PLANNING PROPOSAL

CITY OF COFFS HARBOUR

Reduce Minimum Lot Size
Lot 1 DP 1130767, 37 Campbell Close, Korora

September 2024
VERSION 2 Exhibition

PLANNING PROPOSAL STATUS

Stage	**Version / Date** *(blank until achieved)*
Reported to Council – Initiate s3.33 **Version 1 - Pre_Exhibition**	***Version 1 – Pre-Exhibition*** ***13 June 2024***
Referred to DPHI s3.34(1) **Version 1 - Pre_Exhibition**	***Version 1 – Pre-Exhibition*** ***19 June 2024***
Gateway Determination s3.34(2) **Version 1 - Pre_Exhibition**	***Version 1 – Pre-Exhibition*** ***1 July 2024***
Amendments Required:	***Yes***
Public Exhibition – Schedule 1 Clause 4 **Version 2 - Exhibition**	***Version 2 - Exhibition***
Reported to Council – Initiate Revised PP s3.33 **Version x - Re_Exhibition**	
Revised PP Sent to the Minister - s3.35(1) **Version x - Re_Exhibition**	
Altered Gateway Determination s3.34(2) **Version x - Re_Exhibition**	
Public Exhibition – Schedule 1 Clause 4 **Version x - Re_Exhibition**	
Reported to Council – Endorsement (or Making of LEP if delegated) s3.36 **Version x - Post Exhibition**	
Endorsed by Council for Submission to Minister for Notification (or Making where not delegated) s3.36(2) **Version x – Post Exhibition**	

CONTENTS

APPENDICES

EXECUTIVE SUMMARY & EXHIBITION INFORMATION

What is a Planning Proposal?

A planning proposal is a document that explains the intended effect of a proposed local environmental plan (LEP) and sets out the justification for making that plan. Essentially, the preparation of a planning proposal is the first step in making an amendment to Coffs Harbour LEP 2013.

A planning proposal assists those who are responsible for deciding whether an LEP amendment should proceed and is required to be prepared by a relevant planning authority. Council, as a relevant planning authority, is responsible for ensuring that the information contained within a planning proposal is accurate and accords with the *Environmental Planning and Assessment Act 1979* and the NSW Department of Planning, Housing and Infrastructure's *Local Environmental Plan Making Guideline 2023.*

What is the Intent of this Planning Proposal?

The intent of this Planning Proposal is to amend the Lot Size Map Sheet LSZ_005C of Coffs Harbour LEP 2013, as it relates to Lot 1 DP 1130767, 37 Campbell Close, Korora, from 1 hectare to 5,000 m^2.

Public Exhibition

This planning proposal is on public exhibition in accordance with the Gateway Determination issued by NSW Department of Planning, Housing and Infrastructure. Copies of the planning proposal and supportive information can be viewed on the City of Coffs Harbour's Have Your Say Page https://haveyoursay.coffsharbour.nsw.gov.au/ for the duration of the exhibition period.

All interested persons are invited to view and make a submission on the planning proposal during the exhibition period. Issues raised by submissions will be reported to Council for a final decision. Submissions can be made online, or in writing by email or post to:

The General Manager
City of Coffs Harbour
Locked Bag 155
COFFS HARBOUR NSW 2450
Email: coffs.council@chcc.nsw.gov.au

Any questions, contact:
Joseph Kirwood on 6648 4628
or email joseph.kirwood@chcc.nsw.gov.au

Note: The City is committed to openness and transparency in its decision making processes. The Government Information (Public Access) Act 2009 requires the City to provide public access to information held unless there are overriding public interest considerations against disclosure. Any submissions received will be made publicly available unless the writer can demonstrate that the release of part or all of the information would not be in the public interest. However, the City would be obliged to release information as required by court order or other specific law.

Written submissions must be accompanied, where relevant, by a "Disclosure Statement of Political Donations and Gifts" in accordance with the provisions of the Local Government and Planning Legislation Amendment (Political Donations) Act 2008 No. 44 Disclosure forms are available from the City's Customer Service Section or on the City's website www.coffsharbour.nsw.gov.au/disclosurestatement.

BACKGROUND

Proposal	Reduce Minimum Lot Size
Property Details	Lot 1 DP 1130767, 37 Campbell Close, Korora
Current Land Use Zone(s)	R5 Large Lot Residential
Proponent	Keiley Hunter Town Planning
Landowner	Ms. S Philp & Mr. D Philp
Location	Figure 1: Location Map is included below

This planning proposal has been prepared in accordance with the Environmental Planning and Assessment Act 1979 and *Local Environmental Plan Making Guideline 2023* (NSW Department of Planning, Housing and Infrastructure).

This planning proposal explains the intended effects of a proposed amendment to Coffs Harbour LEP 2013 to enable amendment of the Lot Size Map from 1 hectare to 5,000 m^2 for Lot 1 DP 1130767, 37 Campbell Close, Korora. The amendment will allow development application to be made for subdivision of the site to create a single additional lot as shown in Figure 2.

The Site

The site is located along Campbell Close, Korora within an existing large lot residential area, as shown in Figure 1 below. The site also has frontage to Old Coast Road on the northern boundary.

The site contains a dwelling house, is largely cleared, and contains domestic landscaping. There is a substantial fall from the northern portion of the site to the southern boundary fronting Campbell Close, as the site is located upon two ridgeline spurs.

The site has an area of 1.150 hectares and is zoned R5 Large Lot Residential under LEP 2013. The current minimum lot size for this area is 1 hectare, as shown in Part 4: Mapping - Figure 3.

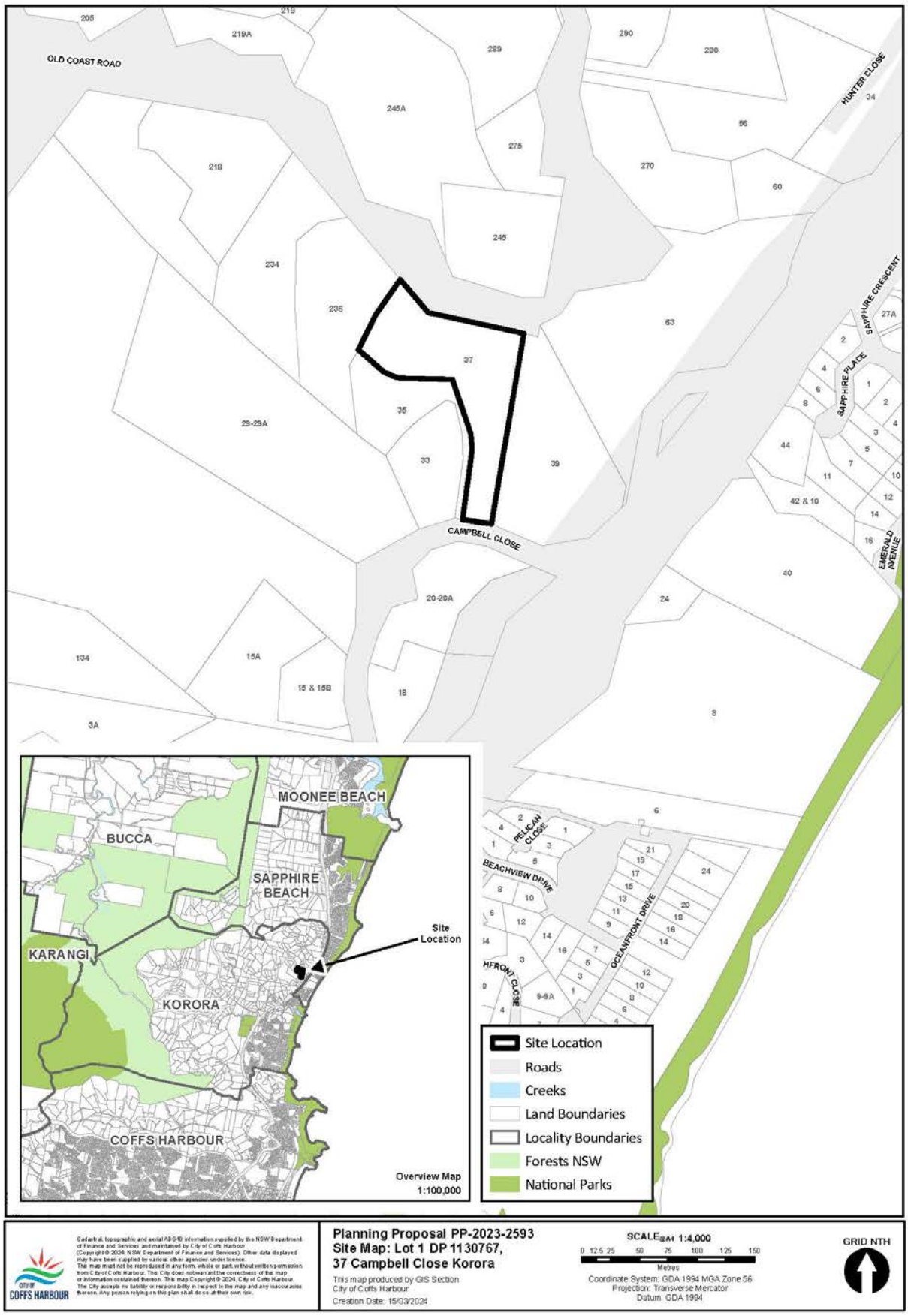

Figure 1: Location Map

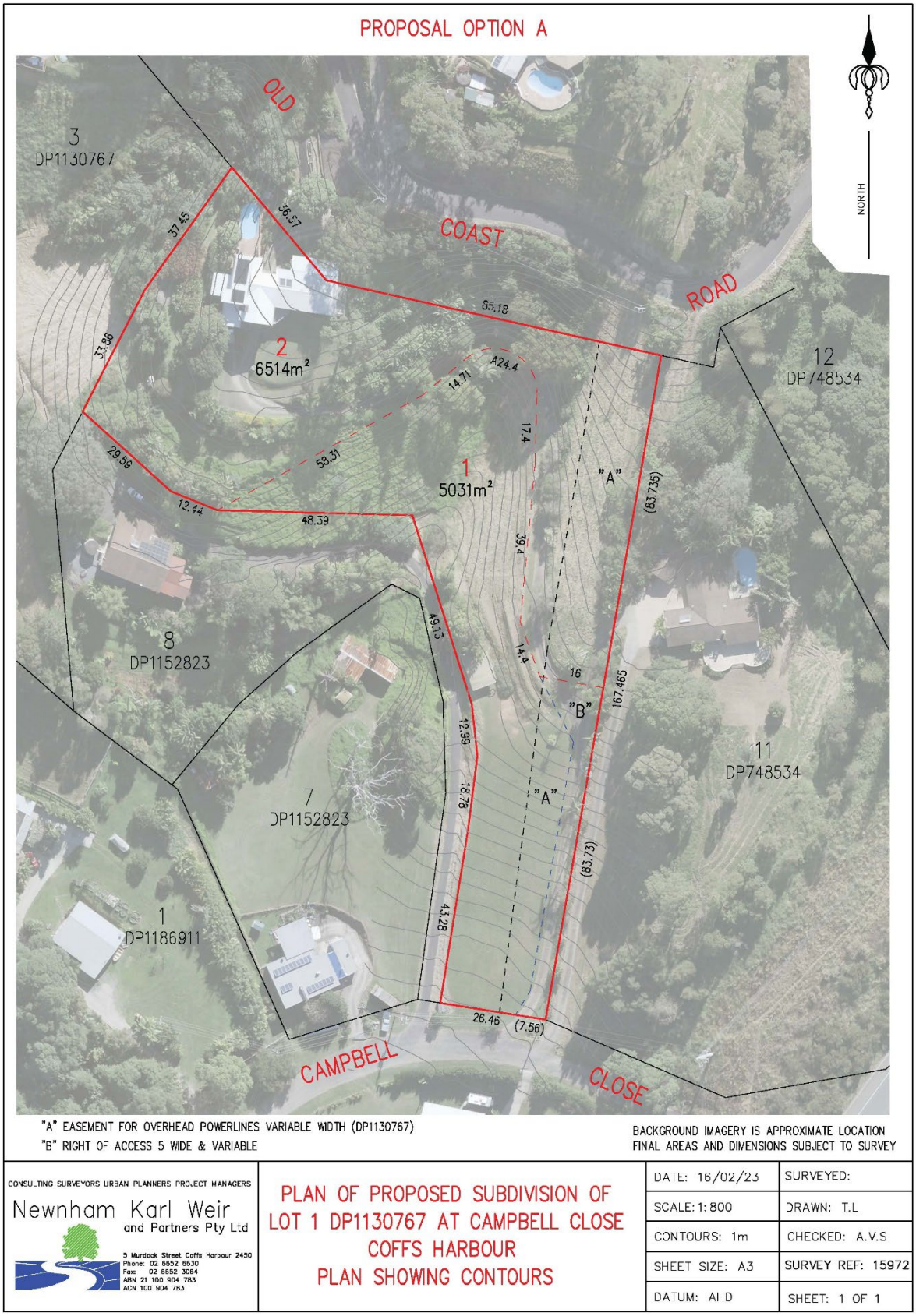

Figure 2: Concept Subdivision Layout

Note: In preparing this planning proposal, Council has not endorsed the proposed plan of subdivision, as this is subject to the development application process.

PART 1 – OBJECTIVES OR INTENDED OUTCOMES

The objective of this planning proposal is to amend the Lot Size Map (Sheet LSZ_005C) of Coffs Harbour LEP 2013 to reduce the minimum lot size on the site from 1 hectare to 5,000 m^2.

PART 2 – EXPLANATION OF PROVISIONS

The LEP amendment will reduce the minimum lot size applying to Lot 1 DP 1130767, 37 Campbell Close, Korora from 1 hectare to 5,000 m^2. This is to be achieved through the amendment of Sheet LSZ_005C (Lot Size Map) of LEP 2013.

PART 3 – JUSTIFICATION & SITE-SPECIFIC MERIT

This part provides a response to the following matters in accordance with the *Local Environmental Plan Making Guideline 2023* (NSW Department of Planning, Housing and Infrastructure):

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

Section A – Need for the planning proposal

1. Is the planning proposal a result of an endorsed local strategic planning statement, strategic study or report?

Yes. The site is included in an existing R5 Large Lot Residential zone and the City's Local Growth Management Strategy (LGMS) 2020, Chapter 6 – Large Lot Residential allows for the potential reduction of minimum lot size in the R5 zone, where sufficiently justified.

Coffs Harbour has a range of lot sizes in its large lot (rural residential) areas, which reflect varying minimum lot size standards that have changed over time. These varied lot sizes are apparent within the Sandy Beach and Emerald Beach large lot areas, and in close proximity to the site. A reduction in minimum lot size for the site would be consistent with the surrounding neighbourhood and its character, as smaller sized lots are already present.

The proposed minimum lot size of 5,000 m^2 will be sufficient to ensure that future lots might achieve a practical and efficient layout to meet their intended (rural residential) use. In this regard, the indicative layout in Figure 2 is demonstrative of this; achieving a practical and efficient layout in a rural residential context.

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

Yes. The planning proposal is considered the best way to achieve the intended outcome and is consistent with the approach set out in the LGMS, which is set out above. It is also consistent with the manner in which Council has dealt with similar planning proposals.

3. Is there a net community benefit?

The Net Community Benefit Criteria is identified in the NSW Government's publication *The Right Place for Business and Services*. This policy document has a focus on ensuring growth within existing centres

and minimising dispersed trip generating development. It applies most appropriately to planning proposals that promote significant increased residential areas or densities, or significant increased employment areas or the like. This planning proposal does not relate to ensuring growth within existing centres and minimising dispersed trip generating development; nor does it relate to promoting significant increased residential areas or densities, or significant increased employment areas or the like. The criteria in the Net Community Benefit test cannot be properly applied to this planning proposal.

Section B – Relationship to strategic planning framework

4. Will the planning proposal give effect to the objectives and actions contained within the North Coast Regional Plan 2041?

The proposed LEP amendment is considered to be consistent with the relevant goals, objectives, activities and actions within the North Coast Regional Plan 2041 as follows:

GOAL 1 – LIVEABLE, SUSTAINABLE AND RESILIENT

- ***Objective 1 – Provide well located homes to meet demand***

Strategy 1.1 A 10 year supply of zoned and developable residential land is to be provided and maintained in Local Council Plans endorsed by the Department of Planning, Housing and Infrastructure.

The proposed LEP amendment is not inconsistent with this strategy. As per Coffs Harbour Local Growth Management Strategy 2020, reduction of minimum lot size of land in Zone R5 Large Lot Residential is permitted where a land capability assessment supports a smaller lot size. The proposed amendment is contained within Zone R5 and is therefore consistent.

Action 1 Establish the North Coast urban housing monitoring program.

The proposed LEP amendment is not inconsistent with this action.

Strategy 1.2 Local Council plans are to encourage and facilitate a range of housing options in well located areas.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 1.3 Undertake infrastructure service planning to establish land can be feasibly serviced prior to rezoning.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment is supported by a Land Capability Assessment & Minimum Lot Size Analysis in Appendix 4, which indicates the on-site sewage management can be maintained at a reduced minimum lot size.

Strategy 1.4 Councils in developing their future housing strategies must prioritise new infill development to assist in meeting the region's overall 40% multi-dwelling / small lot housing target and are encouraged to work collaboratively at a subregional level to achieve the target.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 1.5 New rural residential housing is to be located on land which has been approved in a strategy endorsed by the Department of Planning, Housing and Infrastructure and is to be directed away from the coastal strip.

As per Coffs Harbour Local Growth Management Strategy 2020, reduction of minimum lot size of land in Zone R5 Large Lot Residential is permitted where a land capability assessment supports a smaller lot size. The proposed amendment is contained within an existing R5

Large Lot Residential Zone and shall only result in the potential for a single additional allotment. As such, the proposed amendment is consistent with this strategy.

Strategy 1.6 Councils and LALCs can partner to identify areas which may be appropriate for culturally responsive housing on Country.

The proposed LEP amendment is not inconsistent with this strategy.

Action 2 Provide guidance to help councils plan for and manage accommodation options for seasonal and itinerant workers.

The proposed LEP amendment is not inconsistent with this action.

- ***Objective 2 – Provide for more affordable and low cost housing***

Action 3 Establish Housing Affordability Roundtables for the Mid North Coast and Northern Rivers subregions with councils, community housing providers, State agencies and the housing development industry to collaborate, build knowledge and identify measures to improve affordability and increase housing diversity.

The proposed LEP amendment is not inconsistent with this action.

- ***Objective 3 – Protect regional biodiversity and areas of high environmental value***

Strategy 3.1 Strategic planning and local plans must consider opportunities to protect biodiversity values by:

- focusing land-use intensification away from HEV assets and implementing the 'avoid, minimise and offset' hierarchy in strategic plans, LEPs and planning proposals;
- ensuring any impacts from proposed land use intensification on adjoining reserved lands or land that is subject to a conservation agreement are assessed and avoided;
- encouraging and facilitating biodiversity certification by Councils at the precinct scale for high growth areas and by individual land holders at the site scale, where appropriate;
- updating existing biodiversity mapping with new mapping in LEPs where appropriate;
- identifying HEV assets within the planning area at planning proposal stage through site investigations;
- applying appropriate mechanisms such as conservation zones and Biodiversity Stewardship Agreements to protect HEV land within a planning area and considering climate change risks to HEV assets;
- developing or updating koala habitat maps to strategically conserve koala habitat to help protect, maintain and enhance koala habitat; and
- considering marine environments, water catchment areas and groundwater sources to avoid potential development impacts.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 3.2 In preparing local and strategic plans Councils should:

- embed climate change knowledge and adaptation actions; and
- consider the needs of climate refugia for threatened species and other key species.

The proposed LEP amendment is not inconsistent with this strategy.

Collaboration Activity 1:

Work with and assist councils to:

- review biodiversity mapping and related local environmental plan and development control plan provisions;

- improve access to data to enable identification of protected areas including NPWS Estate, Crown Reserves and in-perpetuity private land conservation agreements to inform local planning;
- ensure koala habitat values are included in land-use planning decisions through regional plans, local strategic planning statements and local environmental plans.

Lead Agency: NSW Biodiversity and Conservation Division

The proposed LEP amendment is not inconsistent with this activity.

- ***Objective 4 – Understand, celebrate and integrate Aboriginal culture***

Strategy 4.1 Councils prepare cultural heritage mapping with an accompanying Aboriginal cultural management plan in collaboration with Aboriginal communities to protect culturally important sites.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 4.2 Prioritise applying dual names in local Aboriginal language to important places, features or infrastructure in collaboration with the local Aboriginal community.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 5 – Manage and improve resilience to shocks and stresses, natural hazards and climate change***

Strategy 5.1 When preparing local strategic plans, councils should be consistent with and adopt the principles outlined in the Strategic Guide to Planning for Natural Hazards.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 5.2 Where significant risk from natural hazard is known or presumed, updated hazard strategies are to inform new land use strategies and be prepared in consultation with emergency service providers and Local Emergency Management Committees (LEMCs). Hazard strategies should investigate options to minimise risk such as voluntary housing buy back schemes.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 5.3 Use local strategic planning and local plans to adapt to climate change and reduce exposure to natural hazards by:

- identifying and assessing the impacts of place-based shocks and stresses;
- taking a risk-based-approach that uses the best available science in consultation with the NSW Government, emergency service providers, local emergency management committees and bush fire risk management committees;
- locating development (including urban release areas and critical infrastructure) away from areas of known high bushfire risk, flood and coastal hazard areas to reduce the community's exposure to natural hazards;
- identifying vulnerable infrastructure assets and considering how they can be protected or adapted;
- building resilience of transport networks in regard to evacuation routes, access for emergencies and, maintaining freight connections;
- identifying industries and locations that would be negatively impacted by climate change and natural hazards and preparing strategies to mitigate negative impacts and identify new paths for growth;
- preparing, reviewing and implementing updated natural hazard management plans and Coastal Management Programs to improve community and environmental resilience which can be incorporated into planning processes early for future development;
- identifying any coastal vulnerability areas;

- updating flood studies and flood risk management plans after a major flood event incorporating new data and lessons learnt; and
- communicating natural hazard risk through updated flood studies and strategic plans.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment shall be referred to NSW Rural Fire Service for further consideration, as the site is identified as Bushfire Prone Land (Vegetation Categories 1 & 3).

Strategy 5.4 Resilience and adaptation plans should consider opportunities to:

- encourage sustainable and resilient building design and materials (such as forest products) including the use of renewable energy to displace carbon intensive or fossil fuel intensive options
- promote sustainable land management including Ecologically Sustainable Forest Management (ESFM)
- address urban heat through building and street design at precinct scale that considers climate change and future climatic conditions to ensure that buildings and public spaces are designed to protect occupants in the event of heatwaves and extreme heat events
- integrate emergency management and recovery needs into new and existing urban areas including evacuation planning, safe access and egress for emergency services personnel, buffer areas, building back better, whole-of-life cycle maintenance and operation costs for critical infrastructure for emergency management
- adopt coastal vulnerability area mapping for areas subject to coastal hazards to inform the community of current and emerging risks
- promote economic diversity, improved environmental, health and well-being outcomes and opportunities for cultural and social connections to build more resilient places and communities.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 5.5 Partner with local Aboriginal communities to develop land management agreements and policies to support cultural management practices.

The proposed LEP amendment is not inconsistent with this strategy.

Collaboration Activity 2:

Work with councils and agencies and the Transition North Coast Working Group to deliver the North Coast Enabling Regional Adaptation report to provide opportunities for climate change adaptation pathways with the aim of transitioning key regional systems to a more resilient future.

Lead Agency: NSW Office of Energy and Climate Change

The proposed LEP amendment is not inconsistent with this activity.

- ***Objective 6 – Create a circular economy***

Strategy 6.1 Support the development of circular economy, hubs, infrastructure and activities and consider employment opportunities that may arise from circular economies and industries that harness or develop renewable energy technologies and will aspire towards an employment profile that displays a level of economic self-reliance, and resilience to external forces.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 6.2 Use strategic planning and waste management strategies to support a circular economy, including dealing with waste from natural disasters and opportunities for new industry specialisations.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 7 – Promote renewable energy opportunities***

Strategy 7.1 When reviewing LEPs and local strategic planning statements:

- ensure current land use zones encourage and promote new renewable energy infrastructure;
- identify and mitigate impacts on views, local character and heritage where appropriate; and
- undertake detailed hazard studies.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 8 – Support the productivity of agricultural land***

Strategy 8.1 Local planning should protect and maintain agricultural productive capacity in the region by directing urban, rural residential and other incompatible development away from important farmland.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment is not located within proximity to any important farmland identified in the North Coast Regional Plan 2041.

- ***Objective 9 – Sustainably manage and conserve water resources***

Strategy 9.1 Strategic planning and local plans should consider:

- opportunities to encourage riparian and coastal floodplain restoration works;
- impacts to water quality, freshwater flows and ecological function from land use change;
- water supply availability and issues, constraints and opportunities early in the planning process;
- partnering with local Aboriginal communities to care for Country and waterways;
- locating, designing, constructing and managing new developments to minimise impacts on water catchments, including downstream waterways and groundwater resources;
- possible future diversification of town water sources, including groundwater, stormwater harvesting and recycling;
- promoting an integrated water cycle management approach to development;
- encouraging the reuse of water in new developments for urban greening and for irrigation purposes;
- improving stormwater management and water sensitive urban design;
- ensuring sustainable development of higherwater use industries by considering water availability and constraints, supporting more efficient water use and reuse, and locating development where water can be accessed without significantly impacting on other water users or the environment;
- identifying and protecting drinking water catchments and storages in strategic planning and local plans; and
- opportunities to align local plans with any certified Coastal Management Programs.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 9.2 Protect marine parks, coastal lakes and estuaries by implementing the NSW Government's Risk-Based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions, with sensitive marine parks, coastal lakes and estuaries prioritised.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 9.3 Encourage a whole of catchment approach to land use and water management across the region that considers climate change, water security, sustainable demand and growth, the natural environment and investigate options for water management through innovation.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 10 – Sustainably manage the productivity of our natural resources***

Strategy 10.1 Enable the development of the region's natural, mineral and forestry resources by avoiding interfaces with land uses that are sensitive to impacts from noise, dust and light interference.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 10.2 Plan for the ongoing productive use of lands with regionally significant construction material resources in locations with established infrastructure and resource accessibility.

The proposed LEP amendment is not inconsistent with this strategy.

GOAL 2 – PRODUCTIVE AND CONNECTED

- ***Objective 11 – Support cities and centres and coordinate the supply of well-located employment land***

Strategy 11.1 Local council plans will support and reinforce cities and centres as a focal point for economic growth and activity.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 11.2 Utilise strategic planning and land use plans to maintain and enhance the function of established commercial centres by:

- simplifying planning controls
- developing active city streets that retain local character
- facilitating a broad range of uses within centres in response to the changing retail environment
- maximising the transport and community facilities commensurate with the scale of development proposals.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 11.3 Support existing and new economic activities by ensuring council strategic planning and local plans:

- retain, manage and safeguard significant employment lands
- respond to characteristics of the resident workforce and those working in the LGA and neighbouring LGAs
- identify local and subregional specialisations
- address freight, service and delivery considerations
- identify future employment lands and align infrastructure to support these lands
- provide flexibility in local planning controls
- are responsive to future changes in industry to allow a transition to new opportunities
- provide flexibility and facilitate a broad range of commercial, business and retail uses within centres
- focus future commercial and retail activity in existing commercial centres, unless there is no other suitable site within existing centres, there is a demonstrated need, or there is positive social and economic benefit to locate activity elsewhere

- are supported by infrastructure servicing plans for new employment lands to demonstrate feasibility prior to rezoning.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment does not intend to remove, add or otherwise impact employment land.

Strategy 11.4 New employment areas are in accordance with an employment land strategy endorsed by the Department of Planning, Housing and Infrastructure.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment only intends to enable the creation of a single additional large lot residential lot.

- ***Objective 12 – Create a diverse visitor economy***

Strategy 12.1 Council strategic planning and local plans should consider opportunities to:

- enhance the amenity, vibrancy and safety of centres and township precincts;
- create green and open spaces that are accessible and well connected and enhance existing green infrastructure in tourist and recreation facilities;
- support the development of places for artistic and cultural activities;
- identify appropriate areas for tourist accommodation and tourism development;
- protect heritage, biodiversity and agriculture to enhance cultural tourism, agri-tourism and eco-tourism;
- partner with local Aboriginal communities to support cultural tourism and connect ventures across the region;
- support appropriate growth of the nighttime economy;
- provide flexibility in planning controls to allow sustainable agritourism and ecotourism;
- improve public access and connection to heritage through innovative interpretation; and
- incorporate transport planning with a focus on active transport modes to connect visitors to key destinations.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 13 – Champion Aboriginal self-determination***

Strategy 13.1 Provide opportunities for the region's LALCs, Native Title holders and community recognised Aboriginal organisations to utilise the NSW planning system to achieve development aspirations, maximising the flow of benefits generated by land rights to Aboriginal communities through strategic led planning.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 13.2 Prioritise the resolution of unresolved Aboriginal land claims on Crown land.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 13.3 Partner with community recognised Aboriginal organisations to align strategic planning and community aspirations including enhanced Aboriginal economic participation, enterprise and land, sea and water management.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 13.4 Councils consider engaging Aboriginal identified staff within their planning teams to facilitate strong relationship building between councils, Aboriginal communities and key stakeholders such as Local Aboriginal Land Councils and local Native Title holders.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 13.5 Councils should establish a formal and transparent relationship with local recognised Aboriginal organisations and community, such as an advisory committee.

The proposed LEP amendment is not inconsistent with this strategy.

Action 5 The Department of Planning, Housing and Infrastructure will work with LALCs, Native Title holders and councils by:

- meaningfully engaging with LALCs and Native Title holders in the development and review of strategic plans to ensure aspirations are reflected in plans;
- building capacity for Aboriginal communities, LALCs and Native Title holders to utilise the planning system; and
- incorporating Aboriginal knowledge of the region into plan.

The proposed LEP amendment is not inconsistent with this action.

- ***Objective 14 – Deliver new industries of the future***

Strategy 14.1 Facilitate agribusiness employment and income-generating opportunities through the regular review of council planning and development controls, including suitable locations for intensive agriculture and agribusiness.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment relates to rural residential land, and therefore will not result in any change to agribusiness opportunities.

Strategy 14.2 Protect established agriculture clusters and identify expansion opportunities in local plans that avoid land use conflicts, particularly with residential and rural residential land uses.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 15 – Improve state and regional connectivity***

Strategy 15.1 Protect proposed and existing transport infrastructure and corridors to ensure network opportunities are not sterilised by incompatible land uses or land fragmentation.

The proposed LEP amendment is not inconsistent with this strategy.

Collaboration Activity 4:

To ensure that centres experiencing high growth have well planned and sustainable transport options, placed-based Transport Plans will be developed for key cities and centres across the North Coast region.

Lead Agency: Transport for NSW

The proposed LEP amendment is not inconsistent with this activity.

- ***Objective 16 – Increase active and public transport usage***

Strategy 16.1 Encourage active and public transport use by:

- prioritising pedestrian amenity within centres for short everyday trips
- providing a legible, connected and accessible network of pedestrian and cycling facilities
- delivering accessible transit stops and increasing convenience at interchanges to serve an ageing customer
- incorporating emerging anchors and commuting catchments in bus contract renewals
- ensuring new buildings and development include end of trip facilities
- integrating the active transport network with public transport facilities
- prioritising increased infill housing in appropriate locations to support local walkability and the feasibility of public transport stops

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 16.2 Local plans should encourage the integration of land use and transport and provide for environments that are highly accessible and conducive to walking, cycling and the use of public transport and encourage active travel infrastructure around key trip generators.

The proposed LEP amendment is not inconsistent with this strategy.

- ***Objective 17 – Utilise new transport technology***

Strategy 17.1 Councils should consider how new transport technology can be supported in local strategic plans, where appropriate.

The proposed LEP amendment is not inconsistent with this strategy.

Collaboration Activity 6:

Investigate public transport improvements including on-demand services.

Lead Agency: Transport for NSW

The proposed LEP amendment is not inconsistent with this activity.

GOAL 3 – GROWTH CHANGE AND OPPORTUNITY

- ***Objective 18 – Plan for sustainable communities***

Action 6 Undertake housing and employment land reviews for the Northern Rivers and Mid North Coast subregions to assess future supply needs and locations.

The proposed LEP amendment is not inconsistent with this action.

- ***Objective 19 – Public spaces and green infrastructure support connected and healthy communities***

Strategy 19.1 Councils should aim to undertake public space needs analysis and develop public space infrastructure strategies for improving access and quality of all public space to meet community need for public spaces. This could include:

- drawing on community feedback to identify the quantity, quality and the type of public space required
- prioritising the delivery of new and improved quality public space to areas of most need
- considering the needs of future and changing populations
- identifying walkable and cycleable connectivity improvements and quality and access requirements that would improve use and enjoyment of existing infrastructure
- consolidating, linking and enhancing high quality open spaces and recreational areas
- working in partnership with local Aboriginal communities to develop bespoke cultural infrastructure which responds to the needs of Aboriginal communities and

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 19.2 Public space improvements and new development should consider the local conditions, including embracing opportunities for greening and applying water sensitive urban design principles.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 19.3 Encourage the use of council owned land for temporary community events and creative practices where appropriate by reviewing development controls.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 19.4 Local environmental plan amendments that propose to reclassify public open space must consider the following:

- the role or potential role of the land within the open space network;
- how the reclassification is strategically supported by local strategies such as open space or asset rationalisation strategies;

- where land sales are proposed, details of how sale of land proceeds will be managed; and
- the net benefit or net gain to open space.

The proposed LEP amendment is not inconsistent with this strategy. The proposed amendment shall not reclassify public open space.

- ***Objective 20 – Celebrate local character***

Strategy 20.1 Ensure strategic planning and local plans recognise and enhance local character through use of local character statements in local plans and in accordance with the NSW Government's Local Character and Place Guideline.

The proposed LEP amendment is not inconsistent with this strategy.

Strategy 20.2 Celebrate buildings of local heritage significance by:

- retaining the existing use where possible
- establishing a common understanding of appropriate reuses
- exploring history and significance
- considering temporary uses
- designing for future change of use options.

The proposed LEP amendment is not inconsistent with this strategy. There are no buildings of local heritage significance on the site.

Coffs Harbour Narrative

Regional Priorities

- Manage and support growth in Coffs Harbour, anchored by the expanding health, education and creative industries sectors, and Coffs Harbour Airport Enterprise Park.
- Deliver suitable housing and job opportunities across the LGA including in Coffs Harbour, Woolgoolga, Moonee Beach, Toormina and Sapphire Beach.
- Protect environmental assets that sustain the agricultural and tourism industries.

Livable and Resilient

- Provide mitigation measures in response to climate change.
- Support environmentally sustainable development that is responsive to natural hazards.
- Retain and protect local biodiversity through effective management of environmental assets and ecological communities.

Productive and Connected

- Develop health, education and aviation precincts at the South Coffs Harbour Enterprise Area and Coffs Harbour Airport Enterprise Park, and new employment land at Woolgoolga and Bonville.
- Promote the sustainable use of important farmland areas through encouraging initiatives to support the development of the agricultural sector and agribusiness.
- Identify opportunities to expand nature based, adventure and cultural tourism assets including Solitary Islands Marine Park and other coastal, hinterland, and heritage assets, which will support the local ecotourism industry.

Housing and Place

- Enable 'better places' through placemaking initiatives, active transport, urban design specific to the North Coast, and facilitation of the '20 minute neighbourhood'.

- Deliver housing at Woolgoolga, North Boambee Valley and Bonville, and address the temporary worker housing needs associated with the Coffs Harbour Bypass.
- Enhance the variety of housing options available by promoting a compact urban form in and around the Coffs Harbour city centre and Park Beach.

Smart, Connected and Accessible (Infrastructure)

- Increase and strengthen social, economic and strategic links with the Mid North Coast subregion including Bellingen, Clarence Valley and Nambucca LGAs, particularly regarding the delivery of additional employment lands.
- Maximise opportunities associated with the increased connectivity provided by the new Coffs Harbour Bypass.

The proposed LEP amendment is not inconsistent with this narrative given that it shall only result in a minor increase for large lot residential land. The reduction in minimum lot size will enable more efficient use of rural residential land and shall not negatively impact any biodiversity values. The proposed amendment is in keeping with the neighbourhood character, where other similarly sized lots can be found.

5. Is the planning proposal consistent with Council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?

Council adopted its Local Strategic Planning Statement (LSPS) on 25 June 2020 for the whole of the Coffs Harbour LGA. The proposed LEP amendment accords with the vision and planning priorities within the Coffs Harbour LSPS, in particular:

Planning Priority	Action
5. Deliver greater housing supply, choice and diversity	A5.1 - Review and amend Council's local planning controls relating to housing supply, choice and diversity as outlined in the Local Growth Management Strategy.
	A5.5 - Implement remaining actions from the Local Growth Management Strategy as funding allows

MyCoffs Community Strategic Plan 2032

The City's Community Strategic Plan is based on four overarching themes: Community Wellbeing; Community Prosperity; A Place for Community; and Sustainable Community Leadership. Within each theme there are a number of sustainable development objectives and outcomes.

The planning proposal supports the vision of the MyCoffs Community Strategic Plan 'connected, sustainable, thriving' and will assist in achieving the objectives of the Plan by: attracting people to work, live and visit; and by undertaking development that is environmentally, socially and economically responsible.

Theme	Objective	Outcome
A Place for Community:	We are creating liveable places that are beautiful and appealing.	• The Coffs Harbour area is a place we are proud to call home. Our neighbourhoods

Liveable neighbourhoods with a defined identity		have a strong sense of identity and are actively shaped by the local community. • Our neighbourhoods are people-friendly and liveable environments.
	We undertake development that is environmentally, socially and economically responsible.	• Population growth is focussed within the existing developed footprint. • Sustainable design and best practice development provide quality housing options.

Coffs Harbour Local Growth Management Strategy

The Planning Proposal is consistent with the Coffs Harbour Local Growth Management Strategy.

The site is included in an existing R5 Large Lot Residential zone, and the LGMS (Chapter 6 – Large Lot Residential Lands) addresses the potential reduction of minimum lot size in the R5 zone, where sufficiently justified. Section 6.7 within Chapter 6 of the LGMS states the following:

"It is also reasonable that if undeveloped land within zone R5 can justify a reduced lot size, then it should be considered through an applicant-initiated planning proposal. This would allow a merit case for a revised minimum lot size LEP amendment request to be submitted to Council, bearing in mind the underlying reasons for the standard in the first place and the objectives of zone R5."

The planning proposal is supported by Appendix 4 – Land Capability Assessment & Minimum Lot Size Analysis and Appendix 5 – Bushfire Assessment Report, which indicate that the reduction of the minimum lot size is appropriate.

6. Is the planning proposal consistent with any other applicable State and Regional Study or Strategies?

Coffs Harbour Regional City Action Plan 2036

The NSW Government developed the Coffs Harbour Regional City Action Plan (the Plan) to provide a framework to manage and shape the city's future growth. The Plan was finalised in March 2021 and it identifies 5 overarching goals which incorporate objectives and related actions. This planning proposal is consistent with the following relevant goals, objectives and associated actions within the Plan:

Goal	Objective	Actions	
Live	17. Deliver a city that responds to Coffs Harbour's unique green cradle setting and offer housing choice.	17.1	Promote a sustainable growth footprint and enhance place-specific character and design outcomes.
		17.4	Support a greater variety and supply of affordable housing.

7. Is the planning proposal consistent with applicable state environmental planning policies (SEPP)?

The table provided in Appendix 1 provides an assessment of consistency against each State Environmental Planning Policy relevant to the Planning Proposal.

8. Is the planning proposal consistent with applicable Ministerial Directions (s9.1 directions)?

The table provided in Appendix 2 provides an assessment of consistency against Ministerial Planning Directions relevant to the Planning Proposal.

Section C – Environmental, social and economic impact

9. 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?

No; there is little likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the planning proposal. The Biodiversity Assessment (Appendix 3) supports this conclusion.

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

Yes; the following matters have been identified as considerations for the planning proposal and any resulting development application.

Bushfire Risk

Bushfire risk has been addressed in a Bushfire Assessment Report (Appendix 5).

The report demonstrates that the planning proposal (and eventual two-lot large lot residential subdivision of the site) complies with relevant objectives (for the development type) and performance criteria within *Planning for Bushfire Protection 2019*.

Wastewater Capability Assessment

The Land Capability Assessment (Appendix 4) demonstrates that a minimum lot size of 5,000 m^2 is suitable to accommodate the sustainable application of wastewater (on-site) from both future and existing residential development, taking into account the intended future subdivision of the site for large lot purposes.

Contaminated Land

The site is identified under the City's mapping as former banana plantation land, where previous sampling has been undertaken and a portion of the property has been cleared for contamination. The Contaminated Land Assessment (Appendix 7) indicates that no significant arsenic, lead or organochloride pesticide contamination is found within the concept subdivision area, with all results well below acceptable contamination thresholds.

Land Use Conflict

The site is located within a developed R5 Large Lot Residential zoned area. While the site is not in proximity to land zoned as RU2 Rural Landscape, there is agricultural production located on a neighbouring property, Lot 2 DP 1186911 Campbell Close, Korora. The subject site has a minimum separation distance from this agricultural use of approximately 100 metres. Table 6 in the *Living and*

working in rural areas handbook (Department of Primary Industries and Regional Development, 2007) recommends a minimum buffer between urban development and horticulture of 300 metres. It is considered that as the separation distance for this site includes a 45-metre-wide buffer of C2 Environmental Conservation zoned land, as well as several developed large lot residential properties, that the site will not be significantly affected by agricultural land use conflict.

11. Has the planning proposal adequately addressed any social and economic effects?

Yes; the planning proposal is not likely to result in any adverse social or economic effects. Social benefits include a likely minor increase in housing stock in the Korora locality, which may have flow on benefits to local community activities. Economic benefits are limited to the likely construction of a further dwelling on the site, and minor flow on benefits to local businesses.

Section D – State and Commonwealth interests

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

Yes; the planning proposal is unlikely to create significant additional demand on existing public infrastructure. The proposed LEP amendment will enable the creation of one additional lot, which shall be serviced by on-site water collection and a waste-water treatment system, as there are no available City water and sewer mains. Vehicular access can be achieved from Campbell Close.

13. What are the views of State and federal public authorities and government agencies consulted in order to inform the Gateway determination?

The Department of Planning, Housing and Infrastructure issued a Gateway Determination for the planning proposal on 1 July 2024 (Appendix 8). The Gateway Determination requires consultation on the planning proposal with the following Government Agencies:

- NSW Rural Fire Service

Note: Following Exhibition this section of the planning proposal will be updated to include details of the community consultation.

PART 4 – MAPS

Proposed maps amendments to Coffs Harbour LEP 2013, as described in Part 2 of this planning proposal, are shown below.

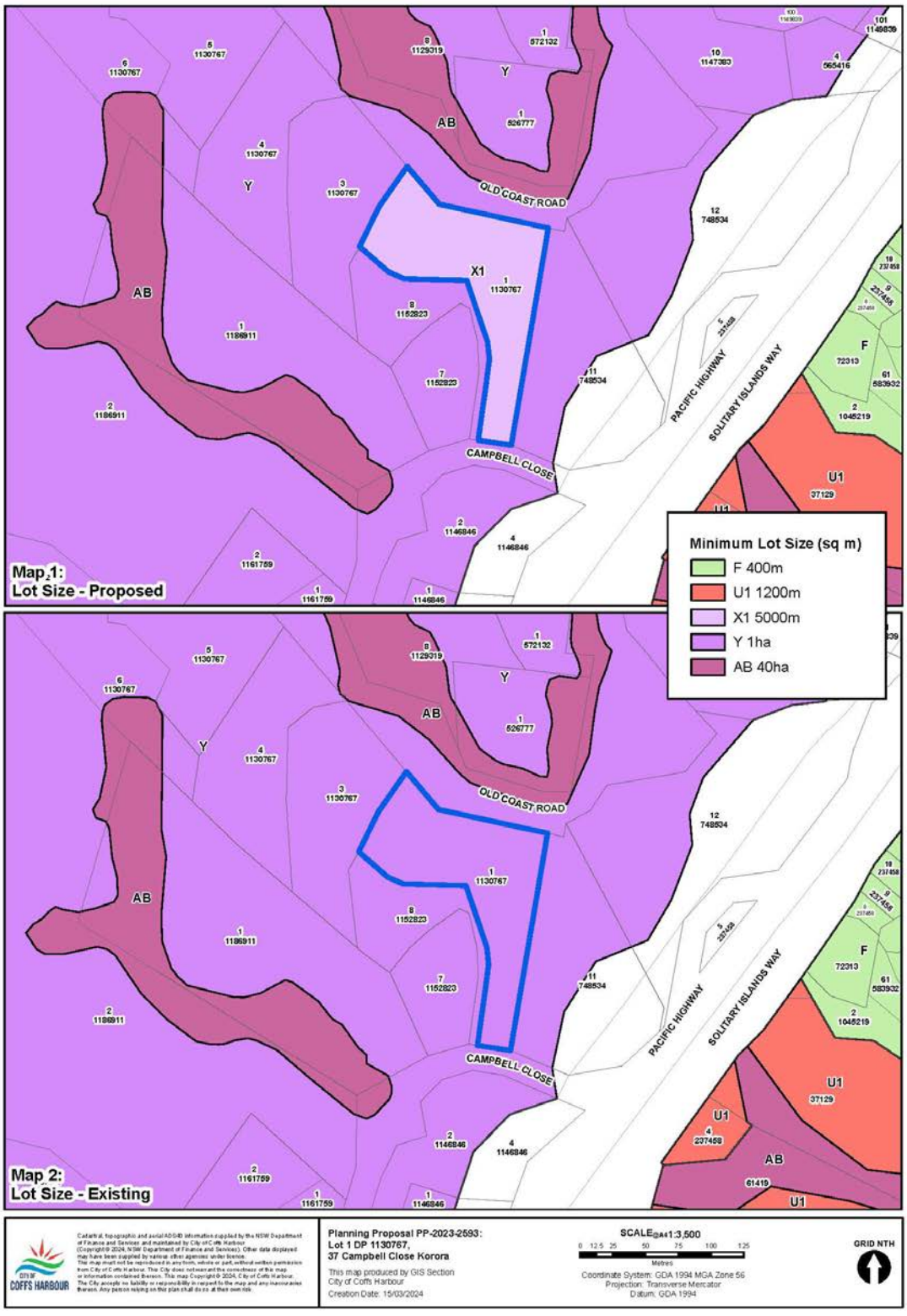

Figure 3: Combined map of existing and proposed amendments to Lot Size Map (Sheet LSZ_005C)

Technical Notes:

- *An amended version of this map sheet will be created and supplied to NSW Department of Planning, Housing and Infrastructure if Council resolves to initiate the planning proposal.*

PART 5 – COMMUNITY CONSULTATION

The Gateway determination issued by the NSW Department of Planning, Housing and Infrastructure will specify the community consultation requirements that must be undertaken for the planning proposal. The City considers that the planning proposal should be exhibited for 28 days, given that it is not a principal LEP and does not seek to reclassify public land.

Public Exhibition of the planning proposal will include the following:

Advertisement

Placement of an online advertisement in the Coffs Newsroom.

Consultation with affected owners and adjoining landowners

Written notification of the public exhibition to the proponent, the landowner and adjoining/adjacent landowners.

Website

The planning proposal will be made publicly available on the City's Have Your Say Website at: https://haveyoursay.coffsharbour.nsw.gov.au/

Note: Following public exhibition, this section of the planning proposal will be updated to include details of the community consultation.

PART 6 –PROJECT TIMELINE

A project timeline is yet to be determined however the anticipated timeframes are provided below in Table 1, noting that the Gateway Determination issued by the NSW Department of Planning, Housing and Infrastructure will specify the date that the planning proposal is to be completed.

Table 1: Anticipated Timeline

Milestone	Anticipated Timeframe
Consideration by Council	June 2024
Commencement (date of Gateway determination)	July 2024
Public exhibition & agency consultation	September 2024
Consideration of submissions	November 2024
Post-Exhibition review and additional studies	November 2024
Reporting to Council for consideration	February 2025
Submission to Minister to make the plan (if not delegated) Submission to Minister for notification of the plan (if delegated)	February 2025
Gazettal of LEP Amendment	March 2025

APPENDIX 1 – CONSIDERATION OF STATE ENVIRONMENTAL PLANNING POLICIES

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Chapter 2 - Vegetation in Non-Rural Areas	No	N/A	The aims of this chapter of the Policy are: a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 3 - Koala Habitat Protection 2020	No	N/A	The aims of this chapter of the Policy are to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline: a) by requiring the preparation of plans of management before development consent can be granted in relation to areas of core koala habitat, and b) by encouraging the identification of areas of core koala habitat, and c) by encouraging the inclusion of areas of core koala habitat in environment protection zones. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 4 - Koala Habitat Protection 2021	Yes	Yes	The aims of this chapter of the Policy are to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 6 – Water Catchments	N/A	N/A	The City of Coffs Harbour is not listed in the "land to which this chapter applies" and thus this chapter of the policy does

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				not apply to the Coffs Harbour LGA at this point in time.
	Chapter 13 – Strategic Conservation Planning	N/A	N/A	The City of Coffs Harbour is not listed in the "land application map" and thus this chapter of the policy does not apply to the Coffs Harbour LGA at this point in time.
SEPP (Exempt and Complying Development Codes) 2008	N/A – this is a standalone State Environmental Planning Policy	No	N/A	This Policy aims to provide streamlined assessment processes for development that complies with specified development standards by: a) providing exempt and complying development codes that have State-wide application, and b) identifying, in the exempt development codes, types of development that are of minimal environmental impact that may be carried out without the need for development consent, and c) identifying, in the complying development codes, types of complying development that may be carried out in accordance with a complying development certificate as defined in the Act, and d) enabling the progressive extension of the types of development in this Policy, and e) providing transitional arrangements for the introduction of the State-wide codes, including the amendment of other environmental planning instruments. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
State Environmental Planning Policy (Housing) 2021	N/A – this is a standalone State Environmental Planning Policy	No	N/A	The principles of this Policy are: a) enabling the development of diverse housing types, including purpose-built rental housing, b) encouraging the development of housing that will meet the needs of more vulnerable members of the community, including very low to moderate income households, seniors and people with a disability, c) ensuring new housing development provides residents with a reasonable level of amenity, promoting the planning and delivery of housing in locations where it will make good use

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				of existing and planned infrastructure and services, d) minimising adverse climate and environmental impacts of new housing development, e) reinforcing the importance of designing housing in a way that reflects and enhances its locality, f) supporting short-term rental accommodation as a home-sharing activity and contributor to local economies, while managing the social and environmental impacts from this use, g) mitigating the loss of existing affordable rental housing. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
State Environmental Planning Policy (Industry and Employment) 2021	Chapter 3 - Advertising and Signage	No	N/A	This aims of this chapter of the Policy are: a) to ensure that signage (including advertising): (i) is compatible with the desired amenity and visual character of an area, and (ii) provides effective communication in suitable locations, and (iii) is of high quality design and finish, and b) to regulate signage (but not content) under Part 4 of the Act, and c) to provide time-limited consents for the display of certain advertisements, and d) to regulate the display of advertisements in transport corridors, and e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors. This Policy does not regulate the content of signage and does not require consent for a change in the content of signage. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Planning Systems) 2021.	Chapter 2 -State and Regional Development	No	N/A	The aims of this chapter of the Policy are: a) to identify development that is State significant development, b) to identify development that is State significant infrastructure and critical State significant infrastructure,

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				c) to identify development that is regionally significant development. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 3 - Aboriginal Land	N/A	N/A	The aims of this Chapter of the Policy are: a) to provide for development delivery plans for areas of land owned by Aboriginal Land Councils to be considered when development applications are considered, and b) to declare specified development carried out on land owned by Aboriginal Land Councils to be regionally significant development. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 4 - Concurrences and Consents	No	N/A	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Precincts—Central River City) 2021	Chapter 2 – State Significant Precincts	No	N/A	The aims of this chapter of the Policy are to: a) to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State, b) to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Precincts—	Chapter 2 -State Significant Precincts	No	N/A	The aims of this chapter of the Policy are to:

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
Eastern Harbour City) 2021				c) to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State, d) to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Precincts—Regional) 2021	Chapter 2 -State Significant Precincts	N/A	N/A	The aims of this chapter of the Policy are to: a) to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State, b) to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Primary Production) 2021	Chapter 2 - Primary Production and Rural Development	No	N/A	The aims of this chapter of the Policy are to: a) to facilitate the orderly economic use and development of lands for primary production, b) to reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources,

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				c) to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations, d) to simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts, e) to encourage sustainable agriculture, including sustainable aquaculture, f) to require consideration of the effects of all proposed development in the State on oyster aquaculture, g) to identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Resilience and Hazards) 2021	Chapter 2 - Coastal Management	No	N/A	The aim of this chapter of the Policy is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016, including the management objectives for each coastal management area, by: a) managing development in the coastal zone and protecting the environmental assets of the coast, and b) establishing a framework for land use planning to guide decision-making in the coastal zone, and c) mapping the 4 coastal management areas that comprise the NSW coastal zone for the purpose of the definitions in the Coastal Management Act 2016. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 3 – Hazardous and	No	N/A	The aims of this chapter of the Policy are:

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
	Offensive Development			a) to amend the definitions of hazardous and offensive industries where used in environmental planning instruments, and b) to render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in this Policy, and c) to require development consent for hazardous or offensive development proposed to be carried out in the Western Division, and d) to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account, and e) to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact, and f) to require the advertising of applications to carry out any such development. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 4 – Remediation of Land	No	N/A	The aims of this chapter of the Policy are to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment— a) by specifying when consent is required, and when it is not required, for a remediation work, and b) by specifying certain considerations that are relevant in rezoning land and in determining development applications in general and development applications for consent to carry out a remediation work in particular, and

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				c) by requiring that a remediation work meet certain standards and notification requirements. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Resources and Energy) 2021	Chapter 2 - Mining, Petroleum Production and Extractive Industries	No	N/A	The aims of this chapter of the Policy are, in recognition of the importance to New South Wales of mining, petroleum production and extractive industries: a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and b1) to promote the development of significant mineral resources, and c) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources, and d) to establish a gateway assessment process for certain mining and petroleum (oil and gas) development: (i) to recognise the importance of agricultural resources, and (ii) to ensure protection of strategic agricultural land and water resources, and (iii) to ensure a balanced use of land by potentially competing industries, and (iv) to provide for the sustainable growth of mining, petroleum and agricultural industries. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
State Environmental Planning Policy (Sustainable Buildings) 2022	Chapter 2 - Standards for residential development - BASIX	No	N/A	The aims of this SEPP are to encourage the design and delivery of sustainable buildings that minimise energy and water use.

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				The proposed LEP amendment does not contain provisions that contradict or hinder the application of Chapter 2 of the SEPP.
	Chapter 3 - Standards for non-residential development	No	N/A	The aims of this SEPP are to encourage the design and delivery of sustainable buildings that minimise energy and water use. The proposed LEP amendment does not contain provisions that contradict or hinder the application of Chapter 3 of the SEPP.
State Environmental Planning Policy (Transport and Infrastructure) 2021	Chapter 2 - Infrastructure	No	N/A	The aim of this chapter of the Policy is to facilitate the effective delivery of infrastructure across the State by: a) improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and b) providing greater flexibility in the location of infrastructure and service facilities, and c) allowing for the efficient development, redevelopment or disposal of surplus government owned land, and d) identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development), and e) identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing, and g) providing opportunities for infrastructure to demonstrate good design outcomes. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 3 - Educational Establishments	No	N/A	The aim of this chapter of the Policy is to facilitate the effective delivery of

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
	and Child Care Facilities			educational establishments and early education and care facilities across the State by: a) improving regulatory certainty and efficiency through a consistent planning regime for educational establishments and early education and care facilities, and b) simplifying and standardising planning approval pathways for educational establishments and early education and care facilities (including identifying certain development of minimal environmental impact as exempt development), and c) establishing consistent State-wide assessment requirements and design considerations for educational establishments and early education and care facilities to improve the quality of infrastructure delivered and to minimise impacts on surrounding areas, and d) allowing for the efficient development, redevelopment or use of surplus government-owned land (including providing for consultation with communities regarding educational establishments in their local area), and e) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing, and f) aligning the NSW planning framework with the National Quality Framework that regulates early education and care services, and g) ensuring that proponents of new developments or modified premises meet the applicable requirements of the National Quality Framework for early education and care services, and of the corresponding regime for State regulated education and care services, as part of the planning approval and development process, and h) encouraging proponents of new developments or modified premises and consent authorities to facilitate the joint and shared use of the facilities of educational establishments with the community through appropriate design.

State Environmental Planning Policy	Relevant Chapter	Applicable	Consistent	Comment
				The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.
	Chapter 4 – Major Infrastructure Corridors	No	N/A	The aims of this chapter of the Policy are: a) to identify land that is intended to be used in the future as an infrastructure corridor, b) to establish appropriate planning controls for the land for the following purposes— (i) to allow the ongoing use and development of the land until it is needed for the future infrastructure corridor, (ii) to protect the land from development that would adversely impact on or prevent the land from being used as an infrastructure corridor in the future. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this chapter of the SEPP.

APPENDIX 2 – CONSIDERATION OF MINISTERIAL PLANNING DIRECTIONS

S9.1 Direction	Applicable	Consistent	Comment
Focus area 1: Planning Systems			
1.1 Implementation of Regional Plans	This direction applies to a relevant planning authority when preparing a planning proposal for land to which a Regional Plan has been released by the Minister for Planning and Public Spaces. Planning proposals must be consistent with a Regional Plan released by the Minister for Planning and Public Spaces. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary), that: (a) the extent of inconsistency with the Regional Plan is of minor significance, and (b) the planning proposal achieves the overall intent of the Regional Plan and does not undermine the achievement of the Regional Plan's vision, land use strategy, goals, directions or actions.	Yes	The North Coast Regional Plan 2041 (NCRP) applies to the Coffs Harbour LGA. The NCRP includes strategies and actions on environmental, economic and social (community) opportunities, as well as maintaining character and housing. Specific responses to relevant strategies and the associated actions and activities contained within the NCRP are provided in Part 3, Section B (4) above. It is considered that the planning proposal complies with the NCRP.
1.2 Development of Aboriginal Land Council land	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
1.3 Approval and Referral Requirements	This direction applies to all relevant planning authorities when preparing a planning proposal. A planning proposal to which this direction applies must: (a) minimise the inclusion of provisions that require the concurrence, consultation or referral of development applications to a Minister or public authority, and (b) not contain provisions requiring concurrence, consultation or referral of a Minister or public authority unless the relevant planning authority has obtained the approval of: i. the appropriate Minister or public authority, and ii. the Planning Secretary (or an officer of the Department nominated by the Secretary), prior to undertaking community consultation in satisfaction of Schedule 1 to the EP&A Act, and	Yes	The planning proposal does not include provisions that require the concurrence, consultation or referral of development applications to a Minister or public authority. It also does not identify development as designated development.

S9.1 Direction	Applicable	Consistent	Comment
	(c) not identify development as designated development unless the relevant planning authority: i. can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the class of development is likely to have a significant impact on the environment, and ii. has obtained the approval of the Planning Secretary (or an officer of the Department nominated by the Secretary) prior to undertaking community consultation in satisfaction of Schedule 1 to the EP&A Act. A planning proposal must be substantially consistent with the terms of this direction.		
1.4 Site Specific Provisions	This direction applies to all relevant planning authorities when preparing a planning proposal that will allow a particular development to be carried out. (1) A planning proposal that will amend another environmental planning instrument in order to allow particular development to be carried out must either: (a) allow that land use to be carried out in the zone the land is situated on, or (b) rezone the site to an existing zone already in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or (c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended. (2) A planning proposal must not contain or refer to drawings that show details of the proposed development. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are of minor significance.	Yes	The planning proposal does not allow a particular development to be carried out, it shall only reduce the minimum lot size to enable subdivision.
1.4A Exclusion of Development Standards from Variation	This direction applies when a planning proposal authority prepares a planning proposal that proposes to introduce or alter an existing exclusion to clause 4.6 of a Standard	N/A	The planning proposal will not introduce or alter an existing exclusion to clause 4.6 of Coffs Harbour LEP 2013.

S9.1 Direction	Applicable	Consistent	Comment
	Instrument LEP or an equivalent provision of any other environmental planning instrument.		
Focus area 1: Planning Systems – Place Based			
Directions 1.5 – 1.22 do not apply to the Coffs Harbour LGA.			
Focus area 2: Design and Place			
Directions yet to be included.			
Focus area 3: Biodiversity and Conservation			
3.1 Conservation Zones	This direction applies to all relevant planning authorities when preparing a planning proposal. (1) A planning proposal must include provisions that facilitate the protection and conservation of environmentally sensitive areas. (2) A planning proposal that applies to land within a conservation zone or land otherwise identified for environment conservation/protection purposes in a LEP must not reduce the conservation standards that apply to the land (including by modifying development standards that apply to the land). This requirement does not apply to a change to a development standard for minimum lot size for a dwelling in accordance with Direction 9.3 (2) of "*Rural Lands*". A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objectives of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objectives of this direction, or	Yes	The site does not include any environmentally sensitive areas. The site does not contain land within a conservation zone or and otherwise identified for environment conservation/protection purposes.

S9.1 Direction	Applicable	Consistent	Comment
	(c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) is of minor significance.		
3.2 Heritage Conservation	This direction applies to all relevant planning authorities when preparing a planning proposal. A planning proposal must contain provisions that facilitate the conservation of: (a) items, places, buildings, works, relics, moveable objects or precincts of environmental heritage significance to an area, in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item, area, object or place, identified in a study of the environmental heritage of the area, (b) Aboriginal objects or Aboriginal places that are protected under the *National Parks and Wildlife Act 1974*, and (c) Aboriginal areas, Aboriginal objects, Aboriginal places or landscapes identified by an Aboriginal heritage survey prepared by or on behalf of an Aboriginal Land Council, Aboriginal body or public authority and provided to the relevant planning authority, which identifies the area, object, place or landscape as being of heritage significance to Aboriginal culture and people. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that: (a) the environmental or indigenous heritage significance of the item, area, object or place is conserved by existing or draft environmental planning instruments, legislation, or regulations that apply to the land, or (b) the provisions of the planning proposal that are inconsistent are of minor significance.	Yes	*European Heritage* The site does not contain any items listed as Heritage Items in Schedule 5 of Coffs Harbour LEP 2013 or the State Heritage Register. There are no European Heritage issues that would prevent a reduction in minimum lot size applying to the land. *Aboriginal Cultural Heritage* The site does not contain any mapped known or predictive Aboriginal Cultural Heritage (ACH), and an AHIMS search has not revealed any ACH sites on or near the site.
3.3 Sydney Drinking Water Catchments	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
3.4 Application of C2 and C3	This direction does not currently apply to the Coffs Harbour LGA.	N/A	

S9.1 Direction	Applicable	Consistent	Comment
Zones and Environmental Overlays in Far North Coast LEPs			
3.5 Recreation Vehicle Areas	A planning proposal must not enable land to be developed for the purpose of a recreation vehicle area (within the meaning of the *Recreation Vehicles Act 1983*): (a) where the land is within a conservation zone, (b) where the land comprises a beach or a dune adjacent to or adjoining a beach, (c) where the land is not within an area or zone referred to in paragraphs (a) or (b) unless the relevant planning authority has taken into consideration: i. the provisions of the guidelines entitled Guidelines for the Selection, Establishment and Maintenance of Recreation Vehicle Areas, Soil Conservation Service of NSW, September 1985, and ii. the provisions of the guidelines entitled Recreation Vehicles Act 1983, Guidelines for Selection, Design and Operation of Recreation Vehicle Areas, State Pollution Control Commission, September 1985. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objective of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan	Yes	The planning proposal does not enable land to be developed for the purpose of a recreation vehicle area (within the meaning of the *Recreation Vehicles Act 1983*).

S9.1 Direction	Applicable	Consistent	Comment
	prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
3.6 Strategic Conservation Planning	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
3.7 Public Bushland	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
3.8 Willandra Lakes Region	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
3.9 Sydney Harbour Foreshores and Waterways Area	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
3.10 Water Catchment Protection	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
Focus Area 4: Resilience and Hazards			
4.1 Flooding	This direction applies to all relevant planning authorities that are responsible for flood prone land when preparing a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land. (1) A planning proposal must include provisions that give effect to and are consistent with: (a) the NSW Flood Prone Land Policy, (b) the principles of the Floodplain Development Manual 2005, (c) the Considering flooding in land use planning guideline 2021, and (d) any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 and adopted by the relevant council. (2) A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Business, Industrial or Special Purpose Zones.	N/A	The site is not identified as flood prone land.

S9.1 Direction	Applicable	Consistent	Comment
	(3) A planning proposal must not contain provisions that apply to the flood planning area which: (a) permit development in floodway areas, (b) permit development that will result in significant flood impacts to other properties, (c) permit development for the purposes of residential accommodation in high hazard areas, (d) permit a significant increase in the development and/or dwelling density of that land, (e) permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate, (f) permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent, (g) are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities, or (h) permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event. (4) A planning proposal must not contain provisions that apply to areas between the flood planning area and probable maximum flood to which Special Flood Considerations apply which: (a) permit development in floodway areas, (b) permit development that will result in significant flood impacts to other properties, (c) permit a significant increase in the dwelling density of that land, (d) permit the development of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals,		

S9.1 Direction	Applicable	Consistent	Comment
	residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate, (e) are likely to affect the safe occupation of and efficient evacuation of the lot, or (f) are likely to result in a significantly increased requirement for government spending on emergency management services, and flood mitigation and emergency response measures, which can include but not limited to road infrastructure, flood mitigation infrastructure and utilities. (5) For the purposes of preparing a planning proposal, the flood planning area must be consistent with the principles of the Floodplain Development Manual 2005 or as otherwise determined by a Floodplain Risk Management Study or Plan adopted by the relevant council. A planning proposal may be inconsistent with this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that: (a) the planning proposal is in accordance with a floodplain risk management study or plan adopted by the relevant council in accordance with the principles and guidelines of the *Floodplain Development Manual 2005*, or (b) where there is no council adopted floodplain risk management study or plan, the planning proposal is consistent with the flood study adopted by the council prepared in accordance with the principles of the *Floodplain Development Manual 2005* or (c) the planning proposal is supported by a flood and risk impact assessment accepted by the relevant planning authority and is prepared in accordance with the principles of *the Floodplain Development Manual 2005* and consistent with the relevant planning authorities' requirements, or (d) the provisions of the planning proposal that are inconsistent are of minor significance as determined by the relevant planning authority.		
4.2 Coastal Management	This direction applies when a planning proposal authority prepares a planning proposal that applies to land that is within the coastal zone, as defined under the *Coastal Management Act*	Yes	The site is partially located within the coastal zone, as defined under the *Coastal*

S9.1 Direction	Applicable	Consistent	Comment
	2016 -comprising the coastal wetlands and littoral rainforests area, coastal vulnerability area, coastal environment area and coastal use area -and as identified by chapter 3 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021.* (1) A planning proposal must include provisions that give effect to and are consistent with: (a) the objects of the *Coastal Management Act 2016* and the objectives of the relevant coastal management areas; (b) the NSW Coastal Management Manual and associated Toolkit; (c) NSW Coastal Design Guidelines 2003; and (d) any relevant Coastal Management Program that has been certified by the Minister, or any Coastal Zone Management Plan under the *Coastal Protection Act 1979* that continues to have effect under clause 4 of Schedule 3 to the *Coastal Management Act 2016*, that applies to the land. (2) A planning proposal must not rezone land which would enable increased development or more intensive land-use on land: (a) within a coastal vulnerability area identified by the *State Environmental Planning Policy (Resilience and Hazards) 2021*; or (b) that has been identified as land affected by a current or future coastal hazard in a local environmental plan or development control plan, or a study or assessment undertaken: i. by or on behalf of the relevant planning authority and the planning proposal authority, or ii. by or on behalf of a public authority and provided to the relevant planning authority and the planning proposal authority. (3) A planning proposal must not rezone land which would enable increased development or more intensive land-use on land within a coastal wetlands and littoral rainforests area identified by chapter 3 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021.* (4) A planning proposal for a local environmental plan may propose to amend the following maps, including increasing or decreasing the land within these maps, under the *State Environmental Planning Policy (Resilience and Hazards) 2021*:		*Management Act 2016* – as it is located in the Coastal Use Area. The planning proposal is consistent with the outcomes of the NSW Coastal Design Guidelines 2003, and the objectives of the Coastal Management Act 2016 for the following reasons: The subject site is separated from the coastal foreshore by the Pacific Highway, and as such will have no impacts upon sensitive ecosystems or animal populations associated with the foreshore. The planning proposal is accompanied by a Biodiversity Assessment (Appendix 3), which supports this. The planning proposal applies to land that is currently zoned for large lot residential purposes. The proposal does not propose rezoning, and as a result will not result in significantly increased development. Appendix 4 to the planning proposal (Land Capability Assessment and Minimum Lot Size Analysis) demonstrates that the development can be adequately serviced without causing any negative impacts to the surrounding environment. The subject site is in proximity to the Solitary Islands Marine Park. However, as previously noted, there is no direct access to this area as the Pacific Highway serves as a separating barrier. As a result, the planning proposal is unlikely to have negative impacts on the marine park. The planning proposal to reduce the minimum lot size

S9.1 Direction	Applicable	Consistent	Comment
	(a) Coastal wetlands and littoral rainforests area map; (b) Coastal vulnerability area map; (c) Coastal environment area map; and (d) Coastal use area map. Such a planning proposal must be supported by evidence in a relevant Coastal Management Program that has been certified by the Minister, or by a *Coastal Zone Management Plan* under the *Coastal Protection Act 1979* that continues to have effect under clause 4 of Schedule 3 to the *Coastal Management Act 2016*. A planning proposal may be inconsistent with the terms of this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that the provisions of the planning proposal that are inconsistent are: (a) justified by a study or strategy prepared in support of the planning proposal which gives consideration to the objective of this direction, or (b) in accordance with any relevant Regional Strategic Plan or District Strategic Plan, prepared under Division 3.1 of the EP&A Act by the relevant strategic planning authority, which gives consideration to the objective of this direction, or (c) of minor significance.		shall enable the subdivision of the site. Eventual residential development shall be assessed against the Coffs Harbour Local Environmental Plan and Development Control Plan and shall be consistent with the character of the area. The planning proposal is consistent with the Local Growth Management Strategy, as endorsed by the Department – as it indicates that reductions of minimum lot size in Zone R5 is acceptable where justifiable.
4.3 Planning for Bushfire Protection	This direction applies to all local government areas when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land. In the preparation of a planning proposal, the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a Gateway determination under section 56 of the Act, and prior to undertaking community consultation in satisfaction of section 57 of the Act, and take into account any comments so made. A planning proposal must: (a) have regard to *Planning for Bushfire Protection 2019*, (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and (c) ensure that bushfire hazard reduction is not prohibited within the Asset Protection Zone (APZ).	No	The site is mapped as bushfire prone land. The Bushfire Subdivision & Infill Assessment Report (Appendix 5) demonstrates that future development on the site by way of subdivision can comply with Planning for Bushfire Protection 2019. Upon receipt of a Gateway Determination, the NSW Rural Fire Service shall be consulted to determine if the LEP amendment is justifiably inconsistent to this direction.

S9.1 Direction	Applicable	Consistent	Comment
	A planning proposal must, where development is proposed, comply with the following provisions, as appropriate: (a) provide an Asset Protection Zone (APZ) incorporating at a minimum: (i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and (ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road, (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the *Rural Fires Act 1997*), the APZ provisions must be complied with, (c) contain provisions for two-way access roads which link to perimeter roads and/or to fire trail networks, (d) contain provisions for adequate water supply for firefighting purposes, (e) minimise the perimeter of the area of land interfacing the hazard which may be developed, (f) introduce controls on the placement of combustible materials in the Inner Protection Area. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the council has obtained written advice from the Commissioner of the NSW Rural Fire Service to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the planning proposal.		
4.4 Remediation of Contaminated Land	This direction applies when a planning proposal authority prepares a planning proposal that applies to: (a) land that is within an investigation area within the meaning of the *Contaminated Land Management Act 1997*,	Yes	A review of the City's records identifies that the site was previously used for agricultural/horticultural activities (banana cultivation).

S9.1 Direction	Applicable	Consistent	Comment
	(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out, (c) the extent to which it is proposed to carry out development on it for residential, educational, recreational or childcare purposes, or for the purposes of a hospital – land: i. in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and ii. on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge). (1) A planning proposal authority must not include in a particular zone (within the meaning of the local environmental plan) any land to which this direction applies if the inclusion of the land in that zone would permit a change of use of the land, unless: (a) the planning proposal authority has considered whether the land is contaminated, and (b) if the land is contaminated, the planning proposal authority is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for all the purposes for which land in the zone concerned is permitted to be used, and (c) if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, the planning proposal authority is satisfied that the land will be so remediated before the land is used for that purpose. In order to satisfy itself as to paragraph 1(c), the planning proposal authority may need to include certain provisions in the local environmental plan. (2) Before including any land to which this direction applies in a particular zone, the planning proposal authority is to obtain and have regard to a report specifying the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines.		The planning proposal is deemed to be consistent to this direction, as it is accompanied by an Environmental Site Assessment (Appendix 7), which concludes no further investigation or remediation is required.

S9.1 Direction	Applicable	Consistent	Comment
4.5 Acid Sulfate Soils	This direction applies to all relevant planning authorities that are responsible for land having a probability of containing acid sulfate soils when preparing a planning proposal that will apply to land having a probability of containing acid sulfate soils as shown on the Acid Sulfate Soils Planning Maps held by the Department of Planning, Housing and Infrastructure. (1) The relevant planning authority must consider the Acid Sulfate Soils Planning Guidelines adopted by the Planning Secretary when preparing a planning proposal that applies to any land identified on the Acid Sulfate Soils Planning Maps as having a probability of acid sulfate soils being present. (2) When a relevant planning authority is preparing a planning proposal to introduce provisions to regulate works in acid sulfate soils, those provisions must be consistent with: (a) the Acid Sulfate Soils Model LEP in the Acid Sulfate Soils Planning Guidelines adopted by the Planning Secretary, or (b) other such provisions provided by the Planning Secretary that are consistent with the Acid Sulfate Soils Planning Guidelines. (3) A relevant planning authority must not prepare a planning proposal that proposes an intensification of land uses on land identified as having a probability of containing acid sulfate soils on the Acid Sulfate Soils Planning Maps unless the relevant planning authority has considered an acid sulfate soils study assessing the appropriateness of the change of land use given the presence of acid sulfate soils. The relevant planning authority must provide a copy of any such study to the Planning Secretary prior to undertaking community consultation in satisfaction of clause 4 of Schedule 1 to the Act. (4) Where provisions referred to under 2(a) and 2(b) above of this direction have not been introduced and the relevant planning authority is preparing a planning proposal that proposes an intensification of land uses on land identified as having a probability of acid sulfate soils on the Acid Sulfate Soils Planning Maps, the planning proposal must contain provisions consistent with 2(a) and 2(b). A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning	N/A	The site does not contain the probability of containing acid sulphate soils.

S9.1 Direction	Applicable	Consistent	Comment
	Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (b) of minor significance.		
4.6 Mine Subsidence and Unstable Land	This direction applies when a relevant planning authority prepares a planning proposal that permits development on land that is within a declared mine subsidence district in the Coal Mine Subsidence Compensation Regulation 2017 pursuant to section 20 of the Coal Mine Subsidence Compensation Act 2017, or has been identified as unstable in a study, strategy or other assessment undertaken by or on behalf of the relevant planning authority or by or on behalf of a public authority and provided to the relevant planning authority. (1) When preparing a planning proposal that would permit development on land that is within a declared mine subsidence district, a relevant planning authority must: (a) consult Subsidence Advisory NSW to ascertain: i. if Subsidence Advisory NSW has any objection to the draft local environmental plan, and the reason for such an objection, and ii. the scale, density and type of development that is appropriate for the potential level of subsidence, and (b) incorporate provisions into the draft Local Environmental Plan that are consistent with the recommended scale, density and type of development recommended under 1(a)(ii), and (c) include a copy of any information received from Subsidence Advisory NSW with the statement to the Planning Secretary (or an officer of the Department nominated by the Secretary prior to undertaking community consultation in satisfaction of Schedule 1 to the Act. (2) A planning proposal must not permit development on land that has been identified as unstable as referred to in the application section of this direction. A planning proposal may be inconsistent with the terms of this direction only if the relevant	N/A	The planning proposal does not apply to land that: • is within a declared mine subsidence district, or • has been identified as unstable in a study, strategy or other assessment undertaken by or on behalf of a public authority or by or on behalf of a public authority and provided to the relevant planning authority.

S9.1 Direction	Applicable	Consistent	Comment
	planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objective of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
Focus Area 5: Transport and Infrastructure			
5.1 Integrating Land Use and Transport	This direction applies to all relevant planning authorities when preparing a planning proposal that will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes. (1) A planning proposal must locate zones for urban purposes and include provisions that give effect to and are consistent with the aims, objectives and principles of: (a) Improving Transport Choice – Guidelines for planning and development (DUAP 2001), and (b) The Right Place for Business and Services – Planning Policy (DUAP 2001). A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objective of this direction, and	Yes	The proposal shall alter a provision relating to land zoned for residential, by reducing the applicable minimum lot size. The proposal is consistent with the Improving Transport Choice – Guidelines for planning and development (DUAP 2001), and The Right Place for Business and Services – Planning Policy (DUAP 2001). The proposal is deemed to be of minor significance as it accords with the City's Local Growth Management Strategy, and will not result in a substantial increase of movement due to the potential of a single additional lot.

S9.1 Direction	Applicable	Consistent	Comment
	ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
5.2 Reserving Land for Public Purposes	This direction applies to all relevant planning authorities when preparing a planning proposal. (1) A planning proposal must not create, alter or reduce existing zonings or reservations of land for public purposes without the approval of the relevant public authority and the Planning Secretary (or an officer of the Department nominated by the Secretary). (2) When a Minister or public authority requests a relevant planning authority to reserve land for a public purpose in a planning proposal and the land would be required to be acquired under Division 3 of Part 2 of the Land Acquisition (Just Terms Compensation) Act 1991, the relevant planning authority must: (a) reserve the land in accordance with the request, and (b) include the land in a zone appropriate to its intended future use or a zone advised by the Planning Secretary (or an officer of the Department nominated by the Secretary), and (c) identify the relevant acquiring authority for the land. (3) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal relating to the use of any land reserved for a public purpose before that land is acquired, the relevant planning authority must: (a) include the requested provisions, or (b) take such other action as advised by the Planning Secretary (or an officer of the Department nominated by the Secretary) with respect to the use of the land before it is acquired.	N/A	The planning proposal does not create, alter or reduce land reserved for a public purpose.

S9.1 Direction	Applicable	Consistent	Comment
	(4) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal to rezone and/or remove a reservation of any land that is reserved for public purposes because the land is no longer designated by that public authority for acquisition, the relevant planning authority must rezone and/or remove the relevant reservation in accordance with the request. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that: (a) with respect to a request referred to in paragraph (4), further information is required before appropriate planning controls for the land can be determined, or (b) the provisions of the planning proposal that are inconsistent with the terms of this direction are of minor significance.		
5.3 Development Near Regulated Airports and Defence Airfields	This direction applies to all relevant planning authorities when preparing a planning proposal that will create, alter or remove a zone or a provision relating to land near a regulated airport which includes a defence airfield. (1) In the preparation of a planning proposal that sets controls for development of land near a regulated airport, the relevant planning authority must: (a) consult with the lessee/operator of that airport; (b) take into consideration the operational airspace and any advice from the lessee/operator of that airport; (c) for land affected by the operational airspace, prepare appropriate development standards, such as height controls. (d) not allow development types that are incompatible with the current and future operation of that airport. (2) In the preparation of a planning proposal that sets controls for development of land near a core regulated airport, the relevant planning authority must: (a) consult with the Department of the Commonwealth responsible for airports and the lessee/operator of that airport; (b) for land affected by the prescribed airspace (as defined in clause 6(1) of the	N/A	The planning proposal does not create, alter or remove a zone or provision relating to land near a regulated airport including a defence airfield.

S9.1 Direction	Applicable	Consistent	Comment
	Airports (Protection of Airspace) Regulation 1996, prepare appropriate development standards, such as height controls. (c) not allow development types that are incompatible with the current and future operation of that airport. (d) obtain permission from that Department of the Commonwealth, or their delegate, where a planning proposal seeks to allow, as permissible with consent, development that would constitute a controlled activity as defined in section 182 of the *Airports Act 1996*. This permission must be obtained prior to undertaking community consultation in satisfaction of Schedule 1 to the EP&A Act. (3) In the preparation of a planning proposal that sets controls for the development of land near a defence airfield, the relevant planning authority must: (a) consult with the Department of Defence if: i. the planning proposal seeks to exceed the height provisions contained in the *Defence Regulations 2016 – Defence Aviation Areas* for that airfield; or ii. no height provisions exist in the *Defence Regulations 2016 – Defence Aviation Areas* for the airfield and the proposal is within 15km of the airfield. (b) for land affected by the operational airspace, prepare appropriate development standards, such as height controls. (c) not allow development types that are incompatible with the current and future operation of that airfield. (4) A planning proposal must include a provision to ensure that development meets *Australian Standard 2021 – 2015, Acoustic-Aircraft Noise Intrusion – Building siting and construction* with respect to interior noise levels, if the proposal seeks to rezone land: (a) for residential purposes or to increase residential densities in areas where the Australian Noise Exposure Forecast (ANEF) is between 20 and 25; or (b) for hotels, motels, offices or public buildings where the ANEF is between 25 and 30; or		

S9.1 Direction	Applicable	Consistent	Comment
	(c) for commercial or industrial purposes where the ANEF is above 30. (5) A planning proposal must not contain provisions for residential development or to increase residential densities within the 20 Australian Noise Exposure Concept (ANEC)/ANEF contour for Western Sydney Airport. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary, which: i. gives consideration to the objectives of this direction; and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objectives of this direction; or (c) in accordance with the relevant Regional Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objectives of this direction.		
5.4 Shooting Ranges	This direction applies to all relevant planning authorities when preparing a planning proposal that will affect, create, alter or remove a zone or a provision relating to land adjacent to and/ or adjoining an existing shooting range. (1) A planning proposal must not seek to rezone land adjacent to and/ or adjoining an existing shooting range that has the effect of: (a) permitting more intensive land uses than those which are permitted under the existing zone; or (b) permitting land uses that are incompatible with the noise emitted by the existing shooting range. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the	N/A	The planning proposal does not create, alter or remove a zone or provision relating to land adjacent to and/or adjoining an existing shooting range.

S9.1 Direction	Applicable	Consistent	Comment
	provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary, which: i. gives consideration to the objectives of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) is of minor significance.		
Focus area 6: Housing			
6.1 Residential Zones	This direction applies to all relevant planning authorities when preparing a planning proposal that will affect land within an existing or proposed residential zone (including the alteration of any existing residential zone boundary), or any other zone in which significant residential development is permitted or proposed to be permitted. (1) A planning proposal must include provisions that encourage the provision of housing that will: (a) broaden the choice of building types and locations available in the housing market, and (b) make more efficient use of existing infrastructure and services, and (c) reduce the consumption of land for housing and associated urban development on the urban fringe, and (d) be of good design. (2) A planning proposal must, in relation to land to which this direction applies: (a) contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and (b) not contain provisions which will reduce the permissible residential density of land. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department	Yes	The planning proposal will enable the creation of one additional lot on the site. The potential for an additional lot will broaden the locality for further housing development. The planning proposal relates to land that has infrastructure and services available to it that are suitable for rural residential purposes. Appropriate planning controls are also contained within Coffs Harbour DCP 2015 to ensure that development is of good design.

S9.1 Direction	Applicable	Consistent	Comment
	nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objective of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
6.2 Caravan Parks and Manufactured Home Estates	This direction applies to all relevant planning authorities when preparing a planning proposal. This direction does not apply to Crown land reserved or dedicated for any purposes under the *Crown Land Management Act 2016,* except Crown land reserved for accommodation purposes, or land dedicated or reserved under the *National Parks and Wildlife Act 1974.* (1) In identifying suitable zones, locations and provisions for caravan parks in a planning proposal, the relevant planning authority must: (a) retain provisions that permit development for the purposes of a caravan park to be carried out on land, and (b) retain the zonings of existing caravan parks, or in the case of a new principal LEP zone the land in accordance with an appropriate zone under the *Standard Instrument (Local Environmental Plans) Order 2006* that would facilitate the retention of the existing caravan park. (2) In identifying suitable zones, locations and provisions for manufactured home estates (MHEs) in a planning proposal, the relevant planning authority must:	Yes	The planning proposal does not identify suitable zones, locations or provisions for caravan parks or manufactured home estates.

S9.1 Direction	Applicable	Consistent	Comment
	(a) take into account the categories of land set out in Schedule 6 of *State Environmental Planning Policy (Housing)* as to where MHEs should not be located, (b) take into account the principles listed in clause 9 Schedule 5 of *State Environmental Planning Policy (Housing)*(which relevant planning authorities are required to consider when assessing and determining the development and subdivision proposals), and (c) include provisions that the subdivision of MHEs by long term lease of up to 20 years or under the *Community Land Development Act 1989* be permissible with consent. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objective of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
Focus area 7: Industry and Employment			
7.1 Employment Zones	This direction applies to all relevant planning authorities when preparing a planning proposal that will affect land within an existing or proposed business or industrial zone (including the alteration of any existing business or industrial zone boundary). A planning proposal must:	N/A	The planning proposal will not affect land within an existing or proposed employment zone (including the alteration of any employment zone boundary).

S9.1 Direction	Applicable	Consistent	Comment
	(a) give effect to the objectives of this direction, (b) retain the areas and locations of existing business and industrial zones, (c) not reduce the total potential floor space area for employment uses and related public services in business zones, (d) not reduce the total potential floor space area for industrial uses in industrial zones, and (e) ensure that proposed new employment areas are in accordance with a strategy that is approved by the Planning Secretary. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary, which: i. gives consideration to the objective of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study (prepared in support of the planning proposal) which gives consideration to the objective of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) of minor significance.		
7.2 Reduction in non-hosted short-term rental accommodation period	This direction does not currently apply to the Coffs Harbour LGA.	N/A	
7.3 Commercial and Retail Development along the Pacific Highway, North Coast	Applies when a relevant planning authority prepares a planning proposal for land in the vicinity of the existing and/or proposed alignment of the Pacific Highway. (1) A planning proposal that applies to land located on "within town" segments of the Pacific Highway must provide that:	N/A	The site is not located in the vicinity of the existing and/or proposed alignment of the Pacific Highway.

S9.1 Direction	Applicable	Consistent	Comment
	(a) new commercial or retail development must be concentrated within district centres rather than spread along the Highway; (b) development with frontage to the Pacific Highway must consider impacts that the development has on the safety and efficiency of the highway; and (c) for the purposes of this paragraph, "within town" means areas which prior to the draft LEP have an urban zone (e.g. Village, residential, tourist, commercial and industrial etc.) and where the Pacific Highway is less than 80km/hour. (2) A planning proposal that applies to land located on "out-of-town" segments of the Pacific Highway must provide that: (a) new commercial or retail development must not be established near the Pacific Highway if this proximity would be inconsistent with the objectives of this Direction. (b) development with frontage to the Pacific Highway must consider the impact the development has on the safety and efficiency of the highway. (c) For the purposes of this paragraph, "out-of-town" means areas which, prior to the draft local environmental plan, do not have an urban zone (e.g.: "village", "residential", "tourist", "commercial", "industrial", etc.) or are in areas where the Pacific Highway speed limit is 80 km/hour or greater. (3) Notwithstanding the requirements of paragraphs (4) and (5), the establishment of highway service centres may be permitted at the localities listed in Table 1, provided that the Roads and Traffic Authority is satisfied that the highway service centre(s) can be safely and efficiently integrated into the highway interchange(s) at those localities. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are of minor significance.		
Focus area 8: Resources and Energy			

S9.1 Direction	Applicable	Consistent	Comment
8.1 Mining, Petroleum Production and Extractive Industries	This direction applies to all relevant planning authorities when preparing a planning proposal that would have the effect of: (a) prohibiting the mining of coal or other minerals, production of petroleum, or winning or obtaining of extractive materials, or (b) restricting the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance by permitting a land use that is likely to be incompatible with such development. (1) In the preparation of a planning proposal affected by this direction, the relevant planning authority must: (a) consult the Secretary of the Department of Primary Industries (DPI) to identify any: i. resources of coal, other minerals, petroleum or extractive material that are of either State or regional significance, and ii. existing mines, petroleum production operations or extractive industries occurring in the area subject to the planning proposal, and (b) seek advice from the Secretary of DPI on the development potential of resources identified under (1)(a)(i), and (c) identify and take into consideration issues likely to lead to land use conflict between other land uses and: i. development of resources identified under (1)(a)(i), or ii. existing development identified under (1)(a)(ii). (2) Where a planning proposal prohibits or restricts development of resources identified under (1)(a)(i), or proposes land uses that may create land use conflicts identified under (1)(c), the relevant planning authority must: (a) provide the Secretary of DPI with a copy of the planning proposal and notification of the relevant provisions, (b) allow the Secretary of DPI a period of 40 days from the date of notification to provide in writing any objections to the terms of the planning proposal, and (c) include a copy of any objection and supporting information received from the Secretary of DPI with the statement to the Planning Secretary (or an officer of the	N/A	The planning proposal will not prohibit the mining of coal or other minerals, production of petroleum, or winning or obtaining of extractive materials; or restrict the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance (by permitting a land use that is likely to be compatible with such development).

S9.1 Direction	Applicable	Consistent	Comment
	Department nominated by the Secretary before undertaking community consultation in satisfaction of Schedule 1 to the Act. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary), that the provisions of the planning proposal that are inconsistent are of minor significance.		
Focus area 9: Primary Production			
9.1 Rural Zones	This direction applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed rural zone (including the alteration of any existing rural zone boundary). A planning proposal must not rezone land from a rural zone to a residential, business, industrial, village or tourist zone. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary which: i. gives consideration to the objectives of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) justified by a study prepared in support of the planning proposal which gives consideration to the objectives of this direction, or (c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning, Housing and Infrastructure which gives consideration to the objective of this direction, or (d) is of minor significance.	N/A	The planning proposal will not rezone land from a rural zone to a residential, employment, mixed use, SP4 Enterprise, SP5 Metropolitan Centre, W4 Working Waterfront, village or tourist zone. The planning proposal does not include provisions that will increase the permissible density of land within a rural zone.
9.2 Rural Lands	This direction applies when a relevant planning authority prepares a planning proposal for land outside the local government areas of lake Macquarie, Newcastle, Wollongong and LGAs	N/A	The planning proposal will not affect land within an existing or proposed rural or conservation zone (including the alteration of

S9.1 Direction	Applicable	Consistent	Comment
	in the Greater Sydney Region (as defined in the *Greater Sydney Commission Act 2015*) other than Wollondilly and Hawkesbury, that: (a) will affect land within an existing or proposed rural or conservation zone (including the alteration of any existing rural or conservation zone boundary) or (b) changes the existing minimum lot size on land within a rural or conservation zone. (1) A planning proposal must: (a) be consistent with any applicable strategic plan, including regional and district plans endorsed by the Planning Secretary, and any applicable local strategic planning statement (b) consider the significance of agriculture and primary production to the State and rural communities (c) identify and protect environmental values, including but not limited to, maintaining biodiversity, the protection of native vegetation, cultural heritage, and the importance of water resources (d) consider the natural and physical constraints of the land, including but not limited to, topography, size, location, water availability and ground and soil conditions (e) promote opportunities for investment in productive, diversified, innovative and sustainable rural economic activities (f) support farmers in exercising their right to farm (g) prioritise efforts and consider measures to minimise the fragmentation of rural land and reduce the risk of land use conflict, particularly between residential land uses and other rural land use (h) consider State significant agricultural land identified *in* chapter 2 of the *State Environmental Planning Policy (Primary Production) 2021* for the purpose of ensuring the ongoing viability of this land (i) consider the social, economic and environmental interests of the community. (2) A planning proposal that changes the existing minimum lot size on land within a rural or conservation zone must demonstrate that it: (a) is consistent with the priority of minimising rural land fragmentation and land use conflict, particularly between residential and other rural land uses		existing rural or conservation zone boundaries) or change the existing minimum lot size within a rural or conservation zone.

S9.1 Direction	Applicable	Consistent	Comment
	(b) will not adversely affect the operation and viability of existing and future rural land uses and related enterprises, including supporting infrastructure and facilities that are essential to rural industries or supply chains (c) where it is for rural residential purposes: i. is appropriately located taking account of the availability of human services, utility infrastructure, transport and proximity to existing centres ii. is necessary taking account of existing and future demand and supply of rural residential land. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are: (a) justified by a strategy approved by the Planning Secretary and is in force which: i. gives consideration to the objectives of this direction, and ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or (b) is of minor significance.		
9.3 Oyster Aquaculture	This direction applies to any relevant planning authority when preparing a planning proposal in 'Priority Oyster Aquaculture Areas' and oyster aquaculture outside such an area as identified in the *NSW Oyster Industry Sustainable Aquaculture Strategy* (2006) ("the Strategy"), when proposing a change in land use which could result in: (a) adverse impacts on a 'Priority Oyster Aquaculture Area' or a "current oyster aquaculture lease in the national parks estate", or (b) incompatible use of land between oyster aquaculture in a 'Priority Oyster Aquaculture Area' or a "current oyster aquaculture lease in the national parks estate" and other land uses. (1) In the preparation of a planning proposal the relevant planning authority must: (a) identify any 'Priority Oyster Aquaculture Areas' and oyster aquaculture leases outside such an area, as shown the maps	N/A	This direction only applies to Priority Oyster Aquaculture Areas and oyster aquaculture outside such an area as identified in the NSW Oyster Industry Sustainable Aquaculture Strategy (2006).

S9.1 Direction	Applicable	Consistent	Comment
	to the Strategy, to which the planning proposal would apply, (b) identify any proposed land uses which could result in any adverse impact on a 'Priority Oyster Aquaculture Area' or oyster aquaculture leases outside such an area, (c) identify and take into consideration any issues likely to lead to an incompatible use of land between oyster aquaculture and other land uses and identify and evaluate measures to avoid or minimise such land use in compatibility, (d) consult with the Secretary of the Department of Primary Industries (DPI) of the proposed changes in the preparation of the planning proposal, and (e) ensure the planning proposal is consistent with the Strategy. (2) Where a planning proposal proposes land uses that may result in adverse impacts identified under (1)(b) and (1)(c), relevant planning authority must: (a) provide the Secretary of DPI with a copy of the planning proposal and notification of the relevant provisions, (b) allow the Secretary of DPI a period of 40 days from the date of notification to provide in writing any objections to the terms of the planning proposal, and (c) include a copy of any objection and supporting information received from the Secretary of DPI with the statement to the Planning Secretary before undertaking community consultation in satisfaction of Schedule 1 to the EP&A Act. A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are of minor significance.		
9.4 Farmland of State and Regional Significance on the NSW Far North Coast	This direction does not currently apply to the Coffs Harbour LGA.	N/A	

Biodiversity Assessment, proposed subdivision of 37 Campbell Close, Korora

Prepared for

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Contents

Figures & Tables

This report has been prepared by G. Elks BSc (Botany) MLitt (Ecology) MECA of Idyll Spaces Environmental Consultants. The information presented is, in the opinion of the author, a true and accurate record of a study undertaken solely in response to the brief. While every attempt has been made to ensure the accuracy and objectivity of the report, the variability of the natural environment and the paucity of comparative research data may require that professional judgement be applied in reaching conclusions. Any opinions expressed in the report are the professional opinions of the author. They are not legal advice, nor are they intended to advocate any specific proposal or position.

The author accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report or its supporting material by any third party.

G.N. Elks B.Sc (Botany), M.Litt (Ecology), MECA

Introduction

Background

Tracee Miller of Newnham Karl Weir has engaged Greg Elks of Idyll Spaces Environmental Consultants to undertake an assessment of the biodiversity impacts of subdivision and associated works at 37 Campbell Close, Korora.

The aim of the assessment is to identify impacts on flora and fauna that may be constraints to the proposal. The objectives are to:

- undertake a Bionet search of records in the locality to identify potentially occurring threatened biodiversity;
- undertake a site transect survey to identify plant species composition, fauna habitat attributes and any threatened flora or community present;
- Review and report on:
    - vegetation classification and mapping;
    - NSW Biodiversity values mapping;
    - key habitat features such as watercourses, large trees, old trees, large woody debris, Koala feed tree species, dens, roosts, nests, dense ground layer vegetation, nectar sources, fruit-bearing trees etc. likely to be utilised by threatened species known to occur in the locality;
    - Coffs Harbour Koala Plan of Management (KPoM), and
    - Biodiversity Offset Scheme threshold triggers.

Description of the proposal

The proposal seeks to subdivide the land to create one additional vacant Torrens Title lot suitable for residential dwelling.

Subject site, study area and locality

For the purposes of this assessment the locality is defined as the area within a square of approximately 10kmx10km centred on the study area. The locality includes roughly equal parts of coastal rural and residential areas, forested National Park and State Forests and the Tasman Sea (**Figure 1**).

The study area is 37 Campbell Close, Korora (LOT 1 DP1130767) (**Figure 2**) plus a buffer of 10 metres to native vegetation. The Subject Site (the site) is the area potentially impacted by the proposal and consists of the vegetated parts of LOT 1 DP1130767.

Methods

Map and data review

A search of Bionet Wildlife Atlas records was undertaken on 19 September 2023. Aerial orthophotographs and maps were inspected online to identify vegetation communities and other mapped features of interest at https://www.coffsharbour.nsw.gov.au/Building-and-planning/Online-mapping-tool , https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap,

https://geo.seed.nsw.gov.au, Spatial Information Exchange https://maps.six.nsw.gov.au/ and Google Earth Pro.

Figure 1 Study area locality (CHCC online maps))

Field survey

All parts of the study area supporting native vegetation were comprehensively searched by means of a 2 hour meander transect on 21 September 2023 to examine flora and fauna habitats, identify vegetation communities and search the subject site for threatened flora and evidence of threatened fauna known to occur in the locality.

Figure 2. Aerial image showing location of proposed Lots 1 & 2 (NKW 16/02/23)

Results

Study area description

LEP 2013 Landuse Zone

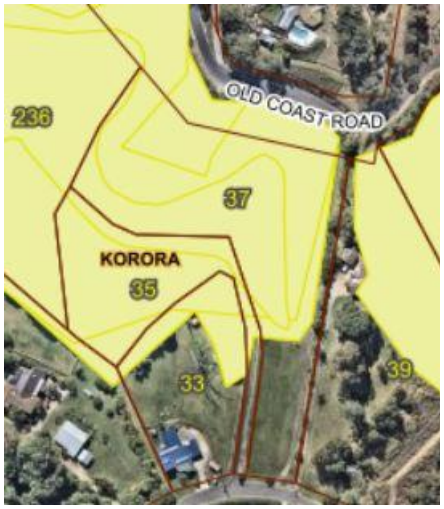
The site is zoned R5 Large Lot Residential.

Landscape and soils

The study area is located in the north-eastern corner of the Korora Basin, on the lower south-facing slopes of the ridgeline that extends northwest toward Bucca.

It is mapped as occurring on the Megan soil landscape. Soils on the site are predominantly stony Red-Brown Earths on Carboniferous sedimentary rocks that have developed on Late Carboniferous metasediments of the Coffs Harbour association.

Soils are likely to have been heavily modified by roading and terracing of the land for banana production and later residential use, and erosion associated with cultivation and earthworks.



Banana cultivation 1943-94 (CHCC)

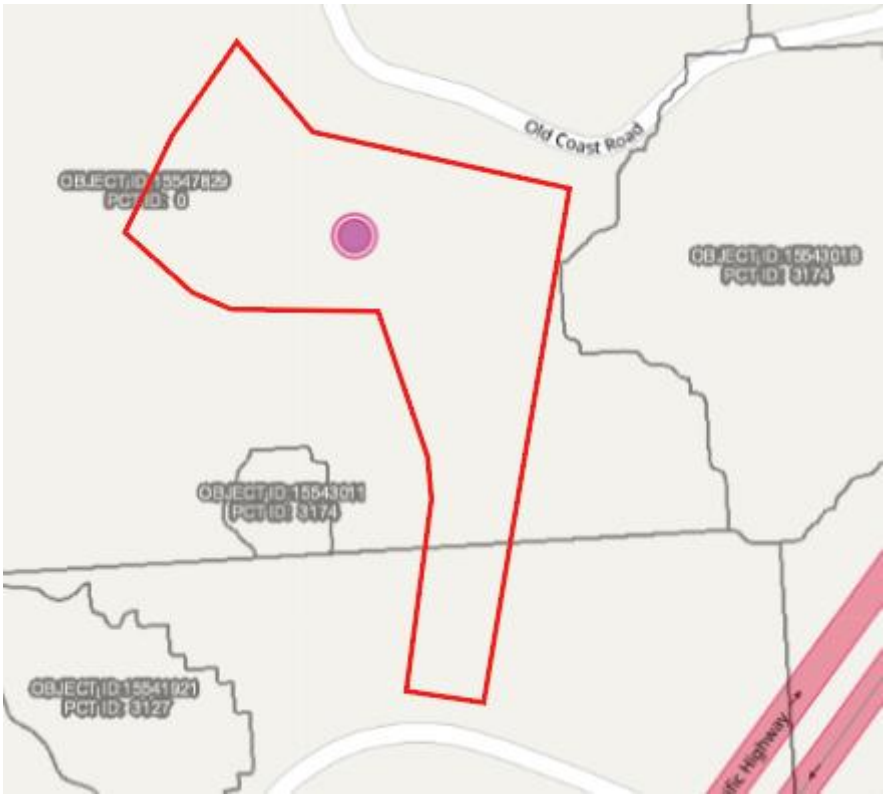


Figure 3. Extract from State Vegetation Type Mapping.

Existing vegetation mapping

State Vegetation Type mapping does not identify any native vegetation on the site (**Figure 3**).

The native vegetation community *PCT 3174 Northern Turpentine-Brush Box Wet Forest* is mapped adjoining the eastern boundary of the study area, with another smaller patch to the south-west of the study area. This community is described (Bionet Plant Community Type data) as

> Extremely tall, sclerophyll open forest which occurs on lower slopes or mid slopes in coastal ranges and valleys north from Bulahdelah, in two major disjunct occurrences, one north of Woodburn, the other between Grafton and Bulahdelah. The canopy may include any of a wide range of sclerophyllous trees, however species often with a high cover very frequently include Syncarpia glomulifera and Lophostemon confertus, accompanied commonly by Eucalyptus microcorys. Other canopy species which sometimes have a high cover locally occasionally include Corymbia intermedia, Eucalyptus grandis and Eucalyptus pilularis, rarely with Eucalyptus acmenoides. This PCT has a mid-dense to dense sub-canopy or mid-stratum of mesic shrubs and vines, with high species richness and typically where no individual species is dominant. Small trees which are sometimes locally abundant include very frequently or commonly Synoum glandulosum, Cryptocarya rigida and Trochocarpa laurina, with vines Dioscorea transversa, Gynochthodes jasminoides, Smilax australis and Cissus hypoglauca almost always or very frequently occurring. Allocasuarina torulosa is also very frequent and occasionally has a high foliage cover in the sub-canopy, or sometimes in the canopy. This PCT occurs mainly in warm, wet locations receiving 1320-1810 mm mean annual rainfall, at low elevations of 20-230 metres asl. It occurs mostly on clay-rich sediments and metasediments. It is floristically similar to PCT 3161, which occurs in similar range and environments, however PCT 3161 generally occurs in drier, slightly more exposed, or slightly more frequently burnt sites. In addition with this PCT, Lophostemon confertus, Allocasuarina torulosa and Trochocarpa laurina are more frequent and common than PCT 3161.

Coffs Harbour City Council's Class 5 vegetation mapping includes most of onsite vegetation as *NRV/EX03* **(Figure 4)**.

NRV Native Remnant Vegetation is described as

> small to medium sized remnants of native vegetation dominated by native species that cannot be assigned to a floristic community due to size, disturbance and fragmentation. Distribution linked strongly to cleared urban and rural landscapes but also includes remnant native tree lines within forest plantation areas (CHCC 2012 p.411).

Ex03 Exotic Vegetation is described as

> small to medium remnant patches of non-native vegetation as well as commercial horticultural farms such as bananas and blueberries. Distribution is linked with rural valley floors, commercial horticultural farms and derived urban/semi-urban landscapes.

The inclusion of two alternative communities in the vegetation classification indicates a degree of uncertainty as to the identity of the vegetation community.

Figure 4. CHCC mapping of site vegetation community NRV01/EX03.

Other Biodiversity Values

- The site is not identified as land with high biodiversity value on the NSW Biodiversity Values Map.
- High biodiversity value land adjoining the eastern boundary of the site (**Figure 5**) indicates the potential occurrence of Threatened species or communities with potential for serious and irreversible impacts.
- The site vegetation is not mapped as Koala habitat under the Coffs Harbour KPoM 1999.
- The site vegetation is not mapped as prescribed vegetation under Coffs Harbour DCP 2015.
- Two CHCC mapped (but not adopted) Biodiversity Corridors traversing the site include a subregional corridor in the north-west, connecting to a Local corridor in the north-east (**Figure 6**).

Figure 5. NSW High Biodiversity Values map

Figure 6. CHCC Biodiversity Corridors

Vegetation description

Native vegetation remnants

Native remnant vegetation mapped as *'>20% native vegetation'* in **Figure 7** occurs at the following 3 locations on the site (**Figure 7**):

1. A single mature Pink bloodwood *Corymbia intermedia* tree.
2. A mature Three-veined laurel *Cryptocarya triplinervis* tree and several young native trees, predominantly Sweet pittosporum *P. undulatum* (**Photo 9**).
3. Several Tuckeroo *Cupaniopsis anacardioides* and a Forest oak *Allocasuarina torulosa* located more or less on the boundary, and a mature Smooth-barked apple *Angophora costata* east of the boundary (**Photo 8**).

and at one location adjoining the site along Old Coast Road:

4. A mixture of approximately 50% native tree and woody vine species (Three-veined laurel, Sweet pittosporum, Tuckeroo, one Black oak *Allocasuarina littoralis* and Burny vine *Trophis scandens*), with planted trees and shrubs (Oleander *Nerium oleander,* White bird-of-paradise *Strelizia nicolai* and Weeping bottlebrush *Callistemon viminalis*) and numerous weeds

including Broadleaved pepper *Schinus terebinthifolius*, Lantana *L. camara* and Crofton weed *Ageratina adenophora* (**Photo 1**).

Understorey vegetation in these four remnants is largely confined to a ground layer of exotic grasses and/or weeds, with occasional clumps of native Rasp fern *Doodia aspera* in areas of dense shade.

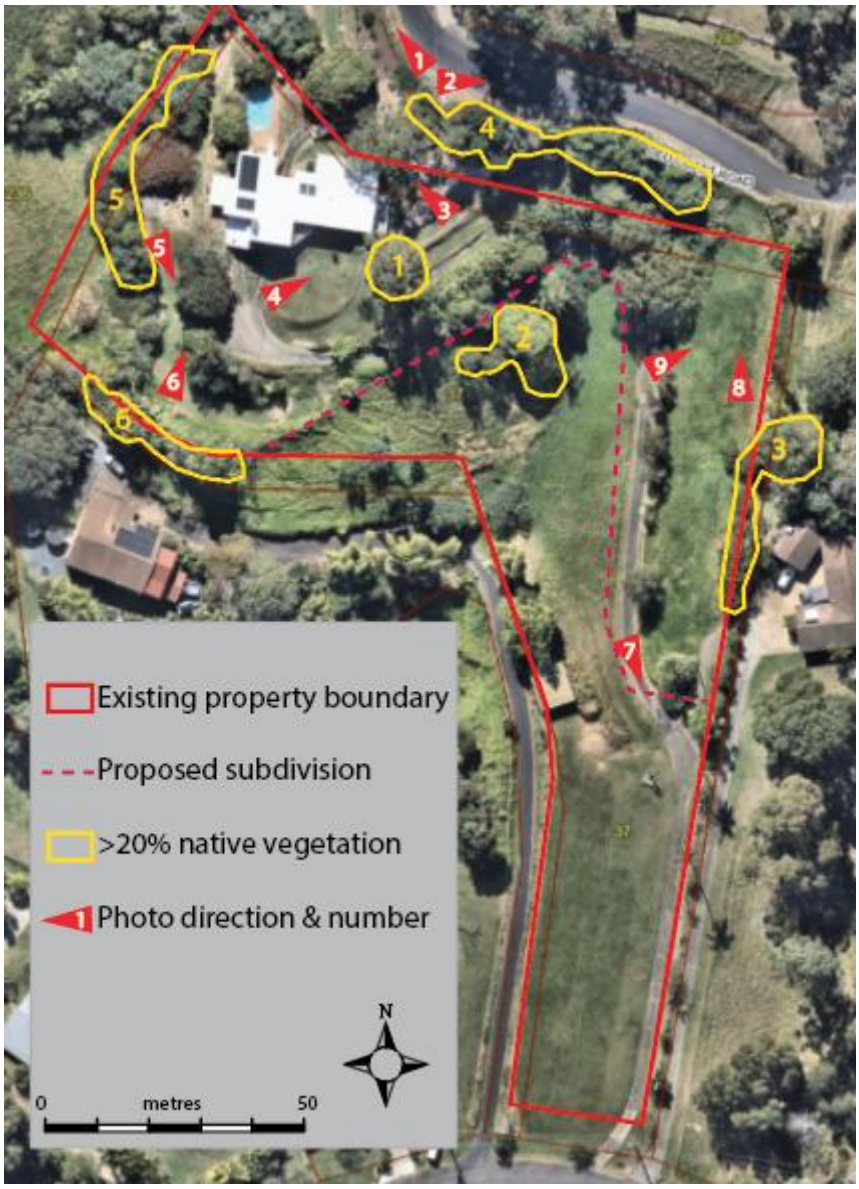


Figure 7. CHCC aerial imagery showing location of native vegetation and position of photographs

Planted native vegetation occurs at two locations (**Figure 7**):

5. Planted trees (small trees in rows) along the western boundary visible in the 2009 imagery are now young trees of Weeping bottlebrush, Foambark *Jagera pseudorhus*, Native frangipani *Hymenosporum flavum* and Steelwood *Sarcopteryx stipitata*. It also has numerous exotic garden trees and shrubs and occasional native Kangaroo vine *Cissus antacrctica* (**Photo 5**).

6. Planted Small-leaved lillypilly *Syzygium luehmannii* trees and introduced Alexander palm *Archontophoenix alexandrae* (**Photo 6**).

It is uncertain as to what extent the planted native vegetation is located on the site or on adjoining property. Planted native vegetation is generally less than 50% of vegetation cover at locations 5 & 6, the remainder consisting of woody weeds such as Broadleaved pepper, Camphor laurel and racehorse tree *Tipuana tipu* and a dense ground layer of the weedy groundcovers Mother-in-law's tongue *Sanseveria trifasciata*,Fishbone fern *Nephrolepis cordifolia*, Asparagus fern *Asparagus aethiopicus*, Singapore daisy *Sphagneticola trilobata* and Crofton weed.

Exotic vegetation

In the western limb of the site around the existing dwelling the exotic vegetation consists of mown lawns (**Photo 2**) and extensive areas of unmanaged Banana plants (**Photo 3**) and wild garden (**Photo 4**), with various weeds and exotic ground covers, the most extensive being Singapore daisy.

In the eastern limb of the site there is a row of Weeping bottlebrush along the road (**Photo 7**), and several large Camphor laurels in the north, over a ground layer of exotic grasses and Singapore daisy (**Photo 9**).

Disturbance Impacts

The original forest cover has obviously been cleared and burnt. All woody vegetation currently occupying the site is of insufficient size or age to pre-date clearing.

The soil profile has been modified by cultivation, terracing and long-term fertilizer and herbicide application for Banana cultivation.

Native woody vegetation has established naturally in some areas not occupied by bananas. Dispersal into the site was probably by wind from upslope forest remnants (Pink bloodwood) or by birds from littoral rainforest remnants 300 metres east of the site (most other native species). Some native tree species have also been planted.

Weedy and exotic garden plants have also been planted or have naturally established and are now the predominant vegetation.

Classification & conservation status

There were only 13 native species detected on the site, of which only Sweet pittosporum and Tuckeroo are common.

Vegetation at location 1 (**Figure 7**) is a single tree characteristic of numerous eucalypt-dominated forest communities. Five of 12 other native species occurring in mapped locations onsite are also characteristic of eucalypt-dominated forest and unlikely to occur in littoral rainforest.

Vegetation at Locations 2, 3 and 4 include species characteristic of littoral rainforests. Vegetation at these locations contains 8 of 117 plant species listed as characteristic of littoral rainforests (NSW Scientific Committee 2011). They do not however show canopy wind-shear characteristic of littoral rainforest.

Vegetation at Locations 4, 5 & 6 shown in **Figure 7** as *'>20% Native Vegetation'* struggle to meet the description of *NRV Native remnant Vegetation* in CHCC (2012) because they are not dominated by native species.

Other woody vegetation (not identified as native vegetation on Figure 7) is appropriately classified as *Ex03 Exotic Vegetation*. It includes 41 exotic and introduced species detected on the site, 23 of which are common or very common. Sixteen of these exotic species are weeds with treatment obligations under the Biosecurity Act.

Neither mapped community is listed as of conservation concern.

Despite the floristically depauperate nature of the vegetation and the absence of other features (such as wind shear) the presence at locations 2, 3 and 4 of species characteristic of littoral rainforest in vegetation indicate that impacts on these vegetation patches are considered as potential impacts on the Endangered Ecological Community (EEC) *Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions*.

Fauna habitat elements

- Eight species of native plants on the site provide forage for, and are dispersed by, frugivorous birds.
- Trails and scats indicate that exotic Deer species frequent the site.
- Watercourses, dams soaks *etc.* are absent.
- Large trees, hollow trees and old trees are absent.
- Large woody debris is absent.
- A litter layer is absent.
- KPoM listed Koala feed tree species are absent.
- No dens, roosts, nests, rocky area, dense native ground layer vegetation or nectar sources were detected.

Table 1. Likelihood of fauna occurrence (excluding species of marine and estuarine habitats)

Class	Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Foraging habitat	Likelihood of occurrence
Amphibia	*Crinia tinnula*	Wallum Froglet	V,P		1	Moist microhabitats in swamps, or wet or dry heaths, or sedge grasslands or swamps	As per breeding habitat	Nil
Amphibia	*Litoria brevipalmata*	Green-thighed Frog	V,P		3	semi-permanent or ephemeral ponds or depressions in a range of vegetation communities, including rainforest, wet and dry forest, heath and grassland.	from rainforest and moist eucalypt forest to dry eucalypt forest and heath	Nil
Amphibia	*Mixophyes iteratus*	Giant Barred Frog	E1,P,2	E	33	Second order or higher streams with some riparian vegetation present.	Streamside vegetation mostly in subtropical or cool temperate forests, or wet sclerophyll forests.	Nil
Reptilia	*Hoplocephalus stephensii*	Stephens' Banded Snake	V,P		10	Between loose bark and tree trunks, amongst vines, or in hollow trunks limbs, rock crevices or under slabs	Rainforest and eucalypt forests and rocky areas up to 950 m in altitude	Nil
Aves	*Amaurornis moluccana*	Pale-vented Bush-hen	V,P		3	Dense vegetation >2 m tall on edges, in shallows or within 300 metres of wetlands, streams or dams	As per breeding habitat	Nil
Aves	*Anthochaera phrygia*	Regent Honeyeater	E4A,P,2	CE	4	Box-Ironbark and other temperate woodlands and riparian gallery forest dominated by River Sheoak	nectar from a wide range of eucalypts and mistletoes. Key eucalypt species include Mugga Ironbark, Yellow Box, Blakely's Red Gum, White Box and Swamp Mahogany	Nil
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		4	in shrubs or low trees in dry, open eucalypt forests, woodlands with an open understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris	As for breeding habitat	Nil
Aves	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	1	Not known in region	Not known in region	Nil
Aves	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	82	large hollow-bearing eucalypts	open forest and woodlands of the coast and the Great Dividing Range up to 1000 m in which stands of She-oak species occur	Nil
Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		1	Live trees, dead standing or fallen timber, stumps or posts with hollows greater than 6 cm diameter.	Grassy woodlands, wet & dry sclerophyll forests and forested wetlands, mostly west of the Great Divide	Nil
Aves	*Coracina lineata*	Barred Cuckoo-shrike	V,P		4	Unknown	Fruiting tree species in rainforest, wet sclerophyll forest, vegetation remnants or isolated trees	Unlikely

Class	Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Foraging habitat	Likelihood of occurrence
Aves	*Cyclopsitta diophthalma coxeni*	Coxen's Fig-Parrot	E4A,P,2	E	2	Live or dead eucalypts close to rainforest or trees within rainforest close to foraging habitat	Figs or other fleshy-fruited trees in rainforest or remnants	Nil
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		12	cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy	eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches	Nil
Aves	*Dromaius novaehollandiae*	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		1	a platform of grass, twigs, leaves and bark on the ground, often at the base of some vegetation and with good views from the nest	a range of predominantly open lowland habitats, including grasslands, heathland, shrubland, open and shrubby woodlands, forest, and swamp and sedgeland	Nil
Aves	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		4	Live or dead tree within or near foraging habitat. Usually isolated, live, paddock trees in NSW, but also in paperbarks and occasionally low shrubs within wetlands.	Shallow open freshwater or saline wetlands and estuarine habitats, including swamps, floodplains, watercourses, wet heathland, wet meadows, farm dams, saltmarsh, mud- and sand-flats, mangroves	Nil
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		31	Hollow-bearing trees. Typically but not solely large old Eucalyptus, often smooth barked species.	Tree canopies. Typically nectar and pollen from Eucalyptus but also other tree species such as Angophora and Melaleuca plus native fruits such as mistletoe	Nil
Aves	*Grantiella picta*	Painted Honeyeater	V,P	V	1	Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests with greater than 5 mistletoes per hectare	As for breeding habitat	Nil
Aves	*Grus rubicunda*	Brolga	V,P		1	Shallow (< 50 cm) wetlands and margins of deeper waterbodies with emergent vegetation	wetlands, mudflats, grasslands, cultivated areas or stubble	Nil
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		58	mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat; nest trees are large emergent eucalypts often with emergent dead branches or large dead trees nearby	bays and inlets, beaches, reefs, lagoons, estuaries and mangroves, saltmarsh, freshwater swamps, lakes, reservoirs, billabongs	Nil
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		6	a large stick nest in tall living trees within a remnant patch	eucalypt forest, woodland or open woodland	Nil
Aves	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	58	None in Australia	Aerial	Unlikely
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		7	Vegetation bordering water bodies or watercourses including Mangroves	as per breeding habitat	Nil

Class	Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Foraging habitat	Likelihood of occurrence
Aves	*Lathamus discolor*	Swift Parrot	E1,P	CE	23	Nil in NSW	where winter flowering species are flowering profusely or where there are abundant lerp infestations	Nil
Aves	*Lophoictinia isura*	Square-tailed Kite	V,P,3		12	generally located along or near watercourses, in a fork or on large horizontal limbs	variety of timbered habitats including dry woodlands and open forests	Nil
Aves	*Ninox connivens*	Barking Owl	V,P,3		3	hollows of large, old trees	woodland and open forest	Nil
Aves	*Ninox strenua*	Powerful Owl	V,P,3		5	Hollows >45 cm diameter that are 6 m or more above the ground in living or dead trees	range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest	Nil
Aves	*Pandion cristatus*	Eastern Osprey	V,P,3		50	Emergent living or dead trees or artificial towers within 3 km of foraging habitat	Open protected water	Nil
Aves	*Ptilinopus magnificus*	Wompoo Fruit-Dove	V,P		77	Rainforests or wet sclerophyll forest with foraging habitat nearby	Fruiting plants, including introduced species, within vegetation types. Fruit between 5-30 mm diameter	**Possible Foraging**
Aves	*Ptilinopus regina*	Rose-crowned Fruit-Dove	V,P		20	Wet sclerophyll forest or rainforest including remnants dominated by camphor laurel. Requires foraging habitat nearby.	Plants with fleshy fruits 5-25mm in size, including introduced species	**Possible Foraging**
Aves	*Tyto longimembris*	Eastern Grass Owl	V,P,3		1	Heaths and swamps witrh vegetation <2 m high and >90 % projected foliage cover	Open, treeless habitats or marshy ground vegetated with tussocks of grass or low heath or recently harvested paddocks or cane fields	Nil
Aves	*Tyto novaehollandiae*	Masked Owl	V,P,3		1	Living or dead trees with hollows >40 cm diameter, cliffs or caves	Most	Unlikely
Aves	*Tyto tenebricosa*	Sooty Owl	V,P,3		9	Hollows >30 cm diameter that are >10 m above the ground in live or dead trees, or in caves	Most forests	Unlikely
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	3	Hollow-bearing trees, fallen logs, small caves, rock crevices, boulder piles, rocky-cliff faces or animal burrows	mostf habitat types from the sub-alpine zone to the coastline	Unlikely
Mammalia	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		3	Hollows in dead or alive trees	Most	Unlikely
Mammalia	*Miniopterus australis*	Little Bent-winged Bat	V,P		27	Caves	Moist eucalypt forest, rainforest or dense coastal banksia scrub	Unlikely

Class	Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Foraging habitat	Likelihood of occurrence
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		10	Maternity caves with very specific temperature and humidity regimes.	forested areas, catching moths and other flying insects above the tree tops	Unlikely
Mammalia	*Myotis macropus*	Southern Myotis	V,P		8	close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage	waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation	Unlikely
Mammalia	*Nyctophilus bifax*	Eastern Long-eared Bat	V,P		1	Dense tree foliage, under bark, in tree hollows	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest	Unlikely
Mammalia	*Petauroides volans*	Southern Greater Glider	E1,P	E	1	Large trees with hollows > 10cm diameter	tall moist eucalypt forests with relatively old trees and abundant hollows	Nil
Mammalia	*Petaurus australis*	Yellow-bellied Glider	V,P	V	7	Large trees with hollows > 10cm diameter	favoured food trees in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils	Nil
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V,P		10	Tree hollows or fissures >2 cm diameter/width in eucalypt forests and woodlands	Blackbutt-Bloodwood forest with heath understorey and abundant hollows	Nil
Mammalia	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		1	Tree hollows, logs or stumps with entrances > 2.5 cm wide	Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter.	Nil
Mammalia	*Phascolarctos cinereus*	Koala	E1,P	E	165	eucalypt woodlands and forests	Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species; in any one area will select preferred browse species	Unlikely
Mammalia	*Phoniscus papuensis*	Golden-tipped Bat	V,P		2	Tree hollows or nests of Yellow-throated Scrubwren or Brown Gerygone	Rainforest gullies or sclerophyll forest on mid to upper slopes, within 2km radius of roost	Nil
Mammalia	*Planigale maculata*	Common Planigale	V,P		3	Hollow logs, under bark, rocks, cracks in soil, grass tussocks or building debris	Coastal heaths, scrubs, woodlands, open forests and rainforests providing cover in the form of dense ground layers	Unlikely
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	65	Canopy trees associated with rainforest, or coastal scrub or riparian or estuarine communities and with sufficient forage resources available within 40km.	Most	**Possible Foraging**
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		3	Live and dead hollow-bearing trees	Most	Unlikely

Class	Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Foraging habitat	Likelihood of occurrence
Mammalia	*Syconycteris australis*	Common Blossom-bat	V,P		11	Rainforest or vine thickets within proximity to foraging habitat.	heathland and paperbark swamps	Nil
Mammalia	*Vespadelus troughtoni*	Eastern Cave Bat	V,P		1	caves and mines	in open forest and woodland, near cliffs or rocky overhangs	Nil
Insecta	*Ocybadistes knightorum*	Black Grass-dart Butterfly	E1		30	Floyd's grass *Alexfloydia repens*	Floyd's grass *Alexfloydia repens* (larvae), nectar (moth)	Nil

Table 2. Likelihood of flora species occurrence

Scientific Name	Common Name	NSW status	Comm. status	Records	Breeding habitat	Likelihood of occurrence
Alexfloydia repens	Floyd's Grass	E1		8	Coastal stands of Swamp Oak or Paperbark in peat-like soil edging the upper tidal areas of mangroves or on the banks of estuarine creeks	Nil
Diuris praecox	Rough Doubletail	V,P,2	V	1	Between Bateau Bay and Smiths Lake on hills and slopes of near-coastal districts in open forests which have a grassy to fairly dense understorey	Nil
Lindsaea incisa	Slender Screw Fern	E1,3		20	Waterlogged or poorly drained sites in dryclerophyll forest or heathland	Nil
Macadamia integrifolia	Macadamia Nut		V	1	subtropical rainforest, regrowth rainforest or remnant rainforest, north of Coraki	Nil
Marsdenia longiloba	Slender Marsdenia	E1	V	70	Subtropical and warm temperate rainforest, moist eucalypt forest adjoining rainforest, and rock outcrops	Nil
Niemeyera whitei	Rusty Plum	V		132	Rainforest and the adjacent understorey of moist eucalypt forest	Nil
Pultenaea maritima	Coast Headland Pea	V		38	Exposed coastal headlands	Nil
Quassia sp. Moonee Creek	Moonee Quassia	E1	E	589	Shrubby layer below tall moist eucalypt forest and tall dry eucalypt forest	Unlikely
Rhodamnia rubescens	Scrub Turpentine	E4A	CE	27	littoral, warm temperate and subtropical rainforest and wet sclerophyll forest	Nil
Rhodomyrtus psidioides	Native Guava	E4A	CE	28	littoral, warm temperate and subtropical rainforest and wet sclerophyll forest often near creeks and drainage lines	Nil
Sophora tomentosa	Silverbush	E1		30	Coastal sand dunes	Nil
Thesium australe	Austral Toadflax	V	V	8	Grassland, grassy open forest or woodland on fertile or moderately fertile soils and coastal headlands, often in association with Kangaroo Grass	Nil
Typhonium sp. aff. brownii	Stinky Lily	E1,3		1	reasonably fertile soils, in moist eucalypt forest and the moist eucalypt forest-subtropical rainforest interface, in ranges west of Coffs Harbour	Nil
Zieria prostrata	Headland Zieria	E1	E	2	Exposed coastal headlands	Nil
Zieria smithii	Low growing form of Z. smithii, Diggers Head	E2		2	Known only from Diggers Head, in low heath with Kangaroo Grass	Nil

Discussion

Likelihood of occurrence of threatened biodiversity

The likelihood of occurrence on the site of threatened biodiversity known to occur in the locality was assessed on the basis of the occurrence and condition of vegetation types and habitat elements on the subject site (**Table 1, Table 2**).

Assessment considered the presence, number and currency of species records in the locality, the species habitat requirements and habitat elements present in the study area, the comprehensiveness of survey cover, the detectability of the species and its occurrence in plant community types as outlined in the relevant Threatened Species profiles.

Potential Impacts of the proposal

No native vegetation has been identified for removal or modification. Such clearing, if required, would be under the provisions of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* and the *Coffs Harbour DCP 2015*. I note that native vegetation on proposed Lot 2 is limited to several young trees in a drainage depression in the northern extremity of the Lot in a location unlikely to be required for development.

In this case, given the scarcity of native vegetation located on the proposed lots and the utilisation of existing access and infrastructure it is difficult to envisage that there would be any direct impact of the proposal on native vegetation.

Indirect impacts are likely to be limited to those associated with occupation of proposed Lot 2, such as noise and light-spill. The paucity of native fauna habitat indicate that indirect impacts, if they were to occur, would likely be confined to the foraging habitat of highly mobile frugivores such as Wompoo Fruit-Dove, Rose-crowned Fruit-Dove and Grey-headed flying fox.

BC Act Assessment of impacts

Subject species

No threatened flora species was identified as a possible occurrence in the study area.

Vegetation attributable to the EEC *Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions* was identified as occurring in the study area and is a subject community for the *Biodiversity Conservation Act* (*BC Act*) 5-part test.

The following fauna species were identified as having foraging habitat in the study area:

- Grey-headed Flying-fox *Pteropus poliocephalus*
- Wompoo Fruit-Dove *Ptilinopus magnificus*
- Rose-crowned Fruit-Dove *Ptilinopus regina*

These species are subject species, grouped below as highly mobile nectar-dependent aerial fauna for the 5-part test.

Biodiversity Offset Clearing Threshold

No clearing is proposed.

The maximum possible area of native vegetation on the site is approximately 300m^2 (0.03ha), which is less than the 0.5ha required for entry to the biodiversity offset scheme (BOS).

No vegetation on the site is mapped as High Biodiversity Value.

5-part test

(a) in the case of a threatened species, whether the proposed development or activity 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,

Highly mobile nectar-dependent aerial fauna

There would be no impact on breeding habitat for highly mobile nectar-dependent aerial fauna.

Impact on foraging habitat is limited to indirect impacts associated with occupation of proposed Lot 2, such as noise and light-spill.

Given the small area of habitat for the subject species and the minor nature of the impacts, the impacts of the proposal are assessed as unlikely to be of sufficient magnitude or extent to affect the life cycle of the species such that a viable local population of that species would be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(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,

Littoral rainforest

The proposal does not require any vegetation clearance and is therefore is unlikely to affect the extent of the ecological community.

The ecological community on the site is a floristically depauperate and opportunistic assemblage of bird-dispersed plant species. The proposal is unlikely to modify the composition of the ecological community.

The local occurrence is therefore unlikely to be placed at risk of extinction.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, 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 development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

Littoral rainforest

No habitat is likely to be removed or modified as a result of the proposed development or activity and no habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposal.

Highly mobile nectar-dependent aerial fauna

There would be no direct impact on breeding or foraging habitat, and indirect impacts are limited to those associated with occupation of proposed Lot 2, such as noise and light-spill.

Habitat would not be fragmented or isolated. Existing vegetation would continue to provide foraging and dispersal resources. The Proposal is therefore unlikely to impact the long-term survival of the species in the locality.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No declared area of outstanding biodiversity value occurs in the region.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The proposal may possibly contribute to the impact of the key threatening process *Anthropogenic Climate Change*. The degree to which the Proposal would contribute to any threatening process is small and not considered likely to place the local population of any of the subject species at foreseeable risk of extinction.

EPBC Act significant impacts.

The Grey-headed flying-fox is a Vulnerable fauna species identified as having foraging habitat in the study area and are therefore a subject species for the *EPBC Act.*

EPBC Act Significant Impact Guidelines indicate that an action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

• lead to a long-term decrease in the size of an important population of a species

• reduce the area of occupancy of an important population
• fragment an existing important population into two or more populations
• adversely affect habitat critical to the survival of a species
• disrupt the breeding cycle of an important population
• modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
• result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
• introduce disease that may cause the species to decline, or
• interfere substantially with the recovery of the species.

No vegetation would be removed by the proposal. Impacts would be limited to indirect impacts on foraging habitat associated with occupation of proposed Lot 2, such as noise and light-spill. The proposal would therefore be unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that it would reduce the area of occupancy of an important population of the species. Nor would the proposal be likely to result in invasive species becoming established, or introduce disease, or by any other means lead to a long-term decrease in the size of an important population, reduce its area of occupancy, fragment the population, adversely affect critical habitat or disrupt its breeding cycle.

Littoral rainforests and coastal vine thickets of eastern Australia are listed as Critically Endangered Community. In this case, the vegetation identified as potential littoral rainforest does not meet the condition criteria for referral, in particular that "The minimum patch size needs to be 0.1 hectares (1000 m^2)" (DEWHA 2009).

Conclusions

The proposal seeks to subdivide the land to create one additional vacant Torrens Title lot suitable for residential dwelling. The proposal would utilise existing access and infrastructure and no removal of native vegetation is proposed.

State Vegetation Type mapping does not identify any native vegetation on the site. Coffs Harbour City Council vegetation mapping shows the vegetation as a mixed *NRV Native Remnant Vegetation/Ex03 Exotic Vegetation*.

This assessment identified approximately 300m^2 of native vegetation on the property. No direct impacts on that native vegetation or associated fauna habitat are considered likely. Impacts are likely to be limited to indirect impacts on foraging habitat associated with occupation of proposed Lot 2, such as noise and light-spill.

BC Act assessment of impacts found that significant impacts on Threatened flora, communities, fauna or their habitat are unlikely. The proposal does not exceed the Biodiversity Offset Clearing Threshold, or occur in an area mapped as High Biodiversity Value. Entry to the Biodiversity Offsets Scheme would not therefore be required.

The EPBC Act Significant Impact Guidelines indicate that the proposal is unlikely to have a significant impact and referral to the Minister is not required.

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Appendices

Flora species inventory

Allocasuarina littoralis	Black oak	very rare	n
Cissus antarctica	Kangaroo vine	rare	n
Corymbia intermedia	Pink bloodwood	very rare	n
Cryptocarya triplinervis	Three-veined laurel	rare	n
Cupaniopsis anacardioides	Tuckeroo	common	n
Cyathea australis	Hard treefern	very rare	n
Doodia aspera	Rasp fern	occasional	n
Hymenosporum flavum	Native frangipani	occasional	n
Jagera pseudorhus	Foambark	rare	n
Pittosporum undulatum	Sweet pittosporum	common	n
Sarcopteryx stipitata	Steelwood	occasional	n
Syzygium luehmannii	Small-leaved lillypilly	occasional	n
Trophis scandens	Burny vine	very rare	n
Acalypha wilkesiana	Fijian fire plant	common	e
Agapanthus spp	Agapanthus	occasional	e
Ageratina adenophora	Crofton weed	very common	e, A
Ageratum houstonianum	Blue billygoat weed	very common	e, A
Archontophoenix alexandrae	Alexander palm	common	in
Asparagus aethiopicus	Asparagus fern	very common	e, A
Azalea cv	Azalea	occasional	e
Callistemon citrinus cv	Crimson bottlebrush	occasional	in
Callistemon viminalis cv	Weeping bottlebrush	common	in
Chloris gayana	Rhodes grass	common	e
Cinnamomum camphora	Camphor laurel	very common	e, A
Duranta erecta	Skyflower	common	e, A
Dypsis lutescens	Golden cane palm	occasional	e
Eriobotrya japonica	Locquat	common	e
Hedera helix	English ivy	occasional	e
Hibsicus cv	Hibiscus	occasional	e
Lagerstroemia indica	Crepe myrtle	occasional	e
Lantana camara	Lantana	occasional	e, A
Lilium formosanum	Formosa lily	occasional	e
Mangifera indica	Mango	occasional	e
Monstera deliciosa	Fruit-salad plant	common	e
Musa cv	Banana	common	e
Neomarica gracilis	Walking iris	occasional	e
Nephrolepis cordifolia	Fishbone fern	very common	e
Nerium oleander	Oleander	common	e
Olea europaea	Olive	occasional	e, A
Paspalum mandiocanum	Broadleaved paspalum	common	e
Phoenix spp	Date palm	occasional	e, A
Pinus radiata	Radiata pine	occasional	e, A
Rhaphiolepis indica	Indian hawthorn	occasional	e, A
Sansevieria trifasciata	Mother-in-laws tongue	common	e
Schefflera actinophylla	Umbrella tree	occasional	in, A
Schinus terebinthifolius	Broadleaved pepper	very common	e, C
Senna pendula	Winter senna	common	e, A
Setaria sphacelata	Pigeon grass	common	e
Spathodea campanulata	African tulip tree	rare	e, A

Sphagneticola trilobata	Singapore daisy	very common	e
Sporobolus fertilis	Giant parramatta grass	common	e, A
Strelitzia nicolai	White bird-of-paradise	common	e, A
Tipuana tipu	Racehorse tree	common	e, A
unknown Arecaceae	Fan palm	rare	e
	Status:		
		native	**n**
		introduced native	**in**
		exotic	**e**
	Biosecurity obligation:		
		Asset Protection	**A**
		Control	**C**

Photographs

Photo 1. Native and exotic vegetation along Old Coast Road (Location 4 on Figure 7)

Photo 2. Exotic lawn and trees between the dwelling and Old Coast Road

Photo 3. Unmanaged Bananas above access road, large Camphor laurels on left

Photo 4. Wild garden with exotic trees shrubs and palms and dense weedy ground layer

Photo 5. Planted natives on left and immediately behind Fijian fire plants around tank (Location 5 on Figure 7)

Photo 6. Planted Small-leaved lillypilly and introduced Alexander palm with dense Singapore daisy groundcover, seedling Racehorse trees right foreground (Location 6 on Figure 7)

Photo 7. Access road, Weeping bottlebrush on right

Photo 8. Native vegetation with exotic grass understorey along eastern boundary (Location 3 on Figure 7)

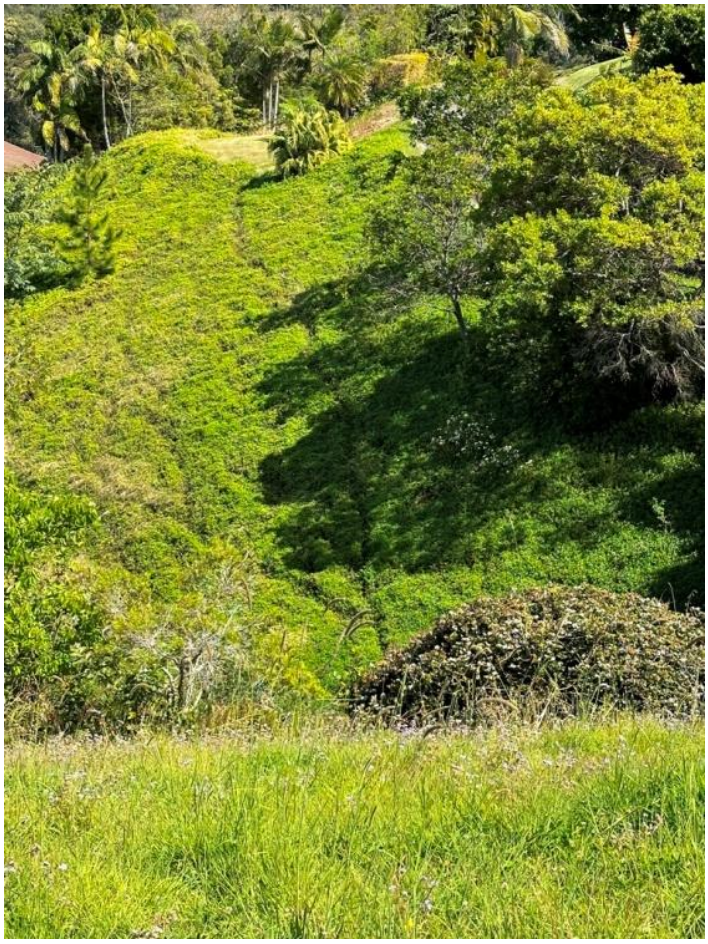
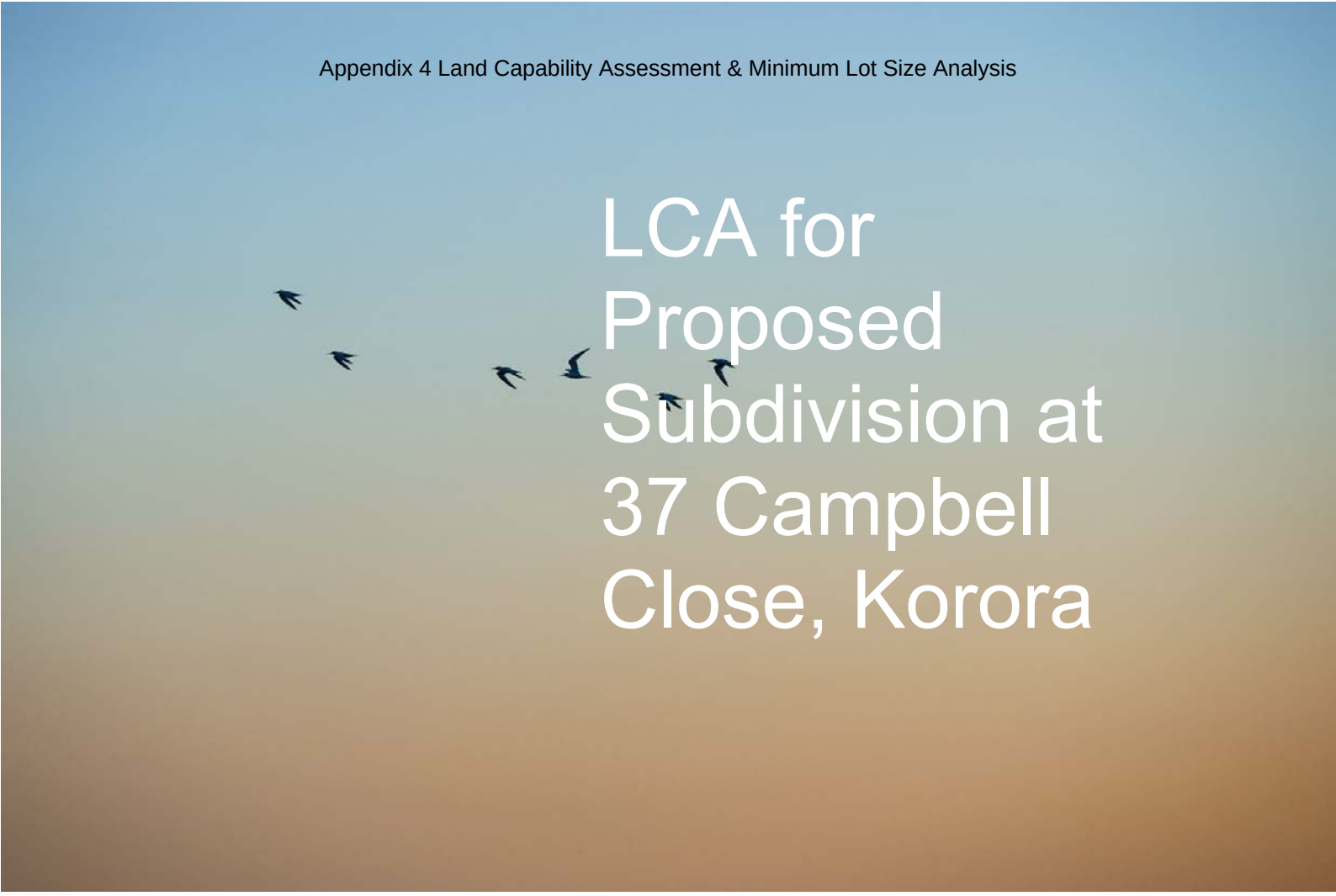


Photo 9. Exotic grassland (foreground), Singapore daisy (rear) showing Deer trails. On right, Three-veined laurel and Pittosporum (Location 2 on Figure 7)



LCA for Proposed Subdivision at 37 Campbell Close, Korora

8 September 2023

For: Darren Philp

Authored by: Strider Duerinckx

Ref	Ver	Date	Distribution
2223-213-02	A	8/9/23	Client, Planner

1 Table of Contents

Figures

Appendices

1 Introduction

Earth Water Consulting Pty Limited (EWC) were engaged by Darren Philp to undertake a Land Capability Assessment (LCA) for the proposed subdivision of 37 Campbell Close, Korora (Lot 1 DP1130767) (the 'Site'), as shown on Figure 1.

The purpose of the LCA is to show that wastewater from an On-site Sewage Management System (OSMS) can be sustainably applied on the proposed lot.

2 Proposed Development

Based on plans of the proposed subdivision layout (Survey Ref: 15972 Newnham Karl Weir and Partners Pty Ltd. Plan of Proposed Subdivision. Dated: February 2023), it is understood that the Site is proposed to be subdivided from one into two (2) lots.

Proposed Lot 2 will include the existing dwelling and shed and be approximately 6,514m^2 in area and Proposed Lot 1 will have a new building entitlement and be approximately 5,031m^2 (Figure 2).

3 Scope of Work

The LCA was undertaken by Strider Duerinckx of EWC. The study methodology included:

- A desktop review of Site conditions including geology, hydrogeology, soils, and landscape features;
- A site inspection to map site and soil constraints plus an audit of the existing dwelling OSMS in relation to the proposed subdivision boundary;
- Drilling of one borehole to assess soil conditions on the proposed lot;
- Assessment of a range of site and soil constraints including landform, slope, aspect, drainage, flooding, proximity to sensitive environments, and soil chemistry;
- Estimation of likely wastewater loads (quantity and quality) from future dwellings on the proposed lot, and undertake confirmation water and nutrient balance modelling to size suitable land application areas;
- Outlining any land improvement works or mitigation measures required to address particular constraints in the land application areas; and
- Provision of this written report, including site plans, describing the results and recommendations from our investigations.

4 Site Details

The property is located on the northern side of Campbell Close and to the south of Old Coast Road in Korora. The property is zoned R5 Large Lot Residential and is surrounded by a number of other R5 properties, C2 Environmental Conservation areas and the SP2 Infrastructure zone of the Pacific Highway, to the east.

The Site sits on a generally south facing set of two ridgeline spurs, which are divided through the centre of the block by a steep gully, running north to south. A derelict shed is located at the centre of the western boundary of proposed Lot 1.

Proposed Lot 1 is mostly cleared and grassed lawn. Proposed Lot 2 contains the existing dwelling with associated improvements. The dwelling is surrounded by terraced and landscaped gardens and maintained vegetation.

4.1 Existing OSMS

The OSMS that services the existing dwelling consists of a round concrete, 2,300L septic tank and three to four terraced absorption trenches of approximately 20m each located to the southeast of the dwelling (Figure 3).

The OSMS appeared to be functioning adequately at the time of inspection and the buffer distance to the proposed new boundary of Lot 1 is acceptable for a primary treatment system.

As such, the existing OSMS on proposed Lot 2 will not impact the proposed subdivision.

Photograph 1 – The existing concrete septic tank servicing the dwelling on proposed Lot 2.

Photograph 2 – Looking northeast over the existing absorption trenches at proposed Lot 2.

Photograph 3 – Looking south at the recommended EMA on proposed Lot 1.

Photograph 4 – Looking southeast at the reserve EMA on proposed Lot 1.

4.2 Site Constraints

Table 1 summarises the Site constraints for the primary and reserve EMAs for each of the proposed lots. These are discussed in terms of the degree of limitation they present (i.e. minor, moderate or major limitation) for on-site effluent application. Reference is made to the rating scale described in Table 4 of DLG (1998). Site features are presented in Figures 3 and 4.

Table 1: Site Constraints

Constraint	Degree of Limitation
Landform: Linear divergent to linear planar midslope location.	Minor
Exposure: Good exposure. Minimal trees near the proposed EMAs.	Minor
Slope: Southeast to southwest facing slopes from 13-37% slope for EMA on Lot 1 and reserve EMA on Lot 2.	Moderate to Major
Rocks and Rock Outcrops: No rock outcrops were observed on the Site.	Minor

Constraint	Degree of Limitation
Erosion Potential: No active erosion noted at time of inspection. The steep slopes combined with the clay subsoils would give a high risk of erosion once disturbed.	Major
Climate: The Site experiences a sub-tropical-temperate climate, typical of north-eastern NSW.	Moderate
Vegetation: Open grassland with scattered trees and shrubs.	Minor
Fill: None noted.	Minor
Surface Waters: Mapped intermittent waterways drain off the Old Coast Road ridgeline and pass south either side of the Site. A steep gully dissects proposed Lot 1.	Moderate
Groundwater: (NSW Office of Water: Groundwater Bore Search) The closest registered domestic bore is located on the property, approximately 25m to the south of the existing dwelling on proposed Lot 2. The bore (GW071040) has a final drilled depth of 27m, and water bearing zones between 21-23m and 26-27m in basalt. A second bore (GW072512) is located around 120m west-southwest of the proposed EMA on Lot 1. The bore has a final drilled depth of 36m and a water bearing zone between 31-36m in broken basalt. Groundwater vulnerability? Clay subsoil and deep groundwater depth will reduce the risk of groundwater contamination through effluent application, however the close vicinity of the sideslope EMAs to the on-site bore will increase the risk without secondary application.	Major
Stormwater run-on and upslope seepage: The midslope position of the proposed EMAs would have moderate to high run-on from upslope areas.	Moderate to Major
Flood Potential: The Site is not impacted by 1:100 year flood extents on the CHCC flood mapping, which indicates that the Korora Basin is not affected by flooding.	Minor
Available Effluent Application Area Both lots have sufficient area available for the application of effluent, and reserve EMAs.	Minor

4.3 Soil Survey and Description

4.3.1 Regional Soils

We reviewed the Soil Landscapes of the Coffs Harbour 1:100,000 Sheet (Milford, 1999) which indicates that the Site is underlain by soils of the Megan Soil Landscape, which is an erosional landscape located on rolling low hills to hills on Late Carboniferous metasediments of the Coffs Harbour association in the Coast Range and Gleniffer/Bonville Hills. Soils are moderately deep to deep (>100cm), well drained structured Red and Brown Earths and Red and Brown Podzolic Soils.

Limitations include strongly acid soils with high erodibility, localized stony soils and potential aluminium toxicity.

4.3.2 Site Soils

Site soils were assessed by drilling one (1) borehole using a power auger (Figure 3) to 1.2m depth. The soil encountered comprised:

- Approximately 200mm of clay loam topsoil, brown, no mottling, with earthy structure and up to 10% coarse fragments; overlying
- Approximately 700mm of light clay to silty clay, bright brown, with no mottling, a strong structure and up to 5% coarse fragments; overlying
- At least 300mm of silty clay (extremely weathered bedrock), orange with light yellow orange mottling, a strong structure and up to 5% coarse fragments.

Competent bedrock was not encountered in the borehole. The borehole log is provided in Appendix A.

Photograph 5 – BH1 soil profile.

Table 2 summarises the key soil physical and chemical assessments. Reference is made to the rating scale described in Table 6 of DLG (1998). Borehole logs are presented in Appendix A and soil chemistry in Appendix B.

Table 2: Soil Assessment

Parameter	Constraint
Depth to bedrock or hardpan (m): The borehole was terminated at 1.2m depth in silty clay. It is believed that competent bedrock will be located at >1.5m based on soil landscape and position.	Minor
Depth to high soil watertable: The depth of the vadose zone (i.e. non-saturated soil material above watertable) was greater than 1.2m at the time of the investigation. The depth to the permanent groundwater aquifer is expected to be more than 20m depth based on local groundwater bores.	Minor
Coarse Fragments (%): The boreholes contained up to 10% coarse fragments in the upper horizon, decreasing with depth.	Minor
Hydraulic loading rate: Soil structure: Strong Soil texture: Light-silty clay 0.2-1.2m **Permeability category:** Category 5a Hydraulic loading recommended: 12mm/day secondary treated effluent into an absorption bed field and 3mm/day for Subsurface Irrigation (SSI). Reasons for the hydraulic loading recommendation: Strongly structured light clay subsoils.	Moderate
pH: 4.40 pH Units from BH1 0.6-0.8m. Strongly acidic soils.	Moderate
Electrical Conductivity (dS/m): 0.228dS/m from BH1 0.6-0.8m. Not saline.	Minor
Dispersiveness: The Emerson Aggregate Test is a measure of soil dispersibility and susceptibility to erosion and structural degradation. It assesses the physical changes that occur in a single ped of soil when immersed in water, specifically whether the soil slakes and falls apart or disperses and clouds the water. An EAT was recorded as Class 3/6 (Slake 3) for BH1 0.6-0.8m. The instability of these aggregates is expected to increase slightly with the application of effluent.	Moderate
Sodicity (ESP):	Minor

Parameter	Constraint
The ESP is a measure of how readily the soils allow sodium from wastewater to be substituted in the soil lattice for other cations. Once accepted, the weak sodium bonds allow increased structural degradation of the soil, increasing the erosion risk. The ESP of BH1 0.6-0.8m was 2.1%. The ESP infers a minimal potential for structural degradation due to sodium salts already present.	
Cation Exchange Capacity: Like ESP, the CEC is a measure of how easily the soils hold and exchange excess cations from the effluent. These cations, such as potassium, magnesium and calcium are used by plants as a nutrient source. The higher the CEC the more likely plant growth will be aided by the application of effluent. CEC was measured in BH1 0.6-0.8m at 4.8 cmol/kg, which indicates that this soil type has low ability to accept and release excess nutrients from effluent.	Major
Phosphorus Adsorption: Phosphorus is a cation present in effluent. It is required only to a limited extent by plants as a trace nutrient, but if there is an excess of phosphorus in environments where other limiting factors are not present (such as waterways), excess phosphorus can result in very high plant growth. Typically, on land, excess phosphorus is taken up by soil adsorption, or is flushed out of the soil into groundwater or surface water bodies. The Site soils in BH1 0.6-0.8m has a Psorp of 1,540mg/kg (10,268kg/ha) in the subsoil.	Minor

5 Recommended OSMS Combination

Due to the cost of reticulated sewerage provision by Council, it is expected that the Site will not be sewered in the foreseeable future.

Based on the site and soil constraints and subdivision boundaries, the minimum treatment and land application combination selected for Proposed Lot 1 and 2 are:

- Treatment to a secondary standard and subsurface application into an appropriately sized absorption bed field.

6 Effluent Management Areas

6.1 Design Hydraulic Load

For hydraulic loading purposes a proposed dwelling of four bedrooms on tank water with bore backup was assumed for the proposed lots. AS/NZS1547:2012 recommends that a wastewater generation load of 150L per person per day for households supplied by tank water with bore backup be used as a basis for wastewater system design. The hydraulic load for the existing and proposed dwellings is based on 1.5 persons per bedroom. The design hydraulic loading for a four-bedroom dwelling under full occupancy is presented in Table 3.

Table 3: Proposed Design Hydraulic Load

No. of Bedrooms	Design Wastewater Load (L/day)
4	900

6.2 Sizing of Effluent Management Areas

Water balance modelling was undertaken to determine sustainable effluent application rates, and from this estimate the necessary size of the EMA required for effluent to be applied from a secondary treatment system trench or beds. The procedures used in the water balance generally follow the AS/NZS 1547:2012 standard and DLG (1998) Guideline. The water balance used is a monthly nominated area model. These calculations determined minimum EMAs for given effluent loads for each month of the year. The water balance can be expressed by the following equation:

Precipitation + Effluent Applied = Evapotranspiration + Percolation + Storage

Median monthly rainfall data was conservatively utilised in the modelling. The water balance conservatively assumes a retained rainfall coefficient of 0.8; that is, generally 80% of rainfall will percolate into the soil and 20% will run off. Given the high slopes and good groundcover at the Site, this is considered a conservative value. The rainfall hydraulic load is incorporated into the water balance to ensure that runoff from the EMA will not occur under typical (design) climate conditions.

The input data and results for the secondary treated trench/ bed water balance are presented in Table 4, and calculation sheets in Appendix B.

A conservative nutrient balance was also undertaken, which calculates the minimum buffer around a trench or bed to enable nutrients to be assimilated by the soils and vegetation. The nutrient balance used here is based on the simplistic DLG (1998) methodology, but improves this by more accurately accounting for natural nutrient cycles and processes. It acknowledges that a proportion of nitrogen will be retained in the soil through processes such as ammonification (the conversion of organic nitrogen to ammonia) and a certain amount will be lost by denitrification, microbial digestion and volatilisation (Patterson, 2003). Patterson (2002) estimates that these processes may account for up to 40% of total nitrogen loss from soil. In this case, a more conservative estimate of 20% is adopted for the nitrogen losses due to soil processes. A summary of the nutrient balance is provided in Table 4.

Table 4: Inputs and Results of Primary Treatment Modelling

Data Parameter	Units	Value	Comments
Hydraulic load	L/day	900	6 persons occupancy.
Precipitation	mm/month	Coffs Harbour	BoM, median monthly.
Pan Evaporation	mm/month	Coffs Harbour MO	BoM, mean monthly.
Retained rainfall	unitless	0.8	Proportion of rainfall that remains onsite and infiltrates the soil, allowing for 10% runoff.
Crop Factor	unitless	0.6-0.8	Expected annual range for vegetation based on monthly values.
Design Loading Rate (DLR) - Secondary	mm/day	12	Maximum rate for design purposes, based on strongly structured medium clay subsoils.
Effluent total nitrogen concentration	mg/L	30	Target effluent quality for secondary treatment systems.
Nitrogen lost to soil processes (denitrification and volatilisation)	annual percentage	20	Patterson (2002).
Effluent total phosphorus concentration	mg/L	12	Target effluent quality for primary treatment systems.
Soil phosphorus sorption capacity	mg/kg	1,540	Value based on soil testing.
Nitrogen uptake rate by plants	kg/Ha/yr	250	Conservative estimated value.
Phosphorus uptake rate by plants	kg/Ha/yr	25	Conservative estimated value.
Design life of system (for nutrient management)	years	50	Reasonable minimum service life for system.
Minimum secondary treatment trench/ bed basal area for hydraulic load (m^2)			84m^2 (142m^2 absorption trench field footprint)
Minimum secondary treatment trench/ bed area for total phosphorus load, without off-site export			220m^2
Minimum secondary treatment trench/ bed area for total nitrogen load, without off-site export			315m^2 nutrient uptake envelope

Based on modelling an active EMA and reserve EMA of 142m2 each have been nominated for a four bedroom dwelling for Proposed Lot 1. A reserve EMA of 142m2 has been nominated for the existing dwelling on proposed Lot 2. The proposed locations of the EMAs are shown on Figure 4.

The actual size and configuration of the EMAs will be dependent on a wastewater management plan at the time of dwelling development planning and application to install or upgrade an OSMS.

7 Buffers

Buffer distances or setbacks from EMAs are required to minimise risk to public health, maintain public amenity and protect sensitive environments. The buffers from DLG (1998) are presented in Table 5 below.

Table 5: Available Buffers

Site Feature	DLG (1998) Buffer	Achievable?
Intermittent watercourses, drainage channels and dams	40m	**Yes**
Permanent waterways	100m	**Yes**
Domestic groundwater bore	250m	**No, 22m to reserve EMA Lot 2, and 61m to reserve EMA Lot 1.**
Property boundary	Primary - 6m downslope and sideslope, 12m upslope	**Yes**
Driveway and building	6m downslope of / 3m upslope	**Yes**

Although the EMAs fall within the 250m buffer to a domestic groundwater bore required by DLG (1998), comparison to the maximum risk assessed buffer in AS/NZS1547:2012 of 15m indicates that the available buffer of 16m to the nearest bore is suitable with effluent treated to a secondary standard.

It must be noted that an existing OSMS is present with similar distances, and is only a primary treatment.

Appendix R of AS/NZS1547:2012 allows for a risk assessment of buffers based on site and soil conditions. The application of secondary treated effluent into absorption beds has been assessed (Appendix D) as a low risk to groundwater bores with an assessed buffer of 15m (22m min available).

The recommended EMAs meet the risk assessed buffers to groundwater bores and are considered suitable.

8 Conclusions & Recommendations

Having undertaken a land capability assessment for the proposed subdivision 37 Campbell Close, Korora, EWC consider that there is the opportunity for the sustainable application of wastewater following subdivision of the existing lot into Proposed Lots 1-2.

We recommend that:

- Proposed Lot 1 - Wastewater be treated to a minimum secondary level with subsurface soil absorption land application. A primary and reserve EMA of 142m^2 minimum each has been nominated for a four bedroom dwelling, with final details to be confirmed during application for individual dwelling construction; and
- Proposed Lot 2 – The existing OSMS for the dwelling does not impact the proposed boundary of the subdivision. A reserve EMA of 142m^2 has been nominated in the future case the existing EMA needs to be replaced due to failure.

For any OSMS we recommend that:

- A dwelling specific OSMS should be designed by an experienced professional, taking into account the assumptions and recommendations contained in this report; and
- An OSMS should be installed by a suitably qualified plumber, ensuring that effluent is distributed evenly across the entire area serviced.

9 References

Coffs Harbour City Council (2015) *On-site Sewage Management Strategy 2015*, Coffs Harbour.

Department of Local Government et al. (1998). *Environment & Health Protection Guidelines: On-site Sewage Management for Single Households*.

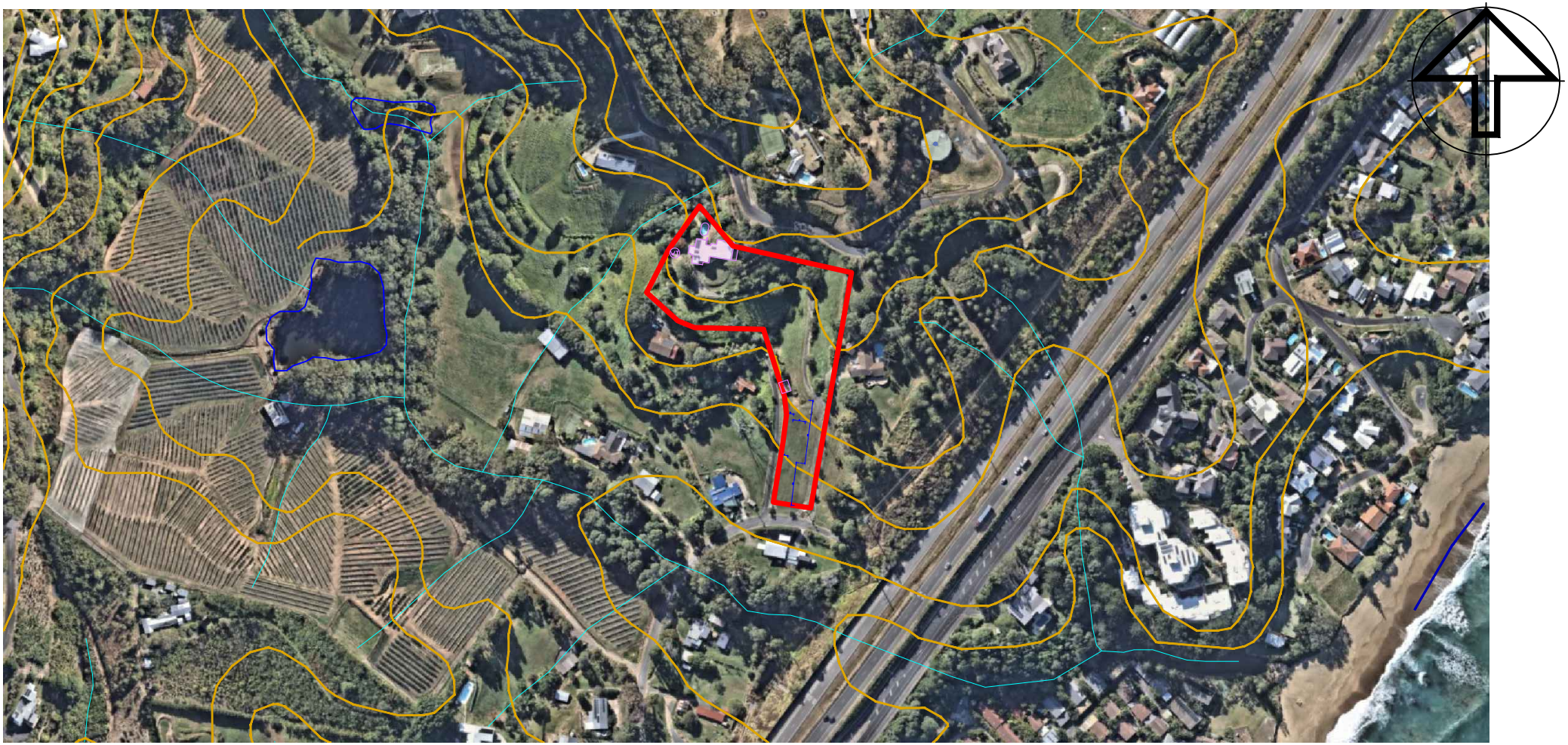
Milford, H. B., (1999) *Soil Landscapes of the Coffs Harbour 1:100 000 Sheet*, Department of Land and Water Conservation Soil Landscape Series.

Patterson, R.A. (2002). *'Workshop 2 – Calculations for Nutrient Balances.' In Evaluating Site and Soil Assessment Reports for On-site Wastewater Systems*. A one-day training course held in Fairfield, Sydney. Centre for Environment Training, Cardiff Heights NSW. March 2002.

Patterson, R.A. (2003). *Nitrogen in Wastewater and its Role in Constraining On-Site Planning*. In Patterson & Jones (Eds.) Proceedings of On-site '03 Conference: *Future Directions for On-site Systems: Best Management Practice*. Lanfax Laboratories, Armidale.

Standards Australia / Standards New Zealand (2012*). AS/NZS 1547:2012 On-site Domestic-wastewater Management*.

FIGURES



0 80 120 160

Horizontal Scale (metres) 1:4000

EARTH WATER CONSULTING

LEGEND

- Property Boundary
- Contour (10m)
- Drainage Alignment
- Existing Building

TITLE: Site Location			PROJECT: LCA for 37 Campbell Close, Korora		CLIENT: Darren Philp
FIGURE: Figure 1					
SHEET: 1 OF 1	ISSUE: A	AUTHOR: SD	DATE: 21/8/23	SCALE: 1:4000	PROJECT: 2223-213

3
DP1130767

COAST

ROAD

12
DP748

2
6514m2

1
5031m2

"A"

"B"

8
DP1152823

7
DP1152823

1
DP1186911

11
DP748534

CAMPBELL CLOSE

WT

Shed

BE
400sqm

37.45
36.57
85.18
33.86
29.59
12.44
48.39
58.31
14.71
A24.4
17.4
39.4
(83.735)
49.13
14.4
16
167.465
12.99
18.78
43.28
(83.73)
26.46
(7.56)
5
9
44
30

0 20 40
Horizontal Scale (metres) 1:800

LEGEND

Property Boundary

Proposed Subdivision Boundary

Proposed Building Envelope

Existing Building

EARTH WATER CONSULTING

TITLE: Proposed Development Layout			FIGURE: Figure 2
			SHEET: 1 OF 1 / ISSUE: A
PROJECT: LCA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:800	PROJECT: 2223-213

0 20 40

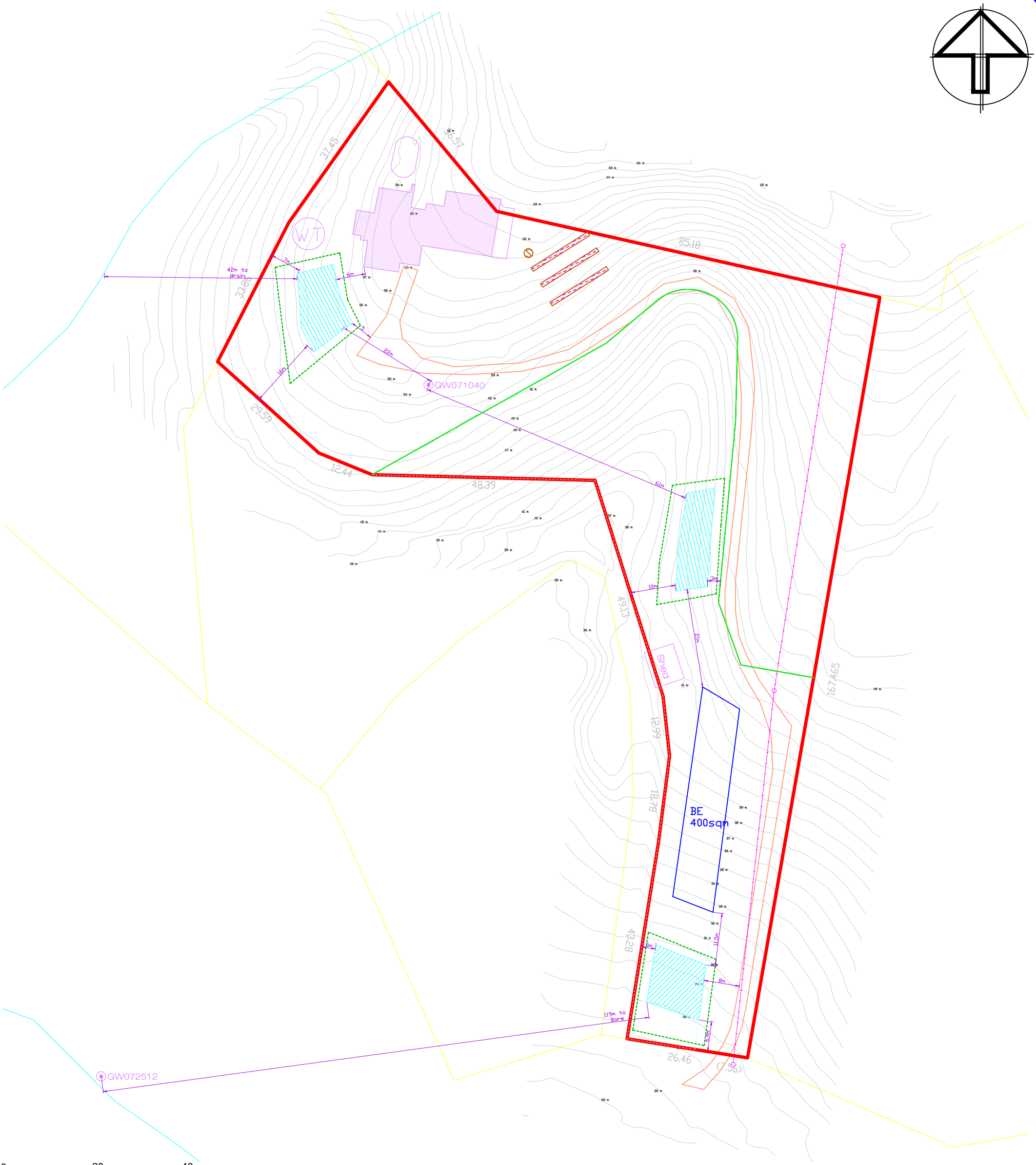
Horizontal Scale (metres) 1:800

LEGEND

- Property Boundary
- Proposed Subdivision Boundary
- Proposed Building Envelope
- Drainage Alignment
- Contour Line (1m)
- Driveway
- Powerline
- Existing Building
- Existing OSMS
- Slope % — Slope Direction and Extent
- Approximate Borehole Location

EARTH WATER CONSULTING

TITLE: Existing Site Layout			FIGURE: Figure 3
			SHEET: 1 OF1 ISSUE: A
PROJECT: LCA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:800	PROJECT: 2223-213



EARTH WATER CONSULTING

TITLE: Recommended Effluent Management Areas			FIGURE: Figure 4
			SHEET: 1 OF1 ISSUE: A
PROJECT: LCA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:800	PROJECT: 2223-213

APPENDIX A

Soil Borelog

Borehole No:	**BH1**
Logged by:	RL
Drilling date:	28/08/2023
Drilling method:	Power Auger
Borehole location:	Figure 2
Borehole coords:	513629, 6654206

Project ref:	2223-213
Client:	Tracee Miller
Address:	37 Campbell Close, Korora

PROFILE DESCRIPTION

Depth (m)	Sampling depth/name	Graphic Log	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1			A1	Clay Loam	Strong	Brown	Nil	5 - 10%	SM	Topsoil
0.2										
0.3			B1	Light Clay	Strong	Bright Brown	Nil	< 5%	SM	Residual
0.4										
0.5										
0.6	S									
0.7										
0.8										
0.9										
1.0			B2	Silty Clay	Strong	Orange	Light Yellow Orange	< 5%	SM	Grading to extremely weathered bedrock
1.1										
1.2										
1.3			Borehole terminated at 1.2m							
1.4										
1.5										

Moisture condition

D	Dry	M	Moist	W	Wet / saturated
SM	Slightly moist	VM	Very moist		

APPENDIX B

WASTEWATER DISPOSAL SOIL ASSESSMENT

1 sample supplied by Earth Water Consulting Pty Limited on 25/2/2022 - Lab Job No. K
3582 Analysis requested by Strider Duerinckx. - **Your Project: 2122-71**
PO Box 50 BELLINGEN NSW 2454

	SAMPLE 1 **BH1 0.6-0.8**
Job No.	*K3582/1*
Description	Medium Clay
Moisture Content (% moisture)	21
Emerson Aggregate Stability Test (SAR 5 Solution) note 12	EAST Class 3/6, Slake 3 see note 12
Soil pH (1:5 $CaCl_2$)	4.40
Soil Conductivity (1:5 water dS/m)	0.026
Soil Conductivity (as EC_e dS/m) note 10	0.228
Native NaOH Phosphorus (mg/kg P)	<0.05

Residual phosphorus remaining in solution from the initial phosphate phosphorus	
Initial Phosphorus concentration (ppm P)	**33.6**
72 hour - 3 Day (ppm P)	15.58
120 hour - 5 Day (ppm P)	15.49
168 hour - 7 Day (ppm P)	14.54
Equilibrium Phosphorus (ppm P)	14.15

EXCHANGEABLE CATIONS	
Calcium (cmol+/kg)	1.74
Magnesium (cmol+/kg)	1.16
Potassium (cmol+/kg)	0.36
Sodium (cmol+/kg)	0.10
Aluminium (cmol+/kg)	1.49
Hydrogen (cmol+/kg)	0.00
ECEC (effective cation exchange capacity)(cmol+/kg)	4.8
Exchangeable Calcium %	35.8
Exchangeable Magnesium %	23.9
Exchangeable Potassium %	7.4
Exchangeable Sodium % (ESP)	2.1
Exchangeable Aluminium %	30.8
Exchangeable Hydrogen %	0.0
Calcium/ Magnesium Ratio	1.50

Notes:

1: ECEC = Effective Cation Exchange Capacity = sum of the exchangeable Mg, Ca, Na, K, H and Al

2: Exchangeable bases determined using standard Ammonium Acetate extract (Method 15D3) with no pretreatment for soluble salts. When Conductivity ≥0.25 dS/m soluble salts are removed (Method 15E2).

3. ppm = mg/kg dried soil
4. Insitu P determined using 0.1M NaOH and shaking for 24 hrs before determining phosphate
5. Soils were crushed using a ceramic grinding head and mill; five 1g subsamples of each soil were used to which 40ml of 0.1M NaCl with Xppm phosphorus was added to each. The samples were shaken on an orbital shaker
6. Exchangeable sodium percentage (ESP) is calculated as sodium (cmol+/kg) divided by ECEC
7. All results as dry weight DW - soils were dried at 6OC for 48hrs prior to crushing and analysis.
8. Phosphorus Capacity method from Ryden and Pratt, 1980.
9. Aluminium detection limit is 0.05 cmol+/kg; Hydrogen detection limit is 0.1 cmol+/kg. However for calculation purposes a value of 0 is used.
10. For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm; EC_e conversions: sand loam 14, loam 9.5; clay loam 8.6; heavy clay 5.8
11. 1 cmol+/kg = 1 meq/100g
12. Emerson Aggregate Stability Test (EAST) for Wastewater applications (see Sheet 3 - Patterson, 2015). MEAT Class 1: Slaking, complete dispersion; Class 2: Slaking, some dispersion; Class 3-6: Slaking 1 slight to 3 complete, No dispersion; Class 7: No slaking, yes swelling; Class 8: No slaking, no swelling.
13. Analysis conducted between sample arrival date and reporting date.
14. .. Denotes not requested.
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Tel. 02 6620 3678, website: scu.edu.au/eal

Checked:.....

PHOSPHORUS SORPTION TRIAL

1 sample supplied by Earth Water Consulting Pty Limited on 25/2/2022 - Lab Job No. K
3582 Analysis requested by Strider Duerinckx. - Your Project: 2122-71

Calculations for Equilibrium Absorption Maximum for Soil provided

I.D.	JOB NO.	Equilibrium P mg P/L (in solution)	Added P mg P/L	P Sorb at Equil. mg P/kg	Native P mg P/kg	Equilibrium P Sorption Level µg P/g soil	Divide Ø (from Table)	Equilibrium Absorption Maximum (B) µg P/g soil
BH1 0.6-0.8	**K3582/1**	14.2	33.63	779	0	779	0.83	**940**

Calculations for phosphorus sorption capacity

	JOB NO.	Equilibrium Absorption Maximum (B) µg P/g soil	multiply by theta of wastewater to be applie (=X)	minus the native P (=Y)	**kg P sorption / hectare (to a depth of 15cm)** (1.95 is a correction factor for density, etc)	**kg P sorption / hectare (to a depth of 100cm)** (1.95 is a correction factor for density, etc)
BH1 0.6-0.8	*K3582/1*	940	(=B x theta)	(=X -native P)	(=Y x 1.95)	(=Y x 1.95 x 100/15)

EXAMPLE 1 - Calculations for phosphorus sorption capacity using a wastewater phosphorus of 15mg/L P

	JOB NO.	Equilibrium Absorption Maximum (B) µg P/g soil	multiply by theta of wastewater to be applie (ie. 0.84)	minus the native P (=Y)	**kg P sorption / hectare (to a depth of 15cm)** (1.95 is a correction factor for density, etc)	**kg P sorption / hectare (to a depth of 100cm)** (1.95 is a correction factor for density, etc)
BH1 0.6-0.8	*K3582/1*	940	790	790	**1,540**	**10,268**

Checked:.....

APPENDIX C

Nutrient Balance

Proj Ref: 2223-213

Site Address: 37 Campbell Close, Korora

Notes:

INPUT DATA

Hydraulic Load		900	L/Day	
Effluent N Concentration		30	mg/L	
% Lost to Soil Processes		0.2	Decimal	
Total N Loss to Soil		5400	mg/day	
Effluent P Concentration		12	mg/L	
Design Life of System		50	yrs	
Crop N Uptake	250	kg/ha/yr =	68	$mg/m^2/day$
Crop P Uptake	25	kg/ha/yr =	7	$mg/m^2/day$
P-sorption analytical result in soil		15640	kg/ha	
% of Predicted P-sorp		0.5	Decimal	

Nitrogen Balance

Nitrogen uptake ability in vegetation	68	$mg/m^2/day$
Nitrgen loading in wastewater	21600	mg/day
Area required for nitrogen	**315**	m^2

Phosphorus Balance

P adsorbed	0.782	kg/m^2
P uptake	0.125	kg/m^2
P generated	197.1	kg
Area required for Phosphorus	**217**	m^2

Nominated Area Water Balance & Storage Calculations

Site Address: **37 Campbell Close, Korora**

Proj Ref: 2223-213

Notes:

Flow Allowance		150	l/p/d
No. of bedrooms		4	bdr
Occupancy		1.5	p/room
Design Wastewater Flow	Q	900	L/day
Design Loading Rate	DLR	12.0	mm/day
Surface Slope		10-30	%
Depth to Limiting Layer		>61	cm
Crop Factor	C	0.6-0.8	unitless
Target Linear Loading Rate	LLR	42	L/m/day
Retained Rainfall Coefficient	RRc	0.8	untiless
Void Space Ratio	V	0.3	unitless
Nominated Land Application Area	N	84	sqm
Trench/Bed wetted thickness	Ww	0.15	m
Rainfall Data	Coffs Harbour Rainfall Data (monthly median)		
Evaporation Data	Coffs Harbour Evap Data (monthly average)		

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Median Rainfall	R	\	mm/month	151.2	179	205.1	135.9	117.4	90	54.3	40.7	35.4	74.7	130.4	114.1	1612.2
Average Evaporation	E	\	mm/month	192.2	156.8	148.8	117	86.8	69	77.5	105.4	135	161.2	171	192.2	
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.70	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	82	61	41	47	63	95	113	137	154	**1189.94**
Percolation	B	DLRxD	mm/month	372.0	336	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0	**4380.0**
Outputs		ET+B	mm/month	525.8	461.44	491.0	441.9	432.8	401.4	418.5	435.2	454.5	484.8	496.8	525.8	**5569.9**
INPUTS																
Retained Rainfall	RR	R*RRc	mm/month	120.96	143.2	164.08	108.72	93.92	72	43.44	32.56	28.32	59.76	104.32	91.28	**1062.56**
Effluent Irrigation	W	(QxD)/L	mm/month	332.1	300.0	332.1	321.4	332.1	321.4	332.1	332.1	321.4	332.1	321.4	332.1	**3910.7**
Inputs		RR+W	mm/month	453.1	443.2	496.2	430.1	426.1	393.4	375.6	364.7	349.7	391.9	425.7	423.4	**4973.3**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month		0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-242.2	-60.8	17.3	-39.2	-22.3	-26.6	-143.1	-235.1	-349.2	-309.8	-236.8	-341.1	**-509.8**
Cumulative Storage	M		mm	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**17.3**
Maximum Bed Storage Depth for Area	BS		mm	**17.28**	Is the calculated storage acceptable?			Yes, storage is conservative								

Nominated trench width	1.2	m	
Total length based on nominated width	70.0	m	
No. of beds	6		
Individual bed lengths	11.7	m	
Individual Bed footprints	14.0	m^2	
Spacing between beds	1	m	
Width of bed area	12.2	m	
Total bed area	142	m^2	
Calculated LLR	46	L/m/day	Calculated LLR < Target LLR? No, requires alt bed config. Redesign!
Nutrient uptake zone	254	2m buffer nutrient uptake allowance	

APPENDIX D

AS1547:2012 Table R1 and R2 Buffer Risk Assessment

Client Darren Philp
Property 37 Campbell Close, Korora
Job Number 2223-213

Feature	Setback Distance Range (m)	Constraint	Constraint Scale			Risk Assessment				Adopted Buffer Distance	
			Low Constraint	High Constraint	Applicable Constraint	Low = 1 Point	Mod = 2 Points	High = 3 Points	Overall Risk Rating	Accept Buffer (m)	Minimum Available Buffer (m)
Groundwater Bores	30-50	Microbial Quality of Effluent	Secondary treated effluent with disinfection	Primary treated effluent	Secondary	x			Low	15	22
		Groundwater	Category 5 and 6 soils, low resource/environmental value	Category 1 and 2 soils, gravel aquifers, high resource/ environmental value	Cat5 soil, domestic bores	x					
		Geology and Soils	Cateogry 3 and 4 soils, low porous regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, highly porous regolith	Cat5 soil, low porous regolith		x				
		Application Method	Drip irrigation or subsurface application of effluent	Surface/above ground application of effluent	Subsurface	x					

Minimum Lot Size Analysis for 37 Campbell Close, Korora

22 September 2023

For: Darren Philp

Authored by: Strider Duerinckx

Ref	Ver	Date	Distribution
2223-213-05	A	22/9/23	Client, Planner

1 Table of Contents

Tables in report

Figures

Appendices

1 Introduction

Earth Water Consulting Pty Limited (EWC) were engaged by Darren Philp to undertake a wastewater Minimum Lot Size (MLS) analysis for the proposed subdivision of 37 Campbell Close, Korora (Lot 1 DP1130767) (the 'Site'), as shown on Figure 1.

The purpose of the MLS is to confirm that a reduction in the minimum lot size to ~5,000m^2 for zoning would be suitable to allow sustainable wastewater application.

2 Proposed Development

Based on plans of the proposed subdivision layout (Survey Ref: 15972 Newnham Karl Weir and Partners Pty Ltd. Plan of Proposed Subdivision. Dated: February 2023), it is understood that the Site is proposed to be subdivided from one into two (2) lots. Proposed Lot 2 will include the existing dwelling and shed and be approximately 6,514m^2 in area, and Proposed Lot 1 will have a new building entitlement and be approximately 5,031m^2 (Figure 2).

A wastewater Land Capability Assessment (LCA) for Proposed Lots 1 and 2 was detailed previously (Ref: EWC 2023) and this MLS report compliments the LCA. The LCA proposed treatment to a secondary standard and subsurface application into an appropriately sized absorption bed field for each Lot.

3 Scope of Work

The MLS was undertaken by Strider Duerinckx of EWC. The study methodology included:

- Reviewing nearby lots, calculation of required developed areas, undevelopable areas, and effluent available areas on each lot;
- Modelling of typical effluent application footprints and mapping on the proposed lot; and
- Provision of this minimum lot size assessment and preparation of a MLS document, including site plans, describing the results and recommendations from our investigations.

4 Minimum Lot Size (MLS) Analysis

4.1 Methodology

When considering the suitability for a lot to sustainably manage wastewater on-site, we typically refer to 'available effluent management area'. This broadly refers to available areas (i.e. not built out or used for a conflicting purpose) where OSMS will not be unduly constrained by site and soil characteristics. Available area on a developed a lot is determined by the following factors:

- total building area (including dwellings, sheds, pools etc.) which includes a defined building envelope but may extend beyond with additional improvements to a property, such as driveways and paths (impervious areas), and gardens/vegetated areas unsuitable for effluent reuse;
- dams, intermittent and permanent watercourses running through lots;
- maintenance of appropriate buffer distances from property boundaries, buildings, driveways and paths, dams and watercourses;

- flood prone land;
- excessive slope;
- excessively shallow soils;
- heavy (clay) soils with low permeability;
- excessively poor drainage, shallow groundwater and/or stormwater run-on; and
- excessive shading by vegetation.

The residual areas (areas not otherwise occupied by improvements, buffers, restrictions or conservation vegetation) were then calculated for the selected lots (Figure 4), and the available area compared to the wastewater envelope required.

4.2 MLS Buffer Distances

Buffer distances from EMAs are typically enforced to minimise risk to public health, maintain public amenity and protect sensitive environments. Generally, adopted environmental buffers for secondary treated effluent land applied into absorption trenches/ beds based on DLG (1998) are:

- 250m from domestic groundwater bores;
- 100m from permanent watercourses;
- 40m from intermittent watercourses and dams;
- 6m from downslope property boundaries and 3m from upslope property boundaries; and
- 6m from downslope buildings and 3m from upslope buildings.

In addition, ASNZS1547:2012 provides suggested risk assessable buffer distances that include buffers to inground water tanks and swimming pools and cuttings. In the comparative lot assessment by EWC these land uses were also buffered.

4.3 MLS Comparative Lots Assessed

Four, nearby R5 zoned, representative lots were selected that have already been subdivided to similar lot area (Figure 3).

Table 1: Comparative Lots Assessed

MLS No.	Lot	DP	Address	Lot Area (m^2)
MLS 1	1	1161759	15 + 15B Campbell Close, Korora	3,785
MLS 2	1	1146846	18 Cambell Close, Korora	3,996
MLS 3	7	1152823	33 Campbell Close, Korora	4,986
MLS 4	8	1152823	35 Campbell Close, Korora	5,000

The properties typically included a dwelling, garage/shed, landscaped trees, shrubs and gardens, driveways, water tanks, and recreational space. This development style will be similar to that proposed for the Site and therefore minimum lot size and development potential should be consistent.

From the sample selection of lots investigated (Table 2), two of the lots are smaller than the nominated minimum 5,000m^2 available lot space, being 3,785-3,996m^2, whilst two are of similar area at 4,986-5,000m^2.

In order to assess the required Effluent Management Area (EMA) footprint, hydraulic and nutrient modelling for secondary treated effluent was undertaken and assumed to be utilised on the MLS lots (Appendix A). The modelling suggests that 315m^2 is the required available effluent application areas to accommodate the active EMA, with an additional 315m^2 as a reserve area.

Table 2: Minimum Lot Size Assessment Results

MLS No.	Lot Area (m^2)	Total Restricted Area (m^2)	Available Eff. Application Area (m^2)	Percent of Lot Available for Eff. Disposal (%)	>630m^2 Area Available for Secondary Treatment and EMA?
1	3,785	2,915	870	22.9	Yes
2	3,996	2,919	1,077	26.9	Yes
3	4,986	2,913	2,073	41.5	Yes
4	5,000	3,582	1,418	28.4	Yes

4.4 Discussion

A comparison of nearby properties suggests that:

- Percent of lot area available for effluent disposal is variable depending on site and soil constraints, ranging between 22.9-41.5%, equating to approximately 870-2,076m^2 available area for effluent land application;
- The available area in the two smaller lots of ~4,000m^2 is broken down into 2-3 smaller footprints, whilst the two larger lots have available EMAs in single footprints. Splitting wastewater into smaller areas poses engineering issues to evenly distribute across the total field, and as such a single larger footprint is preferred;
- The MLS analysis suggests that 4,000m^2 is a limiting lot area based on site and soil constraints in the Korora area, whilst 5,000m^2 provides sufficient available area in contiguous footprints;
- The minimum available surface area of 5,000m^2 is considered suitable for the proposed subdivision of the Site.

5 Conclusions & Recommendations

Having undertaken a MLS assessment for the proposed subdivision of 37 Campbell Close, Korora, EWC consider that there is the opportunity for a reduction in the minimum lot size for the zoning down to 5,00m^2.

6 References

Coffs Harbour City Council (2015) *On-site Sewage Management Strategy 2015*, Coffs Harbour.

Department of Local Government et al. (1998). *Environment & Health Protection Guidelines: On-site Sewage Management for Single Households*.

EWC (2023*). Land Capability Assessment for 37 Campbell Close, Korora*. Ref: 2223-213-02, dated 8 September 2023.

Standards Australia / Standards New Zealand (2012*). AS/NZS 1547:2012 On-site Domestic-wastewater Management*.

FIGURES

0 80 120 160

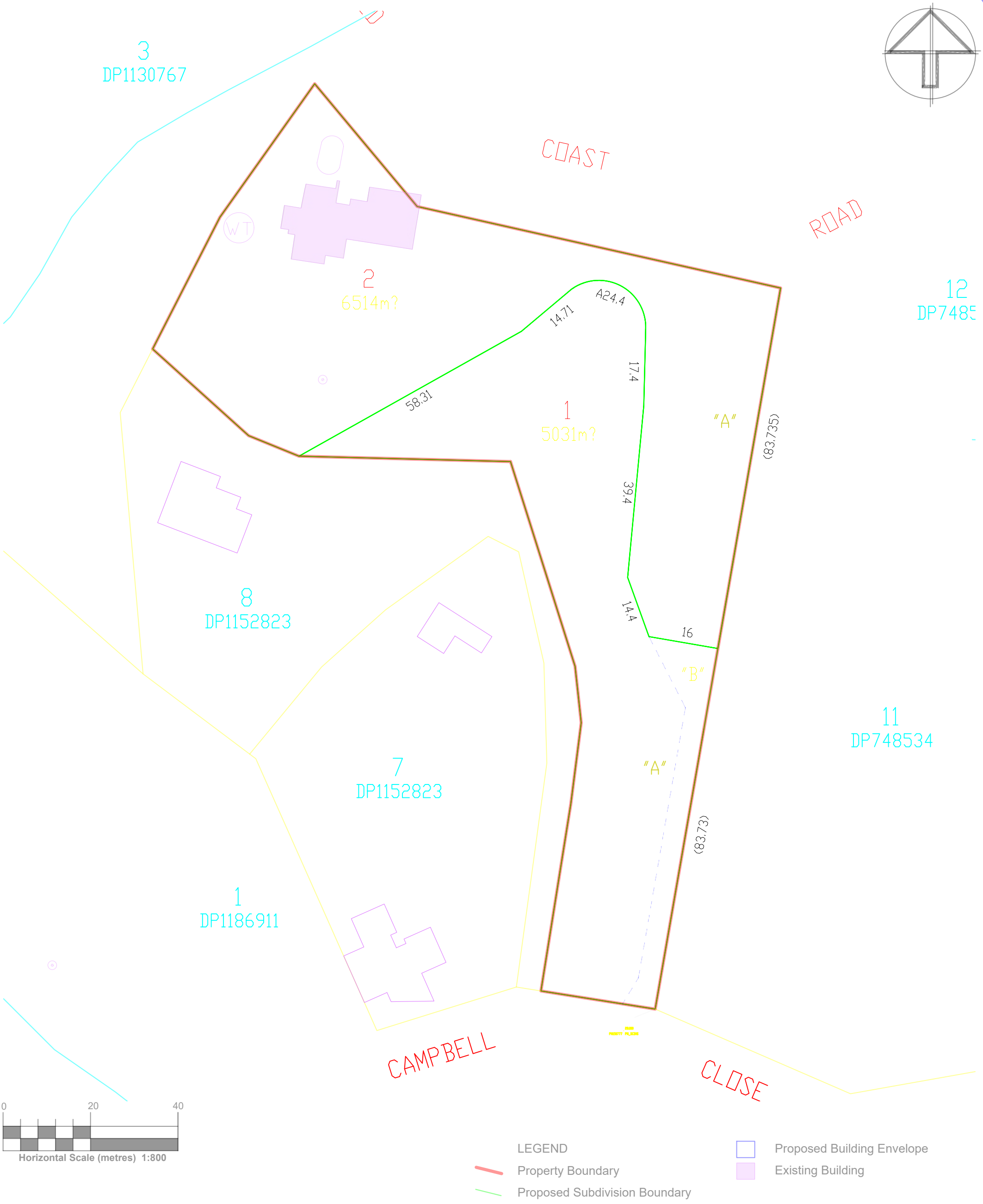
Horizontal Scale (metres) 1:4000

EARTH WATER CONSULTING

LEGEND

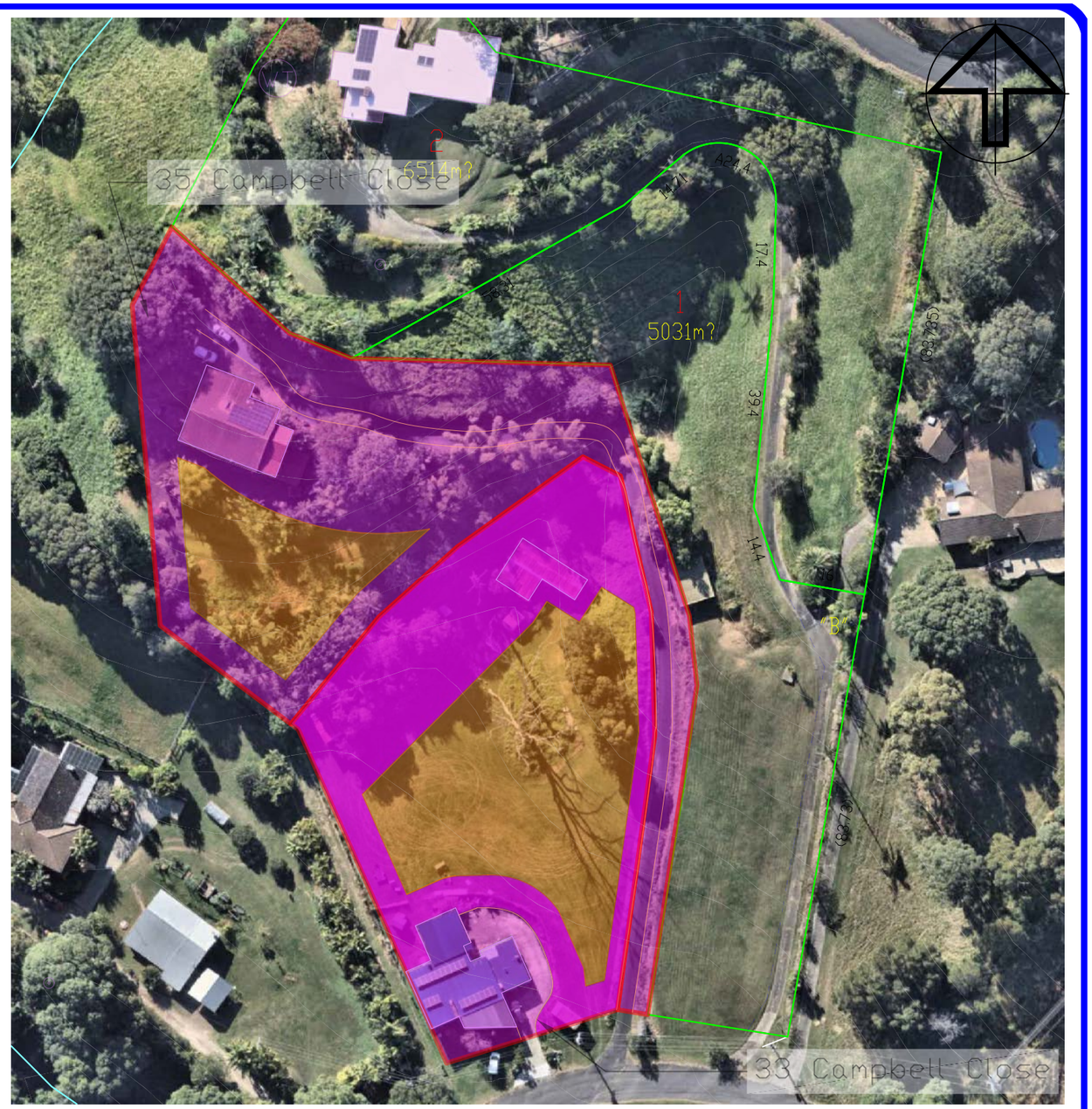
- MLS Property Boundary
- Subdivison Boundary
- Contour (10m)
- Drainage Alignment

TITLE: Site Location			PROJECT: MLS for 37 Campbell Close, Korora		CLIENT: Darren Philp
FIGURE: Figure 1					
SHEET: 1 OF 1	ISSUE: A	AUTHOR: SD	DATE: 22/9/23	SCALE: 1:4000	PROJECT: 2223-213



EARTH WATER CONSULTING

TITLE: Proposed Development Layout			FIGURE: Figure 2
			SHEET: 1 OF1 ISSUE: A
PROJECT: LCA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:800	PROJECT: 2223-213



0 25 50

Horizontal Scale (metres) 1:1000

EARTH WATER CONSULTING

LEGEND

- MLS Property Boundary
- Subdivison Boundary
- EMA Available
- EMA Restricted

TITLE: Comparative MLS Constraints			FIGURE: Figure 3
			SHEET: 1 OF1 ISSUE: A
PROJECT: MLS for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 22/9/23	SCALE: 1:1000	PROJECT: 2021-213

APPENDIX A

Nominated Area Water Balance & Storage Calculations

Site Address: **Campbell Close, Korora - MLS**

Proj Ref: 2223-213

Notes:

Flow Allowance		150	l/p/d
No. of bedrooms		4	bdr
Occupancy		1.5	p/room
Design Wastewater Flow	Q	900	L/day
Design Loading Rate	DLR	12.0	mm/day
Surface Slope		10-30	%
Depth to Limiting Layer		>61	cm
Crop Factor	C	0.6-0.8	unitless
Target Linear Loading Rate	LLR	42	L/m/day
Retained Rainfall Coefficient	RRc	0.8	untiless
Void Space Ratio	V	0.3	unitless
Nominated Land Application Area	N	84	sqm
Trench/Bed wetted thickness	Ww	0.15	m
Rainfall Data	Coffs Harbour Rainfall Data (monthly median)		
Evaporation Data	Coffs Harbour Evap Data (monthly average)		

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Median Rainfall	R	\	mm/month	151.2	179	205.1	135.9	117.4	90	54.3	40.7	35.4	74.7	130.4	114.1	1612.2
Average Evaporation	E	\	mm/month	192.2	156.8	148.8	117	86.8	69	77.5	105.4	135	161.2	171	192.2	
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.70	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	82	61	41	47	63	95	113	137	154	**1189.94**
Percolation	B	DLRxD	mm/month	372.0	336	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0	**4380.0**
Outputs		ET+B	mm/month	525.8	461.44	491.0	441.9	432.8	401.4	418.5	435.2	454.5	484.8	496.8	525.8	**5569.9**
INPUTS																
Retained Rainfall	RR	R*RRc	mm/month	120.96	143.2	164.08	108.72	93.92	72	43.44	32.56	28.32	59.76	104.32	91.28	**1062.56**
Effluent Irrigation	W	(QxD)/L	mm/month	332.1	300.0	332.1	321.4	332.1	321.4	332.1	332.1	321.4	332.1	321.4	332.1	**3910.7**
Inputs		RR+W	mm/month	453.1	443.2	496.2	430.1	426.1	393.4	375.6	364.7	349.7	391.9	425.7	423.4	**4973.3**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month		0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-242.2	-60.8	17.3	-39.2	-22.3	-26.6	-143.1	-235.1	-349.2	-309.8	-236.8	-341.1	**-509.8**
Cumulative Storage	M		mm	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**17.3**
Maximum Bed Storage Depth for Area	BS		mm	**17.28**	Is the calculated storage acceptable?			Yes, storage is conservative								

Nominated trench width	1.2	m
Total length based on nominated width	70.0	m
No. of beds	6	
Individual bed lengths	11.7	m
Individual Bed footprints	14.0	m^2
Spacing between beds	1	m
Width of bed area	12.2	m
Total bed area	142	m^2

Nutrient Balance

Proj Ref: 2223-213

Site Address: Campbell Close, Korora - MLS

Notes:

INPUT DATA

Hydraulic Load		900	L/Day	
Effluent N Concentration		30	mg/L	
% Lost to Soil Processes		0.2	Decimal	
Total N Loss to Soil		5400	mg/day	
Effluent P Concentration		12	mg/L	
Design Life of System		50	yrs	
Crop N Uptake	250	kg/ha/yr =	68	$mg/m^2/day$
Crop P Uptake	25	kg/ha/yr =	7	$mg/m^2/day$
P-sorption analytical result in soil		10268	kg/ha	
% of Predicted P-sorp		0.75	Decimal	

Nitrogen Balance

Nitrogen uptake ability in vegetation	68	$mg/m^2/day$
Nitrgen loading in wastewater	21600	mg/day
Area required for nitrogen	**315**	m^2

Phosphorus Balance

P adsorbed	0.7701	kg/m^2
P uptake	0.125	kg/m^2
P generated	197.1	kg
Area required for Phosphorus	**220**	m^2

Bushfire Assessment Report

37 Campbell Close Korora, NSW 2450

Prepared by Anthony Hulbert BSc MFireSafeEng MIFireE

Fire Engineer

APH Fire / Fire Engineering and More

Ref: APH 2909/23 | Version 1 / 29/09/23 | Version 2 29/10/23

ABN 12427393792

NSW Reg. no. BDC2216

Revision History

Revision No.	Prepared By	Description	Date
1	Anthony Hulbert	Bushfire Assessment Report	29/09/23
2	Anthony Hulbert	Bushfire Assessment Report	29/10/23

Document Acceptance

Action	Name	Signature	Date
Prepared by	Anthony Hulbert		29/09/23
Reviewed by			
Verified by			
Approved by	Anthony Hulbert		29/09/23
On behalf of	Darren Philp 37 Campbell Close Korora NSW 2450		

Table of Contents

1.0 General Description

A site assessment was carried out on 30th of September 2023 for the purpose of preparing a Rural Residential Subdivision and Infill Development Assessment Report required by the Environmental Planning and Assessment Act 1979 and Rural Fires Act 1997 to enhance bush fire protection through the development assessment process and submitted under Section 4.14 of the EP&A Act for the proposed development.

The aim of this report will be to establish whether the development application is satisfied to the specifications and requirements of the Planning for Bushfire Protection 2019 (PBP 2019). Ultimately the building will be designed with regard to these threats and constraints.

The proposed development of Lot 1 (DP 1130767) at 37 Campbell Close Korora, will be a Class 1 subdivision development located in the rural area of Korora; the land zoning is Large Lot Residential (R5). The site is surrounded by a Category 3 bushfire prone area which requires a 30m buffer zone. There are also pockets of Category 1 and 2 nearby. See figures 1 and 2 below.

The Bushfire Prone Land Mapping revealed the area of the proposed development is near Category 1, 2 and 3 bushfire prone land. Category 1 is considered the highest bushfire risk, greater than Category 2 and Category 3. The Category is represented as red on the bush fire prone land map and requires 100m buffer zone. Category 1 vegetation is considered the vegetation with the highest combustibility and likelihood of forming a fully developed fire.

2.0 PBP 2019 Assessment

The procedure adopted for the site assessment follows the site assessment methodology of Appendix 1 in ***Planning for Bushfire Protection-2019 (PBP-2019)***. The methodology is outlined below.

A1.1 Application
Identify APZs ➢ Determine vegetation formation in all directions around the building to a distance of 140 metres (refer to A1.2); ➢ Determine the effective slope of the land from the building for a distance of 100 metres (refer to A1.4 and A1.5); ➢ Determine the relevant FFDI for the council area in which the development is to be undertaken (refer to A1.6); and ➢ Match the relevant FFDI, vegetation formation and effective slope to determine the APZ required from the appropriate table of this Appendix (refer to A1.7). **Identify construction requirements** ➢ Follow steps 1 - 3 above; ➢ Determine the separation distance by measuring from the edge of the unmanaged vegetation to the closest external wall; ➢ Match the relevant FFDI, appropriate vegetation, distance and effective slope to determine the appropriate BAL using the relevant tables at the end of this section (A1.12.5, A1.12.6 and A1.12.7); and ➢ Refer to Section 3 in AS 3959 and NASH Standard to identify appropriate construction requirements for the calculated BAL.

3.0 Vegetation Assessment

Vegetation Category 1

By definition - Vegetation Category 1 is considered to be the highest risk for bushfire. It is represented as red on the bushfire prone land map and will be given a 100m buffer (see figure 2). This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 1 consists of:

- Areas of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations.

Vegetation Category 2

By Definition - Vegetation Category 2 is a lower bushfire risk than Category 1 and Category 3 but higher than the excluded areas. It is represented as tan on a bush fire prone land map and will be given a 30 metre buffer. This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. Vegetation Category 2 consists of:

- Rainforests.
- Lower risk vegetation parcels. These vegetation parcels represent a lower bush fire risk to surrounding development and consist of:
  - Remnant vegetation;
  - Land with ongoing land management practices that actively reduces bush fire risk. These areas must be subject to a plan of management or similar that demonstrates that the risk of bush fire is offset by strategies that reduce bush fire risk; AND include:
    - Discrete urban reserve/s;
    - Parcels that are isolated from larger uninterrupted tracts of vegetation and known fire paths;
    - Shapes and topographies which do not permit significant upslope fire runs towards development;
    - Suitable access and adequate infrastructure to support suppression by firefighters;
    - Vegetation that represents a lower likelihood of ignitions because the vegetation is surrounded by development in such a way that an ignition in any part of the vegetation has a higher likelihood of detection.

Vegetation Category 3

Vegetation Category 3 is considered medium bushfire risk vegetation. It is higher in bush fire risk than category 2 (and the excluded areas) but lower than Category 1. It is represented as dark orange on a Bush Fire Prone Land map and will be given a 30 metre buffer. This category consists of:

- Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.

Low Threat Vegetation - Exclusions

Modified landscapes, coastal wetlands and riparian areas vary significantly in structure and composition, but are generally considered as bush fire hazards, with the exception of saline

wetlands. The following exclusions of AS 3959 apply, and are not required to be considered for the purposes of PBP, as detailed below:

- Single areas of vegetation less than 1 hectare in area and greater than 100 metres separation from other areas of Category 1 or 2 vegetation.
- Multiple areas of vegetation less than 0.25 hectares in area and not within 20m of the site, or each other or of other areas of vegetation being classified vegetation.
- Strips of vegetation less than 20 metres in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m of the site or 2 each other, or other areas of vegetation being Category 1, 2 or 3 vegetation.
- Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load, including grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses such as playing areas and fairways, maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens and other non-curing crops, cultivated gardens, arboretums, commercial nurseries, nature strips and windbreaks. Note: 1. Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bush fire attack (recognizable as short cropped grass for example, to a nominal height of 100 mm). 2. A windbreak is considered a single row of planted trees located on a boundary and used as a screen or to reduce the effect of wind on the leeward side of the trees.
- Existing areas of managed gardens and lawns within curtilage of buildings.
- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.

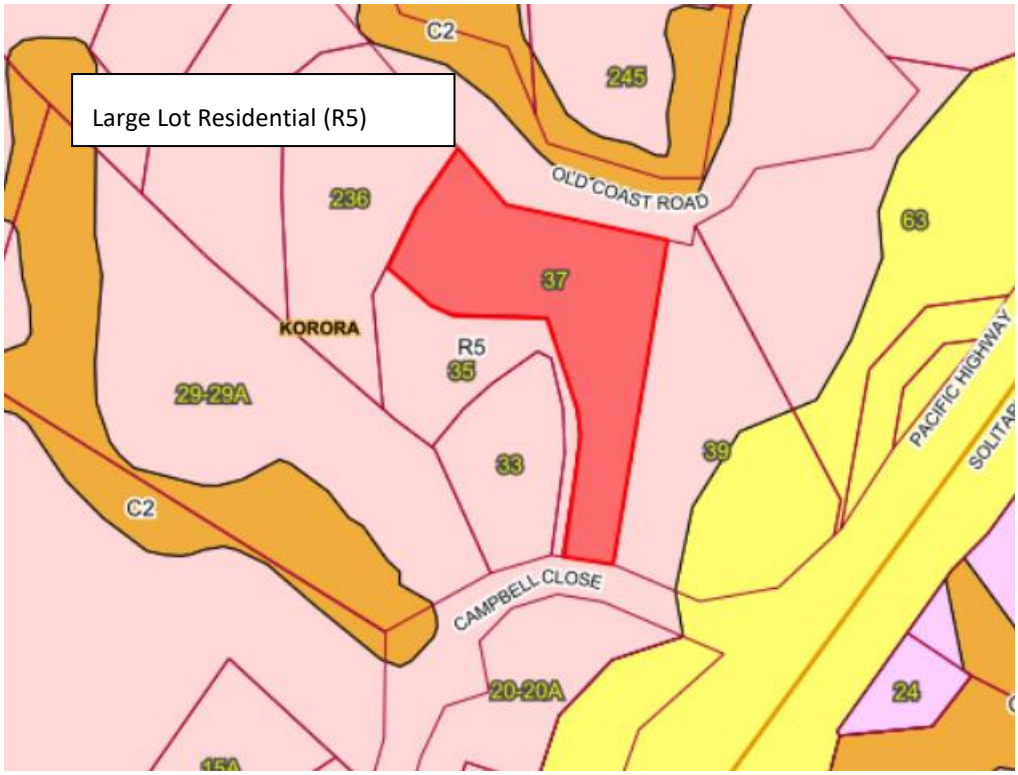


Figure 1: *Local zoning and site location (CHCC)*

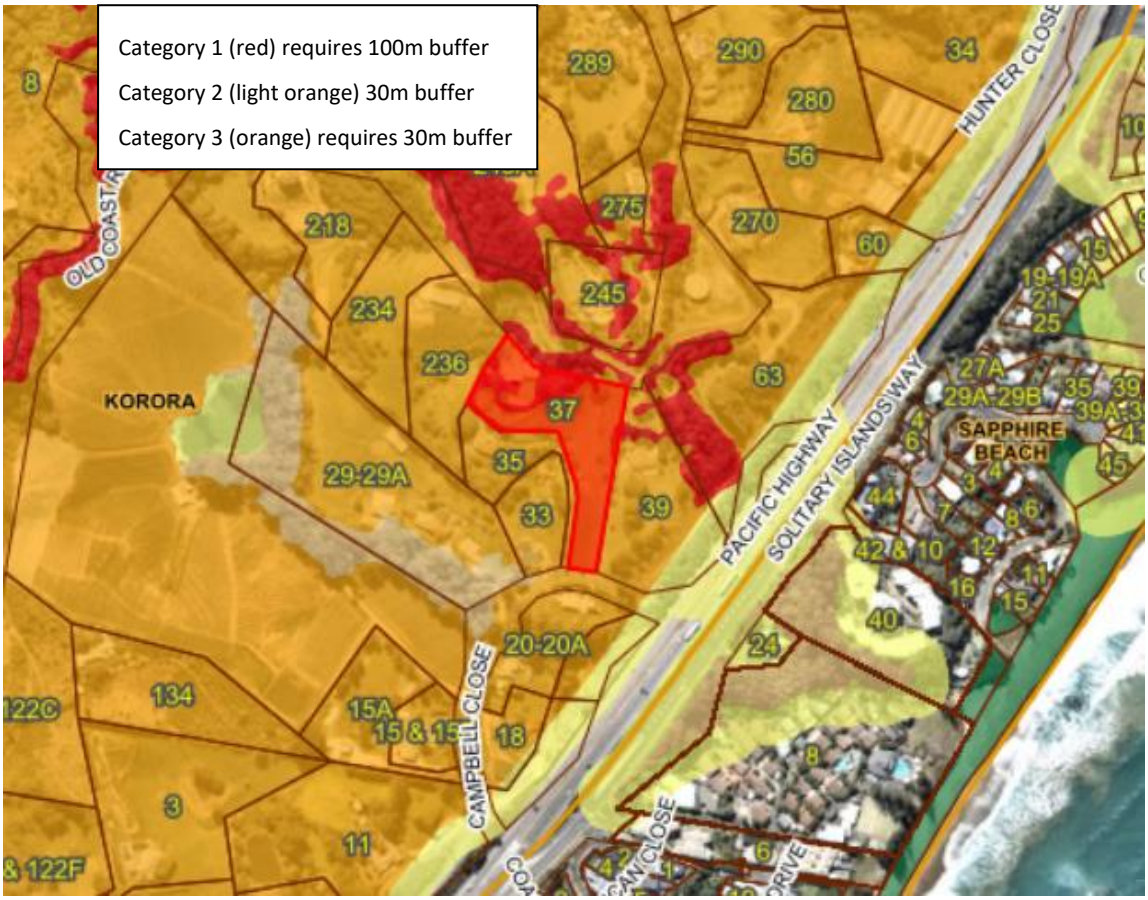


Figure 2: *Bushfire prone land (Category 1, 2 & 3) and site location (CHCC)*

Figure 3: *Aerial view of site and surrounding area (CHCC)*

Figure 4: *Forest vegetation south of site*

Figure 5: *Forest vegetation far southwest and managed land near*

Figure 6: *Managed land east of site and HWY beyond*

Figure 7: *Site location looking north of site*

Figure 8: *Site location and managed land northeast*

Figure 9: *Forest vegetation to the far northwest*

Figure 10: *Forest vegetation to the far north*

Figure 11: *Vegetation to the east and managed land*

Figure 12: *Vegetation west and managed land*

Figure 13: *Site access off Cambell Close*

The vegetation assessment considers the surrounding areas east and west as managed land with the predominant vegetation as remnant forest to the south of the site. The surrounding areas are identified as Category 3 grassland with remnant forest or Category 2 south of site and identified on the bushfire prone map. Category 1 or forest is noted to the far north.

4.0 Slope Assessment

The PBP 2019 Method 1 was utilised to determine the slopes for the rural residential subdivision.

Figure 14: *Slope assessment 1m contour lines*

The slope summary for each elevation of the proposed site is provided below.

4.1 Effective Slope Summary

Elevation	Degrees	Vegetation
North	Up slope or 0 degrees	Forest (far)
South	Downslope or 19 degrees	Remnant (rainforest)
East	Downslope 18 degrees	Grassland (far) & Managed land (near)
West	Downslope 7 degrees	Managed land

5.0 Rural Residential Subdivision & Infill Development Assessment

5.1 Planning for Bushfire Protection 2019 Assessment

The proposed site was assessed through Appendix 1 of the BPB 2019. The FFDI for Korora is 80.

5.1.2 Rural Residential Subdivision

The following bushfire assessment considers Chapter 5 PBP 2019 Table 5.3a Performance Criteria and Acceptable Solutions for Rural Residential Subdivisions.

Intent of measures: to provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact.

Performance criteria and acceptable solution for APZs for residential subdivisions	
Performance Criteria	Acceptable Solution
Asset Protection Zones	
Potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m² for the proposed lots. Table A1.12.3 referenced.	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI. See Conclusion below.
APZs are managed and maintained to prevent the spread of a fire to the building.	APZs are managed in accordance with the requirements of Appendix 4. The APZ will be within the proposed Lots. see Appendix A & B of this report.
The APZ provided within the boundaries and in perpetuity. APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	Part APZs are to be within the lot boundaries with gardens and lawns maintained to IPA, see Appendix B. APZs are located on lands with a slope less than 18 degrees.
Landscaping	
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	➢ landscaping is in accordance with Appendix 4; and ➢ fencing is constructed in accordance with section 7.6 Lawns and gardens are to be maintained as an IPA. See Appendix A and B for IPA APZ requirements.
Access (General Requirements)	
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	➢ property access roads are two-wheel drive, all-weather roads; ➢ perimeter roads are provided for residential subdivisions of three or more allotments;

	➢ subdivisions of three or more allotments have more than one access in and out of the development; ➢ traffic management devices are constructed to not prohibit access by emergency services vehicles; ➢ maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; ➢ all roads are through roads; ➢ dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; ➢ where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; ➢ where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system; and ➢ one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression
The capacity of access roads is adequate for firefighting vehicles.	The capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
There is appropriate access to water supply.	➢ hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; ➢ hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - Fire hydrant installations System design, installation and commissioning; and ➢ there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.
Perimeter Roads	
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	➢ are two-way sealed roads; ➢ minimum 8m carriageway width kerb to kerb; ➢ parking is provided outside of the carriageway width; ➢ hydrants are located clear of parking areas; ➢ are through roads, and these are linked to the internal road system at an interval of no greater than 500m; ➢ curves of roads have a minimum inner radius of 6m; ➢ the maximum grade road is 15 degrees and average grade of not more than 10 degrees; ➢ the road crossfall does not exceed 3 degrees; and ➢ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.
Non-Perimeter Roads	
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	➢ minimum 5.5m carriageway width kerb to kerb; ➢ parking is provided outside of the carriageway width; ➢ hydrants are located clear of parking areas; ➢ roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m;

	➢ curves of roads have a minimum inner radius of 6m; ➢ the road crossfall does not exceed 3 degrees; and ➢ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.
Property Access	
Firefighting vehicles can access the dwelling and exit the property safely.	➢ There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: ➢ minimum 4m carriageway width; ➢ in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay; ➢ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; ➢ provide a suitable turning area in accordance with Appendix 3; ➢ curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; the minimum distance between inner and outer curves is 6m; ➢ the crossfall is not more than 10 degrees; ➢ maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and ➢ a development comprising more than three dwellings has access by dedication of a road and not by right of way. Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.
Water Supplies	
An adequate water supply is provided for firefighting purposes.	➢ reticulated water is to be provided to the development where available; ➢ a static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and ➢ static water supplies shall comply with Table 5.3d.
Water supplies are located at regular intervals; and The water supply is accessible and reliable for firefighting operations.	➢ fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2005; ➢ hydrants are not located within any road carriageway; and ➢ reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
The integrity of the water supply is maintained.	➢ all above-ground water service pipes are metal, including and up to any taps; and

	➢ above-ground water storage tanks shall be of concrete or metal.
Electricity Services	
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	➢ where practicable, electrical transmission lines are underground; ➢ where overhead, electrical transmission lines are proposed as follows: ➢ lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and ➢ no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines. Above ground power lines already exist.
Gas Services	
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Gas facilities shall comply with the following ➢ reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used; ➢ all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; ➢ connections to and from gas cylinders are metal; ➢ polymer-sheathed flexible gas supply lines are not used; and ➢ above-ground gas service pipes are metal, including and up to any outlets.

5.1.3 Conclusion Subdivision Assessment

Building Elevation	Min. distance for BAL < 29 (degrees) Assessment Vegetation	Acceptable Solution (BAL < 29)
North	20m, (upslope or 0 degrees) Forest	Achievable
South (SW)	25m, (downslope 15-20 degrees) remnant (rainforest)	Achievable
East	10m (upslope or 0 degrees) managed land	Achievable
West	8m (5-10 degrees) managed land (includes road easement)	Achievable

The Bushfire Protection Measures (BPMs) for residential and rural residential subdivisions include measures relating to APZs, access to structures and water supply, fire trail access, and provision of water. Electricity and gas services should be provided so that they don't add to the bush fire risk to buildings. All requirements for BPMs that relate to the development must

be provided, unless where specific circumstances apply to render a BPM irrelevant (i.e. no landscaping required).

5.1.4 Residential Infill Assessment

The following bushfire assessment considers Chapter 7 PBP 2019 Table 7.4a Performance Criteria and Acceptable Solutions for Residential Infill Developments.

Intent of measures: to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities.

Performance criteria and acceptable solution for residential development	
Performance Criteria	Acceptable Solution
Asset Protection Zones	
APZs are provided commensurate with the construction of the building; and A defendable space is provided.	To achieve an APZ (< 29kW/m²) the following will be required (Table A1.12.3); NORTH; min. 20m (forest) SOUTH; min. 25m (remnant forest, rainforest) EAST; N/A managed land WEST; N/A managed land Defendable space can be achieved with proposed APZs.
APZs are managed and maintained to prevent the spread of a fire to the building.	APZs are to be formed within the Lot boundaries as IPA. See Appendix B in this report.
The APZ is provided in perpetuity. APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	The APZ will be within the Lot boundaries and maintained as gardens and lawns or as an IPA.
Home-based childcare: the building must not be exposed to radiant heat levels exceeding 29kW/m² (1090K).	N/A
Access	
Firefighting vehicles can access and exit the dwelling the property safety.	At least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road. There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: ➢ minimum 4m carriageway width; ➢ in forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay; a

	➢ minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; ➢ property access must provide a suitable turning area in accordance with Appendix B; ➢ curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; ➢ the minimum distance between inner and outer curves is 6m; ➢ the crossfall is not more than 10 degrees; ➢ maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and ➢ a development comprising more than three dwellings has formalised access by dedication of a road and not by right of way. Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.
The capacity of access roads is adequate for firefighting vehicles.	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.
There is appropriate access to water supply.	➢ Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; ➢ There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.
Firefighting vehicles can access the dwelling and exit the property safely.	➢ at least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road; ➢ There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: ➢ minimum 4m carriageway width; ➢ in forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay; ➢ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; ➢ property access must provide a suitable turning area in accordance with Appendix 3; ➢ curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; ➢ the minimum distance between inner and outer curves is 6m; ➢ the crossfall is not more than 10 degrees; ➢ maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and

	➢ a development comprising more than three dwellings has formalised access by dedication of a road and not by right of way. Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.
Water Supplies	
An adequate water supply is provided for firefighting purposes.	➢ Reticulated water is to be provided to the development, where available; and ➢ a static water supply is provided where no reticulated water is available.
Water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations.	➢ fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; ➢ hydrants are not located within any road carriageway; and ➢ reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005
The integrity of the water supply is maintained.	All above ground water service must be metal/copper including taps.
A static water supply is provided for firefighting purposes in areas where reticulated water is not available.	➢ where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d; ➢ a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet; ➢ ball valve and pipes are adequate for water flow and are metal; ➢ supply pipes from tank to ball valve have the same bore size to ensure flow volume; ➢ 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 4m; ➢ above-ground tanks are manufactured from concrete or metal; ➢ raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959); ➢ unobstructed access can be provided at all times; underground tanks are clearly marked; ➢ tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; ➢ all exposed water pipes external to the building are metal, including any fittings; ➢ where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; ➢ any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005

Electricity Services	
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	➢ where practicable, electrical transmission lines are underground; and ➢ where overhead, electrical transmission lines are proposed as follows: ➢ lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and ➢ no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines. Above electrical transmission lines exist to site.
Gas Services	
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Gas facilities shall comply with the following ➢ reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, the requirements of relevant authorities, and metal piping is used; ➢ all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; ➢ connections to and from gas cylinders are metal; ➢ polymer-sheathed flexible gas supply lines are not used; and ➢ above-ground gas service pipes are metal, including and up to any outlets.
Construction Standards	
The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	➢ BAL is determined in accordance with Tables A1.12.5 to A1.12.7; and ➢ construction provided in accordance with the NCC and as modified by section 7.5 (please see advice on construction in the flame zone). The following setback distances must be achieved and maintained for BAL 29 (Table A1.12.6); **BUILDING ELEVATIONS** NORTH; BAL 19 APZ min. 29-40m SOUTH; BAL 12.5 APZ > 40m EAST; BAL 12.5 managed land WEST; BAL 12.5 managed land See Appendix A & B for APZ requirements.
Proposed fences and gates are designed to minimise the spread of bush fire.	All fences and gates in bushfire prone areas must be of hardwood or non-combustible materials however only non-combustible materials (steel fencing) are acceptable within 6m of a dwelling or in an area with a BAL 29 or greater.
Proposed Class 10a buildings are designed to minimise the spread of bush fire.	There are no construction requirements for sheds, carports and garages greater than 6m from a building otherwise they must be construction in accordance with NCC (Building Code of Australia).

Home-based childcare: the proposed building can withstand bush fire attack in the form of wind, localised smoke, embers and expected levels of radiant heat.	N/A
Landscaping	
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Areas within the lot's boundaries are to be maintained as lawns and gardens, see Appendix B for IPA.
Emergency Management	
Home-based childcare: a bush fire emergency and evacuation management plan is prepared.	N/A

6.0 Conclusion / Recommendations

This report, undertaken in accordance with the ***Planning for Bushfire Protection-2019*** for a residential subdivision and infill development under the Rural Fires Act 1997 and the Environmental Planning & Assessment Act, concludes on the preceding assessment and the following recommendations:

On days of catastrophic fire weather, the NSW RFS recommends leaving early as the only safe option. Any proposal for this type of development that does not meet the acceptable solutions for subdivision will require the applicant to complete a performance-based solution, which may include a BFDB.

To demonstrate the suitability of the proposed subdivision, the following provisions will need to be considered:

- access and egress within the developable land and along the adjoining public road system shall include safety provisions for attending emergency service vehicles and evacuating residents, including road widths and management of vegetation along road verges. Clearing or modifying vegetation in roadside verges of existing road reserves may not be permitted;
- subdivision design shall include perimeter roads separating developable lots from hazardous bushland areas. The objective of perimeter roads is to not only provide a fuel free area adjacent to the hazard but to also ensure suitable unrestricted access for firefighting and fire management purposes. Maintenance of perimeter roads shall be the responsibility of the cluster community;
- access for maintenance of APZ and other fuel management activities;
- larger APZs outside of the range prescribed in PBP and increased Bush Fire Attack Level (BAL) to proposed buildings to create a safer area for occupants and firefighters remaining on site; and
- firefighting water supply and associated firefighting equipment (i.e. pump and hose) for each dwelling in addition to any reticulated water supplies.

Existing dwellings

While all new dwellings within a subdivision must comply with PBP, there may be existing dwellings located on the land that would benefit from BPMs. Conditions may therefore be applied to the subdivision consent requiring the existing structure to be upgraded to provide ember protection and water supplies for firefighting. Advice regarding the maintenance, upgrading and protection of existing buildings can be found on the NSW RFS website www.rfs.nsw.gov.au.

The proposed subdivision site at 37 Campbell Close Korora will meet the PBP 2019 acceptable solutions for a Subdivision Development achieving a BAL < 29. The BAL construction rating for an Infill Development is provided below.

The recommendations of this report are achieved through a combination of measures;

1. Providing construction requirements to Section 3 and Section 7 for BAL 29 Clauses 7.2 to 7.8 and Section 6 Clauses 6.2 to 6.8 of AS 3959:2018;
2. NSW State variations,
3. Water for firefighting,
4. Firefighting vehicle access,
5. Gas services and
6. Landscaping (APZ - Inner Protection Areas)

1) For the proposed site with the minimum setback distances (APZ) the BAL construction levels from the bushfire hazard are as follows.

ELEVATIONS

NORTH:	BAL 19 & APZ min. 29m-40m
SOUTH:	BAL 12.5 APZ > 40m
EAST:	BAL 12.5 min. allowed (10m separation)
WEST:	BAL 12.5 min. allowed (8m separation)
ROOF:	BAL 19

APZs within proposed site are to be maintained for perpetuity as an Inner Protection Area. See below.

2) To ensure the performance criteria for construction standards given in section 7.4 can be met, PBP adopts additional measures over and above AS 3959 and NASH Standard as follows:

- construction measures for ember protection at BAL-12.5 and BAL-19 provided by AS 3959;
- construction measures for development in BAL-FZ; and
- requirements over and above the performance criteria contained within AS 1530.8.1 and AS 1530.8.2 apply in regards to flaming.

NSW State Variations under G5.2(a) (i) and 3.10.5.0(c)(i) of the NCC

Certain provisions of AS 3959 are varied in NSW based on the findings of the Victorian Bush Fires Royal Commission and bush fire industry research. The following variations to AS 3959 apply in NSW for the purposes of NSW G5.2 (a)(i) of Volume One and NSW 3.10.5.0 (c)(i) of Volume Two of the NCC;

- clause 3.10 of AS 3959 is deleted and any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 shall:
    - be non-combustible; or
    - comply with AS/NZS 4200.1, be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2; and
- clause 5.2 (Subfloor Support) and 6.2 of AS 3959 is replaced by clause 7.2 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- clause 5.7 (Verandas, Decks, Steps and Landings) and 6.7 of AS 3959 is replaced by clause 7.7 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- fascias and bargeboards, in BAL-40, shall comply with: clause 8.4.1(b) of AS 3959; or clause 8.6.6 of AS 3959.

3) Static water supply for firefighting:

- dedicated 10 000L non-combustible water tank;
- a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure;
- 65mm Storz outlet with a ball valve is fitted to the outlet;
- ball valve and pipes are adequate for water flow and are metal;
- supply pipes from tank to ball valve have the same bore size to ensure flow volume;
- 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 4m;
- above-ground tanks are manufactured from concrete or metal;
- raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959);
- unobstructed access can be provided at all times;
- underground tanks are clearly marked; tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;
- all exposed water pipes external to the building are metal, including any fittings;
- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack;
- any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
- if fire hose reels are used constructed in accordance with AS/NZS 1221:1997 and installed in accordance with the relevant clauses of AS 2441:2005.

4) Firefighting vehicle access.

- Right of access “B” allows access to proposed Lot 2
- minimum 4m carriage width
- in forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay (Note: site access will not be more than 200m);
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;
- provide a suitable turning area in accordance with Appendix B;
- curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;
- the minimum distance between inner and outer curves is 6m if applicable;
- the cross fall is not more than 10 degrees;
- maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads;

Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.

5) Gas facilities. The location and design of gas services must not lead to ignition of surrounding bushland or the fabric of buildings.

- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used;
- all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- connections to and from gas cylinders are metal;
- polymer-sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

6) Landscaping

- Compliance with the NSW RFS Inner Protection Area (OPA), see below;
- a clear area of low-cut lawn or pavement is maintained adjacent to the house;
- trees and shrubs are located so that: the branches will not overhang the roof; and
- the tree canopy is not continuous; and any proposed windbreak is located on the elevation from which fires are likely to approach.
- Fences and gates in bush fire prone areas must be made of either hardwood or non-combustible material.
- Where fences are within 6m of a building or in areas of BAL-29 or greater, they should be made of non-combustible material only

Inner Protection Areas

IPA within building boundaries to be maintained as IPA.

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:
Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m;
- and preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover;
- and clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height);
- and leaves and vegetation debris should be removed.

Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA. Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%;
- and canopies should be separated by 2 to 5m.

Shrubs

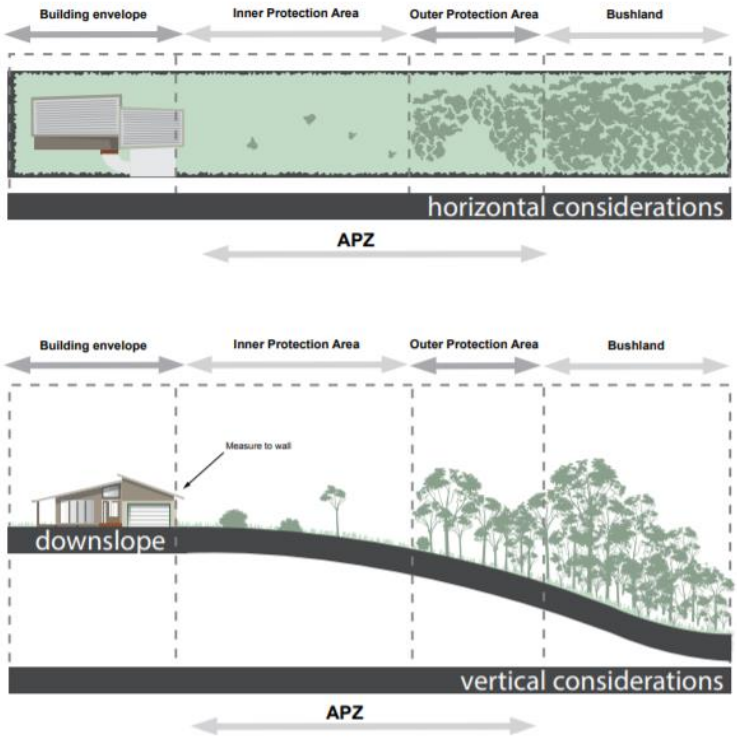
- shrubs should not form a continuous canopy;
- and shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm;
- and leaf and other debris should be removed.

Figure A4.1

Typical Inner and Outer Protection Areas.



7.0 References

1. Australian Standards, Construction of buildings in bushfire prone areas, AS 3959:2018, 14 November 2018

2. Planning for bushfire Protection (PBP 2019), A guide to councils, planners, Fire authorities and developers, November 2019

3. Guide for Bush Fire Prone Land Mapping, NSW Rural Fire Service, NSW Government, Ver 5b Nov 2015

8.0 Limitations

Due to a range of limitations, the measures contained in this document (PBP 2019) do not guarantee that loss of life, injury and/or property damage will not occur during a bush fire event. Limitations of the PBP 2019 include, but are not limited to uncertainties in the following areas: Fire Danger Index; fuel loads; existing developments; human behaviour; and maintenance.

7.1 Fire Danger Index

It may be possible that days of higher Fire Danger Index (FDI) may be experienced than the FDI levels used in this document. This may result in fire situations where conditions challenge survivability of buildings and their occupants.

7.2 Fuel loads

Fuel loads and vegetation classes used in this document are specific to NSW. PBP 2019 has adopted a system of assessing fuel accumulation rates based on vegetation formations and time since last fire (Forestry Commission of NSW, 1991). This has also been supported by published literature on fuel loads (i.e. Good, 1994, Watson, 2005, Cheney and Sullivan, 1997). In some instances fuel loads in an area may be higher than those used in this document. This can influence bush fire behaviour and the potential impact on property.

7.3 Existing developments

The requirement to consider BPMs for development in bush fire prone areas was introduced on 1 August 2002. Existing developments that were built prior to August 2002, may have limited or no BPMs incorporated into the design of the building. This also presents major challenges for the design of alterations and additions to existing buildings.

7.4 Human behaviour

A person's behaviour in times of bush fire may be unpredictable. A person may have good intentions to stay and defend their property from bush fire, but may change their mind once they experience the stress and anxiety associated with the heat, noise, flames and burning embers. Even where a development can comply with PBP 2019, unpredictable human behaviour can be a limiting factor and may result in injury, death or loss of property. All occupants in a bush fire prone area are advised to prepare a Bush Fire Survival Plan, available to download at NSW RFS website www.rfs.nsw.gov.au.

7.5 Maintenance

An unprepared property is not only a risk to the building owner/occupant, but may also present an increased danger to neighbouring buildings and firefighters. Even buildings which are built to comply with PBP are placed at risk through poor maintenance. Post bush fire research recorded by the New South Wales Rural Fire Service (NSW RFS) indicates that proper maintenance of dwellings and their curtilage significantly improves the survivability of structures. Advice regarding the maintenance and protection of existing buildings can be found on the NSW RFS website at www.rfs.nsw.gov.au.

Appendix A

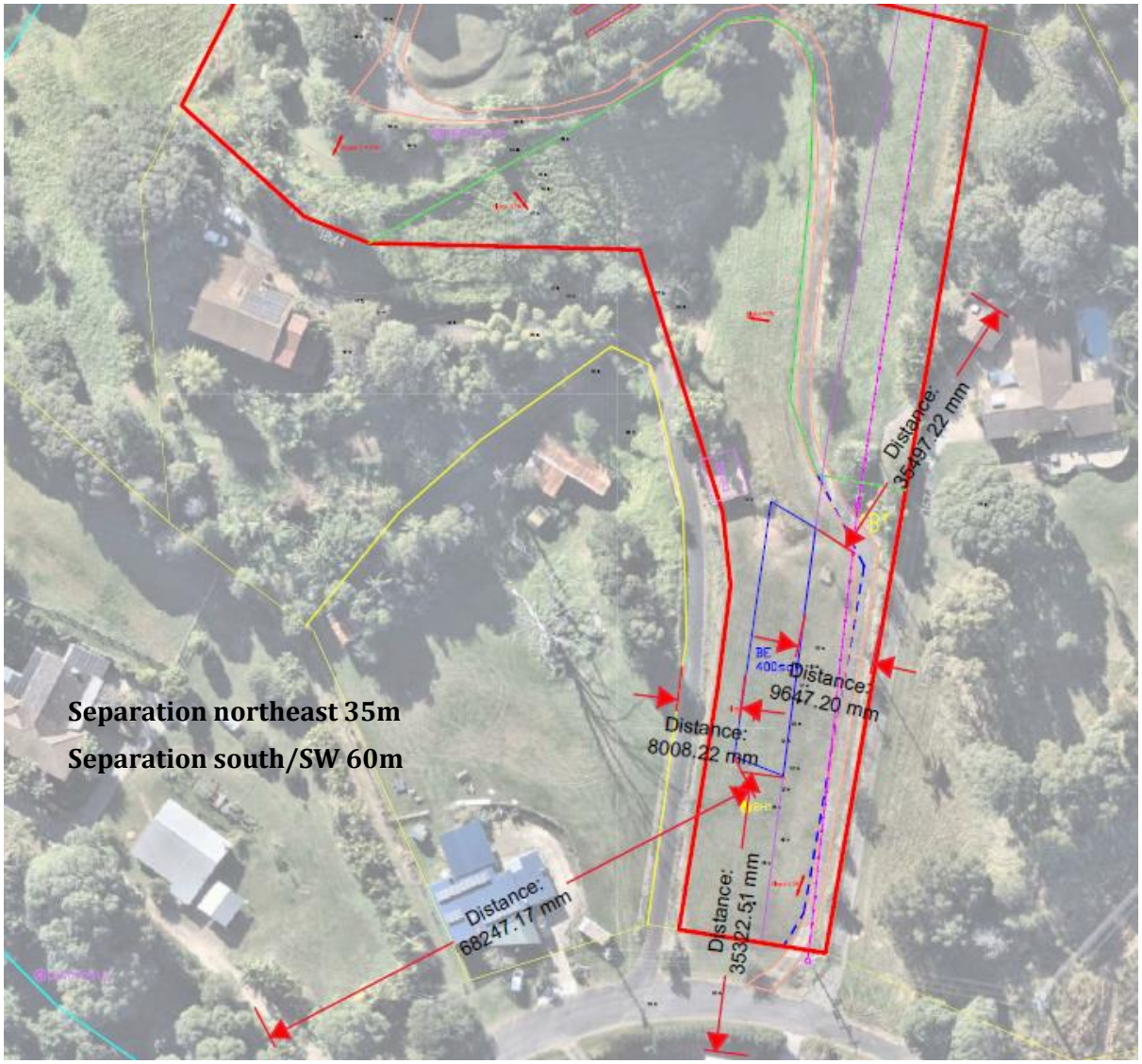


Figure 15: *BAL construction rating for infill development based on APZs and managed land*

Appendix B

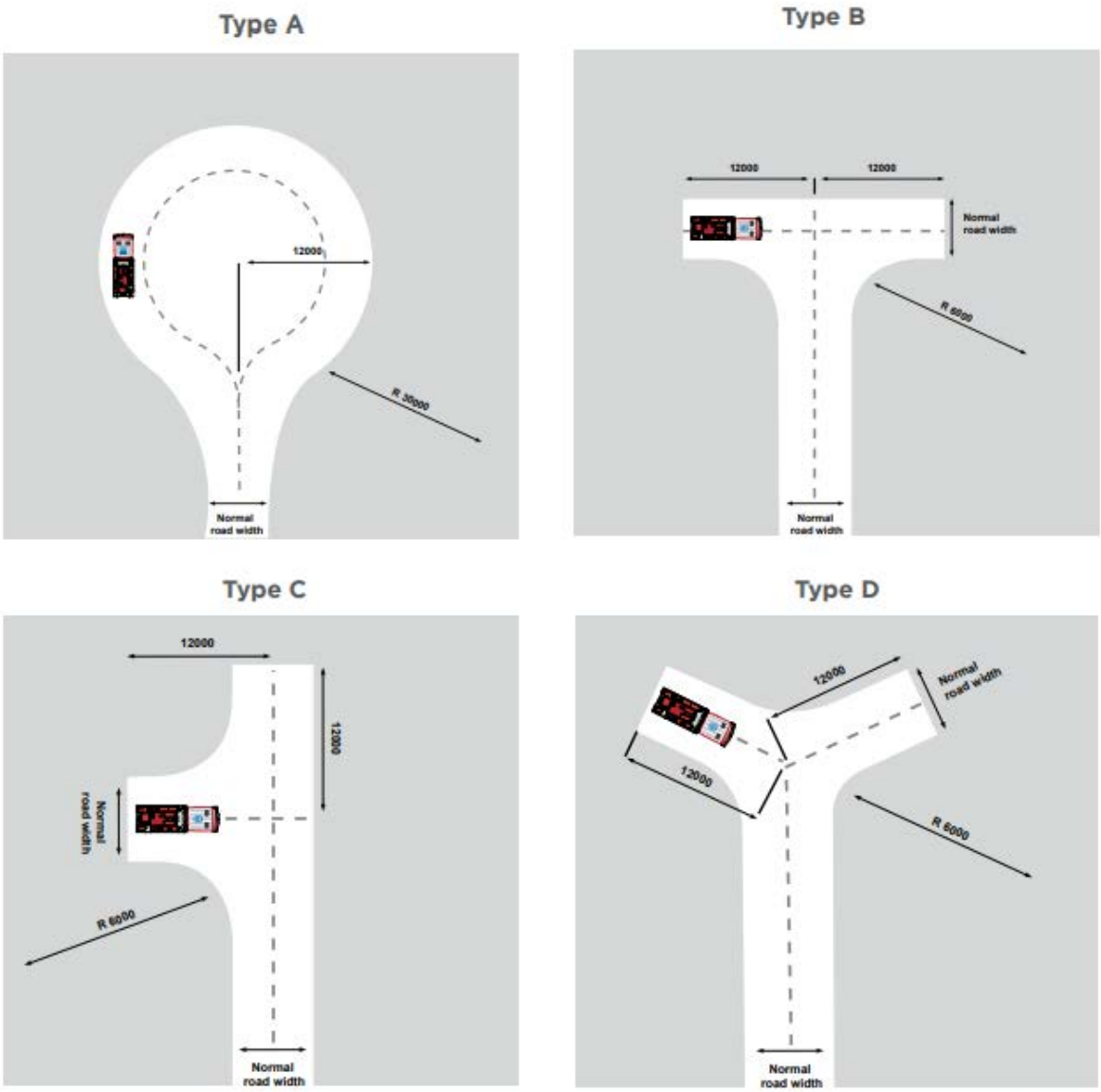


Figure 16: *Turning options*

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37 CAMPBELL CLOSE, KORORA, NSW

ABORIGINAL CULTURAL HERITAGE (DUE DILIGENCE) ASSESSMENT

September 2023

Newnham Karl Weir and Partners

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CONTENTS

FIGURES

Tables

ABBREVIATIONS

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
DCP	Development Control Plans
DECCW	Department of Environment, Climate Change and Water (now Heritage NSW)
EPA	Environmental Planning and Assessment
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
NPW	National Parks and Wildlife
PAD	Potential Archaeological Deposit
Planning Proposal	Reduction of the minimum Lot size from 10,000m^2 to 5,000m^2.
Proposed Works	Proposed two lot rural residential subdivision at 37 Campbell Close, Korora NSW
OEH	Office of Environment and Heritage (now Heritage NSW)
Study Area	37 Campbell Close, Korora NSW (Lot 1 DP1130767)

1. INTRODUCTION

1.1 Project Background

Heritage Management & Planning Pty Ltd has been commissioned by Newnham Karl Weir and Partners, to undertake an Aboriginal Cultural Heritage (Due Diligence) Assessment to support a Planning Proposal for Lot 1 DP 1130767 (37 Campbell Close), Korora NSW (**Figure 1** and **Figure 2**). The Planning Proposal seeks to amend the minimum Lot size from 10,000m^2 to 5,000m^2 to allow for future subdivision, including the follow Lots:

- Proposed new Lot, comprising 5031m^2, which will be accessed from Campbell Close, and
- Proposed existing Lot, comprising 6514m^2 which includes the current dwelling and driveway access.

It is expected that groundworks associated with the proposed new rural residential Lot would include a building pad, onsite sewerage, underground utilities and a new driveway. The Due Diligence assessment has been commissioned to consider the potential impacts of the Planning Proposal on Aboriginal objects and cultural values and to provide statements on the requirement for additional Aboriginal community consultation and archaeological investigations to inform future Development Applications.

1.2 Project Brief & Methodology

The brief for this project was to undertake an Aboriginal cultural heritage assessment in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010A). The methods employed in this assessment include:

- a description of the ground disturbance that would reasonably occur as a result of a future subdivision
- a search of relevant Aboriginal heritage registers
- a review of environmental information relevant to the assessment
- a review of relevant archaeological and cultural heritage assessments to understand the cultural and archaeological landscape
- development of an archaeological predictive model
- completion of a site inspection with a representative of Coffs Harbour and District Local Aboriginal Land Council (LALC), and
- documenting the outcomes of the Due Diligence assessment including:
    i. a summary of the relevant background information to determine the likelihood that landforms will contain Aboriginal cultural heritage
    ii. a description of the methodology and results of the cultural heritage site inspection
    iii. statements on the requirement for additional consultation with the Aboriginal community and archaeological excavation based on the likelihood of harm to Aboriginal objects, and
    iv. management recommendations to mitigate impacts to Aboriginal heritage values to avoid impacts to Aboriginal cultural heritage, including an unexpected find procedure.

Figure 1: 37 Campbell Close: General location

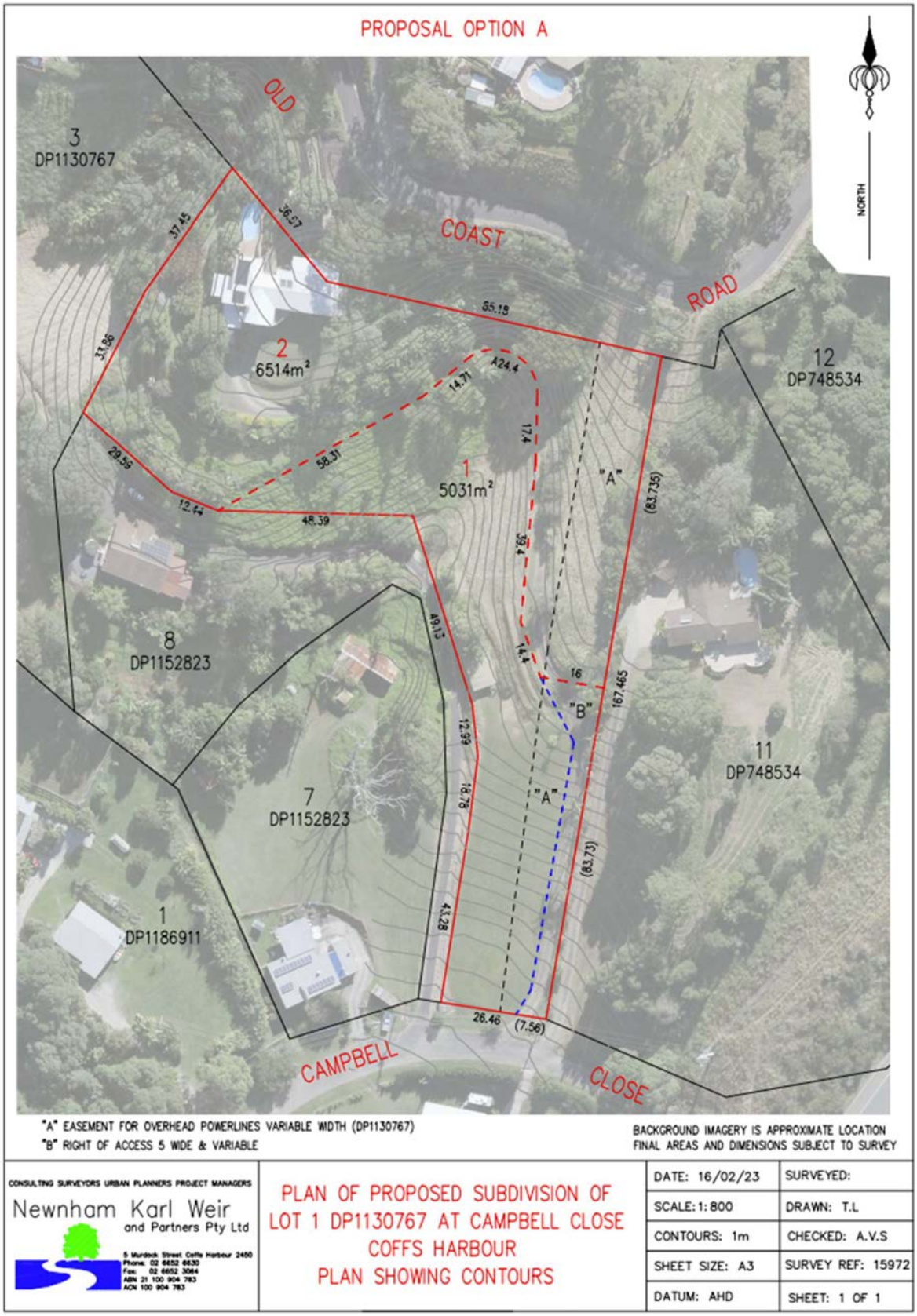

Figure 2: 37 Campbell Close Korora: Proposed Lot layout

2. LEGISLATIVE AND PLANNING CONTEXT

2.1 National Parks and Wildlife Act 1974 (NSW) and Regulations 2019 (NSW)

The *National Parks and Wildlife Act* 1974 (NSW) (NPW Act) is the primary legislation concerning the identification and protection of Aboriginal cultural heritage in New South Wales. Three key definitions in the NPW Act which are relevant to this assessment include:

- **Aboriginal object** means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
- **Aboriginal remains** means the body or the remains of the body of a deceased Aboriginal person, but does not include—

  (a) a body or the remains of a body buried in a cemetery in which non-Aboriginal persons are also buried, or

  (b) a body or the remains of a body dealt with or to be dealt with in accordance with a law of the State relating to medical treatment or the examination, for forensic or other purposes, of the bodies of deceased persons.
- **harm** an object or place includes any act or omission that—

  (a) destroys, defaces or damages the object or place, or

  (b) in relation to an object—moves the object from the land on which it had been situated, or

  (c) is specified by the regulations, or

  (d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

  but does not include any act or omission that—

  (e) desecrates the object or place, or

  (f) is trivial or negligible, or

  (g) is excluded from this definition by the regulations.

Section 86 of the NPW Act provides offense provisions for Aboriginal objects, Aboriginal skeletal remains and Aboriginal places in NSW (see the definition of 'Harm' above). **Section 87** of the NPW Act outlines defences against prosecution relating to Aboriginal objects, skeletal remains and Aboriginal places. These include:

- Acting in accordance with an Aboriginal Heritage Impact Permit (AHIP) issued under **Section 90** of the NPW Act

- Demonstrating that the "defendant exercised due diligence to determine whether the act or omission constituting the alleged offence would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed"
- The activity was prescribed as a "low impact" activity or an "omission" under the NPW Regulations (2019), and
- Was undertaken in compliance with a Code of Practice adopted or prescribed by the NPW Regulations (2019).

2.2 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW

The ACHA has been undertaken to determine whether the Proposed Works can be undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010A). The purpose of this Due Diligence Code of Practice is to establish a defence against prosecution in the event that Aboriginal objects may be inadvertently harmed during an activity (DECCW 2010A: 1 & 2). The Due Diligence Code of Practice:

> …sets out the reasonable and practicable steps which individuals and organisations need to take in order to:
>
> 1. identify whether or not Aboriginal objects are, or are likely to be, present in an area
> 2. determine whether or not their activities are likely to harm Aboriginal objects (if present)
> 3. determine whether an AHIP application is required (DECCW 2010A:2).

The Due Diligence Code of Practice makes the following statement on the requirement for an AHIP (DECCW 2010A:2):

> If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an AHIP application will be required.

However, the practical application of the Due Diligence Code is that if the Due Diligence assessment concludes that harm to Aboriginal objects is "likely" to occur the proponent has an obligation to avoid the impacts by redesigning the activity or undertake additional archaeological investigation, including Aboriginal community consultation, in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010B) (CoPAI) (see below) to determine the requirement for an AHIP. A key limitation of the Due Diligence Code of Practice and the CoPAI is that they do not clearly define the thresholds of "likely" or "highly likely". To assist the assessment, the Merriam Webster dictionary definition of "likely" is:

> "Having a high probability of occurring or being true: very probable" (www.merriam-webster.com/dictionary).

As such, where the Due Diligence assessment concludes that there might be a residual possibility that the activity might impact on Aboriginal objects and measures are put in place to avoid or reduce the likelihood

of Harm then documentation of the assessment process would still provide a defense against prosecution for the activity under the Due Diligence approval pathway (NPW Act section 87(2)).

The Due Diligence Code of Practice makes an additional statement which removes the requirement to undertake additional investigation where there has been significant ground disturbance that would reasonable reduce the potential that Aboriginal objects would be subject to additional harm. The Due Diligence Code of Practice includes the following definition of 'disturbed land' (DECCW 2010A: 12, 18).

> "Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable".

2.3 Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW

The *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010B) (CoPAI) provides the following statement on the application of the Code:

> "This Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. Where an Aboriginal cultural heritage assessment requires an archaeological investigation to be undertaken, this must be done in accordance with the requirements of this Code." (DECCW 2010B:2).

The CoPAI replaces the former Standards and Guidelines Kit and outlines the minimum requirements for archaeological investigation and reporting by archaeologists. The purpose of the CoPAI is to (DECCW 2010B:1):

1. establish the requirements for undertaking test excavation as a part of archaeological investigation without an AHIP. If you comply with these requirements and you harm an Aboriginal object when undertaking test excavations, your actions will be excluded from the definition of harm and as such you will not be committing an offence of harm to an Aboriginal object.
2. establish the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made. Under the NPW Act, the Director General can require that certain information accompany an application for an AHIP. This Code explains what that information is in relation to archaeological investigations.

In the event that the CoPAI assessment concludes that the activity is not likely to impact on Aboriginal objects (i.e. the ACHA concludes that harm to Aboriginal objects is not likely and that an AHIP is not required) a ACHA report that complies with the CoPAI is considered to be compliant with the Due Diligence Code of Practice/ Due Diligence approval pathway. Where the CoPAI investigation determines an AHIP is required then the works can only be authorised by an AHIP (i.e. works cannot proceed under the Due Diligence approval pathway).

2.4 Environmental Planning and Assessment Act (1979)

The *Environmental Planning and Assessment Act* (NSW) (1979) (EPA Act) provides a framework to environmental assessment and approvals in NSW. The EPA Act includes three parts relevant to ACHA assessments:

Part 3- Planning instruments which include Local Environmental Plans (LEPs), Development Control Plans (DCPs) and other strategic planning controls.

Part 4- Development assessment and consent controls including approvals by local Councils and Regional Planning Panels.

Part 5- Self assessment and approvals by a government agencies, or determining authorities, for infrastructure and environmental proposals, and for the approval of State Significant Infrastructure by the Planning Minister.

2.5 Coffs Harbour Local Environmental Plan 2013

The Coffs Harbour LEP (2013) provides a framework to determine activities which require development consent and outlines considerations for the determination process. This includes the following general classes of heritage:

- Items on the NSW State heritage Register
- Items of local heritage significance listed on Schedule 5 of the Coffs Harbour LEP, and
- Aboriginal objects and Places as defined by the NPW Act.

The Coffs Harbour LEP (2013) sets out provisions to control activities at "Aboriginal Places of heritage significance", which include places which do not meet the definition of an Aboriginal object or Aboriginal Place under the NPW Act but are listed under the LEP. Part 5.10.8 of the Coffs Harbour LEP (2013) requires that Coffs Harbour City Council:

> "… must, before granting consent under this clause to the carrying out of development in a place of Aboriginal heritage significance:
>
> a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place, and
>
> b) notify the local Aboriginal communities (in such way as it thinks appropriate) about the application and take into consideration any response received within 28 days after the notice is sent.

Based on the requirement of the LEP, activities or land uses that may not otherwise require consent, such as some agricultural activities, trigger the requirement for development consent if they are in close proximity to Aboriginal objects, Aboriginal Places and Aboriginal Places of heritage significance.

3. CONSULTATION WITH COFFS HARBOUR LALC

The *Aboriginal Cultural Heritage Consultation Requirement for Proponents* (DECCW 2010C) (ACHRCP) provides a guide for consultation with the Aboriginal community. The ACHRCP makes the following comment on the role of consultation in the cultural heritage assessment process (DECCW 2010C:iii):

> The NPW Act provides specific protection for Aboriginal objects and Aboriginal places by providing offences for unauthorised harm. The NPW Act establishes the Director General of DECCW as the decision-maker for Aboriginal heritage impact permit (AHIP) applications. DECCW requires the effective consultation with Aboriginal people as a fundamental component of the AHIP assessment process and acknowledges that:
>
> - Aboriginal people should have the right to maintain culture, language, knowledge and identity
> - Aboriginal people should have the right to directly participate in matters that may affect their heritage
> - Aboriginal people are the primary determinants of the cultural significance of their heritage.
>
> This document focuses on the requirements for consultation with Aboriginal people as part of the heritage assessment process:
>
> - to determine potential harm on Aboriginal cultural heritage from proposed activities
> - that informs decision making for any application for an AHIP where it is determined harm cannot be avoided.

A key consideration is that any activity which has the potential to harm Aboriginal objects, whether is authorised an AHIP or a Code of Practice, must include a process of consultation with the Aboriginal community to understand the values of the place and site that cannot be assessed by standard archaeological methods, including the spiritual, cultural and historic significance in the Aboriginal cultural landscape of which the site forms a part. The following summarises the Aboriginal community consultation undertaken to inform the Due Diligence assessment (**Table 1** and **Appendix A**).

Table 1: Summary of consultation with Coffs Harbour LALC

Date	Stakeholder	Method	Comment
21 August 2023	Uncle Ian Brown	Phone	Discussion of the project and coordination of the site inspection.
25 August 2023	Uncle Ian Brown	Phone	Confirmation and arrangement of the site inspection
28 August	Uncle Ian Brown	Phone	Confirmation and arrangement of the site inspection
29 August	Uncle Ian Brown	Site inspection	Completion of the site inspection

4. DATABASE AND ENVIRONMENTAL REVIEW

4.1 Aboriginal Heritage Information Management System (AHIMS)

The Aboriginal Heritage Information Management System (AHIMS) provides a list of previously recorded Aboriginal sites in NSW. A search of the AHIMS database is a condition of compliance with the Due Diligence Code of Practice and provides information on the types of sites which will likely be located within and around the Study Area.

A search of AHIMS was undertaken on 21 August 2022 (#811718) for the area "Lat, Long From: -30.2625, 153.103 - Lat, Long To : -30.2254, 153.1648" which returned 21 previously recorded Aboriginal sites (**Table 2**, **Figure 3** and **Appendix B**). No sites are recorded in close proximity to the Study Area. Uncle Ian Brown was familiar with the restricted site and confirmed the site is not within the Study Area. The other sites include stone artefact scatters identified on ridge crests as part of the Coffs Harbour Bypass and Pacific Highway-Sapphire to Woolgoolga projects. Two ceremonial sites are recorded on the beach/ rocky headlands are Korora Bay and Crayfish Bay.

Table 2: AHIMS search results (AHIMS search #811718)

Site ID	Site name	Easting	Northing	Site features
22-1-0636	97 Sealy Lookout Drive Site	510726	6652575	Artefact : -
22-1-0301	Finlays Rd	511608	6653331	Artefact : 1
22-1-0565	Lovetts Road	511362	6654206	Artefact : -
22-1-0619	CHB AFT 8	512275	6652358	Artefact : -
22-1-0610	CHB IF 2	512323	6652122	Artefact : -
22-1-0399	Sartor OS1	513905	6654924	Artefact : 1
22-1-0212	S2W-2	514083	6655959	Artefact : 4
22-1-0125	Restriction applied. Please contact ahims@environment.nsw.gov.au.			
22-1-0605	CHB IF 7	513252	6653745	Artefact : -
22-1-0364	Korara 2 and PAD	513424	6654719	Artefact : 1, Potential Archaeological Deposit (PAD) : -
22-1-0400	Sartor ISO 2	514004	6654746	Artefact : 1
22-1-0193	Sapphire Two	514091	6654676	Artefact : 1
22-1-0142	CHSS-3	513100	6653480	Artefact : 1
22-1-0391	S2W-20	514000	6654705	Artefact : -
22-1-0205	Bruxner park 1	510650	6652370	Artefact : 8
22-1-0192	Sapphire One	514145	6655639	Artefact : 4
22-1-0002	Korora Bay;Goanna Site;	513500	6652500	Aboriginal Ceremony and Dreaming : -
22-1-0003	Banana Bowl;Crayfish Bay;	513600	6653200	Aboriginal Ceremony and Dreaming : -
22-1-0566	Old Coast Road	513888	6654946	Artefact : -
22-1-0437	S2W-2 Redeposit	514221	6656185	Artefact : -
22-1-0602	Gaudrons Road IF01	513921	6655739	Artefact : -

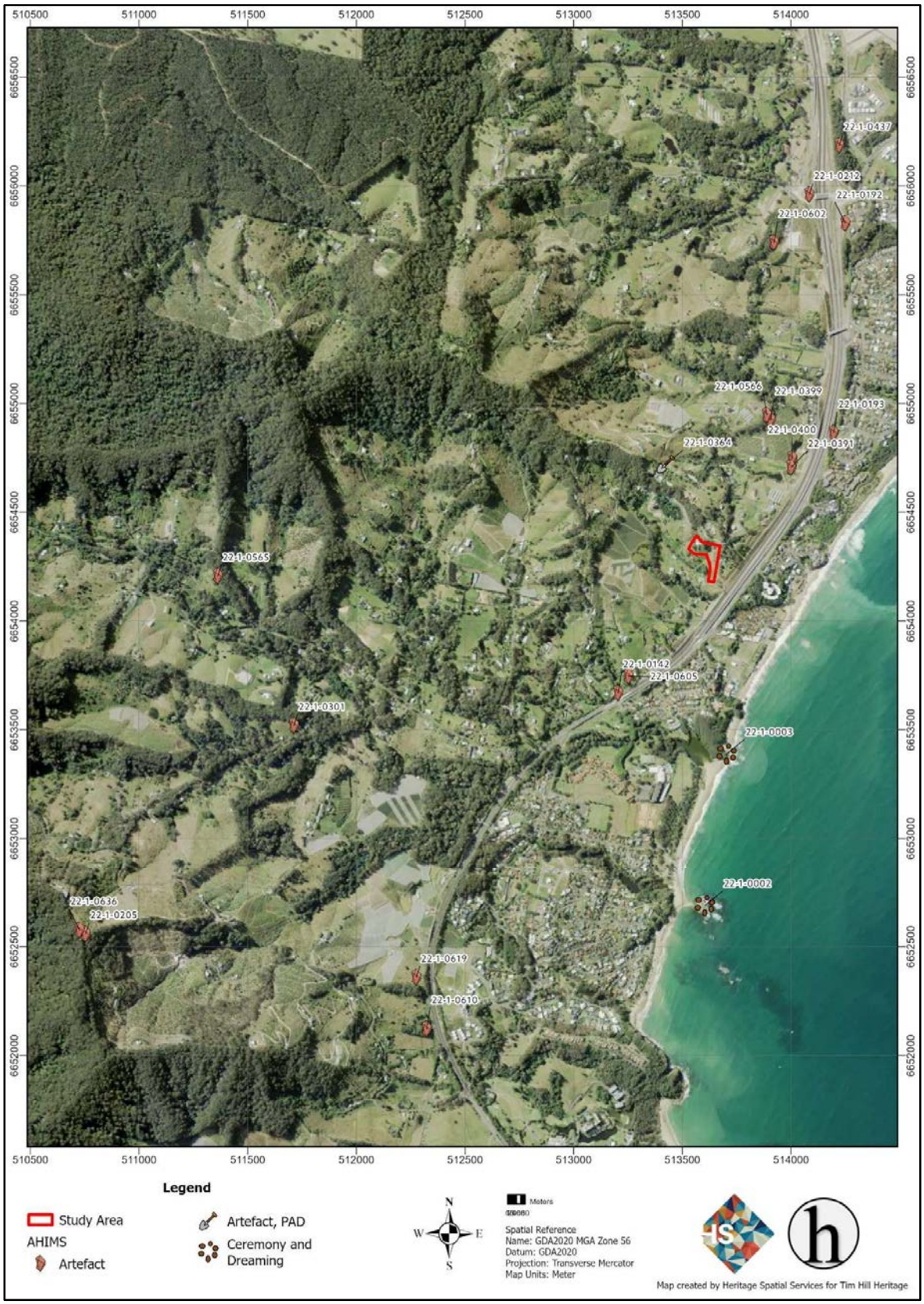

Figure 3: 37 Campbell Close Korora: AHIIMS search results

4.2 Environmental Context

4.2.1 Topography and hydrology

The Due Diligence Code of Practice (Step 2b) identifies some landforms as having an increased potential to contain Aboriginal objects.

> Aboriginal objects are often associated with particular landscape features as a result of Aboriginal people's use of those features in their everyday lives and for traditional cultural activities. Examples of such landscape features are rock shelters, sand dunes, waterways, waterholes and wetlands. Therefore it is essential to determine whether the site contains landscape features that indicate the likely existence of Aboriginal objects (DEECW 201A:12).

Based on the assessment of landform context there is an elevated potential for the Study Area to contain Aboriginal archaeological sites (**Table 3** and **Figure 4**).

Table 3: Landform summary (Due Diligence Code of Practice Step 2b)

Landform	Comment in relation to the Study Area
Within 200m of waters	No- the nearest named creek that holds water is Pine Brush Creek is more than 200 metres south of the Study Area. A gully is mapped as a third order waterway to the south of the Study Area - this does not hold permanent or semi-permanent water and effectively connects two agricultural dams.
Located within a sand dune system	No
Located on a ridge top, ridge line or headland	No
Located within 200m below or above a cliff face	No
Within 20m of or in a cave, rock shelter, or a cave mouth	No
"Is on land that is not disturbed"	See section 4.2.3. below.

4.2.2 Soil landscape summary

The Study Area is mapped as part of the Megan soil landscape which comprises rolling hills and tall closed forests (Milford 1999) (**Table 4** and **Figure 5**):

Table 4: 37 Campbell Close Korora: summary of soil landscape model

Soil landscape	Geology	Vegetation model
Megan	**Landscape—** rolling low hills to hills on Late Carboniferous metasediments of the Coffs Harbour association in the Coast Range and Gleniffer-Bonville Hills. Local relief to 90 m, occasionally to 200 m; slopes typically 5 - 20%, occasionally to 33%; elevation to 317 m. Partially cleared, tall open-forest and tall closedforest. **Soils—** moderately deep to deep (>100 cm), well drained structured Red Earths (Gn3.11), Brown Earths (Gn3.21), Brown Podzolic Soils (Db4.11) and Red Podzolic Soils (Dr2.11),	Mostly uncleared, tall open-forest in the north and tall closed-forest in the south. Because of climatic variation, the native vegetation varies markedly from north to south across this landscape. Tall open-forest (wet sclerophyll forest) dominated by tallowwood (Eucalyptus microcorys) and Sydney blue gum (E. saligna) [Forest Types 46 and 47] occurs extensively on crests and slopes. The drier exposed crests are occupied by tall open-forest dominated by narrow-leaved white mahogany (E. acmenoides), spotted gum (Corymbia

Soil landscape	Geology	Vegetation model
	with moderately deep to deep (>100 cm), structured Yellow Earths (Gn3.21; Gn3.71) and Yellow Podzolic Soils (Dy4.11) in drier situations, and moderately deep to deep (>120 cm), well-drained Krasnozems (Gn3.11; Gn3.14) in the moistest sites. **Geology-** Late Carboniferous Coffs Harbour association metasediments of the Coramba and Brooklana Beds and the Moombil Siltstone (Cccs/Ccbf/Ccmf), comprising a thick turbidite sequence dominated by siliceous mudstone, lithofeldspathic wacke and siltstone with minor metabasalt, felsic volcanics, chert and jasper.	maculata), grey ironbark (E. paniculata) and small-fruited grey gum (E. propinqua) [Forest Types 60 and 74]

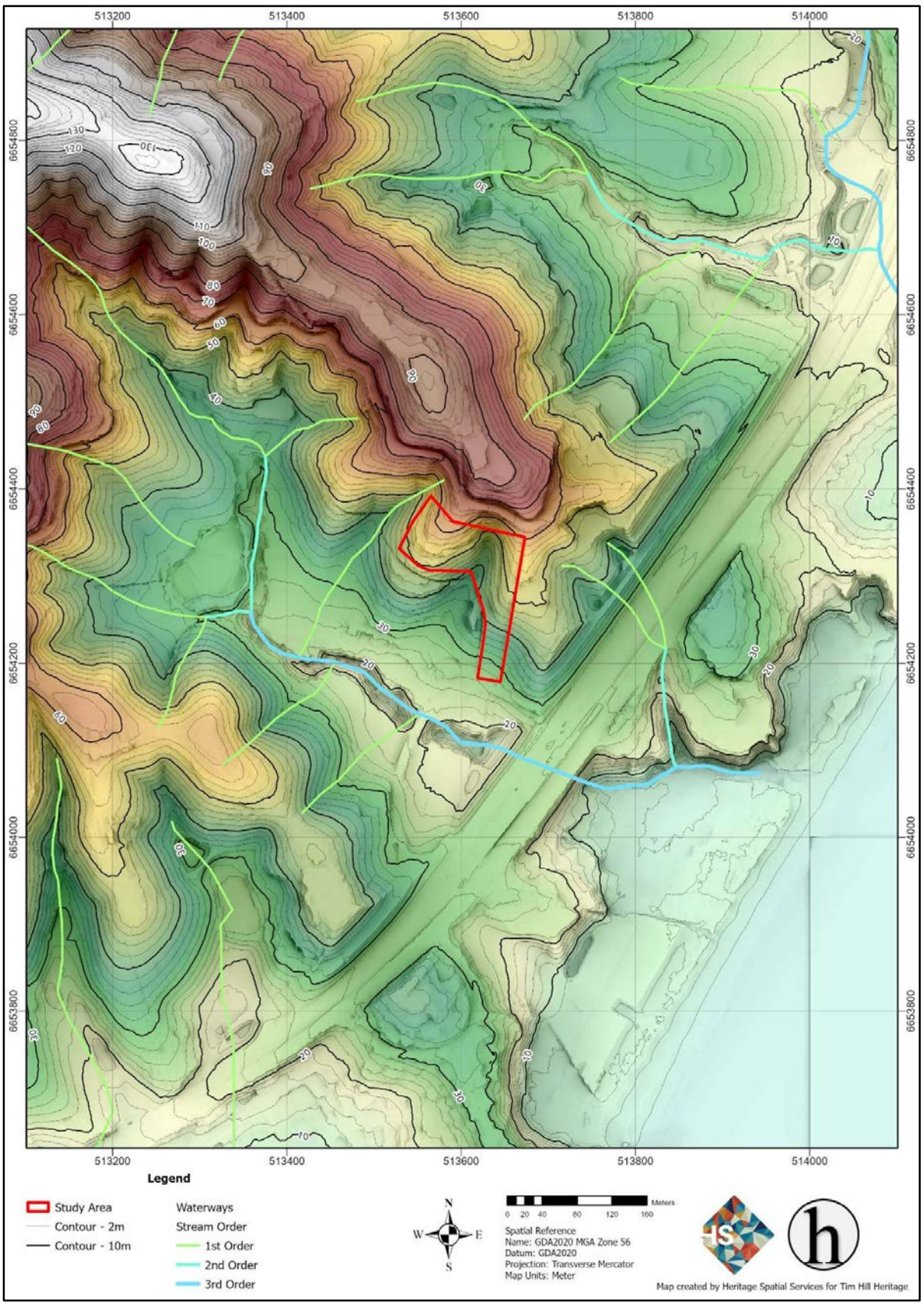

Figure 4: 37 Campbell Close Korora: Topography and hydrology

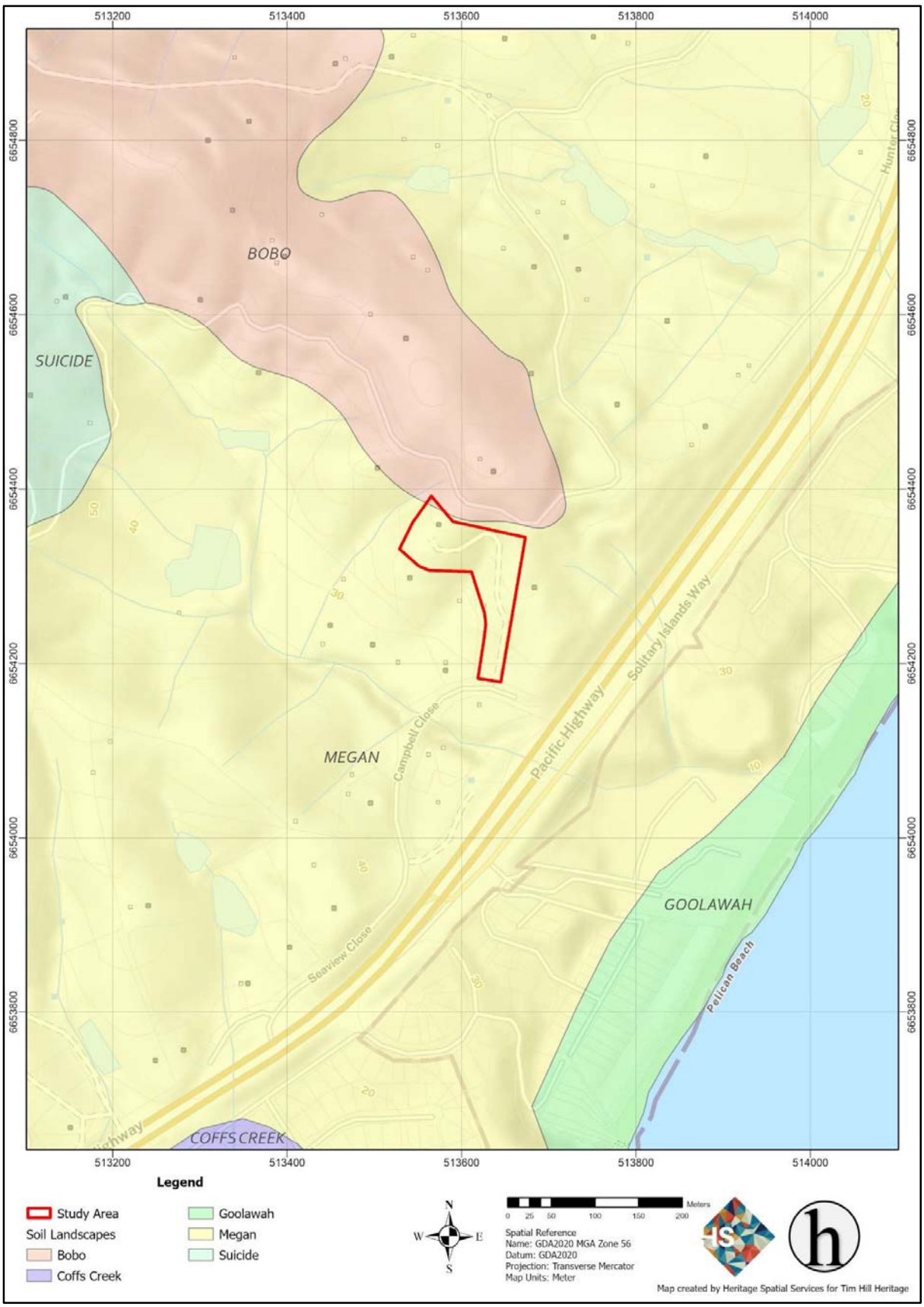

Figure 5: 37 Campbell Close Korora: Soil landscapes

4.2.3 Disturbance History

The impacts of previous ground disturbance is an important consideration in the Due Diligence assessment, particularly where ground disturbance removes Aboriginal objects from the soil profile or disturbs the objects to a degree that the interpretation of the archaeological survey results is significantly compromised. The Due Diligence Code of Practice provides the following advice on the application of the definition of 'disturbed lands'.

> Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks (DECCW 2010:18).

A review of the 1885 and 1892 Crown Plans (Figure 6 and Figure 7) demonstrates that Old Coast Road and Campbell Close were both mapped- with the Old Coast Road providing the primary access to Bellingen and Bucca/ Grafton. The Study Area formed part of a larger holding by Mr. H. Reick.

The Study Area is located between the Old Coast Road and the Pacific Highway in the 1955 aerial photo, but comprises pasture and regrowth bush (Figure 8). The 1965 aerial image (Figure 9) shows the current residential dwelling and the residual of the Study Area under banana plantation. Banana plantations have a significant impact on the ground surface as they typically increase downslope movement and erosion of topsoils when they are planted on steeper slopes. Thay also typically involve the excavation of tracks across the contour to allow vehicle access and manual harvesting of bananas.

Figure 6: 37 Campbell Close Korora: Crown plan 1885

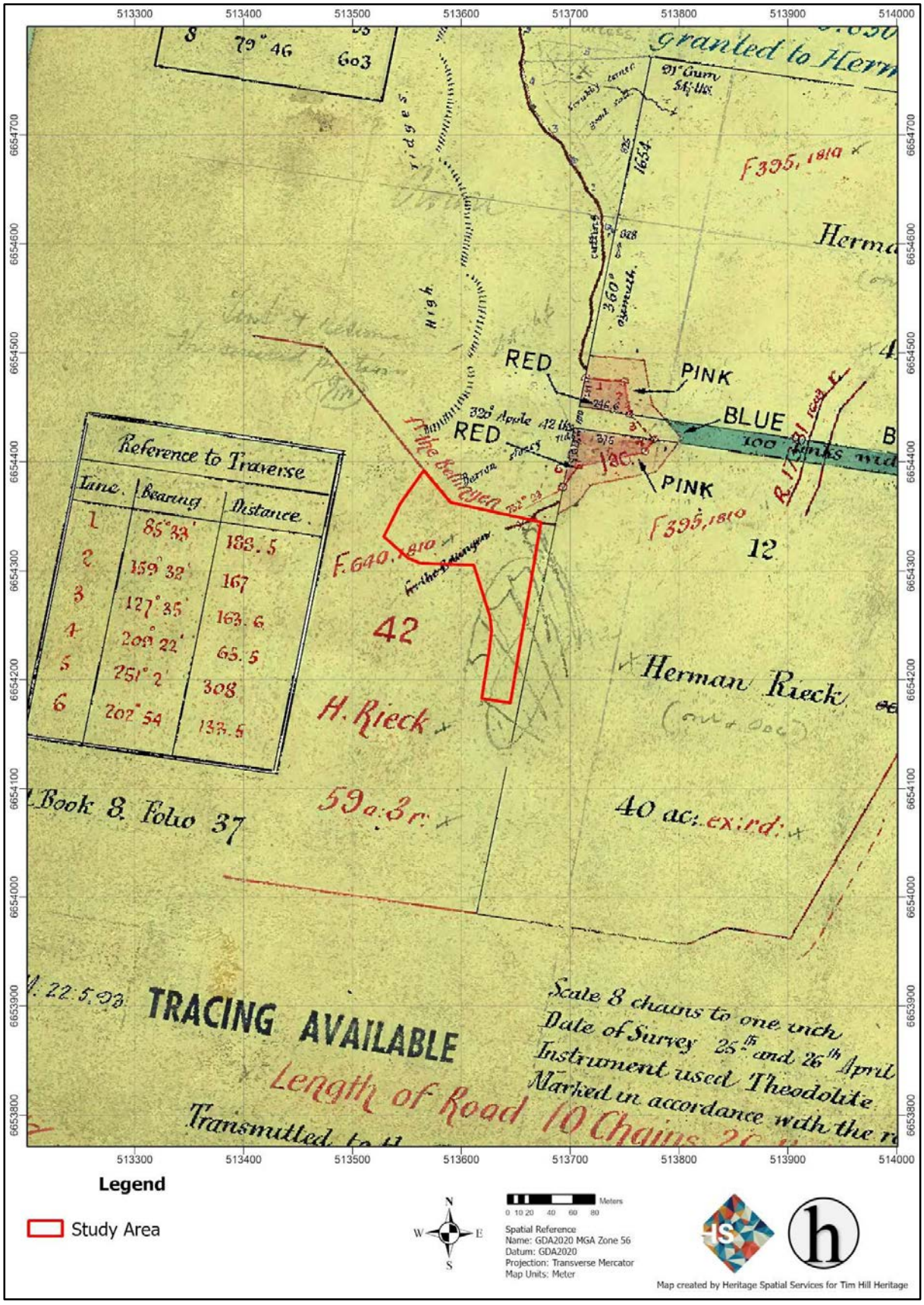

Figure 7: 37 Campbell Close Korora: Crown plan 1892

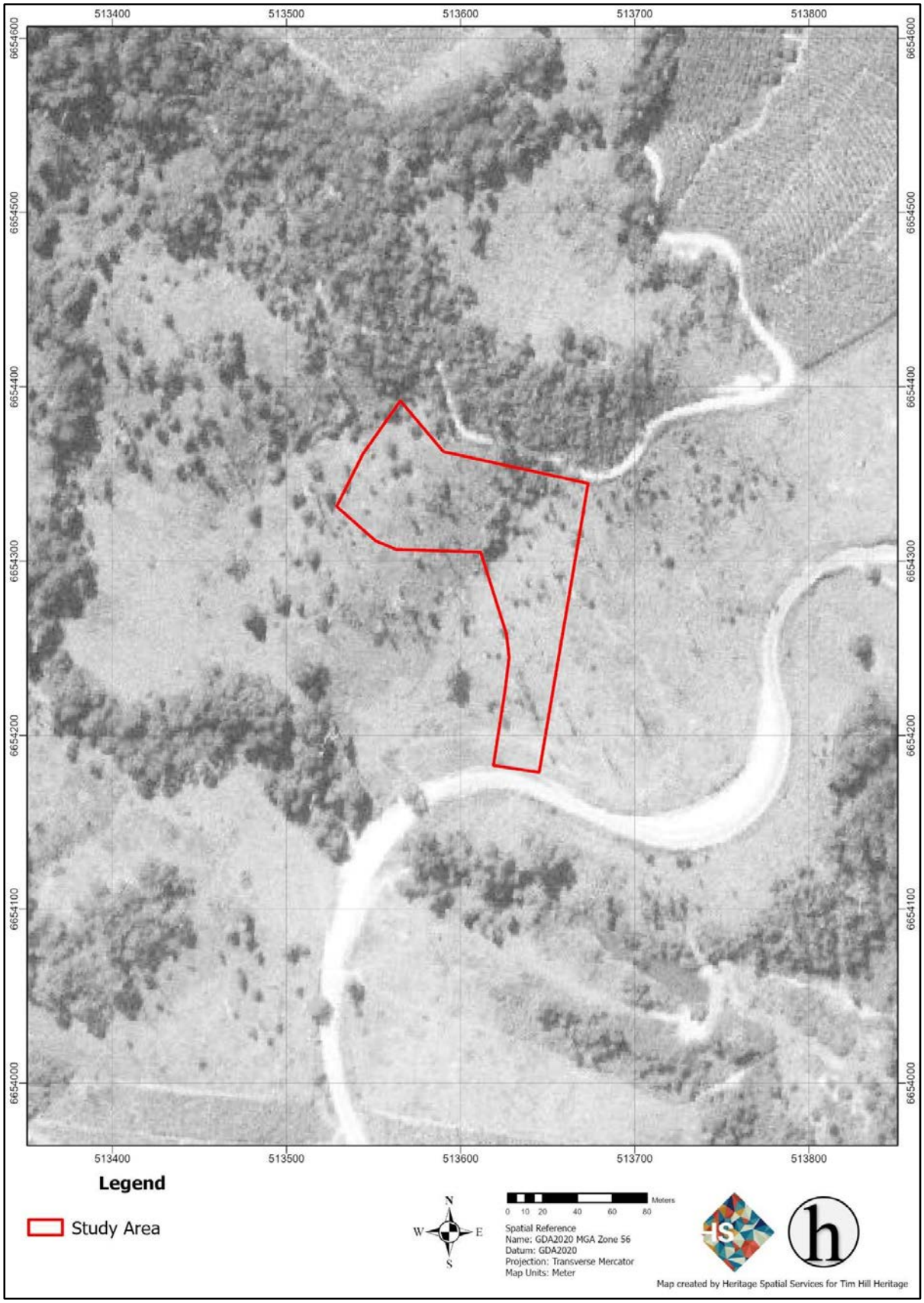

Figure 8: 37 Campbell Close Korora: 1955 aerial photo

Figure 9: 37 Campbell Close Korora: 1975 aerial photo

5. ARCHAEOLOGICAL SYNTHESIS AND PREDICTIONS

5.1 Historical Context

The first historical documents relating to the Coffs Harbour area were the naming of the 'Solitary Islands' by James Cook in May 1770, with additional mapping by Matthew Flinders in 1779. However, despite the early records from 1791 of the two convicts, William and Mary Bryan with their two children running away to the area, it was not until 1847 that the next record of the settlement exists, with Captain John Korff taking shelter at the southern Headland of the area that is now 'Coffs Harbour'. European settlement of the area was relatively late compared to the Bellinger and Clarence Rivers due to the absence of a major river to provide access to forest resources and a fertile flood plain for agriculture.

There was at least some cedar getting at Coffs Creek by Walter Harvie and George Tucker in 1865, with the camp set up by Harvie and Tucker being one of the earliest known semi-permanent European settlements in the Coffs Harbour area. Timber getters often employed the services of Aboriginal bushmen who had the knowledge and skills to rapidly identify Cedar trees (Thomas 2013:2).

Three major phases of settlement themes can be defined within the Coffs Harbour area which have had cumulative impacts within the general Study Area.

Forestry and forest related industries: This phase of settlement includes the very early extraction of cedar and softwoods for export and later more broad extraction of remaining hardwood species which supplied local mills which provided timber for growing villages and towns. This later process of clearing has historic linkages to the settlement of the area post World War 1 and the clearing of land by returned soldiers for early agriculture and horticulture.

Horticulture and agriculture: Farming has played an important role in the study area and has had the most significant impact on the local landscape. Large areas of land have been cleared and regrowth managed for grazing, including beef production in the elevated hills and dairying on the alluvial flats, and horticulture. Significant early crops include corn, bananas, sugar cane, market gardens and pineapples. Some agricultural diversification has taken place in the 20th century, and contemporary land use includes blueberries, avocado, aquaculture and nuts (macadamias). Market gardens and 'share-farms' have operated within the Bonville area and are consistent with the historical process of dividing agricultural land into smaller lots as the wider district population increases. This phase has had the most significant historical effects on the Study Area and remnants of the former banana operations are visible on the western boundary of the Study Area and the steep hillslope to the immediate north.

Residential development: This process of urbanisation has increased significantly since the 1980's and is most noticeable around the small coastal settlements such as Moonee and Sawtell. This urbanisation has mostly been contained within areas already cleared by forestry and horticulture industries. Rural residential development of the 'hinterland' areas to the west of the Pacific Highway has had a lesser impact on landscapes than the higher density development typical of areas east of the Highway. However, as is the case with the

current residential dwelling, farmhouses were typically placed on elevated flat sections of ridge crests which are also the best locations for Aboriginal campsites.

5.2 Ethnohistory

The Study Area is located within the Gumbayngirr nation/language area which is broadly known to include the lands north of Nambucca Heads, south of the Clarence River and west up to the Great Dividing Range (Thomas 2013:1). Given the problematic nature of population estimates at the time of first European settlement, the latter and more 'general' observations of Mathews (1898) for the broader Northern NSW coastline is relevant to the study:

> "In the well-watered coastal districts of New South Wales, where fish and game are abundant, their hunting grounds would be comparatively small," (Mathews 1898:66).

Radcliffe Brown (in Lane 1970:V.8) concludes for the coastal areas that population densities would be in the order of 'one person to every three square miles'. Estimates of tribal groups in the order of 200 individuals are relatively common amongst ethnohistoric and anthropological literature (i.e. Lane 1970 for the Nambucca River district to the south). An additional element to this discussion of population density is the differentiation between the coastal and escarpment areas where the latter is generally accepted to have had lower and much more mobile Aboriginal populations. For the larger river systems (Nambucca, Clarence and Macleay) the concept of more intensive use of the coast as compared to the up-river and escarpment is generally accepted (i.e McBryde 1974, Godwin 1990).

However, a unique quality of the Coffs Harbour area is the proximity of the Great Dividing Range to the Coast. No other 'district' on the North Coast has such a narrow coastal zone or such a short distance between the very different environments of coast and elevated/cold forests. The extent to which this affected land-use is not known, however the absence of historic information about the Coffs Harbour hinterland indicates that this narrow intermediate zone was not as intensively used or was secondary to occupation of the coastal and estuarine areas. There is however great potential for identification of pathways and routes between the coast and escarpment/hinterland.

The 'contact' experience of Gumbayngirr people of the study area is somewhat different to other groups resident on the larger river systems of the North Coast. There are no historical accounts of 'massacres' within the Study Area, although that is not to say they didn't happen along the coastal zone, such as the documented massacre at Red Rock (Goulding 2001:63). Unlike the larger properties and permanent building of European settlers, most Aboriginal living areas from the contact period tended to be very small shacks made from remnant and scavenged materials located usually on Crown Land. Historic living areas tended also to be seasonal; for seasonal bush resources such as fish runs or for seasonal work within the horticulture industry.

Camps located inland, such as those near the Coffs Harbour central business district, tended to be on public land and nearby to small townships where there was access to water either, naturally occurring or at a public tap. The main camping areas identified by Goulding (2001:64-65) are Corindi Lake (inland from Arrawarra), Nana Glen (junction of Orara River and Bucca Bucca Creek), Happy Valley in Coffs Harbour, Coffs Creek/Fitzroy

Oval, Wongala Estate and Yellow Rock. In general terms, the historical (post-European contact) experiences of Aboriginal people had been one of exclusion up until the 1960's (Calley 1956:201). The nature of historic Aboriginal camps and economy within the historic period is such that it is unlikely these types of 'sites' will be present in the historic record of the study area.

5.3 Regional Archaeological Models

5.3.1 McBryde (1974) and Coleman (1982)

McBryde (1974) proposes that groups ranged between the coast and the coastal ranges on a seasonal basis (i.e. McBryde 1974) utilising the immediate coast and main rivers as the focus of occupation. Early sources support this view to some extent as there are records describing the movement of inland groups of the Clarence River, as an example, to the coast during winter. Coleman (1982) proposes an alternate model where it is suggested that movement of coastal people was not frequent, and that semi sedentary groups moved north and south within the coastal plain rather than to the upper rivers (Coleman 1982). The model is based on reports of numbers of small villages composed of dome shaped weatherproof huts between the mid- NSW coast and Moreton Bay. Flinders described a small group of huts in the vicinity of Yamba in 1799, and Perry described two villages on the banks of the lower Clarence in 1839 (McBryde 1974:9). Similar sightings were reported by Rous on the Richmond (McBryde 1974), Oxley on the Tweed (Piper 1976) and in Moreton Bay (Hall 1982). The 'solid' construction methods described for these huts seem to suggest the occupation of a base camp for periods of months rather than a constant wide-ranging pattern of low-level land use.

5.3.2 Godwin (1990a and 1990b)

Godwin (1990a and 1990b) argues that the 'models' proposed by McBryde and Coleman are not supported by the archaeological record and that local conditions dictated exploitation strategies on the north coast of NSW. In this model:

> Amongst coastal groups proper there was no movement from the coast back into the sub-coastal river valleys and foothills. These people were semi-sedentary and lived close to the coast the whole year round. Movement associated with the subsistence round involved travelling only short distances away from the littoral. There were instances of long-distance travel associated with ceremonial gatherings. However, such movement was generally parallel to the coast…
>
> Sub-coastal groups journeyed to the coast, but only in small numbers: there was not the large-scale migration of people posited by McBryde. The data suggests that this took place throughout the year and could have been for both ritual and secular reasons. Groups also journeyed through the "Falls" country throughout the year. There are also reports of movement in a north-south direction along the sub-coastal strip from river valley to river valley, and from the sub-coastal zone to the tablelands which appears to have been associated with ceremonial gatherings. These ranged from clan-sized gatherings through to inter-tribal meetings (Godwin 1999:122, 123).

If this model is applied to the Study Area it is likely that the main areas of occupation would be along the coastal strip and around the creek estuaries which provided broad sandy flats and more abundant aquatic and marine resources.

5.3.3 Byrne (1987)

Denis Byrne undertook a state-wide investigation of the archaeological and Aboriginal cultural heritage values of NSW rainforests. This study included a review of all previously recorded archaeological sites within rainforest environments and a sample investigation which included the 'Big Scrub' or Lowland Rainforest of northern NSW. The predictive model for the lowland rainforests included the following statement:

> The lowland rainforests were situated within what might be termed the core areas of the coastal lowland tribes…the foci of settlement of these tribes were the immediate coastal strip, the estuaries and valleys of the major rivers. The key attribute of the lowland rainforests was their proximity to the main areas of settlement, and, hence, the accessibility or casually, could be easily scheduled within the mainstream economy.
>
> Most of these rainforests could be exploited from bases in other and neighbouring environments. It is likely that the major campsites were located close to the productive margins of these rainforests. Campsites may also have been situated in clearings within rainforests where they acted as bases for the exploitation of core areas of extensive forests and as staging camps for travel through such forests (Byrne 1987:54-55).

If this model were applied to the Study Area it is reasonable to proceed with the assessment on the basis that the former rainforest/ tall closed forest environments would not be conducive to larger scale campsites or occupation and that the Study Area would be utilised by small hunting parties who were primarily based in large camps on drier forests of the coast line or more elevated north-facing ridges further up the range.

5.3.4 Biosis (2017)

Biosis (2017) completed a archaeological predictive model to inform the initial Aboriginal Cultural Heritage Assessment of the Coffs Harbour Bypass, north of the Study Area (Biosis 2017:26), which included the following general predictions:

- Artefact scatters and isolated artefacts are the most common site type found in the Coffs Harbour region. Previous work has identified this site type in any of the local landforms: coastal plain, sub-coastal ramp and escarpment. On the coastal plain these site types are most likely to be present on elevated topography overlooking water sources. Within the sub-coastal and escarpment landforms these site types are predicted to occur on flat spurs or ridges with lower densities than those on the coast. PADs have been previously recorded in the region across a wide range of landforms.
- Along the coastal plain, PADs are most likely to exist on elevated topography overlooking water sources. Further inland, they are predicted to occur on low gradient spurs or ridges, particularly close

to water sources. PADs have the potential to be present in undisturbed to moderately disturbed landforms" (Biosis 2017:35).

- The potential for shell middens, stone quarries and burial sites was considered to be moderate overall, strongly dependent on the occurrence of suitable geology and soil types, with middens considered to be more likely in coastal areas or as small, scattered deposits along the major watercourses. Scarred trees, grinding grooves, rock shelters,
- Aboriginal ceremony and dreaming sites and post-contact sites were considered unlikely to occur within the study area, given the scale of previous land clearance, unsuitable geology or the lack of recorded historical or contemporary identification of specific cultural values within the actual PACHCI Stage 2 assessment.

5.3.5 Collins (2007)

Jacquie Collins (2007) undertook an archaeological assessment of route options for the Sapphire to Woolgoolga Pacific Highway Duplication which identifies three broad landscapes, being (Collins 2007:27,28):

Coastal alluvial plains- … those with highest archaeological sensitivity are well-drained swamp and estuary banks, and the level to low-gradient crests of low rises and spurs. Elements of lowest archaeological sensitivity are valley flats, plains and open depressions. Irrespective of their landscape context, areas developed for residential uses or otherwise intensively disturbed (eg road and services easements) will also have low archaeological sensitivity.

Most likely site types are isolated stone artefacts, small low-density scatters of stone artefacts, and shallow midden scatters composed solely of estuarine mollusc species. However, some large artefact scatters and stratified midden deposits containing a range of shellfish species and other cultural materials are associated with the coastal alluvial plains. Scarred trees may occur in any parts of the landscape where mature trees survive.

Coastal ramp- Predictions for the coastal ramp indicate that landform elements of highest archaeological sensitivity are the level to gently-inclined crests of low ridges, spurs and hills, particularly crests between 10 and 30 metres AHD supporting coastal sclerophyll forest. Elements of lowest archaeological sensitivity are hillslopes with gradients greater than 10 degrees and valley flats supporting swamp forests. Irrespective of its topographic context, land developed for residential uses or otherwise intensively disturbed (e.g. road and services easements, banana plantations) will also have low archaeological sensitivity.

Site types most likely to occur are isolated stone artefacts and small low-density scatters of stone artefacts, although some small single-species shell scatters, large stratified midden deposits and large artefact scatters are associated with this land system. Scarred trees may occur anywhere mature trees survive.

Escarpment foothills- Predictions developed on the basis of existing site information indicate that landform elements of highest archaeological sensitivity are level to gently-inclined ridge and spur crests,

especially dry forested crests with open or east to north-east aspects. Landscapes of lowest archaeological sensitivity are those featuring dissected terrain, comprising hillslopes (particularly slopes above 10 degrees with southerly aspects), gullies and small streams. Irrespective of its topographic context, intensively disturbed land (eg road and services easements, banana plantations) will also have a low level of archaeological sensitivity.

Most likely site types are isolated stone artefacts and small low-density scatters of stone artefacts. Some large artefact scatters and small stone extraction sites (quarries) may also occur. Scarred trees may occur anywhere mature trees survive.

The Study Area is located on a landform equivalent to the 'coastal ramp' and as such, in line with this model, the Study Area has an overall low-moderate potential for archaeological sites, with the greatest potential existing on spurs and ridges.

5.4 Predictive model

From the review of the AHIMS database, the background environmental information and general predictive models it is reasonable to proceed with the investigation on the basis that the Study Area has an overall low potential to contain Aboriginal archaeological sites. The following specific comments are provided to inform the Due Diligence study:

- no sites have been recorded in the immediate area during the highway upgrade and bypass projects
- where sites have been found in the coastal hills they tend to be low-density artefact scatters which relate to hunting and collection in the forests
- Aboriginal sites are mostly likely to occur along the coastline, on the elevated ridge to the north and at the major creek estuaries (Coffs Creek and Moonee Creek), and
- the Study Area comprises either tall, closed forest or rainforest which has been subject to a high level of disturbance from forestry and the historical banana plantation.

6. FIELD SURVEY: ABORIGINAL CULTURAL HERITAGE

6.1 Survey Methods

The archaeological site inspection was undertaken by Tim Hill and Uncle Ian Brown, Aboriginal Sites Officer (Coffs Harbour and Dsitrict LALC) on 29 August 2023. Uncle Ian was familiar with the archaeological and cultural landscape of the Coffs Coast and has undertaken archaeological surveys for numerous projects over the past 20 years. The survey method include meandering pedestrian transects across the hillslope.

6.2 Constraints to Site Detection and Survey Coverage

An assessment of the constraints to site detection is made to assist in formulating a view as to the effectiveness of the field inspection to find Aboriginal sites and cultural materials and is a requirement of the CoPAI (DECCW 2010). The area of surface exposure and the degree of surface visibility within exposed surfaces are usually the product of 'recent' land uses e.g. agricultural tilling, road construction or use by vehicles to create informal tracks, areas of natural erosion on steeper slopes that may have been used repeatedly by animals (McDonald et.al. 1990:92). However, most of the survey areas were significantly covered by grass and weeds and disturbed from construction of the driveway and the former banana plantation (**Table 5** and **Figure 10**-**Figure 15**).

Table 5: Summary of archaeological survey

Survey Unit (SU)	Landform	Survey Area (m^2)	Visibility	Exposure	Effective coverage area (m^2)	Effective coverage %	No. of sites
Proposed Lot 1	Steep slope	500	10	10	5	1	0
Proposed Lot 2	Steep Slope	200	10	10	2	1	0

Figure 10: The hillslope looking east to the boundary of the proposed new Lots

Figure 11: Proposed Lot 1 showing the hillslope and ex. Banana plantation

Figure 12: Proposed Lot 1 looking north to the Old Coast Road

Figure 13: Proposed Lot 1 looking south to Campbell Close

Figure 14: Former banana plantation east of the current dwelling (Proposed Lot 2)

Figure 15: The hillslope below the residential dwelling showing vegetation (looking south)

6.3 Survey Results

The following statements summarise the outcomes of the site inspection consultation with Uncle Ian Brown:

- no Aboriginal sites were recorded within the Study Area and it is not considered likely that the steep slopes would contain Aboriginal archaeological sites as the use of the ridges and steep slopes was typically restricted to smaller hunting or travelling groups with a small archaeological signature
- it is considered likely that the former Old Coast Road is generally in the alignment of an old traditional pathway as the original travel routes through rainforest tended to utilise Aboriginal tracks between campsites which existed prior to settlement
- the Study Area comprises a steep-very steep hillslope which has been subject to significant ground disturbance from bananas in the mid-late 1900's which would increase the likelihood soils have been lost from erosions
- Aboriginal ceremonial sites are known in the local area- however these are typically on the headlands and the major ridges that connect the outcropping rocky headlands to the Coast Range and the Orara Valley, and
- It is considered that the main campsites, and therefore archaeological sites, are located on the Coffs Creek and Moonee Creek estuaries.

6.4 Requirement for Additional Investigation

The CoPAI (DECCW 2010B) requires that archaeological excavation should be undertaken under the following circumstances:

> "sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity"

When applied across the NSW North Coast, sites of 'conservation value' would include classes of archaeological sites which are either rare or of deeper significance to the Aboriginal community, including burials, ceremonial sites such as stone arrangements, birthing places, rock art sites, shell middens, scarred or carved trees and historic sites associated with Aboriginal reserves or "fringe" camps. Stone artefact scatters and isolated artefacts are relatively common throughout the subcoastal area and would not be considered candidates for conservation areas and are not considered to be of high conservation value. Additionally, based on the degree of ground disturbance within the Study Area it is not considered likely, or highly likely, that Aboriginal archaeological sites will be present or subject to harm as a result of the Planning Proposal or subsequent Development Applications.

The requirement for additional archaeological investigation has been considered as part of the consultation with Coffs Harbour LALC. It is concluded that additional consultation with the Aboriginal community and archaeological excavation is not required for any future subdivisions as there is an overall low likelihood that Aboriginal sites will occur within the highly disturbed hillslopes. As such an appropriate management response for this proposal is the implementation of an Unexpected Aboriginal Objects Find Procedure (see below).

7. CONCLUSIONS AND RECOMMENDATIONS

The survey has concluded that the Planning Proposal, and any future Development Applications, within the Study Area will not likely result in harm to Aboriginal archaeological sites. As such the works can be undertaken using the Due Diligence approval pathway (Section 87(2) of the NPW Act). However, it is recommended that an Aboriginal objects find procedure is put in place as a precautionary measure.

Recommendation 1: Aboriginal Objects Find Procedure

It is recommended that if it is suspected that Aboriginal objects have been uncovered as a result of road upgrade works:

a) work in the surrounding area is to stop immediately and records are made of the finds via project incident reporting procedures
b) a temporary fence is to be erected around the site and appropriate controls put in place to ensure that no additional ground disturbance happens in the vicinity of the find
c) an appropriately qualified archaeological consultant and a representative of the Coffs Harbour and District LALC are to be engaged to identify the material and provide an initial assessment of the significance of the object and the likely nature and extent of any associated archaeological sites
d) if the material is found to be of Aboriginal origin, the find must be reported on the AHIMS database
e) In the event that the Aboriginal objects are considered to have been damaged or disturbed, the incident must be reported through the NSW Enviro Hotline, and
f) Works may only recommence after advice from Heritage NSW on the requirement for an AHIP or where design, engineer or construction measures are identified to mitigate further damage to the Aboriginal site.

Recommendation 2: Aboriginal Human Remains

Although it is unlikely that Human Remains will be located within the road reserve or stockpile/ laydown area, should this event arise it is recommended that all works must halt in the immediate area to prevent any further impacts to the remains. The site should be cordoned off and the remains themselves should be left untouched. The nearest Police Local Area Command (Coffs Harbour), Coffs Harbour and District LALC and the Heritage NSW (Parramatta) are all to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community and the Heritage NSW should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all parties, provided it is in accordance with all parties' statutory obligations.

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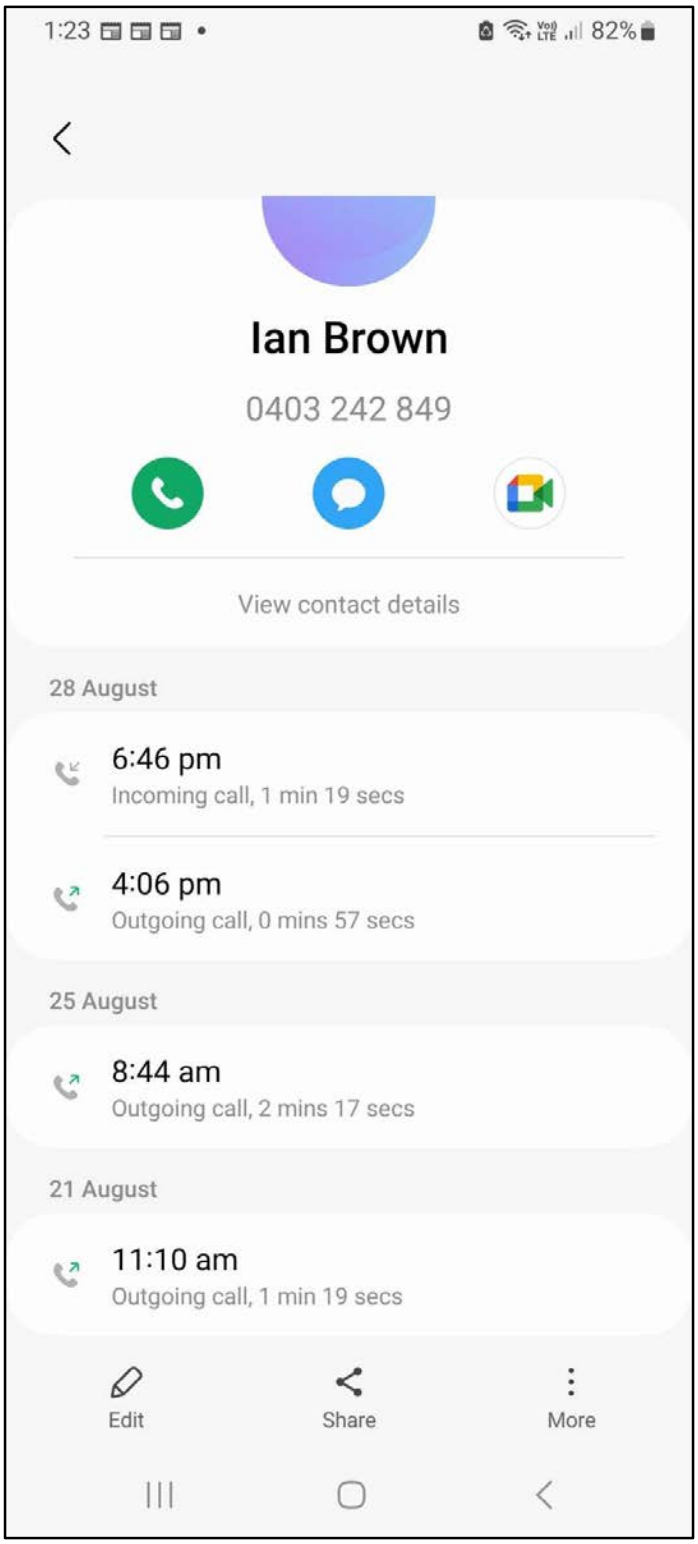
APPENDIX A: CONSUTATION WITH COFFS HARBOUR LALC



APPENDIX B: AHIMS SEARCH RESULTS.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TH125 Campbell Close

Client Service ID : 811718

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
22-1-0636	97 Sealy Lookout Drive Site	GDA	56	510726	6652575	Open site	Valid	Artefact : -		
	Contact	Recorders	Everick Heritage Pty Ltd,Everick Heritage Pty Ltd,Mr.Matthew Finlayson,Mr.Matth					Permits	5043	
22-1-0301	Finlays Rd	AGD	56	511608	6653331	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	Mr.Mark Flanders					Permits		
22-1-0565	Lovetts Road	GDA	56	511362	6654206	Open site	Valid	Artefact : -		
	Contact	Recorders	Coffs Harbour City Council - cnr Coff and Castle Streets,Mr.Marten Bouma					Permits		
22-1-0619	CHB AFT 8	GDA	56	512275	6652358	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor					Permits		
22-1-0610	CHB IF 2	GDA	56	512323	6652122	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits		
22-1-0399	Sartor OS1	GDA	56	513905	6654924	Open site	Destroyed	Artefact : 1		102485,102653
	Contact	Recorders	Mr.John Appleton,Mr.John Appleton					Permits	3491,3492,3605	
22-1-0212	S2W-2	GDA	56	514083	6655959	Open site	Destroyed	Artefact : 4		103091
	Contact Searle	Recorders	Ms.Jacqueline Collins,Ms.Jacqueline Collins					Permits		
22-1-0125	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	Recorders	Anthony English					Permits		
22-1-0605	CHB IF 7	GDA	56	513252	6653745	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits		
22-1-0364	Korara 2 and PAD	GDA	56	513424	6654719	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Davies Heritage Consultants Pty Ltd					Permits		
22-1-0400	Sartor ISO 2	GDA	56	514004	6654746	Open site	Destroyed	Artefact : 1		102485,102653
	Contact	Recorders	Mr.John Appleton,Mr.John Appleton					Permits	3491,3492,3605	
22-1-0193	Sapphire Two	AGD	56	514091	6654676	Open site	Valid	Artefact : 1		
	Contact	Recorders	Coffs Harbour and District Lcal Aboriginal Land Council					Permits	1986	
22-1-0142	CHSS-3	AGD	56	513100	6653480	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0391	S2W-20	GDA	56	514000	6654705	Open site	Valid	Artefact : -		103091
	Contact	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins					Permits		
22-1-0205	Bruxner park 1	AGD	56	510650	6652370	Open site	Valid	Artefact : 8		
	Contact Searle	Recorders	Mr.Ian Brown					Permits	5043	
22-1-0192	Sapphire One	AGD	56	514145	6655639	Open site	Valid	Artefact : 4		
	Contact	Recorders	Coffs Harbour and District Lcal Aboriginal Land Council					Permits	1986	

Report generated by AHIMS Web Service on 21/08/2023 for Tim Hill for the following area at Lat, Long From : -30.2625, 153.103 - Lat, Long To : -30.2254, 153.1648. Number of Aboriginal sites and Aboriginal objects found is 21

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 2

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TH125 Campbell Close

Client Service ID : 811718

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
22-1-0002	Korora Bay;Goanna Site;	AGD	56	513500	6652500	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	
	Contact	**Recorders**	Ray Kelly,Mr.Richard Kelly					**Permits**		
22-1-0003	Banana Bowl;Crayfish Bay;	AGD	56	513600	6653200	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	
	Contact	**Recorders**	Ray Kelly,Mr.Richard Kelly					**Permits**		
22-1-0566	Old Coast Road	GDA	56	513888	6654946	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Coffs Harbour City Council - cnr Coff and Castle Streets,Mr.Marten Bouma					**Permits**		
22-1-0437	S2W-2 Redeposit	GDA	56	514221	6656185	Open site	Valid	Artefact : -		103091,104555
	Contact	**Recorders**	Ms.Jacqueline Collins					**Permits**		
22-1-0602	Gaudrons Road IF01	GDA	56	513921	6655739	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Everick Heritage Pty Ltd,Mr.Alexander Dent					**Permits**		

**** Site Status**

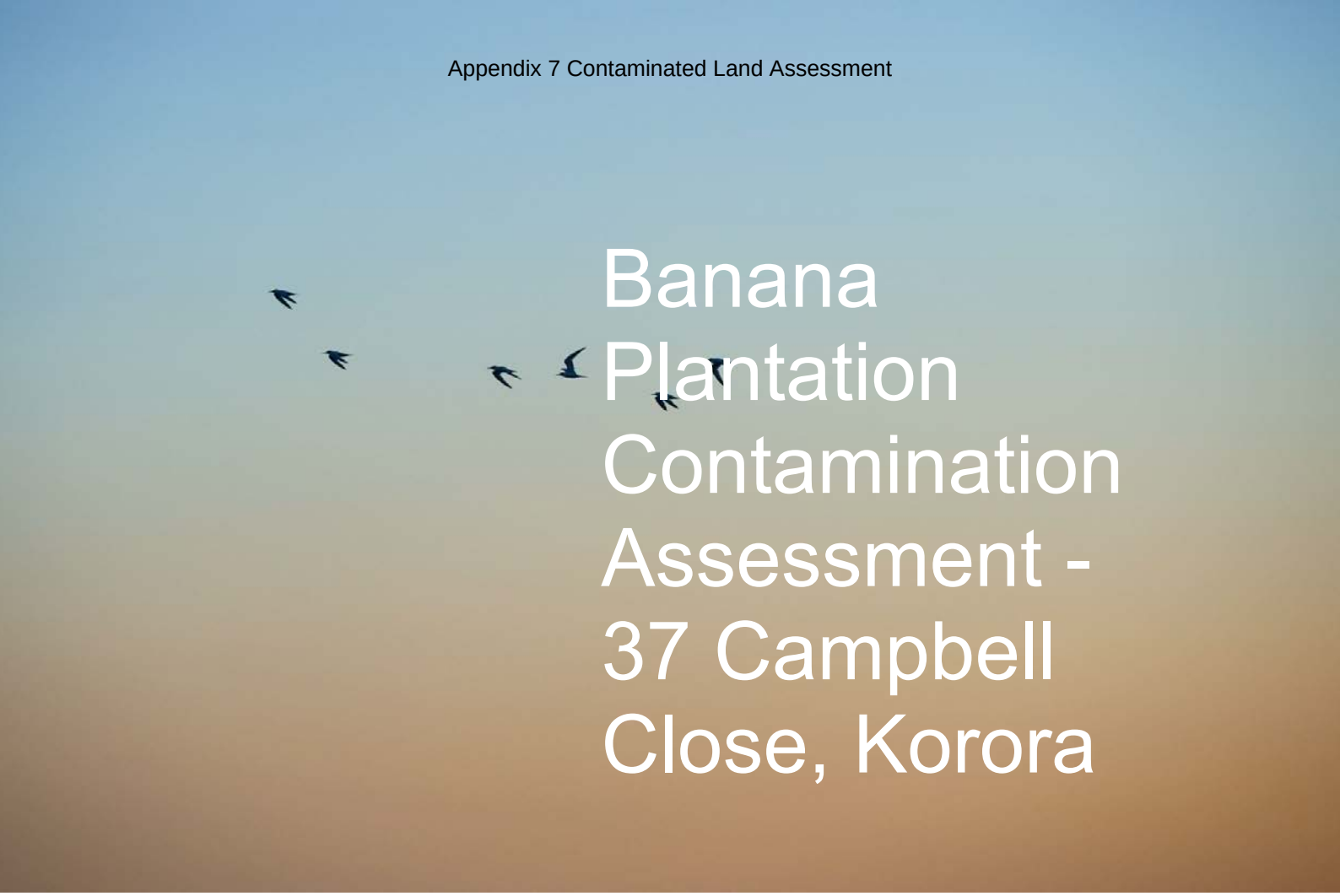
Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/08/2023 for Tim Hill for the following area at Lat, Long From : -30.2625, 153.103 - Lat, Long To : -30.2254, 153.1648. Number of Aboriginal sites and Aboriginal objects found is 21



Banana Plantation Contamination Assessment - 37 Campbell Close, Korora

11 September 2023

For: Darren Philp

Authored by: Strider Duerinckx

Ref	Ver	Date	Distribution
2223-213-03	A	11/9/23	Client

Table of Contents

Attached Tables

Figures

Appendices

1 Introduction

Earth Water Consulting Pty Limited (EWC) was engaged by Darren Philp (the "Client") to undertake a contamination assessment of former banana plantation land at 37 Campbell Close, Korora) (the "Site") (Figure 1).

1.1 Objectives

The objective of this investigation was to undertake an assessment of the property to CHCC and NSW EPA (1997) requirements to ensure that potential soil contamination as a result of former banana cultivation would not limit the proposed residential land use.

1.2 Suitability to Undertake Works

Strider Duerinckx has project managed and signs off on this investigation. Strider is an environmental geologist with 25 years experience in contaminated sites investigations including numerous banana plantation assessments. Strider is a CEnvP (Site Contamination Specialist) accredited.

2 Proposed Development

It is understood that it is proposed to subdivide the 1.15Ha property into two lots of approximately 6,514m^2 and 5,031m^2 each (Figure 2). The proposed subdivision will create an additional building envelope of 400m^2 on the proposed Lot 1.

3 Scope of Work

The assessment was undertaken in reference to report to NSW EPA (1997) Banana Plantation Guidelines, and included:

- A desktop review, including
    - Historical aerial photographs;
    - NSW EPA notices;
- A site walkover of the property to visually assess the current site layout and surface conditions;
- Assuming broadacre farming only with no subsequent soil disturbance, the proposed Lot 1 was assessed to S2.1.1 of the guidelines, including the collection of 28 samples, and analysis of 7 composites for arsenic, lead, DDT, dieldrin and aldrin;
- In accordance with s.2. of the guidelines to assess potential hotspots, the collection of 7 discrete samples at the former packing shed location;
- Preparation of this ESA report detailing the results of the desktop review and site walkover, and assessment of contamination risks, presentation of the analytical results, conclusions regarding the contamination status of Proposed Lot 1, and recommendations for further investigations or remediation (if required).

4 Site Description

4.1 Site Identification

The Site is known as Lot 1 of DP 1130767 and is approximately 11,500m^2 in area.

4.2 Location and Features

The property is located on the northern side of Campbell Close and to the south of Old Coast Road in Korora. The property is zoned R5 Large Lot Residential and is surrounded by a number of other R5 properties, C2 Environmental Conservation areas and the SP2 Infrastructure zone of the Pacific Highway, to the east.

The Site sits on a generally south facing set of two ridgeline spurs, which are divided through the centre of the block by a steep gully, running north to south. A derelict shed is located at the centre of the western boundary of proposed Lot 1. The she is constructed with a G.I. roof and a mix of weatherboard and Fibrous Cement (FC) sheeting on the walls. A piece of the FC sheeting was examined and found to contain chrysotile asbestos.

The Site is mostly cleared and mowed lawn, with some landscaped gardens and maintained vegetation around the existing dwelling on the northern end of the property (Figure 3).

Photograph 1 – Looking southeast from the existing dwelling on proposed Lot 2, over proposed Lot 1.

Photograph 2 - Looking south across the building envelope of proposed Lot 1.

Photograph 3 - Looking west across the derelict shed.

Photograph 4 - The interior of the shed.

4.3 Surrounding Land Use

The surrounding land use includes developed R5 Large Lot Residential land in all directions from the target property.

5 Site History

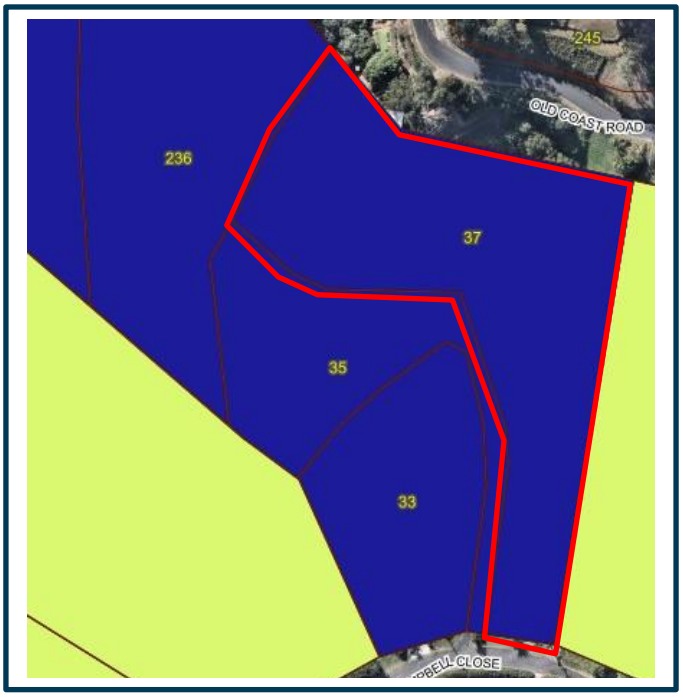
5.1 Mapped BP Land

A review of the Coffs Harbour City Council LEP mapping indicates that the Site and surrounds to the north and west are mapped as having been under banana cultivation between 1943 and 1994.

Photograph 5 - Mapped former banana plantation extents.

5.2 Previous Environmental Investigations

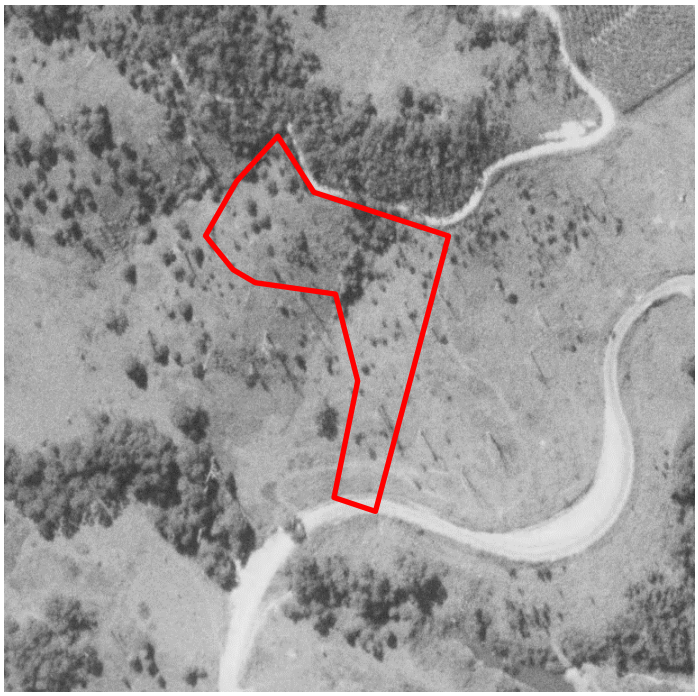
No previous environmental investigations were provided to EWC for the purposes of this investigation. CHCC mapping indicates that the Site is listed on its contaminated sites database as code BCL7 – former banana plantation land, previous sampling undertaken and partial clearance of the property.



Photograph 6 - Mapped contamination status.

5.3 Aerial Photographs

A review of aerial photographs from 1954-2010 indicate that the Site was located on banana cultivation area from at least 1964-2004. The dwelling was constructed between 1954 and 1964, and the shed between 1964 and 1973.



Photograph 7 - 1954 view of locality with approximate Site location highlighted by red outline. Cleared but no BP.

Photograph 8 - 1964 view of the Site showing the property under banana cultivation and the a dwelling.

Photograph 9 - 1973 view of the Site showing banana cultivation and the construction of the shed on Proposed Lot 1.

5.4 NSW EPA Records

A search of the NSW EPA's contaminated land record revealed no investigation or remediation notices have been issued on the Site or adjacent properties for contamination or 'significant risk of harm' under Section 58 of the Contaminated Land Management Act 1997.

A search of the public register under Section 308 of the Protection of the Environment Operations Act indicated that no current and recently surrendered licenses have been held for potentially contaminating activities on the Site or adjacent properties.

5.5 Summary of Site History

The historical review confirmed that banana cultivation was present on the property from at least 1964 up until at least 1973. The dwelling was constructed between 1954 and 1964 and the shed between 1964 and 1973. All banana cultivation appears to have ceased on the property prior to 2004.

A portion of the Site has already been sampled and cleared for contamination, likely in the vicinity of the dwelling on proposed Lot 2 as part of a previous house renovation.

6 Potential Areas and Contaminants of Concern

Based on the site history and a walkover, Areas of Environmental Concern (AECs) and associated Contaminants of Concern (CoC) were identified for the Site. These are presented in Table 1.

Table 1: Potential AEC and CoC

AEC	Potential Contaminating Activity	CoC	Likelihood of Contamination	Comment
1	Broadscale shallow contamination from banana cultivation on Proposed Lot 1	OCP (Aldrin, dieldrin and DDT), heavy metals (arsenic and lead)	Moderate for OCP (dieldrin) and metals (arsenic and lead)	In 1994, the NSW EPA, Department of Agriculture and Coffs Harbour City Council undertook a study of banana plantations in the Coffs Harbour area, and developed a specific set of guidelines to assess these former agricultural properties. A number of typical CoC were identified and contaminant distribution models developed.
2	Potential banana packing shed	OCP (Aldrin, dieldrin and DDT), heavy metals (arsenic and lead) Asbestos in Fibrous Cement (FC) sheeting)	High for OCP and heavy metals. High for asbestos in wall sheeting	A visual inspection of the FC wall sheeting revealed chrysotile asbestos.
Notes **OCP = Organochlorine Pesticides**				

7 Investigation Criteria

The soil investigation levels for banana plantation contamination (OCP, arsenic and lead) were adopted from the NSW EPA (1997) Guidelines. These are comparable to health-based investigation levels for residential sites with access to soil for home grown vegetables at less than the 10% of the daily intake, that are provided in NEPM (NEPC 2013) Guidelines. The investigation criteria are shown in the attached Table LR1.

8 Sampling Program

The sampling program was based on the NSW EPA (1997) Guidelines which were developed specifically for former banana plantation properties. Sampling was undertaken on 23 August 2023 by a trained EWC environmental scientist. In accordance with s2.1.1 for an 3,000-20,000m^2 undisturbed banana growing area, in accordance with Table A 28 samples were required at about a 13.5m grid, composited with a maximum of 4 subsamples per composite (7 composites).

Composite samples were analysed for Arsenic (As), Lead (Pb) and OCP pesticides.

In accordance with s2.2, seven additional discrete samples were collected in a 5m grid to assess a potential hotspot at the shed area. The 7 discrete samples were analysed for Arsenic, Lead and OCP pesticides.

9 Results

9.1 Sample Descriptions

The sampling locations are presented in Figure 3, with sample details provided in Table 2.

Table 2: Sample Descriptions

Sample ID	Depth	Description	Composite ID
S-1	0-75mm	Topsoil	C-1
S-2	0-75mm	Topsoil	C-1
S-3	0-75mm	Topsoil	C-1
S-4	0-75mm	Topsoil	C-1
S-5	0-75mm	Topsoil	C-2
S-6	0-75mm	Topsoil	C-2
S-7	0-75mm	Topsoil	C-2
S-8	0-75mm	Topsoil	C-2
S-9	0-75mm	Clay	C-3
S-10	0-75mm	Topsoil	C-3
S-11	0-75mm	Topsoil	C-3
S-12	0-75mm	Topsoil	C-3
S-13	0-75mm	Topsoil	C-4
S-14	0-75mm	Topsoil	C-4
S-15	0-75mm	Topsoil	C-4
S-16	0-75mm	Topsoil	C-4
S-17	0-75mm	Topsoil	C-5
S-18	0-75mm	Topsoil (clay)	C-5
S-19	0-75mm	Topsoil	C-5
S-20	0-75mm	Topsoil	C-5

Sample ID	Depth	Description	Composite ID
S-21	0-75mm	Topsoil	C-6
S-22	0-75mm	Topsoil	C-6
S-23	0-75mm	Topsoil	C-6
S-24	0-75mm	Topsoil	C-6
S-25	0-75mm	Topsoil	C-7
S-26	0-75mm	Topsoil	C-7
S-27	0-75mm	Topsoil	C-7
S-28	0-75mm	Topsoil	C-7
SH-1	0-75mm	Topsoil	NA
SH-2	0-75mm	Topsoil	NA
SH-3	0-75mm	Topsoil	NA
SH-4	0-75mm	Topsoil	NA
SH-5	0-75mm	Soil	NA
SH-6	0-75mm	Topsoil	NA
SH-7	0-75mm	Topsoil	NA

10 Analytical Results

Samples were forwarded under Chain of Custody conditions at Eurofins Laboratory for analysis. The laboratory reports are included in Appendix A and the soil analytical results are summarised in the attached Table LR1.

10.1 Soil Analytical Results

Comparison of composite sample results to the investigation criteria indicated that:

- Concentrations of OCP were reported below the laboratory Limit of Reporting (LOR) for all samples analysed; and
- Concentrations of arsenic and lead were reported below the Investigation Criteria for all samples analysed.

Comparison of discrete sample results, from the shed footprint, to the investigation criteria indicated that:

- Concentrations of OCP were reported below the laboratory Limit of Reporting (LOR) for all samples analysed; and
- Concentrations of arsenic and lead were reported below the Investigation Criteria for all samples analysed.

95% Upper Confidence Limits (UCLs) were not required to be calculated as all results were reported to less than the Investigation Criteria.

10.2 Quality Assurance and Quality Control

10.2.1 Field Quality Control

Environmental sampling activities were based on industry accepted standard practices.

The sampling equipment was decontaminated between sampling locations by washing with detergent and rinsing with clean water. A new pair of disposable gloves was used when handling each soil sample. Samples were collected in laboratory supplied jars and shipped in a chilled esky to the laboratory.

One composite sample C-1 was duplicated in the field by collecting four discrete samples and compositing into Q1. The field duplicate analytical results are included in Table LR2, and Relative Percentage Difference (RPD) calculated. The RPDS for Arsenic and Lead are calculated as less than 50% and are acceptable.

10.2.2 Laboratory Quality Control

Primary samples were submitted to Eurofins Laboratory, which is a national laboratory that undertakes analyses to NATA accredited analytical methodologies, and participates in NATA endorsed laboratory round robin analyses. Laboratory Quality Control included testing and reporting of reagent blanks, laboratory control samples (LCS), matrix spikes and surrogates spikes, and laboratory duplicates to assess laboratory quality control.

The laboratory quality assurance results are included within the laboratory reports attached in Appendix A. No exceptions to the laboratory quality control reportable limits were noted.

10.2.3 Data Quality Check

The quality assurance and quality control of the field and laboratory methods is considered sufficiently robust for the investigation undertaken. Given this it is concluded that the analytical results dataset reliably represents soil concentrations in the field as sampled.

11 Conclusions and Recommendations

The field and analytical results confirm that historical usage of the property as a banana plantation has not resulted in any significant arsenic, lead or OCP contamination in the proposed subdivision area. All results were well below the acceptable threshold for contamination. As such no further investigations or remediation of soils is required for the residential use of the proposed lot.

The existing shed contains identified asbestos in the FC sheeting. During demolition a clearance certificate will be required to confirm safe removal of the asbestos.

12 References

Coffs Harbour City Council. 2017. Contaminated Land Management Policy

Coffs Harbour City Council. 2018. Contaminated Land Management Procedure

Coffs Harbour City Council Local Environmental Plan 2013.

NEPC. 2013. National Environment Protection (Assessment of Site Contamination) Measure. Schedule B1- Schedule B1 Guideline on Investigation Levels For Soil and Groundwater. National Environment Protection Council.

NSW EPA. 1997. Guidelines for Assessing Banana Plantation Sites. Reprinted 2003.

TABLES

Table LR1: Summary of Composite and Discrete Analytical Results

Sample ID		LOR	Investigation Criteria			C-1	C-2	C-3	C-4	C-5	C-6	C-7	SH-1	SH-2	SH-3	SH-4	SH-5	SH-6	SH-7
Date Collected			NSW EPA	NEPM		23/08/2023											23/08/2023		
Depth Collected	Units	Eurofins	BP	HIL (A)	EIL	0-75	0-75		0-75	0-75		0-75	0-75	0-75	0-75		0-75	0-75	
% Moisture	%	1	-	-	-	29	25	29	20	22	32	29	14	11	23	11	19	23	25
Heavy Metals																			
Arsenic	mg/kg	2	100	100	100	37	24	19	21	13	8	6.9	41	7.6	11	9.3	28	11	15
Lead	mg/kg	5	300	300	1100	16	16	16	17	19	17	21	22	21	21	25	170	25	21
Organochlorine Pesticides																			
4.4'-DDD	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
4.4'-DDE	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
4.4'-DDT	mg/kg	0.05	50	-	180	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
a-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Aldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Aldrin and Dieldrin (Total)*	mg/kg	0.05	10	6	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
b-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Chlordanes - Total	mg/kg	0.1	-	50	-	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	< 1	< 0.1	< 0.1	< 1	< 1	< 0.1
d-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
DDT + DDE + DDD (Total)*	mg/kg	0.05	-	240	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Dieldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endosulfan I	mg/kg	0.05	-	270	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endosulfan II	mg/kg	0.05	-		-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endosulfan sulphate	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endrin	mg/kg	0.05	-	10	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endrin aldehyde	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Endrin ketone	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
g-BHC (Lindane)	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Heptachlor	mg/kg	0.05	-	6	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Heptachlor epoxide	mg/kg	0.05	-	-	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Hexachlorobenzene (HCB)	mg/kg	0.05	-	10	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Methoxychlor	mg/kg	0.05	-	300	-	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05	< 0.05	< 0.5	< 0.5	< 0.05
Toxaphene	mg/kg	0.1	-	20	-	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 10	< 0.5	< 0.5	< 10	< 10	< 0.5

Notes

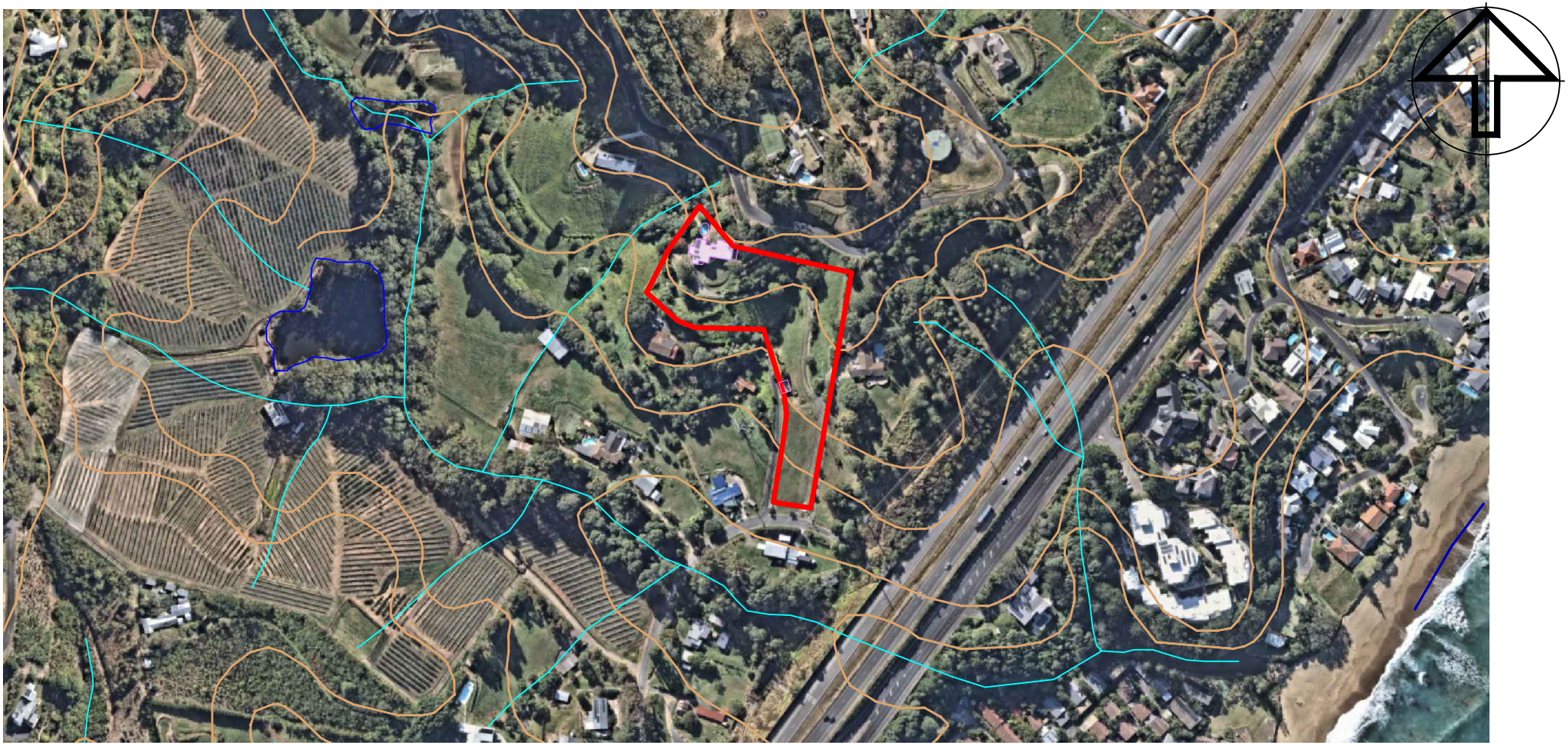
Indicates sample concentration exceeds investigation criteria value

Indicates sample concentration exceeds investigation criteria value by >250%

Table LR2: Summary of Quality Assurance Results

Sample ID		LOR	Investigation Criteria			C-1	Q1	RPD
Date Collected			NSW EPA	NEPM		23/08/2023		
Depth Collected	Units	Eurofins	BP	HIL (A)	EIL	0-75	0-75	
% Moisture	%	1	-	-	-	29	29	NA
Heavy Metals								
Arsenic	mg/kg	2	100	100	100	37	42	12.7
Lead	mg/kg	5	300	300	1100	16	17	NA
Organochlorine Pesticides								
4.4'-DDD	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
4.4'-DDE	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
4.4'-DDT	mg/kg	0.05	50	-	180	< 0.05	< 0.5	NA
a-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Aldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Aldrin and Dieldrin (Total)*	mg/kg	0.05	10	6	-	< 0.05	< 0.5	NA
b-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Chlordanes - Total	mg/kg	0.1	-	50	-	< 0.1	< 1	NA
d-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
DDT + DDE + DDD (Total)*	mg/kg	0.05	-	240	-	< 0.05	< 0.5	NA
Dieldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Endosulfan I	mg/kg	0.05	-	270	-	< 0.05	< 0.5	NA
Endosulfan II	mg/kg	0.05	-		-	< 0.05	< 0.5	NA
Endosulfan sulphate	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Endrin	mg/kg	0.05	-	10	-	< 0.05	< 0.5	NA
Endrin aldehyde	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Endrin ketone	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
g-BHC (Lindane)	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Heptachlor	mg/kg	0.05	-	6	-	< 0.05	< 0.5	NA
Heptachlor epoxide	mg/kg	0.05	-	-	-	< 0.05	< 0.5	NA
Hexachlorobenzene (HCB)	mg/kg	0.05	-	10	-	< 0.05	< 0.5	NA
Methoxychlor	mg/kg	0.05	-	300	-	< 0.05	< 0.5	NA
Toxaphene	mg/kg	0.1	-	20	-	< 0.5	< 10	NA

FIGURES



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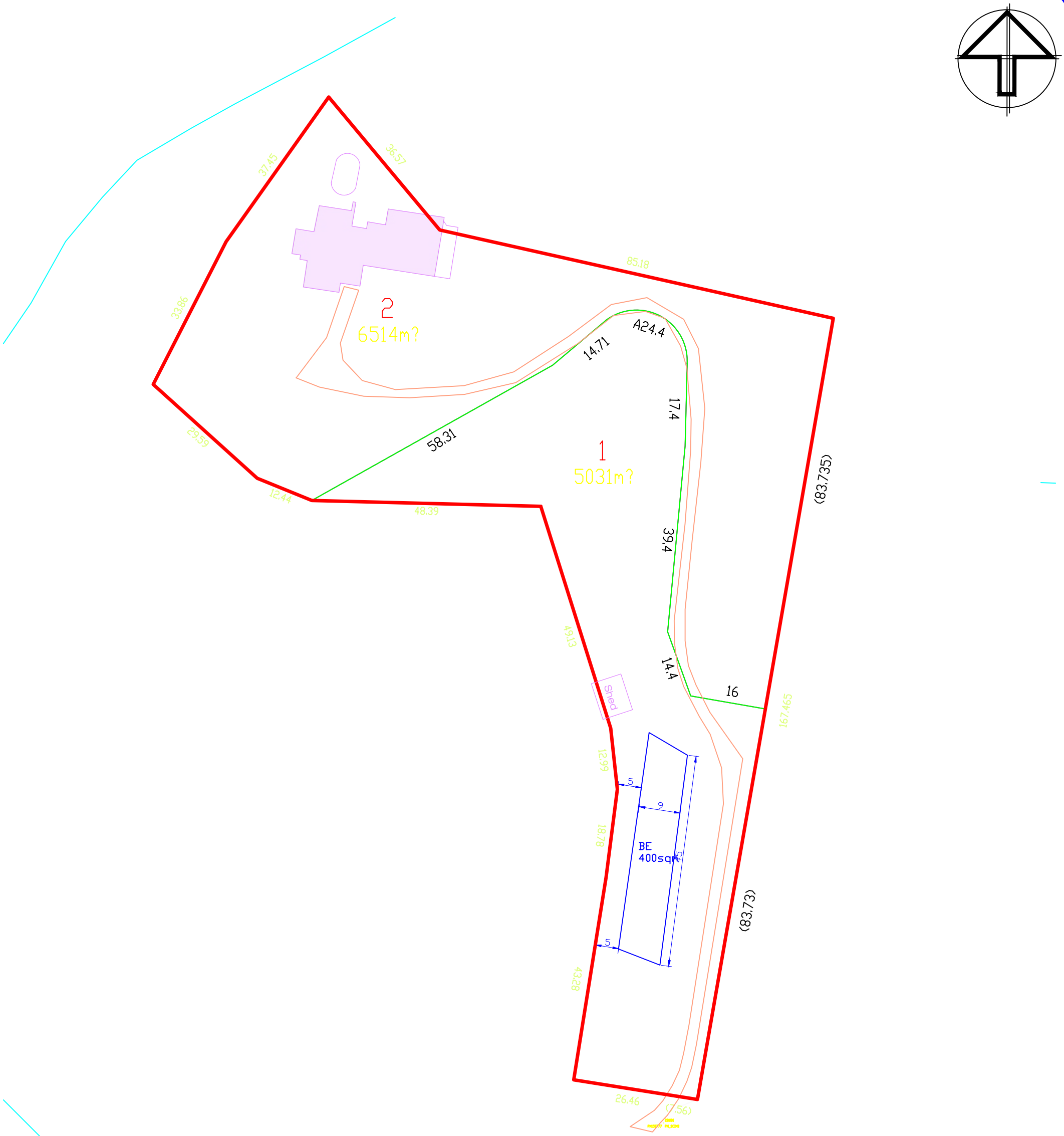
Horizontal Scale (metres) 1:4000

EARTH WATER CONSULTING

LEGEND

- Property Boundary
- Contour (10m)
- Drainage Alignment

TITLE: Site Location			PROJECT: ESA for 37 Campbell Close, Korora		CLIENT: Darren Philp
FIGURE: Figure 1					
SHEET: 1 OF 1	ISSUE: A	AUTHOR: SD	DATE: 21/8/23	SCALE: 1:4000	PROJECT: 2223-213



0 20 40

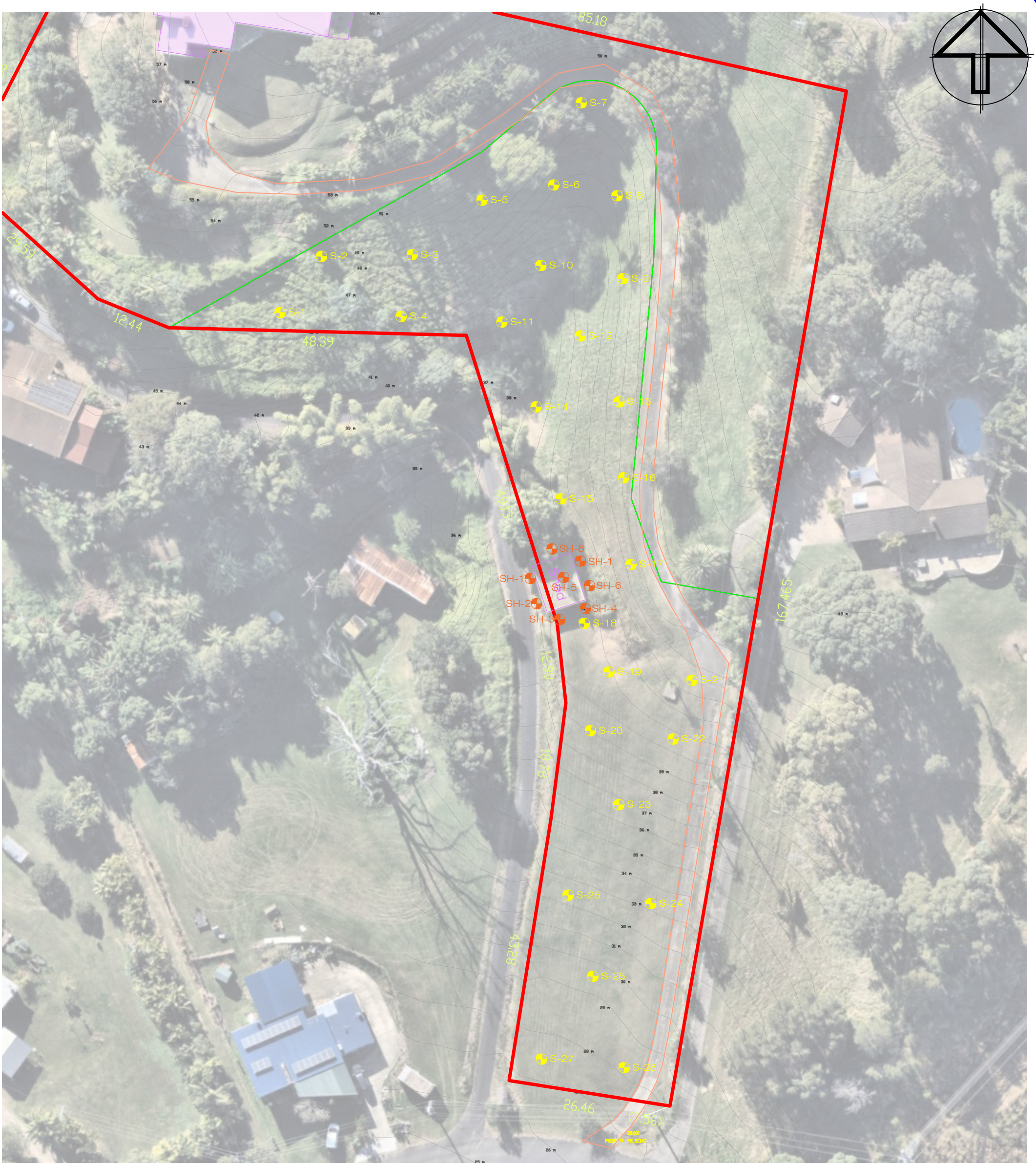
Horizontal Scale (metres) 1:800

LEGEND

- Property Boundary
- Proposed Subdivision Boundary
- Drainage Alignment
- Existing Building

EARTH WATER CONSULTING

TITLE: Proposed Development Layout			FIGURE: Figure 2
			SHEET: 1 OF1 ISSUE: A
PROJECT: ESA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:800	PROJECT: 2223–213



0 10 20 30

Horizontal Scale (metres) 1:600

LEGEND

- Property Boundary
- Proposed Subdivision Boundary
- Drainage Alignment
- Existing Building
- Contour Line (1m)
- Approximate Sample Locations

EARTH WATER CONSULTING

TITLE: Existing Site Layout and Sample Locations			FIGURE: Figure 3
			SHEET: 1 OF1 ISSUE: A
PROJECT: ESA for 37 Campbell Close, Korora			CLIENT: Darren Philp
AUTHOR: SD	DATE: 21/8/23	SCALE: 1:600	PROJECT: 2223-213

APPENDIX A

Earth Water Consulting Pty Limited
2-16 Lourdes Avenue
Urunga
NSW 2455

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Strider Duerinckx**

Report **1019961-S**
Project name CAMPBELL CLOSE
Project ID 2223-213
Received Date Aug 24, 2023

Client Sample ID			**C1**	[G01]**C2**	**C3**	**C4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-Au0062588**	**S23-Au0062589**	**S23-Au0062590**	**S23-Au0062591**
Date Sampled			**Aug 23, 2023**	**Aug 23, 2023**	**Aug 23, 2023**	**Aug 23, 2023**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 10	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	125	99	125
Tetrachloro-m-xylene (surr.)	1	%	99	133	103	97
Heavy Metals						
Arsenic	2	mg/kg	37	24	19	21
Lead	5	mg/kg	16	16	16	17
Sample Properties						
% Moisture	1	%	29	25	29	20

Client Sample ID			C5	C6	C7	[G01]SH-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Au0062592	S23-Au0062593	S23-Au0062594	S23-Au0062595
Date Sampled			Aug 23, 2023	Aug 23, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	95	80	77	50
Tetrachloro-m-xylene (surr.)	1	%	100	81	85	117
Heavy Metals						
Arsenic	2	mg/kg	13	8.4	6.9	41
Lead	5	mg/kg	19	17	21	22
Sample Properties						
% Moisture	1	%	22	32	29	14

Client Sample ID			[G01]SH-2	SH-3	SH-4	[G01]SH-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Au0062596	S23-Au0062597	S23-Au0062598	S23-Au0062599
Date Sampled			Aug 23, 2023	Aug 23, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 1	< 0.1	< 0.1	< 1
4.4'-DDD	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
4.4'-DDE	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
4.4'-DDT	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
a-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Aldrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
b-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
d-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5

Client Sample ID			[G01]SH-2	SH-3	SH-4	[G01]SH-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Au0062596	S23-Au0062597	S23-Au0062598	S23-Au0062599
Date Sampled			Aug 23, 2023	Aug 23, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Dieldrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
g-HCH (Lindane)	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Heptachlor	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Methoxychlor	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Toxaphene	0.5	mg/kg	< 10	< 0.5	< 0.5	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.05	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	< 0.1	< 0.1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	< 0.1	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	82	126	115	51
Tetrachloro-m-xylene (surr.)	1	%	142	86	116	131
Heavy Metals						
Arsenic	2	mg/kg	7.6	11	9.3	28
Lead	5	mg/kg	21	21	25	170
Sample Properties						
% Moisture	1	%	11	23	11	19

Client Sample ID			[G01]SH-6	SH-7
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Au0062600	S23-Au0062601
Date Sampled			Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.5	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.5	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.5	< 0.05
a-HCH	0.05	mg/kg	< 0.5	< 0.05
Aldrin	0.05	mg/kg	< 0.5	< 0.05
b-HCH	0.05	mg/kg	< 0.5	< 0.05
d-HCH	0.05	mg/kg	< 0.5	< 0.05
Dieldrin	0.05	mg/kg	< 0.5	< 0.05
Endosulfan I	0.05	mg/kg	< 0.5	< 0.05
Endosulfan II	0.05	mg/kg	< 0.5	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.5	< 0.05
Endrin	0.05	mg/kg	< 0.5	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.5	< 0.05
Endrin ketone	0.05	mg/kg	< 0.5	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.5	< 0.05

Client Sample ID			[G01]SH-6	SH-7
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Au0062600	S23-Au0062601
Date Sampled			Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Heptachlor	0.05	mg/kg	< 0.5	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.5	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.5	< 0.05
Methoxychlor	0.05	mg/kg	< 0.5	< 0.05
Toxaphene	0.5	mg/kg	< 10	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	78
Tetrachloro-m-xylene (surr.)	1	%	133	84
Heavy Metals				
Arsenic	2	mg/kg	11	15
Lead	5	mg/kg	25	21
Sample Properties				
% Moisture	1	%	23	25

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Sydney	Aug 31, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Heavy Metals	Sydney	Aug 31, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Aug 24, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Site# 2370

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Earth Water Consulting Pty Limited
Address: 2-16 Lourdes Avenue
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NSW 2455

Project Name: CAMPBELL CLOSE
Project ID: 2223-213

Order No.:
Report #: 1019961
Phone: 0402 6083 96
Fax:

Received: Aug 24, 2023 10:05 AM
Due: Aug 31, 2023
Priority: 5 Day
Contact Name: Strider Duerinckx

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	HOLD	Lead	Organochlorine Pesticides	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	C1	Aug 23, 2023		Soil	S23-Au0062588	X		X	X	X
2	C2	Aug 23, 2023		Soil	S23-Au0062589	X		X	X	X
3	C3	Aug 23, 2023		Soil	S23-Au0062590	X		X	X	X
4	C4	Aug 23, 2023		Soil	S23-Au0062591	X		X	X	X
5	C5	Aug 23, 2023		Soil	S23-Au0062592	X		X	X	X
6	C6	Aug 23, 2023		Soil	S23-Au0062593	X		X	X	X
7	C7	Aug 23, 2023		Soil	S23-Au0062594	X		X	X	X
8	SH-1	Aug 23, 2023		Soil	S23-Au0062595	X		X	X	X
9	SH-2	Aug 23, 2023		Soil	S23-Au0062596	X		X	X	X
10	SH-3	Aug 23, 2023		Soil	S23-Au0062597	X		X	X	X
11	SH-4	Aug 23, 2023		Soil	S23-Au0062598	X		X	X	X
12	SH-5	Aug 23, 2023		Soil	S23-Au0062599	X		X	X	X
13	SH-6	Aug 23, 2023		Soil	S23-Au0062600	X		X	X	X

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Site# 2370

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Earth Water Consulting Pty Limited
Address: 2-16 Lourdes Avenue
Urunga
NSW 2455

Project Name: CAMPBELL CLOSE
Project ID: 2223-213

Order No.:
Report #: 1019961
Phone: 0402 6083 96
Fax:

Received: Aug 24, 2023 10:05 AM
Due: Aug 31, 2023
Priority: 5 Day
Contact Name: Strider Duerinckx

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	HOLD	Lead	Organochlorine Pesticides	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
14	SH-7	Aug 23, 2023		Soil	S23-Au0062601	X		X	X	X
15	Q1	Aug 23, 2023		Soil	S23-Au0062602		X			
16	S-1	Aug 23, 2023		Soil	S23-Au0062603		X			
17	S-2	Aug 23, 2023		Soil	S23-Au0062604		X			
18	S-3	Aug 23, 2023		Soil	S23-Au0062605		X			
19	S-4	Aug 23, 2023		Soil	S23-Au0062606		X			
20	S-5	Aug 23, 2023		Soil	S23-Au0062607		X			
21	S-6	Aug 23, 2023		Soil	S23-Au0062608		X			
22	S-7	Aug 23, 2023		Soil	S23-Au0062609		X			
23	S-8	Aug 23, 2023		Soil	S23-Au0062610		X			
24	S-9	Aug 23, 2023		Soil	S23-Au0062611		X			
25	S-10	Aug 23, 2023		Soil	S23-Au0062612		X			
26	S-11	Aug 23, 2023		Soil	S23-Au0062613		X			
27	S-12	Aug 23, 2023		Soil	S23-Au0062614		X			
28	S-13	Aug 23, 2023		Soil	S23-Au0062615		X			
29	S-14	Aug 23, 2023		Soil	S23-Au0062616		X			

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Earth Water Consulting Pty Limited
Address: 2-16 Lourdes Avenue
Urunga
NSW 2455

Project Name: CAMPBELL CLOSE
Project ID: 2223-213

Order No.:
Report #: 1019961
Phone: 0402 6083 96
Fax:

Received: Aug 24, 2023 10:05 AM
Due: Aug 31, 2023
Priority: 5 Day
Contact Name: Strider Duerinckx

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	HOLD	Lead	Organochlorine Pesticides	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
30	S-15	Aug 23, 2023		Soil	S23-Au0062617		X			
31	S-16	Aug 23, 2023		Soil	S23-Au0062618		X			
32	S-17	Aug 23, 2023		Soil	S23-Au0062619		X			
33	S-18	Aug 23, 2023		Soil	S23-Au0062620		X			
34	S-19	Aug 23, 2023		Soil	S23-Au0062621		X			
35	S-20	Aug 23, 2023		Soil	S23-Au0062622		X			
36	S-21	Aug 23, 2023		Soil	S23-Au0062623		X			
37	S-22	Aug 23, 2023		Soil	S23-Au0062624		X			
38	S-23	Aug 23, 2023		Soil	S23-Au0062625		X			
39	S-24	Aug 23, 2023		Soil	S23-Au0062626		X			
40	S-25	Aug 23, 2023		Soil	S23-Au0062627		X			
41	S-26	Aug 23, 2023		Soil	S23-Au0062628		X			
42	S-27	Aug 23, 2023		Soil	S23-Au0062629		X			
43	S-28	Aug 23, 2023		Soil	S23-Au0062630		X			
44	Q1	Aug 23, 2023		Soil	S23-Au0062631		X			
45	Q2	Aug 23, 2023		Soil	S23-Au0062632		X			

eurofins

web: www.eurofins.com.au
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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	HOLD	Lead	Organochlorine Pesticides	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
46	Q3	Aug 23, 2023		Soil	S23-Au0062633		X			
47	Q4	Aug 23, 2023		Soil	S23-Au0062634		X			
48	Q5	Aug 23, 2023		Soil	S23-Au0062635		X			
49	SH-8	Aug 23, 2023		Soil	S23-Au0062696		X			
Test Counts						14	35	14	14	14

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Lead	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	109			70-130	Pass	
4.4'-DDD	%	122			70-130	Pass	
4.4'-DDE	%	95			70-130	Pass	
4.4'-DDT	%	118			70-130	Pass	
a-HCH	%	107			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-HCH	%	104			70-130	Pass	
d-HCH	%	97			70-130	Pass	
Dieldrin	%	104			70-130	Pass	
Endosulfan I	%	116			70-130	Pass	
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	103			70-130	Pass	
Endrin	%	75			70-130	Pass	
Endrin aldehyde	%	79			70-130	Pass	
Endrin ketone	%	115			70-130	Pass	
g-HCH (Lindane)	%	105			70-130	Pass	
Heptachlor	%	110			70-130	Pass	
Heptachlor epoxide	%	107			70-130	Pass	
Hexachlorobenzene	%	90			70-130	Pass	
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	106			80-120	Pass	
Lead	%	94			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Au0062593	CP	%	100			75-125	Pass	
Lead	S23-Au0062593	CP	%	91			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Au0062598	CP	%	96			70-130	Pass	
4.4'-DDD	S23-Au0062598	CP	%	95			70-130	Pass	
4.4'-DDE	S23-Au0062598	CP	%	92			70-130	Pass	
4.4'-DDT	S23-Au0062598	CP	%	88			70-130	Pass	
a-HCH	S23-Au0062598	CP	%	92			70-130	Pass	
Aldrin	S23-Au0062598	CP	%	91			70-130	Pass	
b-HCH	S23-Au0062598	CP	%	90			70-130	Pass	
d-HCH	S23-Au0062598	CP	%	98			70-130	Pass	
Dieldrin	S23-Au0062598	CP	%	91			70-130	Pass	
Endosulfan I	S23-Au0062598	CP	%	89			70-130	Pass	
Endosulfan II	S23-Au0062598	CP	%	81			70-130	Pass	
Endosulfan sulphate	S23-Au0062598	CP	%	95			70-130	Pass	
Endrin	S23-Au0062598	CP	%	85			70-130	Pass	
Endrin aldehyde	S23-Au0062598	CP	%	104			70-130	Pass	
Endrin ketone	S23-Au0062598	CP	%	97			70-130	Pass	
g-HCH (Lindane)	S23-Au0062598	CP	%	93			70-130	Pass	
Heptachlor	S23-Au0062598	CP	%	91			70-130	Pass	
Heptachlor epoxide	S23-Au0062598	CP	%	91			70-130	Pass	
Hexachlorobenzene	S23-Au0062598	CP	%	97			70-130	Pass	
Methoxychlor	S23-Au0062598	CP	%	85			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Au0062588	CP	%	29	31	9.2	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Au0062592	CP	mg/kg	13	13	1.7	30%	Pass	
Lead	S23-Au0062592	CP	mg/kg	19	17	7.3	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Au0062595	CP	mg/kg	41	33	20	30%	Pass	
Lead	S23-Au0062595	CP	mg/kg	22	21	7.4	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Au0062597	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Au0062597	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Au0062597	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☑ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood PlaceMurarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 2 Kingston Town Close Oakleigh VIC 3166 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Earth Water Consulting Pty Limited	Project No	2223- 213
Address	Unit 6 / 1A MArina Crescent, Urunga NSW 2455	Project Name	CAMPBELL CLOSE
Contact Name	Strider Duerinckx	Project Manager	STRIDER
Phone No	0402608396	EDD Format	
Special Directions		Sampler(s)	RL
Purchase Order	2223- 213	Handed over by	
Quote ID No	Earth Water Consulting	Email for Invoice	strider@ewcon.com.au
		Email for Results	strider@ewcon.com.au

Analyses: COMPOSITE; Comp ID; As, Pb; OCP

Containers (Change container type & size if necessary): 500mL Plastic; 125mL Plastic; 40mL Vial; Jar (Glass or HDPE)

Required Turnaround Time (Default will be 5 days if not specified)

♦Surcharge will apply

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☑ 5 days (Standard)
- ☐ Other( )

Client Sample ID	Sampled Date/Time	Matrix	Comp ID	As, Pb	OCP	Jar (Glass or HDPE)	Sample Comments / Dangerous Goods Hazard Warning
S-1	13.3.25	S				✓	SOIL
S-2			C1	✓	✓	✓	
S-3						✓	
S-4						✓	
S-5						✓	
S-6			C2	✓	✓	✓	
S-7						✓	
S-8						✓	
S-9						✓	
S-10			C3	✓	✓	✓	
		Total Counts					

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal | Name: ROB LAIRD | Signature | Date | Time

1019961

Brendan SYL on 28/8 10:05 126 PAGE 1 of 4 2e

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☑ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood PlaceMurarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9800 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 2 Kingston Town Close Oakleigh VIC 3166 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Earth Water Consulting Pty Limited	Project №	2223- 213
Address	Unit 6 / 1A MArina Crescent, Urunga NSW 2455	Project Name	CAMPBELL CLOSE
Contact Name	Strider Duerinckx	Project Manager	STRIDER
Phone №	0402608396	EDD Format	
Special Directions		Sampler(s)	RL
Purchase Order	2223- 213	Handed over by	
Quote ID №	Earth Water Consulting	Email for Invoice	strider@ewcon.com.au
		Email for Results	strider@ewcon.com.au

Analyses

№	Client Sample ID	Sampled Date/Time	Matrix	COMPOSITE	Comp ID	A8 / Pb	OCP	Containers: 500mL Plastic	125mL Plastic	40mL Vial	Jar (Glass or HDPE)	Sample Comments / Dangerous Goods Hazard Warning
1	S-11	25-3-25	S	3							1	SOIL
2	S-12				C3	/	/				1	
3	S-13										1	
4	S-14				C4	/	/				1	
5	S-15										1	
6	S-16										1	
7	S-17										1	
8	S-18				C5	/	/				1	
9	S-19										1	
10	S-20										1	
		Total Counts										

Required Turnaround Time (Default will be 5 days if not ticked)

♦Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Method of Shipment								
☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	ROB LAIRD	Signature		Date	Time

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☑ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

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☐ **Melbourne Laboratory** 2 Kingston Town Close Oakleigh VIC 3166 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Earth Water Consulting Pty Limited	Project №	2223-213
Address	Unit 6 / 1A MArina Crescent, Urunga NSW 2455	Project Name	CAMPBELL CLOSE
Contact Name	Strider Duerinckx	Project Manager	STRIDER
Phone №	0402608396	EDD Format	
Special Directions		Sampler(s)	RL
Purchase Order	2223-213	Handed over by	
Quote ID №	Earth Water Consulting	Email for Invoice	strider@ewcon.com.au
		Email for Results	strider@ewcon.com.au

Analyses: COMPOSITE | COMP ID | As, Pb | OCP

Containers: 500mL Plastic | 250mL Plastic | 125mL Plastic | Glass | 40mL Vial | Jar (Glass or HDPE)

Required Turnaround Time: ♦Surcharge will apply
- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☑ 5 days (Standard)
- ☐ Other( )

№	Client Sample ID	Sampled Date/Time	Matrix	COMPOSITE	COMP ID	As, Pb	OCP	Jar (Glass or HDPE)	Sample Comments / Dangerous Goods Hazard Warning
1	S-21	23-8-22	S	}				✓	SOIL
2	S-22	↓	↓	}	C6	✓	✓	✓	↓
3	S-23	↓	↓	}				✓	↓
4	S-24	↓	↓					✓	↓
5	S-25	↓	↓	}				✓	↓
6	S-26	↓	↓	}	C7	✓	✓	✓	↓
7	S-27	↓	↓	}				✓	↓
8	S-28	↓	↓					✓	↓
9	SH-1	↓	↓			✓	✓	✓	↓
10	SH-2	↓	↓			✓	✓	✓	↓
			Total Counts						

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal | Name: ROB LAIRD | Signature: [signature] | Date: | Time:

CHAIN OF CUSTODY RECORD

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☑ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

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☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 2 Kingston Town Close Oakleigh VIC 3166 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Earth Water Consulting Pty Limited
Address	Unit 6 / 1A MArina Crescent, Urunga NSW 2455
Contact Name	Strider Duerinckx
Phone №	0402608396
Special Directions	
Purchase Order	2223-213
Quote ID №	Earth Water Consulting
Project №	2223-213
Project Name	CAMPBELL CL
Project Manager	STRIDER
EDD Format	
Sampler(s)	RL
Handed over by	
Email for Invoice	strider@ewcon.com.au
Email for Results	strider@ewcon.com.au

Analyses: COMPOSITE; COMP ID; As, Pb; OCP

Containers: 500mL Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL Vial; 500mL PFAS Bottle; Jar (Glass or HDPE)

Required Turnaround Time (Default will be 5 days if not ticked) ♦Surcharge will apply
☐ Overnight (reporting by 9am)♦ ☐ Same day♦ ☐ 1 day♦ ☐ 2 days♦ ☐ 3 days♦ ☑ 5 days (Standard) ☐ Other( )

№	Client Sample ID	Sampled Date/Time	Matrix	COMPOSITE	COMP ID	As, Pb	OCP	Jar (Glass or HDPE)	Sample Comments / Dangerous Goods Hazard Warning
1	SH-3	23-8-23	S			✓	✓	✓	SOIL
2	SH-4	↓	↓			✓	✓	✓	↓
3	SH-5	↓	↓			✓	✓	✓	↓
4	SH-6	↓	↓			✓	✓	✓	↓
5	SH-7	↓	↓			✓	✓	✓	↓
6	Q-1	↓	↓	}				✓	↓
7	Q-2	↓	↓	}				✓	↓
8	Q-3	↓	↓	}	Q1			✓	↓
9	Q-4	↓	↓	}				✓	↓
10	Q-5	↓	↓	}				✓	↓
	Total Counts								

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal | Name: ROB LAIRD | Signature: [signature] | Date | Time

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Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Page 1 of 1 QS3009_R8 Modified by: S. Kolma Approved by: C.D. Perez Approved on: 12 June 2018

Gateway Determination

***Planning proposal (Department Ref: PP-2023-2593)**: to amend the minimum lot size to 5000m^2 at Lot 1 DP 1130767, 37 Campbell Close, Korora*

I, the Acting Director at the Department of Planning, Housing and Infrastructure, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to the Coffs Harbour Local Environmental Plan 2013 to amend the minimum lot size to 5000m^2 at Lot 1 DP 1130767, 37 Campbell Close, Korora should proceed subject to the following Gateway conditions.

The Council as planning proposal authority is authorised to exercise the functions of the local plan-making authority under section 3.36(2) of the Act subject to the following:

(a) the planning proposal authority has satisfied all the conditions of the gateway determination;

(b) the planning proposal is consistent with applicable directions of the Minister under section 9.1 of the Act or the Secretary has agreed that any inconsistencies are justified; and

(c) there are no outstanding written objections from public authorities.

The LEP should be completed within nine months from the date of the Gateway determination.

Gateway Conditions

1. Prior to agency and community consultation, the planning proposal is to be amended to:

   (a) include further discussion of the potential for land use conflict issues;

   (b) include an assessment against section 9.1 Direction 4.2 Coastal Management, identifying that the subject site is located partly within the coastal use area; and

   (c) remove Appendix H – Pre-Lodgement Meeting Notes which reference the zoning of the land as C2 Environmental Conservation Zone in error.

2. Public exhibition is required under section 3.34(2)(c) and clause 4 of Schedule 1 to the Act as follows:

   (a) the planning proposal is categorised as standard as described in the *Local Environmental Plan Making Guideline* (Department of Planning and Environment, August 2023) and must be made publicly available for a minimum of 20 working days; and

   (b) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in *Local*

Environmental Plan Making Guideline (Department of Planning and Environment, August 2023).

3. Consultation is required with the NSW Rural Fire Service under section 3.34(2)(d) of the Act. The NSW Rural Fire Service is to be provided with a copy of the planning proposal and any relevant supporting material and given at least 30 working days to comment on the proposal.

4. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

Dated 1 July 2024

Craig Diss
A/Director, Hunter and Northern Region
Local Planning and Council Support
Department of Planning, Housing and Infrastructure

Delegate of the Minister for Planning and Public Spaces