

FLOOD INFORMATION REQUEST – GENERAL-PURPOSE

Property: 3 Bilgola Ave, Bilgola Beach

Lot DP: 133/752046 and 53//517038

Issue Date: 21 April 2016

Flood Study Reference: 2013 Pittwater Overland Flow Flood Study (Cardno)

A property can be impacted by more than one Category of flooding.

Flood Categories defined by the Pittwater 21 Development Control Plan include:

- **Flood Category 1 Areas-** Properties identified on the Flood Hazard Maps and located within Primary Floodplain Areas where the lowest point of the property is affected by the Flood Planning Level (FPL) (1% AEP flood level plus 500mm Freeboard). Flood Category 1 areas are further defined under flood hazard subcategories of high hazard and low hazard.
 - **Flood Category 2 Areas-** Properties identified on the Flood Hazard Maps where the lowest point of the property lies above the Flood Planning Level but below the level of the Probable Maximum Flood.
 - **Flood Category 3 Areas-** Properties generally located outside or adjacent to the Primary Floodplain Areas that are affected by flooding hazards associated with major stormwater drainage systems, local overland flow paths or drainage easements. Flood Category 3 Areas are further defined under the subcategories of Overland Flow Path – Major and Overland Flow Path – Minor.
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Flood Information for lots:

Flood Life Hazard Category – See Map A

Flood Category 1 (Mainstream) - See Flood Map C

Flood Category 2 (PMF) – See Flood Map D

Probable Maximum Flood (PMF) Level⁴: 12.55m AHD

PMF Maximum Depth from natural ground level: 1.2m

PMF Maximum Velocity: >3.5m/s

Flood Category 3⁵ (Overland Flow) – See Flood Map E

1% Annual Exceedance Probability (1% AEP): See Flood Map B

1% AEP Overland Flow Maximum Water Level^{3&4}: 11.23m AHD

1% AEP Overland Flow Maximum Depth from Natural Ground Level^{3&4}: 0.8m

1% AEP Overland Flow Maximum Velocity: >2.5m/s

Minimum Floor Level^{1,2,3 &4}: 0.5m above the 1% AEP Major overland flow extent and 0.3m above the 1% AEP Minor overland flow extent

1% AEP Overland Flow Provisional Flood Hazard: See Map F

1% AEP Overland Flow Hydraulic Categorisation: See Flood Map G

¹The flood information does not take into account any local overland flow issues with a depth below 0.15m nor private stormwater drainage systems.

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

³Intensification of development requires the consideration of climate change impacts which may result in higher minimum floor levels than those indicated on this flood advice.

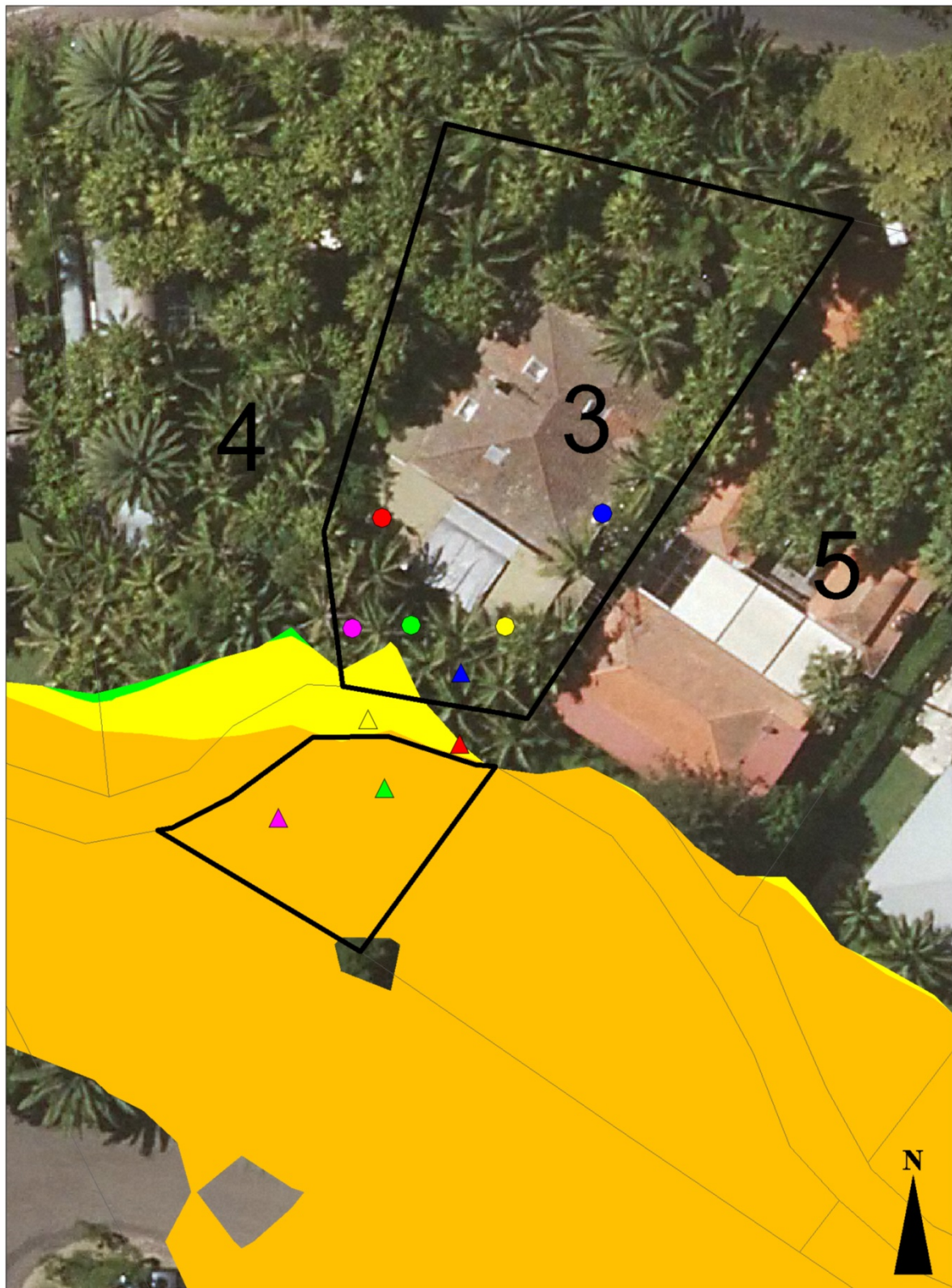
⁴Special Flood Protection developments require higher minimum floor levels using the higher of the PMF and the 1%AEP+0.5m.

⁵The applicable Flood Category 3 classification applied for the purpose of development assessment unless otherwise demonstrated in the Flood Risk Management Report that a different classification should apply (dependent on the location of the proposed development).

General Notes:

- All levels are based on Australian Height Datum (AHD) unless otherwise noted.
- The source information on this advice was obtained from numeric modelling prepared by consultants for Pittwater Council for existing site conditions at the time of the flood study. Separate review and flood model verification has not been undertaken by Council.
- The interpolated information is for the purpose of planning only. Detailed flood data for individual land areas were not determined from the exercise.
- Flood models only approximate flood behaviour. Site specific ground and building survey levels should be used to relate flood levels and to assess the impact of flooding. A site specific flood study/risk assessment may be required for any future development. Care and expertise is required in the interpretation of these flood levels. Engage a suitably qualified engineer to assist you in this matter.
- You need to refer to the Pittwater 21 DCP flood development controls, if you are planning to lodge a Development Application. The advice may be reviewed and amended by Pittwater Council in the course of assessment of a specific development application.
- While this advice is periodically updated, it is possible that the Council holds further information dealing with the flooding which has not been incorporated into the above advice.
- Estuarine/coastal inundation has not been taken into account in the flood information.
- Council is currently reviewing the 2013 Pittwater Overland Flow Flood Study and as such the property's flood classification and flood level may be subject to changes as a result of the updated flood modelling.

FLOOD MAP A: FLOOD LIFE HAZARD CATEGORY



Flood Life Hazard Categories:



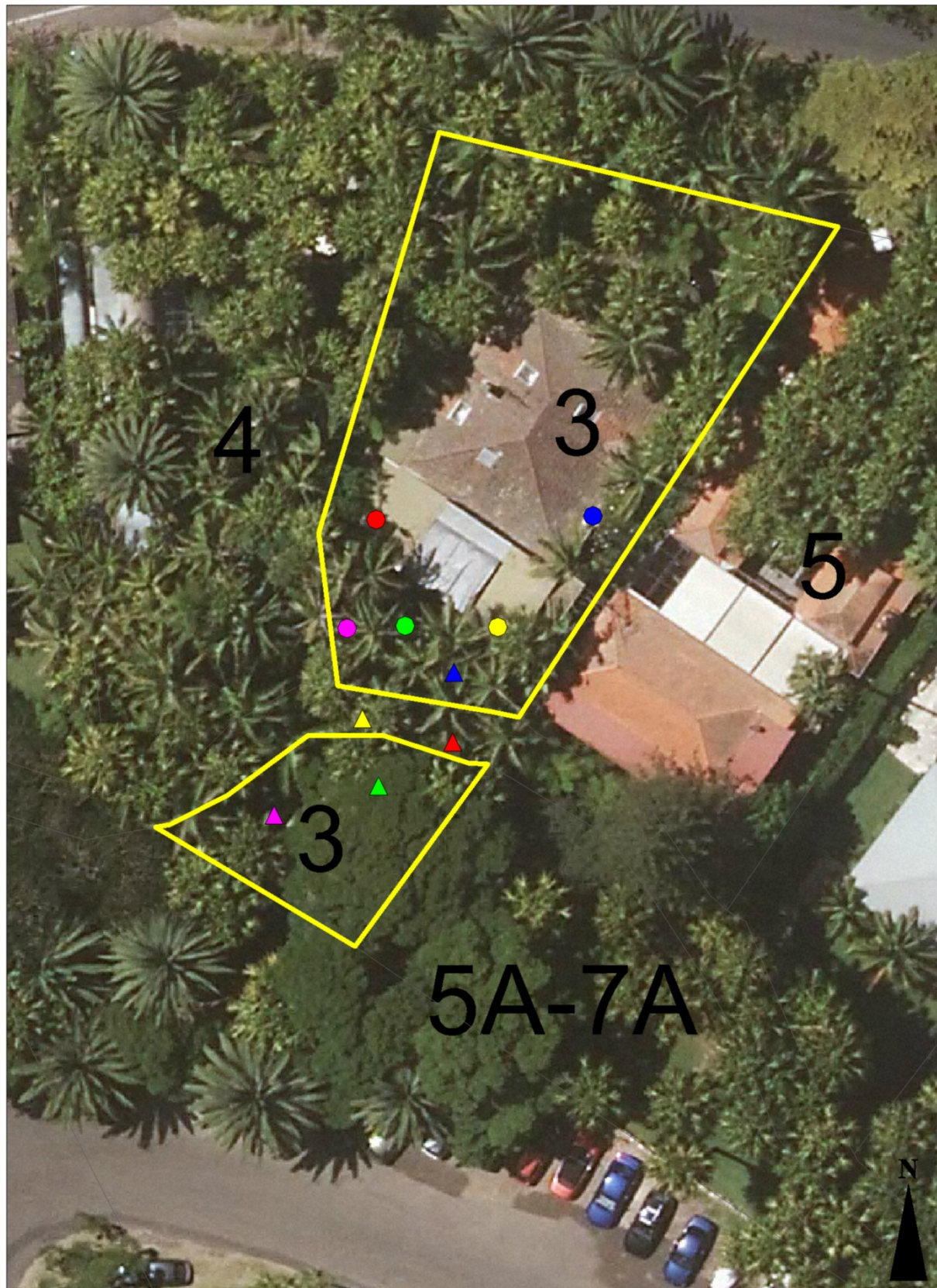
— Lot Boundary

Map not to Scale

Notes:

- Refer to Pittwater 21DCP for 'Flood Emergency Response Planning for Development in Pittwater Policy (Appendix 15) for additional information on the Flood Life Hazard Categories and Pittwater 21 DCP Control B3.25.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Flood study reference) and aerial photography (Source Near Map 2014) are indicative only.

FLOOD LEVEL POINTS



— Lot Boundary

Map not to Scale

Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Flood study reference) and aerial photography (Source: NearMap 2014) are indicative only.

Flood Levels

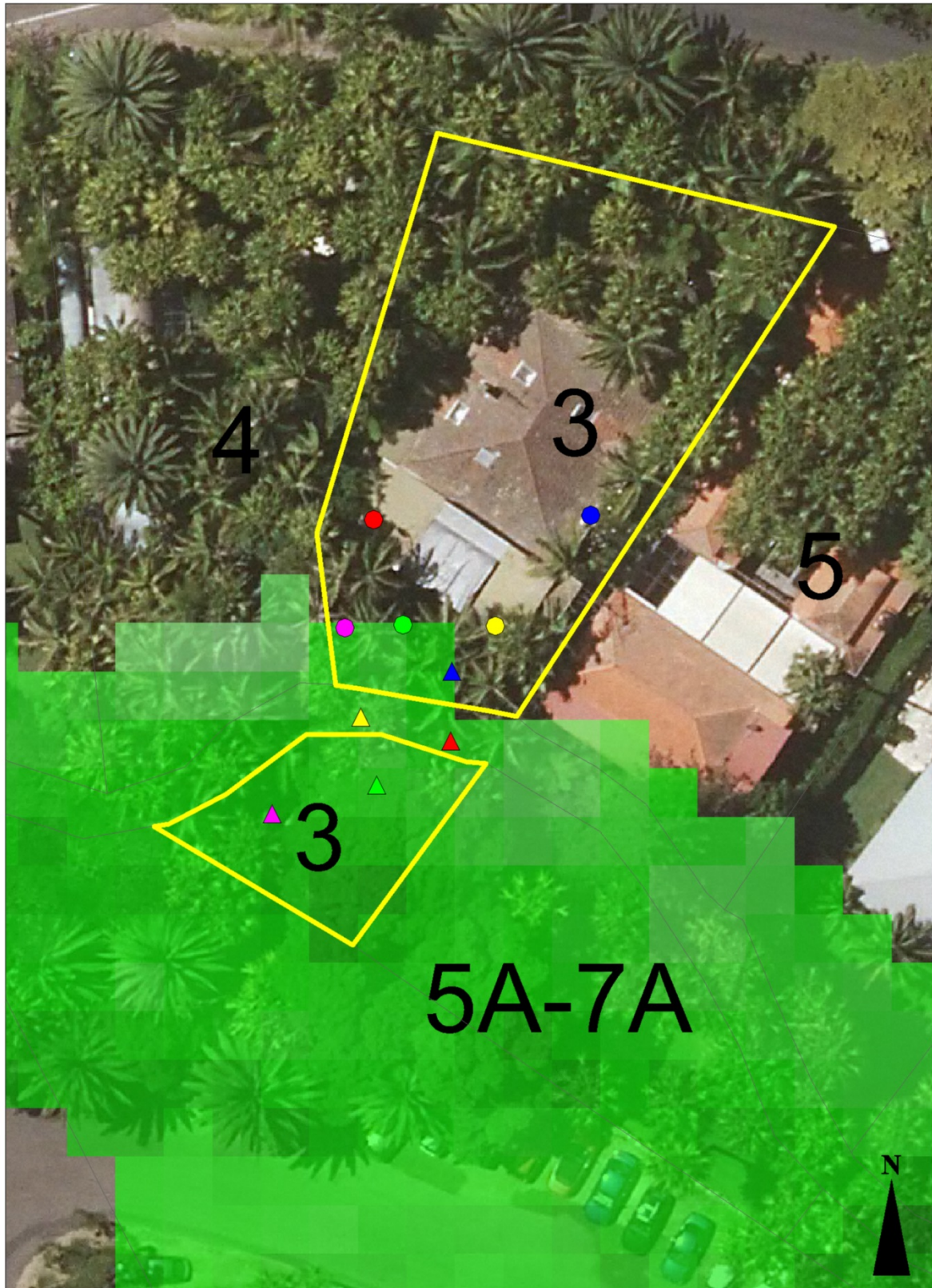
	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	5% AEP Max Velocity (m/s)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
●	Null	Null	Null	Null	Null	Null	Null	Null	Null
●	Null	Null	Null	Null	Null	Null	Null	Null	Null
●	Null	Null	Null	Null	Null	Null	11.49	0.03	0.42
●	11.07	0.17	0.31	11.13	0.23	0.31	11.47	0.33	0.41
●	11.17	0.00	0.37	11.18	0.01	0.37	11.49	0.29	0.38
▲	11.08	0.07	0.49	11.13	0.12	0.58	11.43	0.26	0.94
▲	10.92	0.25	0.86	10.98	0.30	0.94	11.34	0.59	1.55
▲	10.98	0.49	1.03	11.04	0.55	0.95	11.42	0.80	1.13
▲	10.88	0.57	1.27	10.94	0.63	1.32	11.35	1.02	1.82
▲	11.04	0.44	0.98	11.09	0.50	1.32	11.50	0.92	2.18

WL – Water Level

PMF – Probable Maximum Flood

Null = no peak water level/depth identified in flood event.

FLOOD MAP B: FLOODING - 1% AEP EXTENT



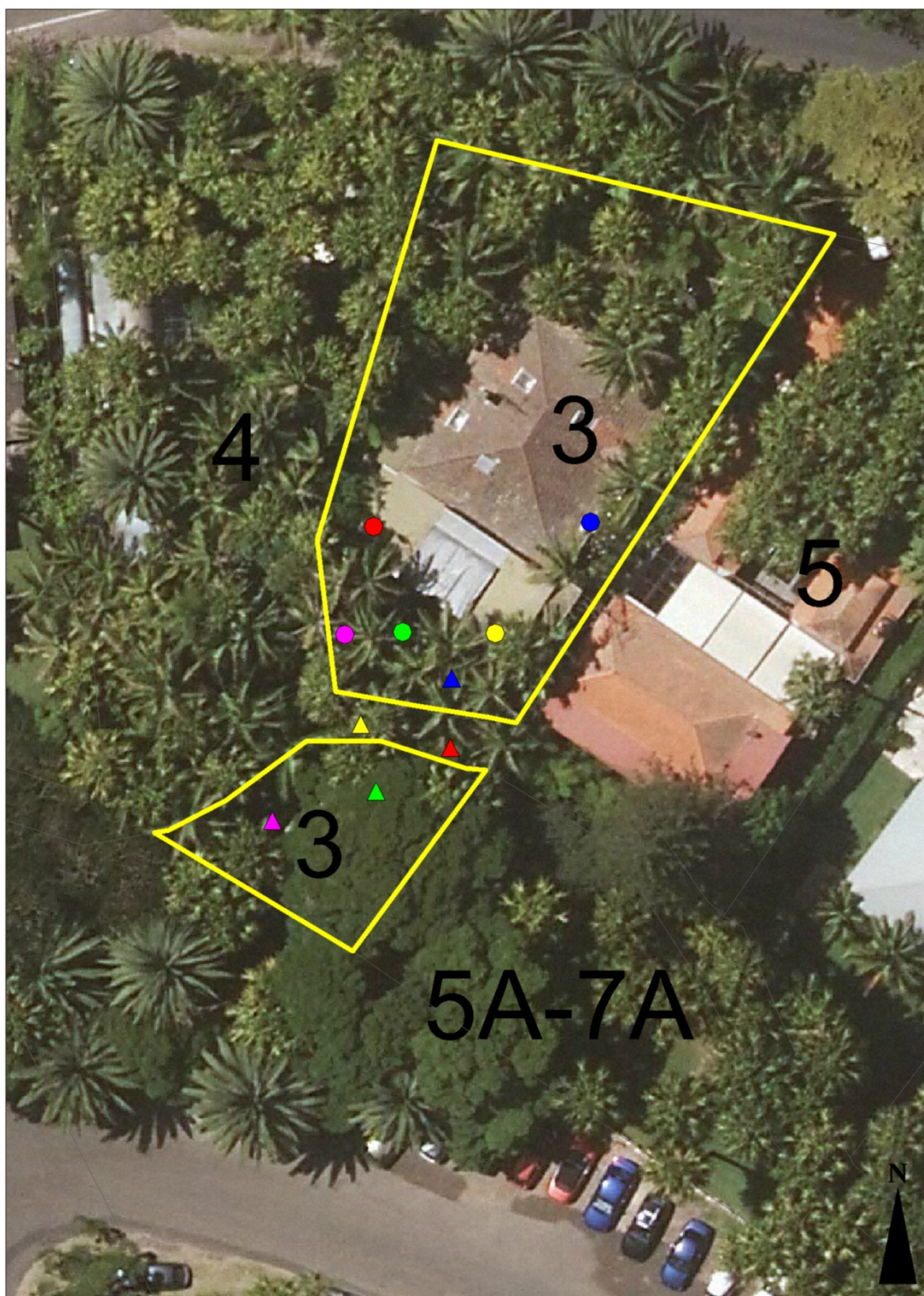
— Lot Boundary line 1% AEP flood extent

Map not to scale

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: Flood study reference) and aerial photography (Source Near Map 2014) are indicative only.

FLOOD MAP C: MAINSTREAM FLOODING EXTENT



Category 1 FPL extent

Lot Boundary

Map not to Scale

This Property is currently not identified as being affected by Mainstream flooding based off the 2013 Pittwater Overland Flow Flood Study. Council is however undertaking a review of this model/Flood Study, and as a result this property's flood classification may change because of the update to the mainstream model.

Notes:

- extent represents the 1% annual Exceedance Probability (AEP) flood event
- extent does not include climate change
- Mainstream FPL – Mainstream Flood Planning Level includes the 0.5m freeboard on the 1% AEP extent for planning purposes
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Flood study reference) and aerial photography (Source: NearMap 2014) are indicative only

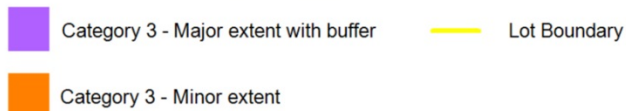
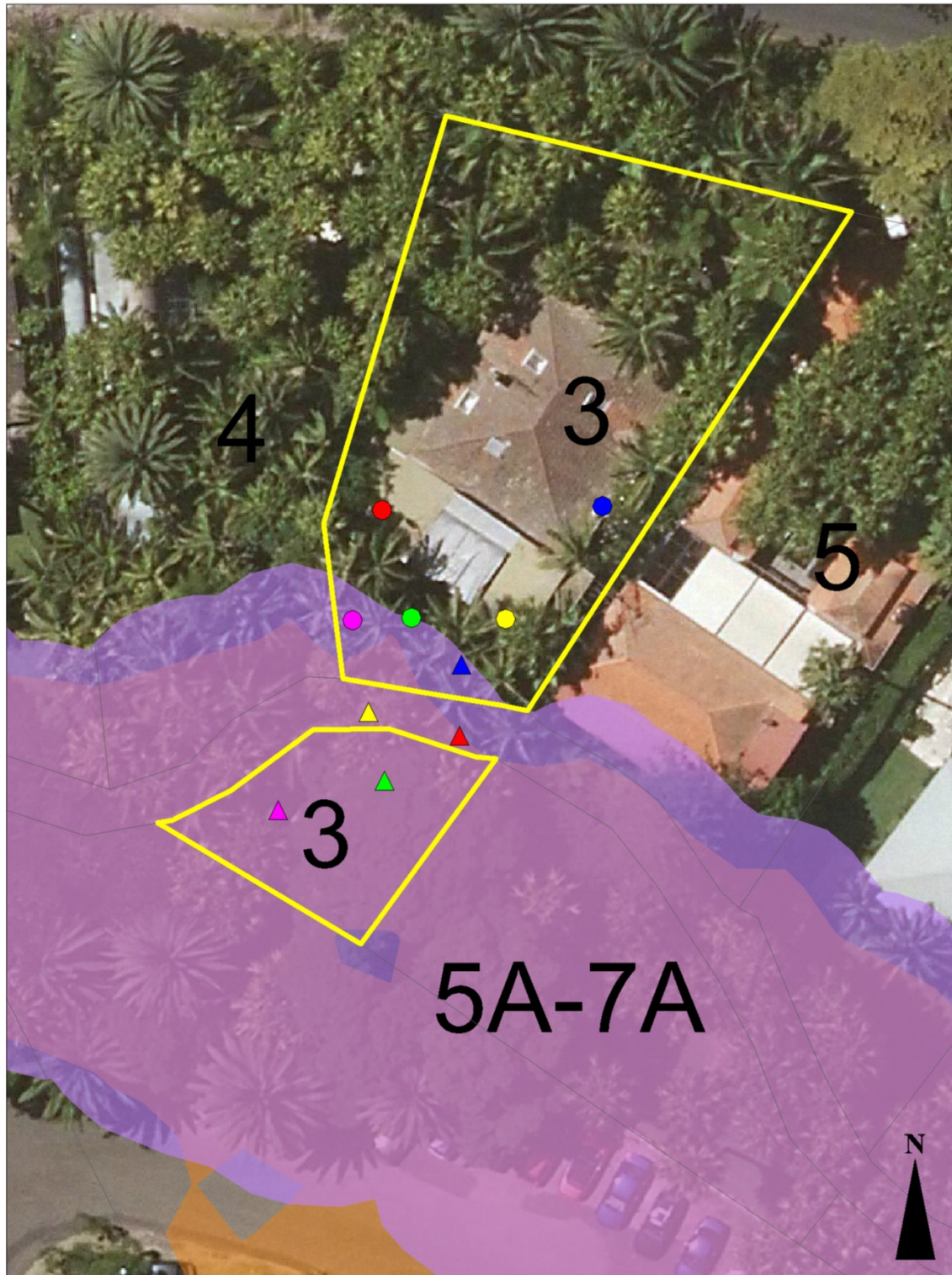
FLOOD MAP D - PMF EXTENT MAP



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: Flood study reference) and aerial photography (Source: NearMap 2014) are indicative only

FLOOD MAP E – OVERLAND FLOW EXTENT MAP

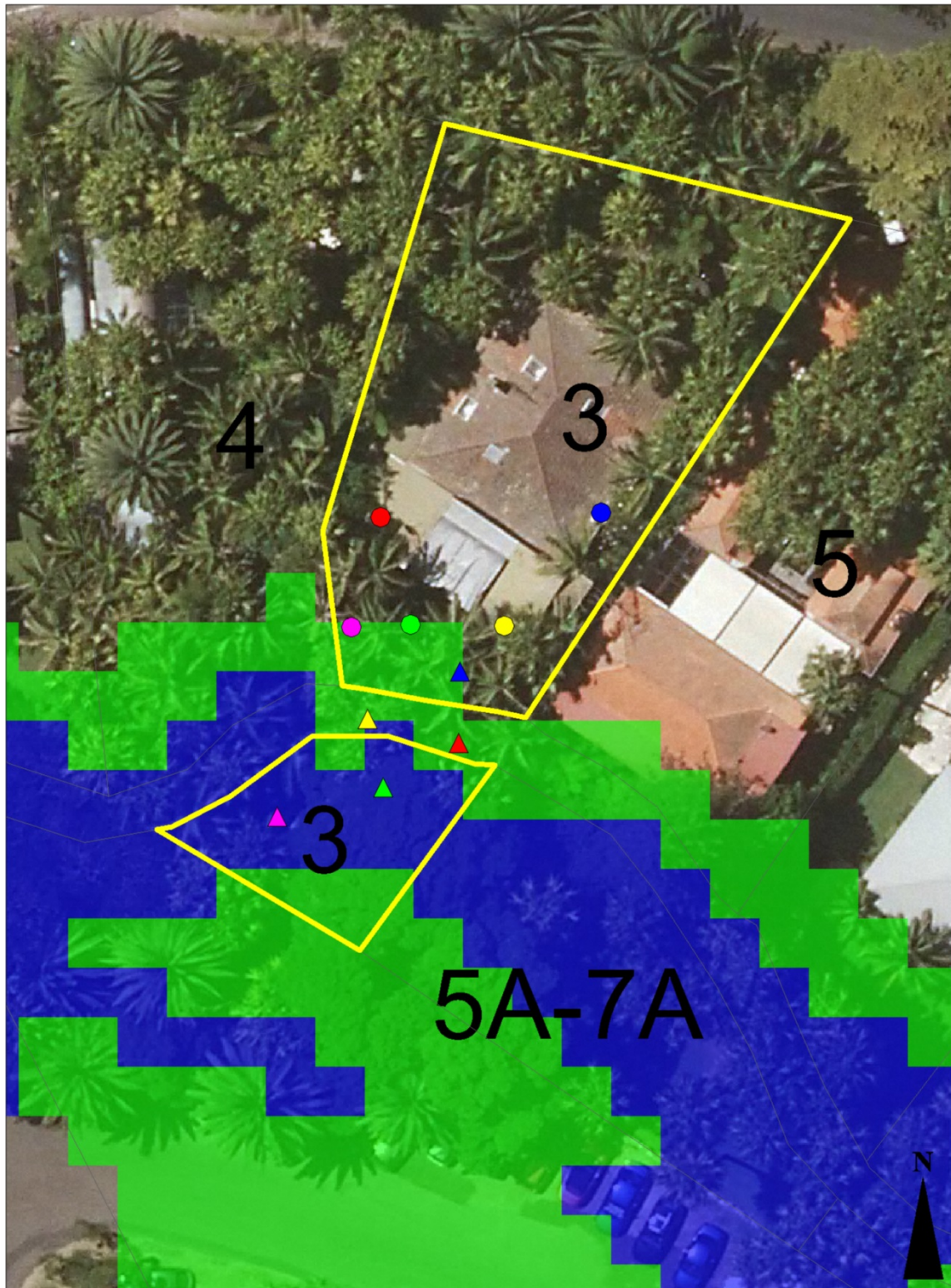


Map not to Scale

Notes:

- extent represents the 1% annual Exceedance Probability (AEP) flood event
- extent does not include climate change
- Overland Flow Path Major includes a fixed 5m horizontal planning buffer on the 1% AEP extent for planning purposes
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Flood study reference) and aerial photography (Source: NearMap 2014) are indicative only

FLOOD MAP F – 1% AEP FLOOD HAZARD EXTENT MAP



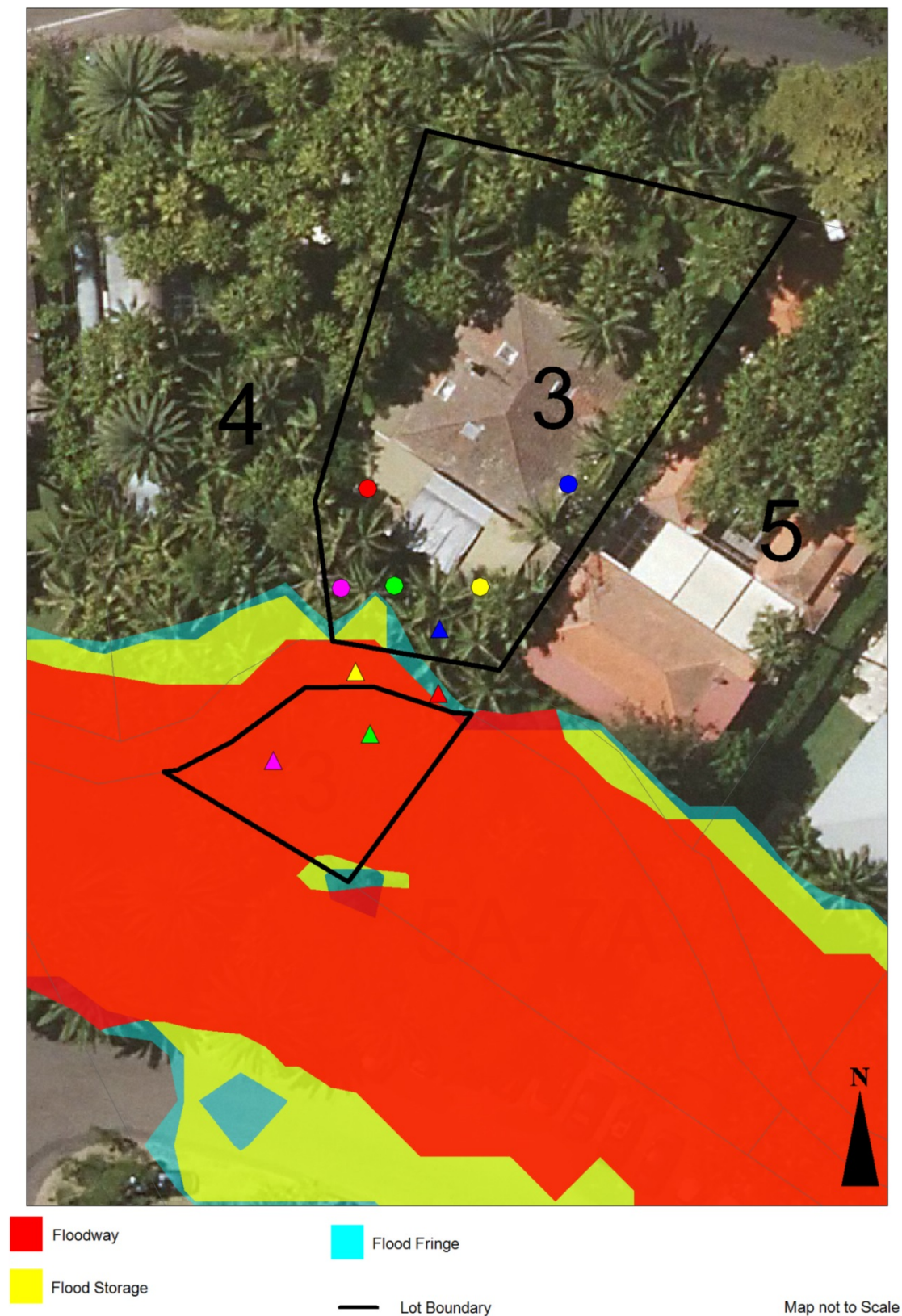
Map not to Scale

Notes:

- extent represents the 1% annual Exceedance Probability (AEP) flood event
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FLOOD MAP G – 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: Flood study reference) and aerial photography (Source: NearMap 2014) are indicative only

Draft Avalon to Palm Beach Flood Map

3 Bilgola Ave, Bilgola Beach



-  Flood Planning Area (FPA) High Risk extent
-  Flood Planning Area (FPA) Medium Risk extent
-  Flood Planning Area (FPA) Low Risk extent



Property

Notes:
1. * extent represents the 1% annual Exceedance Probability (AEP) flood event
2. Flood Planning Area includes the 0.5m freeboard on the
1% AEP extent of 5m horizontal buffer for planning purposes
3. Cadastre Lines, flood extents, aerials locations are indicative only

Not to Scale
Printed April 2016

 **PITTWATER COUNCIL**