

09 November 2022

Warringah Golf Club
397 Condamine Street
North Manly
NSW 2100

c/o Graeme McMullan <graeme@cleanenergyengineering.com.au>

**Flood Management Report for the development of the New Warringah Golf & Community Club House at
433 Pittwater Road North MANLY**

Dear Graeme,

1.0 Introduction

Stellen Consulting was engaged to assess the proposed development (Lot 2742 DP 752038) at 433 Pittwater Road, North Manly in reference to potential impacts arising from overland flow in Brookvale Creek. This report provides a detailed assessment of the flow information specific to the site and development.

The following documentation has been used in the preparation of this Flood Risk Management Report:

- Design drawings listed in Appendix A
- Council provided flood information and pre-DA advice flooding extract in Appendix B

The proposed development has been assessed in accordance with the flood requirements of Clause E11 of the Warringah Development Control Plan, using the information provided by the Council from the Manly Lagoon Flood Study (2013).

2.0 Description of the Development

The site, known as Warringah Recreation Area (Lot 2742 DP 752038), is approximately 1.04 ha. The existing development of the site consists of a clubhouse, squash court, sporting courts, driveway, and car parks (the existing site is shown below in Figure 1).



Figure 1 - Site locality and previous development (SIX Maps)

The proposed master plan is shown in Figure 2. It introduces 6 new tennis courts, a club building with a loading area, parking, and car access. The architecture plans listed in Appendix A show the scope of the DA application of the new main building with a loading area of approximately 0.26 ha as part of the master plan. The design drawings also highlight the layout of the tennis courts, car parks, and the access driveway as shown in Figure 3.



Figure 2 - Proposed master plan layout

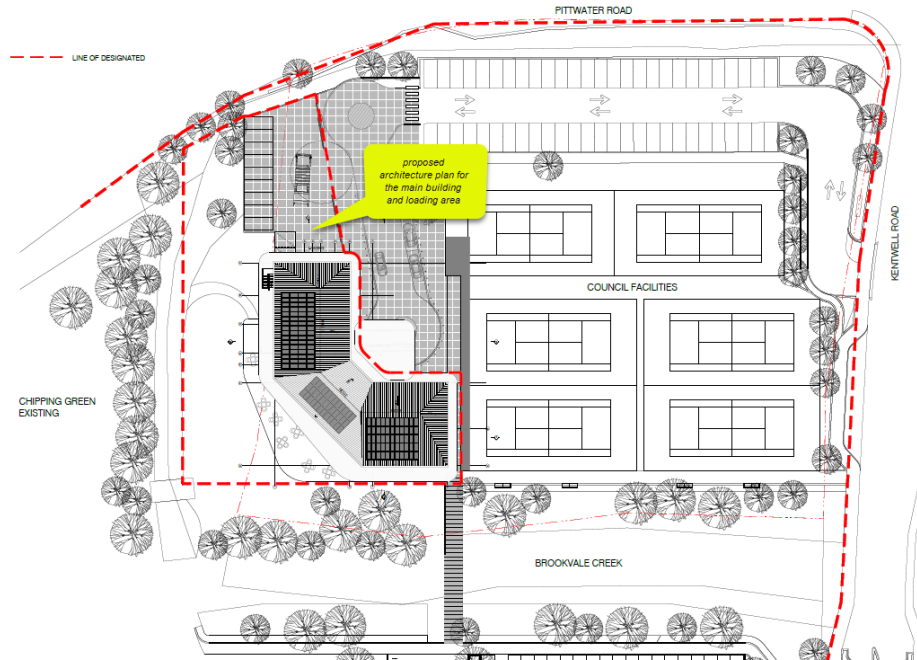


Figure 3 - Proposed architectural plan

The main building proposes two floors: Ground floor at RL 3.60 and the first floor at RL 8.00. The proposed works also include site grading according to the civil design prepared by Stellen Consulting (Ref: P171112-DR-CV-002-01). The proposed work and design levels are shown in the architectural and civil drawings in Appendix A.

Advice from Northern Beaches Council at the time of preparation of this report is that the council will be removing the trees, removing the fencing and floodlights, demolishing the squash courts and tennis offices and digging up / demolishing the tennis courts to provide a clear and level site. Stellen Consulting, at the Clients direction, has considered that in all Flood & Overland Flow calculations

3.0 Flood Analysis & Assessment

Council's flood data predicts that during the 1% AEP event, the club will be inundated with floodwaters arising from flooding within Brookvale Creek. The overland flow path runs northeast through the site toward Pittwater Road. The main building has areas designated as medium risk, and Brookvale Creek is identified as being within the High Flood Risk Precinct, as shown in Figure 4.

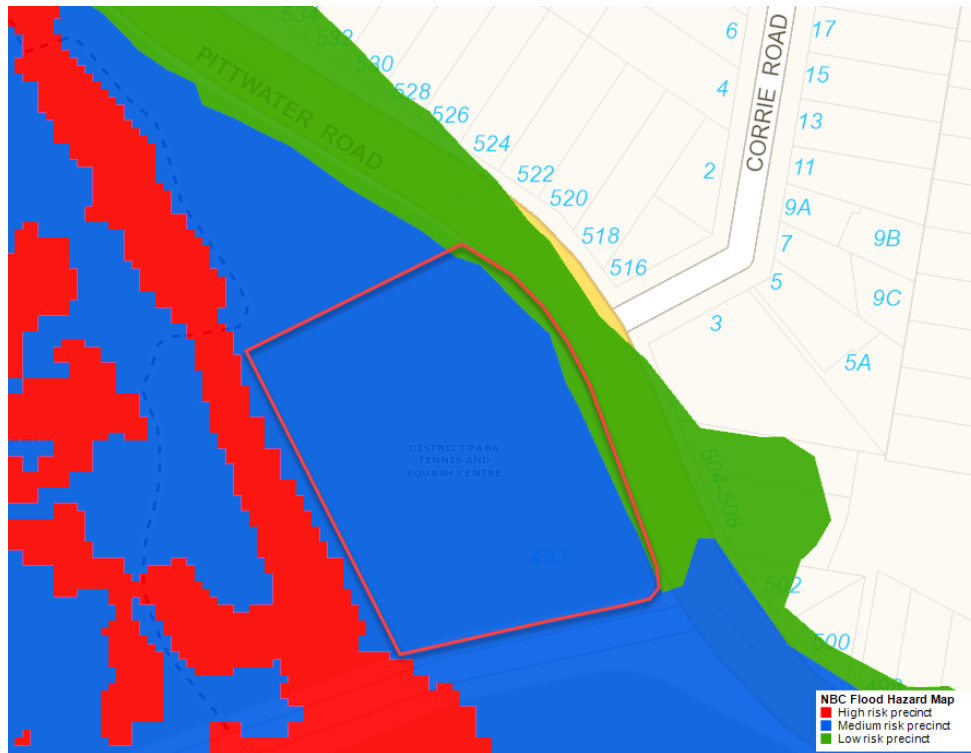


Figure 4 - Flood Risk Precinct

The following information was provided by Council for the vicinity of the main building:

- 1% AEP (100-year) maximum water level: 3.2-3.3m AHD
- Probable Maximum Flood (PMF) maximum water level: 5.69m AHD

Council's flood data suggests the floodwater depth across the site during a 1% AEP event peaks are not more than 0.3 and the velocity x depth product is less than $0.3\text{m}^2\text{s}^{-1}$ presenting a Flood Fringe hydraulic category.

For the main building assessment, the council has suggested that all floor levels within the development shall be at or above the Flood Planning Level (FPL) (flood level + 300mm freeboard). For this site, a Flood Planning Level (FPL) of 3.6m AHD has been adopted for the main building.

$$\text{FPL} = 3.60\text{m AHD}$$

The design has the proposed main building at RL 3.60 which is at the FPL.

4.0 Assessment of Council Conditions

The proposed development is categorised as a “business and industrial use, entertainment or recreation facility” development type. The main building has areas designated as medium risk. Below address the relevant controls that apply to the development.

Flood Effects Caused by Development - A1

- The proposed main building results in a significant fill of approximately 670.50 m^3 . However, the master plan along with the civil design proposes a conservative compensatory net cut volume of 134.47 m^3 .

considering that the council will be removing the trees, removing the fencing and floodlights, demolishing the squash courts and tennis offices, and digging up / demolishing the tennis courts to provide a clear and level site. Considering the provision of the compensatory cut as described in the civil design prepared by Stellen consulting:

- The development will not likely have significant adverse impacts on flood levels or velocities caused by alterations to the flood conveyance;
- There will be no adverse impacts on surrounding properties; and
- Flood hazards will likely remain unchanged due to the development.

Flood Effects Caused by Development - A2

- Considering the provision of the compensatory cut as described in the civil design prepared by Stellen consulting, the development results in a net increase in the flood storage of at least 134.47 m³.

Building Components and Structural Soundness - B1

- The proposed development shall be constructed as flood compatible in accordance with the *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas*, Hawkesbury-Nepean Floodplain Management Steering Committee (2006), up to the flood planning level of 3.6m AHD.

Building Components and Structural Soundness – B2

- New development 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. The structural integrity of the refuge is to be up to the Probable Maximum Flood level. Structural certification shall be provided confirming the above.

Building Components and Structural Soundness – B3

- New electrical equipment, power points, wiring, fuel lines, sewerage systems or other service pipes and connections to be located above the Flood Planning Level of 3.6m AHD.

Floor Levels – C1

- The floor levels within the main building are proposed at or above the Flood Planning Level of 3.6m AHD.

Floor Levels – C2

- NA

Floor Levels – C3

- The main building at the development is categorised in a flood fringe in a 1% AEP event. It proposes a compensatory cut of 57.46 m³ (minimum) described in the civil design prepared by Stellen consulting. This results in a net increase in flood storage.

Floor Levels – C4

- NA

Floor Levels – C5

- the proposed works improve the flood storage within site.

Floor Levels – C6

- NA

Floor Levels – C7

- No floor level is proposed below the flood planning level

Car Parking – D1

- Proposed car park within the loading area is proposed within Flood Fringe hydraulic category during the 1% AEP

Car Parking – D2

- No car park is proposed below the natural ground level; however, the whole site is graded a maximum of 0.5% according to the civil design for the cut and fill plan. As a result, the water depths at 9 car parks within the loading area are expected to be greater than 300mm. □ Vehicle barriers or restraints are to be provided to prevent floating vehicles from leaving the site.

Car Parking – D3

- NA

Car Parking – D4

- Vehicle barriers or restraints are to be provided to prevent floating vehicles from leaving the site. Protection must be provided for all event up to the 1 % AEP flood event.

Car Parking – D5, D6, and D7

- NA

Emergency Response – E1

- The flood life hazard category within the site is H5, and therefore flood emergency response plan is required.

The recommended Flood Emergency Response Plan during critical storm events is to shelter-in-place until floodwaters subside or emergency services advise otherwise. In the event that floodwaters begin to overtop Brookvale Creek, the recommended actions are:

- The occupants of the property shall be directed to the first floor (set at RL 8.00 m AHD), which is higher than the predicted PMF water level (5.69m AHD).
- The occupants must not exit until advised by emergency services or floodwaters subside.

- Emergency services shall be contacted stating the property's location; the situation faced, the number of people on the property and any additional measures to be carried out.

It is also recommended that a copy of this Flood Emergency Response plan is kept on the premises at all times.

Fencing – F1

- Any proposed fencing within the area affected by the 1% AEP floodwaters level up to the 1% AEP flood level of 3.3m AHD must be an open style fencing to allow clear passage of floodwaters and not to increase flood affectation on surrounding land. The fencing must be designed with a minimum of 50% open area from the natural ground level up to the 1% AEP flood level of 5.69m AHD. Openings should be minimum of 75 mm x 75 mm.

Storage of Goods – G1

- All proposed stores are located in the main building area, which is adequately protected from floodwaters to above the applicable Flood Planning Level (refer to architectural drawings). Given that all hazardous or potentially polluting materials will be stored above the FPL, all goods will be adequately protected from floodwater.

Pools – H1

- NA

5.0 Conclusions and Recommendations

This Flood Management Report has been undertaken by Stellen Consulting based on information provided by Northern Beaches Council (Warringah) and available architectural plans and proposed civil design for site grading and levelling. The site has been identified by Council as within the 1% AEP flood and PMF extents.

Based on the information, the proposed main building results in a significant fill of approximately 670.50m³. However, the master plan, with the support of the civil design, propose a conservative compensatory net cut of 134.47 m³. Considering the provision of the compensatory cut as described in the civil design prepared by Stellen consulting:

- The proposed works will not likely have adverse impacts on flood levels or velocities caused by alterations to the flood conveyance;
- There are no significant adverse impacts on surrounding properties; and
- Flood hazards will likely remain unchanged due to the development.

As noted in this report, the proposed development, if carried out in accordance with the recommendations within this report, is consistent with the flood-related requirements of Clause E11 of the Warringah DCP.

Appendix A

Architectural Drawings

The driveway design is described in the following Group Architects drawings dated 12/10/2022

🔖	Sheets and Views
🔖	CLEANED WARRINGAH-000
🔖	CLEANED WARRINGAH-001
🔖	CLEANED WARRINGAH-002
🔖	CLEANED WARRINGAH-003
🔖	CLEANED WARRINGAH-D01
🔖	CLEANED WARRINGAH-100
🔖	CLEANED WARRINGAH-101
🔖	CLEANED WARRINGAH-101a
🔖	CLEANED WARRINGAH-101b
🔖	CLEANED WARRINGAH-101c
🔖	CLEANED WARRINGAH-102
🔖	CLEANED WARRINGAH-103
🔖	CLEANED WARRINGAH-104
🔖	CLEANED WARRINGAH-200
🔖	CLEANED WARRINGAH-201
🔖	CLEANED WARRINGAH-202
🔖	CLEANED WARRINGAH-300
🔖	CLEANED WARRINGAH-900

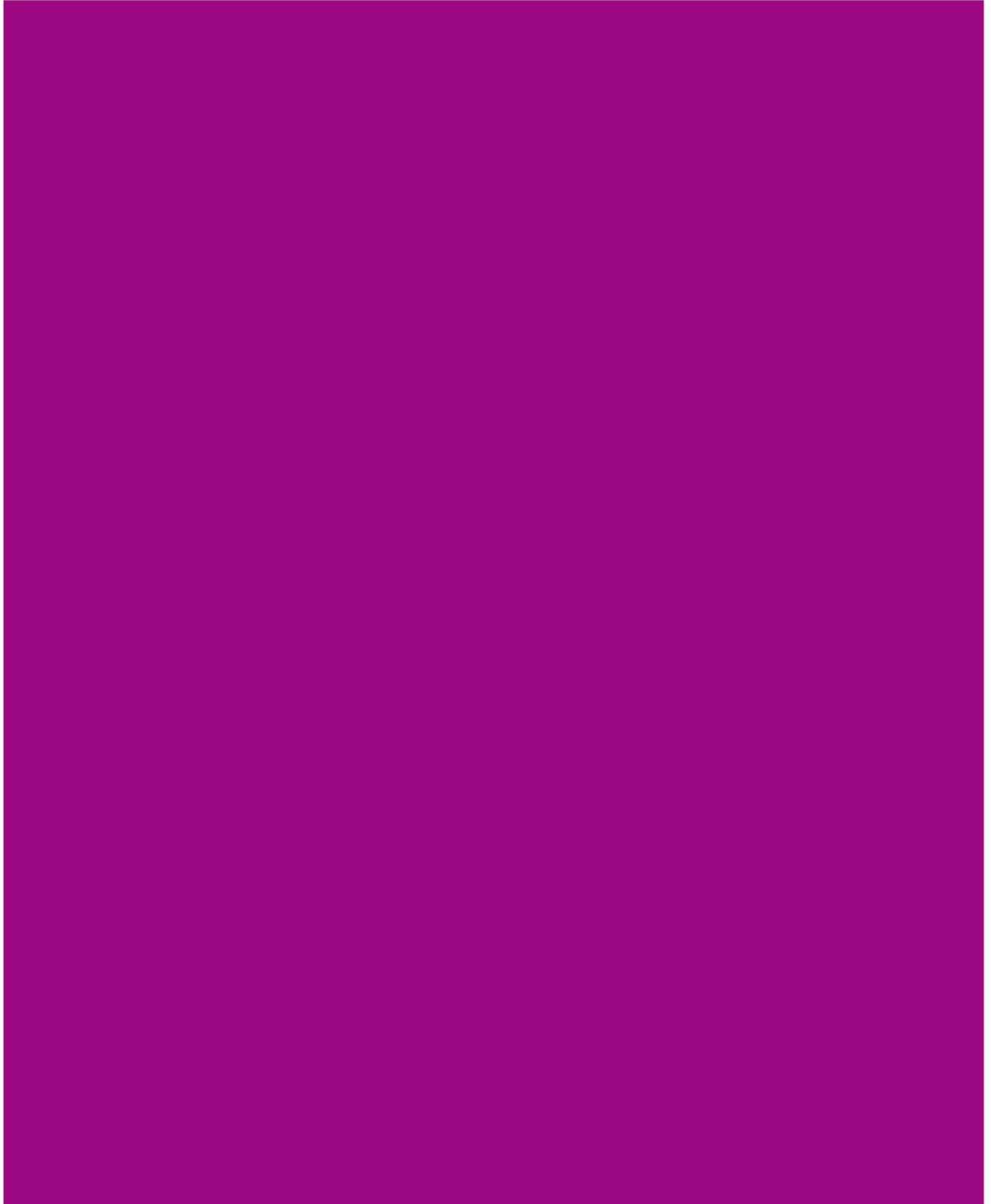
Civil Design Drawings

The driveway design is described in the following Stellen Consulting drawings dated 09/11/2022:

CV-000	Revision 1	Master Plan
CV-001	Revision 2	Civil Design Master Plan
CV-100	Revision 1	Cut/Fill Plan – Main Building and Access
CV-102	Revision 2	Cut/Fill Plan – Tennis Court

Appendix B

Council Supplied Flood Information



Flooding

The site for the proposed Warringah Golf Club main building is identified in the Manly Lagoon Flood Study (2013) as being located in the Medium Flood Risk Precinct, with the following flood data applicable in the vicinity of the main building:

- 1% AEP flood level: 3.2-3.3m AHD
- Freeboard: 0.3m, since the depth is less than 0.3m and the velocity x depth product is less than 0.3m²/s
- Flood Planning Level (FPL): 3.5-3.6m AHD
- Probable Maximum Flood (PMF) Level: 5.69m AHD
- Hydraulic Category in 1% AEP flood: Flood Fringe

Page 9 of 10

Specialist Advice

- Hydraulic Category in PMF: Floodway
- Flood Life Hazard Category: H5

Brookvale Creek and part of the car park on the western side of the creek are identified as being within the High Flood Risk Precinct. For more detailed flood information, a comprehensive Flood Information Report should be obtained from Council, from

<https://www.northernbeaches.nsw.gov.au/council/forms/flood-information-report-application>. As part of the application for the Flood Information Report, flood information can be provided at multiple, specific locations if requested.

A Flood Management Report would need to be submitted with the DA, demonstrating that the proposed development meets all of the flood requirements of Clause E11 of the Warringah DCP. In particular for this site please note:

- There are to be no adverse impacts (defined in Clause A.8 of the Warringah DCP) on flood levels or velocities caused by alterations to the flood conveyance (Control A1).
- All structures are to be designed and constructed to ensure structural integrity up to the PMF, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. (Control B2).
- All electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections are to be waterproofed and/or located above the FPL (Control B3).
- All floor levels must be set at or above the FPL (Control C1).
- Where there is more than 300mm depth of flooding in the car park during a 1% AEP flood event, vehicle barriers or restraints are to be provided to prevent floating vehicles from leaving the site (Control D4).
- There must be an appropriately sized area to safely shelter in place above the PMF level and appropriate access to this area is to be available from all areas within the development (Control E1).
- Any hazardous or potentially polluting materials are not to be stored below the FPL unless adequately protected from floodwaters in accordance with industry standards. (Control G1).

FLOOD INFORMATION REPORT – COMPREHENSIVE

Property: Lot 2742/9999 Condamine Street MANLY VALE NSW 2093

Lot DP: Lot 2742 DP 752038

Issue Date: 09/05/2022

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

Flood Information for lot ¹:

Flood Risk Precinct – See Map A

Flood Planning Area – See Map A

Maximum Flood Planning Level (FPL) ^{2, 3, 4}: 9.46 m AHD

1% AEP Flood – See Flood Map B

1% AEP Maximum Water Level ^{2, 3}: 8.89 m AHD

1% AEP Maximum Depth from natural ground level³: 2.84 m

1% AEP Maximum Velocity: 6.62 m/s

1% AEP Hydraulic Categorisation: N/A See Flood Map D

Probable Maximum Flood (PMF) – See Flood Map C

PMF Maximum Water Level ⁴: 9.87 m AHD

PMF Maximum Depth from natural ground level: 5.24 m

PMF Maximum Velocity: 7.64 m/s

PMF Hydraulic Categorisation: N/A See Flood Map E

Flooding with Climate Change (See Flood Map F)

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

1% AEP Maximum Water Level with Climate change³: 8.85 m AHD

1% AEP Maximum Depth with Climate Change³: 3.03 m

1% AEP Maximum Velocity with Climate Change³: m/s

Flood Life Hazard Category – See Map G

Indicative Ground Surface Spot Heights – See Map H

¹ The flood information does not take into account 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.

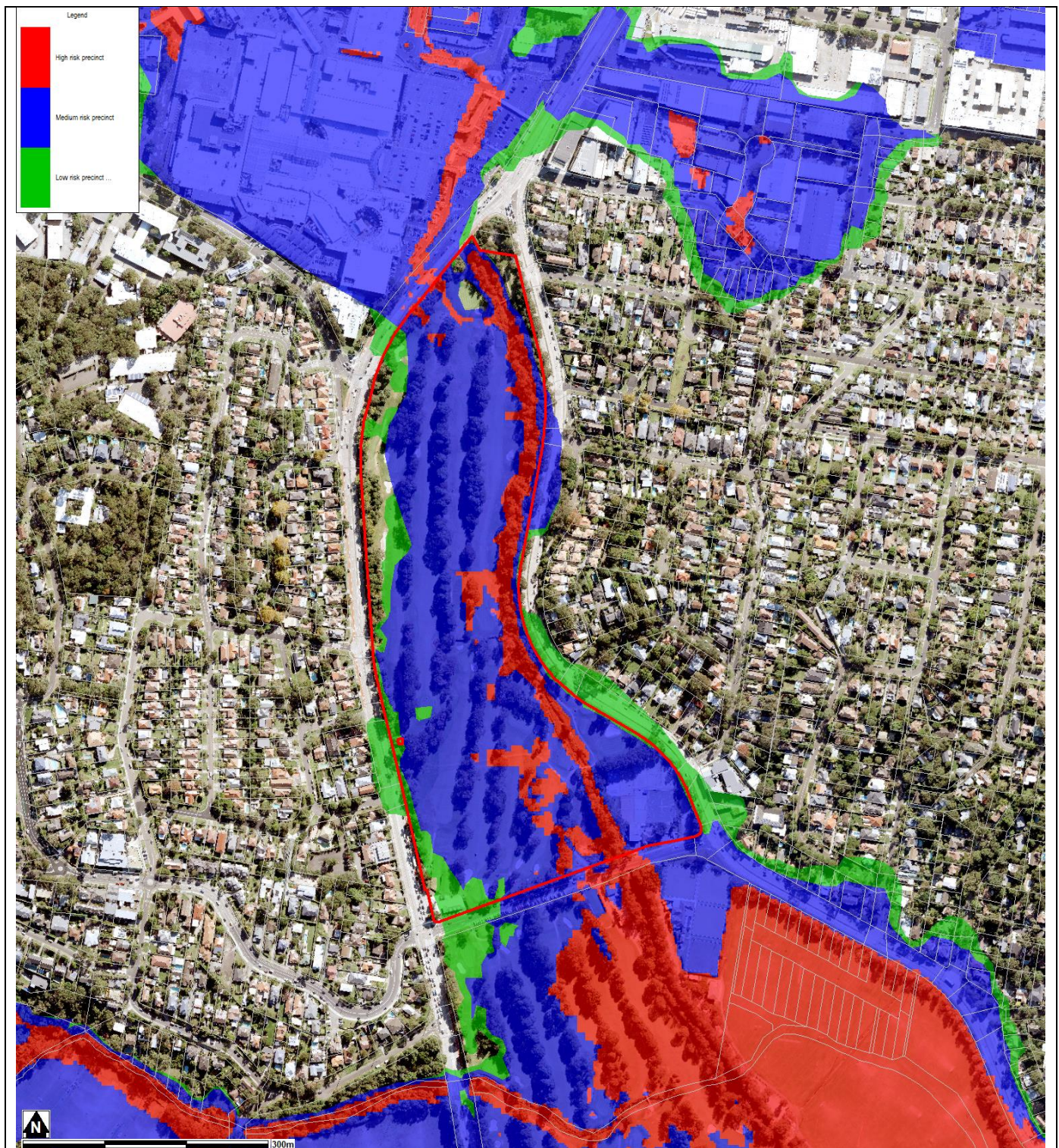
³ Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels.

⁴ Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or FPL.

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.

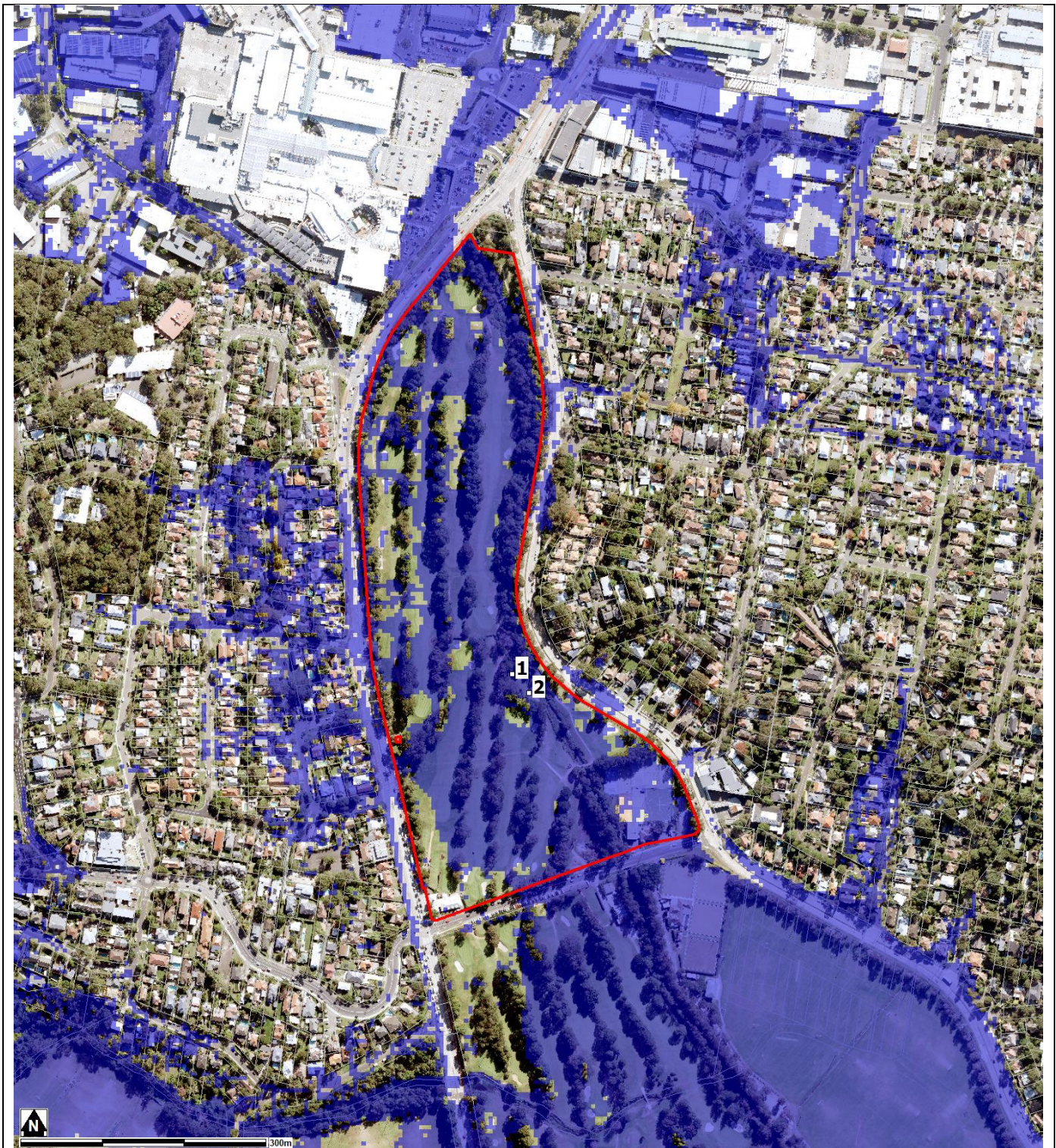
FLOOD MAP A: FLOOD RISK PRECINCT MAP



Notes:

- **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 or H6 Life Hazard Classification).
- The **Flood Planning Area** extent is equivalent to the Medium Flood Risk Precinct extent, and includes the High Flood Risk Precinct within it. The mapped extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- None of these mapped extents include climate change.

FLOOD LEVEL POINTS



Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Manly 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	3.55	0.29	3.69	0.43	1.21	4.19	5.69	2.43	1.91
2	3.33	0.23	3.47	0.37	1.24	3.97	5.69	2.59	2.17

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	3.70	0.44
2	3.54	0.45

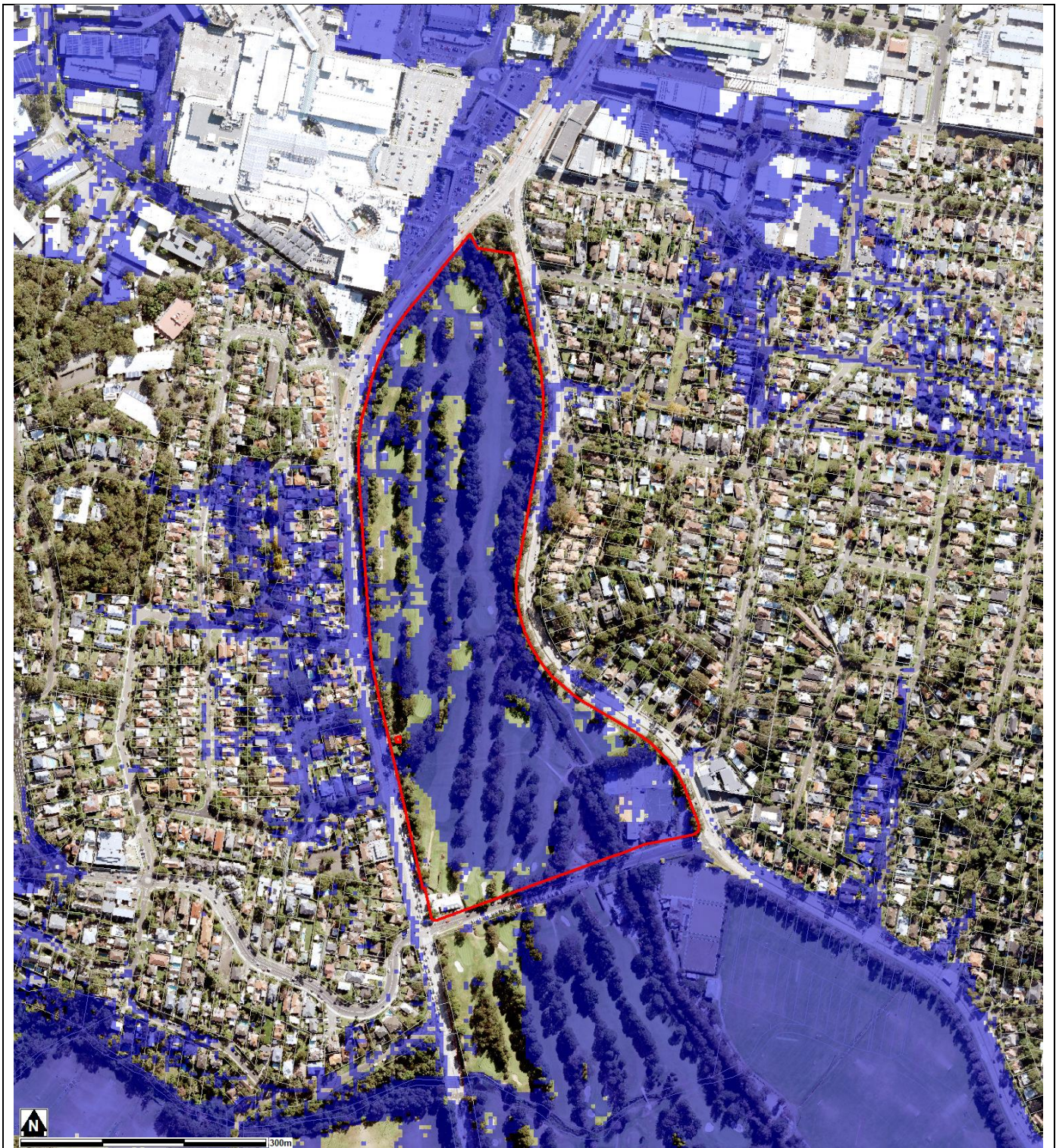
WL – Water Level

PMF – Probable Maximum Flood

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

A variable Flood Planning Level might apply. Freeboard is generally 0.5m above the maximum 1% AEP water level. However for overland flow with a depth less than 0.3m and a VelocityxDepth product less than $0.3\text{m}^2/\text{s}$, a freeboard of 0.3m may be able to be justified.

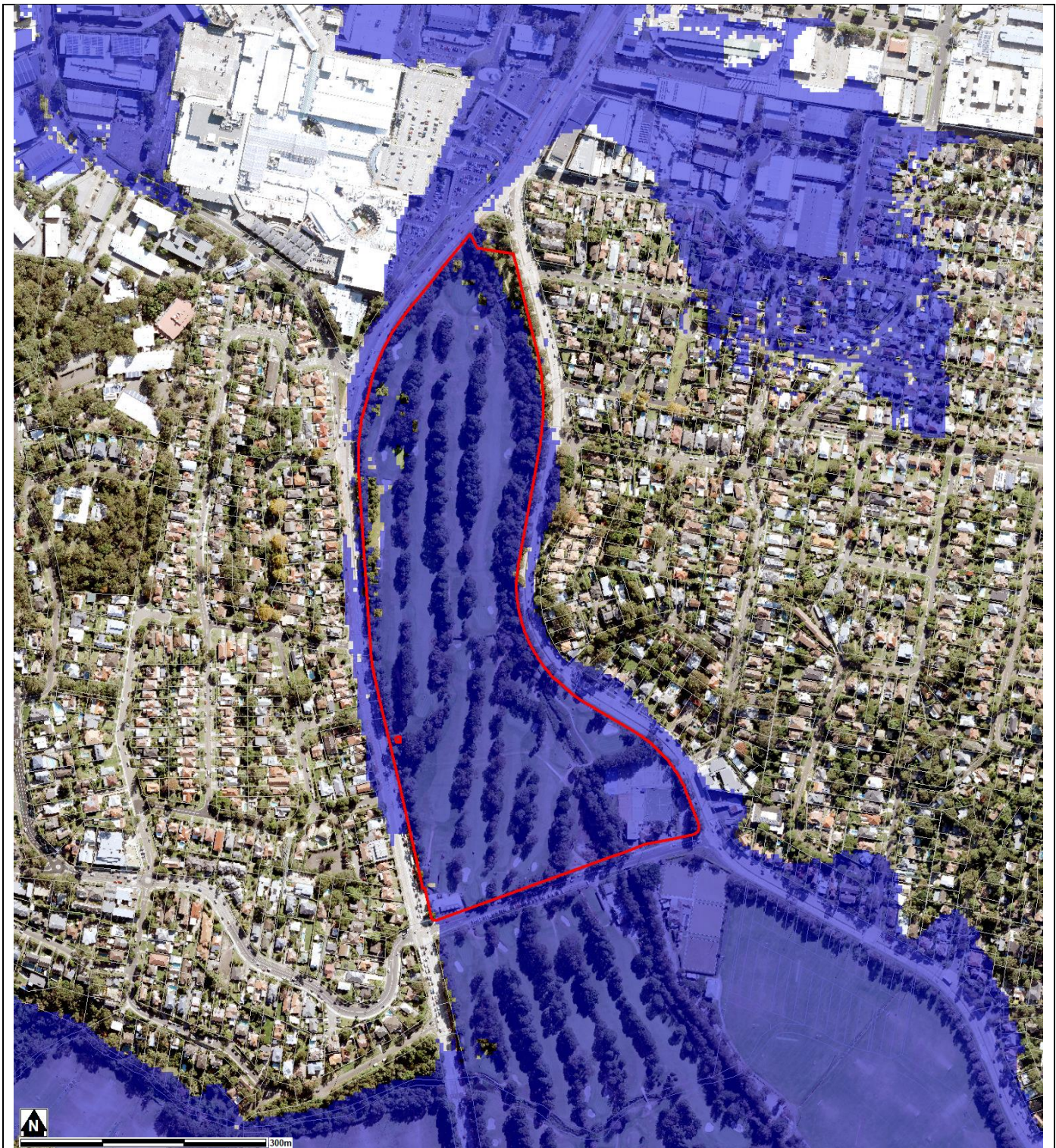
FLOOD MAP B: FLOODING - 1% AEP EXTENT



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: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

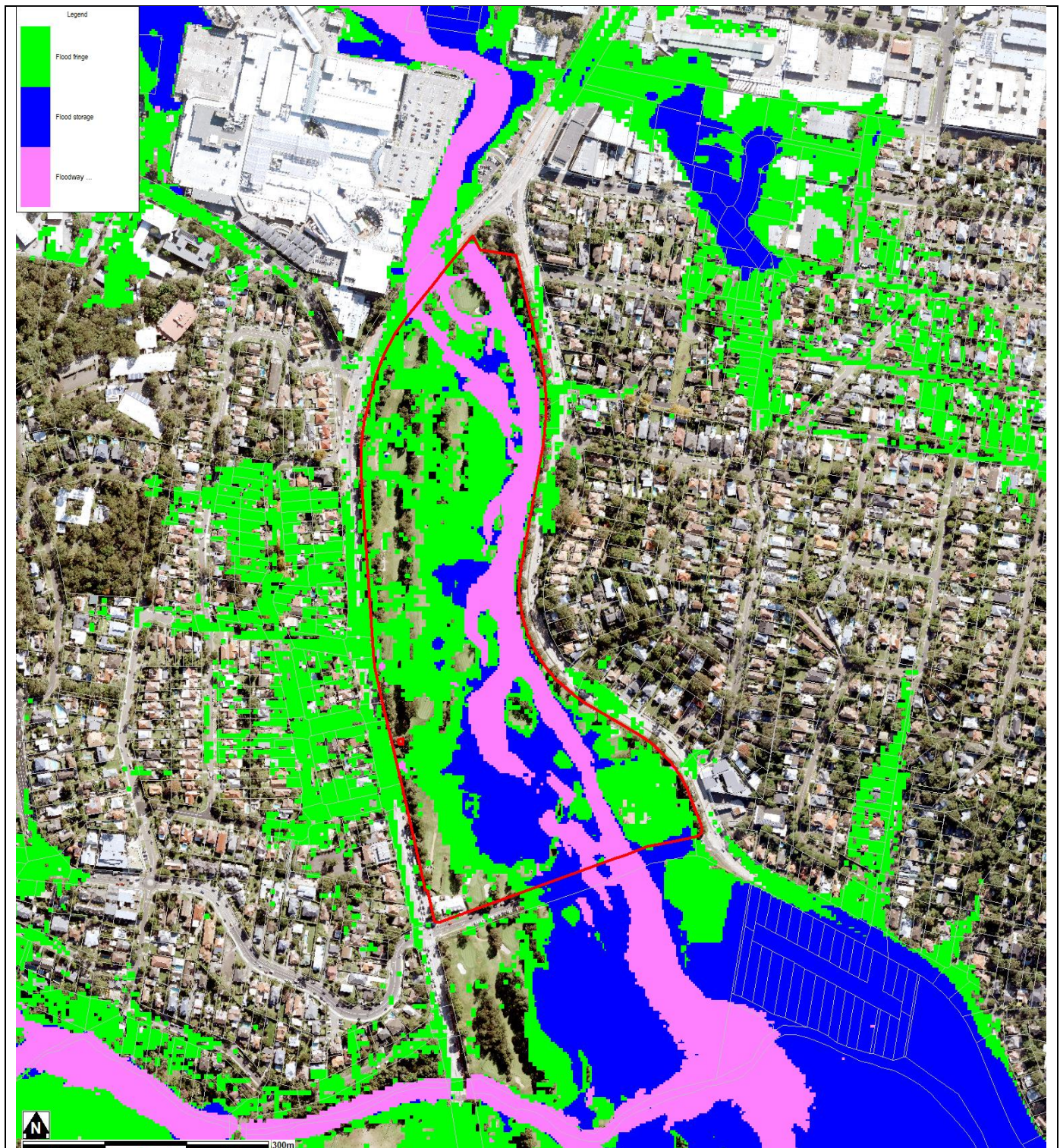
FLOOD MAP C: PMF EXTENT MAP



Notes:

- 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: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

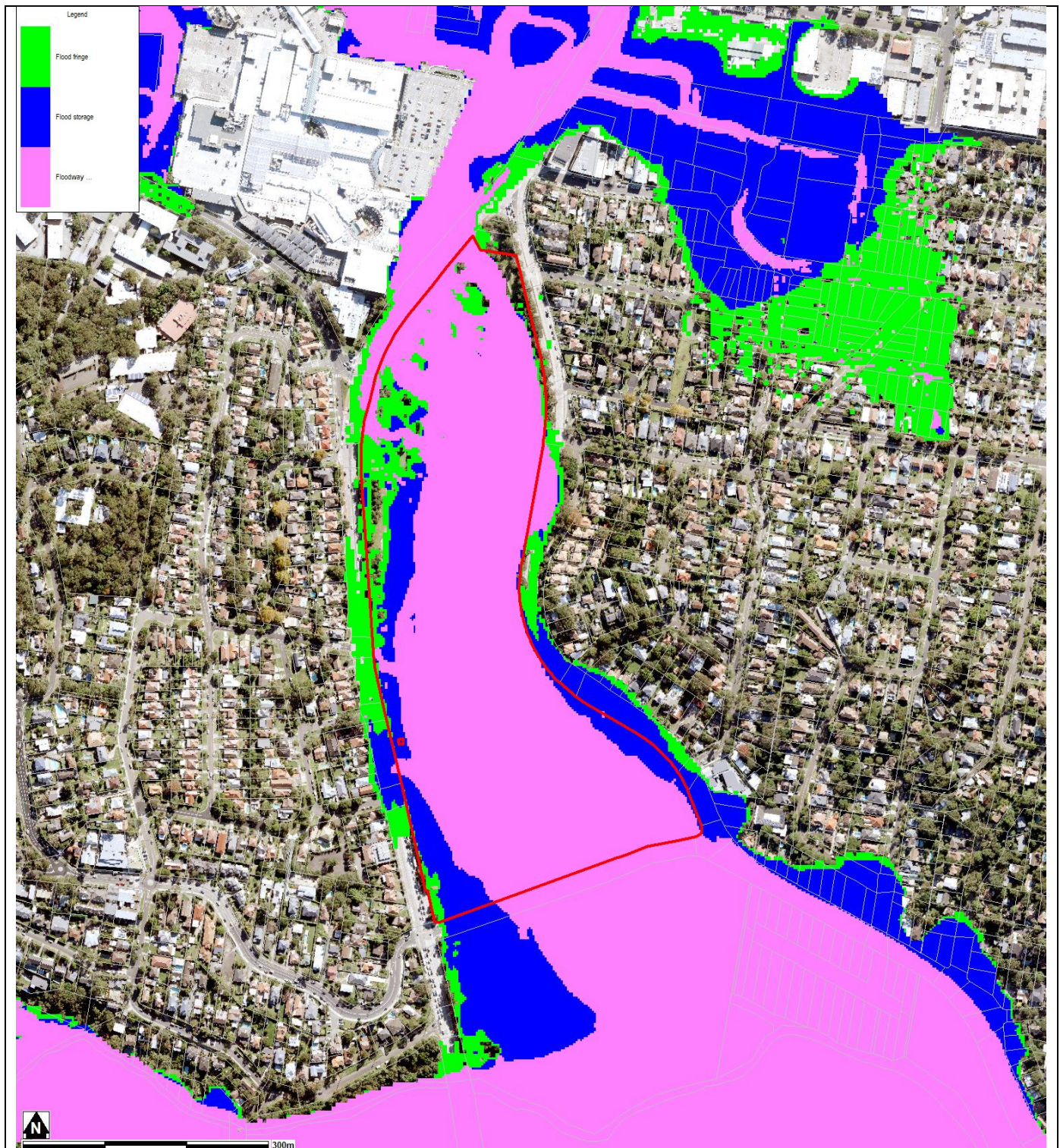
FLOOD MAP D: 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP



Notes:

- 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: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

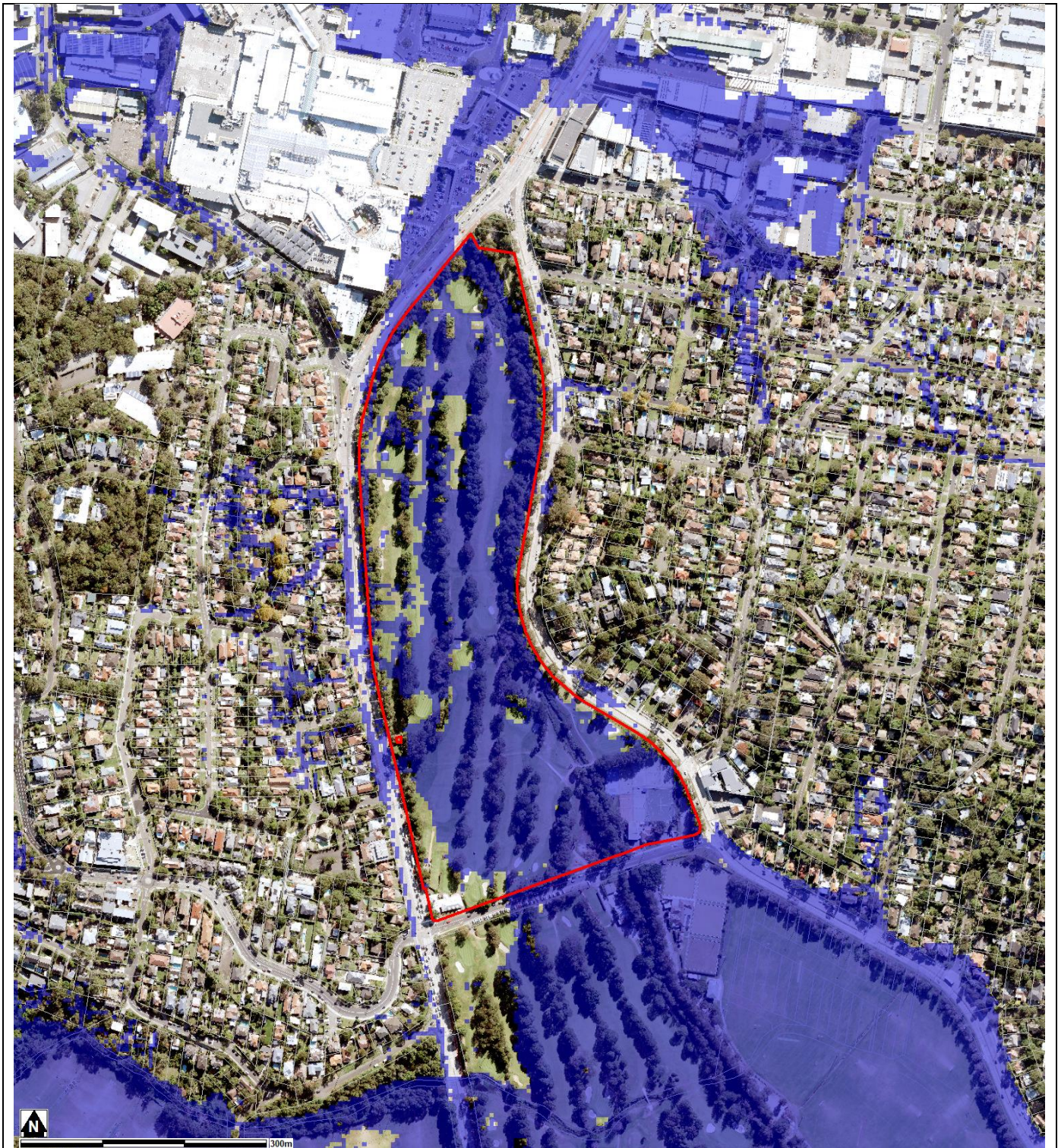
FLOOD MAP E: PMF FLOOD HYDRAULIC CATEGORY EXTENT MAP



Notes:

- 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: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

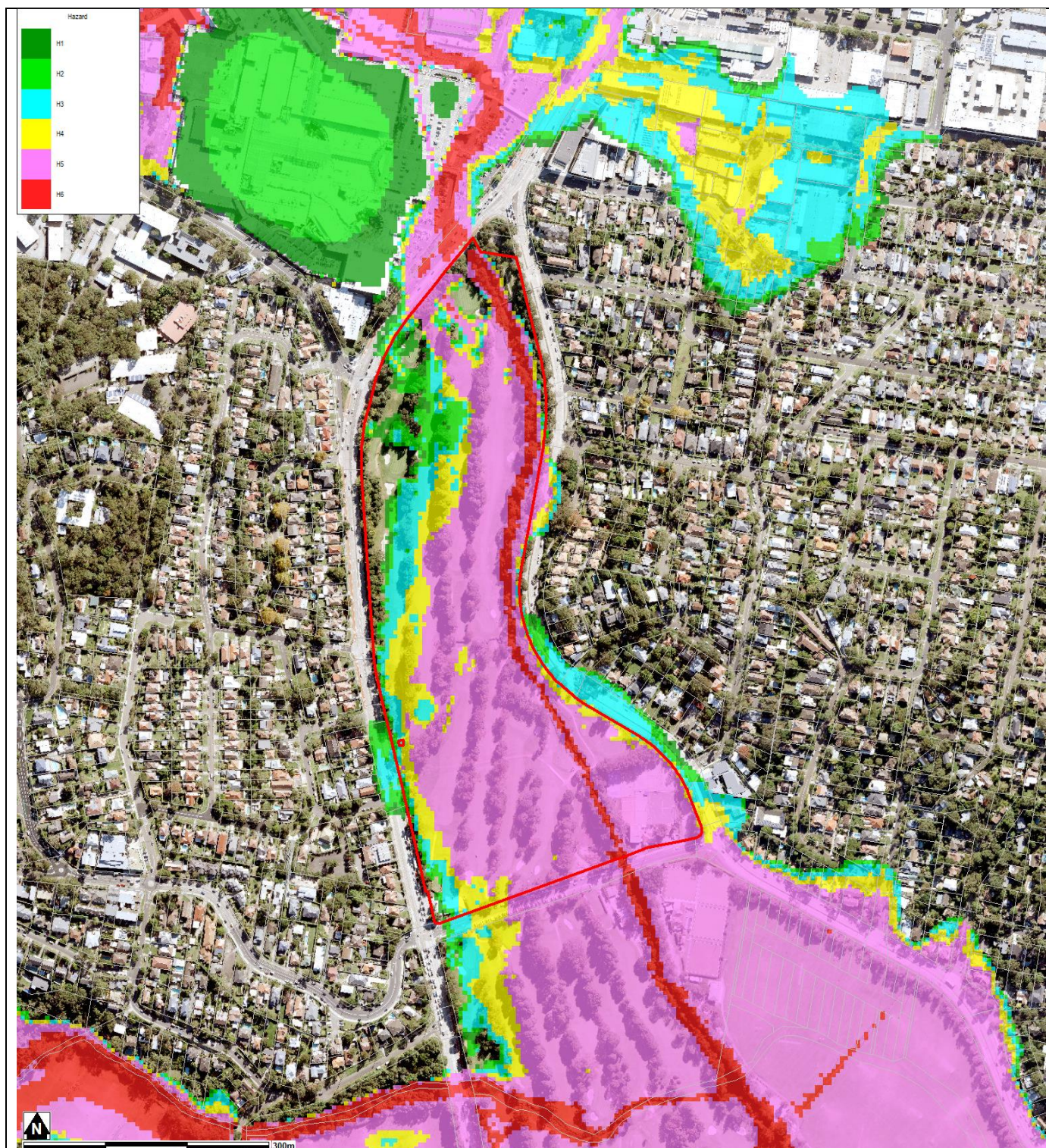
FLOOD MAP F: FLOODING – 1% AEP EXTENT PLUS CLIMATE CHANGE



Note:

- 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: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

FLOOD MAP G: FLOOD LIFE HAZARD CATEGORY

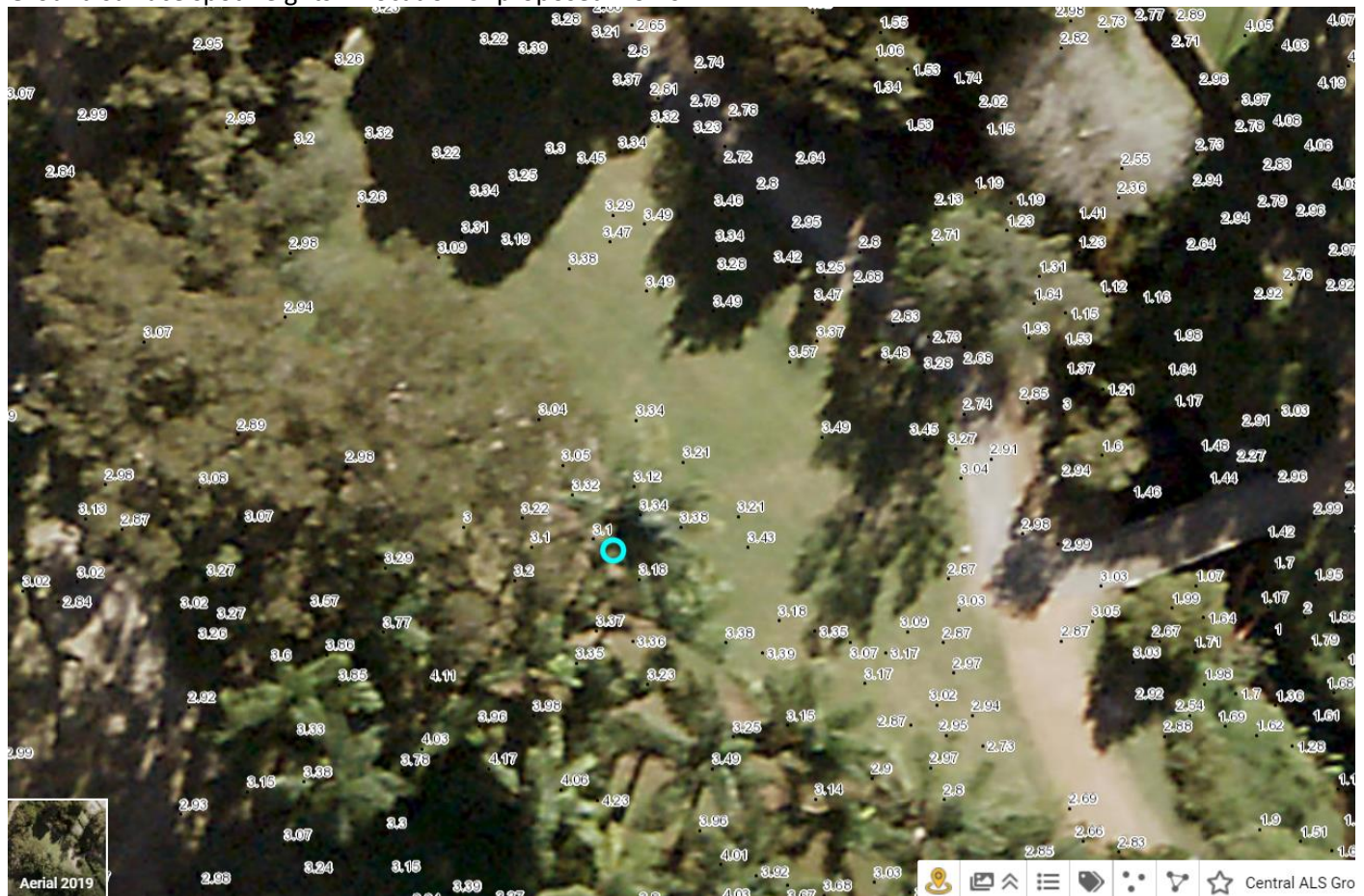


Notes:

- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Manly Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

MAP H: INDICATIVE GROUND SURFACE SPOT HEIGHTS

Ground surface spot heights in location of proposed works



Notes:

- The surface spot heights shown on this map were derived from Airborne Laser Survey and are indicative only.
- Accuracy is generally within $\pm 0.2\text{m}$ vertically and $\pm 0.15\text{m}$ 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.

Preparation of a Flood Management Report

Introduction

These guidelines are intended to provide advice to applicants on how to determine what rules apply on flood prone land, and how to prepare a Flood Management Report. The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood related planning requirements.

Planning Requirements for Flood Prone Land

Development must comply with the requirements for developing flood prone land set out in the relevant Local Environment Plan (LEP) and Development Control Plan (DCP). There are separate LEPs and DCPs for each of the former Local Government Areas (LGAs), although preparation of a LGA-wide LEP and DCP is currently under way.

The clauses specific to flooding in the LEPs and DCPs are as follows:

LEP Clauses	DCP Clauses
Manly LEP (2013) – 6.3 Flood Planning	Manly DCP (2013) – 5.4.3 Flood Prone Land
Warringah LEP (2011) – 6.3 Flood Planning Warringah LEP (2000) – 47 Flood Affected Land *	Warringah DCP (2011) – E11 Flood Prone Land
Pittwater LEP (2014) – 7.3 Flood Planning Pittwater LEP (2014) – 7.4 Flood Risk Management	Pittwater 21 DCP (2014) – B3.11 Flood Prone Land Pittwater 21 DCP (2014) – B3.12 Climate Change

* The Warringah LEP (2000) is relevant only for the “deferred lands” which affects only a very small number of properties, mostly in the Oxford Falls area.

Development on flood prone land must also comply with Council's Water Management for Development Policy, and if it is in the Warriewood Release Area, with the Warriewood Valley Water Management Specification. Guidelines for Flood Emergency Response Planning are available for addressing emergency response requirements in the DCP. These documents can be found on Council's website on the [Flooding page](#).

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

When is a Flood Management Report required?

A Flood Management Report must be submitted with any Development Application on flood prone land (with exceptions noted below), for Council to consider the potential flood impacts and applicable 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.

There are some circumstances where a formal 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 FPL 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 the purpose of a Flood Management Report?

The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood planning requirements, particularly the 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.

Preparation of a Flood Management Report

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

1. Description of development

- 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, eg vulnerable, critical, residential, business, industrial, subdivision, etc

2. Flood analysis

- 1% AEP flood level
- Flood Planning Level (FPL)
- Probable Maximum Flood (PMF) level
- Flood Risk Precinct, ie High, Medium or Low
- Flood Life Hazard Category
- Mapping of relevant extents
- Flood characteristics for the site, eg depth, velocity, hazard and hydraulic category, and the relevance to the proposed development

If the property is affected by an Estuarine Planning Level (EPL) which is higher than the FPL, then the EPL should be used as the FPL. If the FPL is higher than the PMF level, then the FPL should still be used as the FPL, as it includes freeboard which the PMF does not.

3. Assessment of impacts

- Summary of compliance for each category of the DCP, as per the table below.

	Compliance		
	N/A	Yes	No
A) Flood effects caused by Development			
B) Building Components & Structural Soundness			
C) Floor Levels			
D) Car parking			
E) Emergency Response			
F) Fencing			
G) Storage of Goods			
H) Pools			

- Demonstration of how the development complies with any relevant flood planning requirements from the DCP, LEP, Water Management for Development Policy, and if it is in the Warriewood Valley Urban Land Release Area, with the Warriewood Valley Water Management Specification (2001)
- For any non-compliance, a justification for why the development should still be considered.
- Calculations of available flood storage if compensatory flood storage is proposed
- Plan of the proposed development site showing the predicted 1% AEP and PMF flood extents, as well as any high hazard or floodway affectation
- Development recommendations and construction methodologies
- 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 Institution of Engineers Australia
- Any flood advice provided by Council
- Any other details which may be relevant

Further information and guidelines for development are available on Council's website at:

<https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/development-applications/guidelines-development-flood-prone-land>

Council's Flood Team may be contacted on 1300 434 434 or at floodplain@northernbeaches.nsw.gov.au .