

Our ref: L.002949.001.01_OasisKanwal.docx

4 September 2023

Vivacity Property
PO Box H72
Australia Square NSW 1215

Attention: Tom Copping

Dear Tom

RE: OASIS KANWAL DEVELOPMENT – FLOOD ASSESSMENT LETTER

The following letter responds to Vivacity Property request for a flood assessment letter to be submitted as part of a rezoning application to the Department of Planning and Environment (DPE) for the proposed development of Oasis Kanwal (207-209 Wallarah Road Kanwal) (“the Site”). It provides a summary of the existing flood conditions at the Site, the potential for flood impacts and the requirements for flood emergency management.

Background

The rezoning and expansion of an existing caravan park is proposed at the Site, with preliminary architectural drawings indicating works will include the construction of 5 apartment complexes and a commercial block. The Site is bounded by Wallarah Road to the south, the Pacific Highway to the west, Morry Breen Reserve to the east and an unnamed flowpath to the north. Water Cycle, Stormwater Management & Preliminary Servicing for the Site have been designed by Northrop. As part of the works proposed at the Site, a stormwater detention basin is proposed along the northern boundary. The Site is currently zoned R1 Residential, and the application seeks a partial rezoning to E2 Local Centre. The Site is shown in Figure 1.1 and the proposed works are shown in Figure 1.2.



Figure 1.1 The Site at 207-209 Wallarah Road, Kanwal

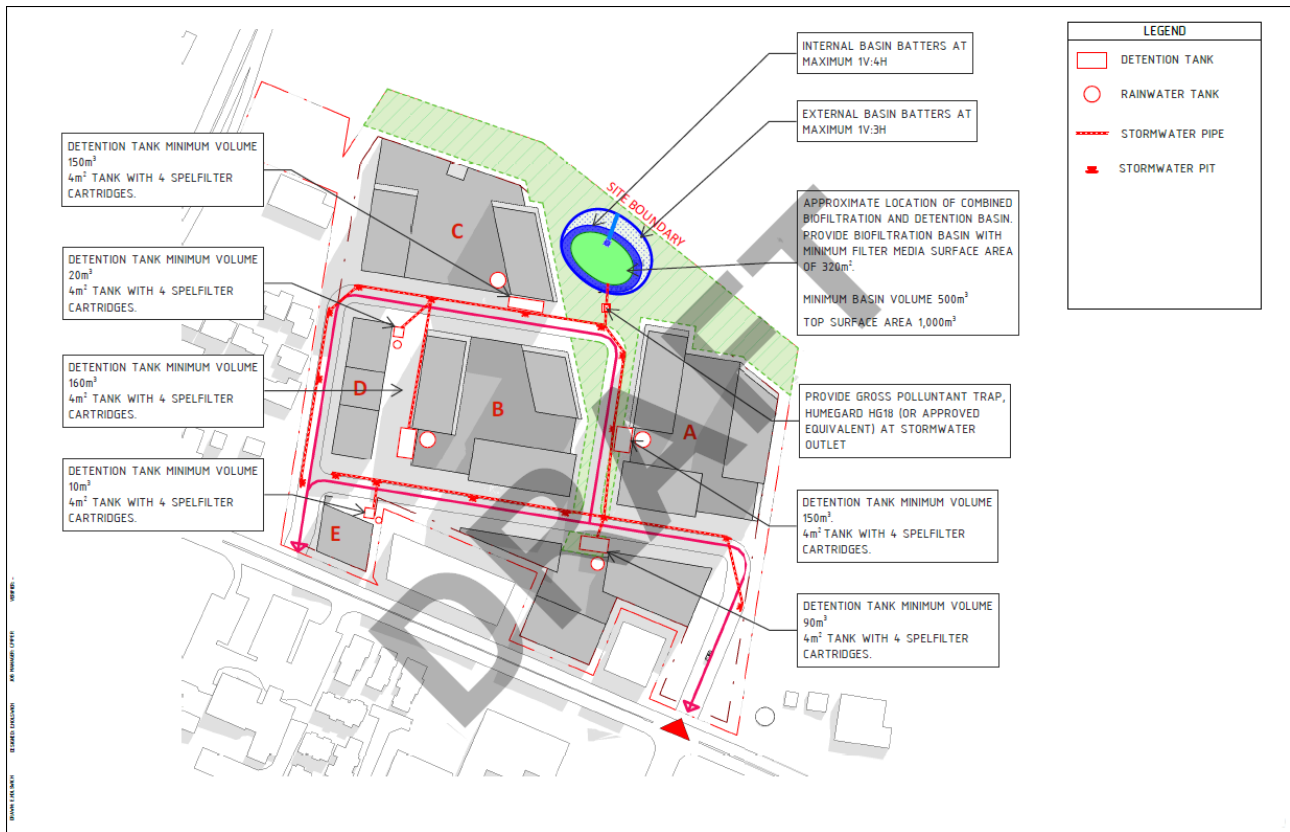


Figure 1.2 Proposed Site Stormwater Works (Northrop, 2023)

REF: OASIS REZONING APPLICATION 207-209 WALLARAH ROAD KANWAL NSW 2259, CONCEPT STORMWATER DESIGN, SK01-01, DATED 14.08.23, NL221828

The Site is located within the study area of the Porters Creek Floodplain Risk Management Study and Plan (Central Coast Council, 2012). Council’s flood certificate for the Site (included as Annex A) indicates that it will be partially flood affected by the unnamed flowpath along its northern boundary.

Section 9.1(2) of the Environmental Planning and Assessment Act 1979 Focus Area 4.1 applies to all relevant planning authorities that are responsible for flood prone land when preparing a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land. As the proposed works involved the rezoning of the Site to a mixed-use precinct the development must comply with the Focus Area. The full Focus Area 4.1 is included as Annex B and Item 3 (outlining requirements for works within the Flood Planning Area or FPA) is copied below

(3) A planning proposal must not contain provisions that apply to the flood planning area which:

- (a) permit development in floodway areas,
- (b) permit development that will result in significant flood impacts to other properties,
- (c) permit development for the purposes of residential accommodation in high hazard areas,
- (d) permit a significant increase in the development and/or dwelling density of that land,
- (e) permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,

(f) permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent,

(g) are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or

(h) permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event.

Assessment of Flood Conditions

Flood conditions on Site are identified in Council's flood certificate. Extracts from the certificate showing local flood conditions at the Site are included below. The location of the proposed detention basin is shown on each figure. It is noted that the location is indicative only and Northrop have advised that the basin can be shifted outside of the flood area.

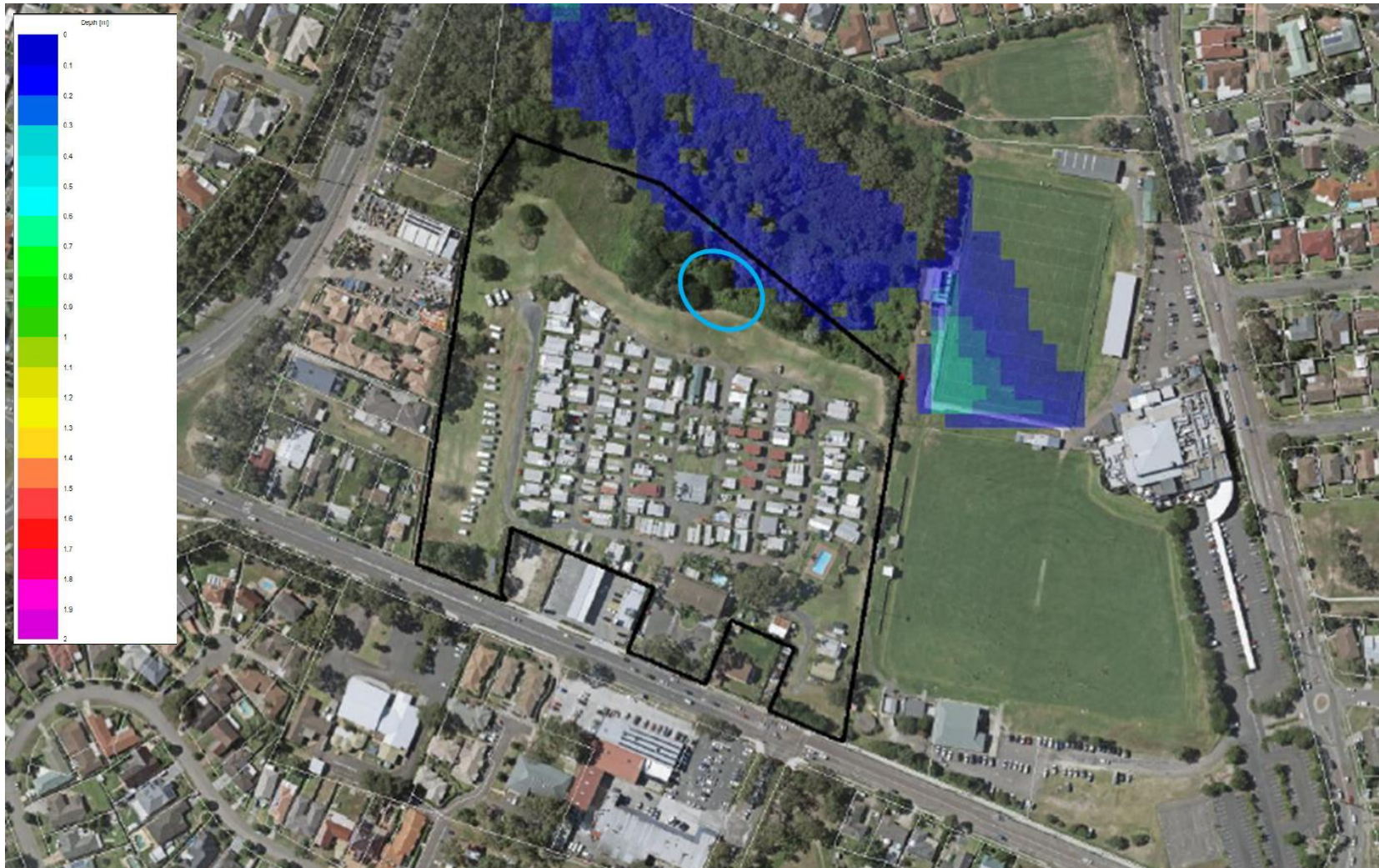


Figure 1.3 5% AEP Flood Depth

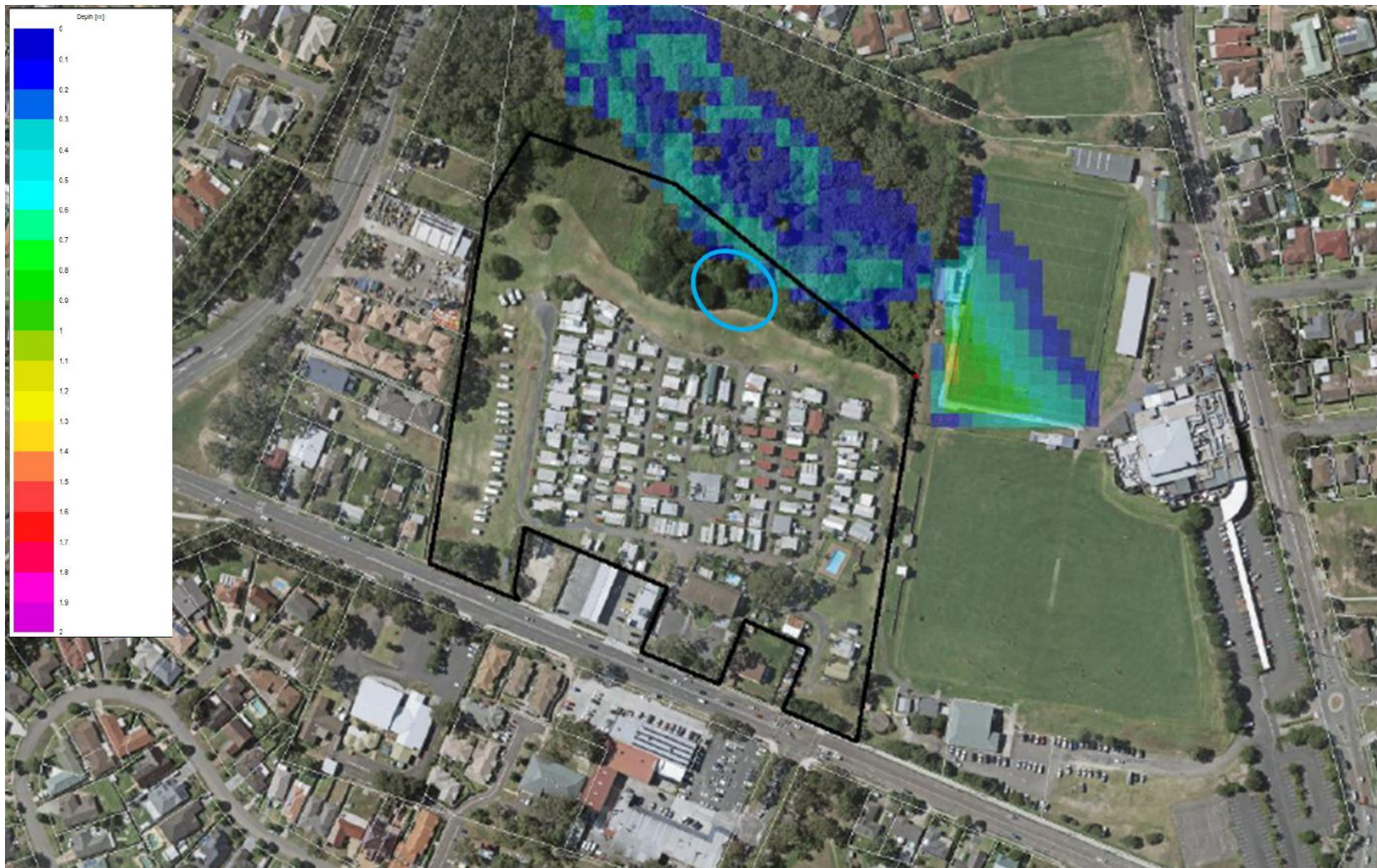


Figure 1.4 1% AEP Flood Depth

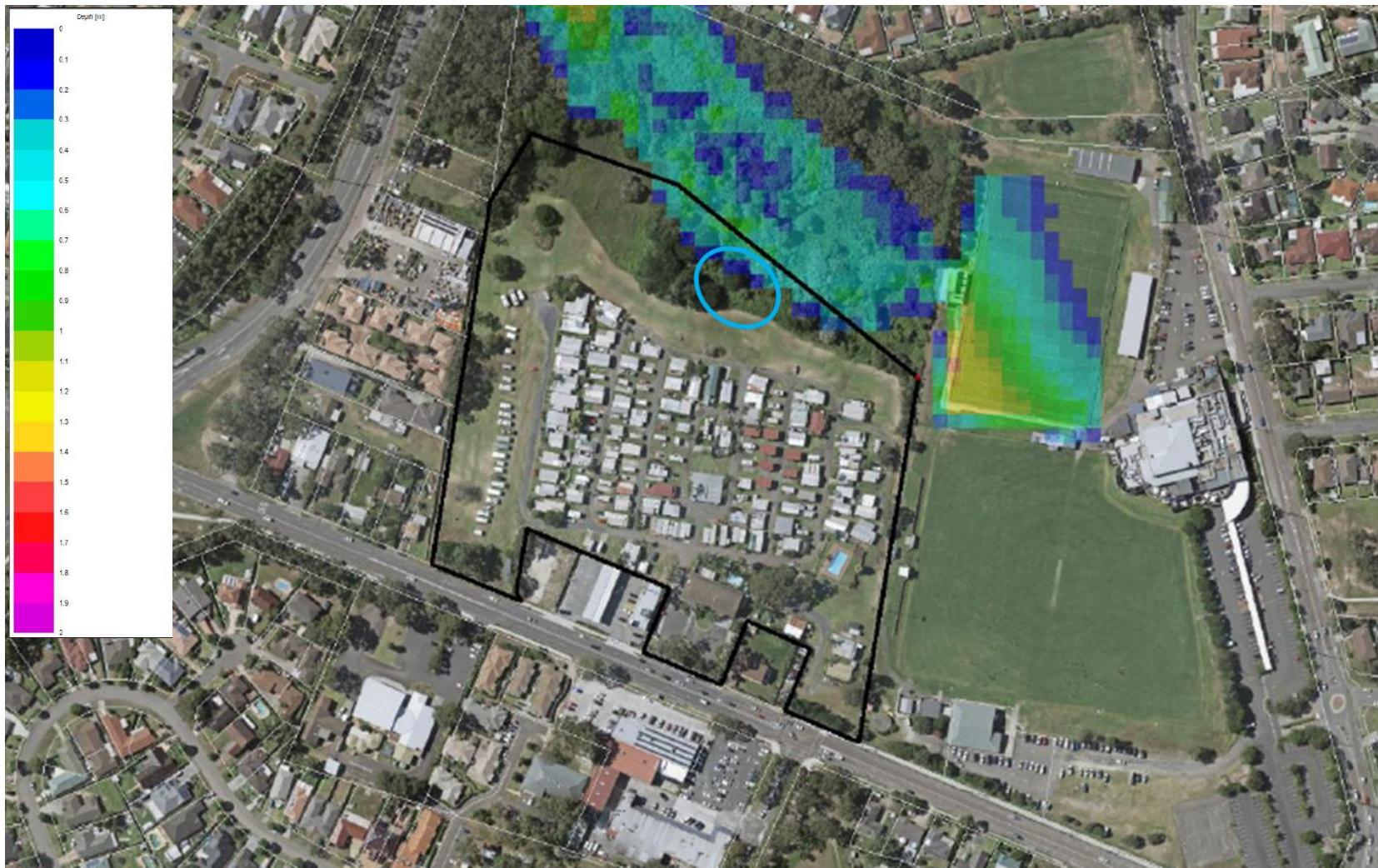


Figure 1.5 PMF Flood Depth

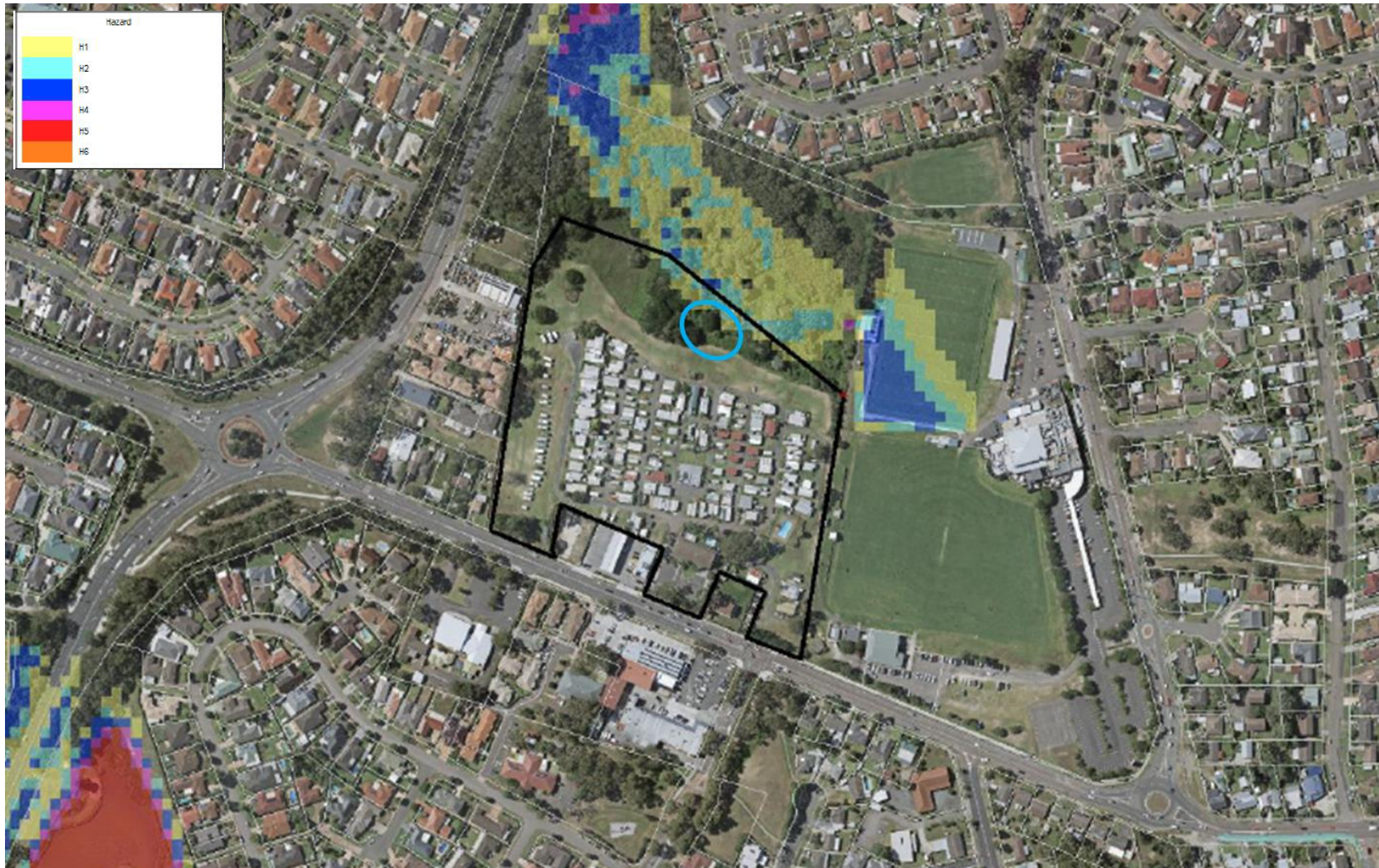


Figure 1.6 1% AEP Flood Hazard



Figure 1.7 Hydraulic Categorisation

As can be seen in Figure 1.3 to Figure 1.7, and with reference to Figure 1.2, the proposed development will largely be flood-free with the exception of the proposed basin adjacent to the northern boundary. The basin intersects with an unnamed flowpath, in areas that are classified as being low-hazard (H1-H2) and low-depth (see Figure 1.3 to Figure 1.6) but also as floodway (see Figure 1.7).

Floodway areas are defined in the Porters Creek Floodplain Risk Management Study and Plan as *the predicted 10 year ARI flood extent*, with no consideration of the specific flood conditions for the event. Given site affectation in the 1% AEP event, it can be seen that the floodway classification of the Site falls within areas of low depth and low hydraulic hazard. However, no velocity information is supplied as part of the Flood Certificate, and therefore the velocity of the floodway area is unknown.

Compliance with Ministerial Direction

The proposed development will be largely flood-free for all events up to and including the Probable Maximum Flood (PMF), with the exception of the proposed basin adjacent to the northern boundary, which will encroach slightly into the flood extent. Given the low hazards and depths presented for all events up to and including the PMF, it is unlikely that this minor encroachment would result in significant flood impacts. Therefore, as the proposed works are predominantly located in a flood-free zone outside of both the FPA and the PMF, the Site will comply with conditions 3b-3g of Section 9.1(2) of the Environmental Planning and Assessment Act 1979 Focus Area 4.1.

Encroachment of the proposed basin into the existing floodway area does not comply with condition 3a. Relocation of the basin to an area outside of the floodway (and ideally to a flood-free area) will ensure full compliance with the direction. It would also reduce or remove the potential for on- and off-site flood impacts, which would assist in compliance with Central Coast Council's flood-related development requirements.

In the event of a significant storm event, it is recommended that occupants of the Site shelter in place to prevent potential interaction with hazardous floodwaters.

We trust that this document suitably outlines flood conditions on Site and the requirements of the Section 9.1(2) of the Environmental Planning and Assessment Act 1979 Focus Area 4.1 that must be met. Please feel free to contact the undersigned (ph.: (02) 8960 7755 or email: kieran.smith@apac.bmt.org) if you require any further clarification.

Yours Sincerely,

BMT

A handwritten signature in black ink, appearing to read 'K. Smith', with a horizontal line extending to the right.

Kieran Smith
Senior Engineer



**Annex A Flood Information Certificate 207-209 Wallarah Rd, KANWAL
(Central Coast Council, 2022)**

Flood Information Certificate



Property Address: 207-209 Wallarah Rd, KANWAL

Lot /DP: 1223/DP1004170

Date Prepared: 9 September 2022

Source of information: Porters Creek Floodplain Risk Management Study and Plan, 2012

This Flood Certificate provides advice furnished in good faith by the council relating to the likelihood of the land identified above being flooded and to the nature or extent of any such flooding ("flood risk").

Flood level and flood planning advice is provided in the tables below and as maps in the Appendix. This advice regarding flood risk has been derived from the flood study listed above. Should you have any enquiries concerning this certificate, please do not hesitate to contact Andrew Dewar on 1300 463 954 during the hours of 8.00am to 4.15pm Monday to Friday

Flood Level Information Table

Flood Event	Minimum Level (m AHD)	Maximum Level (m AHD)
PMF	31.87	33.18
1% AEP	31.64	32.98
5% AEP	31.59	32.95

Planning Information Table

Flood Control Lot	<input checked="" type="checkbox"/>
Minimum Habitable Floor Level	33.48m AHD
<i>Complying Development: Flood Exclusionary Categories</i>	
(a) Flood Storage Area	<input type="checkbox"/>
(b) Floodway Area	<input checked="" type="checkbox"/>
(c) Flow Path	<input type="checkbox"/>
(d) High Hazard Area (H3, H4, H5, H6 Hazard Categorisation)	<input type="checkbox"/>
(e) High Risk Area	<input type="checkbox"/>



Flood Information Certificate



Minimum Habitable Floor Level in the Planning Information Table above is also known as the Flood Planning Level. It is derived from the maximum 1% AEP Flood Level plus 0.5m freeboard and an allowance for sea level rise if applicable. For large lots the maximum 1% AEP flood level may vary across the lot; as such the Minimum Habitable Floor Level would vary at different locations on the lot, which may result in a lower Minimum Habitable Floor Level than the one quoted in the Planning Information Table. Note that Minimum Habitable Floor Levels are based on a flood size that has a 1% chance each year of either being reached or exceeded. Larger floods still have a small chance of occurring. For this reason, Council recommends that property owners consider the merits of choosing a floor level above the minimum floor level if practical to do so.

Flood Mapping related to this address is included in the Appendix. On the Environmental Layers you can choose to view 1% AEP (1 in 100y) flood extents, as well as Flood Precincts, which are referred to in the Development Control Plan.

<https://maps.centralcoast.nsw.gov.au/public/>

Development Controls set appropriate floor levels, construction materials, pedestrian and vehicular access, car parking and impacts on surrounding property for a proposed development; either complying development (fast tracked - see below) or a DA. Council's development controls vary depending on the location:

- Former Gosford: LEP 2014 Clauses 5.21 & 7.3, DCP 2013 Chapter 6.7
- Former Wyong: LEP 2013 Clauses 5.21 & 7.3, DCP 2013 Chapter 3.3

<https://www.centralcoast.nsw.gov.au/plan-and-build/planning-controls-and-guidelines>

Complying Development is a fast-track approval process for straightforward residential, commercial and industrial development (e.g. Granny Flats). From 1 July 2021, all Complying Development Certificate (CDC) applications must be lodged through the online NSW Planning Portal. If the application meets specific criteria it can be determined by a registered certifier. Under Clause 3A.38 of the Codes SEPP 2008 Development must not be carried out on any part of a *flood control lot* that is considered to be in one of the following exclusionary categories: (a) flood storage area, (b) floodway area, (c) flow path, (d) high hazard area, (e) high risk area. Complying Development may be allowable at this address if none of the five flood exclusionary categories in the Planning Information Table above are marked "Yes".

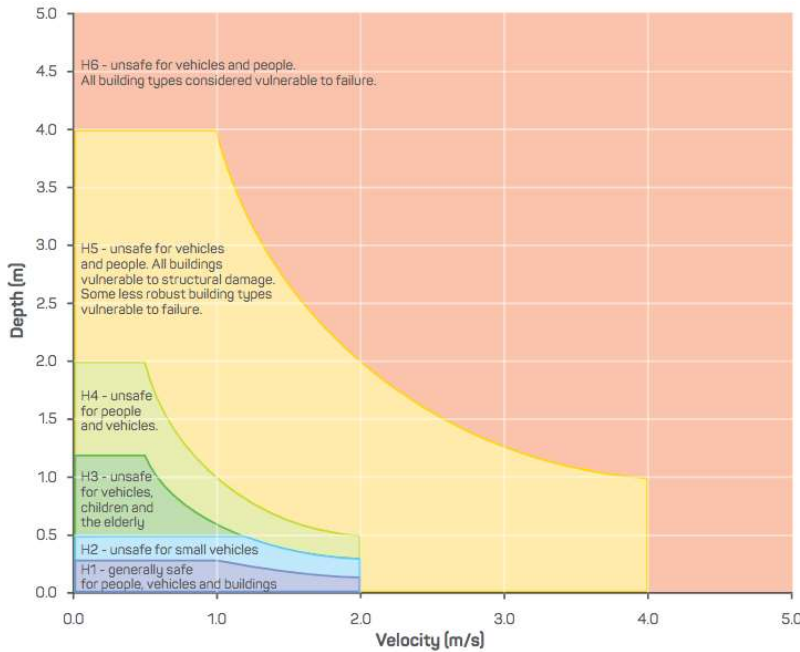
<https://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/Planning-Approval-Pathways/Complying-development>

Flood Hazard: Flooding has the potential to cause loss: loss of life, injury or economic loss. The degree of hazard varies with the severity of flooding and is affected by flood behaviour (extent, depth, velocity, isolation, rate of rise of floodwaters, duration), topography and emergency management.

Council classifies flood hazard using thresholds related to the stability of people as they walk or drive through flood waters, or shelter in a building during a flood. This method classifies hazard on a spectrum of H1 to H6 as described by the hazard vulnerability curves below. For further information refer to: Flood Hazard: Guideline 7.3, Australian Institute for Disaster Resilience 2017 <https://knowledge.aidr.org.au/media/3518/adr-guideline-7-3.pdf>



Flood Information Certificate



Source – Australian Institute for Disaster Resilience 2017. Hydraulic Hazard: refer also to Australian Rainfall and Runoff Section 7.2.7 General Flood Hazard Curves (Figure 6.7.9) <http://book.arr.org.au.s3-website-ap-southeast-2.amazonaws.com/>

Disclaimers

- This certificate is based on Council’s relevant flood study, which covers a large area and utilises *airborne laser scanning* ground level data. Flood depths as shown on the maps at specific locations may not accurately account for localised changes in ground topography; the accuracy of flood depth information at a specific location may be improved by taking the flood level and subtracting the accurate ground level at a particular location, which could be established by a Registered Surveyor.
- Without limiting s.733 of the *Local Government Act 1993*, Council expressly disclaims all and any liability and responsibility in respect of loss, damage or injury to person or property arising from anything done or omitted to be done by any person in reliance, whether wholly or in part, upon any part of this information. Any person having regard to the information contained in this document is encouraged to seek, at their discretion, all other sources of information on the subject matter as they consider appropriate, which may include local knowledge and/or professional advice.
- Council does not, and cannot, warrant that it will, in its capacity as a consent authority under the *Environmental Planning and Assessment Act 1979*, grant consent to a DA that seeks to erect or use dwellings or other structures on the above property that conform with the levels set out in the above information. Council assesses DAs based on merit, which must consider various development controls as set out in the LEP and DCP. For any development proposal on a *Flood Control Lot* Council recommends the applicant to engage the services of a professional engineer who specialises in Flood Risk Management.



Flood Information Certificate



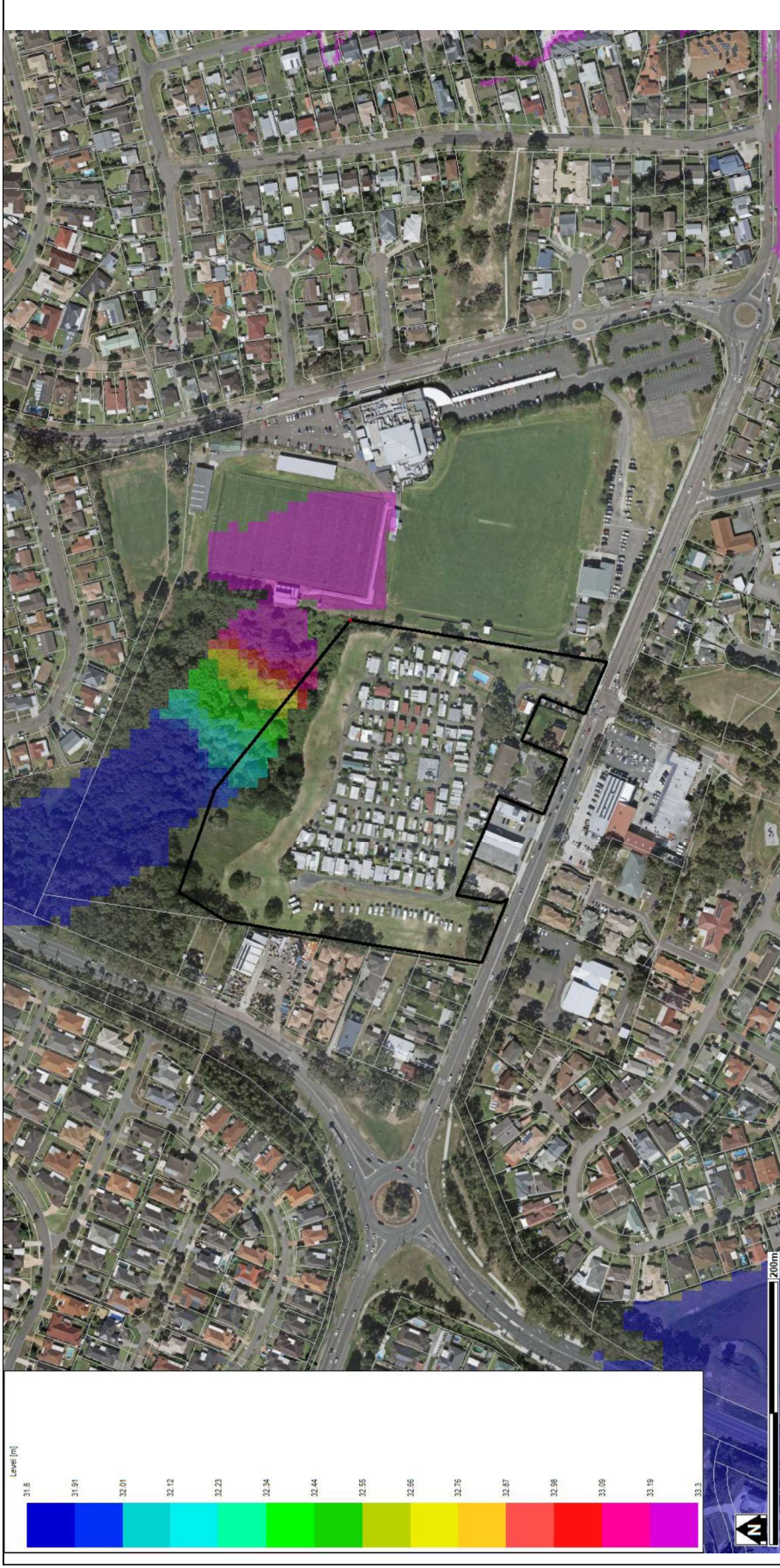
Glossary

AEP	<i>Annual Exceedance Probability</i> : The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage. For example, the 1% AEP flood has a 1% probability of occurring in any given year. This flood is sometimes referred to as 1 in 100, 100yr ARI or Q100
AHD	<i>Australian Height Datum</i> is the reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.
Airborne Laser Scanning	A ground level measurement system in which a laser is emitted from an instrument in an aircraft and directed to the ground in a scanning pattern
DA	Development Application
DCP	Development Control Plan
Flood Control Lot	A land parcel that is subject to flood related development controls
Flood Hazard	Flooding which has the potential to cause loss: loss of life, injury or economic loss. The degree of hazard varies with the severity of flooding and is affected by flood behaviour (extent, depth, velocity, isolation, rate of rise of floodwaters, duration), topography and emergency management.
Flood Storage Area	Areas that are important for the temporary storage of floodwaters during the passage of flood.
Floodway Area	Those areas where a significant volume of water flows during floods.
Flow Path	Those areas where a flow path is identified in the relevant flood study, generally associated with velocities greater than 1 metre per second in the 1% AEP flood.
Freeboard	A factor of safety used in relation to the setting of floor levels. The typical freeboard set by the NSW Government is 0.5m, unless Council can demonstrate a different freeboard can apply as defined in an adopted Floodplain Risk Management Plan.
Ground Levels	Highest and lowest ground levels on the property, predominately based on ground level information databases created by <i>Airborne Laser Scanning</i> . A Registered Surveyor can confirm exact ground levels.
High Hazard Area	Those areas where flooding has the potential to be unsafe or cause damage. Council considers those areas that are Hazard Category H3 or above in a 1% AEP flood to be high hazard. Refer to Section on Flood Hazard below.
High Risk Area	Those areas of high flood risk as identified in a flood study or Floodplain Risk Management Plan.
LEP	Local Environment Plan
PMF	The <i>Probable Maximum Flood</i> is an extreme flood deemed to be the largest flood that could conceivably occur at a specific location. It is generally not physically or economically possible to provide complete protection against this flood event but should be considered for emergency response. The PMF defines the extent of flood prone land (i.e. the floodplain).



Flood Information Certificate

PMF Flood Extents

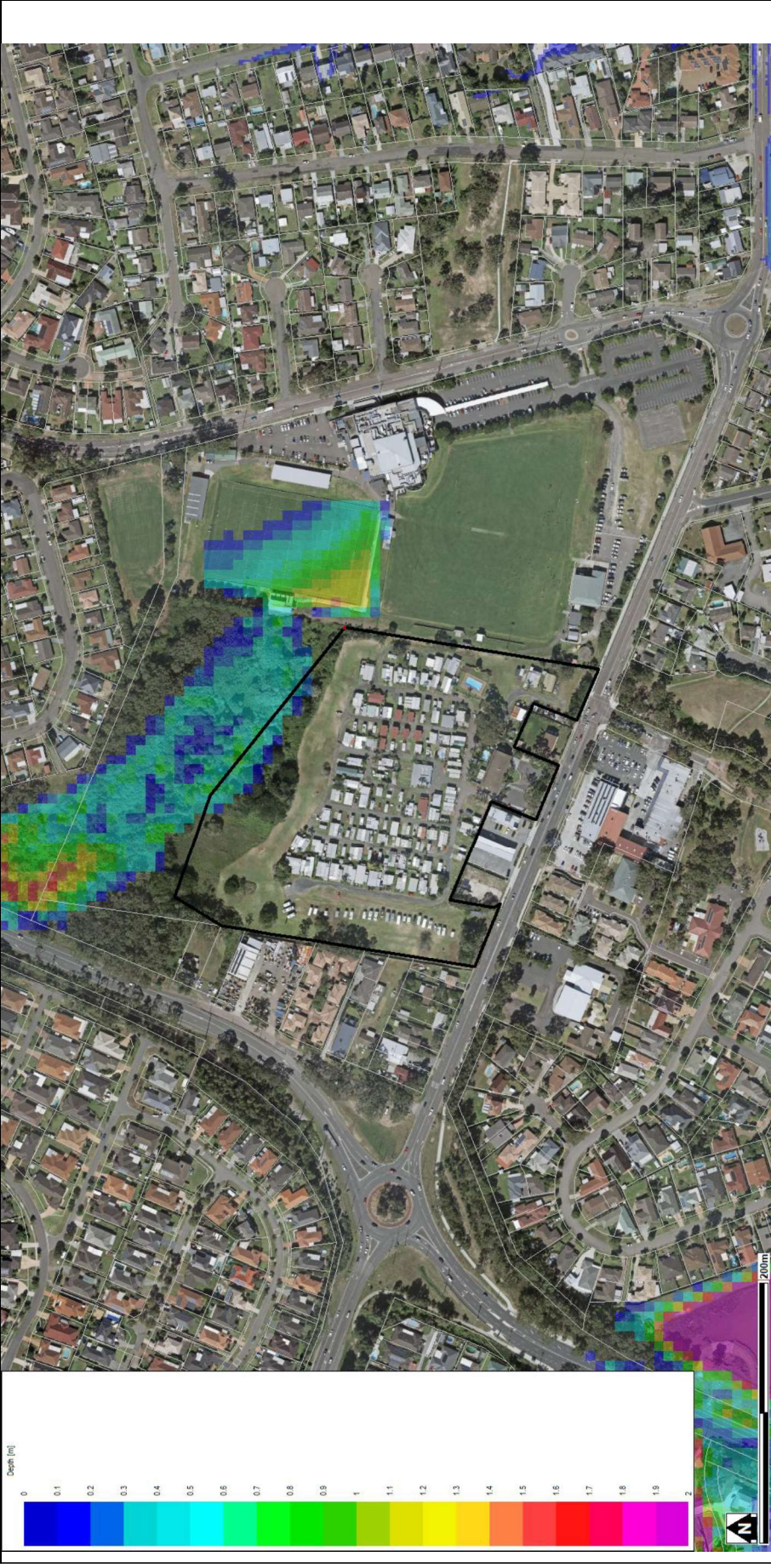


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Flood Information Certificate

PMF Flood Depth



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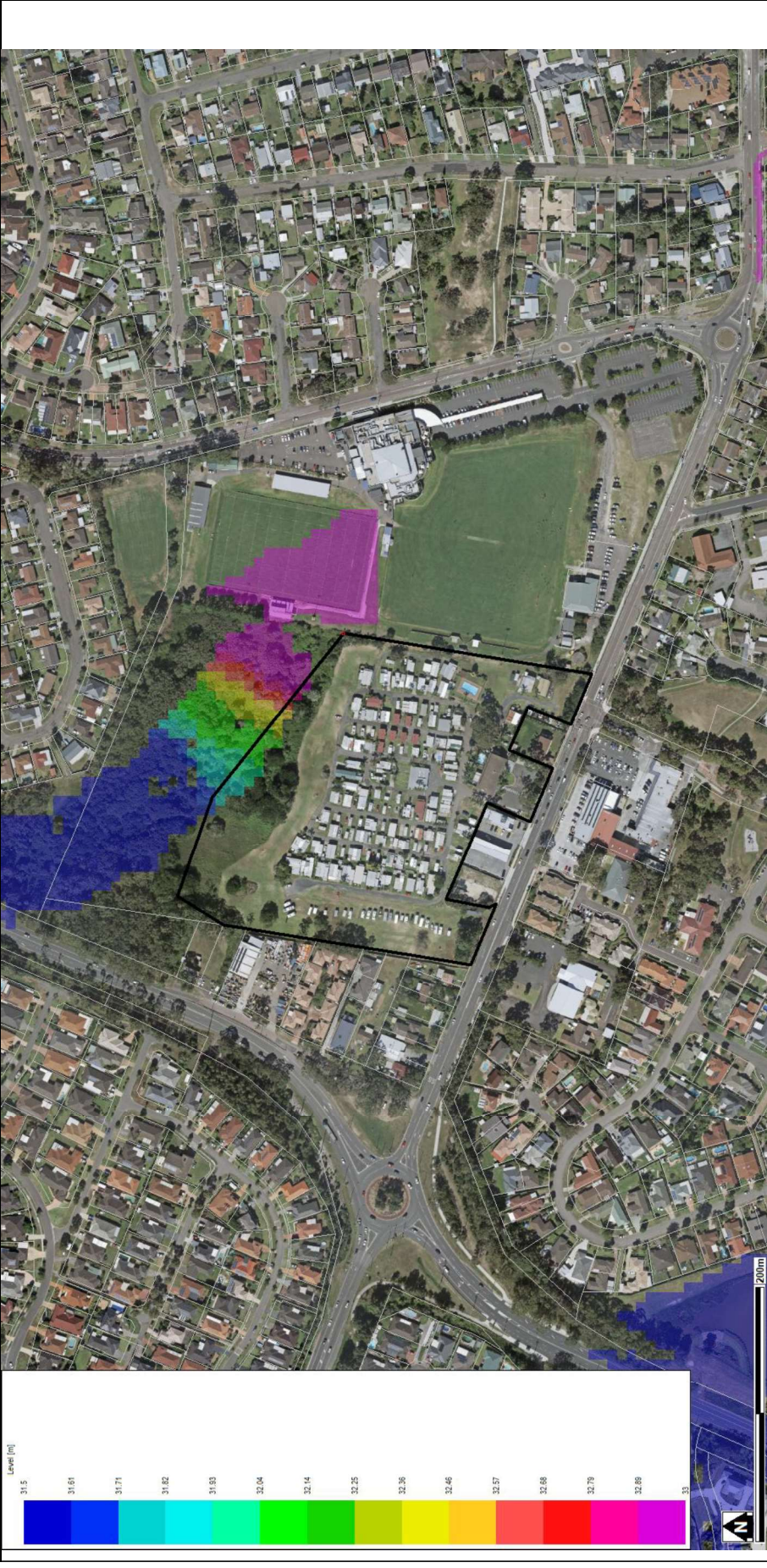
Central Coast Council

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Flood Information Certificate

1% AEP Flood Extents

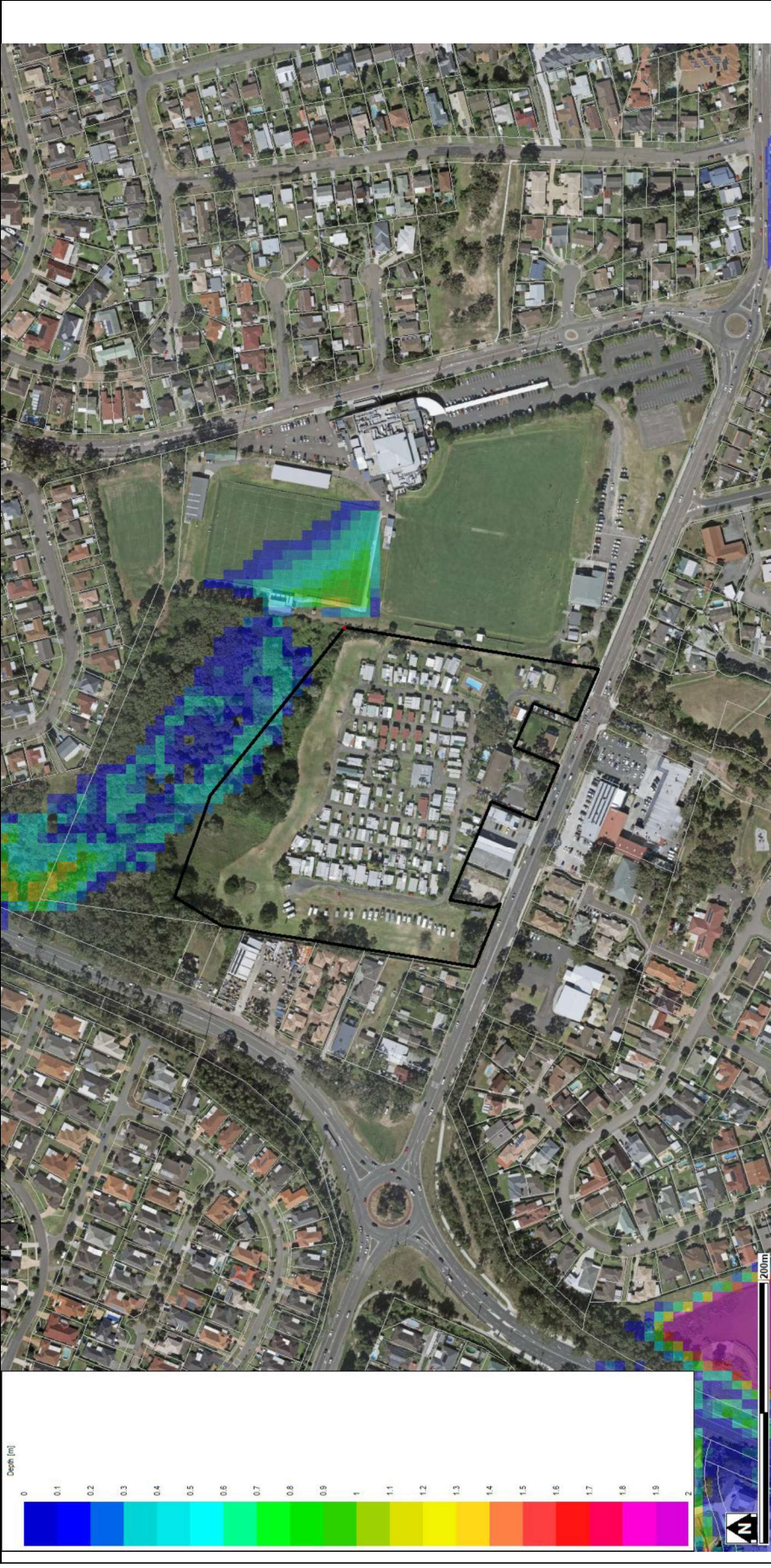


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Flood Information Certificate

1% AEP Flood Depth



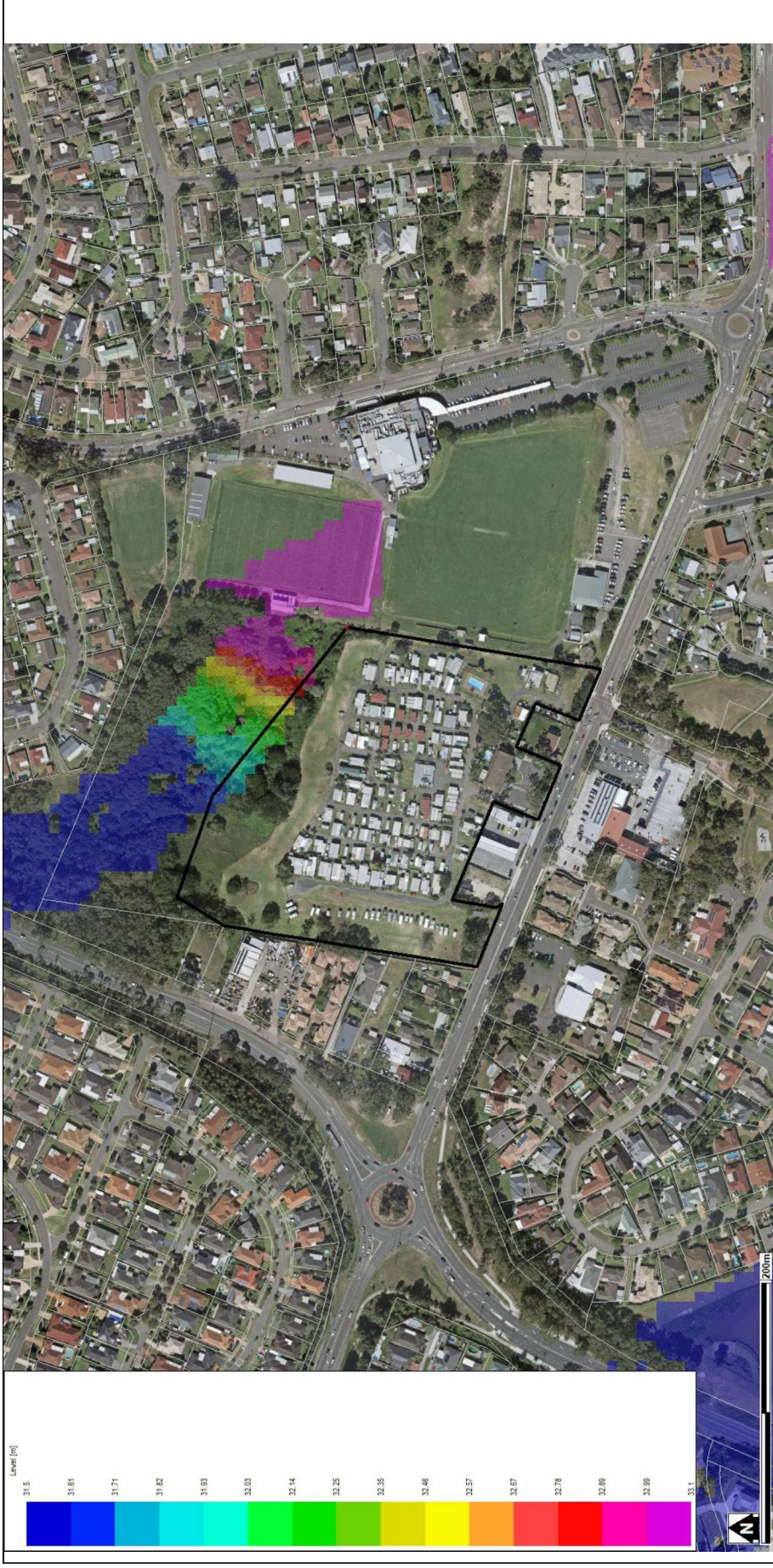
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Flood Information Certificate

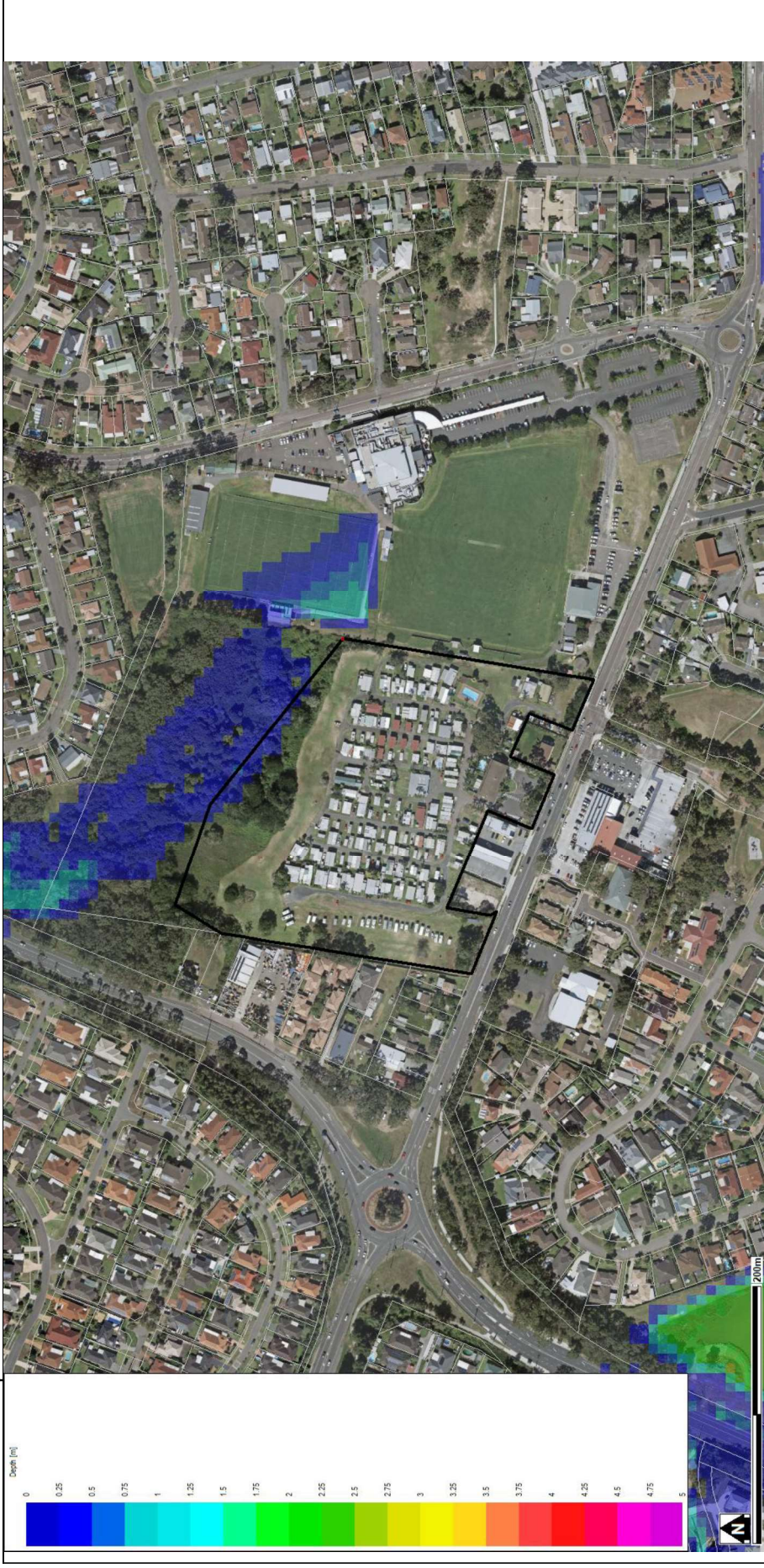
5% AEP Flood Extents



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Flood Information Certificate

5% AEP Flood Depths



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Flood Information Certificate



1% AEP Hazard Categorisation



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Flood Information Certificate



Hydraulic Categorisation



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Annex B Section 9.1(2) of the Environmental Planning and Assessment Act 1979 Focus Area 4.1

Focus area 4: Resilience and Hazards

4.1 Flooding

Objectives

The objectives of this direction are to:

- (a) ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and
- (b) ensure that the provisions of an LEP that apply to flood prone land are commensurate with flood behaviour and includes consideration of the potential flood impacts both on and off the subject land.

Application

This direction applies to all relevant planning authorities that are responsible for flood prone land when preparing a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land.

Direction 4.1

- (1) A planning proposal must include provisions that give effect to and are consistent with:
 - (a) the NSW Flood Prone Land Policy,
 - (b) the principles of the Floodplain Development Manual 2005,
 - (c) the Considering flooding in land use planning guideline 2021, and
 - (d) any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 and adopted by the relevant council.
- (2) A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Employment, Mixed Use, W4 Working Waterfront or Special Purpose Zones.
- (3) A planning proposal must not contain provisions that apply to the flood planning area which:
 - (a) permit development in floodway areas,
 - (b) permit development that will result in significant flood impacts to other properties,
 - (c) permit development for the purposes of residential accommodation in high hazard areas,
 - (d) permit a significant increase in the development and/or dwelling density of that land,
 - (e) permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,
 - (f) permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent,
 - (g) are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or
 - (h) permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event.

- (4) A planning proposal must not contain provisions that apply to areas between the flood planning area and probable maximum flood to which Special Flood Considerations apply which:
- (a) permit development in floodway areas,
 - (b) permit development that will result in significant flood impacts to other properties,
 - (c) permit a significant increase in the dwelling density of that land,
 - (d) permit the development of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate,
 - (e) are likely to affect the safe occupation of and efficient evacuation of the lot, or
 - (f) are likely to result in a significantly increased requirement for government spending on emergency management services, and flood mitigation and emergency response measures, which can include but not limited to road infrastructure, flood mitigation infrastructure and utilities.
- (5) For the purposes of preparing a planning proposal, the flood planning area must be consistent with the principles of the Floodplain Development Manual 2005 or as otherwise determined by a Floodplain Risk Management Study or Plan adopted by the relevant council.

Consistency

A planning proposal may be inconsistent with this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that:

- (a) the planning proposal is in accordance with a floodplain risk management study or plan adopted by the relevant council in accordance with the principles and guidelines of the *Floodplain Development Manual 2005*, or
- (b) where there is no council adopted floodplain risk management study or plan, the planning proposal is consistent with the flood study adopted by the council prepared in accordance with the principles of the *Floodplain Development Manual 2005* or
- (c) the planning proposal is supported by a flood and risk impact assessment accepted by the relevant planning authority and is prepared in accordance with the principles of *the Floodplain Development Manual 2005* and consistent with the relevant planning authorities' requirements, or
- (d) the provisions of the planning proposal that are inconsistent are of minor significance as determined by the relevant planning authority.

Note: In this direction:

- (a) "flood prone land" "flood storage" "floodway" and "high hazard" have the same meaning as in the Floodplain Development Manual 2005.
- (b) "flood planning level" "flood behaviour" and "flood planning area" has the same meaning as in the Considering flooding in land use planning guideline 2021.
- (c) Special flood considerations are outlined in the Considering flooding in land use planning guideline 2021 and an optional clause in the *Standard Instrument (Local Environmental Plans) Order 2006*.
- (d) Under the floodplain risk management process outlined in the NSW Government's Floodplain Development Manual 2005, councils may produce a flood study followed by a floodplain risk management study and floodplain risk management plan.

Date commenced: 20 February 2023