(Future) Public Exhibition Dates
(Start) to (Finish)

PLANNING PROPOSAL

AMENDMENT TO THE PORT MACQUARIE-HASTINGS LEP 2011

LINCOLN ROAD, CASTLE COURT & MARIAN DRIVE, PORT MACQUARIE -

PROPOSED REZONING FOR INFILL RESIDENTIAL AND ENVIRONMENTAL PURPOSES

Version 1.0
14/9/2016

Planning Proposal status (for this copy)

Stage	Version Date (blank until achieved)
Reported to Council - section 55	20 July 2016
Referred to Dept of Planning - sec 56(1)	15 Sep 2016
Gateway Panel determination - sec 56(2)	
Revisions required: Yes / No. Completed	
Public Exhibition - sec 57	
For Council review - sec 58(1)	
Adopted by Council for final submission to Dept of Planning - sec 58(2)	

Council reference: PP2014-8.1

(*Amendment No will initially be blank*) Port Macquarie-Hastings LEP 2011 (Amendment No *)

Department of Planning & Environment reference: *

Council Address	Contact Officer
Port Macquarie-Hastings Council PO Box 84 PORT MACQUARIE NSW 2444	Sandra Bush Senior Strategic Planner Email sandra.bush@pmhc.nsw.gov.au Phone 02 6581 8025

Adoption of the Planning Proposal

1. For initial Gateway determination

This Planning Proposal was endorsed on 14 September 2016 by the undersigned Council delegate of Port Macquarie-Hastings Council:

Signed .....

Name Peter Cameron .....

Position Group Manager Strategic Land Use Planning .....

2. For section 58/59 finalisation

This Planning Proposal was endorsed on …… by Port Macquarie-Hastings Council, or the undersigned Council delegate (delete one):

Signed .....

Name .....

Position .....

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BACKGROUND

This planning proposal has been prepared in accordance with section 55 of the *Environmental Planning and Assessment Act 1979* and the Department of Planning and Environment's *A Guide to Preparing Planning Proposal 2012* and *A Guide to Preparing LEPs 2013*. The planning proposal explains the intended effects of a proposed rezoning of land fronting Lincoln Road, Castle Court and Marian Drive, Port Macquarie for infill residential and environmental conservation purposes.

The site is located approximately 5 kilometres west of the Port Macquarie town centre and comprises Lot 1 DP 1066820 and Lot 34 DP 856163 with frontage to Lincoln Road, Castle Court and Marian Drive. Land adjacent to the southern fringe of the site is characterised by low and medium density residential housing and retirement villages.

Lot 1 (32.38ha) is privately owned and currently zoned partly RU1 Primary Production and partly E2 Environmental Conservation. It is occupied by a single dwelling with access off Lincoln Road. The remainder of Lot 1 comprises wetland, endangered ecological communities and formerly cleared grazing land.

Lot 34 (6,700sqm) is owned by Council and currently zoned RU1 Primary Production. The property is used for stormwater detention associated with existing residential development in the locality.

Figure 1 - the site

It is proposed to rezone three small relatively cleared areas (approx 1.9 ha in total) on the southern fringe of the site to permit future infill residential development generally consistent with concept subdivision plans submitted by the proponent, GEM planning consultants, on behalf of the owner of Lot 1. A copy of the concept plans are at **Annexure 'A'**.

The proponent's concept plans indicate potential for nine additional lots, including a new lot for the existing dwelling, part of which is also proposed to retain an existing area of Zone E2 Environmental

Conservation lands to be managed in private ownership. The concepts also indicate potential for buffers to the environmental residue.

As part of the concept, it is proposed to use a small area of Lot 34, not required for stormwater detention, as Asset Protection Zone to a future residential lot off Castle Court, recognising that the majority of Lot 1 is to be dedicated to Council for environmental management.

As part of the proposal, the proponent has offered to enter into a planning agreement with Council to dedicate the residue of Lot 1 (approx 30ha) as public reserve to be rehabilitated and maintained for environmental conservation purposes. In addition, the proponent has offered to dedicate a drainage channel on the south-eastern boundary of Lot 1 in exchange for part of Council's land (Lot 34) for inclusion in the proposed Castle Court infill footprint, as noted above.

It is intended that Council introduce new zone, lot size, building height and floor space provisions to enable future subdivision of the land as proposed. Figure 2 shows the proposed infill footprints in more detail and Photos 1 to 3 show the street frontages of these areas.

Figure 2 - Proposed infill areas

Photo 1 - Marian Drive frontage

Photo 2 - Castle Court frontage

Photo 3 - Lincoln Road frontage with existing dwelling on the left

This section of the planning proposal will be updated prior to public exhibition.

PART 1 - OBJECTIVES OR INTENDED OUTCOMES

This planning proposal seeks to amend the *Port Macquarie Hastings Local Environmental Plan 2011* by rezoning three proposed infill areas on the southern fringe of Lot 1 DP 1066820 and part of Lot 34 DP 856163, Lincoln Road, Castle Court and Marian Drive, Port Macquarie, to permit future residential infill development and buffers to adjoining environmental lands.

Approximately 3,250sqm of existing zoned Environmental Conservation lands within Lot 1 will be retained and managed in private ownership, as part of a future lot containing the existing dwelling.

Existing zoned Rural land on the residue of Lot 1 will be rationalised and the environmental residue (approx 30 ha), including existing and proposed stormwater drainage systems associated with development in the locality, will be dedicated to Council as public reserve for permanent conservation.

PART 2 - EXPLANATION OF PROVISIONS

The site is currently zoned partly RU1 Primary Production and partly E2 Environmental Conservation with a minimum subdivision lot size of 40 ha.

To achieve the intended land use outcomes, the planning proposal seeks to amend the *Port Macquarie-Hastings Local Environmental Plan 2011* by changing the zoning and minimum lot size controls that relate to the site and by applying height of buildings and floor space ratio controls to the proposed residential zoned areas, by:

- Amending the Land Zoning Map **from** partly RU1 Primary Production and partly E2 Environmental Conservation **to** partly R1 General Residential, partly E3 Environmental Management and partly E2 Environmental Conservation.
- Amending the Lot Size Map to permit minimum lot sizes of 450 sqm, 1000sqm and 5000sqm for the proposed infill footprints.
- Amending the Height of Buildings Map to allow a maximum height of 8.5 metres for future development on that part of the site proposed to be zoned R1 General Residential.
- Amending the Floor Space Ratio Map to allow a maximum floor space ratio of 0.65:1 for future development on that part of the site proposed to be zoned R1 General Residential.

The proposed Map amendments are illustrated in Part 4 of this planning proposal (pp 13-16).

PART 3 – JUSTIFICATION

In accordance with the Department of Planning and Environment's *Guide to Preparing Planning Proposals*, this section provides a response to the following issues:

- Section A: Need for the planning proposal
- Section B: Relationship to strategic planning framework
- Section C: Environmental, social and economic impact, and
- Section D: State and Commonwealth interests.

Section A - Need for the planning proposal

1. Is the planning proposal a result of any strategic study or report?

The site was considered and prioritised with other site specific proposals in a report to Council dated 20 August 2014. The proposal is considered to be consistent with the *Port Macquarie-Hastings Urban Growth Management Strategy 2011-2031* as an infill residential proposal representing minor amendments to the R1 General Residential zone in this location. Dedication of the residue environmental lands to Council as part of the proposal represents a significant public benefit.

2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Under the *Port Macquarie-Hastings Local Environmental Plan* 2011 (LEP), the site is currently zoned partly RU1 Primary Production and partly E2 Environmental Conservation with a minimum lot size of 40 hectares. The planning proposal is the only legal method of amending the LEP to enable development applications to be submitted, assessed and determined for infill development on the fringe of the site. Also, the proposal is considered to be the most appropriate means of ensuring adequate protection, rehabilitation and permanent conservation of the residue environmental lands.

Section B - Relationship to strategic planning framework

3. Is the planning proposal consistent with the objectives and actions of the Mid North Coast Regional Strategy 2006-31?

The site is not identified for future urban development on the Port Macquarie-Hastings Growth Areas Map in the *Mid North Coast Regional Strategy 2006-2031.* Notwithstanding this, justification is provided on the basis that the proposal is for infill residential and represents a minor amendment to the Residential zone in this location.

The Regional Strategy also identifies the need to conserve the natural environment and to extend areas of high biodiversity value. The proposal is consistent with these objectives by restricting the proposed residential zoning to predominantly cleared areas on the fringe of the site and by retaining significant vegetation in an E2 Environmental Conservation zone.

4. Is the planning proposal consistent with Council's Community Strategic Plan and Urban Growth Management Strategy 2010 – 2031?

The proposal is consistent with Council's *Community Strategic Plan Towards 2030*. Infill residential proposals are able to be considered by Council in accordance with the *Port Macquarie-Hastings Urban Growth Management Strategy*, which was endorsed by the NSW Department of Planning and Environment in May 2011.

5. Is the planning proposal consistent with applicable State Environmental Planning Policies?

An assessment of consistency with State Environmental Planning Policies (SEPPs) considered relevant to the proposal is at **Annexure 'B'**.

6. Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

An assessment of consistency with Ministerial Directions considered relevant to the proposal is at **Annexure 'C'**.

Section C - Environmental, social and economic impact

7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

Flora and Fauna

Council's mapping indicates that the site contains three endangered ecological communities (EECs) comprising *Broad-leaved Paperbark Swamp Woodland Forest*, *Twig-rush Coastal Lagoon Sedgeland* and *Swamp Oak Coastal Floodplain Wetland Forest*. The majority of EECs are located within the residue of Lot 1 which is proposed to be dedicated to Council for ongoing environmental conservation. The dedication of the residue and rezoning of part of this area from RU1 Rural to E2 Environmental Conservation is a significant public benefit of the planning proposal.

An environmental assessment report, prepared on behalf of the proponent by Naturecall Environmental (refer to **Annexure 'D'**), includes an assessment of EECs where impacted by the proposed infill footprints. The report notes that the EECs occur in a highly degraded form within the proposed Marian Drive and Castle Court footprints and a small patch of trees in the northwest of the proposed Lincoln Road footprint. The report concludes that the loss of the disturbed margins of EEC for future infill development is insignificant.

An intact EEC at the rear of the proposed Lincoln Road footprint is proposed to be retained in an E2 Environmental Protection zone and managed in private ownership in accordance with a Vegetation Management Plan to be approved by Council at the future subdivision stage. As part of the planning agreement, no fencing will be permitted in this area of the proposed new lot.

Also, as part of the planning agreement, the landowner has offered to undertake vegetation enhancement works along the interface of the proposed urban fringe, in accordance with a Vegetation Management Plan to be approved by Council. Given the substantial environmental offset proposed, Council staff have accepted that the buffer along the edge of the existing EEC will incorporate management for bushfire asset protection. This is a variation from Council's policy of requiring revegetation within the buffer. However, in this case there is a substantial net environmental gain.

The Naturecall Environmental assessment report indicates that the proposed infill areas contain little or no habitat value to threatened species. The Koala was found to be the species with the strongest association with the site due to eight food trees (Forest Red Gum & Swamp Mahogany) within the proposed Marian Drive and Lincoln Road infill footprints. However, the assessment report concluded that the proposed infill sites do not contain major Koala activity, nor qualify as Potential Koala Habitat.

It is proposed to consult with the NSW Office of Environment and Heritage in relation to the flora and fauna aspects of the proposal prior to public exhibition.

State Environmental Planning Policy (SEPP) No 14 - Coastal Wetlands

SEPP 14 was gazetted on 12 December 1985, with the aim of ensuring that coastal wetlands are preserved and protected in the environmental and economic interests of the State. The Policy applies to developments that have the potential to damage or destroy wetlands.

Lot 1 contains a large area of mapped SEPP 14 wetland (No 507), the majority of which forms part of the environmental lands proposed to be dedicated to Council for permanent conservation. A small area of the mapped SEPP 14 wetland encroaches into the northern part of the proposed Castle Court infill footprint.

The proponent's Ecological assessment report (at **Annexure 'D'**) considered the extent of the mapped SEPP 14 boundary on a 1981 aerial photo (i.e. prior to adoption of the SEPP) and noted that the Castle Court infill proposal will affect only a minute portion on the degraded outermost fringe of the SEPP 14 wetland, subject to interpretation of the boundary line, which can be varied from 25-50 metres due to limitations of the mapping.

The assessment concluded that as the Castle Court infill footprint will only remove a very small fraction of the SEPP 14's biodiversity and not significantly alter the hydrological regime; this impact is considered to be insignificant relative to the objectives of the SEPP. It was also noted that the proposed edge treatments, closure of 4WD tracks and dedication of the residue environmental lands to Council will contribute to greater protection to the SEPP 14 area overall.

Consultation in relation to this aspect of the proposal will occur with the NSW Office of Environmental prior to public exhibition.

8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Bushfire hazard

A Bushfire Hazard Assessment report (Oct 2015), prepared on behalf of the proponent by Midcoast Building and Environmental (refer to **Annexure 'E'**), indicates that the proposed infill building envelopes can achieve a 21m wide Asset Protection Zone to protect future development from bushfire hazard.

Consultation will occur with the NSW Rural Fire Service on this aspect of the proposal prior to public exhibition.

Flooding hazard

Council's *Hastings River Flood Study* (2006) indicates that the proposed residential infill areas are located predominantly in Flood Fringe areas with a Low to Medium Hazard category. The proponent has submitted the following information, to the satisfaction of Council staff, to demonstrate that filling the proposed residential building envelopes approximately 900 mm above the 1 in 100 year flood level

(i.e. a minimum floor level of 4.1m AHD), will have minimal impact on the flooding characteristics in the locality:

- *Marian Drive - concept Lots 6 to 9*

Concept Lots 6 and 7 are proposed in the vicinity of an undedicated temporary stormwater basin, remaining from the original subdivision works for Marian Drive. Pre-lodgement consultation with Council's Stormwater Engineer revealed that the basin is not considered necessary for Council purposes and is considered a maintenance issue. Council has indicated that alternative water quality control solution taking the existing drainage through to the rear of the proposed Marian Drive infill footprint.

In light of this advice, the concept proposal is to fill the dam under geotechnical supervision and install an alternative system in accordance with the Stormwater Concept plan at **Annexure 'A'** (sheet 5).

Survey indicates concept Lot 7 ranges from RL 3.25m AHD to RL 2.5m AHD, and RL 2.0m AHD in the proposed Asset Protection Zone area. Concept Lots 8 and 9 range from RL 3.0m AHD to RL 2.0m AHD at the rear.

Flood free building site levels for this area of the site can be achieved with fill of approximately 1.1m at the front of the building envelopes and approximately 2m at the rear of the building envelopes to achieve a minimum floor level of 4.1m AHD.

- *Castle Court - concept Lot 5*

The existing overland flow path for stormwater off the end of Castle Court currently discharges over this section of private property and would be redirected to Council's adjoining drainage reserve (residue of Lot 34) as part of designing the fill profile for the site.

Survey indicates that the existing Castle Court cul-de-sac sits at RL 3.0m AHD. Natural Surface Levels in the building envelope area range from RL 3.5m AHD in the southeast front corner of concept Lot 5 to RL 2.5m AHD at the rear of the envelope.

Flood free building site levels for this area can be achieved with fill of approximately 0.6m at the front of the lot and up to 1.6 m at the rear of the building envelope. Proposed Asset Protection Zone areas can be maintained in their current condition and do not require filling.

- *Lincoln Road - concept Lots 1 to 4*

Surveyed site levels are:
- RL 4.3m AHD in the south east corner of concept Lot 1
- RL 4.0 m AHD in the centre of the proposed building envelope for concept Lot 2
- RL 3.75m AHD and above, within the proposed building envelope for concept Lot 3, and
- RL 3.75m AHD within the existing house block, concept Lot 4.

The Asset Protection Zone areas at the rear of this part of the site occupy lower ground to approximately RL 3.0m AHD at the rear boundary and will not need any filling.

Flood free building site levels for this area can be achieved with minor filling at the front of the land.

<u>Stormwater management</u>

Based on a review of the proponent's submitted information by Council staff, it is considered that the proposal will resolve existing stormwater management issues associated with development in the locality.

In this regard, the offer to enter into a planning agreement will facilitate rectification of temporary water treatment basins located on Lot 1 into Council ownership. These basins receive significant upstream flows as a result of the original Marian Drive subdivision but are currently not covered by an easement for drainage.

Future development of the land will involve filling these basins and stormwater redirected via an easement and right of carriageway to a swale to be constructed on the residue of Lot 1 to be dedicated to Council. The proponent's concept plans (sheet 5) include detail in relation to the proposed swale.

At the subdivision stage, modifications will also be required to the existing drainage reserve off Castle Court to ensure satisfactory access to the perimeter of the basin is able to be maintained prior to amending the boundary to include part of Council's land in the proposed infill footprint. In addition, modifications will be required to the swale of the easternmost drainage channel, prior to dedication to Council.

9. How has the planning proposal adequately addressed any social and economic effects?

The proponent has undertaken a search of the Aboriginal Heritage Information Management System and did not identify any recorded/declared Aboriginal sites or places on or within 200m of the site. A copy of the search is at **Annexure 'F'**. It is intended that consultation occur with the NSW Office of Environment and Heritage, Birpai Aboriginal Land Council and the NSW Aboriginal Land Council, on this aspect of the proposal prior to public exhibition.

Given that the proposal will enable only a small area of residential infill development consistent with adjacent residential development, any other social and economic impacts are expected to be negligible.

Section D - State and Commonwealth interests

10. Is there adequate public infrastructure for the planning proposal?

Direct vehicular access is available to the proposed infill residential areas via Lincoln Road, Castle Court and Marian Drive, respectively.

Sewer and water services are available and considered satisfactory to service future infill residential development as proposed.

Electricity and telecommunications infrastructure are available in the locality and considered to be satisfactory for future development. Consultation will occur with Essential Energy and Telstra regarding this aspect of the proposal prior to public exhibition.

11. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

Should the proposal be supported, the Department of Planning and Environment's Gateway Determination will specify consultation requirements. Prior to public exhibition, it is anticipated that consultation will occur with the following authorities:

- NSW Office of Environment and Heritage - biodiversity, Aboriginal heritage, flooding hazard
- NSW Rural Fire Service - bushfire hazard
- Birpai Aboriginal Land Council - Aboriginal heritage
- NSW Aboriginal Land Council - Aboriginal heritage
- NSW Police Firearms Registry - adjoining rifle range land use
- Department of Lands - adjoining Crown land
- Telstra - telecommunications
- Essential Energy - electricity

This section of the planning proposal will be updated prior to public exhibition.

PART 4 – MAPPING

Proposed map amendments to the *Port Macquarie-Hastings Local Environmental Plan 2011*, as outlined in Part 2 of this planning proposal, are illustrated below. The subject site is shown in red outline.

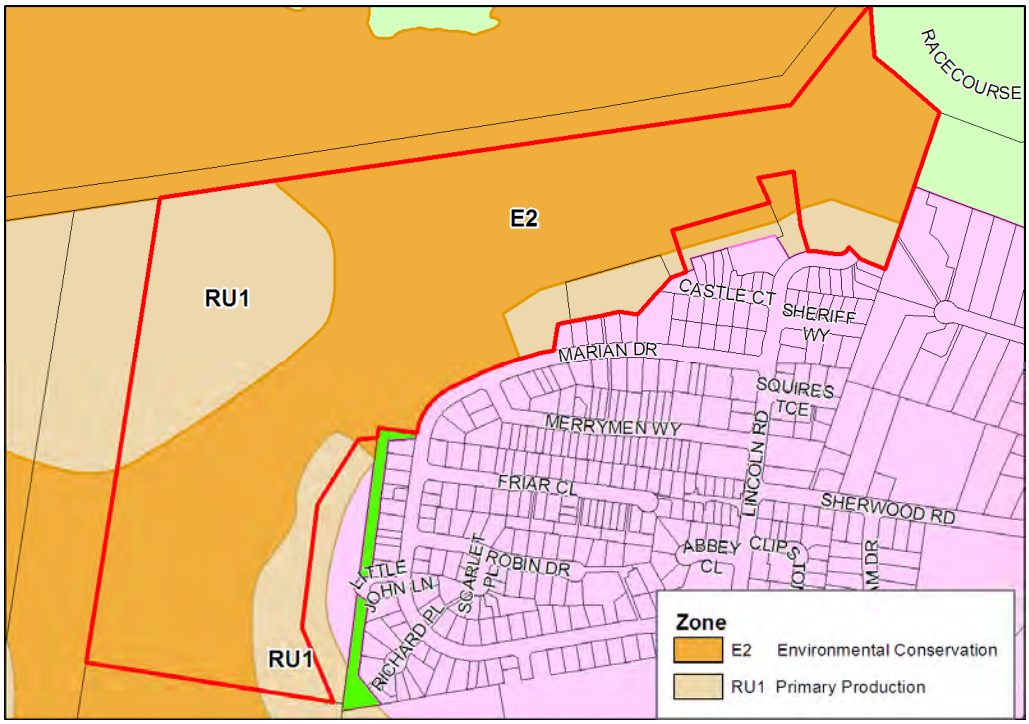

Figure 3 - existing Land Zone

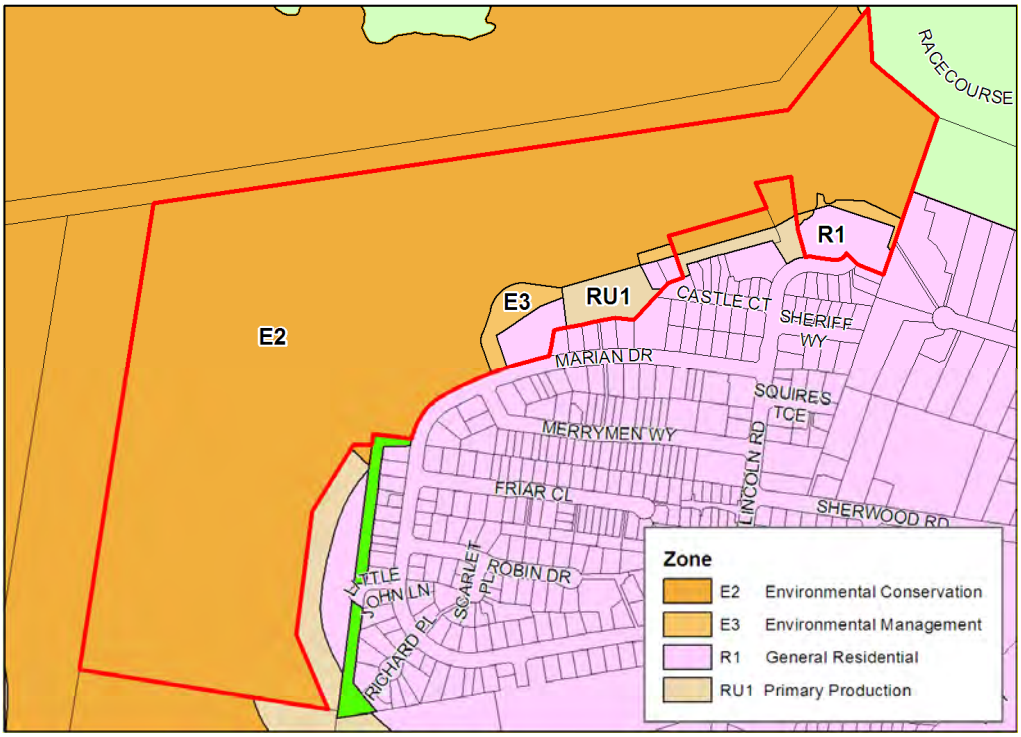

Figure 4 - proposed Land Zone

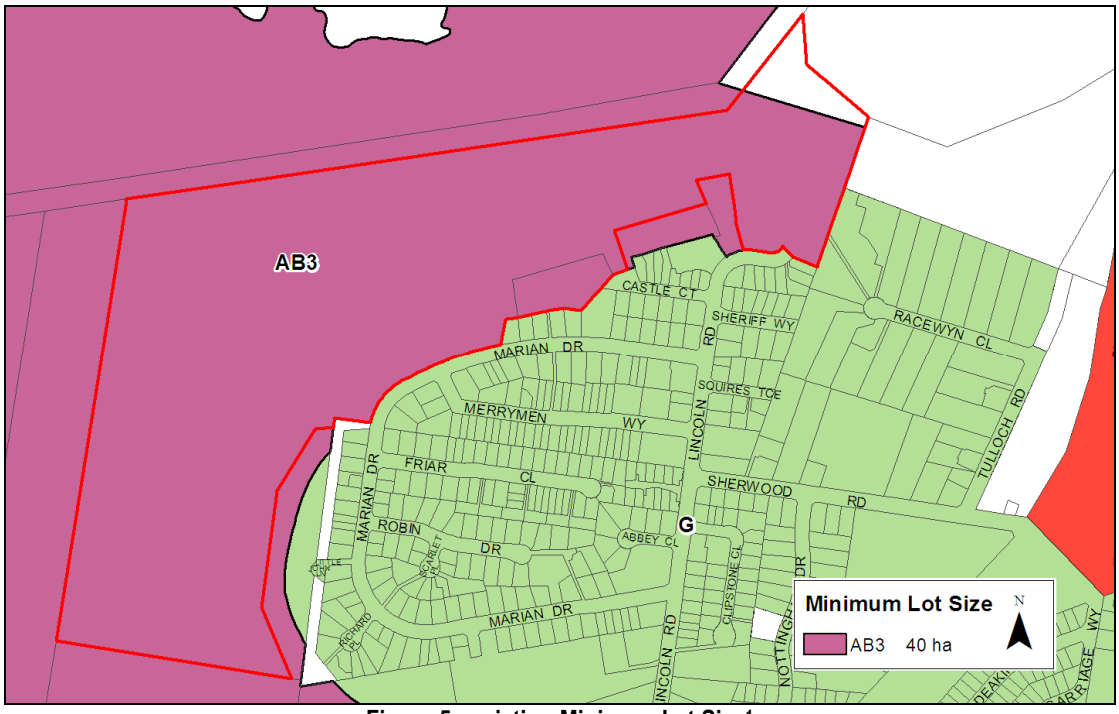

Figure 5 - existing Minimum Lot Size[1]

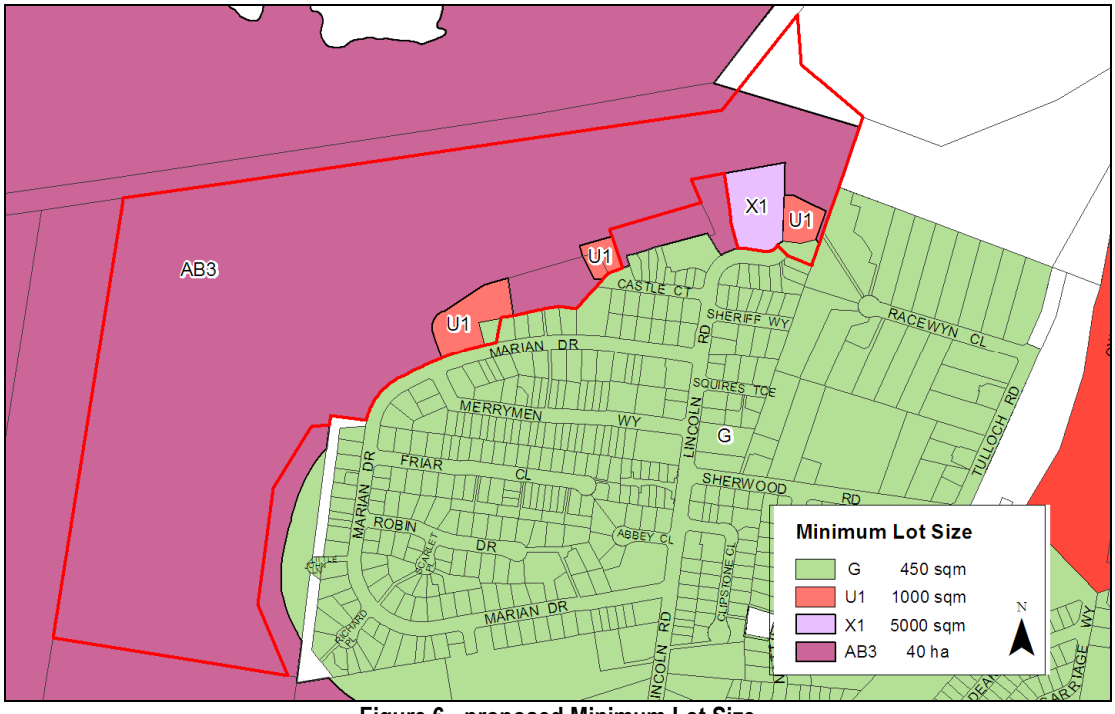

Figure 6 - proposed Minimum Lot Size

[1] No shading means no minimum lot size controls apply.

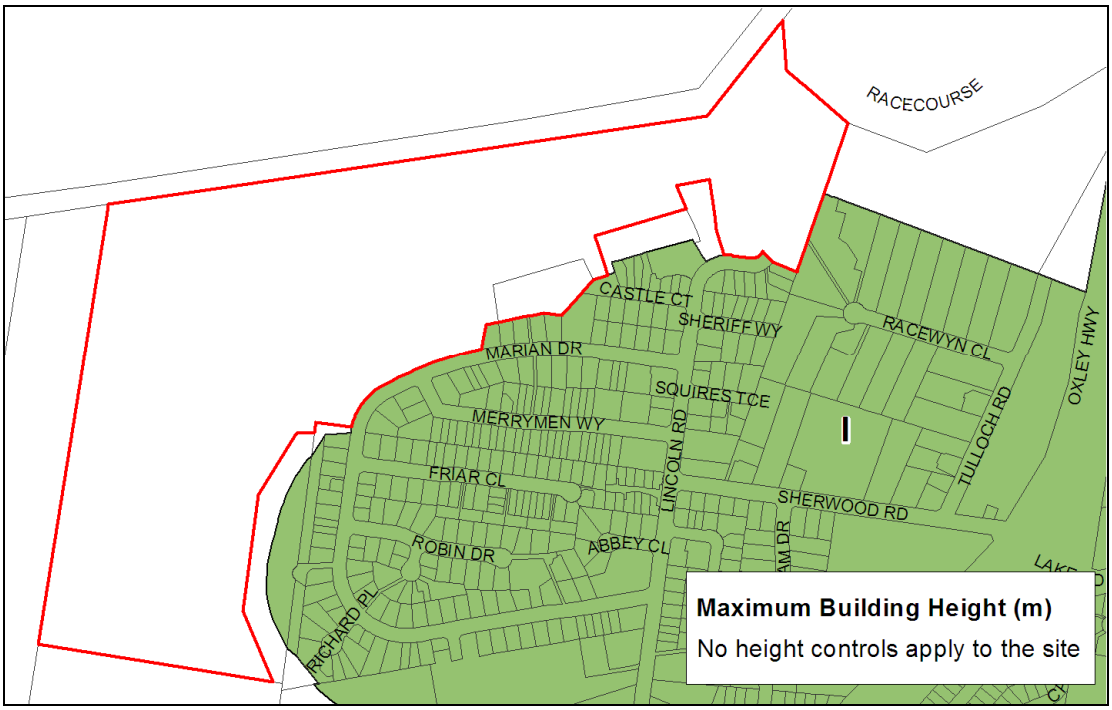

Figure 7 - existing Maximum Height of Buildings

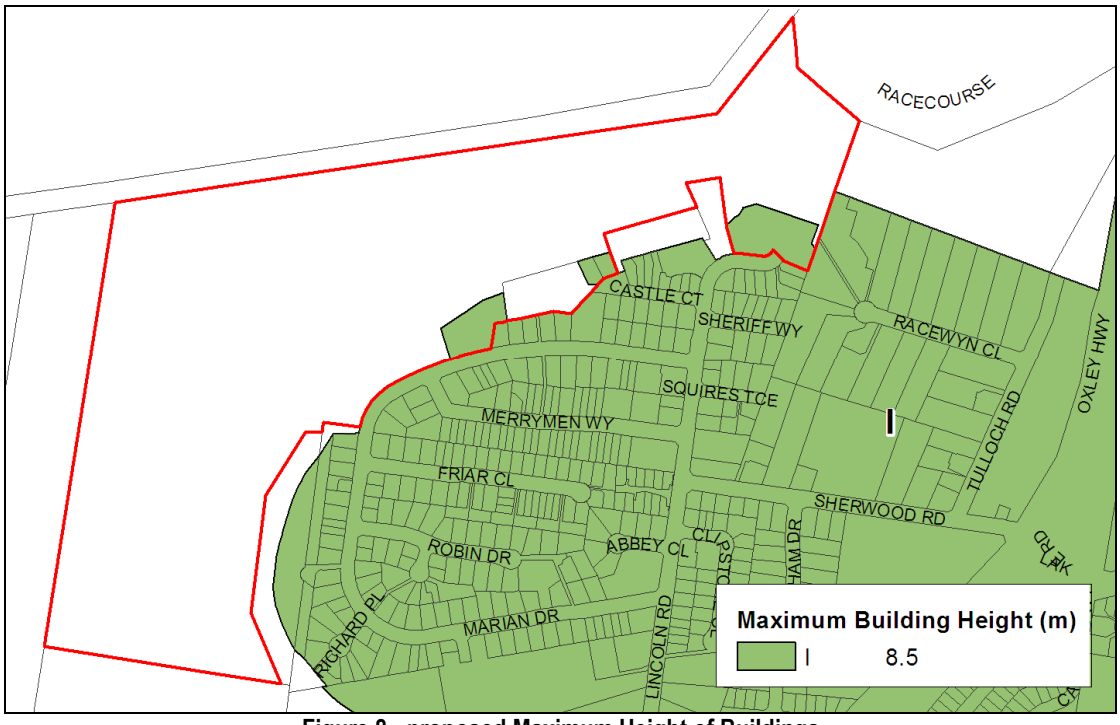

Figure 8 - proposed Maximum Height of Buildings

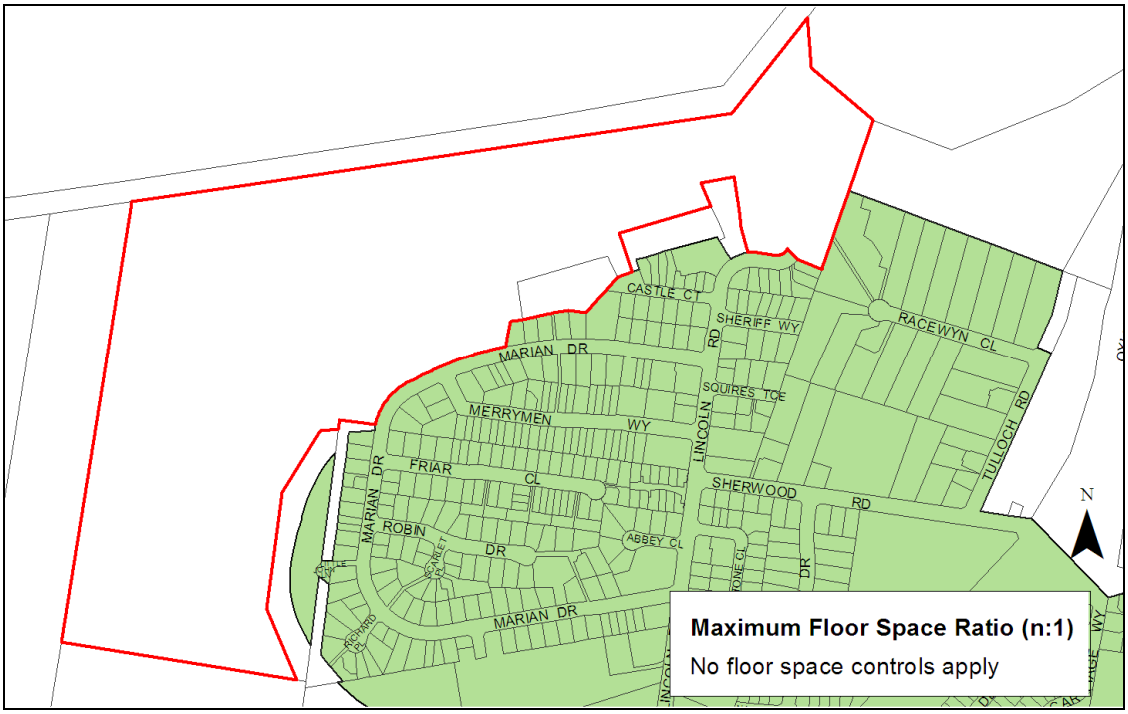

Figure 9 - existing Maximum Floor Space Ratio

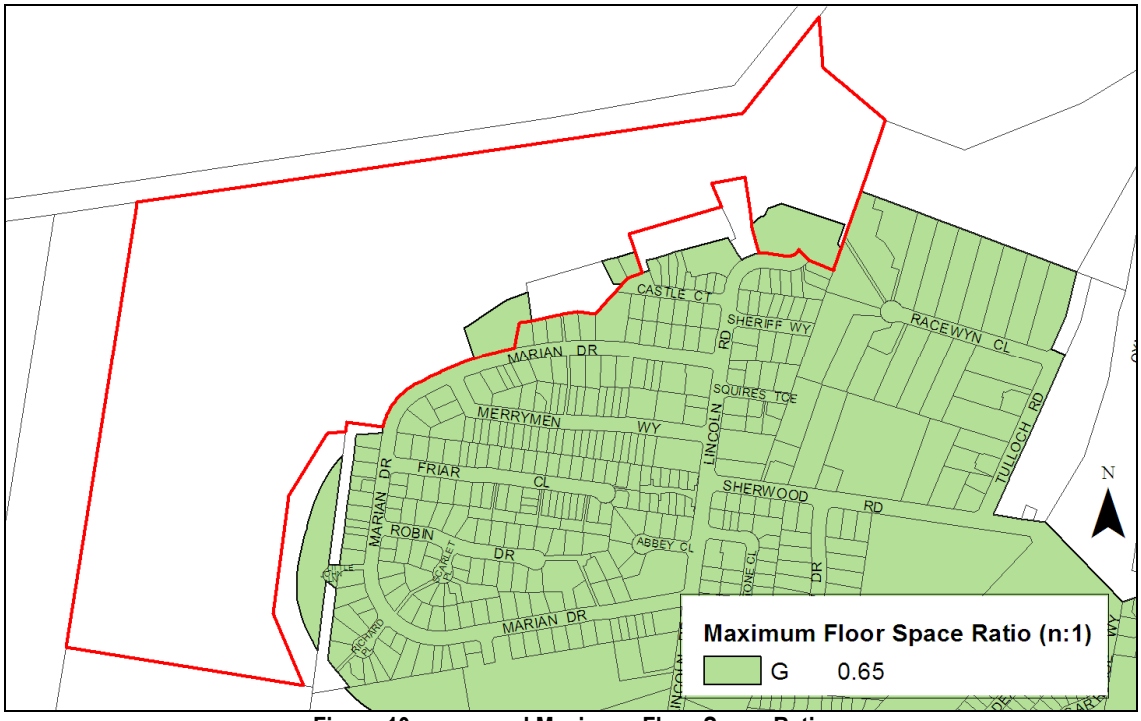

Figure 10 - proposed Maximum Floor Space Ratio

PART 5 – COMMUNITY CONSULTATION

It is proposed to undertake community consultation for 28 days and include notification in a local newspaper and written notification to adjoining and adjacent landowners. The exhibition material will be available on Council's website and at Council's Port Macquarie, Wauchope and Laurieton offices for the duration.

To assist the community in understanding Council's interest in the proposal, statements to address the requirements specified in the Department's *LEPs and Council Land Best Practice Guideline 1997* will form part of the exhibition material. The *Best Practice Guideline* will also be on public display.

This section of the planning proposal will be updated following public exhibition.

PART 6 – PROJECT TIMELINE

This project timeline is based on anticipated dates and timeframes, although it is recognised there can be unexpected delays.

It is assumed that Council has delegation to carry out certain plan-making functions. Delegation would be exercised by Council's General Manager or the Director of Development and Environment.

Planning proposal process outline	Sept 2016 - Apr 2017							
	S	O	N	D	J	F	M	A
Commencement (date of Gateway Determination)	X							
Timeframe for the completion of required additional information		X	X					
Timeframe for government agency consultation (pre and post exhibition as required by Gateway Determination)		X						
Commencement and completion dates for public exhibition				X	X			
Dates for public hearing (if required)								
Timeframe for consideration of submissions					X	X		
Timeframe for the consideration of a proposal post exhibition						X	X	
Timeframe for Parliamentary Counsel Opinion							X	X
Date of submission to the Department to finalise the LEP								X
Date Council will make the plan (if delegated)								X
Date Council will forward to the Department for notification								X

ANNEXURE 'A'

Subdivision Concept Plans

0 25 50 75 100 125
Full Size 1:4000 ; SCALE (m)

DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS	BY
E	6-1-2016	AMEND LOT AREAS	KH
D	26-8-2015	AMENDED LOT LAYOUT	KH
C	14-8-2015	LOTS & SERVICES ADJUSTED	KH
B	15-7-2015	SURVEY ADDED TO DRAWING	GA
A	25-2-2015	DRAWING FOR COMMENT	GA

LEROY DAY
LOT 1 DP 1066820
LINCOLN ROAD, CASTLE COURT AND MARIAN DRIVE
PORT MACQUARIE

HOPKINS CONSULTANTS PTY LTD
Suite 1 / 109 William Street PO Box 1556 Port Macquarie NSW 2444 ABN 27 055 060 878
Telephone: 02 6583 6722 Facsimile: 02 6584 9009 Email: mail@hopcon.com.au
DEVELOPMENT MANAGERS • SURVEYORS • ENGINEERS • PLANNERS

PLANNING PROPOSAL FOR
LOT 1 DP1066820

Drawing Number/Reference	6862-0004		Rev. E
Designer	GH	Origin Of Levels -	Date 25-2-2015
Surveyor	PC	Height -	Sheet Size A3
Drafting	GA	Datum	Sheet No. 1
Approved	GH	Scale 1:4000	Total 5

Cad File: S:\DWGS\6862\6862-0004.dwg, Layout: 1 of 5, Plotted By: kevin, Date: 08/01/16 - 10:58,

EXISTING WATER QUALITY MEASURES FROM FILLED DAM TO BE REPLACED WITH VEGETATED SWALE (REFER DWG 5 of 5 FOR DETAILS)

EDGE OF VEGETATION

GRASSED SWALE FILTER

EDGE OF VEGETATION

EDGE OF VEGETATION

PROPOSED APZ 21m WIDE

APZ 21.0m

STORMWATER DRAINAGE

CONSTRUCT Ø150mm SEWERPIPE AND SEWER MANHOLE

DP 856163

EXISTING Ø150mm SEWERPIPE

FILL EXISTING DAM. EXISTING DRAINAGE OUTLET TO BE RE-ALIGNED & CONSTRUCT OUTLET ENERGY DISSIPATION WITH VEHICULAR ACCESS

7
2566 m²

8
1234 m²

9
2154 m²

6
696.7 m²

FILL TO MIN RL 4.1m AHD

FILL TO RL 4.3m AHD (TO SEWER)

FILL TO RL 4.40m AHD (TO SEWER)

EXISTING SMH
PM57P042
TOP RL 3.72
IL 1.87

SMH
TOP RL 3.60
IL 2.11, IL 2.14

SMH
TOP RL 3.55
IL 2.52, IL 2.55

SMH
TOP RL 3.67
IL 3.03

SP 68740

CONSTRUCT CONCRETE DRIVEWAY TO CATER FOR 100yr OVERLAND STORMWATER FLOW

FILL EXISTING DAM ONSITE UNDER LEVEL 1 GEOTECH SUPERVISION (PQ) - 350m²

DRIVE

EXISTING HYDRANT

EXISTING SMH

EXISTING Ø100mm WATERMAIN

EXISTING Ø150mm SEWERPIPE

EXISTING DRAINAGE

PROPOSED DRAINAGE

MARIAN

EXISTING

MGA

LEGEND

- BUILDING ENVELOPE
- LIMIT OF EARTHWORKS
- ASSET PROTECTION ZONE
- NEW EASEMENT BOUNDARY
- EXISTING EASEMENT BOUNDARY
- REMOVE EASEMENT
- LOT BOUNDARY
- 4.0 CONTOUR LABEL 250mm INTERVALS
- EDGE OF VEGETATION
- TREE SURVEYED

EXISTING
- STORMWATER PIPE
- DRAINAGE PIT
- DRAINAGE HEADWALL
- POTABLE WATER PIPE
- STOP VALVE
- HYDRANT
- SEWERLINE GRAVITY
- SEWER MAN HOLE

CONSTRUCT
- DRAINAGE PIPE
- INTERALLOTMENT DRAINAGE DISCHARGE LOCATION
- DRAINAGE PIT
- DRAINAGE HEADWALL
- WATER MAIN PIPE
- SERVICE LOCATION
- HYDRANT
- SEWERLINE GRAVITY
- SEWER MAN HOLE
- SEWER JUNCTION

FILL LOT 5 & 6 TO MIN RL 4.1m AHD, LOT 8 MIN RL 4.30 AHD & LOT 9 MIN RL 4.40 AHD

NOTE:
PROPOSED BOUNDARIES AND AREAS ARE SUBJECT TO FINAL SURVEY.

0 2.5 5 10 15
Full Size 1:500 ; SCALE (m)

DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS	BY
E	6-1-2016	AMEND LOT 9 & ADD LIMIT OF EARTHWORKS	KH
D	26-8-2015	AMENDED LOT LAYOUT	KH
C	14-8-2015	LOTS & SERVICES ADJUSTED	KH
B	15-7-2015	SURVEY ADDED TO DRAWING	GA
A	25-2-2015	DRAWING FOR COMMENT	GA

LEROY DAY
LOT 1 DP 1066820
LINCOLN ROAD, CASTLE COURT AND MARIAN DRIVE
PORT MACQUARIE

HOPKINS CONSULTANTS PTY LTD
Suite 1 / 109 William Street LPO Box 1556 Port Macquarie NSW 2444 LABN 27 055 060 878
Telephone: 02 6583 6722 LFacsimile: 02 6584 9009 LEmail: mail@hopcon.com.au
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AREA 1 SUBDIVISION CONCEPT ONLY
DP 1066820
MARIAN DRIVE, PORT MACQUARIE

Drawing Number/Reference	6862-0004		Rev. E
Designer	GH	Origin Of Levels -	Date 25-2-2015
Surveyor	PC	Height -	Sheet Size A3
Drafting	GA	Datum	Sheet No. 2
Approved	GH	Scale 1:500	Total 5

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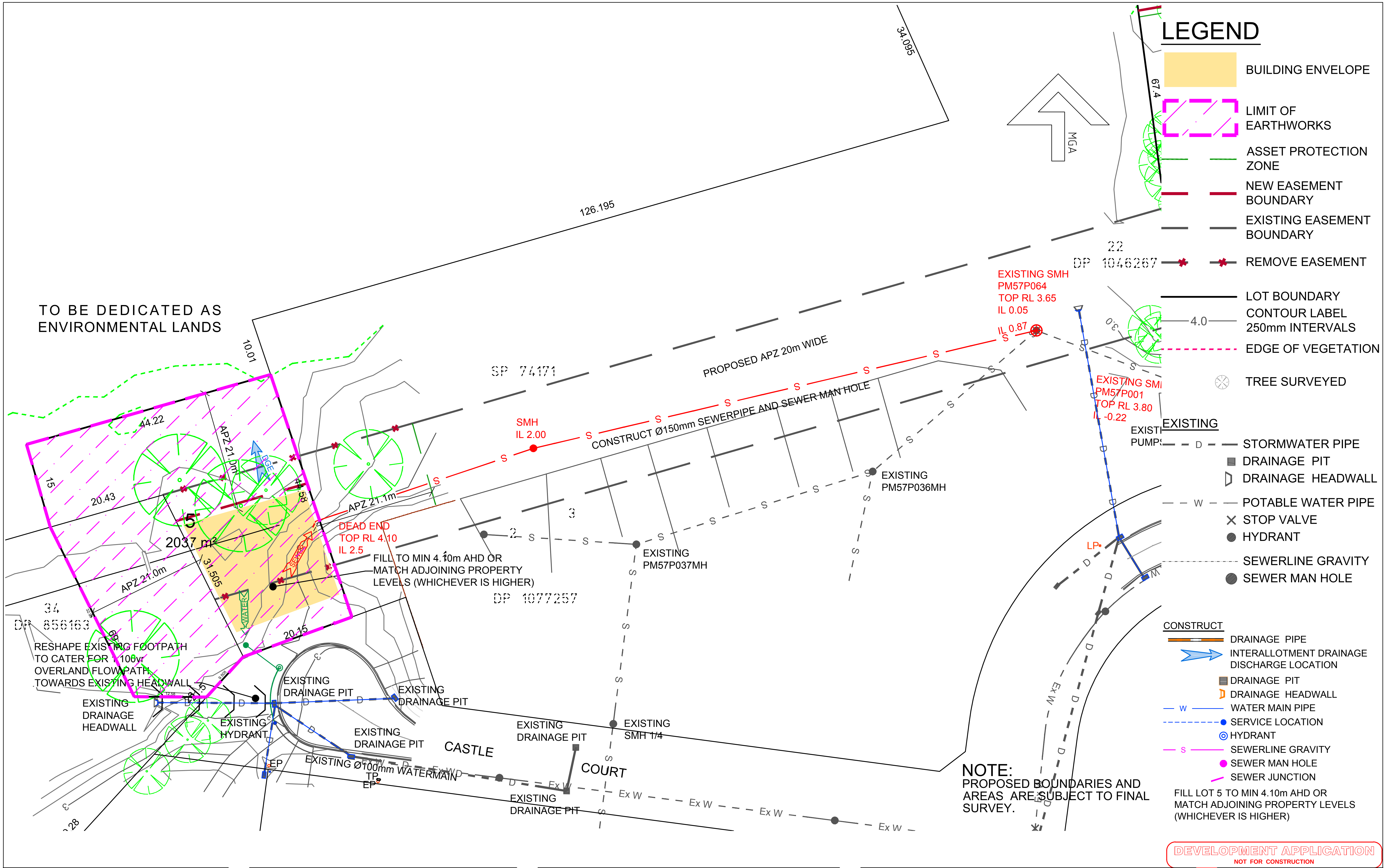
LEGEND
BUILDING ENVELOPE
LIMIT OF EARTHWORKS
ASSET PROTECTION ZONE
NEW EASEMENT BOUNDARY
EXISTING EASEMENT BOUNDARY
REMOVE EASEMENT
LOT BOUNDARY
CONTOUR LABEL 250mm INTERVALS
EDGE OF VEGETATION
TREE SURVEYED
EXISTING
STORMWATER PIPE
DRAINAGE PIT
DRAINAGE HEADWALL
POTABLE WATER PIPE
STOP VALVE
HYDRANT
SEWERLINE GRAVITY
SEWER MAN HOLE
CONSTRUCT
DRAINAGE PIPE
INTERALLOTMENT DRAINAGE DISCHARGE LOCATION
DRAINAGE PIT
DRAINAGE HEADWALL
WATER MAIN PIPE
SERVICE LOCATION
HYDRANT
SEWERLINE GRAVITY
SEWER MAN HOLE
SEWER JUNCTION
FILL LOT 5 TO MIN 4.10m AHD OR MATCH ADJOINING PROPERTY LEVELS (WHICHEVER IS HIGHER)
MGA
TO BE DEDICATED AS ENVIRONMENTAL LANDS
126.195
34.095
67.4
10.01
SP 74171
22
DP 1046267
PROPOSED APZ 20m WIDE
CONSTRUCT Ø150mm SEWERPIPE AND SEWER MAN HOLE
SMH
IL 2.00
EXISTING SMH
PM57P064
TOP RL 3.65
IL 0.05
IL 0.87
EXISTING SMH
PM57P001
TOP RL 3.80
IL -0.22
EXISTING PUMP
EXISTING PM57P036MH
EXISTING PM57P037MH
44.22
15
20.43
APZ 21.0m
APZ 21.1m
44.58
5
2037 m²
31.505
20.15
DEAD END
TOP RL 4.10
IL 2.5
FILL TO MIN 4.10m AHD OR MATCH ADJOINING PROPERTY LEVELS (WHICHEVER IS HIGHER)
DP 1077257
2
3
34
DP 856163
RESHAPE EXISTING FOOTPATH TO CATER FOR 1:100yr OVERLAND FLOWPATH TOWARDS EXISTING HEADWALL
EXISTING DRAINAGE HEADWALL
EXISTING HYDRANT
EXISTING DRAINAGE PIT
EXISTING DRAINAGE PIT
EXISTING DRAINAGE PIT
EXISTING DRAINAGE PIT
EXISTING DRAINAGE PIT
EXISTING SMH 1/4
EXISTING Ø100mm WATERMAIN
CASTLE COURT
EP
TP
LP
NOTE:
PROPOSED BOUNDARIES AND AREAS ARE SUBJECT TO FINAL SURVEY.
DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS	BY
E	6-1-2016	AMEND LOT 5 & ADD LIMIT OF EARTHWORKS	KH
D	26-8-2015	AMENDED LOT LAYOUT	KH
C	14-8-2015	LOTS & SERVICES ADJUSTED	KH
B	15-7-2015	SURVEY ADDED TO DRAWING	GA
A	25-2-2015	DRAWING FOR COMMENT	GA

Liability limited by a scheme approved under Professional Standards Legislation

LEROY DAY
LOT 1 DP 1066820
LINCOLN ROAD, CASTLE COURT AND MARIAN DRIVE
PORT MACQUARIE

HOPKINS CONSULTANTS PTY LTD
Suite 1 / 109 William Street LPO Box 1556 Port Macquarie NSW 2444 LABN 27 055 060 878
Telephone: 02 6583 6722 LFacsimile: 02 6584 9009 LEmail: mail@hopcon.com.au
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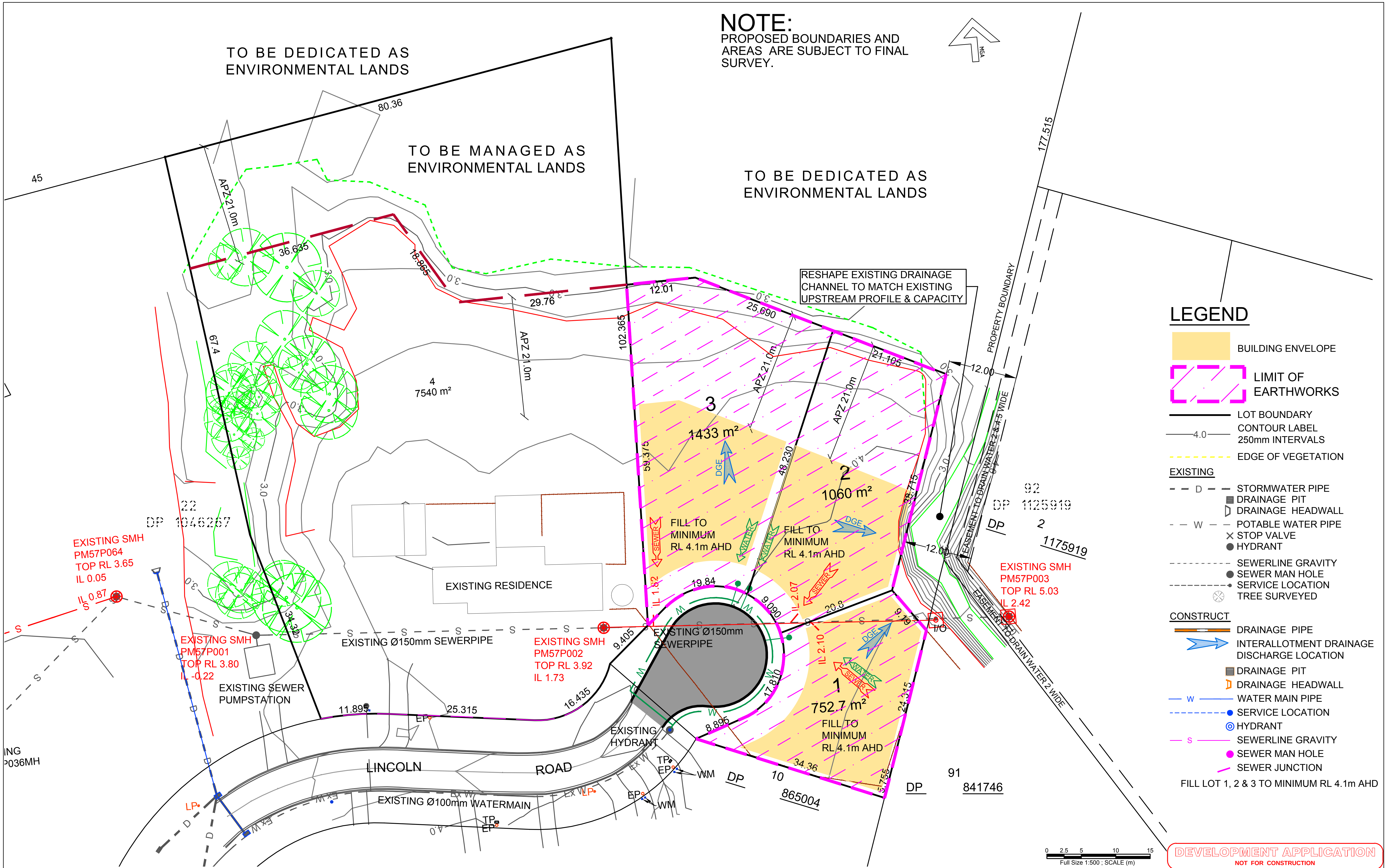
AREA 2 SUBDIVISION CONCEPT ONLY
DP 1066820
CASTLE COURT, PORT MACQUARIE

Drawing Number/Reference: 6862-0004		Rev.: E
Designer: GH	Origin of Levels: -	Date: 25-2-2015
Surveyor: PC	Height: -	Sheet Size: A3
Drafting: GA	Datum	Sheet No.: 3
Approved: GH	Scale: 1:600	Total: 5

Cad File: S:\DWGS\6862\6862-0004.dwg, Layout: 3 of 5, Plotted By: kevin, Date: 08/01/16 - 10:58,


NOTE:
PROPOSED BOUNDARIES AND AREAS ARE SUBJECT TO FINAL SURVEY.
MGA
TO BE DEDICATED AS ENVIRONMENTAL LANDS
TO BE MANAGED AS ENVIRONMENTAL LANDS
TO BE DEDICATED AS ENVIRONMENTAL LANDS
RESHAPE EXISTING DRAINAGE CHANNEL TO MATCH EXISTING UPSTREAM PROFILE & CAPACITY
4
7540 m²
3
1433 m²
2
1060 m²
1
752.7 m²
FILL TO MINIMUM RL 4.1m AHD
FILL TO MINIMUM RL 4.1m AHD
FILL TO MINIMUM RL 4.1m AHD
EXISTING RESIDENCE
EXISTING Ø150mm SEWERPIPE
EXISTING Ø150mm SEWERPIPE
EXISTING Ø100mm WATERMAIN
EXISTING SEWER PUMPSTATION
EXISTING HYDRANT
EXISTING SMH PM57P064 TOP RL 3.65 IL 0.05
EXISTING SMH PM57P001 TOP RL 3.80 IL -0.22
EXISTING SMH PM57P002 TOP RL 3.92 IL 1.73
EXISTING SMH PM57P003 TOP RL 5.03 IL 2.42
LINCOLN ROAD
22 DP 1046267
92 DP 1125919
2 DP 1175919
10 DP 865004
91 DP 841746
PROPERTY BOUNDARY
EASEMENT TO DRAIN WATER 2 & 4.5 WIDE
EASEMENT TO DRAIN WATER 2 WIDE
APZ 21.0m
LEGEND
BUILDING ENVELOPE
LIMIT OF EARTHWORKS
LOT BOUNDARY
CONTOUR LABEL 250mm INTERVALS
EDGE OF VEGETATION
EXISTING
STORMWATER PIPE
DRAINAGE PIT
DRAINAGE HEADWALL
POTABLE WATER PIPE
STOP VALVE
HYDRANT
SEWERLINE GRAVITY
SEWER MAN HOLE
SERVICE LOCATION
TREE SURVEYED
CONSTRUCT
DRAINAGE PIPE
INTERALLOTMENT DRAINAGE DISCHARGE LOCATION
DRAINAGE PIT
DRAINAGE HEADWALL
WATER MAIN PIPE
SERVICE LOCATION
HYDRANT
SEWERLINE GRAVITY
SEWER MAN HOLE
SEWER JUNCTION
FILL LOT 1, 2 & 3 TO MINIMUM RL 4.1m AHD
Full Size 1:500 ; SCALE (m)
DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS	BY
E	6-1-2016	AMEND LOT 4 BOUNDARY & ADD LIMIT OF EARTHWORKS	KH
D	26-8-2015	AMENDED LOT LAYOUT	KH
C	14-8-2015	LOTS & SERVICES ADJUSTED	KH
B	15-7-2015	SURVEY ADDED TO DRAWING	GA
A	25-2-2015	DRAWING FOR COMMENT	GA

LEROY DAY
LOT 1 DP 1066820
LINCOLN ROAD, CASTLE COURT AND MARIAN DRIVE
PORT MACQUARIE

HOPKINS CONSULTANTS PTY LTD
Suite 1 / 109 William Street LPO Box 1556 Port Macquarie NSW 2444 LABN 27 055 060 878
Telephone: 02 6583 6722 LFacsimile: 02 6584 9009 LEmail: mail@hopcon.com.au
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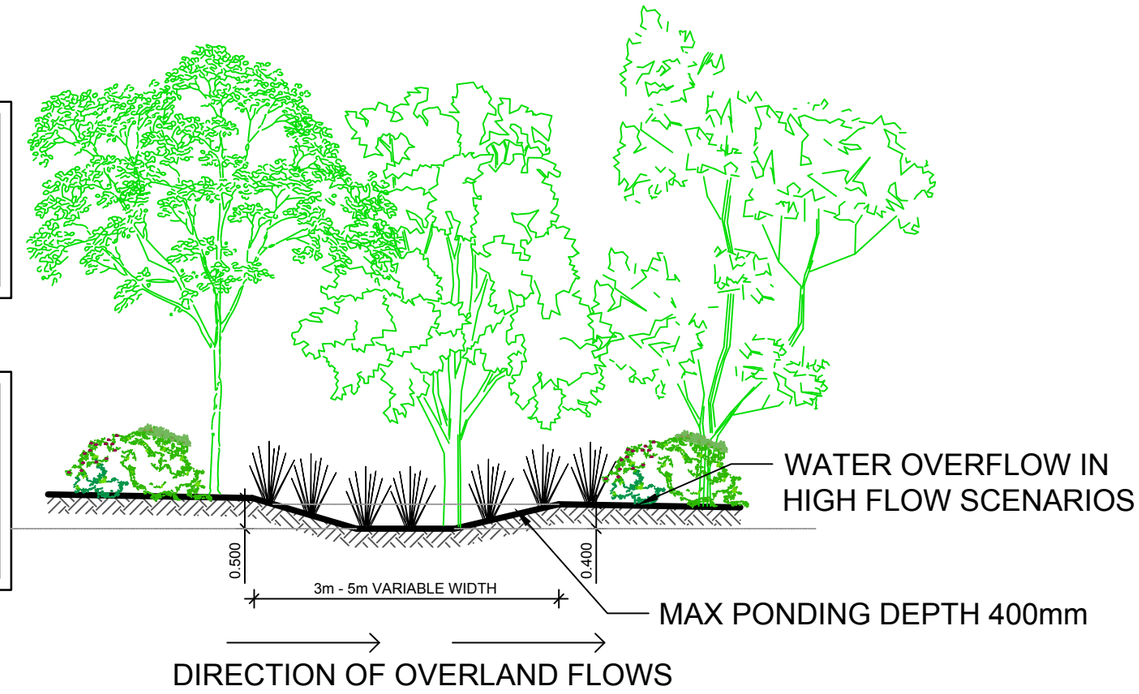
AREA 3 SUBDIVISION CONCEPT ONLY
DP 1066820
LINCOLN ROAD, PORT MACQUARIE

Drawing Number/Reference: 6862-0004		Rev.: E
Designer: GH	Origin Of Levels: -	Date: 25-2-2015
Surveyor: PC	Height: -	Sheet Size: A3
Drafting: GA	Datum:	Sheet No.: 4
Approved: GH	Scale: 1:600	Total: 5

CONSIDERATION TO BE GIVEN TO WET-SCLEROPHYLL AND COASTAL FLOODPLAIN TREE SPECIES SUCH AS; *Allocasuarina* spp., *Callistemon salignus, Casuarina glauca, Eucalyptus robusta,* and *Melaleuca quinquenervia.*

CONSIDERATION TO BE GIVEN TO WET-SCLEROPHYLL AND COASTAL FLOODPLAIN LOWER STOREY SPECIES SUCH AS; *Baumea, Carex and Juncus* for use in the lower section and *Banksia oblongifolia, Leptospermum juniperium* and *L. patersonii* shrubs on the higher grounds.



VEGETATED SWALE

SCALE 1:100

0 0.5 1 2 3
Full Size 1:100 ; SCALE (m)

DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS	BY
E	6-1-2016	AMEND LOT 5 & 9	KH
D	26-8-2015	AMENDED LOT LAYOUT	KH
C	14-8-2015	LOTS & SERVICES ADJUSTED	KH

LEROY DAY
LOT 1 DP 1066820
LINCOLN ROAD, CASTLE COURT AND MARIAN DRIVE
PORT MACQUARIE

HOPKINS CONSULTANTS PTY LTD
Suite 1 / 109 William Street PO Box 1556 Port Macquarie NSW 2444 ABN 27 055 060 878
Telephone: 02 6583 6722 Facsimile: 02 6584 9009 Email: mail@hopcon.com.au
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AREA 1 SUBDIVISION CONCEPT
DP 1066820
MARIAN DRIVE, PORT MACQUARIE
VEGETATED SWALE DETAILS

Drawing Number/Reference: 6862-0004			Rev.: E
Designer: GH	Origin Of Levels: -		Date: 25-2-2015
Surveyor: PC	Height: -		Sheet Size: A3
Drafting: GA	Datum:		Sheet No.: 5
Approved: GH	Scale: 1:500		Total: 5

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ANNEXURE 'B'

Assessment of consistency with applicable State Environmental Planning Policies (SEPPs)

SEPP	Reason for inconsistency or comment
No 14 - Coastal Wetlands *Ensures coastal wetlands are preserved and protected in the environmental and economic interests of the State.*	INCONSISTENT As noted under Part 3, Section C of this planning proposal (p10), a small area of mapped SEPP 14 Wetland No 507 encroaches into the northern extent of the proposed Castle Court infill footprint. The proponent's ecological assessment report (at **Annexure 'D'**) assessed the encroachment and concluded that the impact is considered to be negligible relative to the objectives of the SEPP. It was also noted that the proposed edge treatments, closure of 4WD tracks and dedication of the residue environmental lands to Council would contribute to greater protection to the SEPP 14 area overall. If the SEPP 14 mapping over the proposed Castle Court infill footprint remains as is, clause 7(3) of the SEPP would apply which specifies that any clearing, levee construction, draining, or filling of land affected by the SEPP is designated development under the provisions of the *Environmental Planning and Assessment Act 1979*. It is intended that consultation occur with the NSW Office of Environment and Heritage in relation to this aspect of the proposal prior to public exhibition.
No 44 - Koala Habitat Protection *Encourages the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent free-living populations will be maintained over their present range.*	CONSISTENT As noted under Part 3, Section C of this planning proposal (p10), the proponent's ecological assessment report concluded that the proposed infill residential sites do not contain major Koala activity, nor qualify as Potential Koala Habitat.
No 55 - Remediation of Land *Introduces state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated.*	CONSISTENT The proponent has advised that a preliminary investigation of Lot 1 in accordance with the *Contaminated Land Guidelines* has been undertaken and that the land has not been used for any of the purposes referred to in Table 1 of the Guidelines. The proponent has also advised that anecdotal evidence from the current landowner and third party person familiar with the site has indicated that: • The previous and current land use has been a single dwelling with recreational use of the wider property. • There is no on-site cattle tick dip or former tick dip site on the land. • The land has not been used for market gardens or orchards. Evidence of prior agricultural activity including cattle grazing and land re-shaping to improve drainage is observed in 1981 aerial photographs.

	• There are no oil storage depots or former fuel depots associated with the past or present uses on the site. • There are no refuse or garbage land fill areas on the site. • Searches of the land contamination register, record of notices and contaminated sites notified to Environmental Protection Authority have not identified Lot 1. No investigation of Council's land proposed to be included in the Castle Court infill footprint has been undertaken. This investigation will be completed and the information included in the planning proposal prior to public exhibition.
Rural Lands (2008) *Facilitates the orderly and economic use and development of rural lands for rural and related purposes. The SEPP contains a number of 'Rural Planning Principles' that must be considered in preparing any planning proposals affecting rural land.*	INCONSISTENT The SEPP is relevant because part of the site is zoned RU1 Primary Production and therefore, must be consistent with the Rural Planning Principles of the SEPP. In this instance, the site is not identified as regionally significant farmland and due to its location and environmental values, is considered to have limited agricultural production value. This inconsistency is therefore considered to be of minor significance.

ANNEXURE 'C'

Assessment of consistency with applicable Ministerial Section 117 Directions (s117s)

s117 Direction	Reason for inconsistency or comment
1. Employment and Resources	
No 1.2 Rural Zones *The objective of this direction is to protect the agricultural production value of rural land.*	INCONSISTENT The proposal is inconsistent with the terms of this direction because a proposal must not rezone land from a rural to a residential zone. As previously noted under the assessment of SEPP Rural Land (2008) in Annexure 'B', this inconsistency is considered to be of minor significance given the limited rural production value of the site.
No1.5 Rural Lands *This direction aims to protect the agricultural production value of rural land and to facilitate the orderly and economic development of rural lands for rural and related purposes.*	INCONSISTENT Justification for this inconsistency is provided as per the commentary above.
2. Environment and Heritage	
No 2.1 Environmental Protection Zones *The objective of this direction is to protect and conserve environmentally sensitive areas.*	CONSISTENT The planning proposal is being prepared to permit minor infill residential development on three relatively unconstrained fringe areas of the site, consistent with surrounding residential development. The environmentally sensitive residue lands (approx 30 ha) are proposed to be dedicated to Council as public reserve for permanent environmental conservation purposes. This outcome represents a significant public benefit of the proposal.
No 2.3 Heritage Conservation *The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance.*	INCONSISTENT An Aboriginal heritage survey of the site has not been prepared and therefore, the proposal is inconsistent with the terms of this direction. However, the proponent has carried out a search of the Aboriginal Heritage Information Management System and no recorded/declared Aboriginal sites, or places, were identified on or within 200m of the site. A copy of the search as at **Annexure 'F'**. Additionally, the proponent has advised that in considering the likelihood of any unrecorded relics within the proposed infill footprints, each area has a history of disturbance as outlined below: • Marion Drive - disturbed as part of subdivision of the adjacent area in the late 1990s from construction of a stormwater detention basin and informal access around it. • Castle Court - history of pastoralist use and believed to have been maintained in a mowed / slashed state since the 1970s. Aerial photography from 1981 shows the land as cleared. • Lincoln Road - currently part of the yard of the existing dwelling

	and is regularly mowed. It is intended to consult with the NSW Office of Environment and Heritage, the Birpai Aboriginal Land Council and the NSW Aboriginal Land Council on this aspect of the proposal prior to public exhibition.
3. Housing, Infrastructure and Urban Development	
No 3.1 Residential Zones *The objectives of this direction are to provide for existing/future housing needs, make efficient use of existing infrastructure and minimise the impact of residential development on the environment and resource lands.*	CONSISTENT The proposal relates to a small amount of residential infill, with potential benefits associated with compact urban form and efficient use of existing infrastructure. No natural resources or identified areas of biodiversity or native vegetation are expected to be adversely impacted as a result of the proposal.
No 3.3 Home Occupations *The objective of this direction is to encourage the carrying out of low-impact small businesses in dwelling houses.*	CONSISTENT No change is proposed to the current provisions in the *Port Macquarie-Hastings Local Environmental Plan 2011* which permit home occupations to be carried out in dwelling houses without the need for development consent.
No 3.4 Integrating Land Use and Transport *This direction aims to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following objectives:* *a. improving access to housing, jobs and services by walking, cycling and public transport, and* *b. increasing the choice of available transport and reducing dependence on cars, and* *c. reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and* *d. supporting the efficient and viable operation of public transport services, and* *e. providing for the efficient movement of freight.*	CONSISTENT Marian Drive is a designed bus route providing access to a range of services and facilities within the Port Macquarie area. Future residents of the proposed infill areas will enjoy comparable levels of access and accessibly as per existing residents in the immediate locality.
No 3.6 Shooting Ranges *The objectives of this direction are:* *a. to maintain appropriate levels of public safety and amenity when rezoning land adjacent to an existing shooting range,* *b. to reduce land use conflict arising between existing shooting ranges and rezoning of adjacent land,* *c. to identify issues that must be addressed when giving consideration to rezoning land adjacent to an existing shooting range.*	INCONSISTENT Crown land occupied by the Hastings Regional Shooting Complex adjoins the northern boundary of the subject site. The proposal is inconsistent with the terms of this direction because it is intended to permit infill residential development on the southern boundary. This inconsistent is considered to be of minor significance, based on the following: • The distance between the closest proposed infill residential footprint and closest corner of the rifle range is 320m, which is no closer to the rifle range than existing housing in the locality. • The topography and vegetation between the proposed infill footprints and rifle range are significant and comprise approximately 30 ha of dense tall coastal paperbark swamp

	forest, with no direct line of sight. • Dedication of the residue environmental lands to Council for permanent conservation will ensure retention of an adequate buffer to the rifle range into the future. Prior to public exhibition, consultation regarding this aspect of the proposal will occur with the NSW Police Firearms Registry as the relevant range licensing body.
4. Hazard and Risk	
No 4.1 Acid Sulfate Soils *The objective of this direction is to avoid significant adverse environmental impacts from the use of land that has a probability of containing acid sulphate soils.*	CONSISTENT The proposed Lincoln Road infill footprint is mapped as affected by Class 3 acid sulfate soils (ASS) under the *Port Macquarie-Hastings Local Environmental Plan 2011* (LEP). The Castle Court and Marian Drive infill footprints, in addition to the proposed stormwater swale at the rear of the proposed Marian Drive footprint, are mapped as affected by Class 5 ASS. All proposed building envelopes are proposed to be located above the 1 in 100 year flood level plus Climate Change allowance and therefore, are not expected to disturb potential Class 3 and Class 5 ASS. However, at the detailed development application stage, any potential excavations, including earthworks associated with the proposed stormwater swale, would need to satisfy the ASS provisions of the LEP (i.e. cl 7.1).
No 4.3 Flood Prone Land *This direction aims to 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 that the provisions of an LEP on flood prone land are commensurate with flood hazard and include consideration of the potential flood impacts both on and off the subject land.*	INCONSISTENT The planning proposal is inconsistent with the terms of clause (6)(c) of this Direction because it is proposed to allow a significant increase in the development of the land. Council's *Hastings River Flood Study* (2006) indicates that the proposed infill footprints are located predominantly in Flood Fringe areas with a Low to Medium Hazard category. As discussed under Section C, Part 3 of this planning proposal (pp 10-11), the proponent has submitted information, to the satisfaction of Council staff, which demonstrates that filling these areas approximately 900 mm above the 1 in 100 year flood level (i.e. a minimum floor level of 4.1m AHD), will have minimal impact on the flooding characteristics in the locality. Consequently, the inconsistency with this direction is considered to be of minor significance. In addition, the Flood Planning provisions of the *Port Macquarie-Hastings Local Environmental Plan 2011* (cl 7.3) will need to be satisfied at the time of applying for consent to develop the land. Consultation will occur with the NSW Office of Environment and Heritage on this aspect of the proposal prior to public exhibition.
No 4.4 Planning for Bushfire Protection *The objectives of this direction are to protect life, property and the environment from bush fire hazards by discouraging the establishment of incompatible land uses in bush fire prone areas, and to encourage sound management of bush fire prone areas.*	CONSISTENT As noted in Part 3, Section C of this planning proposal, a Bushfire Hazard Assessment report (Oct 2015) prepared on behalf of the proponent by Midcoast Building and Environmental, has been submitted in support of the proposal. The proponent has advised that the Assessment report was prepared in consultation with the Rural Fire Service in Coffs Harbour, including a design brief meeting in relation to the development concept plan. The report identifies that each lot in the

	subdivision concept plan can achieve appropriate APZ and BAL construction levels identified within that assessment. Consultation will occur with the NSW Rural Fire Service on this aspect of the proposal prior to public exhibition.
5. Regional Planning	
No 5.1 Implementation of Regional Strategies *The objective of this direction is to give legal effect to the vision, land use strategy, policies, outcomes and actions contained in regional strategies.*	INCONSISTENT The proposal is inconsistent with the terms of this direction because the site is not within the area identified for future urban development in the *Mid North Coast Regional Strategy 2006-2031.* Notwithstanding this inconsistency, justification is provided on the basis that the proposal relates to a small infill proposal comprising a minor amendment to the R1 General Residential zone in this location. Infill proposals are able to be considered by Council in accordance with the *Port Macquarie-Hastings Urban Growth Management Strategy*, which was endorsed by the NSW Department of Planning and Environment in May 2011.
6. Local Plan Making	
No 6.1 Approval and Referral Requirements *The objective of this direction is to ensure that LEP provisions encourage the efficient and appropriate assessment of development.*	CONSISTENT The proposal is consistent with this direction.

ANNEXURE 'D'

Ecological Assessment Report

ABN 81 127 154 787

Head Office
PO Box 3401
Helensvale Town Centre
QLD 4212
Phone 1300 319 954
info@naturecall.com.au

www.naturecall.com.au

Wednesday, 7 October 2015

Ms Geraldine Haigh
GEM Planning Projects Pty Ltd
Delivery via: Email [geraldine@gemplanningprojects.com.au]

Dear Geraldine,

RE: Ecological Assessments and Bush Regeneration Principles for Rezoning and Residential Subdivision of part Lot 1 DP 1066820, Marian Drive and Lincoln Rd, Port Macquarie.

As requested, we have conducted an assessment of the subject land, and provide the following:

The proposal was assessed in accordance with the requirements of Section 5A of the *Environment Planning and Assessment Act 1979*, as amended by the *Threatened Species Conservation* (TSCA) *Act 1995*, the Commonwealth *Environment Protection and Biodiversity Conservation* (EPBCA) *Act 1999* - Matters of National Environmental Significance, and *State Environmental Planning Policy* (SEPP) *No. 44 - Koala Habitat Protection.*

In summary:

- The site lacks key habitat components such as hollow-bearing trees. Eight Schedule 2 Koala food trees occur on site, but these are uncommon to absent in the adjoining habitat, hence the study area is not Potential Koala Habitat. Only two of these trees recorded scats.
- No threatened plants were found.
- The EEC – *Swamp Sclerophyll Forest on Coastal Floodplains* occurs on two of the three sites (one is highly degraded – a few trees with exotic groundcover). This forms a small fraction of the local occurrence of this EEC, which is mostly protected under SEPP 14 and in very high condition.
- No referral to the Department of the Environment (DotE) is considered required as the potential impacts of the proposal are below the MNES impact thresholds.
- There is no risk of a significant impact on any threatened species or EEC, hence a Species Impact Statement is not required.
- Measures to manage the edge of the retained habitat and reduce effects can be limited to edge treatments comprising control of weeds; closing the edge with a band of pungent plants and swamp forest species; signage; and closing current access tracks.
- Site 2 slightly encroaches onto the edge of the mapped SEPP 14 boundary. Review of 1981 aerial photography evidences this area and the adjacent margin of the mapped SEPP 14 area has been historically disturbed by previous pastoralism prior to gazettal of SEPP 14 in December 1985, and the few trees remaining are the last vestiges within an area converted to

pasture. Given the limitations of the boundary mapping (25-50m wide buffers are considered to allow for variations in interpretation of the SEPP 14 line); that no forested wetland is impacted; no changes to the hydraulic regime of the wetland will occur; and the proposed edge management and dedication of the residual to PMHC: the filling of this minute portion of SEPP 14 is considered insignificant to the viability of the SEPP 14 wetland and it associated ecological processes.

1.0 Background Information

1.1. Location and Description

The site is comprised of 3 separate areas (a western, central and eastern area) on the southern edge of Lot 1 DP 1066820 located near Marion Drive in the west of Port Macquarie. The parent parcel of land, covering 30.6ha, comprises the residual of the Marion Drive subdivision which has been developing for over 20 years (Figure 1).

The 3 sites have a combined area of approximately 1.55ha, and are characterized by patches of regrowth swamp forest, slashed/managed lawns and exotic grassland. A detention basin is located on the western site.

1.2. Development Proposal

The landowner is currently considering options to establish several new residential Lots over the sites. This will require the removal of some vegetation (generally some regrowth paperbarks, Swamp Oak and pasture species) and filling of the detention basin. Asset Protection Zones will be established or maintained where pre-existing, but will generally only require slashing of overgrown pasture species.

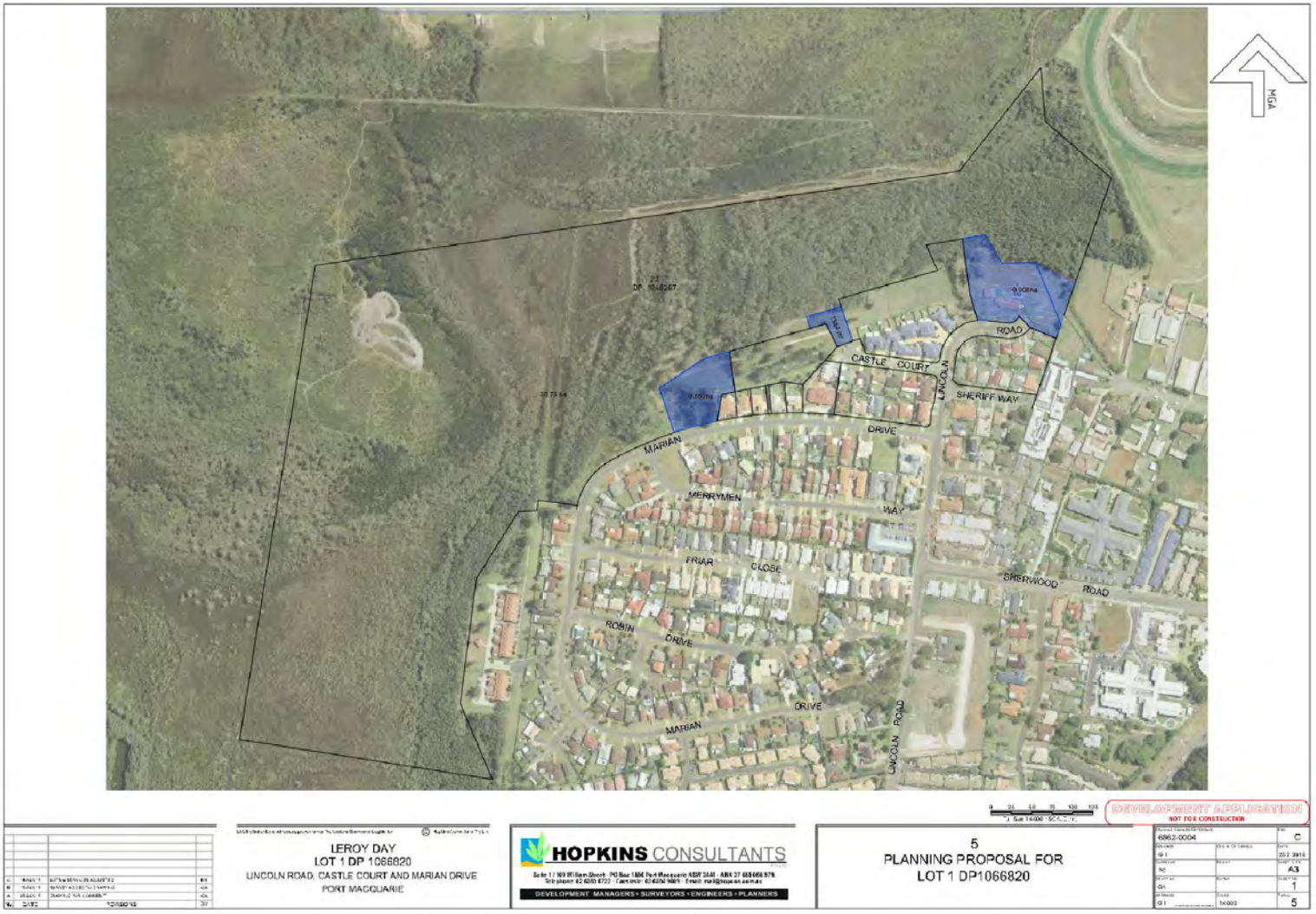
Council have advised that the proposal requires an overview ecological assessment to review the ecological values of the 3 areas proposed to be rezoned and hence suitability for development. Council have also requested an outline of proposed localised bushland management strategies to close the edges of the interface of the new residential areas and the residual to be dedicated to Council as part of the proposal.

Biolink's (2013) Endangered Ecological Community (EEC) mapping shows much of the residual Lot, which is generally vegetated with swamp forest, is a Coastal Floodplain EEC, hence has minimal if any future development potential.

1.3. Key Definitions

The **study sites** are defined as the 3 areas subject to the development proposal as described above. The **study area** is nominated land within 100m of the site as the outer limit of most detectable indirect impacts. The **locality** is land within 10km radius of the subject land.

Figure 1: Study sites locations



2.0 Overview of Site Values

2.1. Topography and Geology

The study sites are located in a low lying area on the edge of a large wetland complex. The landform is generally flat with elevation <5m ASL. A drainage line runs along the eastern boundary of the eastern site, and a detention pond occurs in the western site. Drainage generally flows north into the wetland areas. Both the western and central sites and the northern half of the eastern site are within the mapped 1:100 ARI shown in Figure 2.

As seen in Figure 2, the geology of the sites varies. The western site is almost located entirely on bedrock of the Watonga Formation which is characterised by slate, chert and slaty sandstone (Troedson and Hashimoto 2008). The northern half of the central site occurs on an alluvial backswamp formation with the remainder of this site falling on bedrock. Almost the entire eastern site aside from the southeast corner falls on an undifferentiated alluvial and colluvial fan (Troedson and Hashimoto 2008).

2.2. Disturbance History

The sites have an evident disturbance history and are either currently cleared and managed, or contain patches of regrowth vegetation. Weed cover was generally high and the dominant weed species were exotic grasses (eg Setaria, Torpedo Grass and Whisky Grass), Lantana, Senna, Crofton Weed, Billygoat Weed and Camphor Laurel.

Piles of imported fill and construction waste were found on the western site, and an access trail on its western side was well used by 4WD and motorcross enthusiasts.

2.3. Flora

2.3.1. Vegetation Communities

A total of 3 hours were spent undertaking random meanders over the study sites. These random meanders included time spent mapping vegetation communities and undertaking targeted searches for threatened flora species known to occur locally and in the region.

The survey found the site vegetation was in a highly modified state and consisted of patches of swamp forest, exotic grassland and managed lawn. The detention basin and a drain in the eastern site contained a few aquatic species. A brief description of these communities is provided in the following tables and Figure 3 shows the locations. Photographs of the site vegetation follow the table and a flora list is provided in Appendix 2.

Figure 2: Study area geology and 1:100 ARI

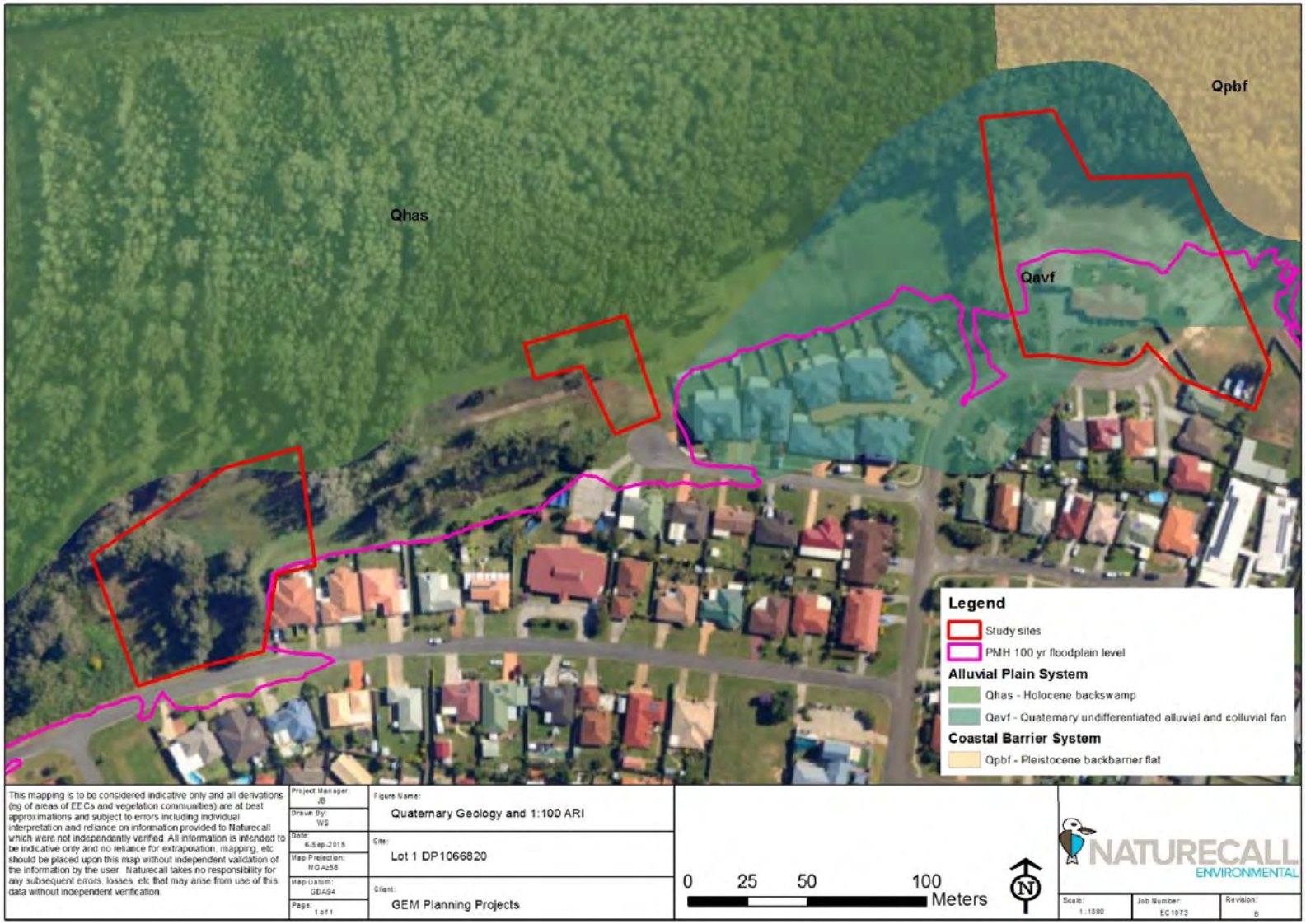


Figure 3: Vegetation communities map

2.3.1.1. Modified Swamp Forest

Table 1: Modified Swamp Forest

Vegetation Community	Modified Swamp Forest
Biometric Community	Paperbark swamp forest of the coastal lowlands of the north coast
Biolink Veg type	Broad-leaved Paperbark Swamp Woodland/Forest and Swamp Oak Coastal Floodplain Wetland Forest
Location	This community occurs in the western site and the northwest corner of the eastern site in a modified state. Higher quality stands occur beyond the site boundaries to the north.
Description	a) **Canopy:** *Structure and Species*: The canopy is characterized by a sparse patchy cover of Broad-leaved Paperbark (*Eucalyptus pilularis)* and Swamp Oak (*Casuarina glauca*). Forest Red Gum (*Eucalyptus tereticornis*) and Swamp Mahogany (*Eucalyptus robusta*) were occasionally present. Height is generally in the range of 15-20m, with an average trunk diameter at breast height (DBH) ranging from 20-50, with a few trees larger than this. **(b) Understorey:** *Structure and Species*: Dominated by canopy juveniles, with some Flax-leaved Paperbark (*Melaleuca linariifolia*), Willow Bottlebrush (*Callistemon salignus)* and Cheese Tree (*Glochidion ferdinandi*). Cover ranges from crowns well-spaced to touching, and height ranging from 5-10m. **(c) Shrub Layer:** *Structure and Species*: A shrub layer is only present in the western site and ranges form 1-3m in height. This layer consists of Lantana (**Lantana camara*) thickets, Senna (*Senna pendula**), Fringed Wattle (*Acacia fimbriata*), Cheese Tree and Coffee Bush (*Breynia oblongifolia*). **(d) Ground Layer:** *Structure and Species*: Consists of managed lawn with few native species in the eastern site and a cover of either exotic grasses or a mix of native and exotic species in the west. Height ranged from 0.05-1.5m. The groundcover at the eastern site was dominated by Couch (*Cynodon dactylon**), White Clover (*Trifolium repens**) and Carpet Grass (*Axonopus fissifolius**). At the western site exotic grasses such as Setaria (*Setaria sphacelata**), Torpedo Grass (*Panicum repens**) were common along with Harsh Ground Fern (*Hypolepis muelleri*), *Carex appressa, Cyperus eragrostis,* Blady Grass (*Imperata cylindrica*) and Bracken (*Pteridium esculentum*).

	(e) Lianas, scramblers, etc: Monkey Rope (*Parsonsia straminea*) was a common climber in the western site.
Condition	Poor condition as a result of current and historical disturbances such as clearing, weed invasion and slashing.
Threatened plants recorded or potential habitat	No threatened species were detected during field surveys. Long history of modification has altered the habitat such that threatened species habitat within the sites is marginal.
Endangered Ecological Communities	The swamp forest vegetation at the eastern site lies on an alluvial plain and is within the 1:100 ARI, hence may qualify as the highly modified and vestigial remains of an EEC which occurs more extensively to the north.

2.3.1.2. Exotic and Managed Grassland

Vegetation Community	Exotic and Managed Grassland
Biometric Community	N/A
Biolink Veg type	N/A
Location	Occurs on all three sites where the native overstorey vegetation is absent.
Description	b) **Canopy:** *Structure and Species*: A few isolated Broadleaf Paperbark occur on the central site. These range in height from 12-15m. **(b) Understorey:** Absent **(c) Shrub Layer:** Absent **(d) Ground Layer:** *Structure and Species*: Areas of unmanaged exotic grassland in the western site are dense and range from 0.1-1.5m in height. The managed areas are approximately 0.05m in height. In the western site the dominant species are Torpedo Grass, Setaria, *Cyperus spp.,* Pennywort (*Hydrocotyle bonariensis**), *Juncus sp.* and Billygoat Weed (*Ageratum houstonianum**). In the central and eastern sites the dominant species are Couch, Whisky Grass (*Andropogon virginicus**), Carpet Grass and Fireweed (*Senecio madagascariensis**).

	(e) Lianas, scramblers, etc: Absent
Condition	Very poor condition as largely consists of exotic grassland and managed lawn.
Threatened plants recorded or potential habitat	No threatened species were detected during field surveys. Long history of modification has altered the habitat such that threatened species habitat within the study area is marginal.
Endangered Ecological Communities	No – does not qualify as an EEC.

Photo 1: Basin and fringing swamp forest – western area

Photo 2: Exotic grassland on central site

Photo 3: Patch of Koala food trees northwest of western area

2.3.2. Threatened Flora Records and Potential Occurrence Assessment

No threatened flora species were recorded on the site despite a thorough walk-over and hand search targeting locally recorded threatened species.

Searches of relevant literature and databases (OEH 2015a) found records of the following threatened flora species in the locality.

Table 2: Locally recorded threatened flora

Common Name and Species	No. of Records	Legal Status	Distance from Study Site/General Location
Scented Acronychia (*Acronychia littoralis*)	3	E-TSCA, E-EPBCA	Sea Acres, Rocky Beach, North Shore
Dwarf Heath Casuarina (*Allocasuarina defungens*)	3	E-TSCA, E-EPBCA	Port Macquarie Airport, Ocean Drive just south of Port Macquarie
Sand Spurge (*Chamaesyce psammogeton*)	2	E-TSCA	Tacking Point, Pelican Point
White-flowered Wax Plant (*Cynanchum elegans*)	1	E-TSCA, E-EPBCA	Sea Acres
Spider Orchid (*Dendrobium melaleucaphilum*)	1	E-TSCA	Outdated record (1922) from Port Macquarie
Narrow-leaved Black Peppermint (*Eucalyptus nicholii*)	3	V-TSCA V-EPBCA	Planted specimens in Port Macquarie
Maundia triglochinoides	3	V-TSCA	Lake Innes Nature Reserve, Emerald Downs
Biconvex Paperbark (*Melaleuca biconvexa*)	22	V-TSCA V-EPBCA	Thrumster, Lake Innes Drive, Emerald Downs, Port Macquarie
Red-flowered King of the Fairies (*Oberonia titania*)	1	V-TSCA	Port Macquarie
Brown Fairy-chain Orchid (*Peristeranthus hillii*)	1	V-TSCA	Outdated record (1979) from Port Macquarie
Rainforest Cassia (*Senna acclinis*)	1	E-TSCA	Port Macquarie
Trailing Woodruff (*Asperula asthenes*)	1	V-TSCA V-EPBCA	Not specified.
Silverbush (*Sophora tomentosa*)	5	E-TSCA	Nobbys Beach, Shelley Beach, Flynns Beach

The site and study area has evidently endured a range of at times significant disturbances, in various intensities, from logging and clearing to cattle grazing and periodic slashing, for many decades; and has also been and is still being invaded by weeds. These threatening processes over time have reduced the suitability of the study area to support threatened species, or resulted in their elimination. This and the

lack of proximate records of such species strongly suggest threatened flora species are unlikely to occur in the study area, as evaluated in Appendix 1.

Thus none are considered further in the statutory assessments.

2.3.3. Endangered Ecological Communities

2.3.3.1. *Swamp Forest on Coastal Floodplains* EEC

"Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions" is a characteristic ecological community listed as Endangered under the TSC Act 2004. This EEC is associated with humic clay loams and sandy loams, on waterlogged or periodically inundated alluvial flats and drainage lines associated with coastal floodplains. *Swamp Sclerophyll Forest on Coastal Floodplains* (SSFCF) generally occurs below 20 m (though sometimes up to 50 m) elevation, often on small floodplains or where the larger floodplains adjoin lithic substrates or coastal sand plains. The structure of the community is typically open forest (but may be reduced to scattered trees via disturbance), and in some areas the tree stratum is low and dense ie a scrub. The community also includes some areas of fernland and tall reedland or sedgeland where trees are very sparse or absent. The most widespread and abundant dominant trees include *Eucalyptus robusta* and *Melaleuca quinquenervia.*

Figure 4 shows that on site, this EEC occurs in a highly degraded form (few scattered remnant trees amongst mostly exotic groundcovers) in the central part of the middle area; and a small patch of retained trees in the northwest and northeast of the eastern site. This forms the degraded edge of the larger occurrence of this EEC to the north where the swamp forest falls on alluvial soils.

Swamp forest around the detention basin appears to fall on non-alluvial soils hence does not qualify as an EEC even though it falls below the modelled 1:100 ARI. Other areas on alluvial soils have been converted to pasture and recovery is prevented by maintenance and competition.

Figure 4: Coastal Floodplain EEC extent and the sites

2.3.4. Other listed Threatened Ecological Communities

A summary review of TECs and Endangered Populations listed under the TSC Act 1995 and EPBC Act 1999 which occur in the North Coast Bioregion (OEH 2015b, DoE 2015a) and their potential for occurrence on site or in the study area, is provided in the following table.

Table 3: Endangered Ecological Communities potential occurrence assessment

Act	Literature Review	Occurrence Assessment
TSC Act	***"Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions"*** is an EEC associated with grey-black clay-loams and sandy loams, where the groundwater is saline or sub-saline, on waterlogged or periodically inundated flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. Swamp Oak Floodplain Forest (SOFF) generally occurs below 20 m (rarely above 10 m) elevation. The structure of the community may vary from open forests to low woodlands, scrubs or reedlands with scattered trees. SOFF has a dense to sparse tree layer in which Swamp Oak (Casuarina glauca) is the dominant species. Other trees including Acmena smithii, Glochidion spp. and Melaleuca spp. may be present as subordinate species. The understorey is characterised by frequent occurrences of vines ie Parsonsia straminea, Geitonoplesium cymosum and Stephania japonica var. discolor, a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter.	This EEC occurs to the northeast of the eastern sites.
TSC Act	***"Subtropical Coastal Floodplain Forest of the NSW North Coast bioregion"*** is a characteristic ecological community listed as Endangered. This Endangered Ecological Community (EEC) is associated with clay-loams and sandy loams, on periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains. Subtropical Coastal Floodplain Forest (SCFF) generally occurs below 50m, but may occur on localised river flats up to 250 m elevation in the NSW North Coast bioregion. While the composition of the SCFF tree stratum varies considerably, the most widespread and abundant dominant canopy trees include *Eucalyptus tereticornis*, *E. siderophloia*, *Corymbia intermedia*, and *Lophostemon suaveolens* (latter only north of the Macleay floodplain).	Vegetation on the site does not meet the floristic and geomorphological criteria of this EEC.

Act	Literature Review	Occurrence Assessment
TSC Act	**"*River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*"** is an EEC associated with silts, clay-loams and sandy loams on periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains. River-Flat Eucalypt Forest on Coastal Floodplains (RFEF) generally occurs below 50m elevations, but may occur on localised river flats up to 250m above sea level. In the North Coast, the most widespread and abundant dominant trees include *Eucalyptus tereticornis, E. amplifolia, Angophora floribunda, A. subvelutina*, *E. saligna* and *E. grandis.*	Vegetation on the site does not meet the floristic and geomorphological criteria of this EEC.
TSC Act	***"Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions***" has been listed as an Endangered Ecological Community under the TSC Act 2004. This EEC is associated with periodic or semi-permanent inundation by freshwater, (including areas with minor saline influence). They typically occur on silts, muds or humic loams in depressions, flats, drainage lines, backswamps, lagoons and lakes associated with coastal floodplains ie habitats where flooding is periodic and standing fresh water persists for at least part of the year in most years. Freshwater Wetlands on Coastal Floodplains (FWCF) generally occur below 20m elevations, and the structure of the community varies from sedgelands and reedlands to herbfields. Woody species of plants are generally scarce. The structure and composition of the community varies both spatially and temporally depending on the water regime (Yen and Myerscough 1989, Boulton and Brock 1999).	Vegetation in the study area does not meet the floristic or geomorphic criteria of this EEC. This EEC is mapped as occurring on the residual to the northwest, which is to be dedicated to PMHC.
TSC Act	***"Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregion***" has been listed as an Endangered Ecological Community since December 2006 on Schedule 1 – Part 3 of the TSCA 1995. Lowland Rainforest, in a relatively undisturbed state, has a closed canopy, characterised by a high diversity of trees whose leaves may be mesophyllous and encompass a wide variety of shapes and sizes. Typically, the trees form three major strata: emergents, canopy and sub-canopy which, combined with variations in crown shapes and sizes, give the canopy an irregular appearance (Floyd 1990). The trees are taxonomically diverse at the genus and family levels, and some may have buttressed roots. A range of plant growth forms are present in Lowland Rainforest, including palms, vines and vascular epiphytes. Scattered eucalypt emergents may occasionally be present. In disturbed stands the canopy continuity may be broken, or the canopy may be smothered by exotic vines.	Vegetation in the study area does not meet the floristic criteria of this EEC.

Act	Literature Review	Occurrence Assessment
TSC Act	***"Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions"*** is typically a closed forest, the structure and composition of which is strongly influenced by its proximity to the ocean. The plant species of this community are predominantly rainforest species while emergent Eucalypts or Lophostemons are present in some stands. This community grows only in coastal areas within maritime influence on sand dunes and soil derived from underlying rocks.	Vegetation in the study area does not meet the floristic and geomorphological criteria of this EEC.
EPBC Act	***"Littoral Rainforest and Coastal Vine Thickets of Eastern Australia"*** is a Critically Endangered Ecological Community listed under the EPBC Act 1999, which is generally identical to the TSC Act listing.	Vegetation in the study area does not meet the floristic criteria of this EEC.
TSC Act	A localised population of a distinctive variation of *Glycine clandestina*, identified as *Glycine* sp. "Scotts Head", has been listed as an Endangered Population. This population is restricted to part of the headland complex at Scotts Head.	The site/subject land is beyond the range of this population which only occurs at Scotts Head.
TSC Act	***"Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregion***" has been listed as an Endangered Ecological Community under the TSCA 1995. Coastal Saltmarsh is the ecological community occurring in the intertidal zone on the shores of estuaries and lagoons along the NSW coast. Characteristic species include: *Baumea juncea, Juncus kraussii, Sarcocornia quinqueflora, Sporobolus virginicus, Triglochin striata, Isolepis nodosa, Samolus repens, Selliera radicans, Suaeda australis, Zoysia macrantha.*	The site/subject land does not meet the floristic or geomorphological requirements of this EEC, hence it does not occur.
TSC Act	***"White Box Yellow Box Blakely's Red Gum Woodland***" is an EEC predicted to occur in Macksville, Dorrigo, Grafton, Kempsey, Korogoro Part, Nambucca, Coffs Harbour and Bare Part Atlas of Wildlife databases. This community is generally restricted to the tablelands and western slopes.	Vegetation in the study area does not meet the floristic and geomorphological criteria of this EEC.
TSC Act	The ***"Population of Eucalyptus seeana in the Greater Taree Local Government Area"*** has been listed as an Endangered Population.	*E. seeana* does not occur in the study area, and is beyond the specified distribution of this Endangered Population.

Act	Literature Review	Occurrence Assessment
TSC Act	***"White Gum Moist Forest in the NSW North Coast Bioregion"*** is an ECC characteristically dominated by White Gum (*Eucalyptus dunnii*) either in pure stands or with E. *saligna, E. microcorys* and/or *Lophostemon confertus* (NSWSC 2008a).White Gum Moist Forest typically occurs on the escarpment slopes and foothills of the north-east NSW, most commonly between 400 and 650 m elevation, where mean annual rainfall exceeds approximately 1000 mm and has a summer maximum (DECC 2007) on fertile soils. It is currently known from the local government areas of Clarence Valley, Coffs Harbour, Kyogle and Tenterfield.	White Gum does not occur in the study area, thus the EEC does not occur.
TSC Act	***"Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions"*** is a Critically Endangered Ecological Community (CEEC). This CEEC occurs on Carboniferous sediments (often on limestone) mainly on rocky slopes. The community typically forms a low closed forest dominated by low trees, shrubs and vines. The canopy is dominated by both varieties of Elaeodendron australe (Red Olive Plum), Geijera parviflora (Wilga), Notelaea microcarpa var. microcarpa (Native olive), and Alectryon oleifolius subsp. elongatus (Western Rosewood). Emergent eucalypts are common and include Eucalyptus albens (White Box), E. dawsonii (Slaty Box), and E. crebra (Narrow-leaved Ironbark). Hunter Valley Vine Thicket has been recorded from the local government areas of Muswellbrook, Singleton, and Upper Hunter (NSWSC 2007b).	This community does not occur in the study area which is located outside the prescribed range, thus the EEC does not occur.
TSC Act	***"Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions"*** is an EEC which occurs on Carboniferous sediments of the Barrington footslopes along the northern rim of the Hunter Valley Floor, where it occupies gullies and steep hill slopes with south facing aspects. The community usually forms a closed forest 15-20m high with emergent trees 20-30m high. Vines are abundant and there is a dense shrub and ground layer (NSWSC 2007c).	This community does not occur in the study area, thus the EEC does not occur.
TSC Act	***"Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, etc***" is an that belongs to the Maritime Grasslands vegetation class of Keith (2004) and its structure is typically closed tussock grassland, but may be open shrubland or open heath with a grassy matrix between the shrubs.	The study area does not meet the floristic or geomorphological requirements of this EEC, hence it does not occur.

Act	Literature Review	Occurrence Assessment
TSC Act	***"Carex Sedgelands of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions"*** is a preliminarily listed EEC in marshy regions dominated by sedges, grasses and semi-aquatic herbs. The species dominants are Carex appressa, Stellaria angustifolia, Scirpus polystachyus, Carex gaudichaudiana, Carex sp. Bendemeer, Carex tereticaulis and Isachne globosa, either as single species or in combinations. Other common species include Geranium solanderi var. solanderi, Haloragis heterophylla, Lythrum salicaria, Epilobium billardierianum subsp. hydrophilum and Persicaria hydropiper (Hunter and Bell 2009).	The study area does not meet the floristic requirements of this EEC, hence it does not occur.
TSC Act	***'Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin*** Bioregions' is an EEC that generally occurs on floodplains and on floodplains and associated floodplain rises along the Hunter River and tributaries.	This community does not occur in the study area which is located outside the prescribed range, thus the EEC does not occur.
TSC Act	'***Coastal Cypress Pine Forest in the NSW North Coast Bioregion'*** is a distinctive vegetation community dominated by Coastal Cypress Pine (Callitris columellaris) and is typically found on coastal sand plains, north from the Angourie area on the far north coast of NSW.	The study area is far beyond the known range of this EEC and the Coastal Pine does not occur, thus the EEC does not occur.

2.4. Fauna

2.4.1. Survey Methods

Due to condition of the site habitats and correspondingly relatively minor impact of the proposal, fauna survey was limited to:

- Direct observations during a one day site visit.
- Habitat evaluation.
- Secondary evidence searches eg scats, nests, bones and tracks.
- Spot Assessment Technique Koala habitat assessment

Habitats on site were defined according to parameters such as:

- Structural and floristic characteristics of the vegetation e.g. understorey type and development, crown depth, groundcover density, etc.
- Degree and extent of disturbance e.g. fire, logging, weed invasion, modification to structure and diversity, etc.
- Soil type and suitability e.g. for digging and burrowing.
- Presence of water in any form e.g. dams, creeks, drainage lines, soaks.
- Size and abundance of hollows and fallen timber.
- Availability of shelter e.g. rocks, logs, hollows, undergrowth.
- Wildlife corridors, refuges and proximate habitat types.
- Presence of mistletoe, nectar, gum, seed, sap, etc. sources.

This collective information plus a literature review and database search formed the basis for predicting the likelihood of potential occurrence of threatened species known or likely to occur in similar habitats in the locality, in the study area. This assessment is provided in 2.6.

2.4.2. Habitat Types

As noted above, the site vegetation is modified swamp forest, exotic grassland and lawn.

The following table provides a summary of the habitat evaluation of the site:

Table 4: Habitat evaluation summary

Habitat Attribute/Type	Site/Study Area	Potential Values to Threatened Species Occurrence
Groundcover	Limited development - provides a poor seed source for native granivore birds, and poor cover for species such as small terrestrial mammals.	No significance – unsuitable for species such as New Holland Mouse, Common Planigale or Eastern Chestnut Mouse.
Leaf litter	A shallow moist layer occurs in the swamp forest.	Overall poor potential refugia and foraging habitat for Green-thighed Frog.
Logs and debris	Absent.	No significance for Quoll, Brushtailed Phascogale, or grassy woodland birds.
Hollows	Absent.	Lack of den, nest and roost sites for hollow-obligate species.
Flowering canopy and understorey trees	Limited diversity – most are summer-autumn flowers, with a few Swamp Mahogany and Forest Red Gum providing a potential winter resource. Broad-leaved Paperbark is a key resource for Grey-headed Flying Fox.	Grey-headed Flying Fox highly likely to use trees when flowering as part of local resource.
Sap and gum sources	Forest Red Gum is a preferred species but rare. *Acacia fimbriata* present but not well developed or abundant.	Only limited potential sap resource for gliders.
Primary preferred Koala browse trees	Two Schedule 2 primary preferred browse trees occur on the study site: Swamp Mahogany and Forest Red Gum. These species constitute <15% of the understorey or canopy cover within a nominal 1ha area including the site.	Koala recorded via scats under 2 trees in the western site. Site only provides minor foraging values as part of wider local range due to rarity of preferred browse species in study area and adjoining habitat.
Allocasuarinas	None identified on the study site. Adjacent lands not potential habitat for preferred species.	No foraging habitat for Glossy Black Cockatoo.

Habitat Attribute/Type	Site/Study Area	Potential Values to Threatened Species Occurrence
Aquatic	A detention pond occurs in the western site. This only has few aquatic species and was infested with Gambusia. A small drainage line runs along the eastern site's boundary which has limited aquatic habitat. Also infested with Gambusia.	Marginal habitat for threatened water birds. No potential habitat for Green and Golden Bell Frog or Green-thighed Frog. Adjacent swamp forest offers non-breeding foraging habitat for Wallum Froglet with wetland further north and northwest likely to be breeding habitat.
Fruiting species	Only very limited preferred species for threatened frugivores, and these are poorly developed	Not likely habitat for threatened frugivores such as Wompoo Fruit Dove.
Passerine bird habitat	Lantana provides some cover for some birds and forest overall has potential for non-grassy woodland passerines.	Generic potential to support threatened passerines such as Varied Sittella.
Caves, cliffs, overhangs, culverts, bridges	Absent from the study area.	No potential roost sites for obligate species for key lifecycle phases.
Small terrestrial prey	Potential habitat for common species of native and exotic rats and Antechinus, as well as bandicoots. Good passerine prey potential.	Potential prey base for Masked Owl and diurnal raptors.

2.4.3. Fauna Observations

Fauna observations were limited as to be expected given the length of the survey period and methods used.

The Koala was detected via scats under two trees in the western site, but activity levels were very low.

A few common forest birds were the predominant species observed. These included a Kookaburra, Rainbow Lorikeet, Grey Fantail, Superb Fairy Wrens, Brown Thornbill, Magpie Lark and Magpie. Am intermediate Egret was observed at the detention pond in the western site.

Crinia parasignifera was heard calling during a preliminary site visit, and a few Garden Sun Skinks comprised the only reptiles. Eastern Grey Kangaroos were directly observed and scats of the Red-necked Wallaby and diggings of bandicoots were noted.

Darkheart (1998) conducted an intensive survey of land adjacent to the eastern site. Via spotlighting, this survey recorded the previous macropods, the fox, common frogs, roaming domestic cats and dogs, the Grey-headed Flying Fox (as flyovers). Trapping recorded only Garden Sun Skink, common frogs. House Mice, Northern Brown Bandicoot, Bush Rat and Swamp Rat.

2.4.4. Corridors and Key Habitats

See Figure 5 for map showing the following:

2.4.4.1. Regional Corridors and Sub-Regional Corridors

Regional corridors are typically >500 metres wide and provide a link between major and/or significant areas of habitat in the region. Ideally they are of sufficient size to provide habitat in their own right and at least twice the width of the average home range area of fauna species identified as likely to use the corridor (OEH 2015c, Scotts 2002).

Sub-regional corridors connect larger landscaped features and are of sufficient width to allow movement and dispersal (generally >300 metres), but may not provide substantial species habitat (OEH 2015c, Scotts 2002).

The study area falls within the Lake Innes to Cowarra sub-regional corridor that links west across the Thrumster area to key habitat in Sancrox, and down to Burrawan State Forest. This corridor is identified to potential support species such as the Koala, Brushtailed Phascogale and Eastern Chestnut Mouse. While the Koala is known and capable of moving over the landscape matrix in this corridor, the other two and similarly mobility limited (eg due to large extents of pastoral land) species would have limited capacity to fully facilitate the eastern and westernmost parts of this corridor.

The three sites fall on the disturbed margins of this corridor, hence residential development as proposed would not comprise the corridor's functional effectiveness.

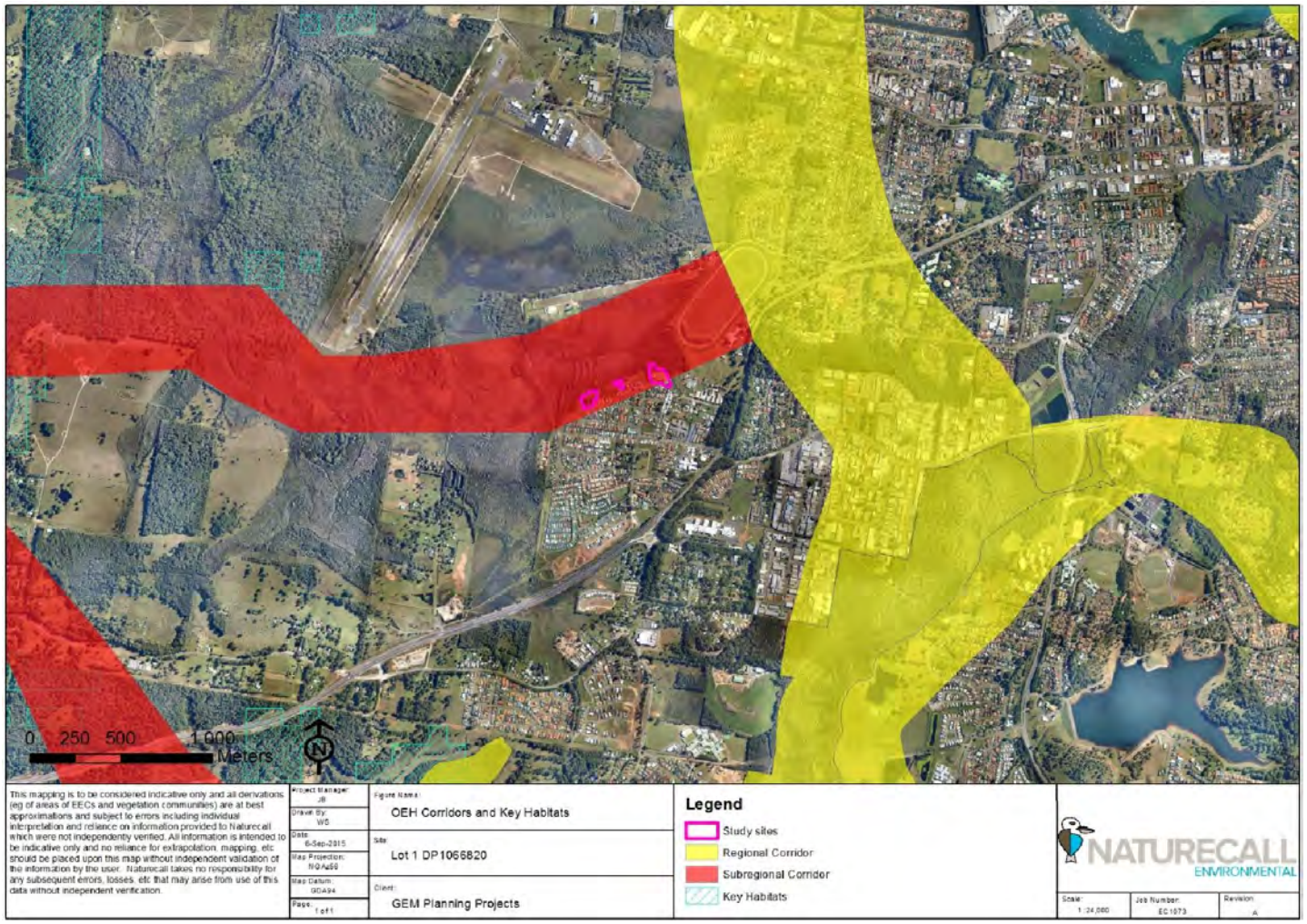
2.4.4.2. Local Corridors and Habitat Links

Local corridors provide connections between remnant patches of habitat and landscape features. Due to their relatively small area and width (they may be <50 metres) these corridors are subject to edge effects (OEH 2015c, Scotts 2002). Habitat links are evaluated in this report as links from habitat on-site directly to similar habitat on adjacent land. These would be used by fauna, which depend solely or at least partially in the study area for all of their lifecycle requirements, and/or dispersal.

The sites can be seen to form the low value fringe of a larger body of remnant vegetation comprising a mix of swamp forest to sedgeland. Urban development to the south and the racecourse to the left severely limit potential connectivity in these directions. Hence the sites themselves have no key local corridor or habitat linkage values.

Dedication of the residual will protect this local corridor's role in the landscape context.

Figure 5: OEH Corridors



2.4.4.3. Key Habitat

Key Habitats are areas of predicted high conservation value for forest faunal assemblages, endemic forest vertebrates or endemic invertebrates; spatially depicted as a merging of mapped assemblage hubs, assemblage hot spots and centers of endemism (OEH 2015c, Scotts 2002).

The study area is not mapped as Key Habitat

2.5. Local Threatened Fauna Records

The species listed in the following table have been recorded within 10km of the study site (OEH Bionet 2015, Jones 1995, Aaso 2002, Biosis 2004a, 2005, Biosphere Environmental Consultants 2006, AMBS 2003, 2004, Redpath 2003, EcoPro 1999a, 1999b, ERM 2002, 2003, 2012, Lewis 2008, NPWS 1995a, Biolink 2013b, 2005a, 2005b, 2005c, 2004, 2003, Trémont 2005, SLR 2015, Standing and Bray 1998, Berrigan 2002, Darkheart 2005a-e, 2004a-c, Bernard Whitehead pers. comm.). Those in bold are listed as threatened under the EPBCA. Marine species are excluded from this list as the site is located well away from the ocean and does not front the Hastings River.

The following species (excluding marine mammals, birds and reptiles as no suitable habitat occurs on the site or would be affected by the proposal) are considered likely to occur in the locality due to suitable habitat and regional records (some have been recorded within 20km) (Strahan 2000, Smith *et al* 1995, Churchill 2009, OEH 2015a, personal knowledge). Those marked with * are listed under the EPBCA:

(a) *Mammals*: *Long Nosed Potoroo, *New Holland Mouse, Becarri's Freetail-bat, Eastern Pygmy Possum, Parma Wallaby, Rufous Bettong.

(b) *Birds*: Sooty Owl, Barking Owl, Red-backed Button Quail, Grey-crowned Babbler, Hooded Robin, Flame Robin, Speckled Warbler, Diamond Firetail, Ground Parrot, Painted Honeyeater, Black-chinned Honeyeater, Brown Treecreeper, *Red Goshawk, *Painted Snipe, Brolga, Comb-crested Jacana

(c) *Reptiles*: Pale-headed Snake, Stephens Banded Snake, *Three-toed Snake-tooth Skink

(d) *Frogs*: **Mixophyes balbus, *M. iteratus, *Litoria olongburensis, Green-thighed Frog*

Table 5: Threatened fauna species recorded in the locality

Group	Common and Species Names	Legal Status	Distance From Study Site/General Location
Mammals	Eastern Chestnut Mouse (*Pseudomys gracilicaudatus*)	V-TSCA	Partridge Creek, Port Macquarie Airport, Lake Innes Nature Reserve, east of Lindfield Park Rd.
	Koala *(Phascolarctos cinereus*)	V-TSCA	Recorded on site, Port Macquarie residential areas, North Shore, Sea Acres, Lake Innes Nature Reserve, UIA 13, UIA 12, Sancrox

Group	Common and Species Names	Legal Status	Distance From Study Site/General Location
	Spotted-tailed Quoll (*Dasyurus maculatus*)	V-TSCA, E-EPBCA	Sea Acres NR, Tacking Point, Riverside Drive, North Shore, Tulloch Road, Findlay Drive
	Brushtailed Phascogale (*Phascogale tapoatafa*)	V-TSCA	Settlement Point, North Shore
	Common Planigale (*Planigale maculata*)	V-TSCA	Lake Innes Nature Reserve, St Columba School, Ruins Way
	Squirrel Glider (*Petaurus norfolcensis*)	V-TSCA	Ocean Drive, Hastings River Drive, Toorak Court, Lake Innes Nature Reserve, Sherwood Road, Boundary Road, Highfields Circuit
	Yellow-bellied Glider (*Petaurus australis*)	V-TSCA	Lake Innes Nature Reserve, Lake Innes estate, UIA 12
	Little Bent-wing Bat (*Miniopterus australis*)	V-TSCA	Sea Acres, Kooloonbung Creek, Lake Innes Nature Reserve, Major Innes Drive/Ruins Way area, Oxley Highway
	Eastern Bent-wing Bat (*M. schreibersii oceanensis*)	V-TSCA	Kooloonbung Creek, Oxley Highway, Boundary Road, Port Macquarie Airport, Lighthouse Road, Mumford Street, Major Innes Drive
	East-coast Freetail Bat (*Mormopterus norfolkensis*)	V-TSCA	Lake Innes Nature Reserve, Major Innes Drive/Ruins Way area, Boundary Road, Kingfisher Road
	Hoary Wattled Bat (*Chalinobus nigrogriseus*)	V-TSCA	Highfields Circuit, Kingfisher Rd
	Eastern Cave Bat (*Vespadelus troughtoni*)	V-TSCA	Ruins Way, Lighthouse Road,
	Greater Broad-nosed Bat (*Scoteanax rueppellii*)	V-TSCA	Sea Acres, Lake Innes Nature Reserve, Ruins Way, Mumford Street, Kingfisher Road
	Golden-tipped Bat (*Kerivoula papuensis*)	V-TSCA	Adjacent to Ocean Drive near Rosendahl Reservoir
	Eastern False Pipistrelle (*Falsistrellus tasmaniensis*)	V-TSCA	Oxley Highway, Kingfisher Rd
	Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)	V-TSCA	Corner of Lighthouse Road and Pacific Drive, Phillip Charley Drive
	Dwyer's Bat/Large Pied Bat (*Chalinobus dwyeri*)	V-TSCA V-EPBCA	Kingfisher Rd

Group	Common and Species Names	Legal Status	Distance From Study Site/General Location
	Southern Myotis (*Myotis macropus*)	V-TSCA	Lake Innes Nature Reserve, Ruins Way, Thrumster
	Common Blossom Bat (*Syconycteris australis*)	V-TSCA	Lake Innes Nature Reserve
	Grey-headed Flying Fox (*Pteropus poliocephalus*)	V-TSCA V-EPBCA	Adjacent land to east, Port Macquarie environs, Lake Innes Nature Reserve, Thrumster, etc
Birds	Glossy Black Cockatoo (*Calyptorhynchus lathamii*)	V-TSCA	Ruins Way, Thrumster, Riverside, Lake Innes Nature Reserve
	Swift Parrot (*Lathumus discolor*)	E-TSCA E-EPBCA	Ruins Way area, Lake Innes residential area
	Little Lorikeet (*Glossopsitta pusilla*)	V-TSCA	Lake Innes Nature Reserve, Thrumster, Port Macquarie Airport, Lighthouse Beach
	Varied Sittella (*Daphoenositta chrysoptera*)	V-TSCA	Kooloonbung Creek, Port Macquarie Airport, Oxley Highway, Ruins Way, Lake Innes Nature Reserve
	Wompoo Fruit Dove (*Ptilinopus magnificus*)	V-TSCA	Sea Acres, Lighthouse Beach gully
	Rose-crowned Fruit Dove (*Ptilinopus regina*)	V-TSCA	Tacking Point, Lighthouse Beach area, Sea Acres
	Barred Cuckoo-shrike (*Coracina lineata*)	V-TSCA	Sea Acres, Macquarie Nature Reserve, Flynns Beach Caravan Park
	Scarlet Robin *(Petroica boodang*)	V-TSCA	Sea Acres
	Regent Honeyeater (*Anthochaera phrygia*)	E-TSCA, E-EPBCA	Fernbank Creek
	Powerful Owl (*Ninox strenua*)	V-TSCA	Adjacent land to east of site, Lake Innes Nature Reserve, Ruins Way, Partridge Creek
	Masked Owl (*Tyto novaehollandiae*)	V-TSCA	Pacific Highway (near Thrumster), Long Point Drive, Queens Lake State Forest
	Eastern Grass Owl (*Tyto capensis*)	V-TSCA	Lake Innes Nature Reserve, Partridge Creek, Lindfield Park Road
	Eastern Osprey (*Pandion cristatus*)	V-TSCA, EPBCA-Migratory	Lake Innes Nature Reserve, Sea Acres, Nobby's Head, Town Green, Hastings River, Settlement Point, North Shore, Fernbank
	Beach Stone-curlew (*Esacus magnirostris*)	E-STCA	Settlement Point

Group	Common and Species Names	Legal Status	Distance From Study Site/General Location
	Bush-stone Curlew (*Burhinus grallarius*)	E-TSCA	Kooloonbung Creek
	Square Tailed Kite (*Lophoictinia isura*)	V-TSCA	Macquarie Nature Reserve, Thrumster, Kooloonbung Creek, Tacking Point, Ocean Drive
	Spotted Harrier (*Circus assimilis*)	V-TSCA	Thrumster
	Blue-billed Duck (*Oxyura australis*)	V-TSCA	Innes Drive, Port Macquarie
	Freckled Duck (*Stictonetta naevosa*)	V-TSCA	Outdated records from Port Macquarie
	Eastern Curlew (*Numenius madagascariensis*)	CE-EPBCA	Hastings River
	Australasian Bittern (*Botaurus poiciloptilus*)	E-TSCA, E-EPBCA	Lake Innes Nature Reserve, Greenmeadows Drive
	Black Bittern (*Ixobrychus flavicollis*)	V-TSCA	Fernbank
	Magpie Goose (*Anseranas semipalmata*)	V-TSCA	Port Macquarie sewerage treatment plant
	Black Necked Stork (*Ephippiorhynchus asiaticus*)	E-TSCA	Lake Innes Nature Reserve, Kooloonbung Creek, Settlement Point, Partridge Creek
Frogs	Wallum Froglet (*Crinia tinnula*)	V-TSCA	Lake Innes Nature Reserve, Emerald Downs, Port Macquarie Airport, Partridge Creek
	Green and Golden Bell Frog (*Litoria aurea*)	E, TSCA, V-EPBCA	North Shore, Annabella Downs Estate, Lindfield Park Rd
Insects	Giant Dragonfly (*Petalura gigantea*)	E-TSCA	Port Macquarie area
	Laced Fritillary (*Argyreus hyperbius*)	V-TSCA	Limeburners Creek Nature Reserve

2.6. Potential Occurrence Assessment

2.6.1. NSW Fauna

The locally and regionally recorded threatened fauna have been evaluated for their potential to occur on the study site/area, as well as for the likely significance of the proposal and thus their eligibility for Seven Part Test assessment, in Appendix 1.

From this assessment, threatened species considered to potentially use habitat in the study area are listed in the following table:

Table 6: Threatened fauna potentially occurring in the study area

Species	Occurrence Type	Occurrence Likelihood
Wallum Froglet	Likely to occur within study area of western site in less disturbed and wetter swamp forest.	At least fair on fringes of northwestern site study area. Very low to unlikely to occur on any site.
Australasian Bittern	Small chance of foraging in fringe of western most study area, with preferred potential habitat comprising sedgeland wetland in northwest of residual area.	Very low as nationally threatened.
Square-tailed Kite	Potential to form minute portion of large foraging territory. No likely potential nest trees.	Fair chance as periodic forager.
Little Eagle	Potential to form minute portion of large foraging territory. No likely potential nest trees.	Fair chance as periodic forager.
Powerful Owl	Site/study area contains marginally suitable foraging habitat that may form marginal and disjunct part of a territory. No nesting hollows observed.	Low chance of periodic forager on marginal fringe of core range.
Masked Owl	Site/study area contains marginally suitable foraging habitat that may form marginal and disjunct part of a territory. No nesting hollows observed.	Low chance of periodic forager on marginal fringe of core range.
Swift Parrot	Few preferred forage species on fringe of study area, but minimal chance of usage given competition with other common species. Recorded nearby.	Very low to unlikely as nationally threatened and conspecific competition.
Little Lorikeet	Site/study area contains broadly suitable foraging habitat that may be used seasonally. No potential nesting hollows observed.	At least fair chance seasonally foraging as small part of local range.
Spotted-tailed Quoll	Site/study area contains marginal habitat however may be used as a linkage between core areas of habitat	Low chance of foraging on site or as transient
Koala	Site has few preferred forage species but not an area of major activity.	**Recorded** – mostly likely transient use or low density home range.
Grey-headed Flying Fox	Generic foraging habitat on site likely to form part of seasonal forage range. Not a known roosting area.	Highly likely chance of occurrence on site as occasional forager.
Yellow-bellied Sheathtail Bat	Site/study area offers potential foraging but no suitable hollows on site.	Low to fair chance as occasional forager.
Eastern False Pipistrelle	Site/study area offers potential foraging habitat as part of large seasonal range. Potentially breeding locally but no suitable hollows on site.	Low chance of foraging as occasional forager.

Species	Occurrence Type	Occurrence Likelihood
East-coast Freetail Bat	Site/study area offers potential foraging and marginal roosting habitat as part of large seasonal range. Potentially breeding locally but no suitable hollows on site.	Fair chance of foraging on site.
Greater Broad-nosed Bat	Site/study area offers potential foraging habitat as part of large seasonal range. Potentially breeding locally but no suitable hollows on site.	Fair chance of foraging over the site.
Hoary Bat	Small area of marginal potential foraging habitat on site. Likely to be southern summer migrant. No suitable hollows on site.	Low as marginal fringe of local range.
Little Bent-wing Bat	Site/study area offers potential foraging habitat as part of large seasonal range. No suitable roosts on site.	Moderate chance of foraging in forest canopy over the site.
Eastern Bent-wing Bat	Site/study area offers potential foraging habitat as part of large seasonal range. No suitable roosts on site.	Moderate chance of foraging in forest canopy on site.

2.6.2. Commonwealth

The following species are considered by the DotE Matters of National Environmental Significance search tool (DotE 2015a) as potential occurrences in the locality. Marine birds, mammals and reptiles and all fish listed in the search are irrelevant as the site/study area does not contain habitat and the proposal has no potential to impact these species.

2.6.2.1. Threatened Species

Table 7 summarises the species predicted by the search tool as potential occurrences, and other species with potential to occur in the locality, for their potential to occur on site, in the study area or on the property. The potential for these species to occur on the site is also reviewed in Appendix 1.

Table 7: EPBC Act threatened fauna species potential occurrence assessment

Note: Likelihood of occurrence derived from opinions of consultants in consideration of known ecology of each species (see Appendix 1); and quality of habitat on-site. * indicates listed on DoE website search.

Group	Common Name	Scientific Name	Listing Status	Recorded In Locality	Suitable Habitat On Site/Study	Likelihood Of Occurrence
Birds	*Regent Honeyeater	*Xanthomyza phrygia*	CE	Y	No preferred habitat	Unlikely – single record evidencing chance visit.
	*Australian Painted Snipe	*Rostratula australis*	V	N	No suitable habitat on site but may occur in sedgeland in residual	Unlikely to occur on site – chance may occur in residual.
	Curlew Sandpiper	*Calidris ferruginea*	CE	N	No suitable habitat (estuaries and beaches).	Unlikely to occur.
	Eastern Curlew	*Numenius madagascariensis*	CE	Y	No suitable habitat (estuaries and beaches).	Unlikely to occur.
	*Red Goshawk	*Erythrotriorchis radiatus*	E	N	Generic potential habitat forming minute fraction of such habitat.	Unlikely as not seen south of Clarence River.
	*Eastern Bristlebird	*Dasyornis brachypterus*	E	N	No suitable habitat.	Unlikely to occur.

Group	Common Name	Scientific Name	Listing Status	Recorded In Locality	Suitable Habitat On Site/Study Area	Likelihood Of Occurrence
	*Australasian Bittern	*Botaurus poiciloptilus*	E	N	Small chance of foraging in fringe of study area, with preferred potential habitat comprising sedgeland wetland in northwest of residual area.	Very low to unlikely as nationally threatened.
	*Swift Parrot	*Lathumus discolor*	E	Y	Few preferred forage species on fringe of study area, but minimal chance of usage given competition with other common species.	Very low to unlikely as nationally threatened.
Mammals	*Long-nosed Potoroo	*Potorous tridactylus*	V	N	No suitable habitat	Unlikely to occur
	*Koala	*Phascolarctos cinereus*	V	Y	Study area has few preferred forage species.	**Recorded via scats.**
	*Spotted-tail Quoll	*Dasyurus maculatus*	E	Y	Low potential foraging habitat. Some corridor values	Low chance foraging on site or as transient

Group	Common Name	Scientific Name	Listing Status	Recorded In Locality	Suitable Habitat On Site/Study Area	Likelihood Of Occurrence
	*Grey-headed Flying Fox	*Pteropus poliocephalus*	V	Y	Trees suitable for seasonal nectar foraging.	Very high likelihood of foraging on site and in adjacent forest.
	*Dwyer's/Large Pied Bat	*Chalinolobus dwyeri*	V	Y	Marginally generic forage habitat in forest. No potential roosts in study area.	Unlikely chance of occurrence.
	*Brushtailed Rock Wallaby	*Petrogale penicillata*	V	N	No suitable habitat in locality.	Unlikely chance of occurrence.
	*New Holland Mouse	*Pseudomys novaehollandiae*	E	N	No suitable habitat.	Unlikely to occur.
Frogs	*Green and Golden Bell Frog	*Litoria aurea*	V	Y	No suitable habitat.	Unlikely to occur.
	*Stuttering Frog	*Mixophyes balbus*	V	N	No suitable habitat.	Unlikely to occur.
	Wallum Sedge Frog	*Litoria olongburensis*	V	N	No suitable habitat.	Unlikely to occur.
	*Giant Barred Frog	*M. iteratus*	E	N	No suitable habitat.	Unlikely to occur.

2.6.3. Migratory Species

No EPBC Act migratory specie were recorded on site.

A significant number of other EPBC Act 1999 listed migratory bird species are known (OEH 2015a) or considered potential occurrences in the locality (DoE 2015a – see Appendix 1). A search of the MNES website and literature review (Readers Digest 1990, DoE 2015b) also produced a list of likely occurrences. All of these species plus some considered by the consultant as potential occurrences in the LGA in similar habitat to that in the study area are also shown in the following table, with an evaluation made on likelihood of occurrence based on cited ecology. Note this list excludes seabirds, etc, as detailed above.

Table 8: EPBC Act migratory species potential occurrence assessment

Common Name	Scientific Name	Predicted Type of Occurrence	Recorded In Locality	Suitable Habitat On Site/Study Area	Likelihood Of Occurrence
*White-Bellied Sea-Eagle	*Haliaetus benghalensis*	Species and/or habitat likely to occur within area	Y	No suitable habitat.	Unlikely to occur.
Osprey	*Pandion cristatus*	-	Y	No suitable habitat.	Unlikely to occur.
Latham's Snipe	*Gallinago hardwickii*	Species or habitat may occur in area	Y	No suitable habitat on site, but likely to occur in residual where sedgeland occurs.	Unlikely to occur in study area.
Australian Painted Snipe	*Rostratula benghalensis (australis)*	Species and/or habitat may occur in area	N	No suitable habitat.	Unlikely to occur in study area.
Great Egret	*Egretta alba*	Species/habitat may occur in area	Y	No suitable habitat on site, but likely to occur in residual where sedgeland occurs.	Unlikely to occur in study area.
Rainbow Bee-eater	*Merops ornatus*	Species/habitat may occur in area	Y	Suitable foraging habitat.	Fair chance of occurrence
Regent Honeyeater	*Xanthomyza phrygia*	Species/habitat may occur in area	Y	Few preferred forage species on fringe of study area, but minimal chance of usage given competition with other common species.	Very low to unlikely as nationally threatened.
Swift Parrot	*Lathumus discolor*	Species/habitat may occur in area	N	Few preferred forage species on fringe of study area, but minimal chance of usage given competition with other common species.	Very low to unlikely as nationally threatened.

Common Name	Scientific Name	Predicted Type of Occurrence	Recorded In Locality	Suitable Habitat On Site/Study Area	Likelihood Of Occurrence
Rufous Fantail	*Rhipidura rufifrons*	Breeding or breeding habitat may occur in area	Y	Not suitable forest type.	Unlikely to occur.
Satin Flycatcher	*Myiagra cyanoleuca*	Breeding or breeding habitat likely in area	Y	Not suitable forest type.	Unlikely to occur.
Black Faced Monarch	*Monarcha melanopsis*	Breeding or breeding habitat may occur in area	Y	Not suitable forest type.	Unlikely to occur.
Spectacled Monarch	*M. trivirgatus*	Breeding or breeding habitat likely in area	Y	Suitable forest type.	Fair chance using large body of habitat along Old Coast Rd.
White-throated Needletail	*Hirundapus caudacutus*	Species/habitat likely to occur in area	N	Yes as part of a broader area	Moderate-high, as transient, between Dec-April
Fork-tailed Swift	*Apus pacificus*	Species/habitat may occur in area	N	Yes as part of a broader area	Fair potential, as transient, between Oct-April

3.0 Constraints and Overview Statutory Assessment

3.1. Constraints

3.1.1. SEPP 14

As shown in Figure 6, part of the adjacent SEPP 14 Coastal Wetland #507 laps over the northern part of the central site. Filling is proposed only for the house site in the southern end, with the residual remaining unfilled and maintained as is via existing use rights ie subject to mowing/slashing.

Figure 7 shows the sites overlaid with the SEPP 14 boundary on a 1981 aerial photograph. As shown in the photograph and as expected as per the criteria used (Adams *et al* 1985), the large body of

swamp forest to the north is generally (but not entirely) encapsulated in the SEPP 14 wetland, including an area clearly shown as cleared but with regrowth indicative of SEPP 14 vegetation dominating the groundcover (still evident in current aerial in Figure 6).

The central site's vegetation has slightly changed in the southern end since this photo – with what appears to be some young trees potentially removed to establish the current pattern. The shading suggests this vegetation may have been only immature regrowth (eg Swamp Oak seedlings), leaving the current larger trees. Ongoing management has been slashing, suppressing regeneration to its current state, and maintaining pasture species in the groundcover.

The proposal thus just affect a miniscule area on the degraded outermost fringe of the SEPP 14 wetland (subject to interpretation of the boundary line, which can be varied from 25-50m due to limitations of the mapping). As this will only remove a minute fraction of the SEPP 14's biodiversity and not significantly alter the hydrological regime, this impact is considered insignificant relative to the objectives of SEPP 14. Furthermore, the proposed edge treatments, closure of 4WD tracks, and dedication to PMHC of the residual will contribute to greater protection of the SEPP 14 area overall via increasing protection and controlling threats.

3.1.2. PMHC DCP 2013

Under the Port Macquarie-Hastings Council Local Environmental Plan (PMHC LEP) 2011, Council has prepared and implemented the PMHC Development Control Plan (DCP) 2013.

The DCP has a specific provisions for hollow-bearing trees, Koala food trees, and EECs and riparian zones which require buffers on land >1ha.

No hollow-bearing trees occur on site, hence no retention and buffer or offset provisions apply for these.

Figure 8 shows that 8 Koala food trees (Forest Red Gum and Swamp Mahogany) occur on the western and eastern sites. If any are removed (one falls on the edge of the dam to be filled), these will have to be replanted as offsets. The offset ratio is 1:2, and trees are required to be planted 10m apart to maximise crown development. These could be planted along the margins of the residual Lot to be dedicated to PMHC

The DCP specifies a buffer distance of 35m to Coastal Floodplain EECs. PMHC has advised that provided the residual is dedicated to Council for protection, this can be waived subject to bush regeneration works of the forest edge to mitigate edge effects.

There are no natural watercourses in the study area, hence no riparian buffers are required.

Figure 6: SEPP 14 mapping

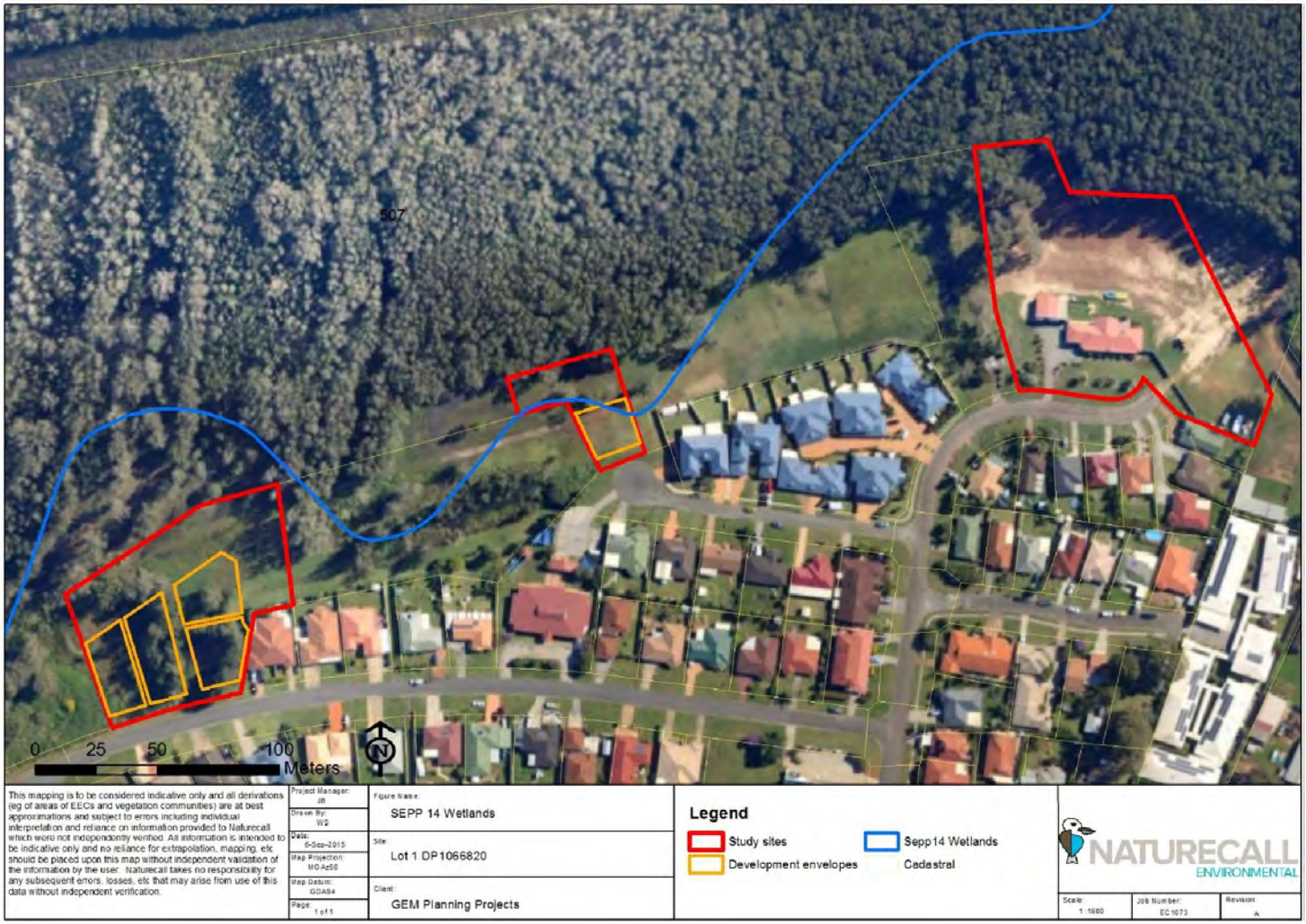


Figure 7: 1981 Aerial and SEPP 14 boundary

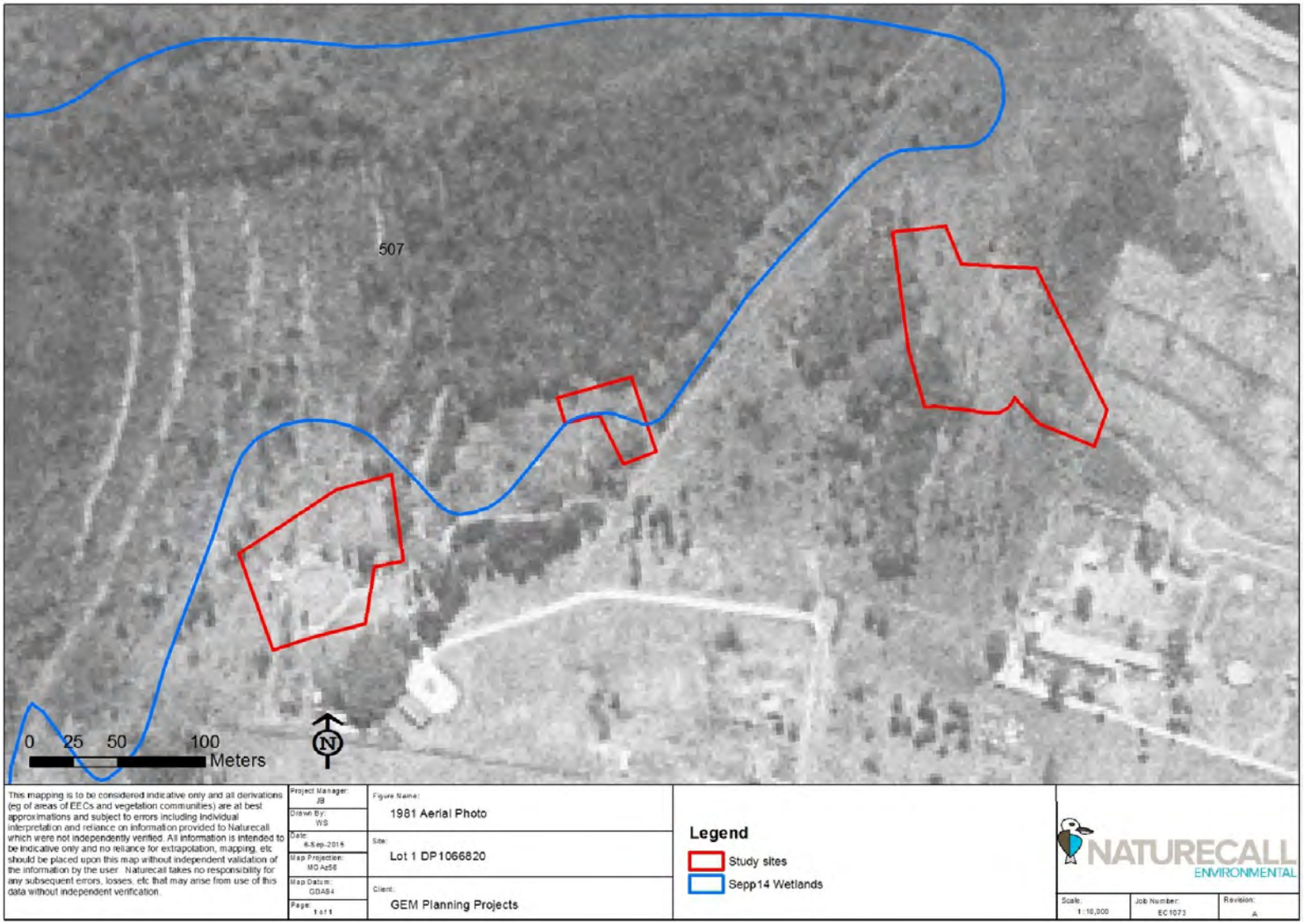
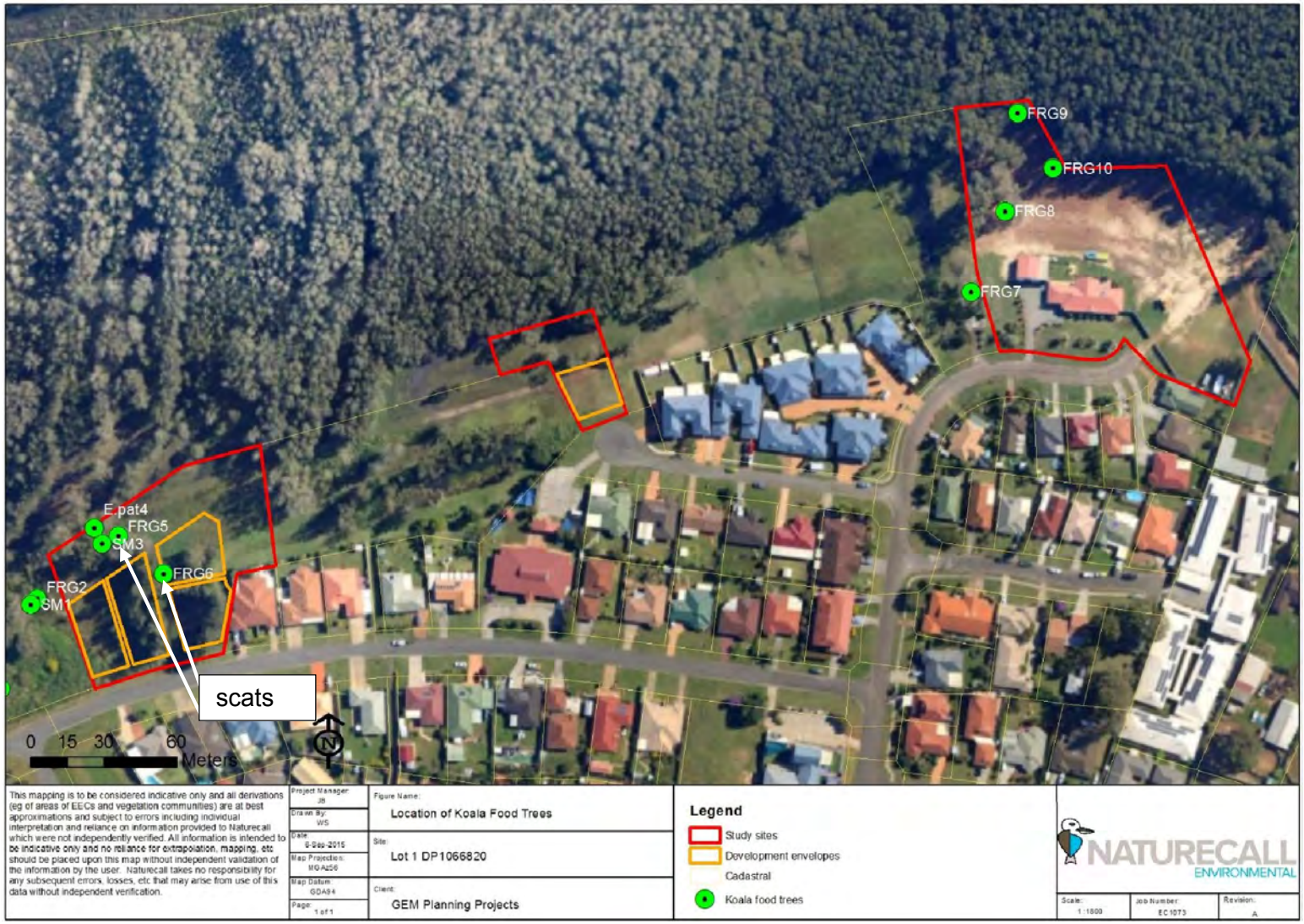


Figure 8: Koala food trees on site



3.2. Seven Part Tests

The Seven Part Tests are used to determine whether a proposed development is likely to have a significant negative effect on species, Endangered Ecological Communities, Endangered Populations and Critical Habitat (and their habitat) listed under schedules of the *Threatened Species Conservation Act 1995* (DECC 2007).

The Seven Parts of Consideration are described by Section 5A of the *Environmental Planning and Assessment Act 1979*, as amended by the Threatened Species Act 1995 which in turn has been amended by the *Threatened Species Conservation Amendments Act 2002*, are listed in the following 7-Part Tests.

All the fauna species listed in Table 6 and the EEC – *Swamp Sclerophyll Forest on Coastal Floodplains* are subject to the Seven Part Test assessment.

A summary assessment of a full formal assessment is provided as follows:

a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

No local population of any threatened species is likely to be placed at risk of extinction as:

- All known and potentially occurring threatened species require habitat which far exceeds the site and study area to maintain their viability.
- For all but the Koala, no important habitat or habitat components will be removed. Any Koala food trees removed (at most 1-2 appear to be at risk) are to be replaced with replantings nearby to result in a net increase in Koala habitat.
- Domestic cats and dogs are current threat, hence the new lots will only incrementally add to the existing cumulative threat.
- Access to the residual, which is likely to contain breeding habitat of the Wallum Froglet, will not be encouraged (existing tracks are recommended to be gated).

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

Not relevant as no relevant endangered populations known or potentially occurring in the locality.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
   (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

The local occurrence of the EEC – *Swamp Sclerophyll Forest* extends well beyond the study area. The proposal will at most see the loss of a very small fraction of the degraded fringe its local occurrence (the few scattered trees in the central site, and the northeast corner of the eastern site), with the residual (containing the overwhelming majority is high condition) protected under SEPP 14 and zoning under the LEP.

Edge effects have already manifested, and the proposal's approval will require some bush regeneration works to mitigate the impacts of the proposal.

Overall thus, the proposal is thus clearly incapable of placing the local occurrence of the EEC at risk of extinction.

d) in relation to the habitat of a threatened species, population or ecological community:
   (i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
   (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
   (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

If approved, the total footprint will be about 1.55ha, and generally mostly impact exotic managed pasture, and artificial waterbody infested with Plague Minnow, and some small very areas of regrowth swamp forest. This occurs on the southern margins of a larger body of swamp forest and sedgeland with high habitat corridor values for species dependant on such habitats, to similar habitat in the UIA 13. The proposal has no impact on these corridor values, hence will not isolate or fragment habitat.

As noted in (a) and (c), the site habitat is of no key significance to the EEC, or threatened species. The Koala is the species with the strongest association with the site due to a handful of browse trees present, but the site does not contain an area of major activity.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No areas of critical habitat have been identified in the locality.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

Relevant recovery plans exist for the Koala, Powerful Owl and Masked Owl in NSW, with a national recovery plan for the Grey-headed Flying Fox. The loss of habitat by definition conflicts with the objectives of these plans, as well as the priority actions identified for the other species and EECs.

However, only low quality habitat is affected on the fringe of generally a larger and locally significant body of habitat, hence the overall recovery objectives are not likely to be compromised.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The loss of native vegetation will contribute to key threatening processes, but only via a minor incremental amount.

3.3. EPBC Act MNES

3.3.1. General Overview

The provisions of the EPBC Act require determination of whether the proposal has, will or is likely to have a significant impact on a "matter of national environmental significance" (MNES).

These matters are listed and addressed in summary as follows:

1) **World Heritage Properties**: The site is not listed as a World Heritage area nor does the proposal affect any such area.
2) **National Heritage Places**: The site is not listed as a National Heritage Place nor does the proposal affect any such area
3) **Ramsar Wetlands of International Significance**: A Ramsar wetland does not occur on the site, nor does the proposal affect a Ramsar Wetland.
4) **EPBCA listed Threatened Species and Communities**: The Koala was recorded via scats using 2 of the primary preferred Koala food trees on site, and is assessed under the specific guidelines (DotE 2014) below. The Grey-headed Flying Fox is highly likely to seasonally forage on site as part of the adjacent swamp forest, as part of its local seasonal range. The Quoll is a significantly less likely potential occurrence. None of these species is considered likely to be significantly impacted.
5) **Migratory Species Protected under International Agreements**: No Migratory species is likely to be significantly affected by the proposal as the site is low value for forest and wetland birds due to condition, habitat type and presence of cats and dogs.
6) **The Commonwealth Marine Environment (CME)**: The site is not within the CME nor does it affect such
7) **The Great Barrier Reef Marine Park:** The proposal does not affect the Great Barrier Reef Marine Park.
8) **Nuclear Actions**: The proposal is not a nuclear action.
9) **A water resource, in relation to coal seam gas development and large coal mining development**: The proposal is not a mining development.

The proposal thus is not considered to require referral to Department of Environment (DoE) for approval under the EPBCA 1999.

3.3.2. Koala Assessment

The habitat in the study area has been assessed using the Koala habitat assessment tool from the EPBC Referral Guidelines (DoE 2014). To qualify as critical habitat, it must score 5 or more. This is shown in the following table:

Table 9: Koala critical habitat assessment

Attribute	Score*	Reason	
Koala occurrence	2	Desktop	Interrogation of the OEH Bionet database reveals numerous records of the species occurring within a 2km radius of the site. EPBCA PMST report identified the Koala as 'known to occur' in the study area.
		On-ground	Koala scats under two trees but usage is either transient or low density home range.
Vegetation structure and composition	0	Desktop	No Potential Koala Habitat mapped in parts of study area
		On-ground	Not preferred species dominating site or study area. Trees on site recommend remnants of original ecotone.
Habitat connectivity	1	The study area occurs within regionally and locally significant habitats which the Koala population can generally move through with limited natural and artificial barriers.	
Key existing threats	2	Desktop	OEH Bionet record vehicle strike and dog attack in the locality
		On-ground	No evidence of Koala road kill found during survey, however some threat exists from domestic dogs and road kill risk along John Oxley Drive and Oxley Highway.
Recovery value	0	Not adjacent to any significant extent of preferred Koala habitat. Not mapped by Biolink (2013b) as Preferred Koala Habitat.	
Total	**5**	**Study area qualifies as critical habitat**	

* Based upon criteria for Coastal Habitat Context.

As per the Koala critical habitat assessment tool, the site just qualifies as critical habitat, hence further assessment is required. An assessment has thus been undertaken to determine if the proposal will adversely affect this habitat and/or interfere substantially with the recovery of the Koala and require referral to the Minister.

The following table derived from the Koala Referral Guidelines (DotE 2014) assesses whether the proposal is likely to adversely affect habitat critical to the survival of the Koala.

Table 10: Impact on critical Koala habitat assessment

Factor	Y/N	Reason
Does impact area contain habitat critical to the survival of the Koala	N	Site and study area habitat does not meet the criteria.
Do the areas proposed to be cleared contain known Koala food trees	Y	No Koala habitat to be removed – no tree removal required.
Are you proposing to clear <2ha of habitat containing known Koala food trees in an area with a habitat score of ≤5	Y	Possible loss of up to 9 trees in area with habitat score of 5. Guidelines state that referral not recommended.
Are you proposing to clear >20ha of habitat containing known Koala food trees in an area with a habitat score of ≥8	N	Does not meet either threshold.
Outcome	In accordance with Figure 1 (Summary of the EPBC Act referral guidelines for the Koala) of the Koala Referral Guidelines (DotE 2014), referral to the department is **NOT RECOMMENDED.**	

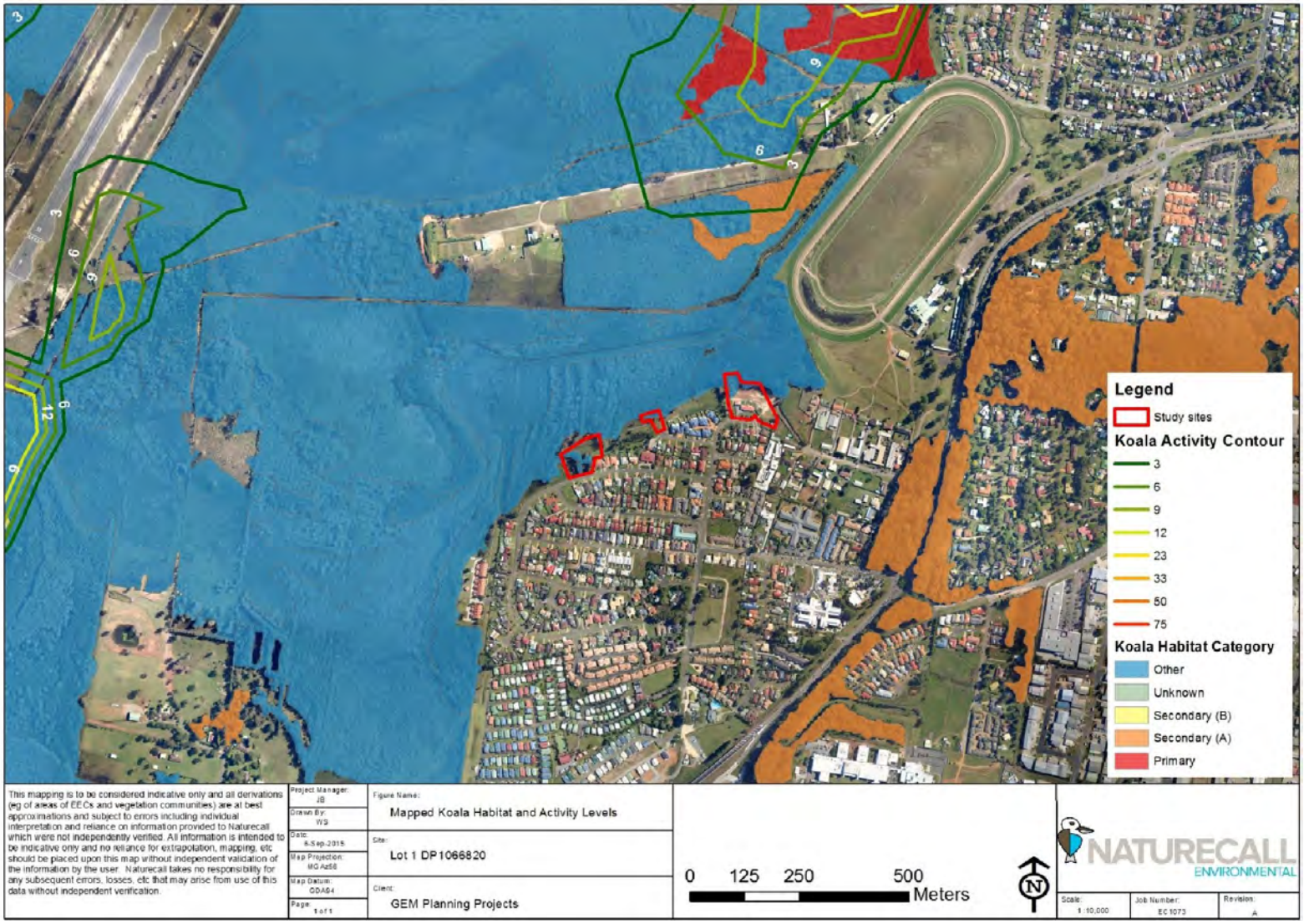
Given the guidelines' recommendation not to refer the proposal pursuant to the EPBC Act, no further assessment of the proposal's potential impacts on the Koala is required.

3.4. Koala Habitat

Schedule 2 species are limited a Swamp Mahogany and few Forest Red Gum, with Broad-leaved Paperbark and Swamp Oak overwhelmingly the dominant species. Consequently, the study area does not qualify as Potential Koala Habitat.

Biolink (2013b) maps the swamp forest as "Other", confirming this result (Figure 9). None of the sites fall within an activity contour.

Figure 9: Biolink (2013b) Koala habitat and activity contours



4.0 Edge Management Recommendations

PMHC has advised that the forest edge adjacent to the proposed new residential areas will require treatment to mitigate edge effects.

This will allow the DCP buffer width to the EEC to be varied as part of the dedication of the residual (generally protected under SEPP 14) to Council.

4.1. Existing and Potential Threats

Urban development adjacent to retained habitat often sees a range of impacts as follows:

- **Greenwaste and other waste dumping**: Most often occurs when yard fences back onto reserves, and sees activities such as dumping of lawn clippings which can introduce weeds into the forest edge; to dumping of whitegoods, unwanted furniture and building rubbish.
- **Encroachment:** Most often occurs when yard fences back onto reserves. Impacts range from extensions of managed areas (ie lawns) due to bushfire threat perception, to yard space for garden sheds, storage of caravans and boats, children's play equipment, vegetable gardens, etc.
- **Unauthorised recreational activities**: Motocross and 4WD enthusiasts, through to mountain bike enthusiasts and children can use existing access tracks or create new paths in reserves adjacent to residential areas. This can lead to habitat modification, erosion and sedimentation, and weed invasion, as well as direct mortality eg vehicle collision; and facilitate the entry of disease (eg Myrtle Rush) and pest species eg foxes.

Most of these threats are best managed by clear separation of these land uses eg boundary roads with houses fronting the habitat. This also maintains community vigilance and hence discourages harmful activities eg rubbish dumping. Erecting barriers such as fencing and locked gates at the entrance to existing maintenance tracks plus appropriate signage can also abate these threats.

4.2. Mitigation Measures

The following is recommended to manage the edge effects as per PMHC request:

- **Edge treatment**: The edges of the forest are to be rehabilitated via control of existing weeds, specifically Noxious Weeds such as Lantana. A minimum of 30m into the forest from the edge is recommended to reduce edge effects.
- **Edge closure**: The edges are to be 'closed' to discourage entry by residents and impacts such as greenwaste dumping. This is to be achieved via planting a band at least 3m wide of native trees (eg Swamp Mahogany), shrubs/small trees (eg Acacias, Cheese Tree, *Persoonia* spp.) and most importantly a ground layer of pungent-leaved plants. The latter are to comprise *Lomandra longifolia* and *Gahnia* spp (eg *Gahnia clarkei*). Both are very effective at deterring entry.

Closure of the access track just west of the western side and provision of gating and barrier fencing is also recommended, with signage indicating dumping is subject to fines.

5.0 Conclusion

This rapid assessment survey has identified that the study sites are in a modified state from a range of previous disturbances and generally only have potential foraging values for large range species and habitat generalists.

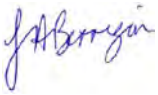
The Koala is the only threatened species known to occur, and the site contains a number of potential food trees which almost all should be retained, but will be offset with replantings if removed.

An EEC occurs on part of each of the three sites, but this EEC is locally extensive, hence the loss of the disturbed margins of the local occurrence on site is clearly insignificant.

Overall thus, it is evident that the proposal is unlikely to result in impacts of sufficient order of magnitude to place a local viable population at risk of extinction; and hence neither a referral to the DotE or a Species Impact Statement is required.

If you have any further queries regarding these issues, please contact the undersigned.

Yours sincerely,



Jason Berrigan.
B. Nat. Res. (Hons).Grad. Cert. (Fish.).
MECANSW, MRZSNSW, MACPN, MABS, MAHS, MRBIA
Principal Ecologist & National Coordinator
Mobile: 0410 522 399
Email: jason.berrigan@naturecall.com.au

Head Office
Phone: 1300 319 954
Email: info@naturecall.com.au
Office: 1/52 Newheath Drive, Arundel, QLD
All Mail: PO Box 3401 Helensvale Town Centre QLD 4212

NSW Offices

Port Macquarie
Phone: 1300 319 954
Email: info@naturecall.com.au
Office: Level 1, Suite 3, 64 Clarence Street, Port Macquarie

Sutherland
Phone: 1300 319 954
Email: info@naturecall.com.au
Office: coming soon.

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ANNEXURE 'E'

Bushfire Hazard Assessment Report

BUSHFIRE HAZARD ASSESSMENT

10 x Lot Subdivision

Lot 1 DP 1066820
Lincoln Road, Castle Court and Marian Drive
Port Macquarie

CLIENT:

Leroy Day

Date:

September 2015
Amended October 2015

41 Belgrave Street, Kempsey NSW 2440 ï PO Box 353 Kempsey NSW 2440 ï phone 0265631292 ï mecham@bigpond.com ï ABN 32098436812

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1.0 INTRODUCTION

As requested by GEM Planning Projects a Bushfire Risk Assessment has been prepared for a linked development located at Lot 1 DP 1066820 Lincoln Road, Castle Court and Marian Drive, Port Macquarie.

This report is based on a site assessment carried out on the 4th August 2015.

The report is to demonstrate that bushfire risk is manageable.

The development would be an integrated development and has a requirement for a Bushfire Safety Authority under Section 100B of the *Rural Fires Act 1997*.

NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation.

1. Rural Fires Act 1997.
2. Environmental Planning and Assessment Act 1979.
3. Building Code of Australia.
4. Council Local Environment Plans and Development Control Plans where applicable.
5. NSW Rural Fire Services, Planning for Bushfire Protection, 2006. (PfBP, 2006)
6. AS 3959-2009 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack.

The report examines ways the risk of bushfire attack can be reduced where the subdivision site falls within the scope of the legislation.

The report is confidential and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known. Any such party relies on this report at their own risk.

1.1 Objectives

The objectives of this report are to:

- Ensure that the proposed subdivision meets the aims and objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and has measures sufficient to minimize the impact of bushfires; and
- Reduce the risk to property and the community from bushfire; and
- Comply where applicable with AS3959 ς 2009.

1.2 Legislative Framework

In NSW, the bushfire protection provisions of the BCA are applied to Class 1, 2, 3, Class 4 parts of buildings, some Class 10 and Class 9 buildings that are Special Fire Protection Purposes (SFPPs).

The BCA references AS3959 ς 2009 as the deemed-to-satisfy (DTS) solution for construction requirements in bushfire prone areas for NSW.

All development on bushfire prone land in NSW should comply with the requirements of Addendum Appendix 3 and other bushfire protection measures identified within PfBP, 2006.

The proposed subdivision is required to obtain a Bushfire Safety Authority from the NSW Rural Fire Service.

1.3 Location

The site is located at Lot 1 DP 1066820 Lincoln Road, Castle Court and Marian Drive, Port Macquarie.

The site is positioned approximately 5km southwest of Port Macquarie. Head west on William Street and continue onto Buller Street, then take a left onto Park Street. At the roundabout take the first exit onto Hastings River Drive and then turn right onto Gordon Street/Oxley Highway and continue for approximately 3.9 km and then take a right onto Sherwood Road and continue 900m to Marian Drive.

All the above mentioned roads are public sealed roads.

Locality ς Port Macquarie
Local Government Area ς Port Macquarie Hastings Council
Closest Rural Fire Service ς Port Macquarie
Closest Fire Control Centre ς Port Macquarie

The site location of the proposed subdivision lots can be seen in **Figure 1** and **Figure 2** below:

Figure 1 ***ς*** *Topographic Map*

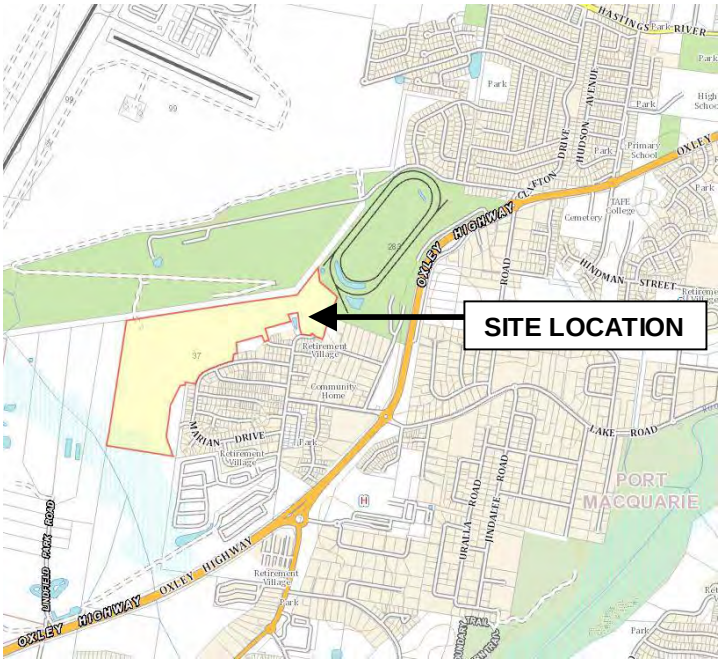


Figure 2 ς Aerial View

Figure 3: Aerial View Close Up showing the Proposed Lots

1.4 Development Proposal and History

The subject site is approximately 30.60ha in size.

It is proposed to subdivide lot 1 into a 10 x lot subdivision consisting of 9 residential lots and 1 large residue lot to be dedicated as environmental land.

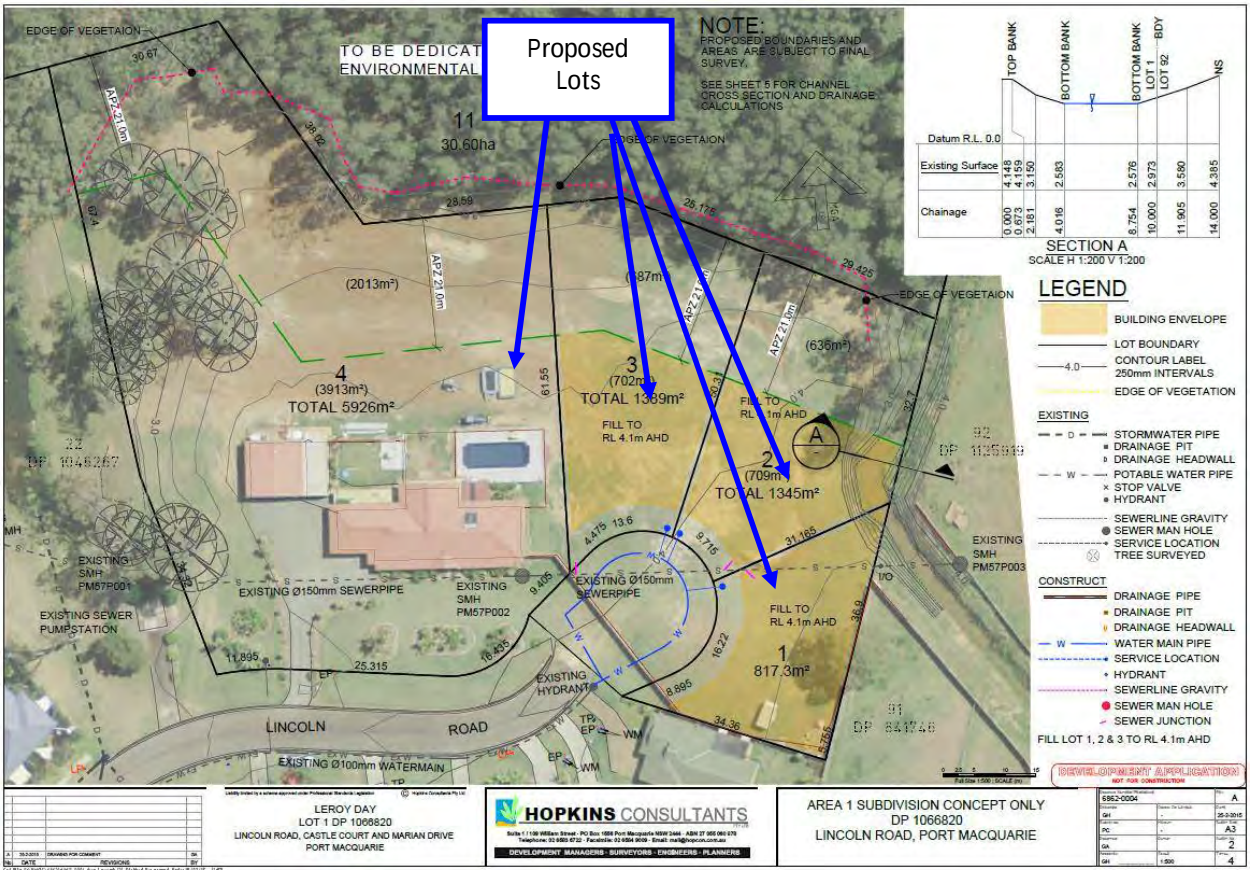
It should be noted that the lots are fragmented and for the purpose of this report the proposed development will be assessed in three areas as follows:

Area 1 ς Lincoln Road 4 x Lots
Area 2 ς Castle Court 1 x Lot
Area 3 ς Marian Drive 4 x Lots

The existing Deposited Plan can be seen in **Appendix 1** and the proposed subdivision layout can be seen in **Appendix 2.**

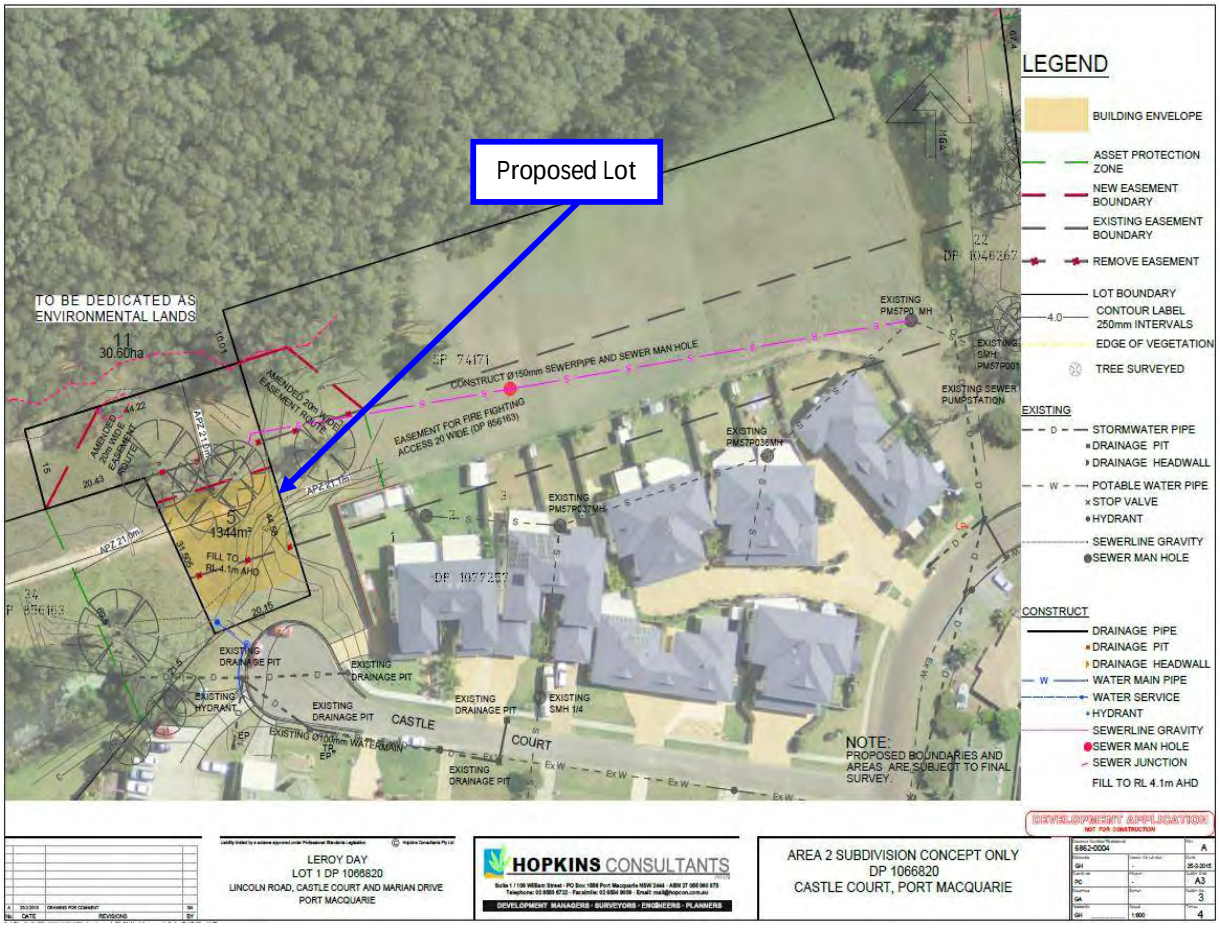
The subdivision layout below is indicative only and there have been some changes as can be seen in the subdivision layout as seen in **Appendix 2**.

Area 1 Lincoln Road

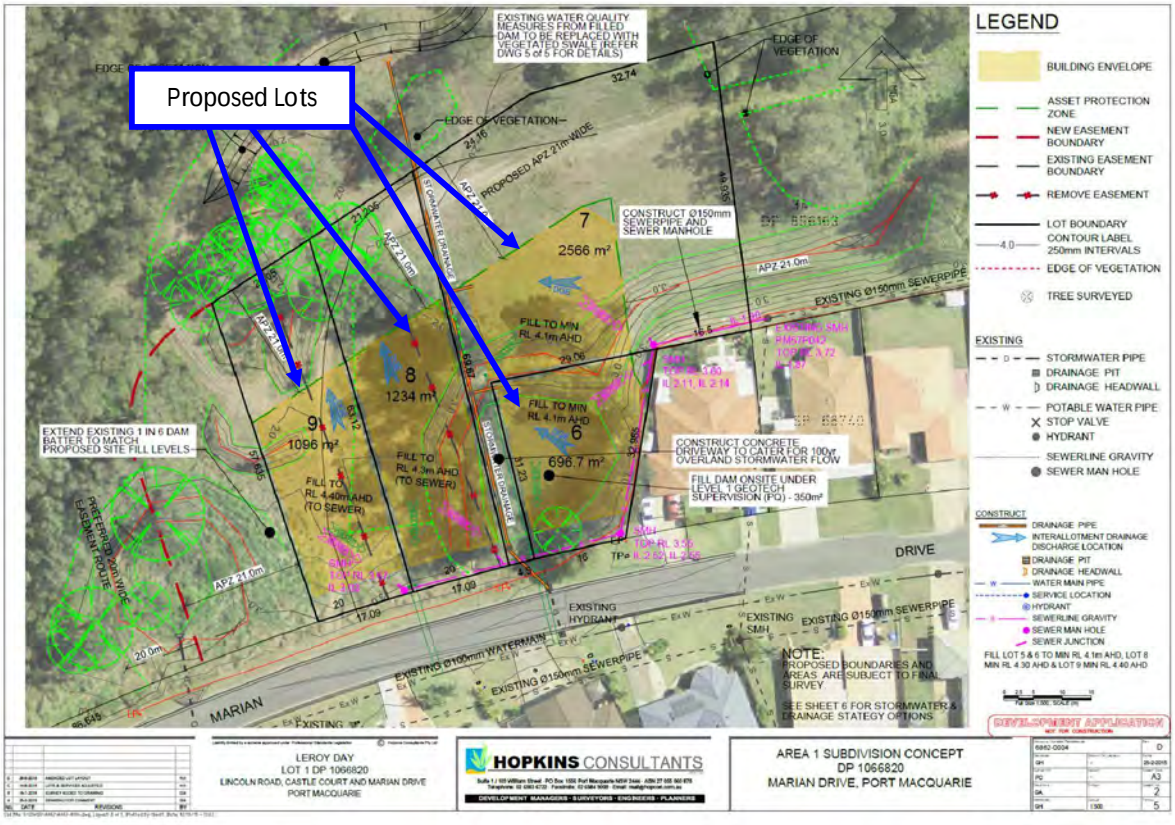


Lot boundaries changed to suit reshaping of existing drain

Area 2 Castle Court



Area 3 Marian Drive



2.0 BUSHFIRE HAZARD ASSESSMENT

2.1 Assessment Methodology

Several factors need to be considered in determining the bushfire hazard.

These factors are slope, vegetation type, and distance from hazard, access/egress and fire weather.

Each of these factors has been reviewed in determining the bushfire protection measures.

The assessment of slope and vegetation being carried out in accordance with Appendix 2 and Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and Section 2 of AS 3959 - 2009.

2.2 Slope Assessment

Slope is a major factor to consider when assessing the bushfire risk.

The slopes affecting the subdivision were measured using a Suunto PM-5/360 PC Clinometer.

The hazard vegetation on adjacent land was also identified and the slopes within the vegetation measured.

The following table shows the results:

Tables 1 ς Hazard Vegetation Slopes

Area 1 ς Lincoln Road 4 x Lots

Proposed Lots	Hazard Aspect	Slope	Upslope/Downslope or Flat
Lots 1 - 4	North	0°	Flat/Upslope
	West	0°	Flat Upslope

Area 2 ς Castle Court 1 x Lot

Proposed Lot	Hazard Aspect	Slope	Upslope/Downslope or Flat
Lot 5	North	0°	Flat/Upslope
	East	0°	Flat/Upslope
	West	0°	Flat/Upslope

Area 3 ς Marian Drive 5 x Lots

Proposed Lots	Hazard Aspect	Slope	Upslope/Downslope or Flat
Lots 6-9	North	0°	Flat/Upslope
	East	0°	Flat/Upslope
	West	0°	Flat/Upslope

2.3 Vegetation Assessment

The vegetation on and surrounding the subject site was assessed over a distance of 140m.

The vegetation formations were classified using the system adopted as per Keith (2004) initially for the Asset Protection Zone calculation and then converting Keith to AUSLIG using Table A3.5.1 of Appendix 3 (2010) for assessment of the Bushfire Attack Level.

2.3.1 Vegetation on and Adjoining/Adjacent to the Subject Lot

Area 1 ς Lincoln Road 4 x Lots

The existing vegetation on Area 1 is considered grassland.

To the north of Area 1 is forested wetland vegetation.

To the east is a residential subdivision under construction.

To the west is a Council operated Sewer pump station that for the purposes of the report has been considered as grassland.

Photo 1 - Showing Council Drainage Reserve and forested wetland

The following table details the hazards for Area 1:

Tables 2 -Hazard Vegetation

Proposed Lots	Hazard Aspect	Vegetation
Lots 1 - 4	North	Forest (forested wetland)
	West	Grassland

Area 2 ς Castle Cove 1 x Lot

The existing vegetation on Area 2 is considered grassland.

To the north of Area 2 is forested wetland vegetation.

To the east is a part residential subdivision which includes an easement provided for firefighting access. It is noted that the access in this area has never been constructed.

To the west is a Councilֿs drainage reserve that would be considered a grassland hazard and beyond the grassland to the west is the easement for firefighting purposes.

The following table details the hazards for the Area 2:

Hazard Vegetation

Proposed Lot	Hazard Aspect	Vegetation
Lot 5	North	Forest
	East	Grassland
	West	Grassland

Photo 2 - Showing Easement for firefighting purposes to the east and the forested wetland vegetation to the north

Photo 3 and 4 - Councils drainage reserve to the west

Area 3 ç Marian Drive 4 x Lots

The existing vegetation on Area 3 is part forest and grassland.

To the north and west of Area 3 is forest vegetation.

To the east is Council's Drainage Reserve.

To the south is the existing residential subdivision.

The following table details the hazards for the Area 3:

Hazard Vegetation

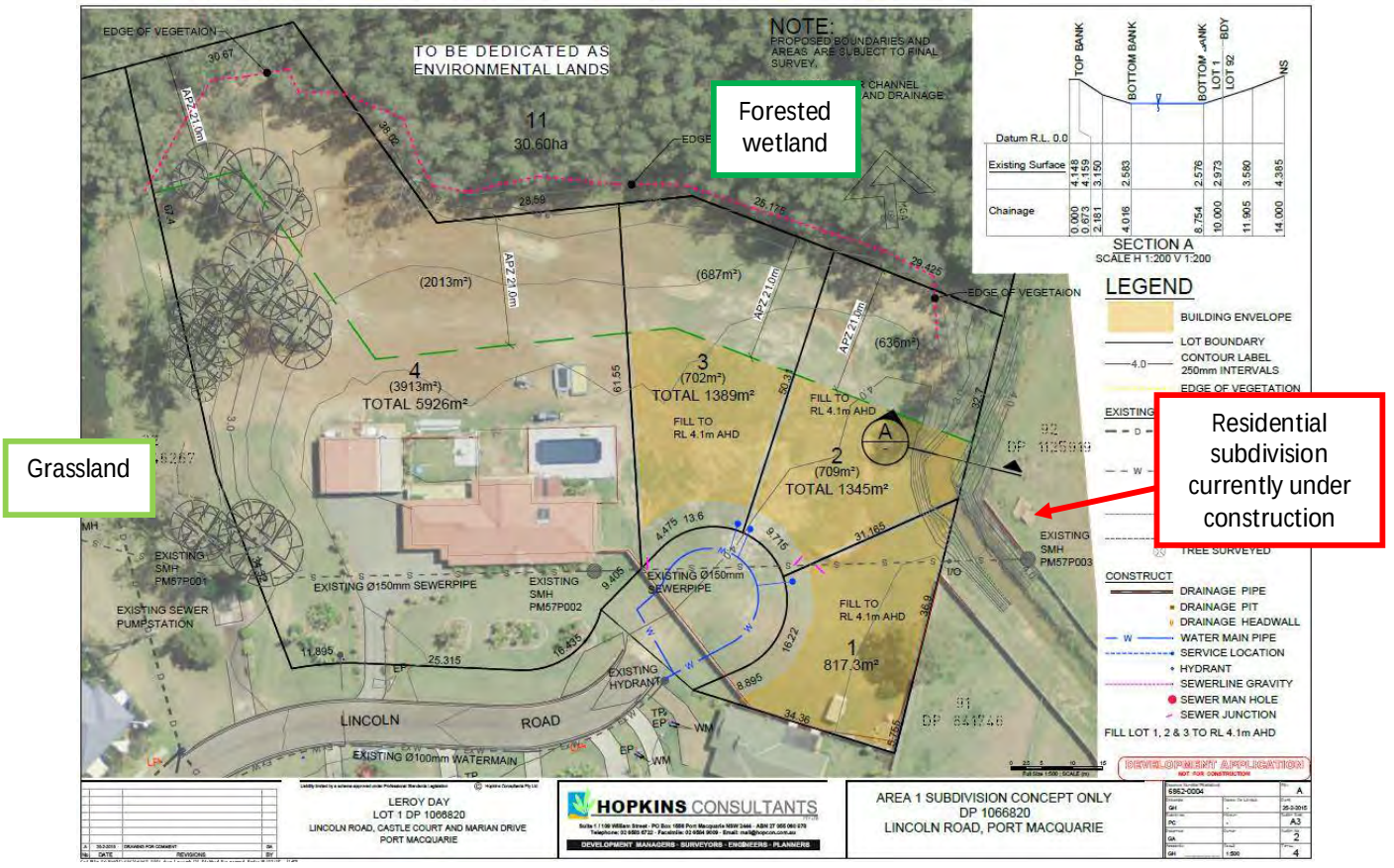
Proposed Lots	Hazard Aspect	Vegetation
Lots 6-9	North	Forest
	East	Grassland
	West	Forest

2.4 Hazards

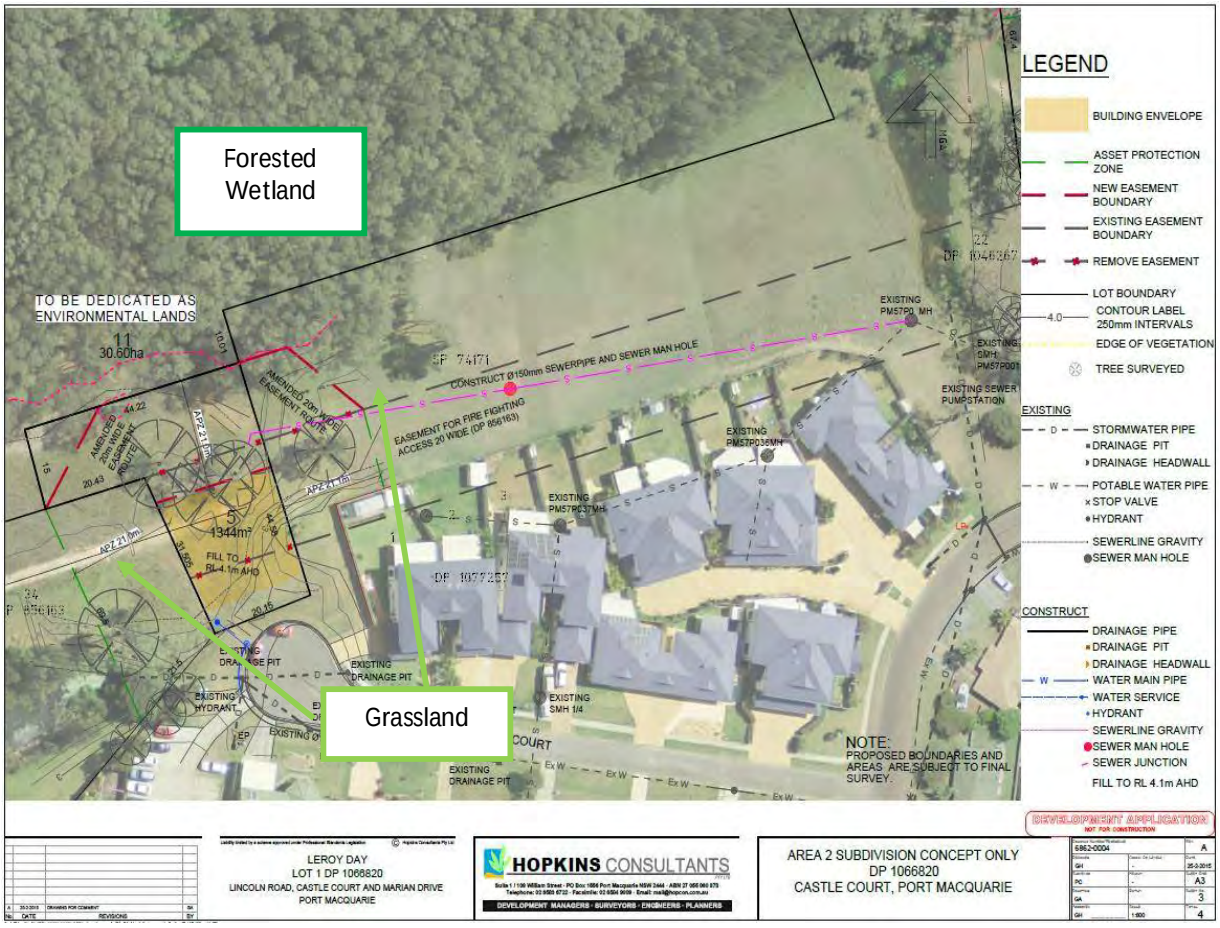
The hazards are located to the north, east and west.

The hazard vegetation can be seen in *Figure 4* below:

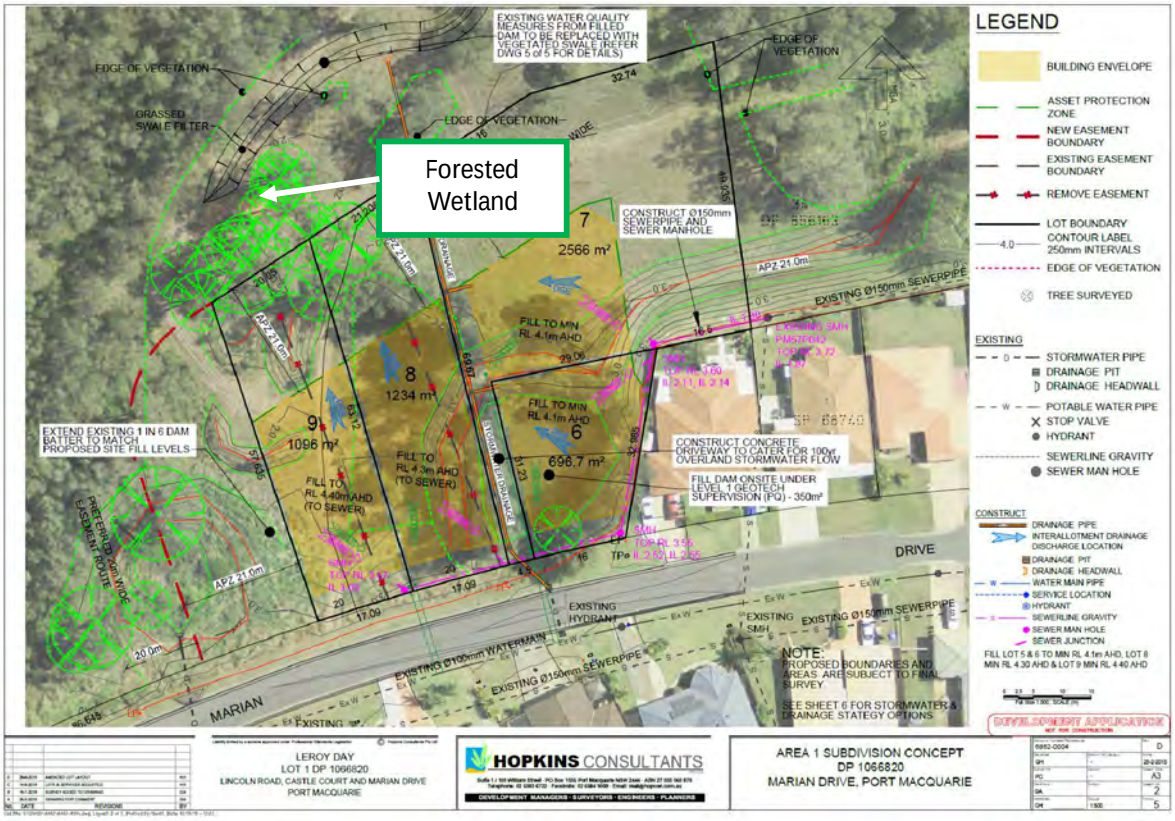
Figures 4: Hazards - Lincoln Road



Castle Court



Marian Drive



Tables 3 ς Summary of Hazard Characteristics

Proposed Lots for Area 1	Hazard Aspect	Hazard	Slope	Upslope/Downslope or Flat
Lots 1 - 4	North	Forest	0°	Flat/Upslope
	West	Grassland	0°	Flat/Upslope

Proposed Lot for Area 2	Hazard Aspect	Hazard	Slope	Upslope/Downslope or Flat
Lot 5	North	Forest	0°	Flat/Upslope
	East	Grassland	0°	Flat/Upslope
	West	Grassland	0°	Flat/Upslope

Proposed Lots for Area 3	Hazard Aspect	Hazard	Slope	Upslope/Downslope or Flat
Lots 6-9	North	Forest	0°	Flat/Upslope
	East	Grassland	0°	Flat/Upslope
	West	Forest	0°	Flat/Upslope

2.5 Fire Danger Index

The fire weather for the site is assumed on the worst-case scenario. In accordance with NSW Rural Fire Services, PfBP, 2006 and Table 2.1 of AS3959 - 2009, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80.

3.0 BUSHFIRE THREAT REDUCTION MEASURES

3.1 NSW Rural Fire Services, *Planning for Bushfire Protection***, 2006**

The following provisions of PfBP 2006 have been identified:

3.1.1 Defendable Space/Asset Protection Zone (APZ)

To ensure that the aims and objectives of NSW Rural Fire Services, PfBP, 2006, a defendable space, between the asset and the hazard is to be provided. The defendable space provides for, minimal separation for safe firefighting, reduced radiant heat, reduced influence of convection driven winds, reduced ember viability and dispersal of smoke.

The proposed development is not considered to be subject to the Special Fire Protection Purpose requirements which are applicable to schools, (the proposed development is not a school).

It is recommended that the defendable space for the proposed development be based upon the minimum requirements for Asset Protection Zones as set out in NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006.

Table 4 - APZ Requirements (PfBP 2006) for the Proposed Lots of the Subdivision

Proposed Lots 1-4 Area 1	Hazard Aspect	Vegetation Type	Slope	IPA	OPA	Total APZ Required (IPA + OPA)
	North	Forest	0° Flat/Upslope	11m	10m	21m
	West	Grassland	0° Flat/Upslope	8m		8m

Proposed Lot 5 Area 2	Hazard Aspect	Vegetation Type	Slope	IPA	OPA	Total APZ Required (IPA + OPA)
	North	Forest	0° Flat/Upslope	11m	10m	21m
	East	Grassland	0° Flat/Upslope	8m		8m
	West	Grassland	0° Flat/Upslope	8m		8m

A 21m APZ has been allowed for on all hazard sides.

Proposed Lots 6-9 Area 3	Hazard Aspect	Vegetation Type	Slope	IPA	OPA	Total APZ Required (IPA + OPA)
	North	Forest	0° Flat/Upslope	11m	10m	21m
	East	Grassland	0° Flat/Upslope	8m		8m
	West	Forest	0° Flat/Upslope	11m	10m	21m

A 21m APZ has been allowed for on all hazard sides.

The minimum Asset Protection Zone setbacks for the three areas can be seen in **Appendix 3.**

3.1.2 Operational Access and Egress

Access to and egress from each of the proposed lots will be via public roads to be completed as part of the subdivision.

An access for firefighting easement has been allowed for in the previous subdivision plan and this easement extends between Council's drainage reserves and does not join back to the public road. With respect to the Area 3 it is recommended that a 4m driveway be provided to lot 7 and this driveway be extended into a sealed turning bay positioned in the APZ of Lot 7 (see **Appendix 3).**

It is considered that the relevant acceptable solutions as provided for by 4.1.3 of NSW Rural Fire Service, PfBP, 2006 are capable of being complied with and as such the intent for the provisions of services can be achieved.

3.1.3 Services - Water, Gas and Electricity

As set out in Section 4.1.3 of NSW Rural Fire Services**,** *Planning for Bushfire Protection*, 2006, developments in bushfire prone areas must maintain a water supply for firefighting purposes.

Electricity supply is available and will be connected to the subdivision site.

Reticulated water supply is available and connected to the site. If Council cannot guarantee a water supply then a Water Supply for Fire Fighting of 20,000 litres in accordance with Fast Fact 3/08 and Planning for Bushfire Protection, 2006 is to be provided for the subdivision (See **Appendix 4).**

Any tanks will require the following at a minimum.

- A suitable connection for firefighting purposes is made available and located within the IPA and away from the structure. A 65mm Storz outlet with a Gate or Ball valve is provided.
- Gate or Ball valve and pipes are adequate for water flow and are metal rather than plastic.
- Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank. A hardened ground surface for truck access is supplied within 4 metres of the access hole.

- Above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of fire fighters.
- All above ground water pipes external to the building are metal including and up to any taps.
- Pumps are shielded.

The use of heavy-duty hoses with wide spray nozzles is recommended with hoses able to reach all parts of any proposed subdivision.

Bottled gas supplies are to be installed and maintained in accordance AS 1596. Metal piping is to be used. All fixed gas cylinders are to be kept clear of all flammable materials to a distance of 10m and shielded on the hazard side of the installation. If gas cylinders need to be located close to the building, the release valves are to be directed away from the building and at least 2 metres away from any combustible material so they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.

It is considered that the relevant acceptable solutions as provided for by 4.1.3 of NSW Rural Fire Services, PfBP, 2006 are capable of being complied with and as such the intent for the provision of services can be achieved.

3.1.4 Landscaping

Landscaping is a major cause of fire spreading to buildings, and therefore any landscaping proposed in conjunction with the proposed development will need consideration when planning, to produce gardens that do not contribute to the spread of a bushfire.

When planning any future landscaping surrounding any proposed building or subdivision, consideration should be given to the following:

- The choice of vegetation ς consideration should be given to the flammability of the plant and the relation of their location to their flammability and ongoing maintenance to remove flammable fuels.
- Trees as windbreaks/firebreaks ς Trees in the landscaping can be used as windbreaks and also firebreaks by trapping embers and flying debris.
- Vegetation management ς Maintain a garden that does not contribute to the spread of bushfire.
- Maintenance of property ς Maintenance of the property is an important factor in the prevention of losses from bushfire.

Appendix 5 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006, contains standards that are applicable to the provision and maintenance of landscaping. Any landscaping proposed to be undertaken in conjunction with the proposed development is to comply with the principles contained in Appendix 5 of NSW Rural Fire Services, PfBP, 2006.

Compliance with Appendix 5 of NSW Rural Fire Services, PfBP, 2006, will satisfy the intent of the bush fire protection measures that are applicable to the provision of landscaping.

3.2 Construction of Buildings

3.2.1 General

The deemed-to-satisfy provisions for construction requirements are detailed in AS 3953-2009. The relevant Bushfire Attack Level and Construction Requirements have been determined in accordance with Appendix 3 (2010) of PfBP, 2006 and Section 2 of AS 3959-2009. The additional construction requirements with respect to A3.7 of Appendix 3 (2010) of PfBP (2006) are required to be added to the standards for each Bushfire Attack Level.

3.2.2 Vegetation

To complete the assessment under AS 3959-2009 the vegetation, as originally assessed in accordance with Keith, has to be converted to AUSLIG.

The following table shows the conversion:

Table 4 ς Summary of Vegetation Characteristics

Vegetation Classification ς (Keith, 2004)	Vegetation Classification ς (AUSLIG 1990)
Forested Wetland	Forest

3.2.3 AS3959 ς 2009 Construction of Buildings in Bushfire Prone Areas

The following construction requirements in accordance with AS 3959 ς 2009 Construction of Buildings in Bushfire Prone Areas is required for the bushfire attack categories.

Bushfire Attack Level (BAL)
BAL - LOW No construction requirements under AS 3959-2009
BAL - 12.5
BAL - 19
BAL - 29
BAL - 40
BAL - FZ

The minimum Bushfire Attack Level 29 setbacks can be seen in **Appendix 3**.

The existing dwelling is positioned approximately 35m from the northern forest hazard and approximately 15m to the closest part of the grassland hazard to the west. It is recommended that consideration be given to ember protection upgrade as detailed in the Rural Fire Services Best Practice Guide άUpgrading of Existing Buildingsέ.

4.0 REQUIREMENTS

The following requirements are considered to be integral to this bushfire risk assessment:

1. An Asset Protection Zones as detailed in Section 3.1.1 of this report are to be provided.

2. The proposed subdivision is to comply with the relevant performance criteria/acceptable solutions as provided for by Section 4.1.3 of NSW Rural Fire Services**,** PfBP, 2006.
3. Adopt landscaping principals in accordance with Section 3.1.4 of the NSW Rural Fire Services, PfBP, 2006.

5.0 CLAUSE 44 CONSIDERATIONS

Table 5

Environmental/Heritage Feature	Comment
Riparian Corridor	Not considered in this report
SEPP 14 – Coastal Wetland	Not considered in this report
SEPP 26 – Littoral	Not considered in this report
SEPP 44 – Koala Habitat	Not considered in this report
Areas of geological interest	Not considered in this report
Environment protection zones	Not considered in this report
Land slip	Not considered in this report
Flood prone land	Not considered in this report
National Park Estate or other reserves	Not considered in this report
Threatened Species, populations, endangered ecological communities and critical habitat	Not considered in this report
Aboriginal Heritage	Not considered in this report

6.0 CONCLUSION

It is suggested that with the implementation of this report, and its recommendations, that the bushfire risk is manageable and will be consistent with the acceptable bushfire protection measure solutions, provided for in Section 4.3.5 of NSW Rural Fire Services, PfBP, 2006.

The report provides that the required APZ□s can be achieved and that any proposed new dwelling in the proposed subdivision can be constructed so as to comply with the requirements of AS 3959-2009 and Appendix 3 of PfBP, 2006, Construction of Buildings in Bushfire Prone Areas.

This report is however contingent upon the following assumptions and limitations:

Assumptions

1. For a satisfactory level of bushfire safety to be achieved, regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.

2. There are no re-vegetation plans in respect to hazard vegetation and therefore the assumed fuel loading will not alter.

3. It is assumed that the building works will comply with the DTS provisions of the BCA including the relevant requirements of Australian Standard 3959 – 2009.

4. The proposed subdivision is constructed and maintained in accordance with the risk reduction strategy in this report.

5. The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.

Limitations

1. The data, methodologies, calculations and conclusions documented within this report specifically relate to the proposed subdivision and must not be used for any other purpose.

2. A reassessment will be required to verify consistency with this assessment if there is any alterations and/or additions, or changes to the risk reduction strategy contained in this report.

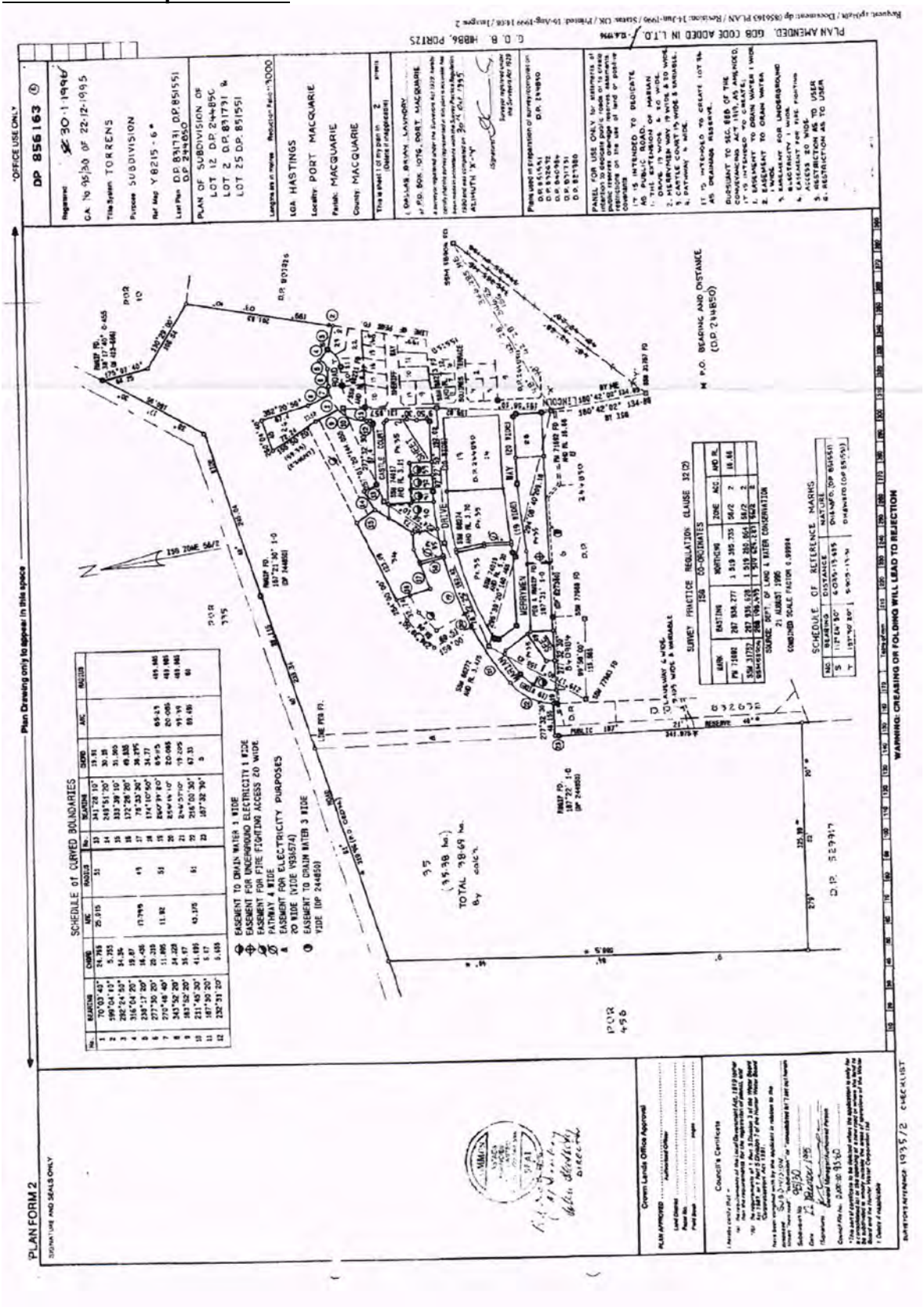
Regards

Tim Mecham
Midcoast Building and Environmental

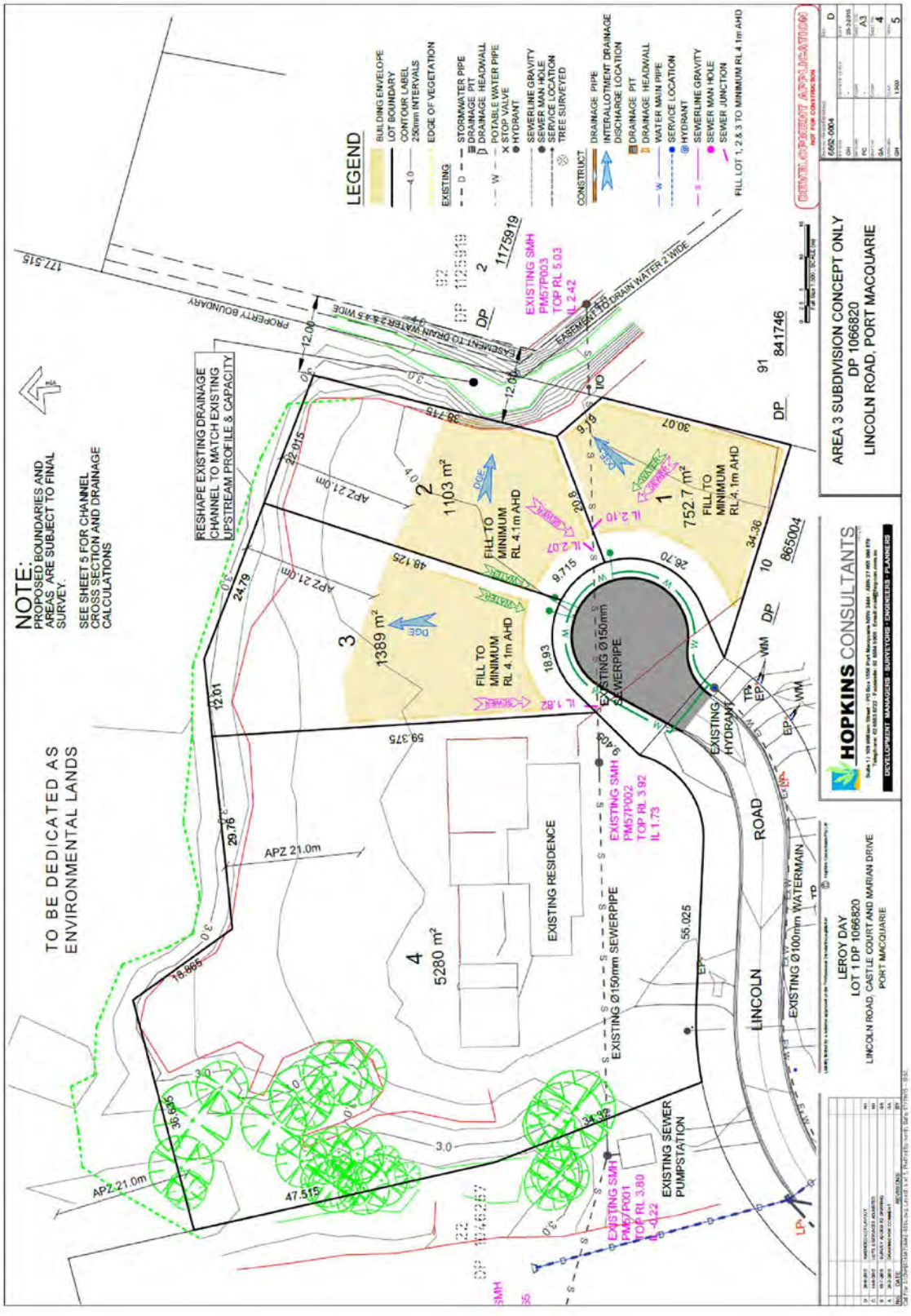
7.0 REFERENCES

NSW Rural Fire Services, *Planning for Bushfire Protection*, 2001
NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006
AS 3959-2009 *Construction of Buildings in Bushfire Prone Areas*
Keith David 2004, Ocean *Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT*, Department of Environment and Conservation
NSW State Government (1997) Rural Fires Act 1997
NSW Rural Fire Service ς *Guideline for Bushfire Prone Land Mapping 2002*

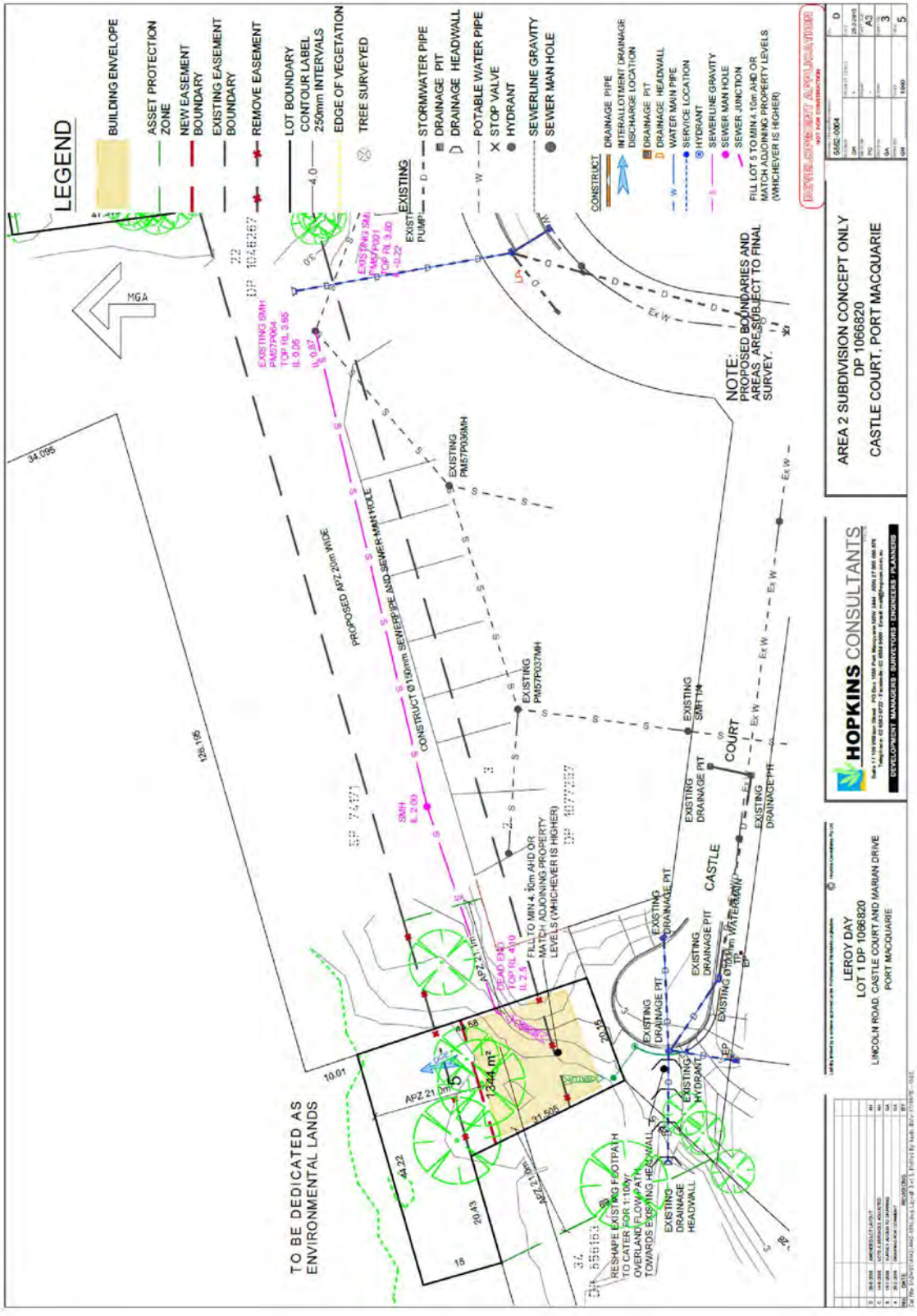
APPENDIX 1: Deposited Plan



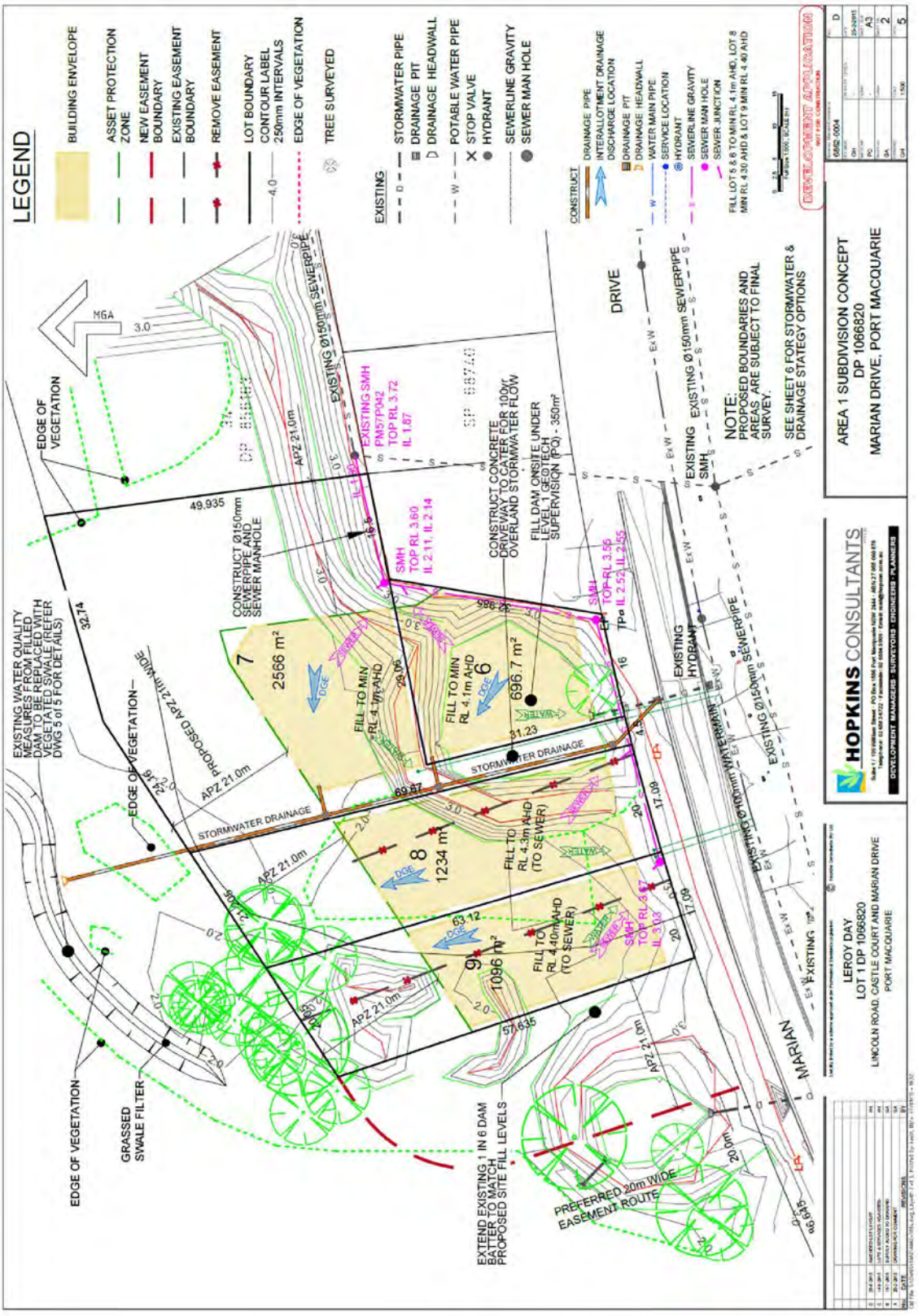
Appendix 2 - Subdivision Layout Area 1 Lincoln Road



Area 2 Castle Court

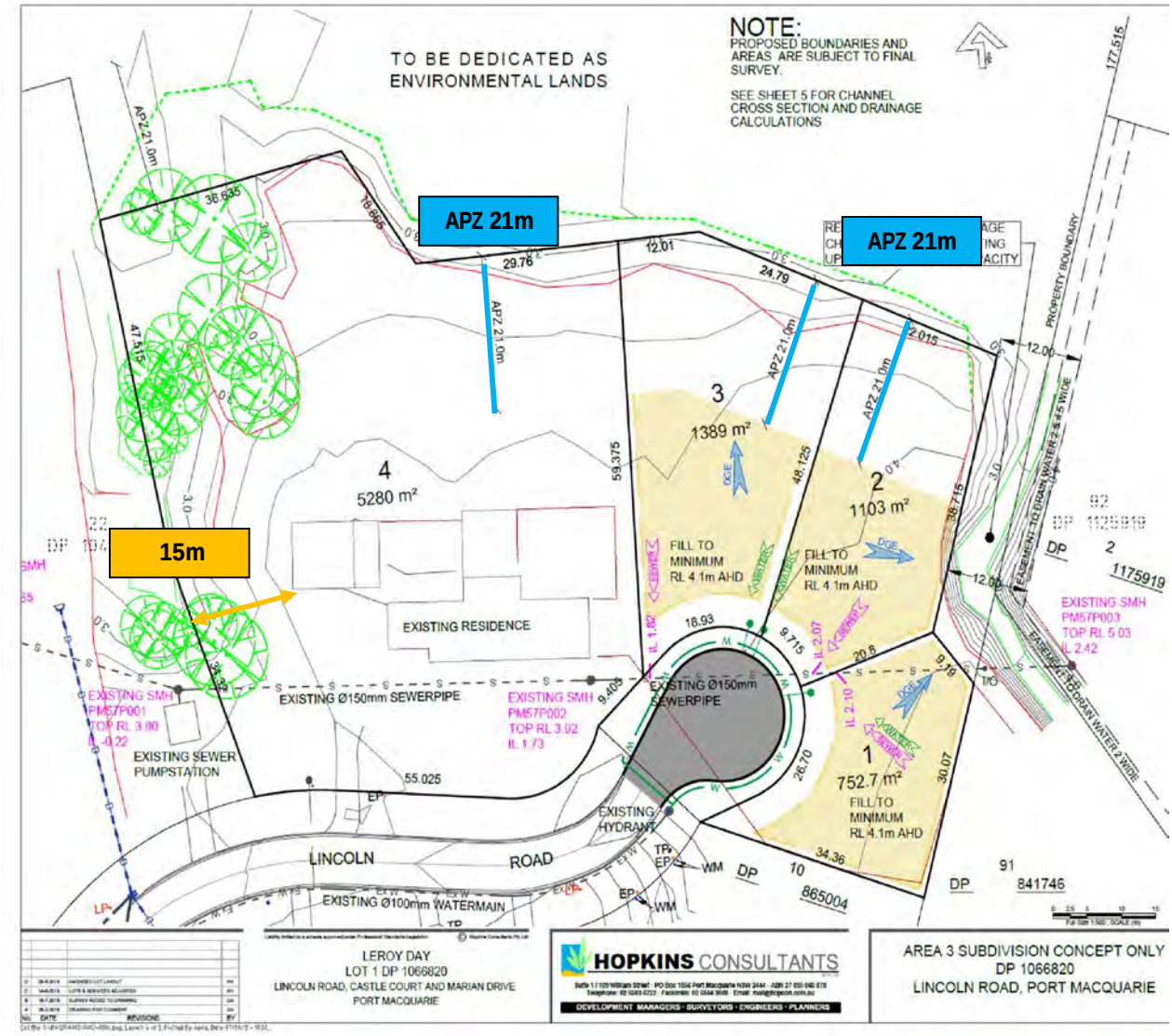


Area 3 Marian Drive

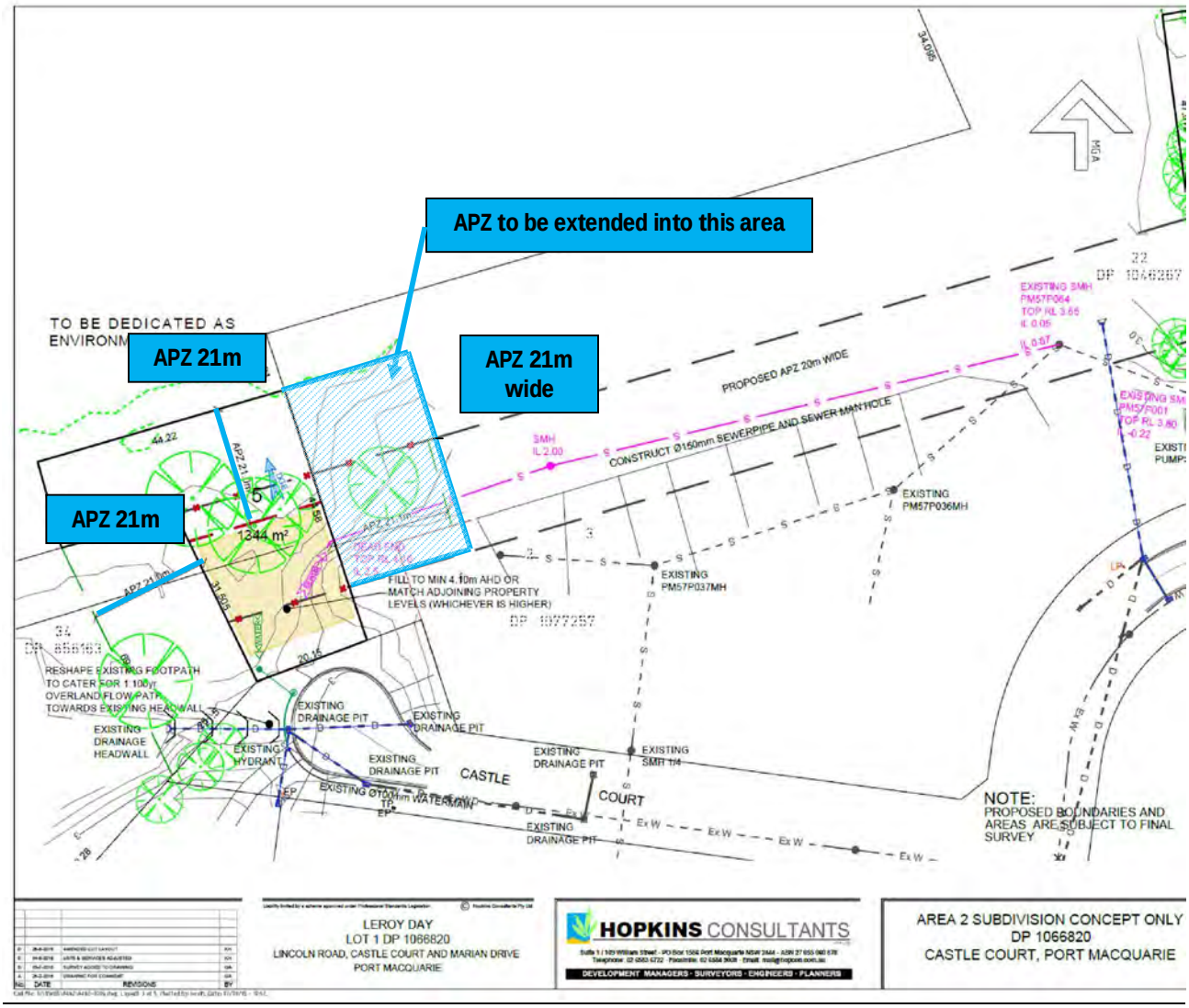


Appendix 3 ς Minimum Asset Protection Zones and BAL 29 Setbacks

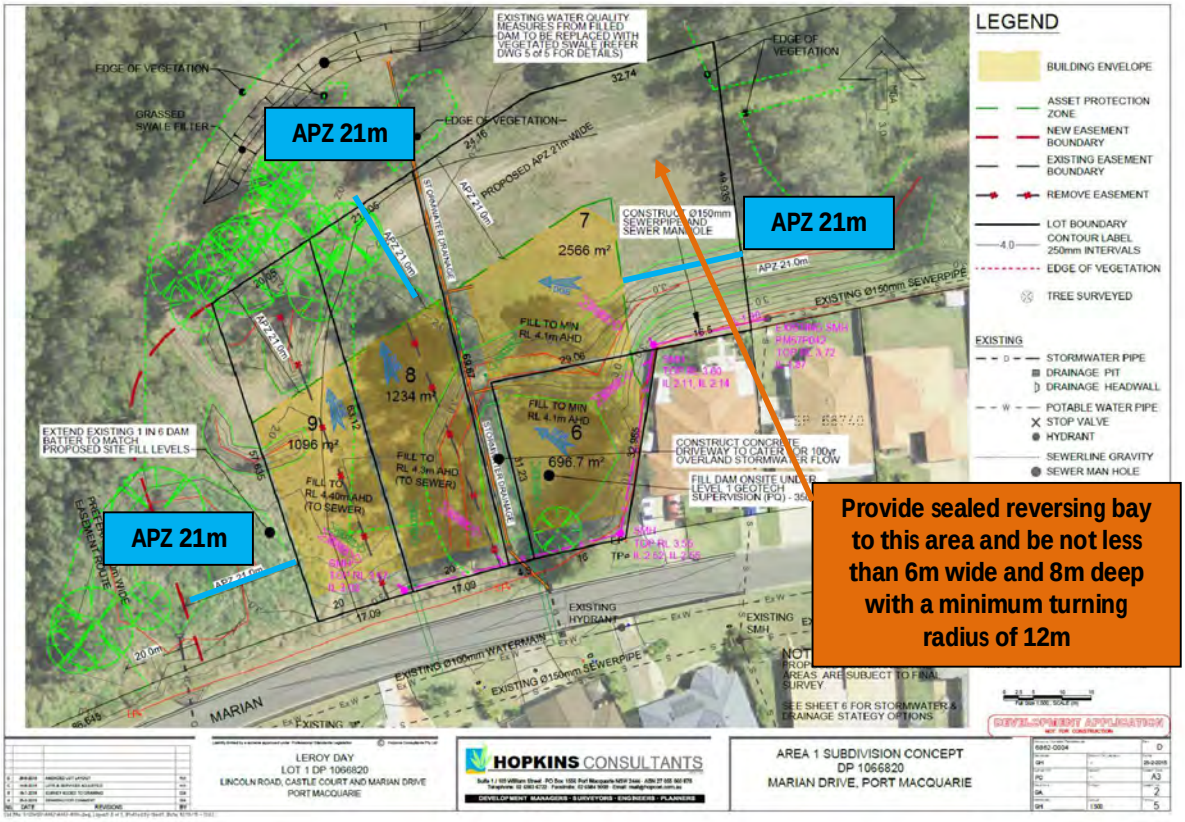
Lincoln Road



Castle Court



Marian Drive



Appendix 4 ς Water Supply for Fire Fighting Purposes

NSW RURAL FIRE SERVICE

COMMUNITY RESILIENCE FAST FACTS 3/08

Water Supply for Fire Fighting Purposes

This Fast Fact clarifies the NSW Rural Fire Service (RFS) position on the requirement for water supplies for development in bush fire prone areas.

Adequate water supply is critical for effective fire fighting. Where a non reticulated water supply is provided or the reticulated water supply is deemed inadequate, an additional onsite stored supply of water for fire fighting will be required. Non reticulated water is a supply that is not piped by council or a water authority and includes rainwater, ground water or surface water.

In the past, additional water sources could take the form of a static water supply (SWS) or a dedicated water supply. The RFS has traditionally required that an alternate supply of water be 'dedicated' for fire fighting purposes in line with the provisions of *Planning for Bush Fire Protection* 2006 (PBP). Dedicated water implies that the supply shall be in the form of a tank of water and has traditionally not included swimming pools or dams. The term also implies that the supply must be isolated from other domestic water supplies and used solely for fire fighting purposes.

From a practical fire fighting point of view, any source of available water will be utilised during a bush fire event and dedicated tanks are not always the most practical option.

In light of the above and the increasing demand for sustainable and efficient use of our water resources, the RFS will no longer require water to be solely 'dedicated' for fire fighting purposes and will allow more flexibility in satisfying the water requirements of PBP. As such, water holding structures such as tanks, swimming pools and dams can be considered.

Therefore, the RFS conditions addressing water supply will no longer refer to a 'dedicated' water supply and will simply state that a supply of water shall be provided for 'fire fighting purposes'. This position will also apply to previously issued conditions referring to dedicated supplies. As such, the water source can be used for other purposes and allow for the circulation of fresh water. The onus will be on the property owner to provide suitable water supply arrangements for fire fighting that meet the RFS requirements and ensure that any water sources are maintained at the appropriate capacity (see Table 4. of PBP).

Water capacities, access (tanker or pedestrian) for fire fighters and the provision of appropriate connections should also be considered when determining if a proposed water source is suitable. Furthermore, the property owner is encouraged to place a 'SWS' sign in a visible location on the street front.

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Version 3 – February 2012

ANNEXURE 'F'

AHIMS Search Result

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : 0005 HPK 6862

Client Service ID : 212343

GEM Planning Projects Pty Ltd

P O Box 2068
Port Macquarie New South Wales 2444
Attention: Geraldine Haigh

Email: geraldine@gemplanningprojects.com.au

Date: 18 February 2016

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1066820 with a Buffer of 200 meters, conducted by Geraldine Haigh on 18 February 2016.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au