Existing Dwelling	Proposed Extension	New Carport	Existing Carport
Existing FFL / surface level <sup>(1)</sup> (mAHD)	2.66	2.00	1.89-2.02	2.06
Proposed FFL <sup>(1)</sup> (mAHD)	-	2.66	1.89-2.02	-
Natural Surface Level <sup>(1)</sup> (mAHD)	1.99	1.99	1.89-2.02	2.06
Flood Risk Precinct <sup>(2)</sup>	High	High	High	High
Predicted 1% AEP Flood Level <sup>(3)</sup> (mAHD)	3.05	3.05	3.05	3.05
Flood Planning Level <sup>(3)</sup> (mAHD)	3.6	3.6	3.6	3.6
Probable Maximum Flood Level <sup>(3)</sup> (mAHD)	5.03	5.03	5.03	5.03
Flood Life Hazard Category (4)	H3-H4	H3-H4	H3-H4	H3-H4
Defer attached our ov and architectural plane (Appendix A)	2 Flood	lovala (Appandix P	DOGO E)	

Table 1. Summary of flood characteristics

Refer attached survey and architectural plans (Appendix A)
Map J, (Appendix B)

Flood levels (Appendix B, page 5)
Map A, (Appendix B)



## 2.2 Assessment of Impacts

All aspects of the proposed development are categorised as concessional and located within the High-Risk precinct. In accordance with Pittwater Council 21DCP sB3.11, flood controls are applicable to the development.

Table 2 provides a summary of the applicable controls for the proposed residential dwelling.

#	Prescriptive controls		Compliance with controls		Relevant Controls
		NA	Yes	No	
A	Flood effects caused by development		√		A2, A3
В	Drainage infrastructure and creek works	√			-
С	Building components and structural		$\checkmark$		C1, C2, C3
D	Storage of goods		$\checkmark$		D1, D2
E	Flood emergency response		$\checkmark$		E1
F	Floor levels			✓	F2, F3, F6
G	Car parking			✓	G1, G2, G3, G4, G5, G6, G7
Н	Fencing		$\checkmark$		H1
I	Pools	$\checkmark$			11

Table 2. DCP flood controls	Medium flood risk precinct,	, concessional development
		•

NA – Not Applicable

## 2.3 Addressing the Controls

Control A - Flood effects caused by development

A2. The certification shall be provided in accordance with Northern Beaches Council's Standard Hydraulic Certification Form (Forms A and A1 of Northern Beaches Council's Guidelines for preparing a Flood Management Report) to the effect that the works have been designed and can be constructed to adequately address flood risk management issues.

Refer to Form 1 (Appendix C)

A3. No filling of the land is proposed below the 1% AEP flood level. Some structures (footings, joists and bearers etc.) are proposed in order to match the existing interal FFL of the dwelling. Refer to Control F for additional information.

#### Control B - Not applicable



#### Control C - Building components and structural

- C1. The proposed alterations and additions footings, slab and structure, shall be designed / checked by a structural engineer and constructed of flood compatible materials in accordance with Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas, Hawkesbury-Nepean Floodplain Management Steering Committee (2006).
- C2. All new structures must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Structural certification shall be provided confirming the above.
- C3. Where reasonably possible, all new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the FPL.

#### Control D - Storage of goods

- D1. Hazardous or potentially polluting materials shall not be stored below the FPL unless adequately protected from floodwaters in accordance with industry standards.
- D2. Goods, materials or other products which may be highly susceptible to water damage are to be located/stored above the FPL.

#### Control E - Flood emergency response

E1. The recommended emergency response is to evacuate. All floor levels in the development are below the PMF level.

All residents shall be informed of the flood evacuation procedure and a copy of this report shall be kept on the premises at all times. This Flood Emergency Response Plan shall be executed, on individual assessment, during high intensity rainfalls within the first 5–10 minutes of a storm and monitored accordingly.

In the event that floodwaters overtop the foreshore boundary at any point on the property, the recommended actions are:

- Emergency services shall be contacted stating the property's location; the situation faced, number of people on the property and any evacuation measures to be carried out.
- The occupants of the property shall evacuate the site and proceed up Wimbledon Avenue to the Wakehurst Parkway/ Wimbledon Avenue intersection. This area is approximately 5m above the PMF level.

For emergency help in floods and storms call the State Emergency Service (SES) on 132 500. If your emergency is life threatening call 000 (triple zero) for Police/Fire/Ambulance.



#### Control F - Floor levels

- F2. The existing dwelling has an FFL of 2.66 mAHD which is below the FPL (3.6 mAHD) as well as the predicted 1% AEP level (3.06 mAHD) flood level. The new extension to the rear of the dwelling proposes to match the existing FFL of the primary dwelling. The proposed rear extension is considered acceptable for the following reasons:
  - Raising the extension to meet the FPL would place the extension 1m above the existing development and render the extension incompatible with the existing development.
  - The extension is relatively small (23m<sup>2</sup>) and ties into the existing dwelling.
  - The extension does not increase the flood risk to the occupants and surrounding properties.
  - The Land and Environment Court ruled in favour of a similar development (4 Rolfe Street, Manly) against Manly council in 2015. In summary, the commissioner concluded that:

"Nevertheless, strict compliance with this numerical requirement of the FPL is, in this instance, unreasonable, as it would be impossible to achieve a satisfactory architectural outcome..."

- F3. A restriction shall be imposed on the title of the land, pursuant to S88B of the Conveyancing Act confirming that the new under croft area is not to be enclosed.
- F6. Not applicable A first floor addition is not proposed.

#### Control G - Not applicable

- G1. The proposed carport is not located in a floodway.
- G2. The proposed carport FFL matches existing ground levels.
- G3. Not applicable No enclosed carpark area is proposed.
- G4. The carport support posts and structure shall be designed to withstand the forces of floodwater and impact of any buoyant vehicle. The proposed carport structure, in effect, acts similarly to a vehicle barrier and /or restraint. As a result fo the above and the low flow velocity of the floodwaters, no additional vehicle restraints are reommended.
- G5. Not applicable No enclosed carpark area is proposed.
- G6. The carport must be constructed to comply with the Flood Prone Land Design Standard.
- G7. Not applicable No filling of the land is proposed.



### Control H - Not applicable

H1. Any fencing, including pool fencing, shall be designed so as not to impede the flow of floodwaters and not to increase flood affectation on surrounding land. Appropriate fencing must comply with the Flood Prone Land Design Standard in addition to other regulatory requirements of pool fencing.

#### Control I - Not applicable

I1. Not applicable – No pool is proposed.



#### CONCLUSION

Council's flood data predicts that during the 1% AEP rain event the site will be completely inundated with floodwaters arising from Narrabeen Lagoon. The floodwaters on and surrounding the site are classified as High Hazard and Flood Storage (Map J & Map F respectively, refer to Appendix B).

All aspects of the proposed development are categorised as concessional and located within the High-Risk precinct. In accordance with Pittwater Council 21DCP sB3.11, flood controls are applicable to the development.

Provided that the recommendations within this report are followed, the development not likely to:

- increase the risk posed to the occupants of the site,
- adversely affect flood behavior of neighbouring upstream and downstream properties with regard to flood affectation; and,
- result in unsustainable social and economic costs to the community as a consequence of flooding.



# Appendix A – Architectural plans and site survey

Architectural Plans by Hosking Munro PTY. LTD. (dated: 12.11.19)

DA100	Site/Roof	Rev.E
DA101	GROUND FLOOR PLAN	Rev.E
DA200	EAST + SOUTH ELEVATIONS	Rev.E
DA201	WEST + NORTH ELEVATIONS	Rev.E
DA300	SECTIONS AA + BB	Rev.E

Survey by STEVE Byrne AND ASSOCIATES PTY LimitedPLAN No:A1 – 10939DDATE OF SURVEY:21.11.2018



# Appendix B – Council Provided Flood Information



# **FLOOD INFORMATION REQUEST – COMPREHENSIVE**

Property: 95 Wimbledon Avenue, Narrabeen Lot DP: 7//17768 Issue Date: 26/11/2019 Flood Study Reference: Narrabeen Lagoon Flood Study 2013, BMT WBM

# **Flood Information for lot:**

Flood Life Hazard Category – See Map A

# <u>1% AEP – See Flood Map B</u>

1% AEP Maximum Water Level<sup>3</sup>: 3.05 m AHD

1% AEP Maximum Peak Depth from natural ground level<sup>3</sup>: 2.34 m

1% AEP Maximum Velocity: 0.54 m/s

1% AEP Provisional Flood Hazard: High See Flood Map E

1% AEP Hydraulic Categorisation: Flood storage See Flood Map F

# Flood Planning Area – See Flood Map C

Flood Planning Level (FPL) 1, 2, 3 & 4: 3.6 m AHD

# Probable Maximum Flood (PMF) – See Flood Map D

PMF Maximum Water Level<sup>2</sup>: 5.03 m AHD

PMF Maximum Depth from natural ground level: 4.31 m

PMF Maximum Velocity: 0.66 m/s

PMF Flood Hazard: High See Flood Map G

PMF Hydraulic Categorisation: Floodway See Flood Map H

Issue Date: 25/11/2019

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# Flooding with Climate Change (See Flood Map I)

The following is for the 30% Rainfall intensity increase and 0.9m Sea Level Rise Scenario:

**1% AEP Maximum Water Level with Climate change**<sup>1&3</sup>: 3.81 m AHD

1% AEP Maximum Depth with Climate Change<sup>3</sup>: 2.86 m

1% AEP Maximum Velocity with Climate Change<sup>3</sup>: N/A m/s

# Flood Risk Precinct – See Map J

# Indicative Ground Surface Spot Heights – See Map K

<sup>1</sup>The flood information does not take into account any local overland flow issues nor private stormwater drainage systems.

<sup>2</sup>Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/ flood planning levels across the site.

<sup>3</sup>Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels than those indicated on this flood advice. <sup>4</sup>Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or Flood Planning Level

## **General Notes:**

- All levels are based on Australian Height Datum (AHD) unless otherwise noted.
- This is currently the best available information on flooding; it may be subject to change in the future.
- Council recommends that you obtain a detailed survey of the above property and surrounds to AHD by a registered surveyor to determine any features that may influence the predicted extent or frequency of flooding. It is recommended you compare the flood level to the ground and floor levels to determine the level of risk the property may experience should flooding occur.
- Development approval is dependent on a range of issues, including compliance with all relevant provisions of Northern Beaches Council's Local Environmental Plans and Development Control Plans.
- Please note that the information contained within this letter is general advice only as a detail survey of the property as well as other information is not available. Council recommends that you engage a suitably experienced consultant to provide site specific flooding advice prior to making any decisions relating to the purchase or development of this property.
- The Flood Studies on which Council's flood information is based are available on Council's website.

# FLOOD MAP A: FLOOD LIFE HAZARD CATEGORY



- Refer to 'Flood Emergency Response Planning for Development in Pittwater Policy for additional information on the Flood Life Hazard Categories and Pittwater 21 DCP Control B3.12.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Ingleside, Elanora and Warriewood Overland Flow Flood Study (2019), WMAwater, Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

# FLOOD LEVEL POINTS



Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 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	2.71	0.81	3.05	1.15	0.04	3.6	5.02	3.07	0.05
2	2.71	0.72	3.05	1.06	0.04	3.6	4.98	3.01	0.09
3	2.71	0.81	3.05	1.15	0.03	3.6	4.98	3.07	0.19
4	2.71	1.17	3.05	1.51	0.04	3.6	5.02	3.06	0.03
5	2.71	0.61	3.05	1.00	0.40	3.6	4.99	2.88	0.27
6	2.71	0.75	3.05	1.08	0.03	3.6	4.98	3.01	0.18

WL – Water Level

PMF – Probable Maximum Flood

N/A = no peak water level/depth/velocity available in flood event

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

ID	CC 1% AEP Max WL (m AHD)	CC1 % AEP Max Depth (m)
1	3.81	2.86
2	3.81	2.86
3	3.81	2.86
4	3.81	2.86
5	3.81	2.86
6	3.81	2.86

A variable Flood Planning Level might apply - 0.5m above 1% AEP max water level (for Mainstream flooding) or 0.5m above the 1% AEP max water level flow path extent with depth greater than 0.3m and 0.3m above the 1% AEP max water level flow path with depth 0.3m and less (for overland flow)

WL – Water Level

PMF – Probable Maximum Flood

N/A = no peak water level/depth/velocity available in flood event.

# FLOOD MAP B: FLOODING - 1% AEP EXTENT



- 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 MAP C: FLOOD PLANNING AREA EXTENT



- Extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- 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 MAP D: PMF EXTENT MAP



- Extent represents the Probable Maximum Flood (PMF) flood event
- 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: NearMap 2014) are indicative only

# FLOOD MAP E: 1% AEP FLOOD HAZARD EXTENT MAP



- Extent represents the 1% annual Exceedance Probability (AEP) flood event
- 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: NearMap 2014) are indicative only

# FLOOD MAP F: 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP



- Extent represents the 1% annual Exceedance Probability (AEP) flood event
- 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: NearMap 2014) are indicative only

# FLOOD MAP G: PMF FLOOD HAZARD EXTENT MAP



- Extent represents the 1% annual Exceedance Probability (AEP) flood event
- Extent represents the Probable Maximum Flood (PMF) event
- 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: NearMap 2014) are indicative only

# FLOOD MAP H: PMF FLOOD HYDRAULIC CATEGORY EXTENT MAP



- Extent represents the Probable Maximum Flood (PMF) event
- 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: NearMap 2014) are indicative only

# FLOOD MAP I: FLOODING – 1% AEP EXTENT PLUS CLIMATE CHANGE



- Extent represents the 1% annual Exceedance Probability (AEP) flood event including 30% rainfall intensity and 0.9m Sea Level Rise climate change scenario
- Flood events exceeding the 1% AEP can occur on this site.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

# FLOOD MAP J: FLOOD RISK PRECINCT MAP



- Low Flood Risk precinct means all flood prone land not identified within the High or Medium flood risk precincts.
- Medium Flood Risk precinct means all flood prone land that is (a) within the 1% AEP Flood Planning Area; and (b) is not within the high flood risk precinct.
- **High Flood Risk precinct** means all flood prone land (a) within the 1% AEP Flood Planning Area; and (b) is either subject to a high hydraulic hazard, within the floodway or subject to significant evacuation difficulties (H5 and or H6 Life Hazard Classification).
- Does not include climate change

# **MAP K: INDICATIVE GROUND SURFACE SPOT HEIGHTS**



- The surface spot heights shown on this map were derived from Airborne Laser Survey and are indicative only.
- Accuracy is generally within ± 0.2m vertically and ± 0.15m horizontally, and Northern Beaches Council does not warrant that the data does not contain errors.
- If accuracy is required, then survey should be undertaken by a registered surveyor.

# **GUIDELINES for Preparing a Flood Management Report**

## Introduction

These guidelines are intended to provide advice to applicants on preparing a Flood Management Report. The purpose of a Flood Management Report is to help applicants measure and manage the flood risk to life and property on their site.

## When is a Flood Management Report required?

A Flood Management Report must be submitted with any Development Application on flood prone land, for Council to consider the potential flood impacts and controls. For Residential or Commercial development, it is required for development on land identified within the Medium or High Flood Risk Precinct. For Vulnerable or Critical development, it is required if it is within any Flood Risk Precinct.

Note that the flood extents shown on the mapping are indicative only. It is recommended that flood levels are compared to registered ground survey to more accurately determine the flood extent.

There are some circumstances where a Flood Management Report undertaken by a professional engineer may not be required. However, the relevant parts of the DCP and LEP would still need to be addressed, so as to demonstrate compliance. Examples where this may apply include:

- If all proposed works are located outside the relevant Flood Risk Precinct extent
- First floor addition only, where the floor level is above the Probable Maximum Flood level
- Internal works only, where habitable floor areas below the Flood Planning Level are not being increased

Note that development on flood prone land will still be assessed for compliance with the relevant DCP and LEP, and may still be subject to flood related development controls.

## What is in a Flood Management Report?

The aim of a Flood Management Report is to demonstrate how a proposed development will comply with the flood related development controls outlined in the relevant LEP and DCP clauses. The report must detail the design, measures and controls needed to achieve compliance, following the steps outlined below.

A Flood Management Report should reflect the size, type and location of the development, proportionate to the scope of the works proposed, and considering its relationship to surrounding development. The report should also assess the flood risk to life and property.

## **Technical requirements of a Flood Management Report**

The technical requirements of a Flood Management Report should include (where relevant):

## 1. Description of development

The description of development should identify:

- Outline of the proposed development, with plans if necessary for clarity
- Use of the building, hours of operation, proposed traffic usage or movement
- Type of use, ie, critical, vulnerable, subdivision, residential, business, industrial, recreational, environmental or concessional

## 2. Flood analysis

The flood analysis should include:

- Predicted 1 in 100 year flood level
- Flood Planning Level (FPL)
- Probable Maximum Flood (PMF) level
- Flood Risk Precinct, ie High, Medium or Low
- Flood Life Hazard Category (in former Pittwater Council area only)
- Mapping of relevant extents
- Flood characteristics for the site, eg depth, velocity, hazard and hydraulic category, and the impact these have on the proposed development

Note that if the property is affected by estuarine flooding or other coastal issues, these need to be addressed separately under the relevant DCP.

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### 3. Assessment of impacts

The assessment of impacts should address the various elements of the relevant LEP and DCP. A simple compliance table should be provided, similar to the table one below.

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

Further details of what is required for each of these categories can be found in the *Development Control Plan for Flood Prone Land*.

For any of these categories which are applicable, the assessment should demonstrate how the development complies, or if it doesn't, provide an explanation of why the development should still be considered.

### **Reporting requirements for a Flood Management Report**

The Flood Management Report should include:

- a) Executive summary
- b) Location plan, at an appropriate scale, that includes geographical features, street names and identifies all waterways and Council stormwater pipes, pits and easements
- c) Plan of the proposed development site showing the extent of the predicted 100 year, any high hazard or floodway conditions and the PMF flood event
- d) Development recommendations and construction methodologies
- e) Calculation formulae (particularly for flood storage)
- f) Clear referencing using an accepted academic referencing system (eg. Harvard)
- g) Analysis of development against relevant State Environmental Planning Policies
- h) Analysis of development against relevant Local Environment Plan and Policies
- i) Conclusion detailing key points
- j) Standard Hydraulic Certification (Form A/A1)
- k) Qualifications of author
- I) Any flood advice provided by Council
- m) Any other details which may be relevant

## **NOTE:** Qualifications of Author

Council requires that the Flood Management Report be prepared by a suitably qualified Engineer with experience in flood design / management who has, or is eligible for, membership to the Australian Institute of Engineers.

For further information please contact Stormwater and Floodplain Team on 1300 434 434 or via email at <u>floodplain@northernbeaches.nsw.gov.au</u>

Attachment A				
EORM A/A1 To be submitted with Development Application				
Development Application for				
Address of site:				
Declaration made by hydraulic engineer or professional management as part of undertaking the Flood Manage	al consultant specialising in flooding/flood risk ement Report:			
I, on behalf of				
(Insert Name)	(Trading or Business/ Company Name)			
on this the(Date)	_ certify that I am engineer or a			
professional consultant specialising in flooding and I a issue this document and to certify that the organisation policy of at least \$2 million.	Im authorised by the above organisation/ company to n/ company has a current professional indemnity			
Flood Management Report Details:				
Report Title:				
Report Date:				
Author:				
Author's Company/Organisation:				
I: (Insert Name)				
Please tick all that are applicable (more than one box	can be ticked)			
have obtained and included flood information from mandatory)	Council (must be less than 12 months old) (This is			
$\square$ have followed Council's Guidelines for Preparing a	Flood Management Report			
have requested a variation to one or more of the flop provided in the <i>Flood Management Report</i> .	ood related development controls. Details are			
Signature Name				



# Appendix C – Form 1 Statement

Attachment A			
NORTHERN BEACHES COUNCIL STANDARD HYDRAULIC CERTIFICATION FORM			
FORM A/A1 – To be submitted with Development Application			
Development Application for			
Address of site:95 Wimbledon Ave North Narrabeen NSW 2101			
Declaration made by hydraulic engineer or professional consultant specialising in flooding/flood risk management as part of undertaking the Flood Management Report:			
I, Yasser Yahya Al-Ashmori on behalf of Akuna Engineering			
(Insert Name) (Trading or Business/ Company Name)			
on this the <u>13/12/2019</u> 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 \$2 million.			
Flood Management Report Details:			
Report Title: Alterations and Additions at 95 Wimbledon Avenue, North Narrabeen			
Report Date: 10/12/2019			
Author: Yasser Yahya Al-Ashmori			
Author's Company/Organisation: Akuna Engineering			
I: <u>Yasser Yahya Al-Ashmori</u> (Insert Name)			
Please tick all that are applicable (more than one box can be ticked)			
$\overline{\mathbb{N}}$ have obtained and included flood information from Council (must be less than 12 months old) (This is mandatory)			
🗹 have followed Council's Guidelines for Preparing a Flood Management Report			

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

Signature	yasser
NameYasse	r Yahya Al-Ashmori