

Planning Proposal

Lot 21 DP1239022 - 35 Gordon Road,
Raleigh



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Declaration

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Raleigh, NSW



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Declaration: I, Jacob Sickinger, declare that this Planning Proposal constitutes a planning proposal for the purposes of Division 3.4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and further declare that the document complies with the relevant provisions of the EP&A Act and has had regard for the *Local Environmental Plan Making Guideline* (2023).

Date: 16 June 2025

| | Name | Signature | Date |
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1. Part 1 – Introduction: Proposal Objective and Intended Outcomes

1.1 Overview of the Planning Proposal

GeoLINK has been engaged by Tracee and Ashley Porter to prepare a Planning Proposal to facilitate amendment of the Bellingen Local Environmental Plan 2010 (BLEP 2010) Lot Size and Zoning Maps to change the minimum lot size development standard/ control and make ancillary adjustments to the zoning map on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW.

The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential), a common access road under community title provisions, and a residual lot. The subject area that is proposed to accommodate the new large lot residential lots is already zoned R5 Large Lot Residential, however it is subject to a broad application of a 10-hectare (10 ha) minimum lot size that also covers the RU1 Primary Production and C2 Environmental Conservation zones that affect Lot 21 DP1239022.

This report has been prepared having regard for the *Local Environmental Plan Making Guidelines August 2023*.

A scoping proposal/report was submitted to Bellingen Shire Council (BSC) in May 2023 and a meeting with BSC, Department of Planning and Environment (now Department of Planning, Housing and Infrastructure) and the Biodiversity Conservation Division (now known as Biodiversity, Conservation and Science Group (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water) was held on 13 June 2023 to discuss the Proposal's scoping.

BSC provided a response to the scoping proposal dated 11 August 2023. This was accompanied by comments from the abovementioned State agencies. Refer to **Appendix H** for copies.

This report describes the Planning Proposal and provides the relevant analysis and justification to support it.

1.2 Objective of Planning Proposal

1.2.1 Objective

The objectives of this Planning Proposal are to:

- Amend the BLEP 2010, including the Land Zoning Map and the Lot Size Map, to enable the creation of a modest large lot residential subdivision, generally consistent with the existing R5 zoning that occurs on the southern portion of the site.
- Rationalise/refine the zoning arrangement of the R5 and C2 zones to provide environmental conservation of High Environmental Value (HEV) land and align the zoning interface based on ground-truthing and ecological survey findings.
- Limit the potential for further subdivision of the proposed Zone C2 Environmental Conservation and RU1 Primary Production areas of the site.



1.2.2 Intended Outcomes

The Planning Proposal's intended outcomes can be summarised as:

- Make efficient use of and enable development of existing R5 zoned land having regard to the strategic and site-specific merits offered by the site and locality.
- Contribute to land supply and diversity, including rural-residential land and associated lifestyle housing opportunities in a suitable location.
- Address the demand for large lot residential land (and housing more broadly) on the NSW North Coast, as acknowledged in the Bellingen Growth Management Strategy (GMS), the Local Strategic Planning Statement (LSPS), and recent trends.
- Suitably avoid and protect areas of HEV land.

A depiction of the current site lot size controls and zoning, and the proposed amended controls, is provided at **Illustration 4.1** and **Illustration 4.2** (thumbnails of these are provided at **Plate 2.1** and **Plate 2.2**). A concept design for potential future subdivision based on the proposed LEP amendments is provided at **Appendix A**.

The proposed amendment also equates to an approximate 93% increase to the C2 zone (from approximately 3.96ha to around 7.65ha) and would have a substantial complementary ecological conservation benefit. The R5 zone would be subject to minor adjustment/rationalisation resulting in a small reduction from approximately 7.2ha to 6.78ha.

1.3 Site Location and Context

The site is described in real property terms as Lot 21 DP1239022, located at 35 Gordon Road Raleigh, NSW. It is an irregular shaped allotment and has an area of approximately 29 ha.

1.3.1 Site Context

The site is located in a semi-rural residential setting, approximately 3.5 km north-west of Urunga township's Central Business District and is approximately 300 m east of the Pacific Highway/ Waterfall Way interchange and is accessed via the Old Pacific Highway. The Bellinger River is located further to the north, with the North Coast rail corridor extending along the eastern boundary of the site.

Illustration 1.1 provides a site locality map.

1.3.2 Site Analysis

The site comprises a mix of land use zones according to the BLEP 2010, including:

- RU1 Primary Production (RU1)
- R5 Large Lot Residential (R5)
- R1 General Residential (R1)
- C2 Environmental Conservation (C2)
- C3 Environmental Management (C3).

The site consists of an existing dwelling and shed which is accessed from Gordon Road and is centrally located on an elevated portion of the site (refer to **Plate 1.1**). The area around the dwelling/ to the north and east comprise of flat, open agricultural land (improved pastures) used for cattle grazing (refer to **Plate 1.2**). Large lot rural-residential properties associated with the Gordon Road estate are located to the west. Consolidated areas of swamp sclerophyll forest are located south of the existing dwelling along an area of low-lying land subject to flood inundation associated with an



intermittent watercourse which drains east into a more permanent feature as it meanders through the site to the north-west. The southern portion of the site is elevated, north-facing, and partially cleared open forest with a managed understory and grassland (refer to **Plate 1.3** to **Plate 1.8**). This area is zoned R5 Large Lot Residential and is intended for the creation of five circa 1 ha lots.

Illustration 1.2 provides an analysis of environmental features present onsite.



Plate 1.1 View showing existing residential dwelling



Plate 1.2 View north from existing dwelling showing extent of agricultural grazing farmland



Plate 1.3 View south showing area of proposed LEP amendment and large lot residential subdivision.



Plate 1.4 View north-west showing the managed/grazed understory of the elevated portion of the open forest and LEP amendment area.



Plate 1.5 Largely clear area of proposal site looking west to Old Pacific Highway. Adjacent dwelling indicates beginning of adjoining residential zone.



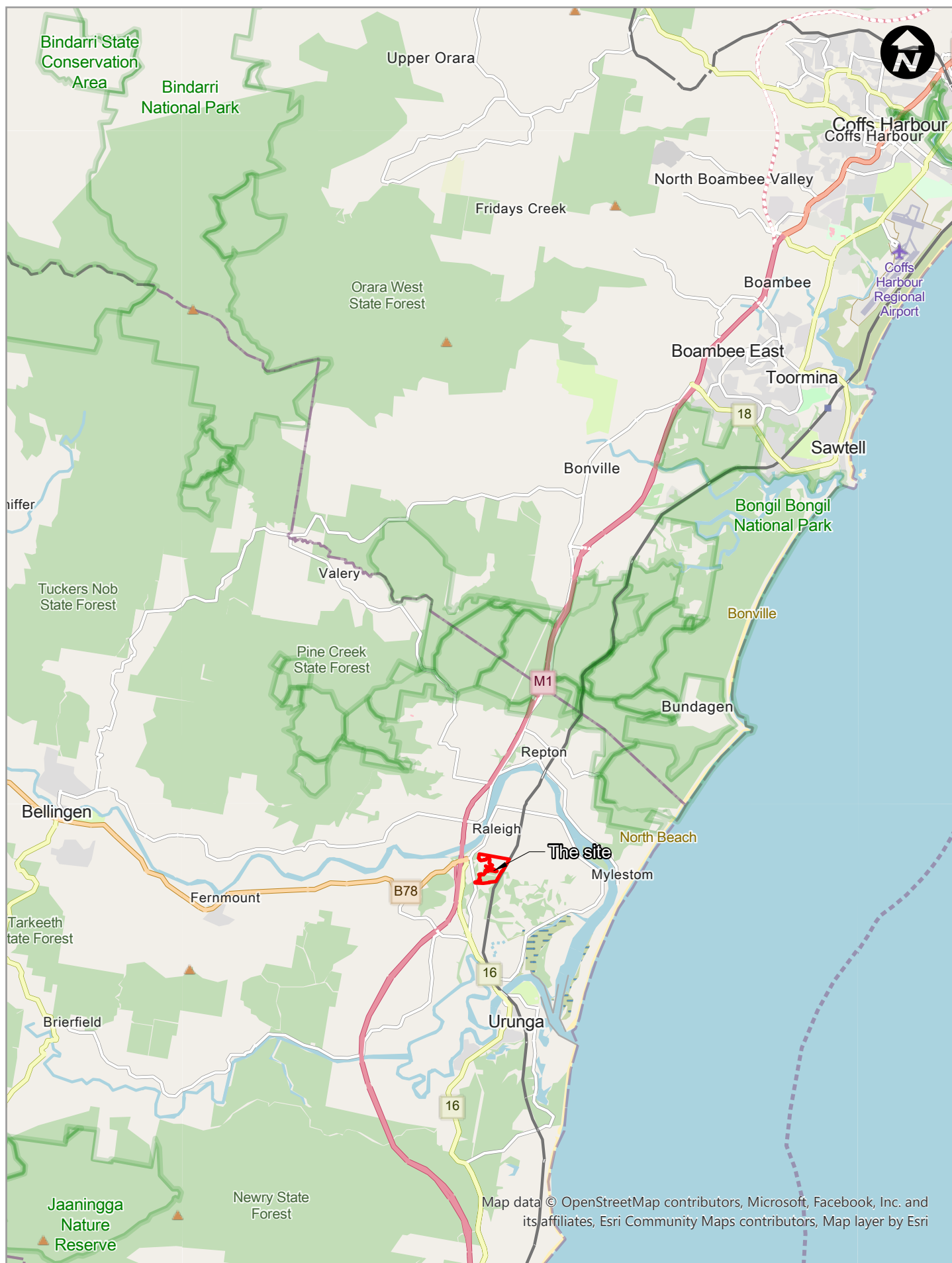
Plate 1.6 Internal to the proposal area looking east, showing managed land with interspersed trees and existing farm track along southern boundary.



Plate 1.7 Internal to the proposal area looking north to indicative location for potential dwelling envelope.



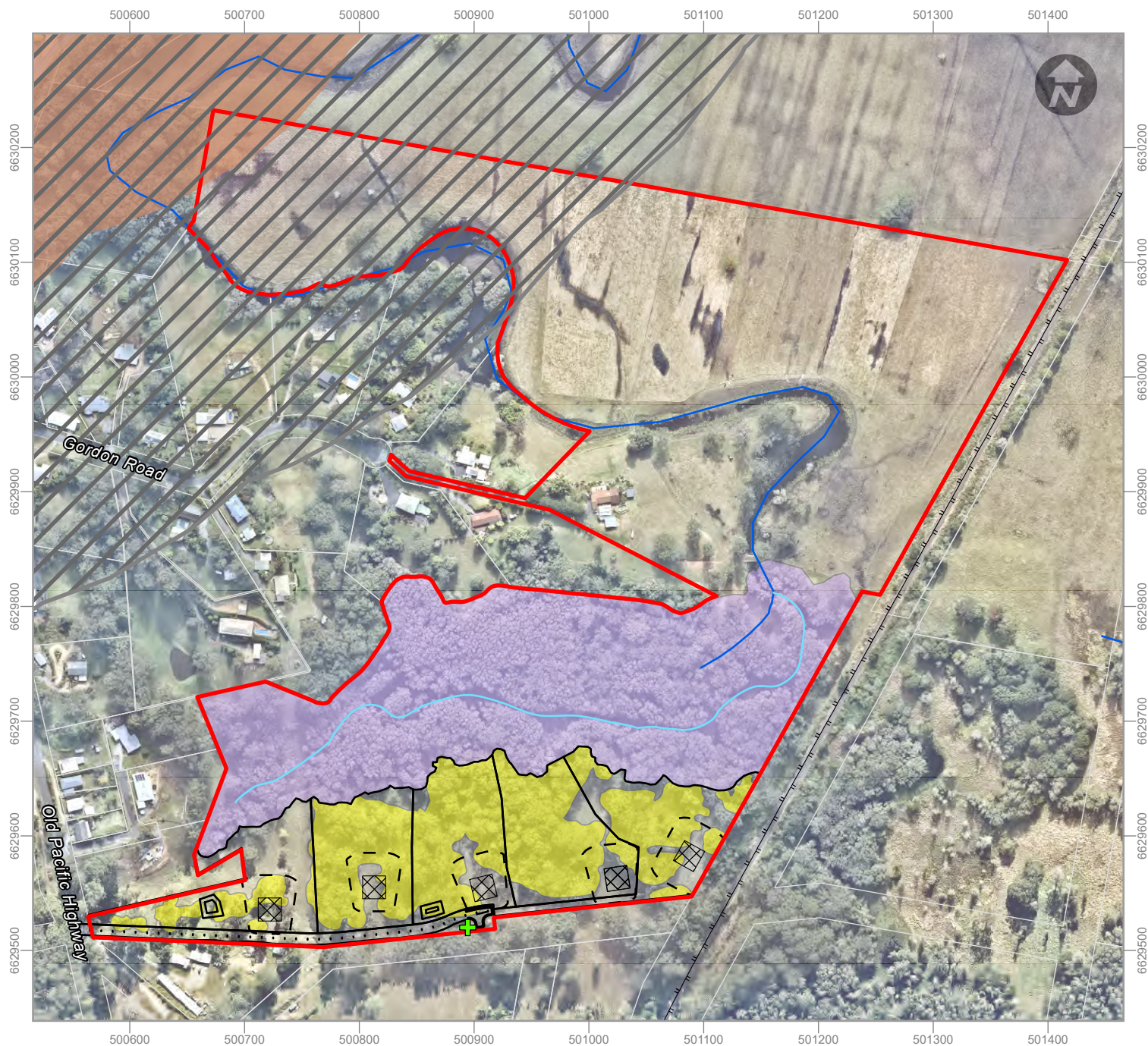
Plate 1.8 Internal to the proposal area looking north to indicative location for potential dwelling envelope.















0 2.5 km

Site Locality - Illustration 1.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: RE Reviewed by: KHP
 Source of base data: OpenStreet Map
 Date: 21/08/2024



LEGEND

- | | |
|--|---|
| Site boundary |  Building envelope |
|  Cadastre |  Asset protection zone |
|  PCT 3250 Northern Foothills Blackbutt Grassy Forest |  Proposed subdivision concept |
|  PCT 4000 Northern Estuarine Paperbark Sedge Forest (TEC) |  North Coast Railway |
|  SEPP (Resilience and Hazards) 2021 Coastal Environment Area Map |  Watercourse |
|  SEPP (Resilience and Hazards) 2021 Coastal Use Area Map |  Indicative location of intermittent watercourse |
| |  Heritage artifact |

0 100 Metres

Site Analysis - Illustration 1.2

Information shown is for illustrative purposes only
Drawn by: AB Checked by: JTS Reviewed by: KHP
Source of base data: Nearmap 25/07/2022
Date: 26/09/2024

2. Part 2 - Explanation of Provisions

The Planning Proposal proposes the following provisions:

- Amend the BLEP 2010 Lot Size Map in accordance with the proposed amendment map shown in **Illustration 4.1** to change the minimum lot size affecting the R5 zone (as adjusted and shown in **Illustration 4.2**) from 10 ha to 1 ha. In addition, apply a 20 ha (currently 10 ha) minimum lot size consistently over the residue lot / area (i.e. the approximately 23.35 ha of land not proposed to be provided with a 1 ha minimum lot size categorisation) as requested by Council to limit further subdivision potential of constrained parts of the property.
- Amend the BLEP 2010 Land Zoning Map in accordance with the proposed zoning amendment map shown in **Illustration 4.2** to extend the area of C2 Environmental Conservation zoning to cover land identified as HEV, that is currently zoned RU1 Primary Production, R1 General Residential and R5 Large Lot Residential, and moderately refine/ rationalise the R5 zone, including 'tidying up' left over silvers of land zoned R1 General Residential and RU1 Primary Production as an ancillary component of the proposal.

Thumbnails/ extracts of the abovementioned maps/illustrations are provided below.

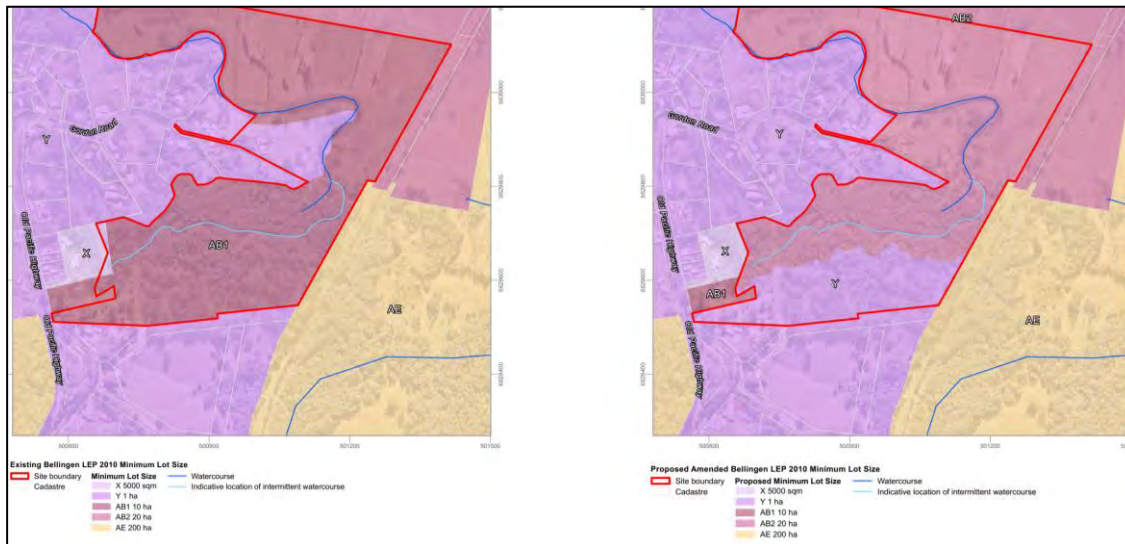


Plate 2.1 Existing (left) and proposed (right) BLEP 2010 minimum lot size map.

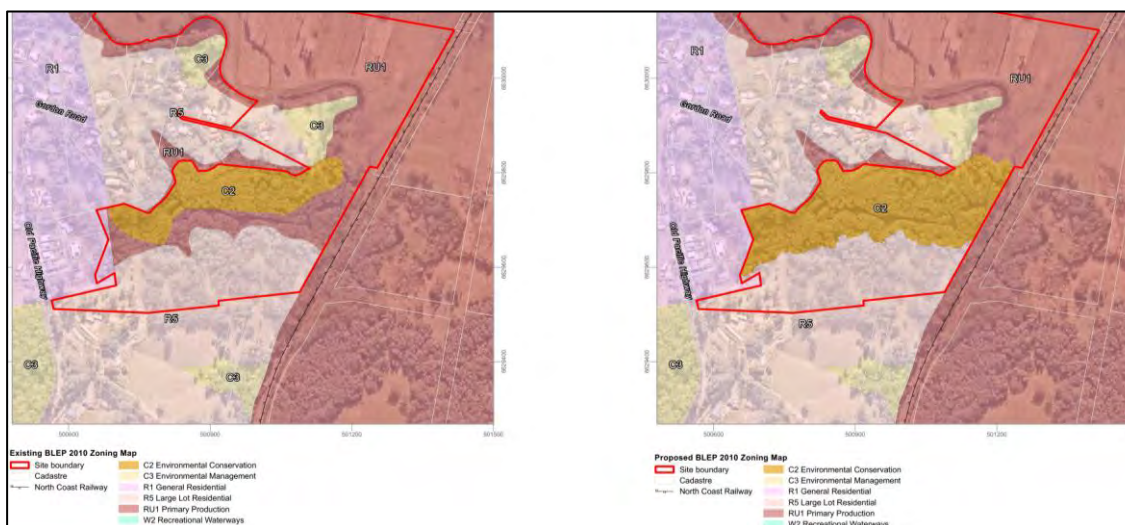


Plate 2.2 Existing (left) and proposed (right) BLEP 2010 zoning map.



3. Part 3 - Justification of Strategic and Site-specific Merit

This section provides an overview of whether the proposal aligns with the strategic framework as well as identifying the site-specific merit of the Proposal. This includes findings from supporting studies and investigations that provide justification for the proposed amendments to the LEP. It also responds to changes that may not be recognised by the existing strategic planning framework applying to the site and its surrounds, notably housing and population demands that have accelerated since preparation of the local growth management strategy which is due for updating.

3.1 Matters for Consideration – Need for the Planning Proposal

3.1.1 Q1. Is the Planning Proposal a result of an endorsed LSPS, strategic study or report?

In part, the area proposed for LEP amendment and future subdivision is already zoned for large lot residential (R5) purposes. Provision of a minimum lot size to enable 1ha lots in this area is aligned with the zone objectives, the intent and considerations of the Bellingen Shire Local Strategic Planning Statement (LSPS) 2020-2040, and the Growth Management Strategy (GMS) relating to rural/ large lot residential development and the land's capability to be further subdivided.

As outlined in **section 3.2.2.1** of this report, the LSPS identifies a number of issues related to Planning Priority 1 which is *'to support a vibrant and ecologically sustainable rural economy that is transitioning towards a regenerative model of rural land use'*. It notes that the appropriate way to consider these issues is by completing a Rural Lands Strategy for the Shire, as per Action 1.1 of the LSPS. Although council has not completed a recent/ updated Rural Lands Strategy and it is understood that this is some time off, this Planning Proposal directly aligns with the LSPS intent to investigate existing land within the R5 zone to determine whether it can be effectively subdivided into smaller lots to meet the demand for rural residential lifestyle lots, whilst protecting the further incursion of lifestyle lots into productive agricultural areas or environmental values.

This Planning Proposal and supporting studies demonstrate that the subject land is suitable for further subdivision within the existing R5 zone, including minor refinements. It is justified on sound planning grounds and enables achievement of the existing zone objectives.

3.1.2 Q2. Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The proposed outcome is to allow for the future subdivision of already zoned Large Lot Residential land that adjoins an existing developed and emerging large lot residential area. Given the current minimum lot size control of 10ha, it is not considered suitable to use clause 4.6 of the BLEP 2010 to seek a variation of 90% for approval of 1ha lots. Furthermore, council has advised that they currently do not have the resources to pursue relevant strategic studies and such a planning proposal. It is considered that the proponent led Planning Proposal is the most appropriate and efficient way to achieve the intended outcome.



3.2 Matters for Consideration – Relationship to Strategic Planning Framework

3.2.1 Q3. Will the planning proposal give effect to the objectives and actions of the applicable regional, or district plan or strategy (including any exhibited draft plans or strategies)?

This Planning Proposal seeks to enable large lot residential subdivision of land already zoned R5, by undertaking the relevant studies to demonstrate that a 1 ha lot size, and corresponding subdivision of land, is suitable and reasonably aligns with strategic directions and site-specific merit. The relevant strategic planning documents and objectives are considered below.

3.2.1.1 North Coast Regional Plan 2041

The purpose of the North Coast Regional Plan (NCRP) 2041 is the 5 yearly update to the previous 2036 version. The NCRP provides a strategic land use planning framework to guide land use and planning priorities in the North Coast Region to 2041. The Plan informs local strategic planning and local environmental plans.

The NCRP 2041 acknowledges the significant changes that have happened across the North Coast over the past 5 years. The NCRP recognises the need to respond to key drivers of change, including COVID-19 which will require a stronger focus on facilitating new jobs and housing for a rapidly growing population. The NCRP also aims to avoid new development in high-risk areas prone to bushfire and flooding.

A key action in the NCRP 2041 is to establish a Regional Urban Development Program to ensure the region can identify a 10-year housing pipeline to accommodate a rapidly growing population.

Key relevant Goals and Objectives include:

- *Goal 1 – Liveable, sustainable and resilient*
 - *Objective 1: provide well located homes to meet demand*
 - *Objective 3: Protect regional biodiversity and areas of high environmental value*
 - *Objective 8: support the productivity of agricultural land*
- *Goal 3 – Growth change and opportunity*
 - *Objective 18: plan for sustainable communities.*

Objective 1 of the Plan in particular, details that a mix of well-planned infill, greenfield and rural residential locations will be essential in supporting the region's future growth.

Rural residential housing also continues to be a popular housing and lifestyle choice on the North Coast, including the Bellingen shire. The NCRP notes that whilst suitable land provision is required for this, it can be costly to service, can have environmental impacts, and may conflict with important agricultural, urban, industrial or resource lands and increase pressure for new services and infrastructure outside existing settlements. New rural residential release areas are to promote sustainable land use outcomes and be located outside the more environmentally sensitive and constrained coastal strip. Only minor and contiguous variations to urban growth area boundaries within the coastal strip will be considered, which this Planning Proposal is consistent with, particularly given the land is already zoned R5 for large lot residential purposes.

Strategy 1.5 states:

- *New rural residential housing is to be located on land which has been approved in a strategy endorsed by the Department of Planning and Environment and is to be directed away from the coastal strip.*

Key broader priorities for Bellingen LGA include:

- *Retain and protect local biodiversity through effective management of environmental assets and ecological communities.*
- *Encourage the ongoing viability of regionally important farmland areas, including the Dorrigo Plateau and the Kalang and Bellinger valleys, to support the agricultural sector.*
- *Deliver housing in appropriate locations including North Bellingen, South Urunga and East Dorrigo.*
- *Promote the diversification of housing options through increased affordable and social housing, additional infill, housing that caters to the shire's ageing population, and innovative housing types unique to the area including community land trusts and ecovillages.*

Noting the importance and strategic direction given to boosting housing supply, the NCRP 2041 also acknowledges the importance of rural lands and activity on the North Coast. The objective is to support productive agricultural lands, whilst also protecting environmentally sensitive areas, including such areas along the coastal strip.

The subject site of the proposed BLEP 2010 amendment and future large lot/ rural residential subdivision is already zoned R5 Large Lot Residential and situated marginally inside the coastal strip, just east of the Pacific Highway. It is situated directly adjacent to the existing R1 General Residential zoned land and corresponding urban growth area boundary depicted in **Plate 3.1**. It is important to note that other proximal land already zoned R5 Large Lot Residential, both developed and undeveloped, is not identified on the urban growth area map (**Plate 3.1**) but surrounds the subject site to the north and south.

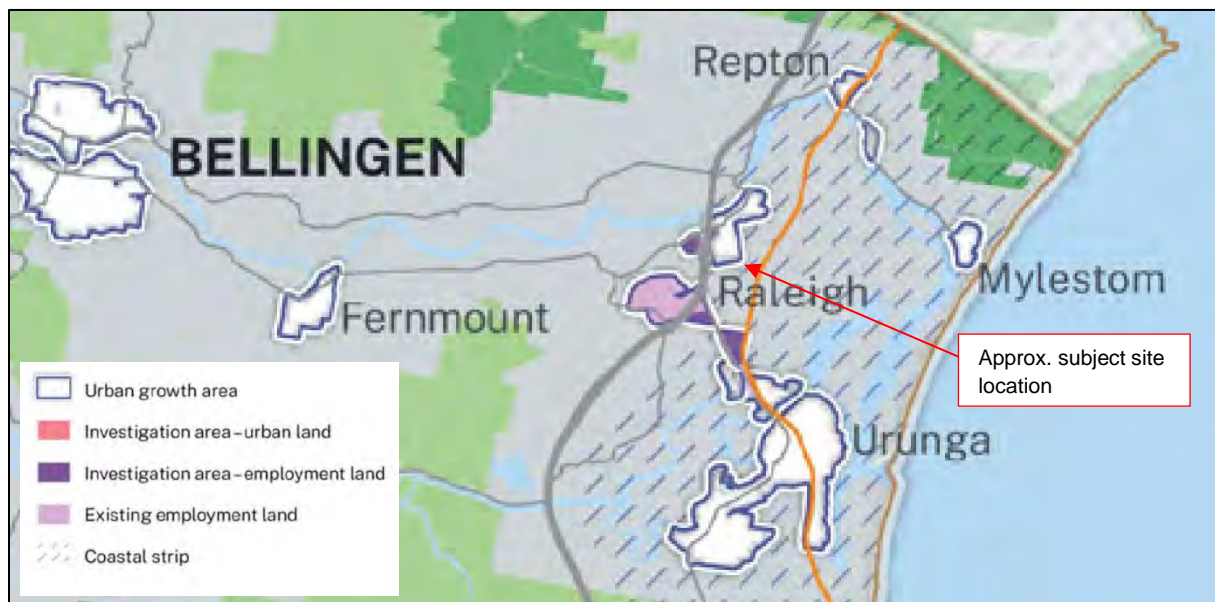


Plate 3.1 Except from NCRP 2041 – Urban Growth Area for Bellingen LGA.



The proposal is reasonably consistent with the NCRP objectives and outcomes in that it:

- Helps respond to the high demand for housing in the region and locality, including rural residential lifestyle blocks in a suitable location that immediately integrates with land use patterns that already exist in the area, is well connected, and is/ or can be appropriately serviced without high cost or demand for public infrastructure.
- The majority of the land subject to the amendment and proposed for large lot residential subdivision is not identified as High Environmental Values (HEVs) land; such land has been identified by the biodiversity assessment (refer to **Appendix E**) as being associated with the low-lying land to the north (identified as Plant Community Type (PCT) 4000 Northern Estuarine Paperbark Sedge Forest (TEC)). The proposed subdivision would not adversely impact such areas, with development and concept building envelopes located well outside of these mapped areas. Despite being in the coastal strip, the land is largely disturbed managed grazing land and is not highly sensitive or incompatible with the proposal. Refer to **Section 3.3** for further discussion on the environmental constraints and potential impacts of the proposal.
- The subject land is suitably located and separated from the main areas of broader agricultural land to the north and northeast, which ensures the avoidance and minimisation of potential rural land conflict (refer to **Section 3.3** for further discussion).
- The concept design and location of the large lot residential subdivision would promote clustering with other residential and rural residential land directly adjacent, consistent with the NCRP Settle Planning Guidelines.
- The land is already zoned for rural residential purposes and the proposed change to the minimum lot size facilitates this intent.

It is noted that the land is within the coastal strip and not identified as a formal urban growth area on the subject mapping. It is submitted however, that the proposal is not for urban development, but for large lot residential and it is consistent and contiguous with existing residential and rural residential development in the immediate area. It represents an orderly and economic use of land that is already zoned R5 for large lot residential purposes. The proposal also satisfies the Urban Growth Area Variation Principles in Appendix A of the NCRP, as follows:

- This Planning Proposal report demonstrates that the proposal is consistent with the objectives and outcomes in the NCRP 2041 and the intent of applicable Section 9.1 Directions, State Environmental Planning Policies, and local growth management strategies (the Bellingen local growth management strategy is discussed further below).
- The proposal would be adequately serviced and largely self-sufficient (on-site domestic water and sewerage would be provided, along with a community title access road, and power connections are readily available at the site), would not place an unreasonable or high demand on government infrastructure or services, and would effectively avoid cost to government.
- Although some of the low-lying areas of the site is mapped/ identified as high environmental value (HEV) land by the biodiversity assessment undertaken, the Planning Proposal and supporting specialist assessments for biodiversity and Aboriginal heritage demonstrate that the proposal suitably avoids, minimises and appropriately manages and protects any areas of HEV, water quality sensitivity, riparian land and Aboriginal heritage. The Proposal includes an expansion of the C2 zone.
- The proposal and supporting assessment demonstrate that the risk from natural hazards (flood and bushfire) can be avoided and minimised. Flooding and bushfire are further discussed in **Section 3.3**. The site is not severe slope, not mapped as acid sulphate soils (class 5 mapping applies to the proposed development area which is elevated well above 5 m AHD), nor is it a highly erodible landscape.



- Despite being marginally in the coastal strip, the proposal is already zoned R5 and is contiguous and consistent with the pattern of adjacent R1 and R5 zoned land and existing development. As discussed further below in relation to the Local Growth Management Strategy, it is understood from the Council report that considered submission to the Strategy in March 2010, *Draft Shirewide Local Environmental Plan – Consideration of Submissions* (Planning/Local Environmental Plan 2009) that, “the 5, 10, 20 & 40ha minimum lot sizes are included only to allow for creation of small residue allotments including constrained land. DCP provisions will provide that the underlying zoning should be the principal determinant of subdivision potential in such instances”. This indicates the current underlying R5 zoning should be the principal determinant of subdivision potential for the land and that the minimum lot size can be adjusted accordingly to 1ha as the relevant assessments have now been undertaken as part of this Planning Proposal and demonstrate that the land is suitable.
- The proposal would be appropriately separated and buffered by forest from agricultural land uses (grazing land further north and northeast) and primary production land. The arrangement therefore would adequately avoid and minimise the potential of rural land use conflict.
- Despite the broader land parcel being mapped as important farmland (some of which overlaps with vegetated and high environmental value land mapping), the subject amendment and rural residential subdivision area is generally not mapped. This area is contiguous with existing zoned urban land and supported by sound planning grounds, including but not limited to:
 - Avoiding important farmland to the north, separated by an environmental conservation zoning of a forested swamp, and therefore offering a more than adequate separation from farmland.
 - Recognition in the Bellingen Growth Management Strategy regarding demand for rural residential land and the potential to apply 1 ha minimum lot sizes to land already zoned for R5 proposes, subject to appropriate constraints analysis. This in turn would take pressure off the need to rezone other land for rural residential purposes to meet demand which could encroach important farmland or environmental sensitivities elsewhere.

Based on the assessment against the NCRP 2041 (including the urban growth area variation principles), the proposal is:

- Not specifically identified in, and is therefore not directly consistent with, urban growth area mapping. However, the site is already zoned for R5 Rural Residential purposes.
- On balance, it is generally consistent with the overarching relevant objectives and strategies of the NCRP, including but not limited to:
 - Its favourable context and association with existing R1 and R5 zoned land;
 - Ability to clearly demonstrate the site-specific and strategic merit of the proposal.
 - There are limited impacts, which are manageable, despite some of the potential surrounding constraints and being within the coastal strip;
 - Efficient utilisation of existing R5 zoned land in an appropriate location, with minimal biophysical constraints and no expected unacceptable environmental or socio-economic impacts;
 - The existing underlying zoning, meaning the proposal would not undermine the NCRP intent to direct growth to identified urban growth areas; and
 - A demonstrably appropriate amendment to the current minimum lot size to enable the R5 zone’s potential to be realised is not unreasonable and can be supported.



3.2.2 Q4. Is the planning proposal consistent with a council LSPS that has been endorsed by the Planning Secretary or GCC, or another endorsed local strategy or strategic plan?

3.2.2.1 Bellingen Shire Council Local Strategic Planning Statement (LSPS)

The LSPS was adopted in 2020. The overarching strategic planning statement for the area is:

To provide agile, innovative and pragmatic land use planning policies that deliver sustainable business, employment and housing opportunities, respond to the challenges of a changing climate, and preserve the natural environment and social diversity that underpins the sense of place that is valued by residents of Bellingen Shire.

The LSPS identifies a number of issues related to Planning Priority 1 which is *to support a vibrant and ecologically sustainable rural economy that is transitioning towards a regenerative model of rural land use*. It notes that the appropriate way to consider these is by completing a Rural Lands Strategy for the Shire, as per Action 1.1 of the LSPS. This includes:

- The LSPS outlines that a *Rural Lands Strategy will be completed for Bellingen Shire that reviews the suitability of existing planning controls for all rural land within the Shire (including E zones and the R5 zone) considers trends and drivers for change and recommends future potential actions that Council can pursue to support a viable and ecologically sustainable rural economy. Particular emphasis will be placed upon the protection and productive utilisation of regionally significant farmland, and measures that address and promote resilience and self-reliance in the local food system will also be considered.*
- *Consistent with actions within the Bellingen Shire Local Housing Strategy 2020-2040, the Rural Lands Strategy will also review the suitability of existing land within the R5 Large Lot Residential Zone for either agricultural use, or subdivision into smaller lots to meet the demand for larger lifestyle lots whilst protecting the further incursion of lifestyle lots into productive agricultural areas.*

The LSPS also notes that rural residential development would be carefully planned for, including the need for biodiversity conservation and to plan and better prepare for natural hazards.

This Planning Proposal demonstrates that the subject land, that is already zoned R5, is capable of being subdivided into smaller 1 ha lots, without adverse encroachment or impacts to farmland, environmentally sensitive land, or hazards. Furthermore, this proposal directly aligns with the strategy's consideration of existing land within the R5 zone that can be effectively and responsibly subdivided into smaller lots to meet the demand for larger lifestyle lots and housing, whilst also avoiding impacts to important farmland and enhancing the conservation of environmentally sensitive land through extension of the C2 Environmental Conservation zone. This also aligns with the current acute population trends and associated needs for housing across the State and on the North Coast.

3.2.2.2 Bellingen Growth Management Strategy (GMS) 2007

The Bellingen GMS aim is to guide growth and land use planning, with a planning horizon of 2006 to 2026. Although the GMS is ageing and requires updating to review and respond to changed circumstances, trends, and increased pressure on land use planning needs such as housing, it acknowledges the role of and need for rural-residential land in suitable localities. It is also clear from the NRCP 2041 update that recent trend influences, including COVID-19 and regional migration, are driving growth on the North Coast, including the Coffs Coast (which includes Bellingen Shire).

The GMS identifies that whilst much of the predicted growth that was expected to result from new greenfield development has not occurred, rural residential development has continued and remains in demand.

The GMS only makes brief mention about the supply and demand for rural residential land in Fernmount/ Raleigh. It states that *large areas of rural-residential land around Fernmount and Raleigh exist. Much of the land has already been developed or is subject to environmental (flooding, bushfire, native vegetation) constraints.*

The GMS notes that rural residential development has long been recognised as a legitimate form of development that must be catered for. However, not all rural areas are suitable for this form of development and the servicing of rural dwellings can be potentially expensive for government.

The subject site is included on Figure 8-2 (Urunga Rural Residential Land Analysis) of the GMS as area Uru009, depicted as rural residential land (refer to **Plate 3.2**). It is however mapped as an area potentially subject to environmental constraint. It appears therefore the site was designated a higher minimum lot size (10ha) at the time based on a desktop assessment of potential environmental constraints and subject to future investigation of these (*limited to bushfire potential, 1% AEP flood, ASS potential, aerial photography interpretation including extant, intact woodland communities*). It is also shown to directly adjoin contiguous rural/large lot residential land that is not mapped as potentially constrained.

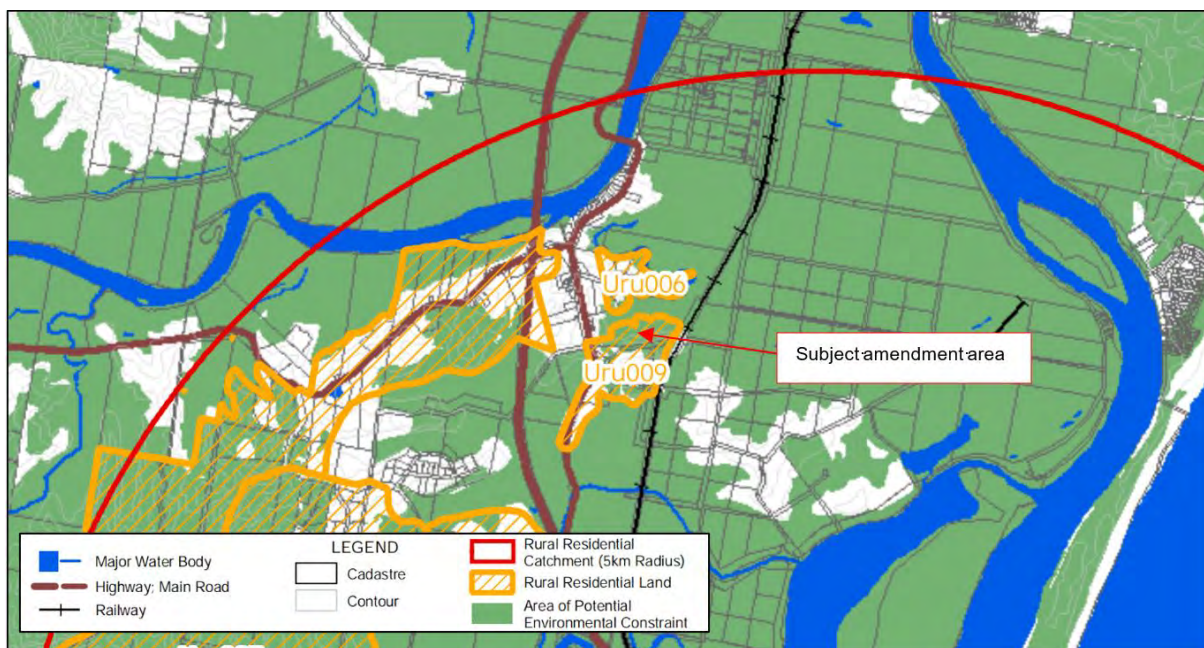


Plate 3.2 Except of Figure 8-2 from Bellingen GMS 2006-2026

The GMS mentions that the results of an analysis of existing rural-residential areas and potential constraints highlight the opportunities for the re-subdivision of existing zoned rural-residential (now referred to as large lot residential) land in the LGA.

The GMS outlines that demand for rural-residential land has been historically high. Based on current trends and recent surges in housing and regional lifestyle demand, this continues to be the case. However current supply is constrained by the density of the subdivision minimum lot size applied to various areas. Yet the supply can be increased by either lowering the subdivision density or identifying new investigation areas.

The GMS commented that given the amount of land already zoned for rural-residential purposes and Council's decision to change the minimum lot size to 1 ha (and lower) for the rural-residential zone, the supply of additional rural-residential land can be achieved by application of this 1 ha minimum lot size where considered appropriate, as opposed to rezoning additional land for R5 purposes.



Given the subject land was rezoned R5 Large Lot Residential under the new LEP (BLEP 2010), the GMS infers that this land is suitable for rural residential development and potential application of the commonly adopted standard 1 ha minimum lot size, subject to demonstrating it is appropriate in the context of potential constraints.

Importantly the GMS acknowledges that it is unlikely that the supply of rural-residential land will continue to meet demand in the Shire, particularly around Urunga. The proposed amendment provides an opportunity to utilise existing R5 zoned land for five 1 ha lots and contribute to boosting supply. Importantly, this would occur within the strategic catchment surrounding Urunga and is within the subdivision capability of the land as demonstrated by the studies undertaken for this Planning Proposal (i.e. on-site effluent disposal/treatment, high value environmental land protection, and bushfire and flood protection).

The GMS also outlines criteria for assessing the suitability of residential and rural-residential land. It outlines that several factors contribute to identifying the relevant environmental constraints/opportunities and infrastructure needs as they apply to determining potential for developable land. It outlines that the ability to reduce the sizes of rural residential lots is often limited by the requirement to dispose of effluent through on-site disposal techniques. Other constraints include steep terrain, distance from main centres, accessibility, potential for acid soils, flooding, significant vegetation, bushfire hazards, and the requirement to protect productive land suitable for agriculture.

The proposed amendment and subdivision are reasonably consistent with the rural-residential land release strategy within the GMS and demonstrate that the subject area is suitable for development of 1 ha lots when considered against the land suitability criteria for rural-residential land. This is confirmed by the following:

- The land is already zoned for rural-residential/large lot residential (R5 Large Lot Residential)
 - Despite some limited constraints, the land can support such development, and this is demonstrated by this Planning Proposal report and the supporting studies (i.e. on-site effluent disposal/treatment, biodiversity, contamination, and bushfire protection).
 - The site is immediately adjacent to existing residential and large lot residential development, including the village of Raleigh, with good access and connectivity to services, and is within 5km of Urunga township and approximately 2km from Raleigh Public School.
 - The proposed 1 ha lot size is consistent with the approach referenced in the GMS and is an appropriate size for adequate separation of dwellings and for the disposal of effluent as demonstrated by the On-site Effluent Suitable Assessment at **Appendix F**.
 - The area of land proposed to be subdivided in 1 ha lots and developed does not comprise prime agricultural land nor significant conservation value. Adequate separation and buffering by established vegetation is provided from primary farmland further to the north and HEV land within the low-lying swamp area would not be adversely impacted and is afforded further conservation under the proposal.
 - The dwelling envelopes would be sited to be well above flood prone land (refer to **Plate 3.7**) and provide for adequate bushfire protection (refer to the Bushfire Hazard Assessment at **Appendix C**).
 - The subject area is mapped Class 5 acid sulfate soils and is not a risk with the proposed lots and development areas being well above 5m AHD (acid sulfate soils generally do not occur above this elevation).
 - The land is not required or likely to be required for urban development/expansion.
 - The site context and proposed community title arrangement minimises costs to Council/government as the access road would be a private undertaking and maintained as such. Potable water and sewerage treatment would be provided on-site and appropriately designed.
- Telecommunications and electricity are available to the site, with the potential option for off-grid



(individual domestic) solar and battery provision of electricity to service dwellings being considered. Hence the proposal would not be costly to government and can be readily serviced.

- The land was not identified in the GMS to be back-zoned to either Rural Small Holdings or Environmental Protection as indicated by Figure 8-5 of the GMS. The area was identified to be maintained as Rural Residential.

Sufficient environmental planning grounds demonstrate that the development would achieve the orderly and economic use of land already zoned R5 in a manner that suitably avoids and minimises impacts to adjoining land, farmland, or key environmental features/ values.

The land use arrangement would maintain the settlement hierarchy and results in an acceptable outcome that would be compatible with the existing pattern of development, also whilst maintaining social and economic viability and adequately preserving natural landscape values. In addition to strategic policy, the proposal can be justified based on its site-specific merit, a favourable location, and minimal impacts. There would be no unreasonable or unfavourable planning outcomes that would be contrary to the GMS. Essentially the planning proposal builds on the GMS by undertaking the necessary site-specific assessments required to determine an appropriate subdivision minimum for the land.

3.2.3 Q5. Is the planning proposal consistent with any other applicable State and regional studies or strategies?

Regional Housing and the Regional Housing Development program

The NSW Government has adopted all recommendations of the Regional Housing Taskforce as part of a comprehensive response to improve housing supply and affordability in the regions.

The package will speed up the delivery of essential infrastructure and streamline planning to unlock thousands of homes across regional NSW.

Delivering on the recommendations of the Regional Housing Taskforce, the Regional Housing Development program will focus on removing planning barriers and increasing coordination to facilitate the delivery of 127,000 homes for regional NSW in the next 10 years.

Key benefits that are aligned with the subject Planning Proposal and future subdivision include:

- Supply of more development-ready land for housing, including supporting measures that bring forward a supply of 'development ready' land.
- Increased regional housing supply, including diverse housing options.

The subject land is well located, is largely 'development ready', and requires minimal infrastructure to establish the subdivision and creation of five additional semi-rural lifestyle blocks.

Bellingen's Community Vision 2035

This set out key actions for council to seek to achieve the community's vision. The proposal is consistent with the Vision and relevant aspirations and objectives. This includes *Places for People* and *Our Living Environment* as the proposal provides for additional lifestyle housing options whilst also enhancing the conservation of important environmental values.

Bellingen Shire Local Housing Strategy 2020-2040

The Housing Strategy is a plan to provide high quality homes to all residents of Bellingen Shire and to make sure housing meets the needs and desires of our community. The Housing Strategy will be used to guide development, decision-making and infrastructure priorities for the next 20 years.



The Housing Strategy is focused on housing in residential areas of the Shire. Housing growth in rural areas and rural-residential areas will be guided by the Rural Lands Strategy. Rural and rural residential housing and population growth will contribute to the growth of the Shire overall.

Although an updated Rural Lands Strategy is not yet available, the Housing Strategy makes clear that housing and housing diversity are important, and that rural residential housing forms a key part of the mix of housing required in the Shire and to serve a growing and diverse population. The strategies notes that rural and rural-residential growth (R5 zoned land) is not yet known and that development potential of R5 land is to be reviewed at a later date. It also notes that there is further greenfield development potential of Repton and Raleigh which will be reassessed once sewer is connected.

This proposal is consistent with and helps deliver on the intent of this strategy. It complements the intent to investigate the development potential of R5 land. This includes review of land already zoned R5. This Planning Proposal demonstrates that this existing subject area of R5 zoned land is suitable for this purpose, would not have unacceptable impacts/consequences, and would align with the intent of housing and future rural land strategy objectives, including to protect and encourage local food production and agriculture.

Future Transport Strategy

The Future Transport Strategy sets Transport for NSW vision for safe, healthy, sustainable, accessible and integrated passenger and freight journeys in NSW. The Future Transport Strategy is primarily related to setting the direction for continuing to improve the transport system and is not directly applicable to the proposal.

Nonetheless, the proposal is for a modest LEP amendment and associated large lot residential subdivision that would have direct access to suitable road infrastructure and transport, including local and State roads, including Pacific Highway, with convenient access to local and regional towns and services.

State Infrastructure Strategy

The State Infrastructure Strategy (SIS) is a 20-year infrastructure investment plan for the NSW Government that places strategic fit and economic merit at the centre of investment decisions.

The proposal is for a modest LEP amendment and associated large lot residential subdivision of land already zoned R5. It is not reliant on any major infrastructure provisions.

North Coast Regional Water Strategy

This strategy sets out the long-term water management plan for the region, designed to support community and industry resilience and address strategic challenges facing the region. The proposal is consistent as it would not place any unsustainable demands on, or cause adverse impacts to, water resources.

The intermittent watercourse located to the north of the proposed LEP amendment and future subdivision area, would be included in the single residue lot and further conserved through extension of the C2 zone. The studies undertaken demonstrate that the proposal is not expected to impact the receiving environment, including water resources.



3.2.4 Q6. Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

The following section provides an outline of the State Environmental Planning Policies applicable to the Planning Proposal and future development of the site and provides commentary on issues to be considered by this Planning Proposal.

3.2.4.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Chapter 2 Vegetation in non-rural areas applies to land within several non-rural land zones and applies to clearing native vegetation that is not associated with a development application. The site is zoned a combination of rural and non-rural zones, with the proposed future large lot residential subdivision area being zoned R5 (a non-rural zone). Any future subdivision application would consider native vegetation removal as part of that process and therefore Chapter 2 of this SEPP would not apply.

Chapter 3, Koala Habitat Protection 2020, applies to Part 4 development applications under the *Environmental Planning and Assessment Act 1979* (EP&A Act) and within land zoned RU1 Primary Production, RU2 Rural Landscape, RU3 Forestry within local government areas listed in Schedule 2. Bellingen Shire is listed. However, this application is a Planning Proposal and any associated future subdivision of land that required clearing would occur within the R5 Large Lot Residential Zone. Therefore, this Chapter does/ would not apply.

Chapter 4, Koala Habitat Protection 2021, applies to land within the Bellingen LGA, and applies to development permitted with consent under Part 4 of the EP&A Act. This Chapter would therefore apply when considering a future development application for subdivision of the subject land.

As part of this Planning Proposal, biodiversity matters have been reviewed and assessed, including Koala Habitat (refer to **Section 3.3.1**). The primary Koala food trees, Tallowwood, Swamp Mahogany and Small-fruited Grey Gum are common at the site. BioNet Koala records are largely absent from the land associated with the site which is effectively an island isolated from other Koala habitats by the Pacific Motorway/ Giinagay Way/ Old Pacific Highway to the west, the Bellinger River to the north and east, and the Kalang River to the south. Koalas are considered to have a low likelihood of occurring at the site.

The *Bellingen Shire Council Coastal Area – Core Koala Habitat Comprehensive Koala Plan of Management* (CKPoM) was previously adopted by BSC under the provisions of Clause 13 of State Environmental Plan No.44 – Koala Habitat Protection (now repealed and replaced as outlined above). The site is mapped as containing areas of Secondary B and Secondary A Koala habitat. The site is not depicted as including core Koala habitat in the CKPoM.

The provisions of CKPoM apply to land:

- a) Identified as being core Koala habitat on the Core Koala Habitat Map; and
- b) That have an area of more than 1 ha.

A future development on the site would not trigger requirements of the CKPoM directly, however Koala management requirements of the Bellingen Development Control Plan (DCP) – Chapter 16 Koala Habitat Protection and Chapter 4, Koala Habitat Protection 2021 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 would need to be addressed.

As part of a future DA on the site the DCP requires that:

- A Koala Habitat Assessment Report (KHAR) and Koala Activity Report (KAR) must be prepared.
- Development Criteria included in Section 16.7 of the DCP must be addressed.
- The Habitat Compensation Policy is to be addressed in relation to the loss of Koala food trees.

Under the provisions of Chapter 4 of State Environmental Planning Policy (Biodiversity and Conservation) 2021, the council's determination of a future development application must be consistent with the approved koala plan of management that applies to the land.

It is expected that a future DA would satisfy these requirements and no significant impact to Koala habitat would occur. The indicative building envelopes shown on the subdivision concept layout and relevant mapping illustrations demonstrate this.

3.2.4.2 State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 2 (Coastal Management)

Chapter 2 of the State Environmental Planning Policy (Resilience and Hazards) 2021 (RHSEPP) provides an integrated and coordinated approach to coastal land use planning. It defines the four coastal management areas through detailed mapping and specifies assessment criteria that are tailored for each coastal management area. Councils and other consent authorities must apply these criteria when assessing proposals for development that fall within one or more of the mapped areas.

As depicted in **Plate 3.3** and **Illustration 1.2**, although the northern portion of the subject lot is partly mapped as being in the coastal use and coastal environment area, the actual area of the lot affected by the proposed LEP amendment and future subdivision does not fall within the coastal zone as defined by the *Coastal Management Act 2016* (Coastal Management Act). The Planning Proposal area is not mapped as comprising or being within coastal wetlands or littoral rainforests area, coastal vulnerability area, coastal environment area, or coastal use area. No adverse impact to the coastal zone or related environment would occur and no further consideration is required.

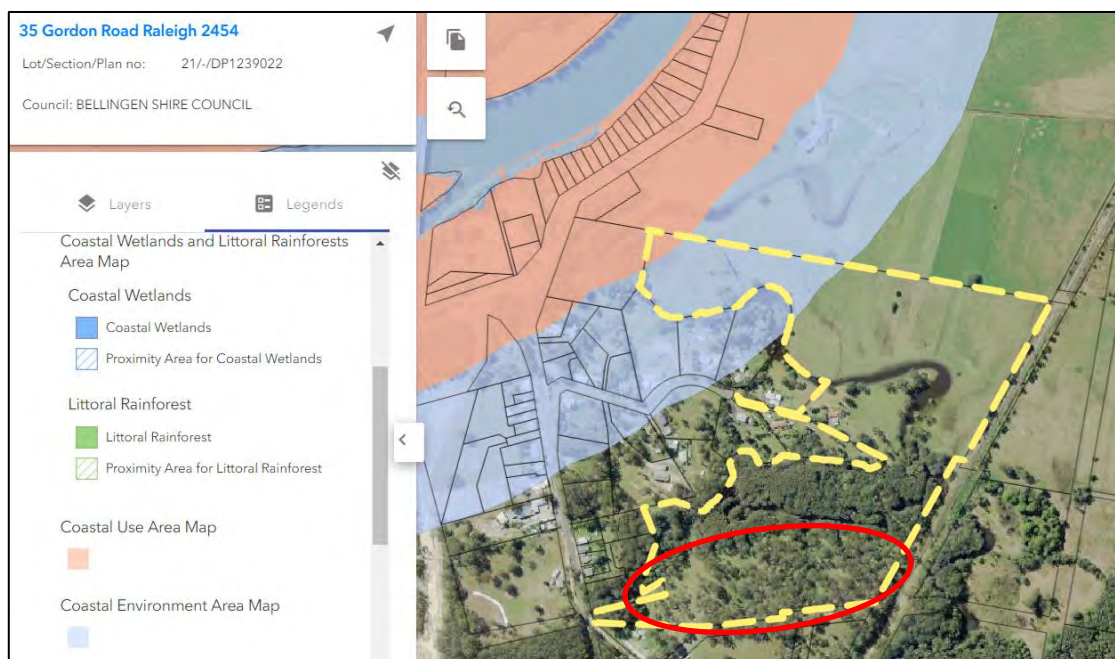


Plate 3.3 RHSEPP Mapping and the Subject Site, with Approximate Planning Proposal and Future Subdivision Area Circled Red (Source: NSW Spatial Viewer 2024).



Chapter 3 Hazardous and Offensive Development

The proposal does not constitute a potentially hazardous industry or potentially offensive industry as defined in Section 3.2 of the RHSEPP. This Chapter does not apply.

Chapter 4 Remediation of Land

The object of Chapter 4 is to provide for a State-wide planning approach to the remediation of contaminated land. It aims 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 by:

- *Specifying when consent is required, and when it is not required, for remediation work.*
- *Specifying certain considerations that are relevant in determining development applications in general (particularly for a change of use) and those for consent to carry out remediation work.*
- *Requiring that remediation work meets certain standards and notification requirements.*

The site is not declared to be 'significantly contaminated land' under part 3 of the *Contaminated Land Management Act 1997* and is not subject to a 'management order' within the meaning of the *Contaminated Land Management Act 1997*. The land is not the subject of an approved voluntary management proposal or an 'ongoing maintenance order'.

Contamination has been investigated and a Phase 1 Preliminary Site Investigation (PSI) prepared (refer to **Section 3.3.2.1** and **Appendix D**). There is no evidence of contamination that would prohibit the proposal. The land is considered to be suitable.

3.2.4.3 State Environmental Planning Policy (Primary Production) 2021

The relevant aims of this Policy are as follows:

- *to facilitate the orderly economic use and development of lands for primary production,*
- *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,*
- *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,*
- *to require consideration of the effects of all proposed development in the State on oyster aquaculture,*

The portion of land subject to this proposal and future subdivision is already largely zoned R5 large lot residential. There would be negligible change to the rurally zoned land, save for some minor refinements and expanded C2 environmental conservation zoning aligned with HEV land. Surrounding open and large areas of rurally zoned land in the broader landscape would remain unaffected. As outlined in **Section 3.3.2.8** the development area is well separated from these areas and its use for large lot residential would not result in land use conflict with agricultural activity on the residue lot or beyond. Application of the 20ha minimum lot size to this area comprising C2 and RU1 zones, as requested by Council, would ensure no further subdivision potential or fragmentation of rural land. Furthermore, the site immediately adjoins existing zoned R1 and R5 zoned land, indicating that such land uses in this locality are acceptable and can co-exist with surrounding rural land. Rural residential development is an ideal transitional zone to the rural zoned land, given the larger lot size. As such it is considered that the proposal will maintain the site's consistency with the aims of the State Environmental Planning Policy (Primary Production) 2021.



3.2.5 Q7. Is the Planning Proposal consistent with applicable Ministerial Directions (s. 9.1 directions) or key government priority?

Directions made under Section 9.1 (formerly Section 117) of the EP&A Act, issued on or after the 1 July 2009, have been reviewed (i.e. the version of Ministerial Directions assessed was accessed and current as of September 2024). Those that are relevant to the site/proposal are identified and addressed in **Table 3.1** below. Note, for the sake of length, not all details of the applicable Directions have been quoted in the table below.

Table 3.1 Applicable Section 9.1 Ministerial Directions

| <i>Direction No.</i> | <i>Summary of Objectives/ Direction</i> | <i>Consideration/comment</i> |
|---------------------------------------|--|---|
| Focus Area 1: Planning Systems | | |
| 1.1 Implementation of Regional Plans | <p>The objective of this direction is to give legal effect to the vision, land use strategy, goals, directions and actions contained in Regional Plans.</p> <p>(1) Planning proposals must be consistent with a Regional Plan released by the Minister for Planning.</p> <p><i>Consistency</i></p> <p>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:</p> <p>(a) the extent of inconsistency with the Regional Plan is of minor significance, and</p> <p>(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.</p> | <p>As outlined in Section 3.2.1.1, this Planning Proposal is generally consistent with the NCRP 2041 and achieves its overall intent and does not undermine the achievement of the Regional Plan's vision, land use strategy, goals, directions or actions. The matter that the land is within the coastal strip (though not in the coastal zone as defined by the <i>Coastal Management Act 2016</i>), that is, it is east of the Pacific Highway, and not identified as a formal urban growth area on the subject mapping is an inconsistency of minor significance. As discussed in the above referenced section, the proposal represents an orderly and economic use of land that is already zoned R5 for large lot residential purposes, responds to the local strategic framework, and satisfies the Urban Growth Area Variation Principles in Appendix A of the NCRP.</p> <p>It is not believed that the Proposal is inconsistent with the NCRP, as the land is already zoned for the rural residential purposes and the applicable subdivision minimum is being refined to better reflect the actual land use constraints of the site. It is consistent with the BSC GMS in this regard which, rather than back-zone the land, recommended it be rezoned for rural residential purposes.</p> |
| 1.4 Site Specific Provisions | <p>The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.</p> <p><i>Direction 1.4</i></p> <p>(1) A planning proposal that will amend another environmental planning instrument in order to allow particular development to be carried out must either:</p> | <p>Consistent. No unnecessarily restrictive site-specific planning controls are proposed, nor should they be applied to the site. The existing R5 zone, including minor ancillary refinement, is appropriate.</p> |



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| | <p>(a) allow that land use to be carried out in the zone the land is situated on, or</p> <p>(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</p> <p>(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.</p> <p>(2) A planning proposal must not contain or refer to drawings that show details of the proposed development.</p> | |
| Directions 1.5 to 1.22 | Not applicable. | Not applicable. |

Focus area 2: Design and Place - This Focus Area was blank when the Directions were made

Focus Area 3. Biodiversity and Conservation

| | | |
|---------------------------|--|---|
| 3.1 Conservation Zones | The objective of this direction is to protect and conserve environmentally sensitive areas. | Consistent. The Planning Proposal will not adversely impact on any environmentally sensitive areas. Rather, this Planning Proposal enhances conservation and protection of land identified as HEV as per the biodiversity assessment undertaken. The sites are large enough and capable of supporting dwellings and onsite wastewater systems that are adequately separated from sensitive environments. |
| 3.2 Heritage Conservation | The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. | <p>Consistent. As outlined in Section 3.3.2, Aboriginal and non-Aboriginal heritage has been assessed.</p> <p>An Aboriginal Cultural Heritage Assessment (ACHA) (refer to Appendix B) has concluded that the proposed large lot residential development has the potential to impact on Aboriginal artefacts, being an isolated find / low density artefact scatter that have been identified across the ridge crest along the southern boundary of the Study Area. The ACHA has outlined management procedures that should be put in place, including a buffer around the artefact, to avoid and further reduce the likelihood that ground disturbing works will impact on Aboriginal objects.</p> <p>Overall, the ACHA has demonstrated that Aboriginal heritage would not be an</p> |



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| | | <p>impediment to the Planning Proposal and future subdivision, and the site and heritage potential can be effectively managed through the access road design and during works by adoption of common and suitable management measures.</p> <p>Heritage database searches (refer to Appendix G) revealed that no items of non-Indigenous/ European heritage significance are known within or immediately adjacent to the subject site. The site, nor those adjoining, are not listed in Schedule 5 (Environmental Heritage) of the BLEP 2010. No impacts are anticipated.</p> |
| Directions 3.3 to 3.10 | Not applicable. | Not applicable. |

Focus area 4: Resilience and Hazards

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|--------------|---|---|
| 4.1 Flooding | <p>The objectives of this direction are to:</p> <p>(a) ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and</p> <p>(b) ensure that the provisions of an LEP that apply to flood prone land are commensurate with flood behaviour and includes consideration of the potential flood impacts both on and off the subject land.</p> | <p>Consistent. As outlined in Section 3.3.2.6, whilst the low-lying north fringe of the proposed amendment area is flood prone, the vast majority of the site subject to the LEP amendment and future R5 subdivision (including the proposed potential dwellings sites) is not identified as flood prone land.</p> <p>The R5 land provides ample land above the 100-year Average Recurrence Interval (ARI) flood extent to establish and maintain dwellings and associated facilities.</p> <p>Safe occupation of and efficient evacuation of future proposed lots is possible and maintained during a flood event. No increased requirement for government spending on emergency management services or infrastructure is required.</p> <p>The site is suitable and consistent with the direction.</p> |
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| 4.2 Coastal Management | <p>The objective of this direction is to protect and manage coastal areas of NSW.</p> <p>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 <i>Coastal Management Act 2016</i> – comprising the coastal wetlands and littoral rainforests area, coastal vulnerability area, coastal environment area and coastal use area - and as identified by chapter 2 of the State Environmental Planning Policy (Resilience and Hazards) 2021.</p> | <p>Not applicable. The portion of the land subject to the proposed LEP amendment and future large lot subdivision is not in the coastal zone as defined by the <i>Coastal Management Act 2016</i> (Coastal Management Act). That is, it is not mapped as comprising or being within coastal wetlands or littoral rainforests area, coastal vulnerability area, coastal environment area, or coastal use area. Therefore, this Direction and the NSW Coastal Design Guidelines are not applicable.</p> |
| 4.3 Planning for Bushfire Protection | <p>The objectives of this direction are to:</p> <p>(a) protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and</p> <p>(b) encourage sound management of bush fire prone areas.</p> | <p>Consistent. As outlined in Section 3.3.2.6, a Bushfire Hazard Assessment (refer to Appendix C) for the Planning Proposal has been prepared.</p> <p>This assessment has had regard for Planning for Bushfire Protection 2019 and demonstrates that bushfire protection measures are achievable and can be implemented to facilitate the proposed development, therefore showing that site can support large lot residential development and the Planning Proposal is acceptable from a bushfire perspective.</p> |
| 4.4 Remediation of Contaminated Land | <p>The objective of this direction is to reduce the risk of harm to human health and the environment by ensuring that contamination and remediation are considered by planning proposal authorities.</p> | <p>Consistent. The land is already zoned R5, this planning proposal however would enable subdivision to achieve the objectives of the zone and provide five, 1ha large lot residential lots.</p> <p>As outlined in Section 3.3.2.1 a Phase 1 PSI (refer to Appendix D) has been prepared.</p> <p>Based on a review of the available desktop data, observations made during the site inspection and sampling and laboratory testing results, it is determined that the soil within the subject area is not subject to contamination by previous land uses and practices. It is considered that the soil contamination status reported is not prohibitive to the proposed development. Therefore, no further investigation (detailed site assessment) is required.</p> |
| 4.5 Acid Sulfate Soils | <p>The objective of this direction is to avoid significant adverse environmental impacts from the use</p> | <p>Consistent. The subject area is mapped Class 5 acid sulfate soils, and is not a risk. The proposed R5 zoned area and future lots have development areas well</p> |



| | | |
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| | of land that has a probability of containing acid sulfate soils. | above 5m AHD (acid sulfate soils generally do not occur above this elevation). An acid sulfate soils study is not warranted and large lot residential development would be suitable and presents minimal risk. |
| 4.6 Mine Subsidence and Unstable Land | Not applicable | The Planning Proposal is not within a designated mine subsidence district and is not identified as being unstable. |

Focus area 5: Transport and Infrastructure

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| 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, employment, village or tourist purposes. | The proposal relates to the R5 zone, which is not an urban zone as it is for large lot/rural residential purposes. Nonetheless, the site has good access to road infrastructure and is close to services such as local townships and schools. Bus services also operate in the area. |
| 5.2 Reserving Land for Public Purposes | The objectives of this direction are to: (a) facilitate the provision of public services and facilities by reserving land for public purposes, and (b) facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition. | Consistent. No public land is proposed, reduced, or affected by this planning proposal. |
| 5.3 Development Near Regulated Airports and Defence Airfields | Not applicable | Not applicable |
| 5.4 Shooting Ranges | Not applicable | Not applicable |

Focus Area 6: Housing

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| 6.1 Residential Zones | The objectives of this direction are to: (a) encourage a variety and choice of housing types to provide for existing and future housing needs, (b) make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and (c) minimise the impact of residential development on the environment and resource lands. | Consistent. This Planning Proposal seeks to make efficient, orderly and economic use of existing R5 zoned land via the creation of 1ha lots which is a suitable density for this purpose and the constraints of the land. It will provide additional rural residential housing choice in an area where such housing types are sought after. The site is well located and takes advantage of existing infrastructure and services with minimal requirements for additional provision, as well as being serviced by individual domestic infrastructure. The concept design layout and potential building envelopes represents good design, working with the constraints of |
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| | | the land and minimising disturbance/vegetation impacts. |
| 6.2 Caravan Parks and Manufactured Home Estates | Not applicable | Not applicable |

Focus area 7: Industry and Employment


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| Directions 7.1 to 7.3 | Not applicable | Not applicable |
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Focus area 8: Resources and Energy

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| 8.1 Mining, Petroleum Production and Extractive Industries | Not applicable | |
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Focus area 9: Primary Production

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|-----------------|--|--|
| 9.1 Rural Zones | <p>The objective of this direction is to protect the agricultural production value of rural land.</p> <p>(1) A planning proposal must:</p> <p>(a) 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.</p> <p>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:</p> <p>(a) justified by a strategy approved by the Planning Secretary which:</p> <p>i. gives consideration to the objectives of this direction, and</p> <p>ii. identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), or</p> <p>(b) justified by a study prepared in support of the planning proposal which gives consideration to the objectives of this direction, or</p> <p>(c) in accordance with the relevant Regional Strategy, Regional Plan or District Plan prepared by the Department of Planning and Environment which gives consideration to the objective of this direction, or</p> | <p>Consistent. The proposal is for a particular site as identified in this report. A small area of RU1 zoned land will be changed to C2 and R5. This is as a result of the biodiversity assessment undertaken and ancillary administrative housing-keeping zone amendments to rectify small silvers of ad-hoc rural zoning believed to be left over when the zoning layers were digitised. These amendments would not adversely affect productive agricultural land and are of minor significance.</p> |
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| | (d) is of minor significance. | |
| 9.2 Rural Lands | <p>The objectives of this direction are to:</p> <ul style="list-style-type: none"> (a) protect the agricultural production value of rural land, (b) facilitate the orderly and economic use and development of rural lands for rural and related purposes, (c) assist in the proper management, development and protection of rural lands to promote the social, economic and environmental welfare of the State, (d) minimise the potential for land fragmentation and land use conflict in rural areas, particularly between residential and other rural land uses, (e) encourage sustainable land use practices and ensure the ongoing viability of agriculture on rural land, (f) support the delivery of the actions outlined in the NSW Right to Farm Policy. | <p>This Planning Proposal is consistent as follows:</p> <ul style="list-style-type: none"> ■ The land affected is already primarily zoned R5. A small area of rurally zoned land, that is not productive and occurs on the edge of swampy land of environmental value would be rezoned to ensure high value environmental land is protected. This would not adversely impact rural land, productivity or viability of surrounding rural activity. ■ Is consistent with the direction objectives. ■ Identifies and protects environmental values, with substantial extension of the C2 zone. ■ Has found that the natural and physical constraints of the land are suitable for the intended purpose/outcome. ■ Would not hinder farmers in exercising their right to farm. ■ Does not fragment rural land and would not result in rural land use conflict. ■ Is and can be adequately serviced and connected. ■ Responds to demand for large lot residential housing by utilizing suitable land that is already zoned R5 and only requires minor ancillary zoning amendments to rural zoning. ■ Is in the social, economic and environmental interests of the community. |
| 9.3 Oyster Aquaculture | Not applicable | Not applicable |
| 9.4 Farmland of State and Regional Significance on the NSW Far North Coast | Not applicable | Not applicable |

Overall, the proposal is consistent with the vast majority of relevant Section 9.1 Directions. Where some limited inconsistency has been identified, this is of minor significance and inconsequential, and it can be argued that it is in fact not an inconsistency if the underlying zoning of the land is considered. Needless to say, any such inconsistency is permissible under the relevant Directions and justified as outlined in this Planning Proposal. The proposal is suitable for the site context, would effectively utilise and integrate into the existing R5 zone and adjacent Raleigh village/residential area, would not adversely impact the environment, agriculture, or the strategic intent of policy, and is acceptable.



3.3 Matters for Consideration – Environmental, Social and Economic Impact

3.3.1 Q8. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected because of the proposal?

A biodiversity assessment report (refer to **Appendix E**) has been prepared to accompany this Planning Proposal. The assessment included desktop analysis and field survey undertaken over two days. Refer to the biodiversity assessment report for further details.

The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential) and common access road under community title provisions, and a residual lot. The subject area also comprises RU1 Primary Production and C2 Environmental Conservation zones.

No parts of the site are depicted on the Biodiversity Values (BV) Map.

Land proposed for amendments to the BLEP 2010 to facilitate future subdivision comprises elevated north-facing land including partially cleared open woodland dominated by Tallowwood (*Eucalyptus microcorys*), Grey Ironbark (*Eucalyptus siderophloia*), Turpentine (*Syncarpia glomulifera*), Blackbutt (*Eucalyptus pilularis*), Thick-leaved Mahogany (*Eucalyptus carnea*) and Pink Bloodwood (*Corymbia intermedia*). Subdominant trees include Red Ash (*Alphitonia excelsa*) and Pink Flowered Doughwood (*Melicope elleryana*). This vegetation is representative of Plant Community Type (PCT) 3250 Northern Foothills Blackbutt Grass Forest.

Vegetation to the north of the land proposed for amendments to the BLEP 2010 includes consolidated areas of swamp sclerophyll forest within a low-lying area of occasionally inundated land associated with an intermittent waterway. Vegetation in this area is dominated by Broad-leaved Paperbark (*Melaleuca quinquenervia*) with occasional Swamp Mahogany (*Eucalyptus robusta*), Swamp Oak (*Casuarina glauca*) and Pink-flowered Doughwood. This vegetation is representative of PCT 4000 Northern Estuarine Paperbark Sedge Forest.

Open woodland occurring on the land proposed for amendments to the BLEP 2010/ development is not indicative of a Threatened Ecological Community (TEC). Areas to the north outside of the proposed subdivision/development area comprise of swamp sclerophyll forest (PCT 4000) and are representative of the following TECs:

- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions listed under the BC Act.
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland listed under the EPBC Act.

No threatened flora species were detected at the site.

Several threatened fauna species are considered to have a moderate-high potential to occur at the site. Nearly all of these species are highly mobile and likely to utilise the site on occasion as foraging habitat as part of broader local foraging ranges. The primary Koala food trees, Tallowwood, Swamp Mahogany and Small-fruited Grey Gum are common at the site. BioNet Koala records are largely absent within the locality of Raleigh, including from the land associated with the site, which can be effectively viewed as an island isolated from other Koala habitats due to the Pacific Highway to the west, the Bellinger River to the north and east, and the Kalang River to the south. Therefore, Koalas are considered to have a low likelihood of occurring at the site.



A future five lot residential development on the site would require the clearing of some native trees within the under scrubbed woodland on the site which is representative of a degraded form of PCT 3250. Preliminary area calculations for impacted vegetation based on the concept layout (including nominated indicative building envelopes, APZs, road footprint and lot boundaries) suggest that clearing of < 0.5 ha is achievable. It appears that hollow-bearing trees can be avoided as part of a future development application for subdivision on the site.

The proposed LEP amendment and future development on the site would aim to avoid impacts to HEV areas as follows:

- As part of the Planning Proposal, all areas of mapped PCT 4000 are proposed to be incorporated into a revised and enhanced C2 zone on the site. This includes a narrow area of land between the existing C2 and R5 zones that is currently zoned RU1 Primary Production.
- As part of a future Development Application (DA) on the site, mature trees would be retained to the maximum extent possible. It is noted that the subdivision concept plan has been designed to locate building envelopes, bushfire asset protection zones (APZs) and boundary fences to avoid and minimise impacts on mature trees where possible.
- As part of a future DA on the site a comprehensive Vegetation Management Plan would be prepared for all C2 zoned land on the site, including fencing, weed control, and revegetation measures to ensure this land is effectively managed for conservation into the future.

As mentioned, residual impacts of a future five lot residential subdivision on the site are likely to comprise removal of selected mature trees on the site which have been estimated to represent < 0.5ha of PCT 3250.

No matters of national environmental significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) would be significantly affected.

The biodiversity assessment concluded that the proposal for amendment of the LEP and a future five lot large lot residential subdivision on the site, plus common access road, can be undertaken with relatively low biodiversity impacts. Relevant statutory instruments would be addressed as part of a future development application on the site in the event the Planning Proposal is approved.

No critical habitat or threatened species, populations or ecological communities, or their habitats, are likely to be adversely affected because of the proposal. The proposal is acceptable from a biodiversity perspective and would not result in any unreasonable or significant ecological impact.

3.3.2 Q10. Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

3.3.2.1 Contamination

GeoLINK were engaged to prepare a Phase 1 Preliminary Site Contamination Investigation (PSI) (refer to **Appendix D**) to facilitate amendment of the BLEP 2010 to enable the future subdivision of the existing lot to support a Large Lot Residential subdivision and associated future dwellings.

The PSI was undertaken to provide information on the potential for contamination at the site and the compatibility of the site for the proposed Planning Proposal and future development from the contaminated land perspective.

A review of the site history was undertaken to determine whether current or past activities may have contributed to contamination of the site. The historical aerial photography review indicates a potential



for the following land contaminating activities to have occurred on within the proposed subdivision footprint:

- minor-scale agricultural activities – livestock grazing. It is noted that there was no evidence of cropping activities from the aerial photographs.

This warranted further investigation. A comprehensive site inspection was undertaken on 15 November 2023, focusing on the proposed subdivision footprint. The purpose of the site inspection was to make observations of the site and adjacent land uses to determine its potential for land contamination from previous land uses and practices. Soil sampling was also conducted on-site.

Soil sampling was conducted at the site on 15 November 2023 to assess the presence of chemicals of potential concern as listed previously. Samples were taken across the proposed subdivision development footprint. The following sampling, analysis and data quality objectives have been adopted in order to:

- Confirm the soils on the subject site do not pose a risk to human health or the environment.
- Employ quality assurance when sampling, assessing and during evaluation of the soils.
- Ensure that decontamination techniques are applied during the sampling procedure and that no cross contamination of samples occurs.

In accordance with NSW EPA Guidelines (1995), a combination of systematic and judgemental sampling protocols was used to determine whether any residue contaminants or ‘hot spots’ are present across the proposed subdivision development footprint. This included representative samples within/ adjacent to the nominated building envelopes and topographical features such as gully’s where contaminants may have settled. The maximum number of discrete samples that are allowed is four (NEPC 2013). Therefore, a total of 12 individual sub-samples were collected across the site and composited into three.

The laboratory results were assessed against relevant guideline criteria to determine the following:

- Potential risks to public health and the environment associated with any disturbance of contaminated soils.
- The need for further investigation and evaluation if necessary.
- Any potential remediation measures that may be required.

The soil sample results do not exceed any of the relevant health-based or ecological-based investigation level criteria. The soil contaminant levels reported from within the proposed subdivision footprint are considered unlikely to pose a significant risk to human health or the environment.

Based on a review of the available desktop data, observations made during the site inspection and sampling and laboratory testing results, it is determined that the soil within the proposed subdivision development footprint is not subject to contamination by previous land uses and practices. It is considered that the soil contamination status reported is not prohibitive to the Planning Proposal and any future proposed development. Therefore, no further investigation (detailed site assessment) is required.

3.3.2.2 On-site Effluent (Sewage) Assessment

GeoLINK has prepared an on-site effluent disposal suitability assessment to support the Planning Proposal and a future proposed large lot residential subdivision (refer to **Appendix F**).



This assessment details the site inspection of the property and provides a description of the site and its environs as well as an assessment of the issues to be considered for the installation of on-site wastewater management systems. The assessment has been undertaken with reference to:

- Bellingen Shire Council Development Control Plan (2017) Chapter 10 - *On-Site Sewage Management*
- AS/NZS 1547: On-site Domestic Wastewater Management (Standards Australia/Standards New Zealand, 2012)
- Environment & Health Protection Guidelines: On-site Sewage Management for Single Households (Department of Local Government, 1998).

Following the site assessment and calculations utilising the modified Clarence Valley Council's On-Site Sewage Management System Design Model (Land Application Area Calculator), the Planning Proposal, facilitating a future large lot residential subdivision, can be considered suitable. The assessment shows an on-site wastewater management system for each future lot can be accommodated and effectively established across several likely dwelling options, subject to relevant design recommendations.

The site is suitable and can support on-site effluent disposal for 1ha large lot residential lots.

3.3.2.3 Aboriginal Heritage

Tim Hill Heritage Management and Planning Pty Ltd (Tim Hill) was engaged to provide Aboriginal heritage advice for the Proposal, including the preparation of an Aboriginal Cultural Heritage Assessment (ACHA) (refer to **Appendix B**).

The ACHA was commissioned to consider the potential impacts of the Proposal, and any future development applications, on Aboriginal objects and cultural values, including potential impacts to the cultural landscape.

The brief and methodology for the ACHA was to undertake an archaeological and cultural landscape in accordance with the Code of Practice for the *Archaeological Investigation of Aboriginal Objects in NSW* (DEECW 2010A) (CoPAI) and to undertake an impact assessment in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (Office of Environment and Heritage 2011) (OEH). The methods employed in the assessment are outlined in the ACHA.

Review of historic aerials was undertaken to understand the potential impact of historic land use on the potential for the Planning Proposal and future subdivisions to harm Aboriginal objects, with specific consideration of impacts to topsoils with the potential to contain Aboriginal archaeological sites.

Aerial photos from 1968, 1978, and 1993 demonstrate that the Study Area has been subject to some ground disturbance from forest clearing and agriculture. This includes:

- Original forestry in the mid 1800's
- Partial clearing/ thinning of the regrowth vegetation for grazing, and
- Construction of a vehicle track along the southern boundary.

However, it was determined reasonable to proceed with the assessment on the basis that historical land clearing has not had a significant impact on the soil profile, being disturbance which is clear and observable.

A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 18 October 2023 (AHIMS # 830144) for the area "Lat, Long From: -30.4877, 152.9788 - Lat, Long To : -30.4507, 153.0406". No Aboriginal sites are recorded in or near the Study Area.



The AHIMS search identified 29 previously recorded Aboriginal sites, of which the majority were Artefacts (31%/n=9) and Potential Archaeological Deposits (31%/n=9). Three restricted sites are included within the AHIMS search however these are recoded as part of the Pacific Highway upgrade project and are located to the west of the Study Area. The ceremonial site and burial are recorded to the southeast of the Study Area and relate to the old Yellow Rock/ Urunga Aboriginal Reserve.

Based on the review of information and the predictive model for the Study Area, the following specific comments were provided to inform the ACHA:

- the Study Area is not located on the immediate banks of the Bellinger or Kalang Rivers – however it is located near to swampland formed in a paleochannel of the river which would have increased local resource diversity
- the Study Area is located on the northern slope of relatively large and expansive ridge crest that terminates on the floodplain east of the Study Area- the termination of the ridge would provide direct access to a significant wetland and the mosaic of resources including birds and fish that are not as common within the rivers or ocean
- Ceremonial/ mythological sites are known to be located in the general vicinity- the Study Area may have been used for hunting and collection associated with these significant site types but would not likely have been used directly as part of ceremonial activities, and
- the Study Area is located in an area which has been subject to low-moderate historic ground disturbance which has not removed most of the topsoils.

As such it is considered that there is a low-moderate potential that the Study Area will contain Aboriginal archaeological sites.

A site inspection and field survey was undertaken on Tuesday 7 November 2023 with Uncle Ian Brown and Rhys Brown from Coffs Harbour & District Local Aboriginal Land Council (LALC). Uncle Ian is familiar with sites around the Bellinger/ Kalang River and has worked on archaeological surveys including South Urunga Heights and the Pacific Highway upgrade near Urunga.

For the purposes of the ACHA the following describes the outcomes of the archaeological investigation/ survey:

- the archaeological survey comprised a pedestrian transect across of sample of the Study Area with a focus on the ridge crest/ upper slope due to the elevated likelihood for Aboriginal archaeological sites would be located on the drier elevated ridges
- the Study Area was identified to have only been subject to low-moderately historical ground disturbance including the partial excavation of the farm track/ fence boundary and the clearing and grubbing of the regrowth forest for grazing- the study confirmed there has not been significant ground disturbance that is “clear or observable” over the majority of the Study Area, and
- the ground surface visibility was generally good to very good on the ridge crest and upper slope but reduced down the slope - ground surface visibility did not significantly constrain the site inspection and based on the available sample area the survey team was confident in the results of the site inspection.

The site inspection identified one Aboriginal stone artefact, being a unifacial cobble chopper, that was located on the ridge crest above proposed concept Lot 3 (see **Plate 3.4** to **Plate 3.6**). The cobble chopper was eroding out of the topsoil that had been disturbed by farming activities / use of the farm track and is consistent with the most common Aboriginal stone artefacts on the sub-coastal forests. The primary observation of the site inspection was that the elevated and dry forests that existed prior to land clearing provided forest hunting grounds which offered a range of resources not available on the floodplain and estuaries of the Kalang and Bellinger Rivers. The main campsites/ occupation areas would have fringed the estuary and coastline and that any use of the hills terminating on the edge of

the floodplain would be secondary to the main coastal campsites. As such the cobble chopper forms an ancillary part of a much broader archaeological and cultural landscape.



Plate 3.4 35 Gordon Road, Chopper 01 – location of site (source: Tim Hill)



Plate 3.5 35 Gordon Road Chopper 01 – ventral surface (source: Tim Hill)



Plate 3.6 35 Gordon Road Chopper 01 – location in relation to southern boundary fence (source: Tim Hill)



Requirement for archaeological test excavation

The CoPAI sets out three criteria/ requirements for archaeological excavation, being:

- There is a “high probability” of artefacts being present in the soil profile,
- That the artefacts would be of “potential conservation value”, and
- The artefact cannot be “substantially avoided”.

The results of the archaeological survey are within the range of ‘normal’ for archaeological investigations on the NSW north coast where the ability to identify sites closely correlates with landforms, the amount of grass cover and the extent of historic disturbance to topsoils.

In the case of the Study Area the main ridge crest/ potential occupation area is located on the adjacent paddock (south). Given the amount of ground visibility on the farm track it is expected that if the site had moderate or high-density artefacts these would have been visibly eroding out of the soil/ slope.

In northern NSW, sites which are considered to have ‘conservation value’ include, for example, bora/ stone arrangement sites, modified trees, rock art, historic sites associated with former Aboriginal reserves and missions and Aboriginal burials. Stone artefact scatters are relatively common and would not be considered to be of high conservation value. There are precedents and examples for the management of stone artefacts/ cobble choppers, and it is known that there are hundreds of similar artefacts within museum collections from Coffs Harbour’s northern beaches. As an example, the Urunga Heights subdivision and the Pacific Highway upgrades were approved without the requirement of conservation zones around the recorded archaeological sites.

The final consideration is that layout of the subdivision places the building envelopes and onsite waste management systems off the ridge crest where the likelihood that artefacts being present is significantly reduced. The substantial impact to the topsoils in along the ridge crest is from the shared road access which has been designed (the concept design was amended following heritage advice) to avoid the location of the known isolated artefact and reduce the overall impact on the residual area of the ridge with the potential to contain similar artefacts.

On this basis, archaeological test excavation is not warranted.

Cultural Values of the Study Area

The following summarises the observations and comments from Uncle Ian relating to the cultural landscape values of the Study Area:

- The primary cultural sites within local area comprised ceremonial sites on the lower floodplain. Uncle Ian was familiar with the sites recorded as part of the Pacific Highway upgrade and had discussed local stories with Richard Kelly who had previously recorded cultural sites when he worked for Coffs Harbour and District LALC in the 1990’s
- The Yellow Rock and Urunga Island Aboriginal Reserves were a significant place for the Aboriginal community - however the cultural values were primarily located around the boundaries of the reserves and at Urunga/ North Beach villages on the floodplain, and
- There are artefacts all through the forests and Aboriginal people would have used the elevated ridges as pathways to get up into the high country - however being so close to the coast the river would have been the main way to get around the flood plain and travel upriver.

Uncle Ian did not raise any specific objections to the proposal for rural/large lot residential development within the Study Area and did not raise any broader concerns about such development generally in the Raleigh area.



Significance Assessment

The ACHA has considered the framework for the assessment of significance based on the Burra Charter (Australian ICOMOS Incorporated 2013), *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (OEH 2011), and *Assessing heritage significance guidelines* (Department of Planning and Environment 2023).

Overall, Cobble choppers are of significance to the Gumbayngirr community and demonstrate the occupation of the local area by ancestors. However isolated artefacts are not historically significant on the Coffs Harbour coast and Cobble choppers are common and have either low or not applicable significance when considered against the assessment of significance criteria in the abovementioned guidelines.

Assessment of Harm

The following ground disturbance would reasonably result from the future large lot residential subdivision of the Study Area:

- Excavation of the access road from Old Pacific Highway along the southern boundary, including drains and water diversions as required
- Installation of services and mains power
- Excavation of pads for building envelopes where their design required cut and fill earthworks
- Installation of onsite wastewater treatment, including tanks and evaporative trenches, and
- Construction of potential ancillary structures including sheds, pools and gardens.

The following statements are provided to inform the Impact Assessment and outline measures to avoid or mitigate the consequences of harm (see Table 8 of the ACHA for more detail).

- there is an overall low likelihood that the building envelopes and areas on the lower slope identified for onsite waste management systems contain stone artefact scatters associated with traditional Aboriginal campsites
- there are no old growth trees and none of the mature trees have evidence of anthropogenic modification, and
- the main construction activity with the potential to impact on Aboriginal objects is the shared road/ access off Old Pacific Highway that is located on the edge of the ridge/ upper slope.

Management Recommendations

The ACHA has concluded that the proposed large lot residential development has the potential to impact on Aboriginal artefacts, being isolated finds / low density artefact scatter that have been identified across the ridge crest along the southern boundary of the Study Area. The ACHA has outlined management procedures that should be put in place to further reduce the likelihood that ground disturbing works will impact on Aboriginal objects. This includes (refer to ACHA for full detail):

- Retention of the artefact known as the 35 Gordon Road Cobble Chopper and implementation of a 5-metre buffer around it, by shifting the access road as far north as possible to substantially avoid the ridge crest (this is reflected in the concept design)
- Management of topsoils along the ridge crest/main access road and driveways
- Cultural heritage inductions
- Management of Aboriginal Human Remains (unexpected finds).

These measures are relatively standard and would be implemented during the design and DA stage of the Proposal, noting that the appended concept design has already adopted the artefact buffer recommendation by realigning the head of the access road to the north.



Overall, the ACHA has demonstrated that Aboriginal heritage would not be an impediment to the Planning Proposal and future subdivision, and the site and heritage potential can be effectively managed through the access road design and during works by adoption of common and suitable management measures.

3.3.2.4 European Heritage

Heritage database searches (refer to **Appendix G**) revealed that no items of non-Indigenous/ European heritage significance are known within or immediately adjacent to the subject site. The site, nor those adjoining, are not listed in Schedule 5 (Environmental Heritage) of the BLEP 2010. No impacts are anticipated.

3.3.2.5 Visual Amenity

The area subject to the Planning Proposal is currently rural land, on the edge of large lot residential and residential development. The Planning Proposal would allow for a modest large lot residential subdivision. The proposal would integrate with the adjoining large lot residential and residential zoning, including the Raleigh village, and is consistent with the local pattern and character of development. Future subdivision would involve construction of an access road, dwellings and potential ancillary services and structures (e.g. sheds, pools, gardens), consistent with rural residential character.

The provision of additional dwelling sites would result in a minor visual change. However, this will unlikely be visible from the Old Pacific Highway or from Gordon Road given the topography of the land and established forested wetland vegetation creating a natural buffer. The location of the indicative building envelopes is compatible with the existing dwellings on adjoining allotments, therefore the appearance of a dwelling in that location is not considered to be out of context with the existing visual amenity or the strategic planning context.

Impacts of the Planning Proposal on the visual amenity of the locality would be negligible, and such development would be compatible with the local visual character, having no detrimental impact on the broader scenic landscape.

3.3.2.6 Potential Hazards

Flooding

Council's Floodplain Risk Mapping, obtained from the *Lower Bellinger and Kalang Rivers Floodplain Risk Management Study 2021*, shows that the lower northern portions of the site are flood affected, and mapped as being within the 'Flood Planning Area' and 'Probable Maximum Flood' levels (refer to **Plate 3.7**). Most of the subject area and future possible subdivision, including the proposed potential dwellings sites, is not identified as flood prone land.

The proposed future lots will provide ample land above the 100-year ARI and PMF flood events to establish and maintain future dwellings and associated facilities outside of flood hazards. Suitable flood free road routes are accessible via local flood free roads. This includes the section of the Old Pacific Highway to which the development would have direct access, and that connects to the nearby Pacific Highway via the Waterway Way interchange a short distance to the north. It is noted that as per the objectives of the Pacific Highway Upgrade Program (as outlined in the project's Environmental Impact Statement), the relatively recently upgraded highway provides for flood immunity for at least one highway carriageway for a one in 100-year flood event (Sinclair Knight Merz 2010).



The Environmental Impact Statement prepared by Sinclair Knight Merz in 2010 for the Warrell Creek to Urunga section of the Pacific Highway upgrade modelled flooding events, including the increase in flood levels resulting from climate change for a 1 in 100-year ARI flood for the Kalang River, Nambucca River, and Warrell Creek.

As shown in **Plate 3.8** the results of the flood climate modelling exercise showed that the impacts due to climate change would have minimal impact on the flood immunity or structural integrity of the highway where it crosses the floodplain, including the proposed bridge over the Kalang River as the road deck is 5.7 m higher than the 100 year ARI flood event level (Sinclair Knight Merz 2010).

The climate change impacts would have minimal impact on the flood immunity or structural integrity of the proposed bridge at the Nambucca River crossing as the deck level is higher than the 100-year ARI flood event level with climate change. The road over the floodplain north of the Nambucca River would be 7.5-8 m above the flood levels under this same climate change scenario (Sinclair Knight Merz 2010).

This demonstrates that adequate flood immunity for nearby key road routes is provided and would be accessible for future residents of the proposed subdivision if needed. Further flood studies are not required to demonstrate acceptable flood outcomes or access, and the site is suitable for the proposal.

In relation to the requirements of Council's DCP 2017 for subdivisions involving flood prone land (Chapter 3 and 8), the following is confirmed:

- As shown in **Plate 3.7**, the development site is predominantly free from flood hazards and no filling of flood liable land to create suitable building envelopes is required. Nominated potential building envelopes and the common access road as shown in the concept plan at **Appendix A** are above the flood planning level and Probable Maximum Flood (PMF).
- Flood mapping demonstrates that nominated potential building envelopes with sufficient area for residential purposes will be well separated from the nearest land affected by the 1% Annual Exceedance Probability (AEP) and PMF flood extents.
- No work is proposed within the riparian area or below the 1% AEP flood levels.
- The proposed development would not affect flood behaviour or impact adjoining land.
- Flood-free access is proposed via an access road that connects to the Old Pacific Highway, servicing each proposed residential lot via community title road can be achieved.
- The flood-free access to Gordon Road from the existing residual dwelling will be maintained/ unchanged.
- Future residents of the proposed lots can effectively shelter in place, or if necessary, evacuate via established flood free road routes (including the nearby accessible Pacific Highway which is above the 1% AEP flood level in this area as one of the key design standards for the completed Pacific Highway upgrade in this area provides flood immunity to the highway for the 1 in 100 year flood event (Sinclair Knight Merz 2010), enabling access to the north or south and nearby centres/community facilities.

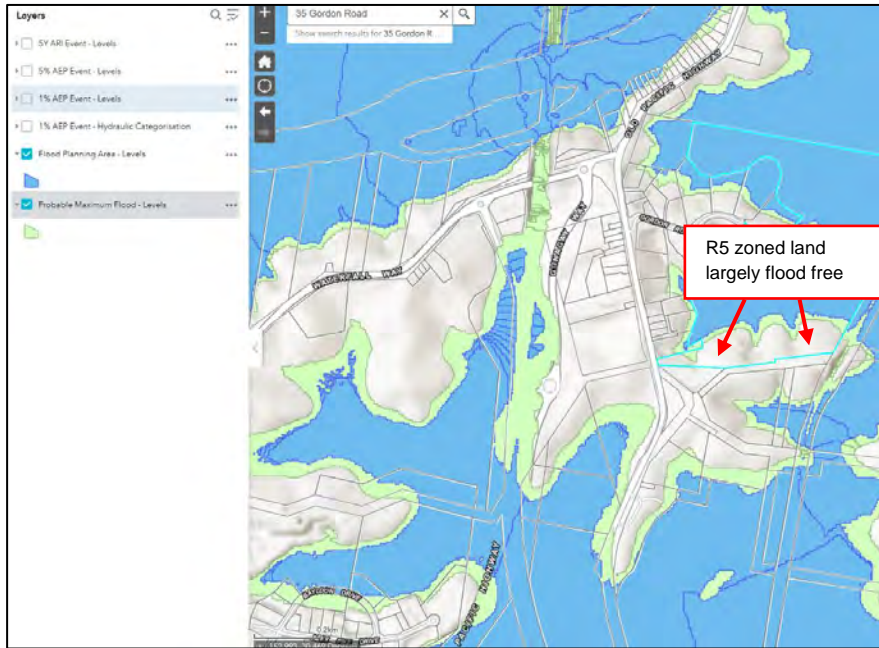


Plate 3.7 BSC online flood planning map showing extent of flood prone areas at the site and surrounds

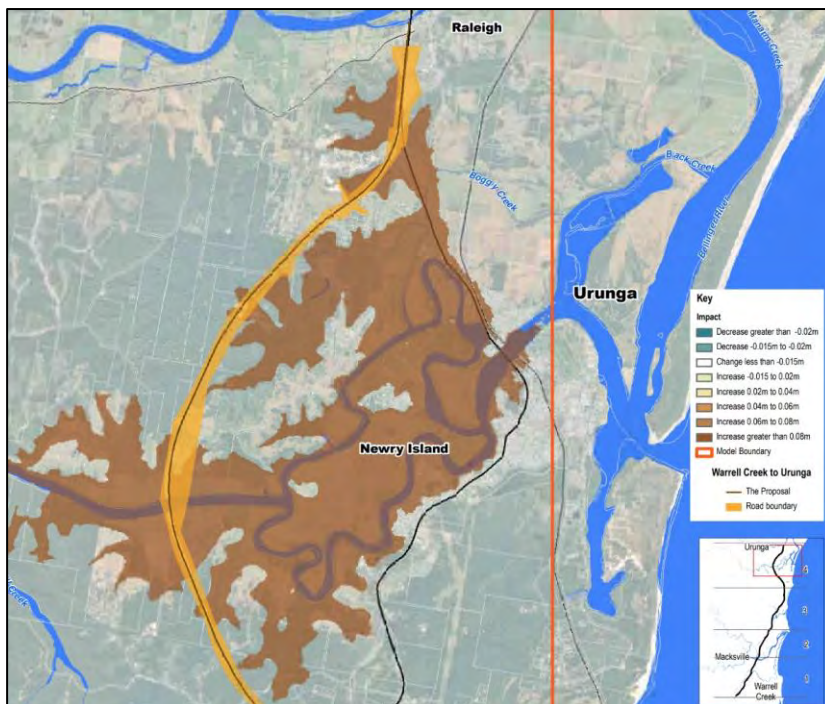


Plate 3.8 Kalang River – Pacific Highway Upgrade Developed Conditions with Climate Change Impacts 100 Year ARI Flooding (source: Sinclair Knight Merz 2010)

Bushfire

GeoLINK has prepared a Bushfire Hazard Assessment (refer to **Appendix C**) for the Planning Proposal, as support for the proposal would lead to a subdivision, and a Bushfire Safety Authority would therefore be requested from the NSW Rural Fire Service in accordance with s100B of the *Rural Fires Act 1997* as part of any future DA.



This Bushfire Hazard Assessment is based on the concept design of the proposed future subdivision and has taken into consideration the proposed layout, hazard vegetation, effective slope, local bushfire risk conditions and Fire Danger Index for the site in accordance with Planning for Bushfire Protection 2019. This Bushfire Hazard Assessment demonstrates that bushfire protection measures are available and can be implemented to facilitate the proposed development, therefore showing that site can support large lot residential development, and the Planning Proposal is acceptable from a bushfire perspective.

The following table provides a summary of the recommendations for each bushfire protection measure outlined in Chapter 5 of Planning for Bushfire Protection 2019.

| Bushfire Protection Measure | Recommendation |
|---------------------------------------|---|
| Asset Protection Zones | <ul style="list-style-type: none">■ The area to the north of each proposed dwelling envelope be managed as an APZ for a minimum distance of 20 m. This APZ can be separated into two distinct zones, a 10 m Inner Protection Area (IPA) and 10 m Outer Protection Area (OPA).■ Proposed 'Lot 5' requires a 9 m APZ setback from the eastern boundary to offset the hazard contained within adjoining the North Coast Railway corridor. Additionally, a 20 m APZ is required to the south to offset the forest vegetation on adjoining land.■ The location of the proposed community title access road along the southern boundary of the site provides a managed, physical separation barrier of approximately 11 m between the building envelopes to the north and grassland hazard to the south. This applies also to the shared driveway access handle / right-of-way servicing proposed 'Lots 4' and '5'.■ Existing dwelling on the residue lot to maintain current APZ. |
| Services - Water, Electricity and Gas | <ul style="list-style-type: none">■ Utility services to proposed lots be installed in accordance with Section 5.3c of PBP 2019. |
| Construction Standards | <ul style="list-style-type: none">■ New building envelopes can comply with BAL 12.5 construction standards.■ Recommend that the existing dwelling on residual 'Lot 7' apply non-combustible gutter and valley leaf guards to be installed, as the site complies with all other performance criteria and acceptable solutions of PBP 2019. |

3.3.2.7 Noise

Noise is not considered to be a major constraint at the site, as the site is within a semi-rural environment with relatively low background noise. However, there would be occasional train noise from the north coast railway line for the closest proposed eastern lot which is located adjacent to the rail corridor. Noise assessment and potential attenuation (e.g. insulation and double glazing) can be considered at the dwelling design stage as part of a future DA for this purpose, as necessary.

3.3.2.8 Potential Land Use Conflict

The subject area of land is already zoned R5 large lot residential and only moderate refinements are proposed as a result of ground-truthing ecological values and ancillary "tidying up" around what would otherwise be redundant silvers of RU1 and R1 zoning.



There is no agriculturally zoned land or intensive farmland interface to the immediate south, east or west of the proposed amendment/subdivision area. The land to the north of the proposed amendment/subdivision area is identified as regionally significant farmland, and the broader site is used for cattle grazing, however the area immediately north of the proposal area is vegetated swamp and zoned primarily for environmental conservation. It is also the intent of this Planning Proposal, based on the biodiversity assessment undertaken, to extend this environmental conservation zone. This provides for a substantial natural ecological buffer to the main area of open grazing land situated further to the north. Therefore, the subject site provides a suitable context to implement a subdivision design which has due regard to the current grazing land and buffer areas as per the NSW DPI *Living and Working in Rural Areas Handbook* and effectively avoids/minimises the risk of potential land use conflict with agricultural activity without the need for additional management measures.

Given this, a standalone Land Use Conflict Risk Assessment (LUCRA) is not necessary as it can be adequately demonstrated that the proposal is acceptable, is adequately separated from the main area of farmland and open grazing land to the north and does not give rise to an unreasonable risk of rural land use/ agricultural conflict.

3.3.2.9 Cumulative Impacts

Given the site and surrounding context, minimal vegetation clearing requirements, and existing R5 zoning, the proposed future subdivision of the land is unlikely to result in adverse cumulative environmental effects. In addition, potential impacts on the environment would be minimised with the effective implementation of the safeguards and mitigation measures required under any future development application. There is a notable benefit to extending the C2 zone over areas identified as high environmental value land.

3.3.3 Q10. Has the Planning Proposal adequately addressed any social and economic effects?

The Planning Proposal is not expected to generate any significant adverse social or economic impacts.

European and Aboriginal cultural heritage have been addressed previously. No significant impacts are expected/likely and suitable management measures can be implemented where required.

The proposal would enable subdivision to create five additional large residential lots that can effectively accommodate dwellings. Provision of additional large lot residential land supply and lifestyle blocks aligns with housing demand on the north coast and would provide a socio-economic benefit.

There would be negligible impact upon social infrastructure such as schools and health facilities given the restrained scale of the proposal. Additionally, there is available and accessible social infrastructure at both local and regional levels to provide for the need for future residents.

As the lots would be at least 1ha in size, they effectively provide for ample private open space. The local area also offers a range of accessible outdoor recreation opportunities.

The proposal is of a modest scale and would not put pressure on retail centres. To the contrary, the proposal and additional future residents would support retail centres in Urunga and Coffs Harbour.

The proposal is suitable and would effectively integrate with the Raleigh village, including residential and large lot residential development. It is consistent with the local pattern and character of development. No further specific social or economic matters require additional assessment.



3.4 Matters for Consideration – Infrastructure (Local, State and Commonwealth)

3.4.1 Q11. Is there adequate public infrastructure for the Planning Proposal?

The site is located on the Old Pacific Highway and adjacent to the Raleigh village area that comprises a residential and large lot residential area. The area does not currently have reticulated sewer, however BSC is progressing a proposal to sewer the area. The area is serviced by sealed local and State roads, reticulated water, electricity, and telecommunication infrastructure.

Given the proposal is relatively modest and effectively integrated into the existing development pattern, the proposed development is not expected to require the provision of, or notably increase the demand for, public facilities and services. There is no policy requirement to connect to reticulated water. Section 3.8.4 of the DCP outlines that water mains would not be extended to service lots with a minimum size of 1ha. Where an existing water main conveying potable water runs across the frontage of a proposed rural residential allotment, Council may permit the connection of that lot only to the water main upon payment of the necessary Section 64 Contribution to Council. This could be an option, however being large lot residential lots of 1ha in area, the dwellings can be serviced by on-site sewerage management and rainwater tanks, and therefore be self-sufficient.

The lots can be readily connected to the electricity network which is present at the site, or alternatively off-grid (solar and battery) solutions can be considered.

Overall, the proposal is relatively modest in scope and has restrained development potential with no significant infrastructure or service upgrades required. No notable or unreasonable increased demand for services or infrastructure because of the Planning Proposal is expected and the LEP amendment can be adequately catered for without high costs for additional infrastructure or services.

3.5 Matters for Consideration – State and Commonwealth Interests

3.5.1 Q12. What are the views of State and Commonwealth public authorities consulted in order to inform the Gateway determination?

Consultation is outlined further in **Section 5**. As part of scoping for the proposal, the following public authorities were consulted and provided initial feedback and direction for preparation of the Planning Proposal:

- Bellingen Shire Council
- Department of Planning, Housing and Infrastructure (formerly known as Department of Planning and Environment)
- Biodiversity and Conservation Division (now part of the Department of Planning, Housing and Infrastructure's Biodiversity and Science Group)
- Department of Primary Industries (Agriculture).

This and responses to their initial feedback on the proposal are outlined in **Table 5.1**.

From the scoping stage, there appears to be general in principle support from Council staff and the Department of Planning, Housing and Infrastructure to consider the Planning Proposal, particularly given the existing R5 zoning and that the proposal has the potential to demonstrate adequate strategic and site-specific merit.



Biodiversity was identified as a key consideration for the proposal and the Biodiversity and Conservation Division (now part of the Department of Planning, Housing and Infrastructure) initially expressed reservation toward the proposal during scoping and concern for potential biodiversity impacts. In response to this, a detailed assessment was undertaken, and on balance the findings are favourable. Biodiversity benefits outlined in this Planning Proposal demonstrate that the site is suitable and biodiversity matters (including areas of HEV land) can not only be appropriately managed, but conservation areas and environmental values would be enhanced, whilst also providing for well-located large lot residential development.

Department of Primary Industries (Agriculture) advised during scoping that as the area of land was already zoned R5, they had no objection to the proposal.

No Commonwealth referrals, including under the EPBC Act, are expected to be required.

Pre-exhibition Agency Comments

The Gateway Determination issued by the NSW Department of Planning, Housing & Infrastructure (DPHI) required consultation with NSW Government Agencies.

This consultation has been undertaken and copies of responses received are included as **Appendix I** to this Planning Proposal.

Feedback provided by agencies is summarised below, with comments provided as necessary.

NSW Department of Climate Change, Energy, the Environment and Water (Conservation Programs, Heritage and Regulation Group (CPHR))

Recommendations:

The PP [Planning Proposal] acknowledge that it accords with the text in the NCRP but not with the wording of NCRP Strategy 1.5.

Comment:

It is noted that there are anomalous provisions within the NCRP, however the discussion within the existing PP is considered to reasonably address the proposal's compliance with the overall intent of the NCRP, with no particular concerns having been raised by the NSW Department of Planning, Housing & Infrastructure concerning non-compliance. In this respect, the amendment of the PP is not considered necessary.

The scope of the PP and the planning area be expanded to review and assess the occurrence of HEV land and the application of appropriate land use zones over the whole of Lot 21 DP1239022.

Comment:

The NCRP requires, "at the planning proposal stage, HEV assets within the planning area should be identified through site investigations and suitable mechanisms put in place to protect HEV."

The "planning area" is defined as "the footprint of the proposed area to be developed or rezoned".

The expanded areas of land that are referenced in these comments clearly go beyond the planning area that is the subject of the proposal and it is not justifiable in this instance to require new and additional studies over areas of land that will not be impacted by the proposal.



The planning proposal be revised to include either:

a) a planning agreement committing the landholder to the preparation and implementation of a vegetation management plan (VMP) to manage the C2 zoned land in the planning area, with the VMP to be lodged with the first development application for large lot residential land uses in the planning area; or

b) a site-specific development standard under the Local Environmental Plan, or other planning mechanism as appropriate, requiring a VMP to be registered on the title prior to any subdivision of the planning area.

Comment:

The preparation of a planning agreement or an additional site specific development standard is considered to add unnecessary additional complexity to the planning framework at Planning Proposal stage. The additional C2 Zoning is considered to represent a significant conservation gain in its own right, and it is not necessary to further address future management at the rezoning stage. The proponents have indicated a willingness to submit a VMP as part of any future subdivision application and this is considered adequate in the circumstances.

NSW Department of Primary Industries and Regional Development, Agriculture and Biosecurity

- *Expansion of C2 zone provides an effective buffer between agricultural activities that will continue on residue part and the new 1ha lots.*
- *Increase of minimum lot size from 10ha to 20ha will prevent further subdivision of land used for agricultural production.*
- *Extension of C2 zone over HEV land consistent with relevant principles.*
- *Proposal would ideally be considered as part of a Rural Lands Strategy process, however given site's location and minimal impact on agriculture, no objection offered.*

Comment:

Noted.

NSW Rural Fire Service

The NSW RFS has no objection to the planning proposal. Council needs to be satisfied that vegetation management practices will need to be undertaken on the proposed subdivision lots. Further vegetation management will also be required over the proposed single access road's from Old Pacific Highway to each building envelope.

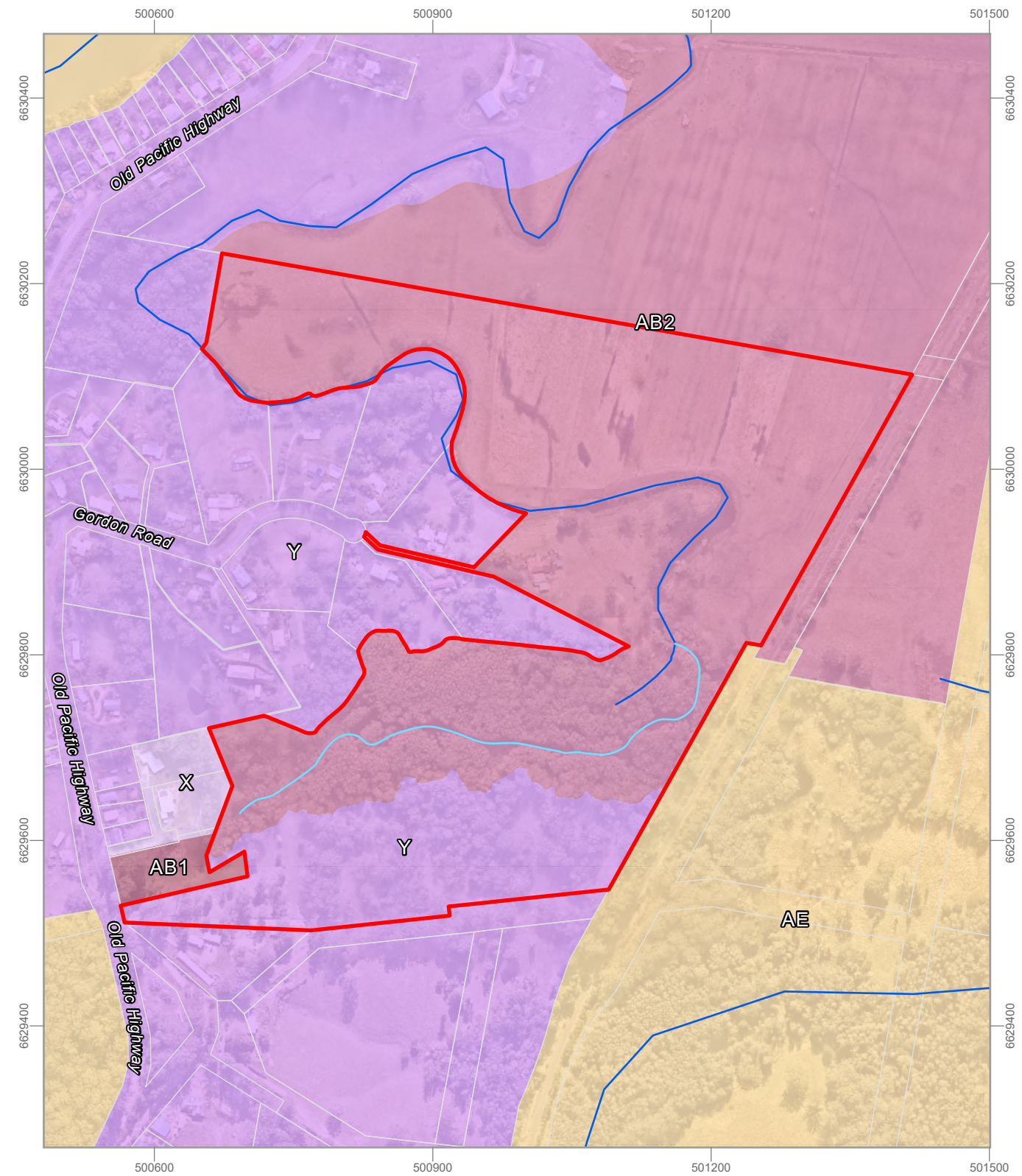
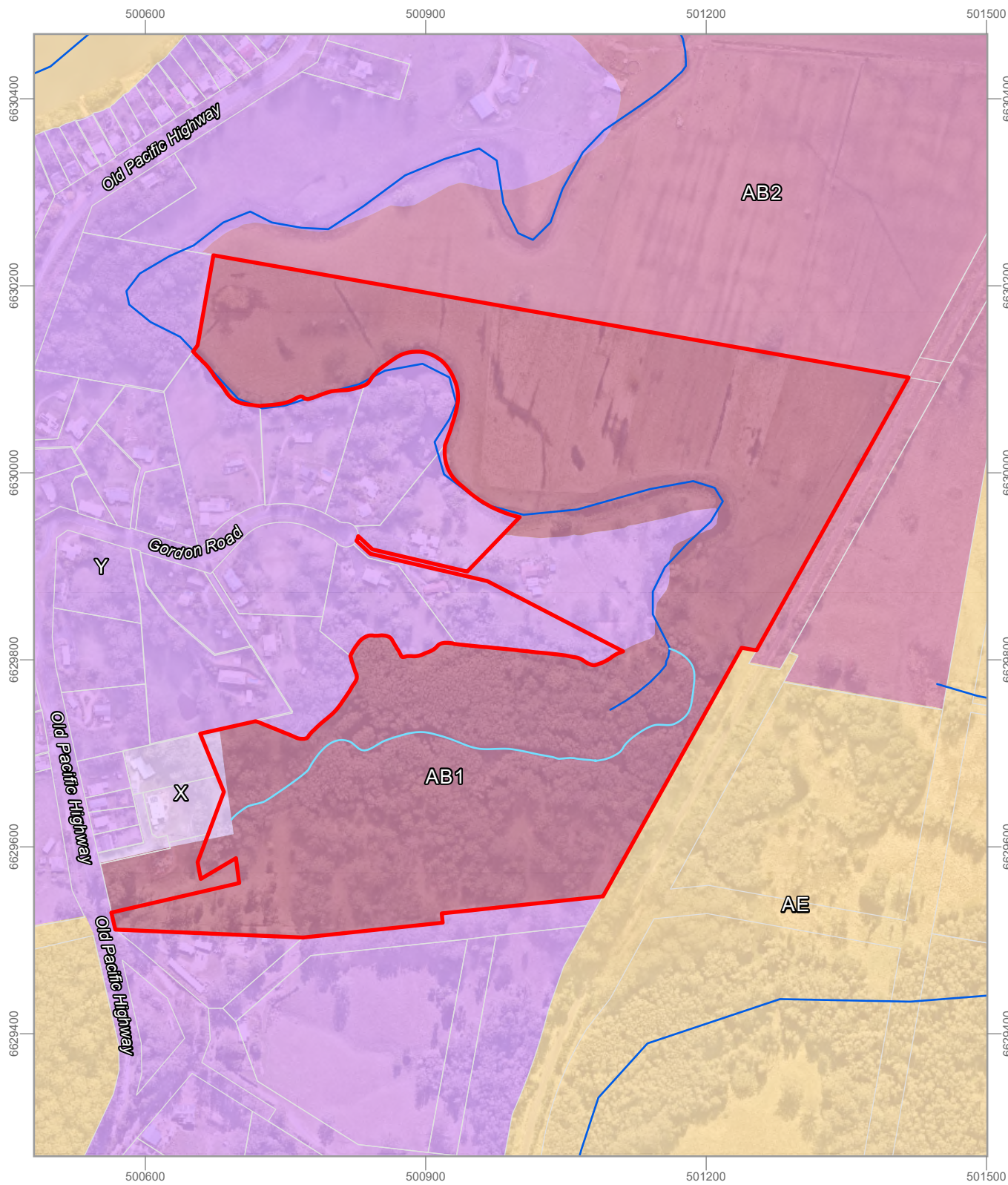
Comment:

Noted. It is understood that vegetation management practices will need to be undertaken on future subdivision lots. The Biodiversity Assessment indicates that this will not involve HEV land and that any APZ management is unlikely to significantly impact upon any important ecological feature.

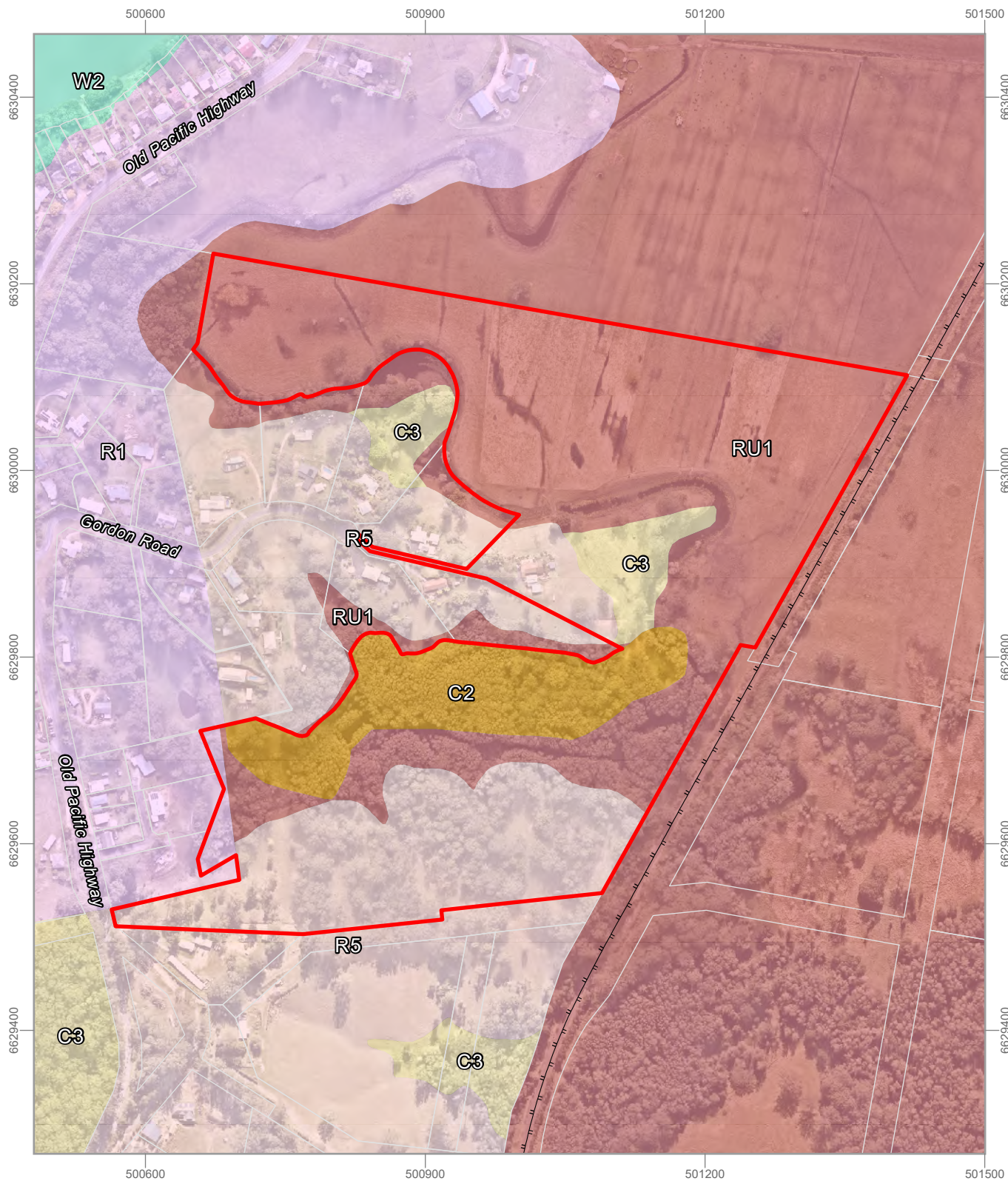


4. Part 4 – Maps

The following maps show the existing and proposed arrangement of land use zones and minimum lot size standard sought under this Planning Proposal to be applied to the BLEP 2010.

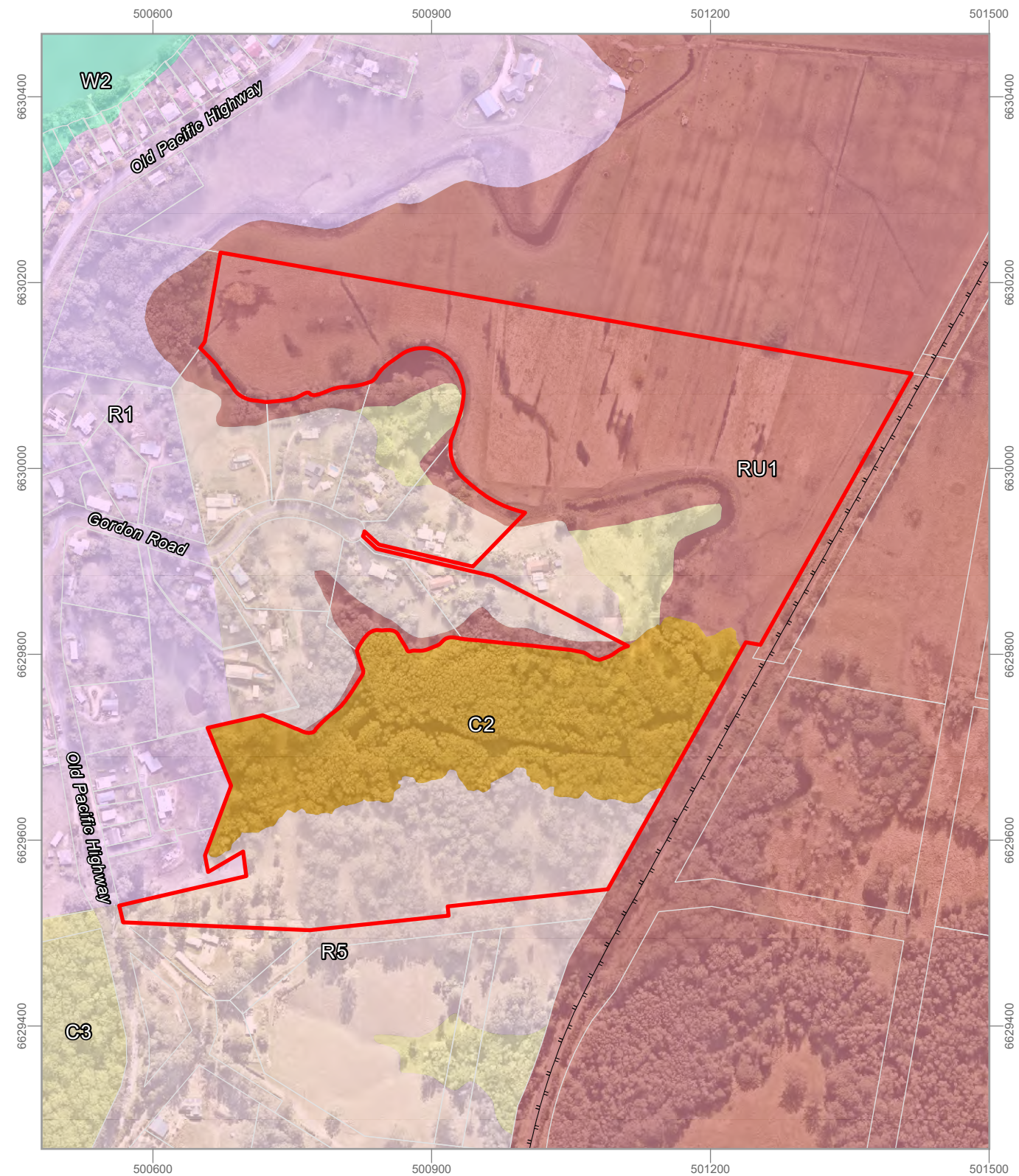


Existing and Proposed BLEP 2010 Minimum Lot Size Map - Illustration 4.1



Existing BLEP 2010 Zoning Map

- Site boundary
- Cadastre
- North Coast Railway
- C2 Environmental Conservation
- C3 Environmental Management
- R1 General Residential
- R5 Large Lot Residential
- RU1 Primary Production
- W2 Recreational Waterways



Proposed BLEP 2010 Zoning Map

- Site boundary
- Cadastre
- North Coast Railway
- C2 Environmental Conservation
- C3 Environmental Management
- R1 General Residential
- R5 Large Lot Residential
- RU1 Primary Production
- W2 Recreational Waterways

Existing and Proposed BLEP 2010 Zoning Map - Illustration 4.2



5. Part 5 – Community Consultation

Public consultation will occur in accordance with the Planning Proposal requirements post lodgement of the application. Consultation will be required with key government agencies, as applicable.

As part of scoping for the proposal (pre-lodgement), the following public authorities were consulted via submission of a Scoping Proposal and a meeting held on 13 June 2023:

- Bellingen Shire Council
- Department of Planning, Housing and Infrastructure (formerly known as Department of Planning and Environment)
- Biodiversity and Conservation Division (now part of the Department of Planning, Housing and Infrastructure)
- Department of Primary Industries (DPI) - Agriculture.

Their feedback has been considered and responded to as part of this Planning Proposal. Key matters and responses are provided below in **Table 5.1**. A copy of the Minutes from the meeting, provided from the perspective of Council and both agencies who attended the meeting are provided at **Appendix H**.

Department of Planning and Environment liaised with DPI Agriculture in respect of the proposal, and they advised that although the land more broadly is mapped as important farmland, they do not have an objection to the reduction of the minimum lot size as it is already zoned R5 Large Lot Residential.

Table 5.1 Scoping (Pre-lodgement) Meeting - Authority Comments

| Public Authority Comment | |
|---|---|
| Bellingen Shire Council | |
| Other matters raised by Council included the need to address the offsetting provisions contained within Chapter 16 of the Bellingen Shire Development Control Plan 2017 in respect of any clearing of Preferred Koala Habitat mapped by Council and the potential issues / implications of doing this on the same site. | <p>Koala habitat has been addressed in Section 3.3.1 and the Biodiversity Assessment at Appendix E.</p> <p>Limited clearing of mature trees is required, with building envelopes, APZs and boundary fencing strategically located to minimise impacts.</p> <p>Subject to the Planning Proposal's approval, as part of a future DA on the site the DCP requires that:</p> <ul style="list-style-type: none"> ■ A Koala Habitat Assessment Report (KHAR) and Koala Activity Report (KAR) must be prepared. ■ Development Criteria included in Section 16.7 of the DCP must be addressed. ■ The Habitat Compensation Policy must be addressed in relation to the loss of Koala food trees. <p>There is adequate land available, including in the expanded C2 zone to accommodate compensatory planting.</p> |
| Council also raised the prospect of the proponent considering the voluntary potential allocation of additional Environmental Protection Zones on High Environmental Value Land as an ancillary component of the overall proposal. | <p>Following the recommendations of the Biodiversity Assessment at Appendix E, as part of the Planning Proposal all areas of mapped PCT 4000 are proposed to be incorporated into a revised and extended C2 zone on the site. This equates to approximately 93% increase to the C2 zone (from approximately 3.96ha to 7.65ha) and would have a substantial complementary environmental benefit.</p> |



| | |
|---|---|
| Council is not supportive of the submission of a combined Planning Proposal and Development Application. | Noted. A separate Planning Proposal and Development Application (subject to approval of the Planning Proposal) would be submitted for consideration. |
| Noting that the land is presently zoned R5 Large Lot Residential, and the proposed use would potentially be consistent with the objectives of that zone, it is possible that the proposal could be considered as a "Standard" LEP in accordance with the LEP Making Guideline. | Noted. |
| Council notes that NSW Government Biodiversity & Conservation have indicated they are unlikely to support the proposal. Consideration should be given to the merit of proceeding with the proposal in view of this. Council also notes that it may not be delegated with the ability to act as the Local Plan Making Authority in respect of matter where it is not possible to resolve the objections of a government authority. | Noted. This Planning Proposal has considered all biodiversity related comments and concerns. A detailed biodiversity assessment has been undertaken and demonstrates the site is suitable. Building envelopes, associated APZs and internal boundary lines have been strategically located to minimise additional clearing requirements, along with a substantial increase to C2 zoning to protect and conserve high environmental values. Hence, the proposal is in the interests of both facilitating a large lot residential subdivision and biodiversity conservation objectives. Objective review of the Planning Proposal should facilitate support for the proposal and the complementary development and ecological benefits it provides. |
| Confirmation of council assessment fees, likely consultation requirements, and assessment timeframes and milestones | <p>Noted. However, the proponent also notes that Council's 2022-2026 Delivery Program & 2024-2025 Operational Plan at Strategic Direction PP.2.1 is to <i>manage local planning to encourage and support affordable and diverse housing options</i>. The proposal supports this through the delivery of well-located lifestyle housing options that are in demand. On this basis, processing of the Planning Proposal is related to Council's strategic priorities for diverse housing options.</p> <p>Whilst Council may seek a consultant to assist with their strategic planning resources and support assessment of the Planning Proposal, we suggest that if such costs are passed onto the Proponent, that the Planning Proposal application fees should be reduced accordingly as ultimately these fees are to support Council's resourcing and assessment of the Planning Proposal.</p> |
| <p>Council requested the following additional studies to justify the proposal:</p> <ul style="list-style-type: none"> ■ A Preliminary Assessment of the potential for land contamination ■ Aboriginal Cultural Heritage ■ On-site Sewage Management. ■ Flood planning matters/analysis | <ul style="list-style-type: none"> ■ Specialist reports have been provided for contamination, Aboriginal Cultural Heritage, and On-site Sewage Management. Their findings demonstrate the proposal is acceptable. ■ Flood planning matters has been considered in Section 3.3.2.6 and based on the site context and information available, the site is suitable for development and further analysis is not warranted to establish this. |



A review of aerial photography of the subject property indicates a denudation of the vegetative cover between 31/7/2011 and 10/7/2).

It is requested that any planning proposal assessment addresses the legal framework by which the reduction in vegetation cover in this area was undertaken.

The following points have been provided based on the review of historical imagery, discussions with the current landowners on continuing use, and associated land management of the site and the avenue for which these allowable activities have been undertaken:

Plate 5.1 and **Plate 5.2** are historical imagery taken from 1985 to 1990 which shows the extent of vegetation cover across the site, with **Plate 5.3** showing aerial vegetation conditions as at July 2023.

It is evident that large portions of the site were previously cleared/thinned and being managed as part of the wider primary production use of the site (agriculture, including improved pastures/ grazing). The subject site consisted of grassland to the west and open forest to the east, concentrated within the empirical drainage lines/ gullies.

Discussions with the current landowners had identified that the site had not been adequately managed from around 1990 through to 2011 (approximate timeframe). During this time, the groundcover and mid-story of the site had been extensively overcome by invasive species/ noxious weeds and some native saplings/regrowth which is evident on the satellite imagery presented by BSC from 2011.

The landowners had stated that after the events of the 2009 floods which completely inundated the northern low-lying parts of the property/ grazing land, resulting in stock loss and impacts to crop yield, emphasis was placed on reinstating and continuing use of the subject area to allow for regular cattle grazing to occur given this is a favourable location on the subject land which is elevated and not impacted by flooding. Gradual vegetation management in the form of tractor slashing/ mulching of the undergrowth had been undertaken, with some mature native trees requiring removal to facilitate these works and the wider operation of the farm (permissible activities discussed further below).

In addition, farm agistment with the property to the south (where open pastures are observed) has been ongoing since the subject site was used for ongoing agricultural use. The movement of livestock between properties, in particular through the subject site, supports the notion of the works being undertaken.

The site forms part of a farm which includes rurally zoned land and R5 zoned land. Land management activity undertaken in the past would have been consistent with routine agricultural management activities (RAMAs) that covered a wide range of day-to-day farming, safety and other rural and non-rural activities where clearing of native vegetation did not require approval under the former *Native Vegetation Act 2003* (NV Act). This covered rural land and land zoned rural residential or large lot residential (e.g. R5). Allowable activities included land management for sustainable grazing purposes, rural infrastructure, obtaining construction timber, and non-protected regrowth which was permitted to be cleared where it had grown since 1 January 1990. The NV Act was in effect till August 2017, with an additional 12-month transitional period provided. Current legislation governing the clearing of native vegetation is the *Local Land Services Act 2013* and the *Biodiversity Conservation Act 2016*.

The removal of noxious weeds through the under and mid-storey has occurred over time and did/does not require approval.

Under Part 2.5 (Clearing of native vegetation on primary production land in Zones R5, C2, C3 and C4 that does not require



permit or approval) of *State Environmental Planning Policy (Biodiversity and Conservation) 2021* which relates to the current native vegetation clearing framework, the Bellingen LGA is identified as “Allowable clearing land” on the Allowable Clearing Map. The site and current operations (as described above) continue to form part of grazing land and meet the definition of the land used for primary production within the meaning of the *Land Tax Management Act 1956*, section 10AA. Therefore, *State Environmental Planning Policy (Biodiversity and Conservation) 2021, Part 2.5 Clearing of native vegetation on primary production land in Zones R5* sets out the current permissible clearing activities of native vegetation that does not require a permit or approval under this clause. The following divisions within this clause apply to routine land management activities associated with agriculture and other common practices that have occurred within the subject site since repeal of the NV Act:

■ *Section 2.30 Clearing for construction and maintenance of fences and farm tracks*

Permanent fencing (existing) along the southern and eastern boundary of the subject site had been replaced in 2015 and upgraded to support the abovementioned activity. Suitable trees that were within 6 m of the boundary line were removed under these provisions and milled on-site and used as fence posts/ cattle yards. In addition, some internal fence lines were later introduced as part of the sustainable grazing practices undertaken on the property to support greater crop yield growth and paddock rotation.

Similarly, existing boundary and internal farm tracks traverse through the subject site to support the movement of machinery and livestock. Some trees that were identified as requiring removal were again harvested and used on-site for construction purposes (fence post, cattle yards etc.). Additionally, the farm track which runs parallel to the southern boundary fence line has direct access to council’s road network, and is therefore used by utility contractors to gain access to the powerline easement (Essential Energy) and previously ARTC to gain access to the rail corridor.

The principle of “to the minimum extent necessary” was applied to vegetation removal undertaken.

■ *Section 2.33 Clearing for maintenance of electricity transmission infrastructure*

As mentioned above, there is a powerline easement which traverses through the subject site. Extensive vegetation clearing was undertaken approximately 5 years ago by a contractor on behalf of Essential Energy in order to maintain a safety clearance from these power lines. Given the nominal operating voltage power of this line is above 11 kV, a clearing width of 25 m would have been applied/is permitted.

Given the permissible works that were undertaken above, it is important to note that by comparing vegetation cover shown in the satellite imagery from 1985/90 through to reasonably current observable imagery supplied by BSC (dated July 2023), there is more native vegetation that has been retained on-site, including retention of regrowth.



Plate 5.1 Extent of vegetation cover in 1985 - Source: NSW Government Historical Imagery Viewer – Image date 1985



Plate 5.2 Extent of vegetation cover in 1990 - Source: NSW Government Historical Imagery Viewer – Image date 1990



Plate 5.3 Extent of vegetation cover in mid 2023 - Source: Bellingen Shire Council – Image Date 10 July 2023



| | |
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| | Ultimately, land management and associated clearing activities were understood to be undertaken in accordance with the relevant past and current policy framework. Vegetative cover, particularly in the more sensitive low-lying swamp areas of the site, has generally increased overtime compared to 1990 as shown in the aerial images above. |
| Subject to appropriate investigation and resolution of key matters it is considered that the proposal could potentially demonstrate adequate strategic and site-specific merit. | Noted and agree. This Planning Proposal demonstrates that there is adequate strategic and site-specific merit to support the proposal. Biodiversity impacts are shown to be minimal and there is a complementary benefit of enhanced environmental conservation of high value environmental land facilitated by the proposal. |

Department of Planning and Environment

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| Willing to explore the possibility of reducing minimum lot size given the land is already zoned R5 Large Lot Residential. | Noted. This Planning Proposal demonstrates that there is adequate strategic and site-specific merit to support the proposal. |
| Need to be able to justify the provisions of the Growth Management Strategy which allocates a 10 ha minimum lot size due to site constraints. | As outlined in Section 3.2.2.2 , the proposed amendment and future subdivision are reasonably consistent with the rural-residential land release strategy within the GMS and demonstrate that the subject area is suitable for development of 1ha lots within the existing residential zone when considered against the land suitability criteria for rural-residential land. It is submitted that a 10ha minimum lot size was applied at the time based on a desktop assessment of site constraints and rather than back-zone the area, as identified in the GMS, for other similarly zoned areas the site would be subject to future assessment of potential constraints to confirm that 1ha minimum was suitable. The Planning Proposal has confirmed this. |
| Biodiversity will be a key consideration for the proposal. | Noted. The biodiversity assessment demonstrates no significant impacts and that the site is suitable, with the added benefit of an increase and enhancement of conversation value land. |
| Need to consider the extent of 1 in 100 and PMF flood events including evacuation routes and relevant hazard and risk categories. | Flood planning matters has been considered in Section 3.3.2.6 and based on the site context and information available, the site is suitable for development and suitable evacuation routes are accessible. |
| Need to demonstrate that infrastructure and servicing is capable of being achieved with particular regard to access and onsite sewerage management. | As outlined in the relevant parts of Section 3.3.2 and the concept design at Appendix A , suitable access can be provided and the site can support onsite sewerage management. |
| Bushfire will also be a consideration for the site. | The bushfire assessment at Appendix C demonstrate that the site is suitable and adequate bushfire protection measures can be provided. |

Biodiversity and Conservation Division

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| The planning area is located in the coastal strip mapped by the North Coast Regional Plan 2041 (NCRP) and is not within | The strategic merits of the proposal are discussed in Section 3.2 . The area of land is already zoned R5 large lot residential. Variation to the NCRP is allowable and the proposal is consistent with all variation criteria, including directly adjoining existing |
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| an identified urban growth area in the NCRP. Strategy 1.5 of the NCRP clearly states that new R5 zoned (Large lot residential) housing is to be directed away from the coastal strip. We note that the planning system allows new residential housing to be created by rezoning land or by changing the Minimum Lot Size (MLS) of land. | residential land and zonings, and of minor consequence. Further, and consistent with comments in previous Council reports, the current underlying R5 zoning should be the principal determinant of subdivision potential. The minimum lot size can be adjusted accordingly to 1ha as the relevant assessments have now been undertaken as part of this Planning Proposal and demonstrate that the land is suitable for this purpose. |
| Although the planning area is zoned R5, the approved Bellingen Growth Management Strategy 2007 applied an MLS of 10ha to the R5 zoned land in the planning area due to its environmental constraints. This was applied so that only one rural residential dwelling would be permissible to reduce the impacts to the biodiversity values of the land. | <p>Currently no subdivision can occur solely within the R5 zoned area as it is under (at 7.19ha) the current 10ha minimum lot size. We understand that the 10ha minimum lot size was applied to the land as a precautionary measure based on a desktop assessment of the constraints at the time and that the constraints had not been fully assessed then in relation to its capacity for 1ha lots, and therefore this was effectively deferred until such assessment was carried out. This is also supported by the GMS investigation mapping which for other areas similarly zoned suggested that they be 'back-zoned to rural small holdings or environmental protection'. This was not recommended for the subject site which maintains the R5 zone.</p> <p>This Planning Proposal has now undertaken the necessary site-specific constraints analysis to determine the most suitable lot size, and a 1ha minimum is appropriate based on these findings .</p> |
| The yet-to-be-prepared Planning Proposal seeks to create new rural residential housing in the planning area by reducing the MLS from 10 ha to 1 ha, which would increase the number of rural residential dwellings permissible and hence increase the impacts to the planning area's biodiversity values. | The Biodiversity Assessment has concluded that the proposal and a future five large lot residential subdivision on the site can be undertaken with relatively low biodiversity impacts. The expansion of the C2 zone over areas identified as HEV land is a substantial environmental benefit of the proposal. |
| The scoping report significantly underestimates clearing required for the proposal with undersized building envelopes, which do not allow for a standard dwelling footprint, ancillary buildings such as sheds, driveways, realistic APZs, and effluent disposal areas. New boundary fence lines would also need to be cleared. | <p>The concept design and detailed assessments that support this planning proposal confirm that the general layout and indicative siting of building envelopes (generally consistent with the scoping report) are reasonable and that significant clearing is not required. Concept building envelopes are based on a standard accepted size (20m x 20m) as per the Bellingen DCP. Suitable APZs in accordance with Planning for Bushfire Protection 2019, and effluent disposal areas as per relevant guidelines and calculations, have been included.</p> <p>New boundary fence lines would require minimal clearing and would be strategically located to take advantage of the site's open woodland composition.</p> |
| Parts of the planning area are highly likely to meet the High Environmentally Value (HEV) | Following the recommendations of the Biodiversity Assessment at Appendix E , all areas of mapped PCT 4000, which is identified as HEV, are proposed to be incorporated into a revised and |



| | |
|--|--|
| land criteria and will be impacted through clearing for new boundaries. Noting that land to the north of the lots and extending onto the proposed lots in some areas where new boundaries are proposed are highly likely to align with a coastal floodplain Endangered Ecological Community (EEC). | extended C2 zone on the site. This equates to approximately 93% increase to the C2 zone (from approximately 3.96ha to 7.65ha) and would have a substantial complementary environmental benefit. Boundaries and associated fencing would boarder this area, but not extend into it and therefore avoids and minimises impact. |
| In accordance with the NSW RFS boundary clearing code the location of the proposed northern boundary of the R5 lots would enable a boundary clearing width of 25m permissible for the proposed northern boundary fence within the RU1 zone, noting this area is highly likely to be coastal floodplain EEC and HEV land. | Expansion of the C2 zone is proposed to cover areas of HEV land. As a result of this and consequential minor refinement of the R5 zone, no RU1 zone land would remain at the northern interface, negating this concern. |
| For the reasons noted above, it is unlikely the BCD would support the planning proposal as detailed in the scoping report. | As outlined in the above responses and detailed in this Planning Proposal, the proposal has considered all constraints and preliminary scoping comments. It has been adjusted to respond to HEV land which has been confirmed via ecological survey. There would be limited biodiversity impacts and instead a substantial benefit through increased environmental conservation zoning. Objective review the Planning Proposal should facilitate support for the proposal and acknowledge the complementary development and environmental conservation benefits it provides. |

Overall, from the scoping (pre-lodgement) consultation undertaken, there appears to be general in principle support from Council staff and the Department of Planning, Housing and Infrastructure to consider the Planning Proposal, particularly given the existing R5 zoning. It was acknowledged that the scoping proposal had the potential to demonstrate adequate strategic and site-specific merit (which has now been fulfilled by this Planning Proposal).

Biodiversity is a key consideration for the proposal, with the Biodiversity and Conservation Division (now part of the Biodiversity and Science Group within the Department of Planning, Housing and Infrastructure) initially expressing reservation toward the proposal during scoping due to potential biodiversity concerns. As outlined above, these matters have been comprehensively addressed, and the biodiversity outcomes and benefits outlined in this Planning Proposal, demonstrate that the site is suitable. Not only are potential biodiversity impacts limited, but conservation areas and environmental values would be enhanced, whilst also providing for well-located large lot residential development. The proposal is therefore justified and warrants support.

The Gateway Determination issued by the NSW Department of Planning, Housing & Infrastructure (DPHI) required further consultation with NSW Government Agencies. This consultation has been undertaken and copies of agency comments received are included as **Appendix I** to this Planning Proposal. Refer to **Section 3.5.1** of this Planning Proposal for a summary and responses to these comments.

As part of the Aboriginal cultural heritage assessment (**Appendix B**), consultation with the Aboriginal community was undertake via a site inspection and field survey conducted with Uncle Ian Brown and



Rhys Brown from Coffs Harbour & District Local Aboriginal Land Council (LALC). They did not raise any specific objections to the proposal for rural residential development within the Study Area and did not raise any broader concerns about rural residential development generally in the Raleigh area.

No specific community consultation has occurred. Given the area is already zoned R5 and adjoins R5 and R1 zonings, it is not expected that the proposal would raise public concern. Public exhibition of the Planning Proposal would provide the community with the opportunity to comment, and this would be considered as part of the process.



6. Part 6 – Project Timeline

The timeframes for which a Local Environmental Plan is made will be determined by the Department at the Gateway stage and set out in the Gateway determination. For proponent-initiated planning proposals, consultation with council on the timeframe for completion is recommended. This has occurred; however, Council has not been able to confirm or commit to a timeframe, other than to suggest it is likely that the Planning Proposal category would be considered 'standard'.

As a preliminary indication, the following table provides estimated timeframes for the relevant steps and key milestones to achieve the amendment of the Local Environmental Plan. This is based on the Benchmark Timeframes in Section 1 of the *Local Environmental Plan Making Guideline* to inform what are maximum overall timeframes that can be expected for a 'standard' Planning Proposal.

Table 6.1 Estimated Local Environmental Plan amendment milestones and associated timeframes based on maximum standard benchmarks

| Step/Milestone | Estimated Max Timeframe/Completion Date |
|----------------------------------|---|
| Anticipated commencement | Early October 2024 |
| Consideration by Council | October – November 2024 |
| Council Decision | December/January 2025 |
| Gateway determination | February 2025 |
| Pre-exhibition/post gateway | March 2025 |
| Public Exhibition and Assessment | April - June 2025 |
| Finalisation | July 2025 |



7. Conclusion

This Planning Proposal forms a request to amend the BLEP 2010 for part of Lot 21 DP1239022, at 35 Gordon Road Raleigh, NSW, relating to the minimum lot size development standard and zoning arrangement.

The Planning Proposal demonstrates that the proposal is justified and generally consistent with the strategic framework, including site-specific merit and variation criteria where necessary. The NCRP 2041 clearly recognises that the North Coast area has increased in popularity as a place to live and work and that there is a need for housing supply, choice and diversity, as well as the provision of suitable rural-residential land and associated lifestyle opportunities. There is also a broader housing shortage Statewide, and within the region. The proposal is consistent with this context and supportable as it is orderly and integrates with existing patterns of residential and large lot residential development purposes. The subject land has good access to services and connectivity, with convenient access to Urunga township and the regional city of Coffs Harbour, amongst other towns.

It is noted that the Bellingen GMS is nearing the end of its planning horizon, however it and the LSPS acknowledge that there is demand for rural/large lot residential land (this trend and general housing demand has continued and even increased in recent years). The GMS and Council have adopted a general 1ha minimum lot size for large lot residential development where appropriate, and this Planning Proposal confirms that the site's constraints are limited and that such a minimum lot size for the subject land is acceptable and appropriate. Such an application is consistent with enabling existing R5 zoned land to be re-subdivided, contributing to the supply of rural-residential land to meet demand and provide housing options.

The land subject to the amendment and proposed future large lot residential subdivision is already zoned R5 Large lot Residential. Any future proposed subdivision would also adjoin existing R5 Large Lot Residential and R1 General Residential zones (which have a minimum lot size control of 1ha and 5000m² respectively). It would provide for a logical co-location and continuation of this development pattern in the area. The Planning Proposal represents orderly development and would not create substantial new demand for additional services or infrastructure.

The proposal's consistency with nearby residential developments and zonings will ensure the resultant subdivision outcome is compatible with the local land use context and does not adversely impact the amenity or character of the locality. This amendment would simply provide for the ability to realise the land's subdivision potential consistent with the intended purpose of the existing underlying R5 zone and the intent and considerations of the LSPS and GMS. It would not lead to any unintended or detrimental land use effects.

The proposal is consistent with the current underlying R5 zoning and its objectives, which are currently hindered by the existing broad application of the 10ha minimum lot size standard that also applies to adjoining C2 and RU1 zones on the same land parcel (noting, as requested by Council, this would be changed to a 20ha minimum across the residue area consisting of the C2 and RU1 zones to limit potential further subdivision of constrained parts of the property). The minor refinement of the R5 zone boundary and interface with adjoining zoning is logical and based on the investigations undertaken. These have ground-truthed the potential constraints and the proposed changes will greatly expand the environmental conservation zoning to areas identified as HEV. This refinement of the R5 zone does not increase the total area zoned R5 and is effectively a minor administrative and ancillary component of the overall proposal based on sound planning principles and analysis.

As such, it is submitted that on balance, the site enjoys sufficient strategic merit and any inconsistency with strategic policy is of a minor significance only and can be justified based on site-specific merit,



variation criteria, and the existing underlying R5 zoning. The notable enhancement of the C2 zone and minor refinement of the zoning arrangement is a complementary beneficial outcome of the proposal.

Given the nature of the proposal, the existing R5 zoning, location, demand, strategic direction, and findings of this report, the proposed amendment is appropriate, based on sound planning grounds, and deserves favourable consideration.



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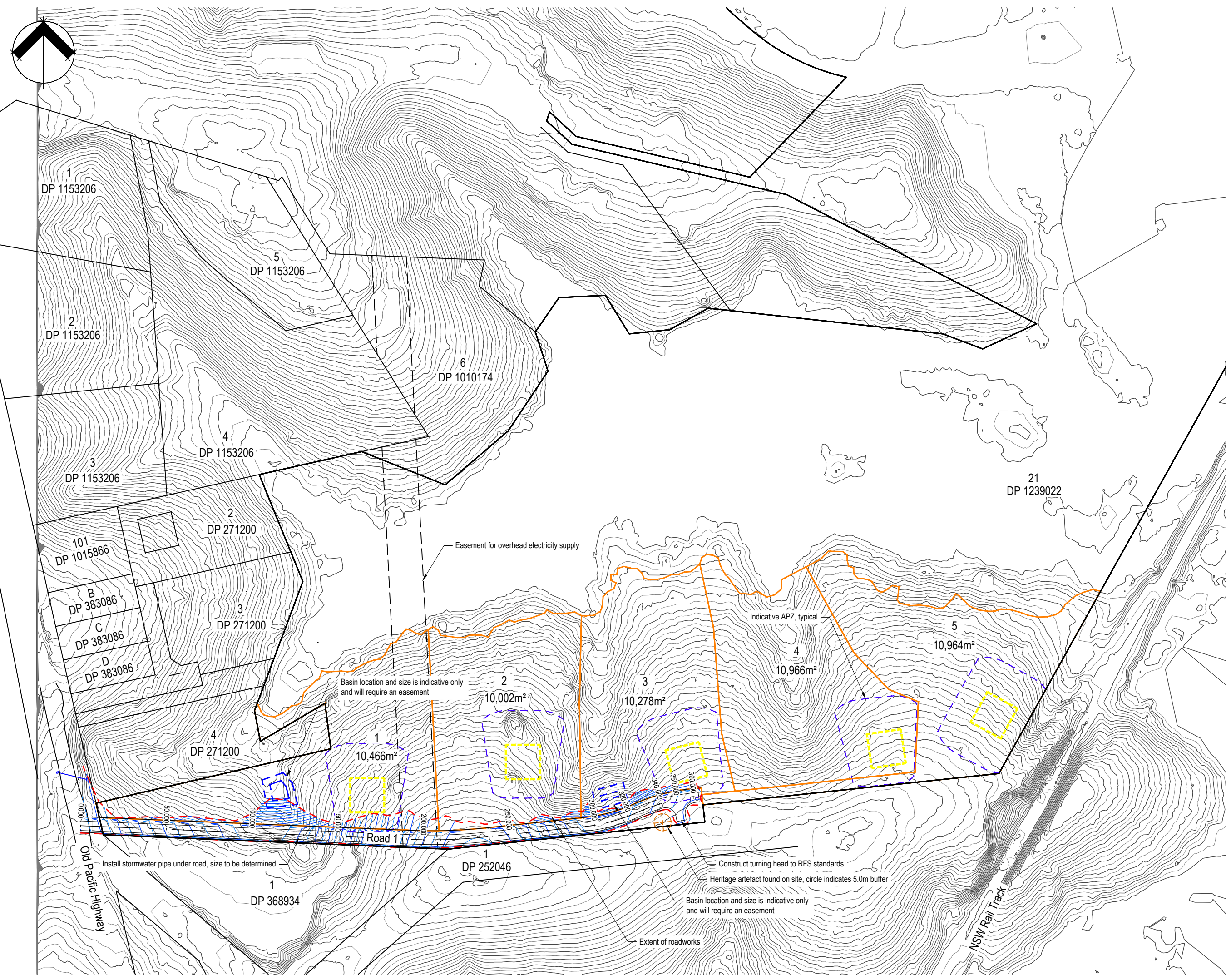
The dimensions, number, size and shape of lots shown on drawings are subject to detailed engineering design, final survey and Council conditions of consent.

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Appendix A

Concept Subdivision Layout



- Notes:
- Existing and design contours are at 0.5m intervals.
 - Subdivision boundaries are subject to final survey, tree locations and ecological survey.

PRELIMINARY

| Rev. | Description | Date | Des. | App. | Chk. |
|------|-------------|------|------|------|------|
| | | | | | |

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Project Title

Gordon Road Subdivision

Client

Ashley & Tracee Porter

| | | | | | |
|----------|-----|-------|------------|---------|-----|
| Designed | JLC | Drawn | JLC | Checked | |
| Approved | KHP | Date | 19/09/2024 | | KHP |

XREFs

Scale

metres 0 10 20 30 40 50

Drawing Title

Concept Design Layout

Drawing Number

4200/C010

Revision

-



Appendix B

Aboriginal Cultural Heritage Assessment



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ABORIGINAL CULTURAL HERITAGE ASSESSMENT

September 2024

Mr Ashley Porter





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ABBREVIATIONS

| | |
|--------------|--|
| ACHA | Aboriginal Cultural Heritage Assessment |
| AHIMS | Aboriginal Heritage Information Management System |
| AHIP | Aboriginal Heritage Impact Permit |
| DA | Development Application |
| DCP | Development Control Plan |
| DEECW | Department of Environment, Climate Change and Water (now Heritage NSW) |
| EARS | Environmental Assessment Requirements |
| EIS | Environmental Impact Assessment |
| EPA | Environmental Planning and Assessment |
| LALC | Local Aboriginal Land Council |
| LEP | Local Environment Plan |
| NPW | National Parks and Wildlife |
| PAD | Potential Archaeological Deposit |
| The Proposal | <p>The proposal includes the following:</p> <ul style="list-style-type: none"> • to reduce the minimum Lot size to 10000m² • subdivision to provide an additional 5 rural residential lots along the southern boundary, and • subdivision of an additional Lot for the shared road access with access from Old Pacific Highway |
| SU | Survey Unit |
| Study Area | Part of Lot21 DP1239022 located at 35 Gordon Road Raleigh, NSW. |

1 INTRODUCTION

1.1 Background

Heritage Management & Planning Pty Ltd has been commissioned by Mr Ashley Hardie- Porter to undertake a Aboriginal Cultural Heritage Assessment (ACHA) to support the planning proposal to amend the Bellingen Valley Local Environmental Plan (LEP) at Lot 21 DP 1239022, being 35 Gordon Road Raleigh NSW (the Study Area) (**Figure 1**). The planning proposal (the Proposal) includes the following amendments to the Bellingen LEP (**Figure 2** and **Figure 3**):

- reduction of the minimum Lot size to 10000m²
- subdivision to provide 5 additional rural residential lots along the southern boundary, and
- subdivision of an additional Lot along the southern boundary to provide a shared road access from Old Pacific Highway

The ACHA has been commissioned to consider the potential impacts of the Proposal, and any future development applications, on Aboriginal objects and cultural values, including potential impacts to the cultural landscape.

1.2 Brief & Methodology

The brief for the ACHA was to undertake an archaeological and cultural landscape assessment in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DEECW 2010A) (CoPAI) and to undertake a impact assessment in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (Office of Environment and Heritage 2011) (OEH). The methods employed in this assessment include:

- a description of the planning proposal and potential impacts to the ground surface that might reasonably result in Harm to Aboriginal objects
- a search of relevant Aboriginal heritage registers to identify previously recorded Aboriginal sites in the local area
- a review of environmental information to understand the archaeological potential based on landform, resource available and historic ground disturbance
- a review of relevant archaeological and cultural heritage assessments in the local area and region
- development of an archaeological predictive model to inform the survey methodology, significance assessment and impact mitigation measures
- completion of archaeological investigation with Coffs Harbour and District Local Aboriginal Land Council (LALC) to inform the impact assessment including:
 - i. a summary of the survey methodology
 - ii. a description of results of the survey

- iii. statements on the adequacy of the assessment and the requirement for additional archaeological investigation, and
 - iv. any relevant comments from Aboriginal community representatives on the cultural landscape value of the Study Area.
- an assessment of the cultural values of the Study Area using established heritage significance criteria, and
 - an outline of measures to mitigate the impacts of the Proposal on cultural values including any conditions/ management recommendations to be incorporated into future approvals.

1.3 Report Authorship

The study was undertaken by Tim Hill (BA. Hons. Archaeology and Palaeoanthropology, University of New England (1998)).



Figure 1: 35 Gordon Road: Study Area location

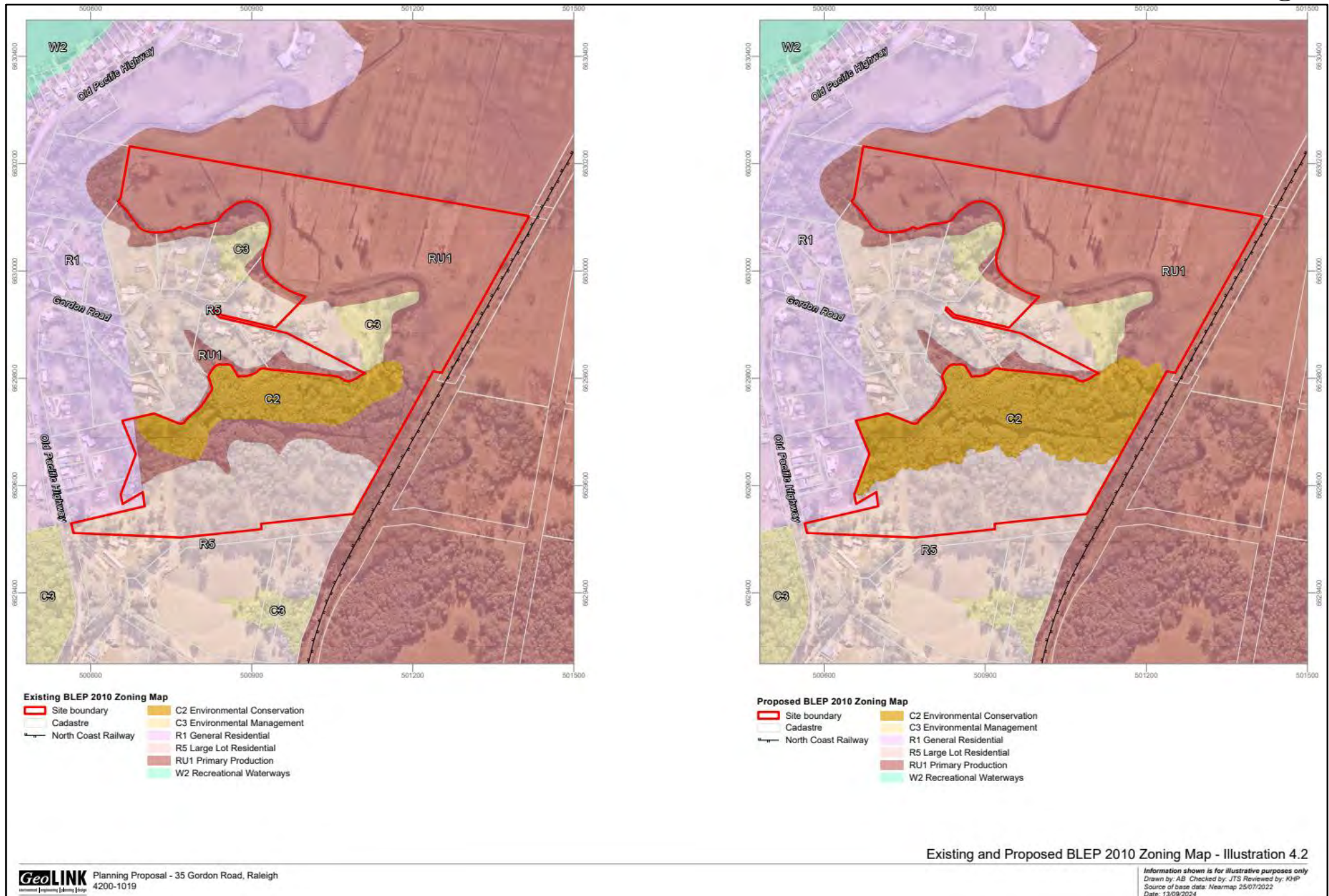


Figure 2: 35 Gordon Road: Existing and proposed zoning map

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2 LEGISLATIVE AND PLANNING CONTEXT

2.1 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 Environment 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.

The Planning Proposal will be assessed under Part 3 of the EPA Act. Any future works will be subject to approval by Bellingen Shire Council under Part 4 of the EPA Act.

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

The *National Parks and Wildlife Act* (NSW) (1974) (NPW Act) is the primary legislation concerning the identification and protection of Aboriginal cultural heritage in New South Wales. **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' below). 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 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).

A ACHA is required as the Proposal does not meet the criteria of a ‘low impact activity’ or an “omission” as defined by the NPW Act and Regulations.

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

The purpose of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DEECW 2010A) is to establish a defence against prosecution in the event that Aboriginal objects may be inadvertently harms during an activity (DEECW 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 (DEECW 2010A:2).

The Due Diligence Code of Practice makes the following statement on the requirement for an AHIP (DEECW 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 of Practice is that it is a process of establishing whether additional assessment is required. In the event that the Due Diligence assessment concludes that harm to Aboriginal objects is likely, additional archaeological investigation, including Aboriginal community consultation, is required. A key limitation of the Due Diligence Code of Practice is that it does not clearly define the thresholds of “likely” or “highly likely”. To assist the assessment, the Merriam Webster dictionary definition (www.merriam-webster.com/dictionary) of “likely” is:

“Having a high probability of occurring or being true: very probable”

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. The Due Diligence Code of Practice includes the following definition of ‘disturbed land’ (DEECW 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”.

The application of the previous disturbance provisions must be considered on a case-by-case basis. The general application of the existing disturbance defenses outlined in the Due Diligence Code of Practice is that ground disturbance must have removed the portion of the soil profile likely to contain Aboriginal objects from the local area or be of a nature whereby the ground disturbance would significantly reduce the likelihood of finding Aboriginal objects as part of a Due Diligence/ archaeological investigation. This is primarily because the Due Diligence procedures assume that the likelihood that an activity will impact Aboriginal objects can be determined using standard archaeological investigation methods. Archaeological investigation requires a sample survey to determine/ infer the likelihood that Aboriginal objects are present and the confidence in results from archaeological investigations is significantly reduced where the land has been subject to ground disturbance.

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

The 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.” (DEECW 2010B:2).

The purpose of this CoPAI is to (DEECW 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.

Section 3.1 of the CoPAI (DEECW 2010B:24) makes the following comment on the requirement archaeological test-excavations as part of the assessment:

Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that 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.

In this instance the term 'high-probability' is taken as being equivalent to 'likely' as used in the Due Diligence Code of Practice (DECCW 2010A). Although there is not a direct relationship between the requirement to apply for a AHIP and the requirement for archaeological test excavation, where the AHIP includes disturbance of soils which are also archaeological deposits test excavation is usually required to demonstrate the nature and extent of the archaeological site for the purposes of informing the significance and impact assessment.

2.5 Bellingen Local Environmental Plan 2010

The Bellingen LEP (2010) 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 Bellingen LEP, and
- Aboriginal objects and Places as defined by the NPW Act.

The Bellingen LEP (2010) 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 places under the NPW Act but are listed under the LEP. Part 5.10.8 of the Bellingen LEP (2010) requires that Bellingen Shire 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 by means of an

adequate investigation and assessment (which may involve consideration of a heritage impact statement), and

- b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.

The Proposal does not impact any areas identified as a 'place of Aboriginal heritage significance' under the Bellingen LEP (2010). The study includes consultation with the Coffs Harbour & District LALC.

3 ENVIRONMENTAL REVIEW

3.1 Landform summary

The Study Area is located on the edge of the Bellinger/ Kalang floodplain, which flows east to the Pacific Ocean at Urunga. The floodplain to the north and east of the Study Area comprises a remnant lagoon that would have been a paleochannel of the Bellinger River. Boggy Creek is located to the south of the Study Area and joins the Kalang River at Newry Island. The Study Area is at approximately 10-20 metres above sea level and is located on a spur off a relatively small hill/ crest that separates the lower Bellinger and Kalang Rivers (**Figure 4**).

The Study Area is mapped as part of the “Bellinger Slate”, being a formation of the New England Fold Belt/ Nambucca Beds, which comprises sedimentary rocks dating to the late Carboniferous (360-299 million years) period (**Figure 5**). Regolith on the Nambucca Beds is weathered rock of weak strength, with strongly weathered silty clays (often deep red, with mottling at depth) on colluvium and footslopes in areas of weathered substrate, to very shallow on ridges and upper slopes. Soils developed on the deep regolith are red, strongly structured, and with weak texture contrast. Soils are acidic clays and slaking when wet but generally moderately fertile. Mica flakes impart silty textures to the soil materials. Quartz gravels are common as surface lag deposits (Eddie, 2000). These stone material types are not typically suitable for stone tool production.

The vegetation models for the Study Area include tall open forest and tall closed forest (see **Table 1** and **Figure 6**).

Table 1: 35 Gordon Road- Soil landscape summary

| Soil Landscapes | |
|-----------------|--|
| Pine Creek | <p>Landscape: undulating to rolling low hills to hills on Permian metasediments in the southern Gleniffer Bonville Hills and the Bellinger Valley. Local relief up to 50 m; slopes 10 - 33%; elevation 5 - 60 m</p> <p>Vegetation: Partially to extensively cleared, tall open-forest grading to tall closed-forest in more sheltered positions. Blackbutt (<i>Eucalyptus pilularis</i>) dominates the ridges, with narrow-leaved white mahogany (<i>E. acmenoides</i>), red mahogany (<i>E. resinifera</i>), grey ironbark (<i>E. paniculata</i>) and small-fruited grey gum (<i>E. propinqua</i>) on the more exposed north-facing ridges and upper slopes. Downslope, tallowwood (<i>E. microcorys</i>) and Sydney blue gum (<i>E. saligna</i>) dominate a tall closed-forest (wet sclerophyll forest), with flooded gum (<i>E. grandis</i>) occupying a lower slope position along the valleys. In the more sheltered valley floors are found patches of viney scrub.</p> <p>Geology: Bellinger Slate (Pnbf), comprising dark micaceous slate, lithofeldspathic sandstone, minor conglomerate, moderately to intensely cleaved, fractured and deformed. Regolith is no more than 100 cm deep, only moderately kaolinised, moderately strong but highly fractured and moderately porous.</p> |

3.2 Disturbance History

Review of historic aerials was undertaken to understand the potential impact of historic land use on the potential for the Planning Proposal and future subdivisions to harm Aboriginal objects, with specific consideration of impacts to topsoils with the potential to contain Aboriginal archaeological sites.

Aerial photos from 1968 (**Figure 7**), 1978 (**Figure 8**) and 1993 (**Figure 9**) demonstrate that the Study Area has been subject to some ground disturbance from forest clearing and agriculture. This includes:

- Original forestry in the mid 1800's
- Partial clearing/ thinning of the regrowth vegetation for grazing, and
- Construction a vehicle track along the southern boundary.

However, based on a review of the available aerial photos it is reasonable to proceed with the assessment on the basis that historical land clearing has not had a significant impact on the soil profile, being disturbance which is clear and observable.

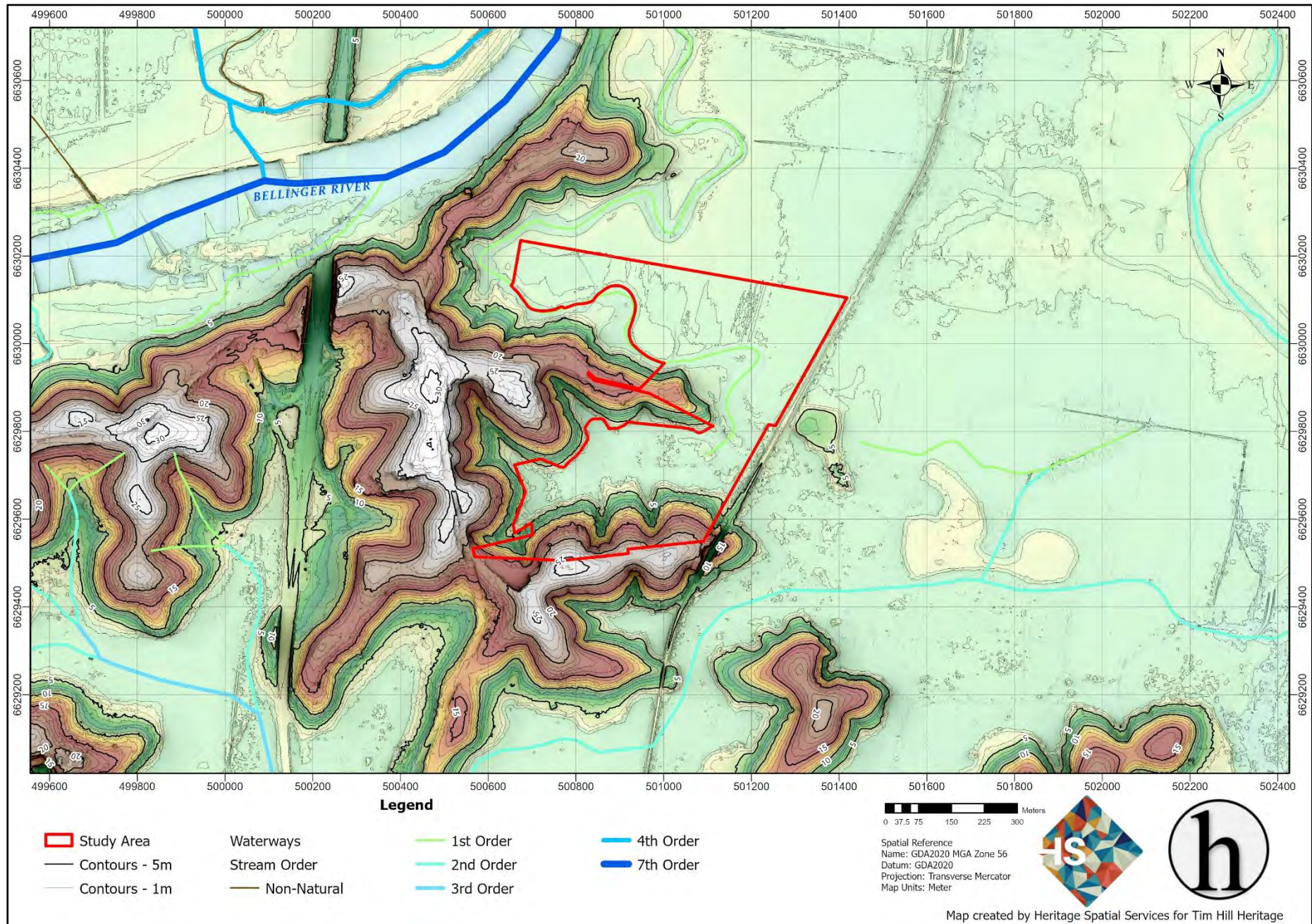


Figure 4: 35 Gordon Road-Topography and hydrology (source Six Maps)

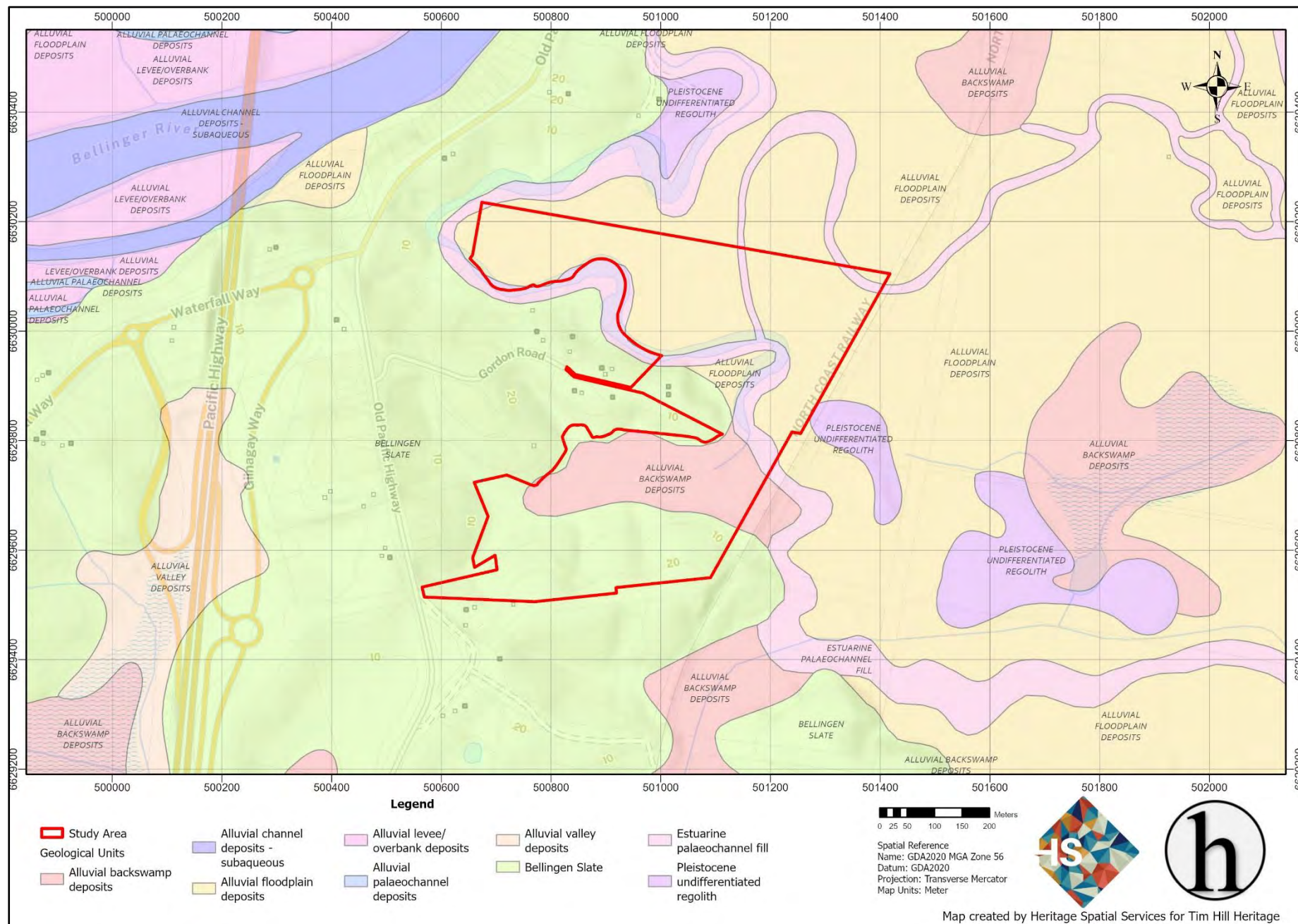


Figure 5: 35 Gordon Road- Geological model (source Geological Survey of NSW)

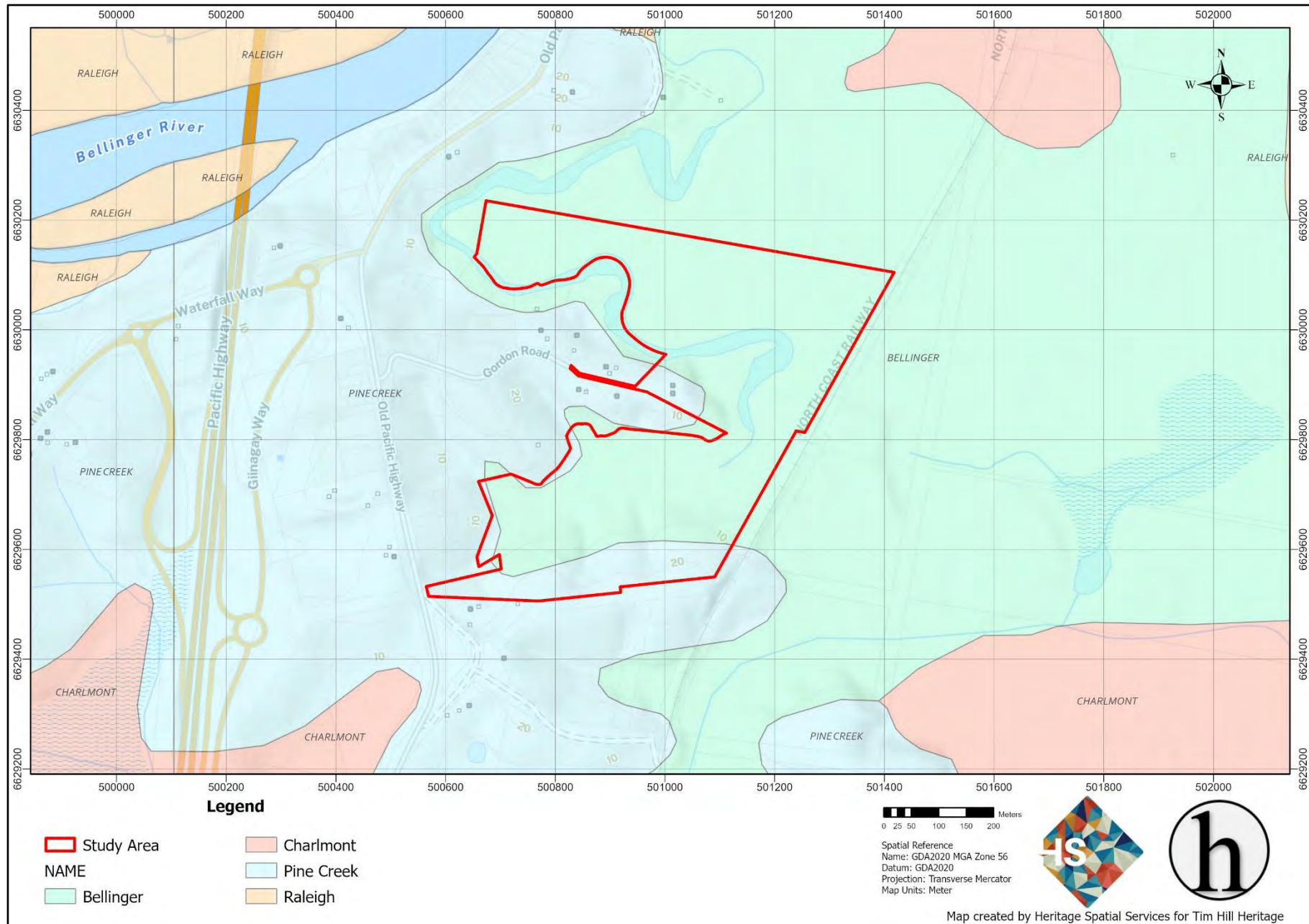


Figure 6: 35 Gordon Road- Soil landscape model (source: eSpade.nsw.gov.au)



Figure 7: 35 Gordon Road - 1968 aerial photo



Figure 8: 35 Gordon Road- 1979 aerial photo

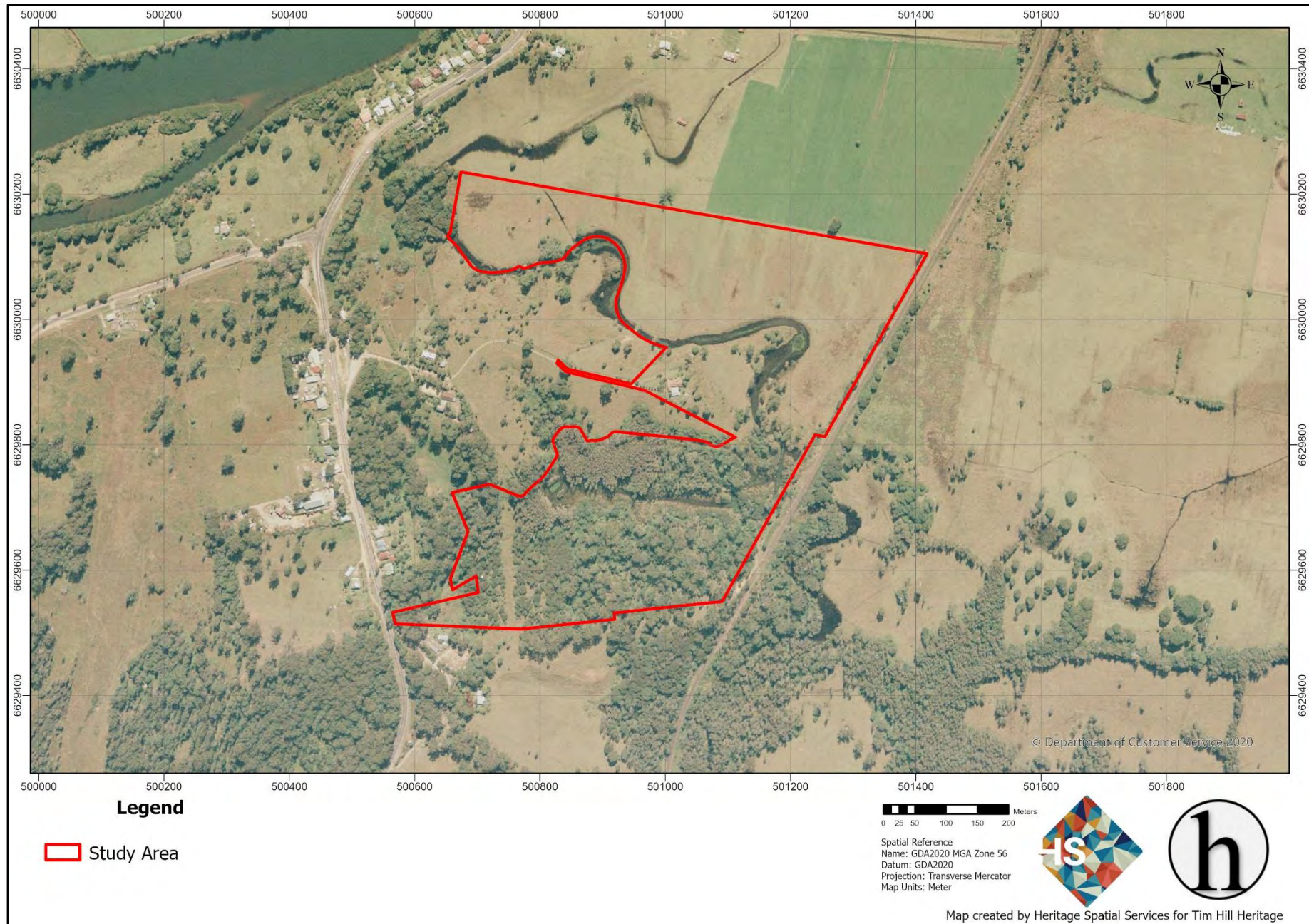


Figure 9: 35 Gordon Road- 1993 aerial photo

4 ARCHAEOLOGICAL SYNTHESIS AND PREDICTIONS

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 CoPAI and provides information on the types of sites which are likely to be located within and around the Study Area. A search was undertaken on 18 October 2023 (AHIMS # 830144) for the area “Lat, Long From : -30.4877, 152.9788 - Lat, Long To : -30.4507, 153.0406” (Table 2 and Figure 10). No Aboriginal sites are recorded in or in close proximity to the Study Area.

The AHIMS search identified 29 previously recorded Aboriginal sites, of which the majority were Artefacts (31%/n=9) and Potential Archaeological Deposits (31%/n=9). Three restricted sites are included within the AHIMS search however these are recoded as part of the Pacific Highway upgrade project and are located to the west of the Study Area. The ceremonial site and burial are recorded to the southeast of the Study Area and relate to the old Yellow Rock/ Urunga Aboriginal Reserve.

Table 2: Summary of AHIMS search results by site type (AHIMS # 830144)

| Site type | No. | Freq |
|---|-----|------|
| Aboriginal Ceremony and Dreaming | 1 | 3 |
| Artefact | 9 | 31 |
| Artefact, Potential Archaeological Deposit (PAD) | 2 | 7 |
| Burial, Ceremonial Ring (Stone or Earth), Shell, Artefact | 1 | 3 |
| Ceremonial Ring (Stone or Earth) | 1 | 3 |
| Modified Tree (Carved or Scarred), Ceremonial Ring (Stone or Earth) | 1 | 3 |
| Potential Archaeological Deposit (PAD) | 9 | 31 |
| Restriction applied | 3 | 10 |
| Shell , Artefact | 2 | 7 |
| | 29 | 100 |

Based on the AHIMS search the most likely sites to occur within the Study Area include stone artefact scatters and Potential Archaeological Deposits.

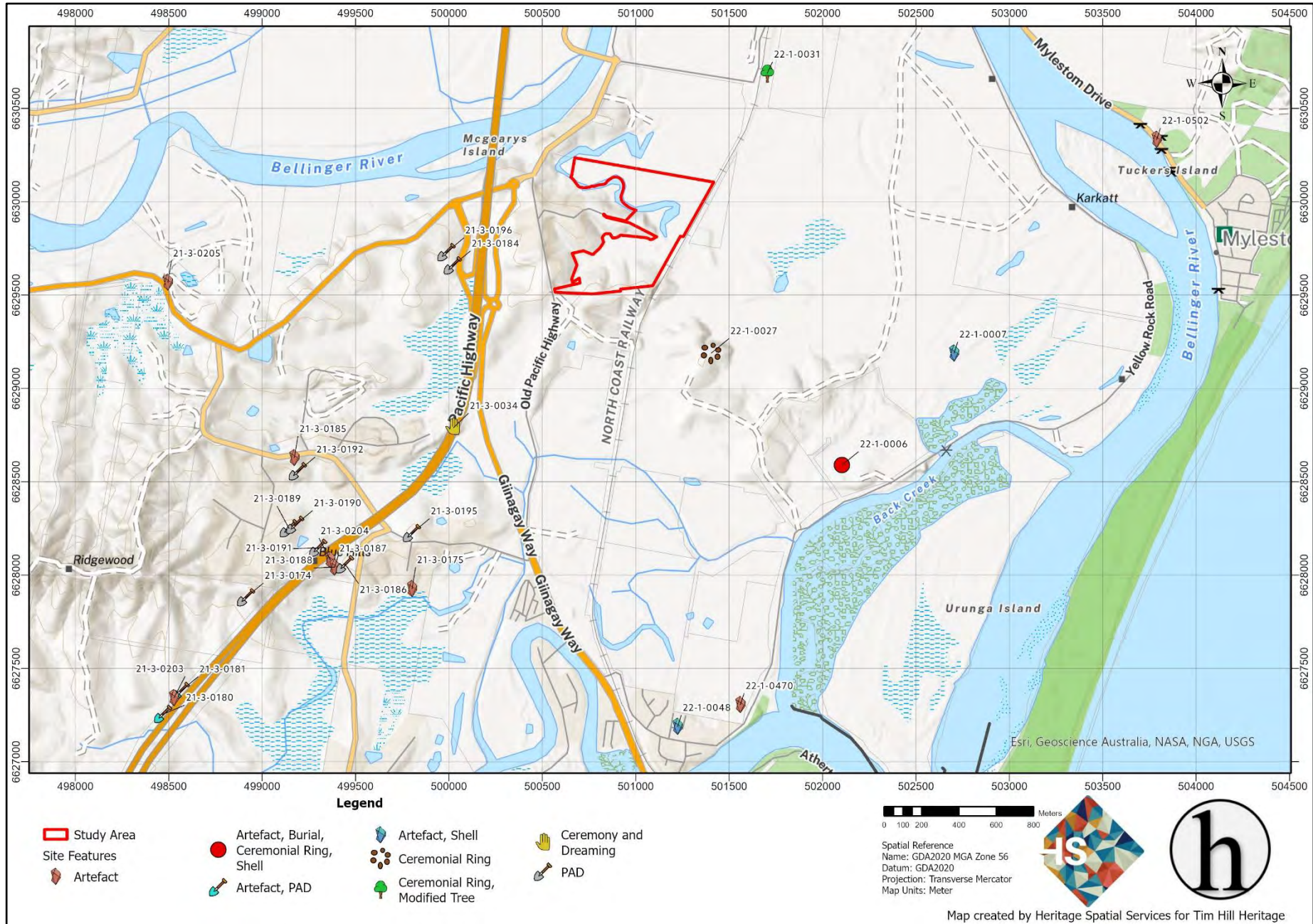


Figure 10: AHIMS search results (#830144)

4.2 Ethnohistory

The township of Raleigh is located within the Gumbayngirr language area. The Gumbayngirr language was spoken south to the Nambucca River north to the Clarence River and west to the escarpment / eastern New England tablelands near Guyra (see Godwin 1990 for a regional overview of language areas). In general Aboriginal groups in the Gumbayngirr and adjoining areas formed relatively discrete 'clans' (earlier known as 'hordes') however in effect movement of individuals between these groups was common (see Calley 1959 for a detailed analysis of the neighbouring Bandjalang social organisation). The Aboriginal population of the Bellinger River was estimated to be 300 at the time of European settlement, with a specific reference by Hodgkinson in the 1840's of an Aboriginal group between the Kalang and Bellinger Rivers (Collins 2008: 9-10). The observation of 1700 people for a tribal fight on north beach (Mylestom) in the 1880's is indicative of the potential capacity and productivity of the area (Braithewaite and Beard 1978).

Ethnohistorical observations (see Godwin 1990 and Belshaw 1978) describe a regional material culture and economy which includes a general dependence on coastal and estuarine resources with less intensive use of forest resources (see **Figure 11** for Hendersons 1845 drawing of fishing on the Bellinger). Rainforests and tall closed forests were observed to be highly utilised by small hunting and foraging groups which in effect had a very small archaeological footprint. The main technological adaptations relevant to archaeological assessments are the use of wooden implements such as spears, bowls and clubs which were produced using primarily locally available beach stones. Whilst numerous observations of these implements are available there are few ethnographic observations of knapping from the NSW North Coast. Other technologies included canoes and nets/ fibres for fishing. However, it is generally accepted that estuarine and marine shell fish and carbohydrate rich plants provided the main source of food on the northern NSW coastal strip. These foods required no intensive production or technology/ processing and as such the majority of food production in the region has a limited archaeological signature. The exception to this is the large coastal shell mounds and middens formed from the accumulation of food waste, stone tools and often burials.

A Aboriginal Reserve was established on Urunga Island in 1882 and later moved onto Yellow Rock (to the west of Mylestom see **Figure 12** and **Figure 13**). The Urunga Island Reserve was relocated to Hungry Head in 1921 after a large flood. This Reserve operated until 1937 where residents were resettled at Kempsey and Yellow Rock (see Ahoy and Murphy 1996 and Braithewaite and Beard 1978).

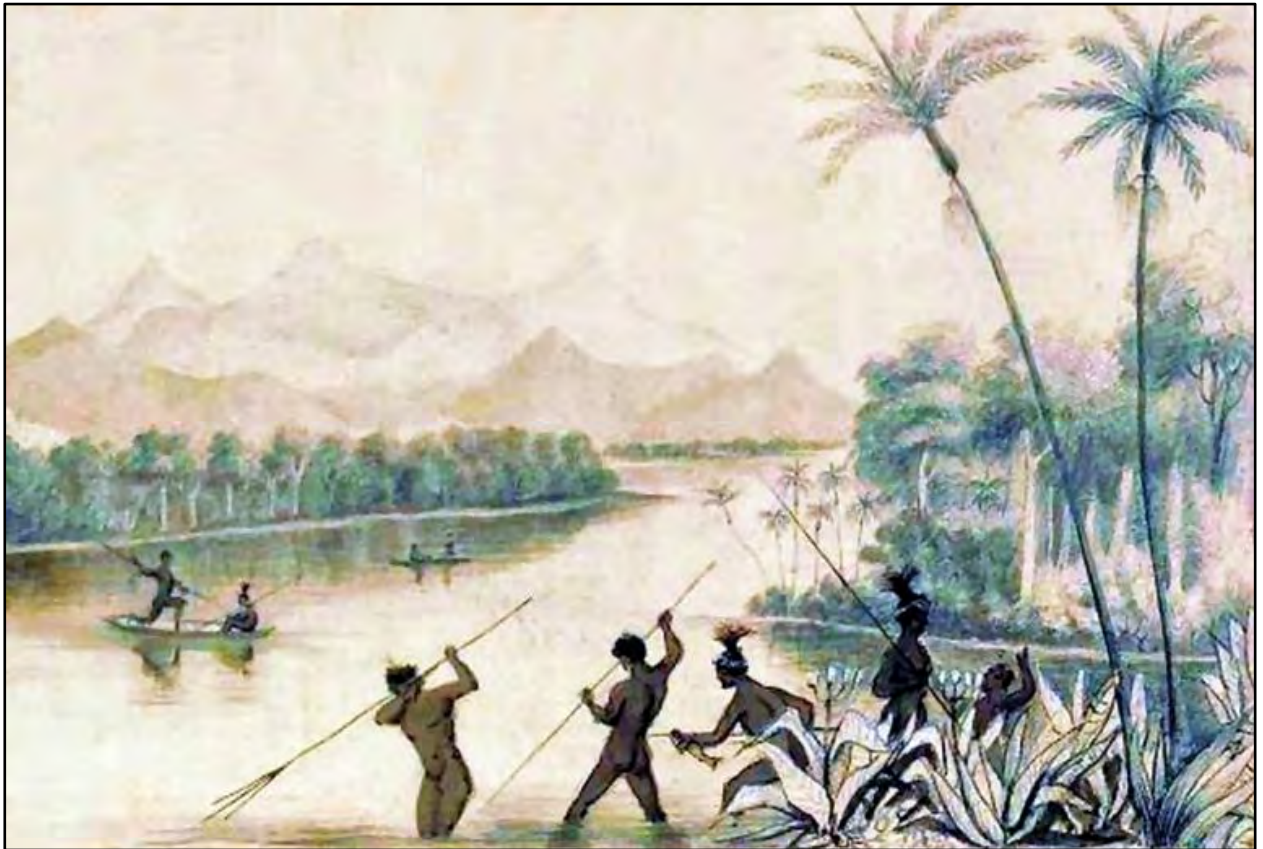


Figure 11: Spearing fish on the Bellinger River (Bellingen Museum)



Figure 12: Aboriginal school at Urunga (Urunga History Group- Facebook)



Figure 13: Aboriginal men at Yellow Rock Aboriginal Reserve

4.3 Local archaeological studies

4.3.1 *River Street Footpath (Everick 2020)*

Everick Heritage Consultants (2020) completed archaeological investigation for the River Street footpath on the north bank of the Bellinger River at Mylestom, NSW. Survey of the area identified no Aboriginal objects or sites and it was determined that original topsoils on the north bank of the Bellinger had been significantly disturbed by historic land use. The study concluded that the area did not have a high potential to contain Aboriginal sites.

4.3.2 *Coffs Harbour- Urunga Forestry Management study (Davies and Stewart Zerba 2005).*

The Coffs Harbour- Urunga Forestry Management study provides the most comprehensive local assessment of the archaeological values and potential of the Coffs Coast hinterland. Whilst it is acknowledged that the sub-coastal zone which comprises the Study Area is not included within the Davies study, its findings are relevant as the study was structured around 'land systems' (Davies and Stewart Zerba 2005). Overall, the sampling strategy employed by the study was biased towards the location of open campsites, stone artefact scatters and isolated finds. However, the study found a strong correlation between archaeological sites; the degree of slope and the sandiness of soils and concluded that most archaeological sites occurred on the crests of spurs in areas which would have been dry sclerophyll or open forest. Regionally, most archaeological sites in the study area were associated with the dissected escarpment and ranges with relatively few sites found on near coastal low hills and rises. However, the study found that whilst 'site density' was greater in the escarpment area the number of artefacts per site was much lower when compared to coastal and sub-coastal sites. This finding supports a model of greater

mobility through the escarpment and a relative absence of permanent camps on the immediate sub-coastal zone when compared resource rich marine and estuarine areas of the coastline.

4.3.3 Warrell Creek to Urunga Pacific Highway Upgrade (SKM 2010)

Warrell Creek to Urunga Pacific Highway Upgrade is a major infrastructure development which terminates to the west of the Study Area at the Bellinger River bridge. The Pacific Highway traverses a number of landforms similar in topography and vegetation to the Study Area. The study included;

- Consultation with Aboriginal stakeholders through Focus Groups;
- Collation of environmental and cultural information;
- Anthropological survey;
- Archaeological survey; and
- Archaeological test excavations.

This study proposed a model whereby landscapes analogous to the Study Area (gently sloping crests and spur lines with slope <10%) were predicted as having the highest potential to contain Aboriginal sites. However, the model noted that archaeological potential reduced significantly with distance from water (SKM 2010:353).

The Warrell Creek to Urunga survey identified eight (8) archaeological sites and mapped an additional 29 Potential Archaeological deposits ('PADs'). The location of these sites typically supported the model for use of spur lines and ridge crests. A major site was located on the 'Kalang Spur' comprising;

...76 surface artefacts located on the crest of north-east to south-west trending spur. The spur led towards the Kalang River in the north-east. The artefacts consist of fine, medium and coarse-grained sandstone flaked artefacts, with a small amount of other materials such as chert. The artefacts were scattered along an access track in a forested area on private property. During subsurface testing, a further 19 artefacts were discovered on the crest and upper slope of the spur, this included some ochre and artefacts with ochre residue.

Of note is that the archaeological testing program sampled 25 of a total 34 identified PADs, of which only five contained Aboriginal objects. All the five PADs where artefacts were recorded were already known to contain Aboriginal sites (SKM 2010:353-355).

It is noted that the Raleigh site (#21-3-0034) is mapped on the highway alignment but was not identified during the SKM survey. However, as mapped this site would have been either identified or destroyed by the highway works.

4.3.4 Urunga Heights (McCardle 2013, Everick Heritage Consultants (2018))

Penny McCardle was commissioned to undertake a cultural heritage assessment of the proposed Urunga Heights residential development south of Urunga. The assessment included a archaeological assessment/ surface inspection of eroded trails, clearings and creek lines with a focus on ridge crests and spurs. The report identified a single Aboriginal stone artefact site (SU1) which was described as a 'core' located on

Antinomy Trail. The study did not recommend additional investigations or map PADs. The SU1 site was not registered on AHIMS.

Everick Heritage Consultants (2018) completed additional archaeological investigations of the residential zone of the Urunga Heights residential development as part of an approval modification. The investigation identified eight sites, which occurred both on the ground surface and within the topsoil deposits to a maximum depth of approximately 140 mm. The density of stone artefacts was no greater than 5 per m² and isolated artefacts made up 50% of the site types. Based on the sample surveys undertaken and consultation with RAPs the study concluded that additional stone artefact sites would be located across the ridge crests. Based on the absence of a developed topsoil stone artefacts would likely be located within the upper 150 mm of topsoil along the ridge crest in areas where there was not a history of significant soil disturbance. The study found that the impact of disturbance from historic forest clearing and intensive horticulture was significant in some locations. Most of the artefacts located during the study were broken or damaged, likely because of these disturbance activities.

4.3.5 107 Yellow Rock Road (Umwelt 2014 and Everick Heritage Consultants 2015)

The 107 Yellow Rock Road subdivision required the survey of a large area of land to the north of the Kalang River -to the south of the Study Area. The initial investigation was conducted by Umwelt in 2014 and then following surveys were undertaken by Everick Heritage Consultants in 2015. The results of the Umwelt survey included two Aboriginal sites near the river and a PAD on the northern portion of the floodplain. The first Aboriginal site was noted to be an isolated find (#22-1-0470) and the second (#22-1-0048) a midden to the west of the highway (Umwelt 2014:3). The PAD was identified due to its proximity to water, identification of an Aboriginal object within the same landform, the undisturbed nature of the landform, and the sites proximity to sheltered and resource rich landforms. Umwelt recommended proceeding with caution, and further archaeological research to be conducted on the PAD (Umwelt 2014:4).

The survey conducted in the following year by Everick and the investigations concluded that the PAD area was likely the result of historical dredging of the Kalang River (Everick Heritage Consultants 2015:3). The isolated find (#22-1-0470) was noted to be underneath the existing dwelling, and it was concluded that works would not impact the site (Everick Heritage Consultants 2015:4). Similarly, the Yellow Rock midden was concluded to fall outside of the area of the subdivision and would not be impacted by civil works.

4.3.6 Gundmain Caravan Park (Collins 2008)

Collins (2008) undertook an archaeological assessment for a proposed residential subdivision at South Urunga (Lot 130 DP755552), being part of the Gundmain Caravan Park. This survey comprised the area of alluvial flats below the hillslope and immediately adjacent to the southern bank of the Kalang River. The study identified one (1) Aboriginal stone (siltstone) artefact (RL-1 #22-1-0128). The study concluded that the artefact had most likely moved downslope from the ridgeline of the Pacific Highway (Collins 2008:17).

4.4 Regional archaeological studies

4.4.1 *McBryde (1974) and Coleman (1982)*

McBryde (1974) proposes that groups ranged between the seacoast and foothills of 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 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.

4.4.2 *Byrne (1987)*

Denis Byrne was engaged by the Forestry Commission of NSW to undertake a review of ethnohistorical and archaeological records relating to the use of rainforests in NSW (Byrne 1987). This was the first major synthesis of records relating to rainforests in northern NSW and is directly relevant to the Study as the Study Area comprised rainforest, or rainforest margin.

“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).

However, the Byrne report (197:98) makes an important note on the relationship between rainforests and sacred/ significant sites from which had implications for the low-lying river country and woody hills of the river valleys:

By way of a conclusion, it may be said that the rainforests of New South Wales, particularly those on the Far North Coast, have a relatively high incidence of sacred/significant sites, which consisted of natural landscape features. In the far North Coast there is a tendency for these sites to be

concentrated in rainforest environments: of the 34 sites of this type in a rough rectangle between Tweed Head, Ballina, Tabulam, and Woodenbong 15 are in rainforest contexts and a further three are on land likely to have formerly have been rainforest. It might also be stressed that three of the sacred/ significant mountain sites are held by Aborigines (sic) in the areas where they are known to be most important, if not the most important, sacred sites known to them...

4.4.3 Godwin (1999)

Godwin (1999a and 1999b) 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:

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 1999:123).

4.4.4 Regional Forest Archaeological Assessment (Hall and Lomax 1998)

Hall and Lomax (1998) undertook a major review of archaeological assessments undertaken across NSW as part of the NSW Forestry Corporation assessments for logging operations. The Study reviewed and summarised data which included hundreds of recorded Aboriginal sites in forest environments which had generally not been subject to significant ground disturbance when compared to urban and agricultural landscapes. The study makes the following comment on the relationship between site size and diversity and the inferred function of archaeological sites across forest environments:

Archaeological evidence in the form of stone artefact scatters is present in all forest types and in many if not most areas occurs more or less continuously across the landscape. Data from recent regional scale archaeological studies that employed similar survey methodologies across a range of diverse forest types including coastal, sub-tropical and subalpine forested areas are presented in Table 1. The data show that on average approximately one to three artefact occurrences can be expected to occur for each linear kilometre of forest environment regardless of type. The term artefact occurrence refers to one or more stone artefacts at least 100 m from the next artefact.

A range of stone artefact site types has been located during forest surveys. In the broadest possible sense these sites can be characterised as ranging from small simple sites 2451, Australia. to larger and more diverse sites...with increasing site diversity roughly corresponding to the stone artefact occurrence...The larger and more diverse sites generally represent occupation sites. These are sites that would have had a generalised function and where a range of activities were carried out. Large but less diverse sites are more likely to represent locations where specific activities were

undertaken such as quarry or primary reduction sites where stone raw materials were principally worked. Smaller sites of low diversity represent the debris from activities away from main occupation sites...(Hall and Lomax 1998:35-36).

The study makes additional comments on the relationship between sites and landforms, particularly proximity to water and ridges crests/ spurs:

Analysis indicated that there was a high positive correlation between site location and ridgelines in some land systems but not in others. Further analysis indicated that one of the major factors determining the strength of this correlation would appear to be fairly subtle differences in the level of constraint imposed on human movement by terrain. For example, in hilly areas of low relief there was not the same constraint to use ridge tops for pathways as there was in areas of high relief.

...there is a much higher positive correlation between site location and ridges for the ranges land system than for the lowland hills land system. Other factors which are likely to have influenced this positive correlation is the relative abundance of stone artefact raw materials in high relief means relative to areas of low relief where artefact raw materials are less common (Hall and Lomax 1998:37-38).

The relatively open and broad nature of the ridge crest would, if this model is correct, reduce the potential that the Study Area was an open campsite or major occupation area.

4.4.5 Predictive model for the Study Area

The following landscape features are influential in the distribution of Aboriginal archaeological sites on the NSW North Coast:

- elevated ridges and ridge crests where the forest is more open and soils are free draining
- elevated landforms which provide access to a range of physical/ environmental resources
- lands which have not been exposed to repeated and/or significant disturbance
- areas in the vicinity of sacred/ significant cultural sites, and
- areas around the periphery of the lowland rainforests.

As a general pattern of use spurs and ridgelines above the water line would have formed the main areas of occupation. Secondary creeks and adjacent ranges would have been utilized as traditional pathways, however the archaeological signature of this type of use typically comprises isolated artefacts and low-density stone artefact scatters. The archaeological signature of the river/floodplain is typically associated with hunting and gathering and includes low density artefact scatters, isolated artefacts and scarred trees. Archaeological sites associated with consumption of foods, such as hearths and middens, rarely survive in soils subject to flooding and intensive agriculture.

The following specific comments are provided to inform the ACHA:

- the Study Area is not located on the immediate banks of the Bellinger or Kalang Rivers – however it is located near to swampland formed in a paleochannel of the river which would have increased local resource diversity
- the Study Area is located on the northern slope of relatively large and expansive ridge crest that terminates on the floodplain east of the Study Area- the termination of the ridge would provide which direct access to a significant wetland and the mosaic of resources including birds and fish that are not as common within the rivers or ocean
- Ceremonial / mythological sites are known to be located in the general vicinity- the Study Area may have been used for hunting and collection associated with these significant site types but would not likely have been used directly as part of ceremonial activities, and
- the Study Area is located in an area which has been subject to low-moderate historic ground disturbance which has not removed most of the topsoils.

As such it is considered that there is a low- moderate potential that the Study Area will contain Aboriginal archaeological sites.

5 FIELD SURVEY: ABORIGINAL CULTURAL HERITAGE

5.1 Pedestrian survey

A site inspection was undertaken on Tuesday 7 November 2023 with Uncle Ian Brown and Rhys Brown from Coffs Harbour & District Local Aboriginal Land Council (LALC). Uncle Ian is familiar with sites around the Bellinger/ Kalang River and has worked on archaeological surveys including South Urunga Heights and the Pacific Highway upgrade near Urunga.

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 (DEECW 2010A). For the Study Area this included (**Figure 14- Figure 21**):

- Original forestry in the mid 1800's
- Partial clearing/ thinning of the regrowth vegetation for grazing, and
- Construction a vehicle track/ agricultural fence along the southern boundary.

Table 3 presents information on the extent to which survey data provides sufficient evidence for an evaluation of the extent and nature of disturbance across the area and the potential of identifying archaeological materials should they occur. Based on the calculation of survey coverage it is reasonable to proceed on the basis that the archaeological survey was not significantly constrained by grass cover and gravel from access tracks and laydown areas.

Table 3: Calculation of survey coverage/ effectiveness by Survey Unit

| Survey Unit (SU) | Landform | Survey Area (m ²) | Visibility | Exposure | Effective coverage area (m ²) | Effective coverage % | No. of sites |
|------------------|-------------|-------------------------------|------------|----------|---|----------------------|--------------|
| 1 | Ridge | 2720 | 40 | 30 | 326 | 12 | 1 |
| 2 | Mid slope | 1540 | 30 | 20 | 92 | 6 | 0 |
| 3 | Lower slope | 850 | 20 | 10 | 17 | 2 | 0 |



Figure 14: Looking east from the ridge crest showing the cleared fenceline and access track (Proposed Lot 2)



Figure 15: Looking west from the ridge crest to Old Pacific Highway (Proposed Lot 2)



Figure 16: Inspection of the boundary track (near Proposed Lot 3).



Figure 17: Inspection of the boundary track (near Proposed Lot 3).



Figure 18: Inspection of the mid-upper slope (Proposed Lot 5).



Figure 19: Inspection of the mid-upper slope (Proposed Lot 3).



Figure 20: Inspection of the mid-lower slope looking south-west to the ridge crest (Proposed Lot 4).



Figure 21: Inspection of the proposed access Lot showing the farm/ boundary track (Proposed Lot 1)

5.2 Survey Results

For the purposes of the ACHA the following describes the outcomes of the archaeological investigation/ survey:

- the archaeological survey comprised a pedestrian transect across of sample of the Study Area with a focus on the ridge crest/ upper slope due to the elevated likelihood for Aboriginal archaeological sites would be located on the drier elevated ridges
- the Study Area was identified to have only been subject to low-moderately historical ground disturbance including the partial excavation of the farm track/ fence boundary and the clearing and grubbing of the regrowth forest for grazing- the study confirmed there has not been significant ground disturbance that is “clear or observable” over the majority of the Study Area, and
- the ground surface visibility was generally good to very good on the ridge crest and upper slope but reduced down the slope- ground surface visibility did not significantly constrain the site inspection and based on the available sample area the survey team was confident in the results of the site inspection.

The site inspection identified one Aboriginal stone artefact, being a unifacial cobble chopper, that was located on the ridge crest above Lot 3 (see **Figure 22- Figure 26**). The cobble chopper was eroding out of the topsoil that had been disturbed by farming activities / use of the farm track and is consistent with the most common Aboriginal stone artefacts on the sub-coastal forests. The primary observation of the site inspection was that the elevated and dry forests that existed prior to land clearing provided forest hunting grounds which offered a range of resources not available on the floodplain and estuaries of the Kalang and Bellinger Rivers. The main campsites/ occupation areas would have fringed the estuary and coastline and that any use of the hills terminating on the edge of the floodplain would be secondary to the main coastal campsites. As such the cobble chopper forms an ancillary part of a much broader archaeological and cultural landscape.

Table 4: Summary of site inspection results

| Site ID | Name | Coordinate | Dimensions (LxWxT cm) | Site type | Description |
|---------|-------------------------------|-------------------------|-----------------------|----------------------------------|---|
| | 35 Gordon Road Cobble Chopper | -30.46651/ 153.00932 | 147c78x35 | Cobble Chopper/ Isolated Find | A large unifacially flaked cobble chopper/ side scraper. The artefacts is made from very dense greywacke of a rhyolite/ metamorphosed basalt. The cobble has been flaked across most of one side. |



Figure 22: 35 Gordon Road Chopper 01- location of site



Figure 23: 35 Gordon Road Cobble Chopper 1- ventral surface



Figure 24: 35 Gordon Road Cobble Chopper 1- dorsal surface



Figure 25: 35 Gordon Road Cobble Chopper 1- location in relation to the ridge crest and upper slope



Figure 26: 35 Gordon Road Cobble Chopper 1- location in relation to the boundary fence

5.3 Requirement for archaeological test excavation

The CoPAI sets out three criteria/ requirements for archaeological excavation, being:

- There is a “high probability” of artefacts being present in the soil profile,

- That the artefacts would be of “potential conservation value”, and
- The artefact cannot be “substantially avoided”.

The results of the archaeological survey are within the range of ‘normal’ for archaeological investigations on the NSW north coast where the ability to identify sites closely correlates with landforms, the amount of grass cover and the extent of historic disturbance to topsoils. Archaeological test excavation for residential developments on the Coffs Coast have consistently demonstrated that topsoils do contain Aboriginal artefacts which are consistent with the manufacture and maintenance of hunting tools. The south Urunga Heights residential development and the Pacific Highway upgrade provide relevant studies which demonstrate the prevalence of low-density artefact scatters/ isolated finds on ridges and spurs throughout the sub-coastal forest environments. The density of artefacts in these forest environments typically ranges from 1 artefact per 5-20 m². In the case of the Study Area the main ridge crest/ potential occupation area is located on the adjacent paddock (south). Given the amount of ground visibility on the farm track it is expected that if the site had moderate Or high density artefacts these would have been visible eroding out of the soil/ slope.

In northern NSW, sites which are considered to have ‘conservation value’ include, for example, bora/ stone arrangement sites, modified trees, rock art, historic sites associated with former Aboriginal reserves and missions and Aboriginal burials. Stone artefact scatters are relatively common and would not be considered to be of high conservation value. There are precedents and examples for the management of stone artefacts/ cobble choppers and it is known that there are hundreds of similar artefacts within museum collections from Coffs Harbours northern beaches. As an example the Urunga Heights subdivision and the Pacific Highway upgrades were approved without the requirement of conservation zones around the recorded archaeological sites.

The final consideration is that layout of the subdivision places the building envelopes and onsite waste management systems off the ridge crest where the likelihood that artefacts being present is significantly reduced. The substantial impact to the topsoils in along the ridge crest is from the shared road access which has been redesigned to avoid the location of the known isolated artefact and reduce the overall impact on the residual area of the ridge with the potential to contain similar artefacts.

Based on the design of the assessment it is considered that the location of the site can be substantially avoided and no additional archaeological excavations are required. The Proposal can proceed under the Due Diligence approval pathway, being Section 87(2) of the NP& W Act.

5.4 Cultural Values of the Study Area

The following summarises the observations and comments from Uncle Ian relating to the cultural landscape values of the Study Area:

- The primary cultural sites within local area comprised ceremonial sites on the lower floodplain- Uncle Ian was familiar with the sites recorded as part of the Pacific Highway upgrade and had

discussed local stories with Richard Kelly who had previously recorded cultural sites when he worked for Coffs Harbour and District LALC in the 1990's

- the Yellow Rock and Urunga Island Aboriginal Reserves were a significant place for the Aboriginal community- however the cultural values were primarily located around the boundaries of the reserves and at Urunga/ North Beach villages on the floodplain, and
- there are artefacts all through the forests and Aboriginal people would have used the elevated ridges as pathways to get up into the high country- however being so close to the coast the river would have been the main way to get around the flood plain and travel up river.

Uncle Ian did not raise any specific objections to the proposal for rural residential development within the Study Area and did not raise any broader concerns about rural residential development generally in the Raleigh area.

6 SIGNIFICANCE AND IMPACT ASSESSMENT

6.1 Significance assessment

6.1.1 Australian Burra Charter

The NSW *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (Office of Environment and Heritage 2011) (OEH) provides a framework for the assessment of significance based on the Burra Charter (Australian ICOMOS Incorporated 2013) which includes the following significance criteria:

- Social,
- historical,
- Scientific, and
- aesthetic.

The following statements are provided to inform the heritage assessment (**Table 5**)

Table 5: 35 Gordon Road Chopper 1-Heritage significance assessment- Burra Charter

| Criteria | Comment | Significance |
|-------------------|---|--------------|
| Social | Cobble choppers are of significance to the Gumbayngirr community and demonstrate the occupation of the local area by ancestors. | Low |
| Historical | Isolated artefact are not historically significant on the Coffs Harbour coast | N/A |
| Scientific | Cobble choppers have limited scientific value as they are very common in sub-coastal forests | Low |
| Aesthetic | Cobble choppers have limited aesthetic value. | N/A |

The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (OEH 2011) provides additional criteria for the assessment of scientific value (**Table 6**).

Table 6: 35 Gordon Road Cobble Chopper 01- Assessment of scientific significance

| Criteria | Comment | Significance |
|------------------------------|---|--------------|
| Research Potential | Cobble choppers have limited research potential as they are very common and there are numerous in museum and research collections across Australia. | Low |
| Representativeness | The 35 Gordon Road Cobble Chopper 1 is representative of a class of unifacial cobble choppers from the Coffs Coast | N/A |
| Rarity | Cobble choppers are not considered to be rare on the Coffs coast and sub-coastal forests | N/A |
| Educational potential | Cobble choppers are well represented in museum and research collections and the chopper is typical of this artefact class. | N/A |

6.2 Significance assessment- NSW Assessing heritage significance guidelines

The *Assessing heritage significance guidelines* (Department of Planning and Environment 2023) (DP&E) provide a recognised framework to understand the significance of Aboriginal objects and places in NSW.

The guidelines are based on criteria established in the 1990's and are based on two primary levels of significance- local and state (DP&E 2023:3):

These guidelines will help you determine, by using thresholds and examples, whether a place or object is of heritage significance:

- at a state level, being important to the whole of NSW, and eligible to be considered for nomination to the State Heritage Register
- at a local level, being important to a local area and eligible to be considered for a heritage listing at the local level.

The following statements are provided in response to the significance assessment criteria set out in the NSW Assessing Heritage Significance Guidelines (DP&E 2023) (**Table 7**)

Table 7: 35 Gordon Road Cobble Chopper 1- NSW Assessing Heritage Significance Guidelines (DP&E 2023)

| Criteria | Statement | Significance level |
|---|---|--------------------|
| Historic | An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area). | N/A |
| Historical association | An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area). | N/A |
| Aesthetic/creative/technical achievement | An item is important in demonstrating aesthetic characteristics and/ or a high degree of creative or technical achievement in NSW (or the local area). | N/A |
| Social, cultural, and spiritual | An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural, or spiritual reasons. | Local |
| Research potential | An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area). | N/A |
| Rarity | An item possesses uncommon, rare, or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area). | N/A |
| Representativeness | An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments). | |

6.3 Assessment of Harm

6.3.1 Likely impacts

The following ground disturbance would reasonably result from the future residential subdivision of the Study Area (see **Figure 2**):

- Excavation of the main access road from Old Pacific Highway along the southern boundary, including drains and water diversions as required
- installation of mains power

- Excavation of pads for building envelopes which would require cut and fill earthworks
- Installation of onsite waste water treatment, including tanks and evaporative trenches, and
- Construction of ancillary structures including sheds, pools and gardens.

6.3.2 Impact Avoidance and Assessment

The following statements are provided to inform the Impact Assessment and outline measures to avoid or mitigate the consequences of harm (see **Table 8**).

- there is an overall low likelihood that the building envelopes and areas on the lower slope identified for onsite waste management systems contain stone artefact scatters associated with traditional Aboriginal campsites
- there are no old growth trees and none of the mature trees have evidence of anthropogenic modification, and
- the main construction activity with the potential to impact on Aboriginal objects is the shared road/ access off Old Pacific Highway that is located on the edge of the ridge/ upper slope.

Table 8: Summary of existing ground disturbance, Cultural heritage values and management response.

| Area | Existing land use / disturbance | Aboriginal cultural heritage | Cultural heritage management response |
|--------------------|---|---|---|
| Ridge | Clearing of timber/ regrowth for farm access track and the boundary fence | 35 Gordon Road Cobble Chopper 01. Isolated artefacts, being stone tools associated with hunting and resource collection in the open forests, may occur throughout the ridgelines as these were the preferred location of hunting camps and pathways. | Placement of a buffer around the known site (35 Gordon Road Cobble Chopper 1). Implementation of an unexpected find procedure is an appropriate mitigation measure for the ridge crest. The access road has been redesigned to avoid the chopper. |
| Mid slopes | This area has been subject to some forest clearing and historic agriculture which has increased local soil erosion. | Soils on the side slopes have limited potential for additional artefacts as these areas were typically not campsites, pathways or lookouts during hunting. | An unexpected find procedure is an appropriate mitigation measure for side slopes. |
| Lower slope | This area has been subject to forest clearing and historic agriculture which has increased local soil erosion. The lagoon to the north of the lower slope has been created artificially following the construction of the railway line which has dammed up the gully | Soils on the side slopes have limited potential for additional artefacts as these areas were typically not campsites, pathways or lookouts during hunting. | An unexpected find procedure is an appropriate mitigation measure for the disturbed lands |

6.3.3 *Ecologically Sustainable Design principles*

The *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) specifically identifies the following principles as part of the impact assessment (OEH 2011:12):

- Precautionary Principle, and
- Principle of inter-generational Equity

The Environmental Defenders Office (2022) factsheet on Ecologically Sustainable Development (ESD) provides the following comments on the Precautionary principle and the Principle of Intergenerational equity

The Precautionary principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. If risk to the environment is high, but scientific certainty of the risk eventuating is low, the precautionary principle can fill the gap and essentially requires decision-makers to act as though the risk to the environment is real.

There is an implicit acknowledgment that science and scientific methodologies have limitations. Because of these limitations, it is unlikely that the full consequences a particular act or activity upon the environment can be known in advance. A lack of full scientific certainty is therefore the norm, rather than the exception.

Inter-generational equity

This principle states that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

When applied to Aboriginal cultural heritage management the application of ESD principles is problematic as the ESD principles are primarily developed to inform decision making around ecological values whereas the cultural heritage process includes Aboriginal knowledge holders and Elders who are the primary stakeholders/ decision makers with respect to Aboriginal cultural values and have different value systems. The EDO (2022) makes the following comment on the practical application of the ESD principles that is relevant to this assessment:

ESD seeks to maximise the combined total of economic, social and environmental values relevant to a decision but to do this, value judgments may need to be made by the decision-maker.

The ACHRCP consultation process has an inherent mechanism to provide opportunities for Aboriginal knowledge holders/ RAPS to inform the investigation process, significance assessment and management response based on their individual or collective values and judgements on the acceptable level of change or impact to their culture.

The following ESD considerations / statements are provided to inform the assessment (

Table 9).

Table 9: ESD considerations and statements

| ESD Principle | Comment | Management response |
|---------------------------------|---|--|
| Apply Precaution | <p>The impact assessment and management recommendations have been informed by the precautionary principle:</p> <ul style="list-style-type: none"> the study has included consultation with Aboriginal knowledge holders and stakeholders who have extensive experience managing Aboriginal sites and places in the region, and the archaeological inspection has demonstrated that the ridge crest within Study Area has been subject to some ground disturbance and the Project. the road access has been redesigned to avoid the isolated artefact/ cobble chopper. | <p>The primary management response is to redesign the access road to avoid the ridge crest and known artefact.</p> <p>An unexpected find procedure can be applied for the residual areas of the rural residential subdivision.</p> |
| Intergenerational equity | <p>The impact assessment and management response has been informed by the principle of inter-generation equity:</p> <ul style="list-style-type: none"> the Study Area is not a constrained space and any isolated artefacts, if present, will be retained on country and can be accessed in the future for community led research. As the boundary of the Study Area runs parallel to the ridge crest it is possible to set aside a conservation zone between the main access road and the ridge crest. | <p>The ACHA has included consultation with Knowledge Holders and the management response has been informed by previous experiences managing sites across agricultural landscapes of the Bellinger and Kalang Valleys.</p> |

7 MANAGEMENT RECOMMENDATIONS

7.1 Management Recommendations

The ACHA has concluded that the proposed rural residential development has the potential to impact on Aboriginal artefacts, being isolated finds / low density artefact scatter that have been identified across the ridge crest along the southern boundary of the Study Area. The following management procedures should be put in place to further reduce the likelihood that ground disturbing works will impact on Aboriginal objects.

7.1.1 35 Gordon Road Cobble Chopper

The known extent of the 35 Gordon Road Cobble Chopper (**Figure 22** and **Table 4**), includes the immediate area of ridge crest on the southern boundary of the Study Area. The artefact should be retained on country and a 5-metre buffer zone placed around it- subject to development consent this may include revegetation with native plant species to be specified within the Vegetation Management Plan (VMP). The location of the 35 Gordon Road Cobble Chopper must be included on all relevant drawings to ensure that contractors are aware of its location and the extent of buffer zones around the site.

7.1.2 Topsoils along the ridge crest/main access road and driveways

The following procedures must be applied for future works associated with the road access, subject to development consent:

- all works that affect topsoils during construction works must be subject to monitoring by Aboriginal sites officers to implement an Unexpected Finds Procedure (see below)
- topsoils on the ridge crest should be subject to a topsoil relocation procedure as part of the road/ driveway construction activity so that they are retained along the southern boundary of the Lot, and
- the topsoil stockpiles from the main access road should be quarantined and clearly identified with exclusion fencing and signage during construction.

7.1.3 Cultural heritage inductions

Cultural heritage inductions are required for any contractors and staff involved the excavation of topsoils for the access road/ driveways on the ridge crest. Cultural heritage induction should be delivered by Coffs Harbour and District LALC and should include:

- a summary of the local archaeological and cultural landscape
- the consent conditions and requirements to stockpile topsoil and buffer areas around the isolated artefact/ cobble chopper,
- a guide to identify stone artefacts in the local area
- the unexpected find procedure and communication requirements/ responsibilities, and
- a summary of management and mitigation measures around the topsoils relocation/ stockpile areas.

7.1.4 Unexpected Finds Procedure

The ACHA has concluded that there is the residual potential that artefacts may be located along the ridge crest and the upper slope. The following unexpected finds procedure should be applied for all works affecting topsoils on the ridge and upper slope:

- a) work in the surrounding area is to stop immediately and records are made of the finds via incident reporting procedures
- b) a temporary exclusion zone 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 as a update of the 35 Gordons Road Cobble Chopper, or as a new site
- 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, engineering or construction measures are identified to mitigate further damage to the Aboriginal site.

7.1.5 Aboriginal Human Remains

Although it is unlikely that Human Remains will be located at any stage during earthworks within the Study 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 & 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: AHIMS EXTENSIVE SEARCH RESULTS

| <div>  <div> AHIMS Web Services (AWS) Extensive search - Site list report </div> <div> Your Ref/PO Number : Gordon road Raleigh Client Service ID : 830144 </div> </div> | | | | | | | | | | |
|---|---|-------|------|---------|----------|-----------|------------------------|--|-------------------------------------|-------------|
| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
| 21-3-0184 | WC-U BR21 PAD | GDA | 56 | 500021 | 6629657 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 22-1-0470 | Yellow Rock Road IF1 | GDA | 56 | 501560 | 6627305 | Open site | Valid | Artefact : - | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0189 | Short Cut Road Artefact Scatter [Formerly SHORTCUT ROAD PAD 2] | GDA | 56 | 499143 | 6628249 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0195 | Short Cut Road 5 | GDA | 56 | 499802 | 6628223 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0034 | Raleigh; | AGD | 56 | 499920 | 6628600 | Open site | Valid | Aboriginal Ceremony and Dreaming : - | Natural Mythological (Ritual) | 2130,102566 |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 22-1-0007 | Myleston | AGD | 56 | 502600 | 6629000 | Open site | Valid | Shell : -, Artefact : - | Midden | 100505 |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0181 | TYSONS FLAT 2 | GDA | 56 | 498564 | 6627377 | Open site | Partially Destroyed | Artefact : 68, Potential Archaeological Deposit (PAD) : - | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0191 | SHORTCUT ROAD PAD 1 | GDA | 56 | 499300 | 6628144 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | 3469 |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0187 | SOUTH ARM ROAD ARTEFACT 3 | GDA | 56 | 499387 | 6628041 | Open site | Valid | Artefact : 1 | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 22-1-0502 | ZURG-20 Isolated Find 01 | GDA | 56 | 503789 | 6630333 | Open site | Valid | Artefact : - | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 21-3-0180 | TYSONS FLAT 1 | GDA | 56 | 498470 | 6627254 | Open site | Valid | Artefact : 1, Potential Archaeological Deposit (PAD) : - | | |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |
| 22-1-0027 | Raleigh Bora Ground | AGD | 56 | 501300 | 6629000 | Open site | Valid | Ceremonial Ring (Stone or Earth) : - | Bora/Ceremonial | 3469 |
| | <u>Contact</u> | | | | | | | <u>Permits</u> | | |

Report generated by AHIMS Web Service on 18/10/2023 for Tim Hill for the following area at Lat, Long From : -30.4877, 152.9788 - Lat, Long To : -30.4507, 153.0406. Number of Aboriginal sites and Aboriginal objects found is 29

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 3



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Gordon road Raleigh

Client Service ID : 830144

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|-----------|--|---------------------------|--|---------|----------|-----------|----------------|--|-------------------------------------|---------|
| 21-3-0190 | SHORTCUT ROAD PAD 2A | GDA | 56 | 499177 | 6628267 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | Contact | Recorders | Doctor.David Collard,Jacobs Group (Australia) Pty Ltd - North Sydney | | | | | Permits | | |
| 22-1-0048 | Yellow Rock Midden; | AGD | 56 | 501120 | 6627000 | Open site | Valid | Shell : -, Artefact : - | Midden | |
| | Contact | Recorders | Pamela O'Neill | | | | | Permits | | |
| 22-1-0006 | Yellow Rock Burial Ground | AGD | 56 | 502000 | 6628400 | Open site | Valid | Burial : -, Ceremonial Ring (Stone or Earth) : -, Shell : -, Artefact : - | Bora/Ceremonial,B urial/s,Midden | |
| | Contact | Recorders | George England | | | | | Permits | | |
| 21-3-0205 | Waterfall Way IF 01 | GDA | 56 | 498495 | 6629568 | Open site | Valid | Artefact : - | | |
| | Contact | Recorders | Everick Heritage Pty Ltd,Mr.Tim Hill | | | | | Permits | | |
| 21-3-0174 | WC-U-PAD 6 | GDA | 56 | 498914 | 6627879 | Open site | Not a Site | Potential Archaeological Deposit (PAD) : - | | |
| | Contact | Recorders | Ms.Rose Reid,Mr.Joseph Brooke | | | | | Permits | | |
| 21-3-0185 | Shortcut Road Artefact 1 | GDA | 56 | 499172 | 6628628 | Open site | Valid | Artefact : 1 | | |
| | Contact | Recorders | Jacobs Group (Australia) Pty Ltd - Melbourne | | | | | Permits | | |
| 21-3-0204 | South Arm Rd Artefact Reburial | GDA | 56 | 499364 | 6628081 | Open site | Valid | Artefact : 1 | | |
| | Contact | Recorders | Jacobs Group (Australia) Pty Ltd - Melbourne,Doctor.David Collard | | | | | Permits | | |
| 22-1-0425 | Restriction applied. Please contact ahims@environment.nsw.gov.au. | | | | | Open site | Valid | | | |
| | Contact | Recorders | Mr.Joseph Brooke,Jacobs Group (Australia) Pty Ltd - Melbourne | | | | | Permits | | |
| 21-3-0203 | Tyson's Flat 2 Reburial | GDA | 56 | 498528 | 6627342 | Open site | Valid | Artefact : 1 | | |
| | Contact | Recorders | Jacobs Group (Australia) Pty Ltd - Melbourne,Doctor.David Collard | | | | | Permits | | |
| 21-3-0188 | SOUTH ARM ROAD ARTEFACT 2 | GDA | 56 | 499387 | 6628041 | Open site | Valid | Artefact : 1 | | |
| | Contact | Recorders | Doctor.David Collard,Jacobs Group (Australia) Pty Ltd - North Sydney | | | | | Permits | | |
| 21-3-0186 | SOUTH ARM ROAD PAD 1 | GDA | 56 | 499444 | 6628056 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | Contact | Recorders | Doctor.David Collard,Jacobs Group (Australia) Pty Ltd - North Sydney | | | | | Permits | | |
| 21-3-0194 | Restriction applied. Please contact ahims@environment.nsw.gov.au. | | | | | Open site | Valid | | | |
| | Contact | Recorders | Mr.Joseph Brooke,Jacobs Group (Australia) Pty Ltd - Melbourne | | | | | Permits | | |
| 21-3-0175 | KRB-1 (Coffs Harbour) | GDA | 56 | 499802 | 6627926 | Open site | Valid | Artefact : - | | 4266 |
| | Contact | Recorders | Mrs.Robynne Mills,ERM - Melbourne,Ms.Alyce Haast | | | | | Permits | | |
| 21-3-0196 | Waterfall Way 1 | GDA | 56 | 499987 | 6629728 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |

Report generated by AHIMS Web Service on 18/10/2023 for Tim Hill for the following area at Lat, Long From : -30.4877, 152.9788 - Lat, Long To : -30.4507, 153.0406. Number of Aboriginal sites and Aboriginal objects found is 29

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 2 of 3



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Gordon road Raleigh

Client Service ID : 830144

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|-----------|--|------------------|--|---------|----------|-----------|----------------|---|---------------------------------|---------|
| | <u>Contact</u> | <u>Recorders</u> | Jacobs Group (Australia) Pty Ltd - Melbourne,Ms.Amanda Goldfarb | | | | | <u>Permits</u> | | |
| 22-1-0031 | Bellingen River;Myleston | AGD | 56 | 501600 | 6630500 | Open site | Valid | Modified Tree (Carved or Scarred) : -, Ceremonial Ring (Stone or Earth) :- | Bora/Ceremonial,C arved Tree | |
| | <u>Contact</u> | <u>Recorders</u> | David Bell | | | | | <u>Permits</u> | | |
| 21-3-0192 | Shortcut Road PAD 3 | GDA | 56 | 499191 | 6628554 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | <u>Contact</u> | <u>Recorders</u> | Jacobs Group (Australia) Pty Ltd - Melbourne,Ms.Amanda Goldfarb | | | | | <u>Permits</u> | | |
| 21-3-0193 | Restriction applied. Please contact ahims@environment.nsw.gov.au. | | | | | Open site | Destroyed | | | |
| | <u>Contact</u> | <u>Recorders</u> | Mr.Joseph Brooke,Jacobs Group (Australia) Pty Ltd - Melbourne,Mr.Alistair Carr | | | | | <u>Permits</u> | | |

**** 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 18/10/2023 for Tim Hill for the following area at Lat, Long From : -30.4877, 152.9788 - Lat, Long To : -30.4507, 153.0406. Number of Aboriginal sites and Aboriginal objects found is 29

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.





Appendix C

Bushfire Hazard Assessment

Bushfire Hazard Assessment

35 Gordon Road, Raleigh



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Prepared for: Ashley and Tracee Porter
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Bushfire Disclaimer

This report in no way suggests or guarantees that a bushfire or grass fire will not occur at the Project Site and / or impact the proposed development. Furthermore, the measures recommended in this report do not guarantee that loss of life, injury and / or property damage will not occur during a bushfire or grass fire event. The severity and impact of a bushfire or grass fire event can be influenced by matters such as vegetation management, human behaviour and extreme weather conditions.

This report advises on matters published by the NSW Rural Fire Service in the guideline Planning for Bushfire Protection 2019 and other advice available from that organisation. Due consideration has been given to site conditions, the nature of the proposed development and to appropriate legislation and documentation available at the time of writing. The report is therefore current at the time of writing only.

Certification



| | Name | Signature | Date |
|-------------|--|--|-------------|
| Prepared by | Kale Hardie-Porter Environmental Planner BUrb&EnvPlan (Hons) Planning for Bush Fire Prone Areas, Short Course – UTS |  | 27/09/2024 |
| Reviewed by | Paul Creenaune Senior Bushfire Consultant (Level 3 BPAD) Bachelor of Urban & Regional Planning Graduate Diploma in Bushfire Protection |  | 27/09/2024 |
| UPR | Description | Issued By | Date Issued |
| 4200-1002 | Version 1 | Jacob Sickinger | 27/09/2024 |
| | | | |
| | | | |

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Appendices

Appendix A Concept Subdivision Plan

Executive Summary

GeoLINK has been engaged to prepare a Bushfire Hazard Assessment to support a proposed amendment of the Bellingen Local Environmental Plan 2010 (BLEP 2010) Zoning and Lot Size Map. The proposal aims to change part of the zoning and minimum lot size controls on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW referred to herein as 'the site'. The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential) and common access road under community title provisions, and a residual lot.

As the proposal would involve future subdivision, a Bushfire Safety Authority would therefore be requested from the NSW Rural Fire Service in accordance with s100B of the *Rural Fires Act 1997*.

This Bushfire Hazard Assessment has taken into consideration the proposed layout, hazard vegetation, effective slope, local bushfire risk conditions and Fire Danger Index for the site in accordance with Planning for Bushfire Protection 2019. This Bushfire Hazard Assessment demonstrates that bushfire protection measures are available and can be implemented to facilitate the proposed development.

Any proposed future development application for subdivision (subject to approval of the Planning Proposal) would be regarded as Integrated Development under Section 4.46 of the *Environmental Planning and Assessment Act 1979*.

The following table provides a summary of the recommendations for each bushfire protection measure outlined in Chapter 5 of Planning for Bushfire Protection 2019.

| Bushfire Protection Measure | Recommendation |
|---------------------------------------|---|
| Asset Protection Zones | <ul style="list-style-type: none">■ The area to the north of each proposed dwelling envelope be managed as an APZ for a minimum distance of 20 m. This APZ can be separated into two distinct zones, a 10 m Inner Protection Area (IPA) and 10 m Outer Protection Area (OPA).■ Proposed Lot 5 requires a 9 m APZ setback from the eastern boundary to offset the hazard contained within adjoining the North Coast Railway corridor. Additionally, a 20 m APZ is required to the south to offset the forest vegetation on adjoining land.■ The location of the proposed community title access road along the southern boundary of the site provides a managed, physical separation barrier of approximately 11 m between the building envelopes to the north and grassland hazard to the south. This applies also to the shared driveway access handle / right-of-way servicing proposed Lots 4 and 5.■ Existing dwelling to maintain current APZ |
| Services - Water, Electricity and Gas | <ul style="list-style-type: none">■ Utility services to proposed lots be installed in accordance with Section 5.3c of PBP 2019. |
| Construction Standards | <ul style="list-style-type: none">■ New building envelope can comply with BAL 12.5 construction standards.■ Recommend that the existing dwelling on the residual lot apply non-combustible gutter and valley leaf guards to be installed, as the site complies with all other performance criteria and acceptable solutions of PBP 2019. |



1. Introduction

1.1 Scope and Purpose

GeoLINK has been engaged to prepare a Bushfire Hazard Assessment with respect to Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW referred to herein as 'the site'. The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential) and common access road under community title provisions, and a residual lot.

This Bushfire Hazard Assessment will accompany the Planning Proposal and can then also be reviewed (if necessary) and support any Statement of Environmental Effects (SEE) that informs a future development application (DA) lodged under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the proposed development on bushfire prone lands submitted to Bellingen Shire Council (BSC). As the proposal involves subdivision of an existing lot, a Bushfire Safety Authority (BFSA) is requested from the NSW Rural Fire Service (RFS) in accordance with s100B of the *Rural Fires Act 1997*.

This report serves to:

- identify the site and proposed development;
- determine the bushfire threat; and
- identify precautions required to improve the chances of building survival in the event of a bushfire.

1.2 Legislative Framework

The assessment contained in this report has been prepared with regard to:

- Environmental Planning and Assessment Act 1979 (EP&A Act);
- Environmental Planning and Assessment Regulation 2021;
- Rural Fires Act 1997;
- Australian Standard 3959:2018 'Construction of Buildings in Bushfire Prone Areas';
- NASH Standard 'Steel Framed Construction in Bushfire Areas (2014)'; and
- Planning for Bushfire Protection (PBP) 2019.

The *Rural Fires Act 1997* and the *Environmental Planning and Assessment Act 1979* (EP&A Act) institute a framework for environmental planning and assessment to consider bushfire hazard issues.

Direction 4.3 Planning for Bushfire Protection, issued by the Minister for Planning under Section 9.1(2) of the EP&A Act, must be considered with respect to the proposed LEP amendment (refer to **Section 4.1**).

Section 100B of the *Rural Fires Act 1997* establishes that a 'Bush Fire Safety Authority' is required for a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes.

Section 100B of the *Rural Fires Act 1997* establishes that a 'Bush Fire Safety Authority' is required for a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes. As the proposal involves subdivision of bushfire prone land that could be used for residential purposes, a Bushfire Safety Authority (BFSA) will be required from the NSW Rural Fire Service (RFS) at subdivision DA stage in accordance with s.100B of the *Rural Fires Act 1997*.



1.3 Bushfire Prone Land

BSC bushfire prone land mapping has been prepared as a requirement of Section 10.3 of the EP&A Act and in accordance with the NSW RFS 'Guideline to Bushfire Prone Land Mapping'. Council's bushfire prone land mapping indicates that the southern portion of the site is mapped as being Category 1 vegetation (refer to **Illustration 1.1**).



LEGEND

- | | | |
|--|--|---|
| Site boundary | Vegetation category 1 | Contours at 2m intervals |
| Cadastre | Vegetation category 2 | Watercourse |
| | Vegetation category 3 | |
| | Vegetation buffer | |

0 100 Metres

GeoLINK
environment | engineering | planning | design

Bushfire Hazard Assessment - 35 Gordon Road, Raleigh
4200-1020

Bushfire Prone Land - Illustration 1.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: AB Reviewed by: KHP
 Source of base data: Nearmap 25/07/2022
 Date: 21/08/2024
 Revision: A



2. Background

2.1 Location and Description

The site is described in Real Property terms as Lot 21 DP1239022, 35 Gordon Road Raleigh and is located approximately 3.5 km North-west of Urunga Central Business District. Gordon Road is approximately 300 m east of the Pacific Highway / Waterfall Way interchange and is accessed via the Old Pacific Highway (refer to **Illustration 2.1**). Bellinger River is located to the north, with the North Coast rail corridor extending along the eastern boundary of the site.

The site is irregular shaped and consist of an existing residential dwelling and detached shed which is accessed from Gordon Road and is centrally located on an elevated portion of the site (**Plate 2.1**). The area around the dwelling/ to the north and east comprise of flat, open agricultural land (improved pastures) used for cattle grazing (**Plate 2.2**). Large lot rural-residential properties associated with the Gordon Road estate are located to the west. Areas of consolidated coastal wetland forest vegetation is located to the south of the existing dwelling along an area of low-lying land subject to flood inundation with an intermittent watercourse which drains east into a more permanent feature as it meanders through the site to the north-west (**Plate 2.3**). The southern portion of the site is elevated, north facing and partially cleared open forest with a managed understory (**Plate 2.4**).

Illustration 2.1 and **2.2** provides an overview of the site locality and analysis of environmental features present onsite.

Error! Reference source not found. provides a quick reference for the location and description details of the site.

Table 2.1 Site Detail Summary

| Site Details | |
|-------------------------|--|
| Lot/DP | Lot 21 DP1239022 |
| Street Address | 35 Gordon Road Raleigh, NSW |
| Elevation | RL 4-22 m AHD |
| Site Area | Approximately 29 ha |
| BLEP 2010 Zoning | C2 - Environmental Conservation C3 - Environmental Management R1 - General Residential R5 - Large Lot Residential RU1 - Primary Production |
| Fire Weather Area | North Coast |
| Fire Danger Index (FDI) | 80 |
| Fire Control Centre | Coffs Coast (Coffs Harbour) |



Plate 2.1 View showing existing residential dwelling (residual lot)



Plate 2.2 View north from dwelling showing extent of agricultural grazing farmland



Plate 2.3 View east showing low-lying drainage/ watercourse traversing through the site

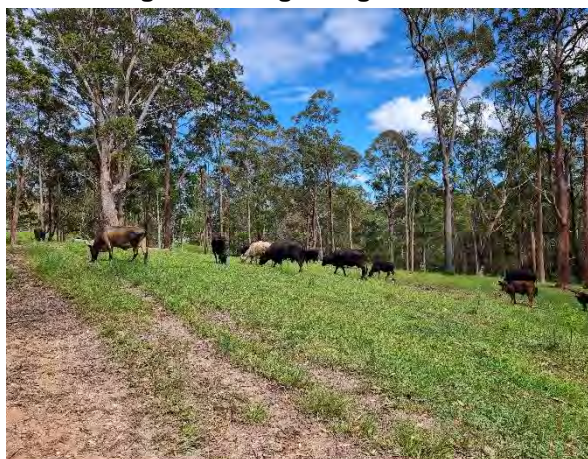
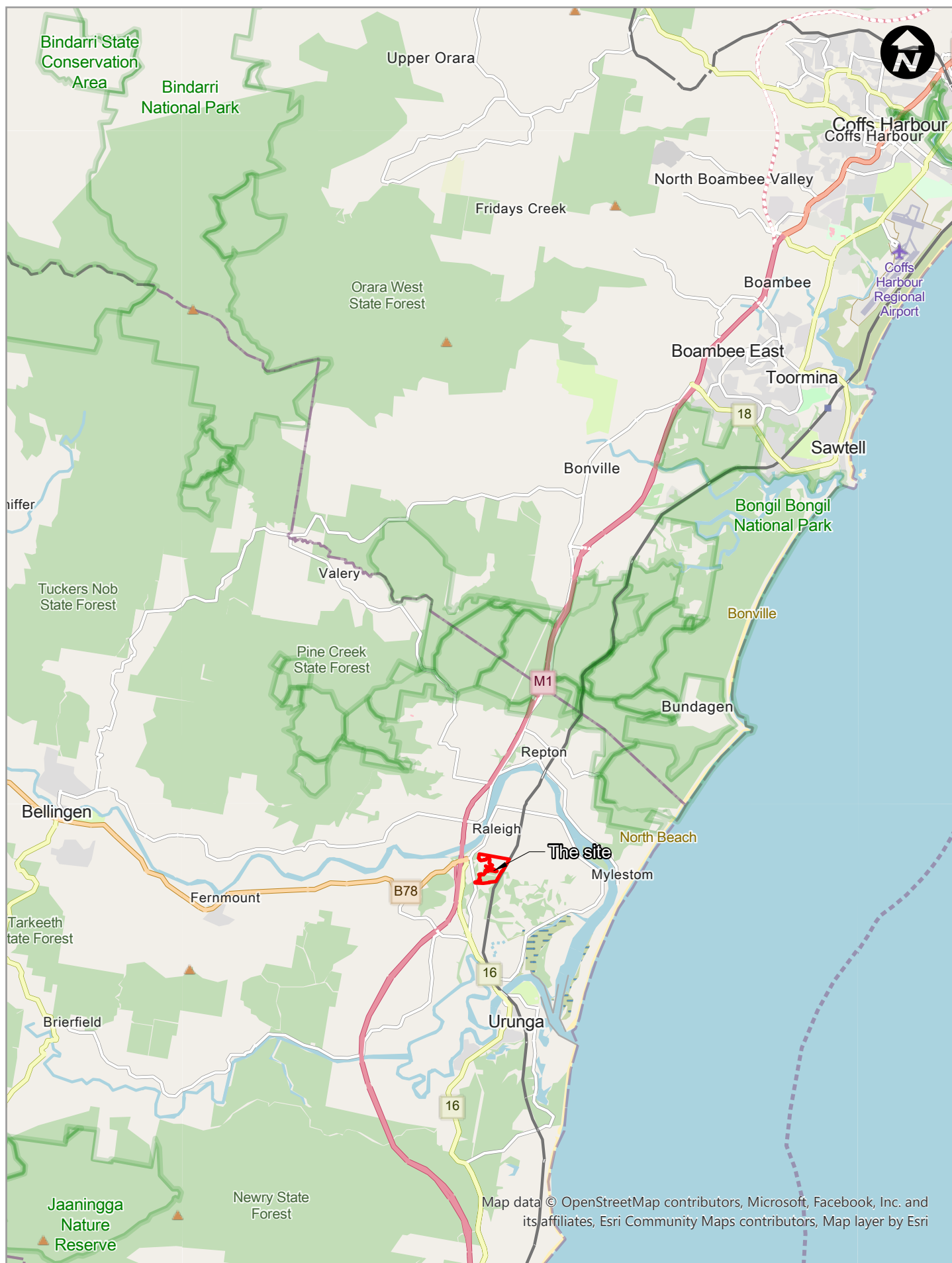


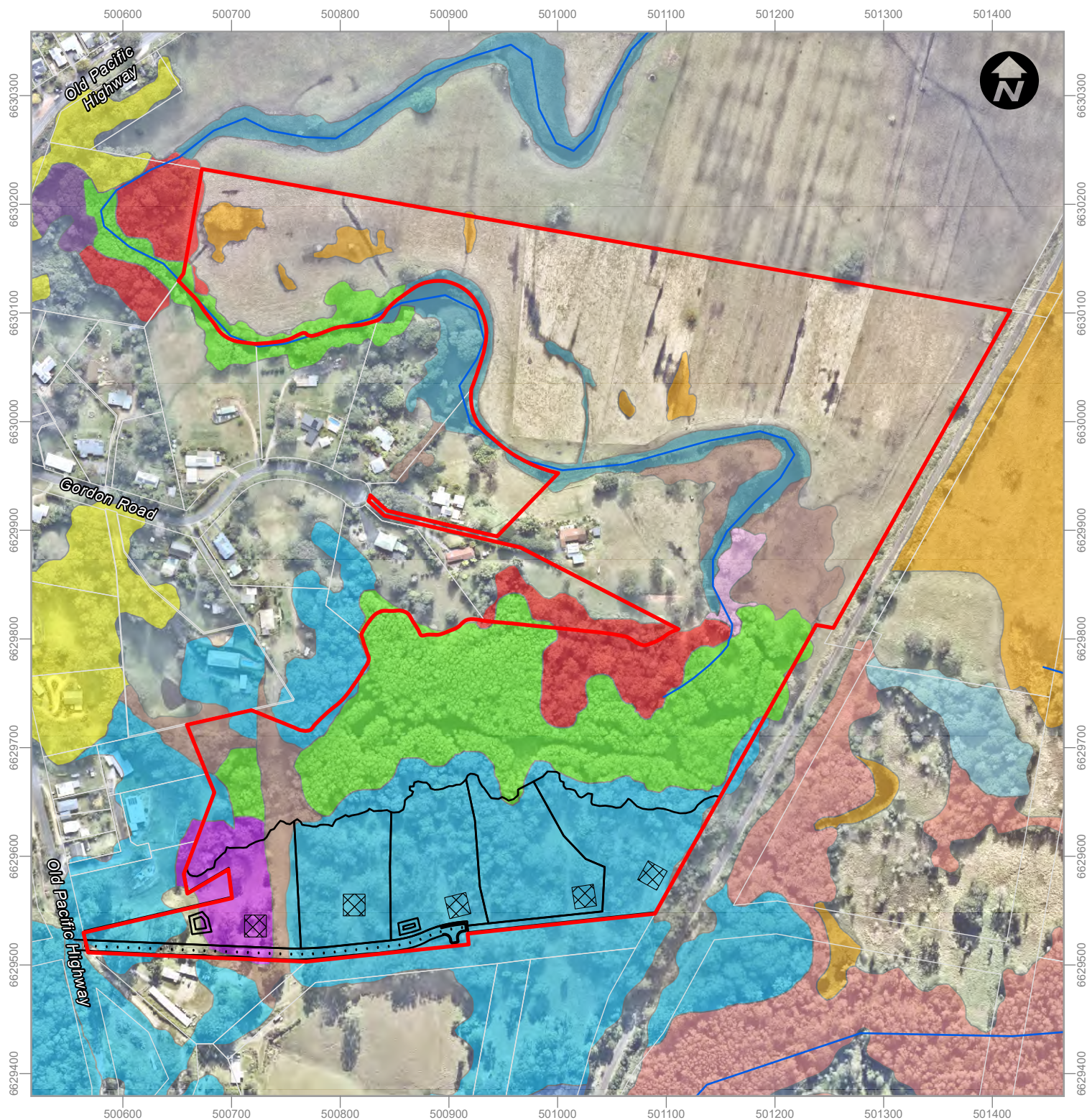
Plate 2.4 View north-west showing the extent of the managed understory of the elevated portion of the open forest



0 2.5 km

Site Locality - Illustration 2.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: PTC Reviewed by: KHP
 Source of base data: OpenStreet Map
 Date: 21/08/2024
 Revision: A



LEGEND

 Site boundary

 Cadastre

 Proposed building envelope

Bellingen LGA Vegetation Mapping

 Blackbutt - Red Mahogany - Bloodwood dry open forest on infertile sandy soils of low coastal rises and hills, NSW North Coast Bioregion and South Eastern Queensland Bioregion

 Broad-leaved Paperbark - Swamp Oak - Tall Sedge swamp forest on alluvial soils

 Camphor laurel

 Exotic vegetation

0 100 Metres

 Flooded Gum moist open forest of sheltered lower slopes and gullies

 Knotweed wet meadow forbland on alluvial soils of coastal floodplains

 Lagoon forbland freshwater wetlands of coastal floodplains

 Native remnant vegetation

 Swamp Mahogany - Willow Bottlebrush - Broad-leaved Paperbark forested wetland

 Swamp Oak - Broad-leaved Paperbark - Willow Bottlebrush floodplain forested wetland

 Swamp Oak Forested Wetland of Estuaries

 Tallowwood - Small-fruited Grey Gum - Forest Oak dry open forest

 Turpentine - Blackbutt - Tallowwood - Forest Oak ferny moist forest of the escarpment ranges of the Mid North Coast

 Proposed subdivision concept

Site Analysis - Illustration 2.2

2.2 Zoning and Land Use

The site is situated in a semi-rural residential setting, a short distance north from the coastal town of Urunga. The site is approximately 29 ha and is predominantly zoned RU1 Primary Production under Bellingen Local Environment Plan (2010), comprising improved pastures located to the north and east of the existing residential dwelling (refer to **Plate 2.5**). Pockets of established forested wetland vegetation (mapped C2 Environmental Conservation and C3 Environmental Management) are centrally located along an intermittent watercourse which drains into a more permanent feature as it meanders through the site from west to east/ north-east refer to **Plate 2.6**). This area of vegetation is the main source of the bushfire hazard, mapped as Category 1 vegetation.

The proposed subdivision is confined to the southern portions of the site along the southern boundary and is mapped R5 Large Lot Residential, a continuation of the village of Raleigh. This portion of the site is elevated, north facing and highly disturbed, open forest with a managed understory (refer to **Plates 2.7** and **2.8**). A review of the Biodiversity Values Map and Threshold Tool indicates that no parts of the site are mapped as land of Biodiversity Value. Surrounding land uses comprise large lot rural residential development and agricultural grazing land.



Plate 2.5 View north showing existing residential building (far top left of picture) and extent of the agricultural land to the north and east



Plate 2.6 View north showing extent of Category 1 vegetation within the watercourse



Plate 2.7 View north-east showing extent of managed land/ understory on the elevated portions to the south (proposed subdivision)



Plate 2.8 View north showing extent of Category 1 vegetation along the low-lying forested wetland

2.3 Proposed Development

A concept plan of the proposal is provided as **Appendix A** of this report. The development proposal is for subdivision of the existing lot into seven lots, through the creation of five residential lots and common access road under community title provisions, and a residue lot. The community title development is contained within the area zoned R5 Large Lot Residential land, situated along the southern boundary of the site and is approximately 6 ha in size. Access will be achieved via the Old Pacific Highway where a 20 m wide frontage can support an internal access road, extending approximately 350 m into the site (refer to **Plates 2.9** and **2.10**). The maintenance of the internal access road would be shared by the future owners of the community title lots which would be outlined in a community management statement which is a legally binding document.

The residual lot which contains the existing dwelling and associated infrastructure, none of which is impacted upon by the proposed loss of land for the community title residential subdivision, will retain access from Gordon Road.

The proposed lots are all a minimum of 1 ha in area, with the residual lot (accommodating the existing dwelling) retaining the remaining 23 ha. The concept plan in **Appendix A** details the location of each of the proposed building envelopes which are situated in cleared section of land and is capable of complying with bushfire and effluent disposal requirements for a future dwelling.

The site is not connected to council reticulated water supply. Minor vegetation removal is required for the construction of the internal access road.

Refer to **Appendix A** for a concept subdivision plan and **Illustration 2.2** for site analysis and proposed lot layout.



Plate 2.9 View north-west showing current access to the southern portions of the site via the Old Pacific Highway



Plate 2.10 View east showing 20 m wide frontage to the Old Pacific Highway



3. Planning for Bushfire Protection Assessment

3.1 Bushfire Assessment

The following subsections were informed by a site visit undertaken by GeoLINK.

3.1.1 Vegetation

BSC vegetation mapping depicts the vegetation at and surrounding the site as predominantly being:

- *North Coast Wet Sclerophyll Forests*
- *Coastal Swamp Forests*

Based on Appendix 1 of PBP 2019, the predominant vegetation assessed as being the greatest threat to the proposed development is 'forest'. Wet Sclerophyll Forests is located within the elevated portions of the site (to the south) and is the area where the proposed community title subdivision will occur (refer to **Plate 3.1**). This vegetation has been assessed as being highly disturbed, with a managed understory dominated by improved pasture (broadleaf paspalum and kikuyu), resulting from the primary production activity occurring onsite (cattle grazing). Given the proposal is for residential lots, this area of modified forest is assessed as managed land and will be supported/ maintained by future residential activity.

Open grassland (used for cattle grazing) and pockets of remnant vegetation is located on the adjoining property to the south where two residential dwellings are located (refer to **Plate 3.2**). A 60 m wide managed rail corridor (North Coast Railway) extends along the eastern boundary and provides ample separation distance between the proposal and areas of established Coastal Swamp Forest to the east. Notwithstanding this, stands of Camphor Laurels and extensive areas of Lantana, Privet and other woody weed species dominate pockets of unmanage land within the rail corridor, extending beyond to the east (refer to **Plate 3.3**).

The greatest bushfire threat to the proposal (mapped as Category 1 vegetation) is the Coastal Swamp Forests, situated to the north of the development footprint and is within the low-lying intermittent watercourse which drains into a more permanent feature to the north-east. Established stands of Broad-leaved Paperbark, Swamp Oak and Tall Sedge vegetation dominates the dense canopy (refer to **Plate 3.4**).

Vegetation within the site is not a declared area of outstanding biodiversity value nor mapped on the biodiversity values map.

Some vegetation removal would be required to facilitate the proposed internal access road.



Plate 3.1 View north-west showing extent of highly disturbed forest with managed understory. The foreground shows the forested wetland



Plate 3.2 View south-east showing open grassland (pastures) located south of the site



Plate 3.3 View north-east showing the North Coast Railway – this corridor is being managed to a degree but is infested with exotic weeds




Plate 3.4 View north from within the forested wetland area which poses the great hazard to the development

Vegetation surrounding the site of the proposed building envelopes has been assessed in terms of potential fire hazard over a distance of 140 m, using the formation classes provided within Section A1.2 of PBP 2019. Dominant vegetation formations in each relevant direction are provided in **Table 3.1**.

Table 3.1 Predominant Vegetation Formation

| Direction | Predominant Vegetation Formation |
|-----------|----------------------------------|
| North | Forest |
| East | Exotic Vegetation – Rainforest* |
| South | Grassland |
| West | Managed Land |

*Only applicable to the proposed lot adjoining the rail corridor (Lot 5). Section A1.9 of PBP 2019 identifies Camphor Laurels, Lantana, Privet and other exotic woody weed species which display similar fire behaviour characteristics to some of the native vegetation classifications with lower fuel loads. Table A1.9 has been used to convert the vegetation formations and fuel loads where the



predominant vegetation formation of exotic weed species (being greater than 70% canopy cover) is demonstrated over a distance of 140 metres and therefore has been assessed as 'rainforest'.

3.1.2 Slope

The landform is dominated by rolling low hills and hills up to 22 m AHD, that are dominated by narrow rounded crests and long sideslopes and footslopes.

The effective slope is that slope within the hazard which most significantly affects fire behaviour of the site having regard to the vegetation formation. The effective slope for the proposal has been assessed over 100 m from the nominated building envelopes which is located on the elevated rounded crest of the site. Slope gradient within the mapped forest to the north and east of the site has been assessed as being flat (excluding the short but steep bank (cutting) located within the rail corridor to the east). Grassland to the south is situated on a gentle slope. The effective slope in relation to the development is presented in **Table 3.2**.

Table 3.2 Effective Slope

| Direction | Effective Slope Category |
|-----------|--------------------------|
| North | Upslope/ flat |
| East | Upslope/ flat |
| South | >0°-5° |
| West | N/A |

3.1.3 Fire (Weather Area)

Bellingen Shire Council local government area is located within the 'North Coast' fire area, with a Fire Danger Index (FDI) rating of 80.

3.1.4 Climate

The typical/average climate in the Mid North Coast Bushfire Management Committee (BFMC) area could be described as sub-tropical. The driest months on average being June to September and wettest in late summer and autumn (source www.weatherzone.com.au). The bushfire season generally runs from September through to January.

3.1.5 Bushfire Season

Prevailing weather conditions associated with the bushfire season in the Mid North Coast BFMC area are strong west to north westerly winds, with high temperatures and lower relative humidity.

3.2 Bushfire Protection Measures

3.2.1 Asset Protection Zones

An Asset Protection Zone (APZ) is a fuel-reduced area surrounding a built asset or structure. APZ requirements have been calculated based on the effective slope, vegetation formations and FDI rating in accordance with Table A1.12.3 (*Minimum Distances for APZs – residential developments <29 kW/m² @ 1090K*) of PBP 2019 (refer to **Table 3.3**).

APZs should consist of open areas with minimal fuel at ground level that could be set alight by bushfire. Some trees and shrubs are permissible within the APZ, provided crown separation can be achieved and vegetation does not overhang buildings. In addition, no combustible materials (e.g. wood piles, flammable building materials) should be stored in the APZ.

Illustration 3.1 shows the required APZ's calculated for the indicative building envelopes proposed for the residential subdivision.

Table 3.3 Asset Protection Zones

| Direction | Vegetation Formation | Effective Slope Category | APZ (m) |
|------------|--------------------------------|--------------------------|---------|
| North | Forest | Upslope/ flat | 20 |
| East | Exotic Vegetation – Rainforest | Upslope/ flat | 9* |
| South | Grassland | >0°-5° | 11** |
| South-east | Forest | Upslope/ flat | 20* |
| West | Managed Land | N/A | N/A |

*required for proposed Lot 5

** the location of the proposed community title access road along the southern boundary of the site provides a managed, physical separation barrier of approximately 11 m between the building envelopes to the north and grassland to the south. This applies also to the shared driveway access handle / right-of-way servicing proposed Lots 4 and 5.

In accordance with Table A1.12.4 of PBP 2019, the 20 m APZ to the north can be separated into two distinct zones, a 10 m Inner Protection Area (IPA) and 10 m Outer Protection Area (OPA). The established and managed of each (as specified in Appendix A4.1.1 and A4.1.2 of PBP 2019), include the following:

IPA


- 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.
- OPA**
- 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

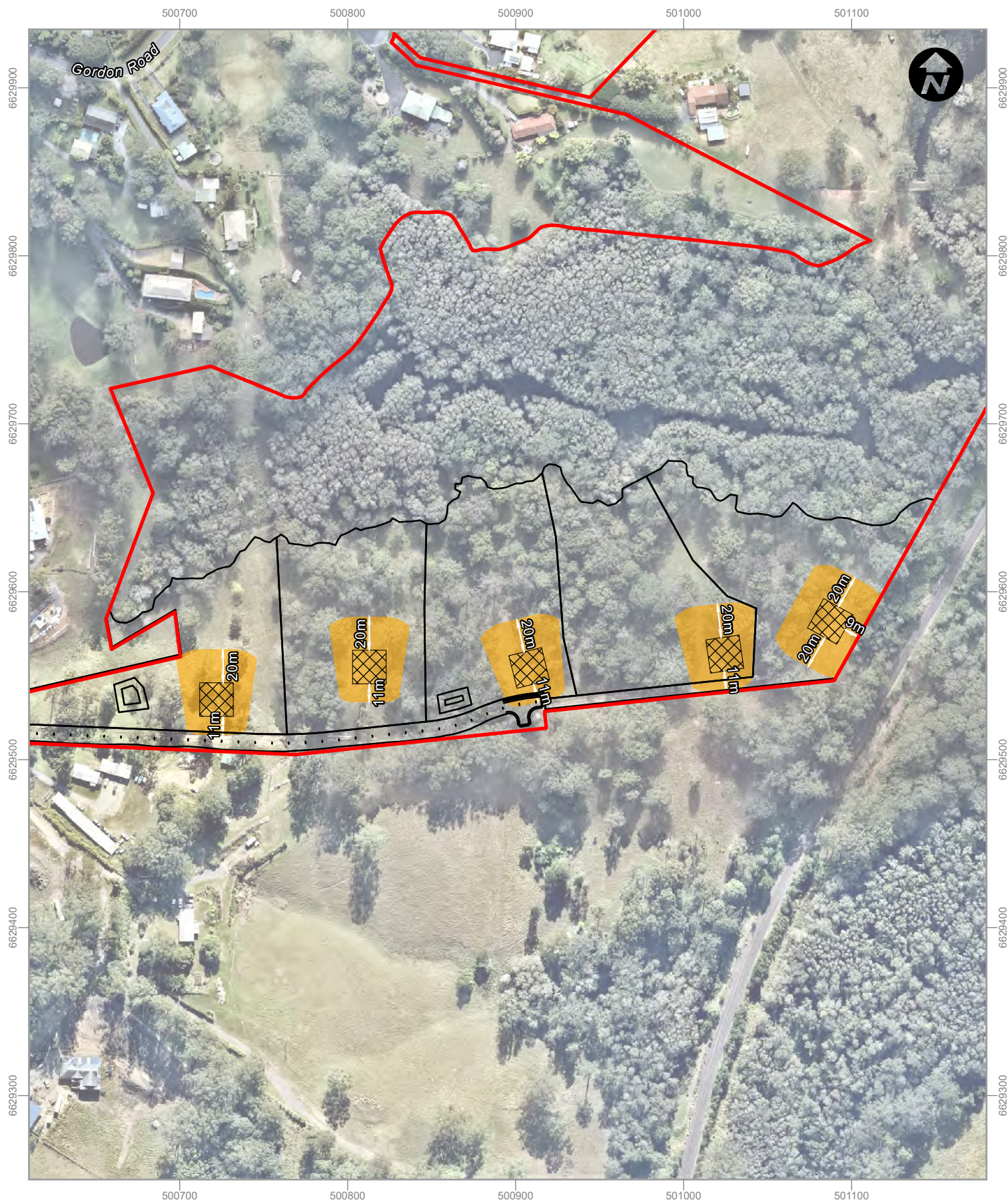
Table 3.4 assesses compliance with the acceptable solutions of PBP 2019 relating to APZs.

Table 3.4 Assessment of APZ Compliance with Table 5.3a of PBP 2019

| Performance Criteria | Acceptable Solution | Application | Compliant with Acceptable Solution |
|---|---|--|------------------------------------|
| Potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot. | APZs are provided in accordance with Tables A1.12.2 or A1.12.3 based on the FFDI. | <ul style="list-style-type: none"> ■ In accordance with Table A1.12.3 of PBP 2019 a 20 m APZ is required to the north where the predominate hazard (forested wetlands) is located. A 11 m APZ is required to the south where grassland is located and Lot 5 (adjacent to the rail corridor) requires a 9 m APZ to the east and 20 m to the south. | Yes |
| APZs are managed and maintained to prevent the spread of fire to the building. | APZs are managed in accordance with the requirements of Appendix 4 of PBP 2019. | <ul style="list-style-type: none"> ■ APZs will be managed in accordance with the requirements of Appendix 4 of PBP 2019. | |
| The APZ is provided in perpetuity. | APZs are wholly within the boundaries of the development site. | <ul style="list-style-type: none"> ■ APZs will be located within the boundaries of the site. Defendable space can be achieved within the site boundary facing the hazard from the proposed building envelope. This space provides a safe working environment in which efforts can be | |



| Performance Criteria | Acceptable Solution | Application | Compliant with Acceptable Solution |
|---|--|--|------------------------------------|
| | | undertaken to defend the structure, before and after the passage of a bushfire. | |
| APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. | APZs are located on lands with a slope less than 18 degrees. | <ul style="list-style-type: none"> APZ is not located on slope exceeding 18 degrees. | |
| 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. | <ul style="list-style-type: none"> Landscaping will be in accordance with Appendix 4 of PBP 2019. | Yes |
| | Fencing is constructed in accordance with Section 7.6 of PBP 2019. | <ul style="list-style-type: none"> Any fencing proposed within the identified APZ will be constructed in accordance with Section 7.6 of PBP 2019. | Yes |



LEGEND

- Site boundary
- Asset protection zone (APZ)
- XXXX Proposed building envelope
- Proposed subdivision concept

0 60 Metres

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Bushfire Hazard Assessment - 35 Gordon Road, Raleigh
4200-1020

Asset Protection Zone - Illustration 3.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: AB Reviewed by: KHP
 Source of base data: Nearmap 25/07/2022
 Date: 20/09/2024
 Revision: A

3.2.2 Access

Due to the relatively short site frontage to the Old Pacific Highway, the proposed subdivision layout only has one intersection / access point onto the Old Pacific Highway. There are no other public roads in the vicinity of the site to enable alternative access to be provided to the proposed subdivision and it is inefficient and uneconomical to provide a second access point in close proximity along the site frontage of the Old Pacific Highway.


Table 3.5 assesses compliance against the acceptable solutions of PBP 2019 relating to access.

Table 3.5 Assessment of Access Compliance with Table 5.3b of PBP 2019

| Performance Criteria | Acceptable Solution | Application | Compliant |
|--|---|--|-----------------|
| <u>Access (General Requirements)</u> Firefighting vehicles are provided with safe, all-weather access to structures. | Property access roads are two-wheel drive, all-weather roads. | The proposed access road will be two-wheel drive, all-weather. | Yes |
| | Perimeter roads are provided for residential subdivisions of three or more allotments. | A perimeter road is not required for large-lot/ rural-residential subdivision. | N/A |
| | Subdivisions of three or more allotments have more than one access in and out of the development. | The proposed subdivision layout has a single access road that intersects with the Old Pacific Highway. The site has only limited frontage to the Old Pacific Highway (20m) and no other public road frontage for a secondary access point. | Does not comply |
| | Traffic management devices are constructed to not prohibit access by emergency services vehicles. | No traffic management devices are proposed. | N/A |
| | 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. | Proposed road design will comply with the relevant standards to ensure maximum grades are not exceeded. | Yes |
| | All roads are through roads. | The proposed subdivision layout has a single shared, community title access road which extends 350 m east from the Old Pacific Highway. The road terminates via a turning head, based on the design requirements similar to 'Type D' of A3.3 of PBP 2019 | Does not comply |
| | Dead end roads are not recommended, but if unavoidable, are not more than 200 m in length, incorporate a minimum 12 m outer radius turning circle, | Refer to comment above. | Does not comply |

| Performance Criteria | Acceptable Solution | Application | Compliant |
|--|---|---|-----------|
| | 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. | Kerb and guttering is not required. | N/A |
| | 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. | Access/ egress is not proposed through 'forest' hazard vegetation. The proposed access road follows the southern boundary of the site which borders managed land/ grassland to the south. The coastal swamp forest is located approximately 150 m to the north. | Yes |
| | One way only public access roads are no less than 3.5 m wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression. | No one way public access roads are proposed. | N/A |
| 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. | The proposed road can be constructed to comply with relevant load capacity | Yes |
| 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. | Reticulated water supply is not available to the site. The closest hydrants are located along the Old Pacific Highway, immediately adjacent to the entry into the site. | N/A |
| | Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005. | N/A | N/A |
| | There is suitable access for a Category 1 fire appliances to within four metres of the static water supply where no reticulated supply is available. | Access to the static water supply for each lot can be provided at dwelling construction stage. | Yes |
| <u>Perimeter roads</u> Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing | Are two-way sealed roads. | A perimeter road is not proposed given the nature and scale of the proposal. | N/A |
| | Minimum eight metre 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 | | |

| Performance Criteria | Acceptable Solution | Application | Compliant |
|---|---|---|-----------|
| a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. | at an interval of no greater than 500 m. | | |
| | Curves of roads have a minimum inner radius of six metres. | | |
| | The maximum grade road is 15 degrees and average grade of not more than 10 degrees. | | |
| | The road crossfall does not exceed three degrees. | | |
| | A minimum vertical clearance of four metres 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 5.5 m carriageway width kerb to kerb. | The proposed community title access road within the subdivision can be designed to comply with the requirements for non-perimeter roads. | Yes |
| | 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 500 m. | | |
| | Curves of roads have a minimum inner radius of 6 m. | | |
| | The road crossfall does not exceed three degrees. | | |
| | A minimum vertical clearance of four metres 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. | N/A | Yes |
| | In circumstances where this cannot occur, the following requirements apply: <ul style="list-style-type: none"> – minimum 4m carriageway width; – in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by | Property access roads to individual lots are not proposed as part of the subdivision, but would be provided at the future dwelling DA stage for the respective lots. Notwithstanding this, all of the lots are capable of providing a property | Yes |



| Performance Criteria | Acceptable Solution | Application | Compliant |
|----------------------|--|---|-----------|
| | 2m wide, making a minimum trafficable width of 6m at the passing bay; <ul style="list-style-type: none"> - 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. | access road from the proposed community title road to the nominated building envelope in accordance with the requirements for property access. All lots (except proposed Lots 4 and 5) have direct frontage to the proposed community title road, with the nominated building envelopes being within close proximity to the road. Proposed Lots 4 and 5 have a driveway access handle / right-of-way from the road to the building envelope. The access handles traverse grassland areas to the south and are no greater than 150 m in length. | |

Addressing the Performance Criteria

The performance criteria for areas of access non-compliance with PBP 2019 acceptable solutions is:

Firefighting vehicles are provided with safe, all-weather access to structures.

In order to provide safe, all-weather access for fire fighting vehicles, the subdivision layout has been designed to ensure that:

- proposed community title road traverses along the southern boundary of the site which is adjacent to managed residential land and open grassland, away from the forest vegetation located approximately 150 m to the north.
- Nominated building envelopes are located in close proximity to the proposed community title road. Proposed Lots 4 and 5 have a driveway access handle / right-of-way from the road to the building envelope. The access handles traverse grassland areas to the south and are no greater than 150 m in length. Sufficient room can be provided to allow firefighting appliances to access/ egress each lot, details of which can be provided at the future dwelling DA stage for the respective lots.
- the proposed APZ over each lot creates a managed corridor along the proposed road, thus providing a managed separation between the road and the predominate bushfire hazard vegetation to the north and providing for safe access. Given the separation distance, this exceeds the minimum requirement of PBP 2019 for a radiant heat exposure of 29 kW/m².

The above measures are intended to minimise radiant heat exposure along the road and from the building envelopes to the road. The impact of smoke and embers will also be lessened with greater separation from the bushfire hazard vegetation.

3.2.3 Services – Water, Electricity and Gas

As the site is not serviced by reticulated water supply. A static water supply for fire fighting could be provided at dwelling construction stage.

Existing electricity supply can be made available to the site via adjacent overhead transmission lines. The client intends to nominate the subdivision as being 'off-grid' from external power supply. As per BSC Development Control Plan (2017), developments of this nature can opt to utilise alternative power sources where it can be demonstrated that future dwellings are capable of meeting the reasonable energy demands and that there will be no adverse impacts on the health and safety of occupants. Eliminating exposed power sources (ie. transmission lines) will reduce the risk of fires starting as a result of arcing wires.

Bottled gas is not proposed at this stage and will be assessed at dwelling construction stage for the proposed lot.

Table 3.6 outlines the extent to which the water, electricity and gas services comply with the relevant acceptable solution requirements of Table 5.3c of PBP 2019.

Table 3.6 Assessment of Services Compliance with Table 5.3c of PBP 2019

| Performance Criteria | Acceptable Solution | Application | Compliant |
|--|--|--|-----------|
| Adequate water supplies are provided for firefighting purposes. | Reticulated water is to be provided to the development, where available. | Reticulated water is not available to the site. | N/A |
| | A static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed. | A static water supply can be provided at dwelling construction stage. | Yes |
| | Static water supplies shall comply with Table 5.3d. | A minimum 20,000 litre static water supply would be required for each lot. | Yes |
| Water supplies are located at regular intervals. 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. | N/A | N/A |
| | Hydrants are not located within any road carriageway. | N/A | N/A |
| | Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads. | N/A | N/A |
| Flows and pressure are appropriate. | Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. | N/A | N/A |
| The integrity of the water supply is maintained. | All above-ground water service pipes external to the building are metal, including and up to any taps. | All above-ground water service pipes external to the building will be metal, including and up to any taps. | Yes |

| | | | |
|--|--|---|-----|
| 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. | Existing electrical services are above ground and can be made available to the site. However, as discussed Section 3.2.3 , the proposed development will be 'off-grid' and will comply with BSC requirements to ensure occupant safety is maintained at all times – this will be assessed at dwelling construction stage for each lot. | N/A |
| | Where overhead, electrical transmission lines are proposed as follow: <ul style="list-style-type: none"> lines are installed with short pole spacing (30 m), unless crossing gullies, gorges or riparian areas no part of a tree is closer to a power line than the distance set out in accordance with the specifications in <i>ISSC3 Guideline for Managing Vegetation Near Power Lines</i>. | Refer to above | N/A |
| Location and design of gas services will 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. | Bottled gas is not proposed at this stage and will be assessed at dwelling construction stage for each proposed lot. Bottled gas can be provided in accordance with PBP 2019. | Yes |
| | All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 m and shielded on the hazard side. | If required, all fixed gas cylinders will be kept clear of all flammable materials to a distance of 10 m and shielded on the hazard side. | Yes |
| | Connections to and from gas cylinders are metal. | Connections to and from gas cylinders will be metal. | Yes |
| | Polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used. | No polymer-sheathed flexible gas supply lines will be used. | Yes |
| | Above-ground gas service pipes external to the building are metal, including and up to any outlets. | Above-ground gas service pipes external to the building will be | Yes |

| | | | |
|--|--|---|--|
| | | metal, including and up to any outlets. | |
|--|--|---|--|

3.2.4 Construction Standards

The National Construction Code (NCC) is a performance-based code which comprises the Building Code of Australia (BCA) as Volumes 1 and 2 and the Plumbing Code of Australia as Volume 3. The NCC contains Performance Requirements and Deemed-to-Satisfy provisions relating to the construction of buildings in bushfire prone areas. In NSW, these provisions apply to Class 1, 2 and 3 buildings, Class 4 parts of a building, Class 9 buildings that are Special Fire Protection Purpose, and associated class 10a buildings and decks to minimise their vulnerability to ignition from radiant heat and ember attack. The standard of building construction required to provide bushfire protection is based on the Bushfire Attack Level (BAL). The BAL is used to describe the level of potential bushfire attack on a property (ember attack, radiant heat and direct flame contact) and is based on radiant heat flux exposure thresholds (expressed in kilowatts per metre squared – kW/m²), as described in Table A1.7 of PBP 2019.

BALs are determined in accordance with PBP 2019 - Table A1.12.6 and the corresponding construction requirements are contained in Australian Standard AS3959-2018: 'Construction of Buildings in bushfire prone areas'.

Table 3.7 provides the appropriate calculated BALs based on the indicative building envelopes for proposed Lots 1 - 5 relative to the separation distance from the bushfire hazard (similar setback/ positioning as shown in **Appendix A** and **Illustration 3.1**).

Table 3.7 Calculated Bushfire Attack Levels for Proposed Future Building Envelopes

| Aspect | Vegetation Formation | Effective Slope Category | Separation Distance (m) | BAL |
|------------|--------------------------------|--------------------------|-----------------------------|---------------------------------|
| North | Forest | Upslope/ flat | 20-<29 29-<40 40-<100 | BAL-29 BAL-19 BAL-12.5 |
| East | Exotic Vegetation – Rainforest | Upslope/ flat | 9-<14 14-<20 | BAL-29* BAL-19* |
| South | Grassland | >0°-5° | 11-<16 16-<23 23-<50 | BAL-29 BAL-19 BAL-12.5 |
| South-east | Forest | Upslope/ flat | 20-<29 29-<40 40-<100 | BAL-29* BAL-19* BAL-12.5* |
| West | Managed Land | N/A | N/A | N/A |

*Applies only to proposed Lot 5

The site contains an existing dwelling which will be retained on the residual lot. Section 5.1.3 of PBP 2019 states that *while all new dwellings within a subdivision must comply with PBP 2019, there may be existing dwellings located on the land that would benefit from bushfire protection measures.*

Conditions may therefore be applied to the subdivision consent requiring the existing structure to be upgraded to provide ember protection and water supplies for fire fighting.

Given that the dwelling is located approximately 100 m from the identified hazard, and that there are no changes proposed to the dwelling or adjoining structures, it is recommended that non-combustible gutter and valley leaf guards are to be installed, as the site complies with all other performance criteria and acceptable solutions of PBP 2019. This includes good access to Gordon Road to the west (away from the hazard in the south), the grounds surrounding the dwelling are currently managed as an IPA and there is good access to reticulated and static water supply (pool adjacent to the dwelling).

3.2.5 Specific Objectives of Subdivisions

Table 3.8 demonstrates that the specific objectives for subdivisions will be met by the proposal.

Table 3.8 Specific Objectives for Subdivision Development (Section 5.2 of PBP 2019)

| Specific Objectives | Application | Compliant |
|---|--|-----------|
| Minimise perimeters of the subdivision exposed to the bushfire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided). | <ul style="list-style-type: none"> Each lot and future nominated building envelope can satisfy the performance criteria and acceptable solutions of PBP 2019. The subdivision design and location of the community title road extends away from the identified hazard to the north thus, creating a safe passage for firefighters and residents. | Yes |
| Minimise vegetated corridors that permit the passage of bushfire towards buildings. | <ul style="list-style-type: none"> The proposal does not include any vegetated corridors. | Yes |
| Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests. | <ul style="list-style-type: none"> Although the landform is dominated by rolling low hills with rounded crests and long sideslopes, no ridge-tops or steep slopes are present. | Yes |
| Ensure that APZs between a bushfire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanisms. | <ul style="list-style-type: none"> APZs calculated for site specific slope and vegetation conform with the acceptable solution requirements of PBP 2019. | Yes |
| Ensure the ongoing maintenance of APZs. | <ul style="list-style-type: none"> APZ maintenance would be a requirement for any future development on each of the proposed lots. | Yes |
| Provide adequate access from all properties to the wider road network for residents and emergency services. | <ul style="list-style-type: none"> Access would be provided in accordance with Section 5.3b of PBP 2019 and Section 3.2.2 of this report. | Yes |
| Provide access to hazard vegetation to facilitate bushfire mitigation works and fire suppression. | <ul style="list-style-type: none"> The proposed development would include bushfire protection measures in accordance with Section 5.3 of PBP 2019. APZs allow for sufficient separation between the proposed dwelling and hazardous vegetation which aides in firefighting operations. | Yes |
| Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting. | <ul style="list-style-type: none"> Access and services would all be provided in accordance with Section 5.3.2 and 5.3.3 of PBP 2019. | Yes |



3.2.6 Landscaping

No additional landscaping or fencing is proposed as part of the subdivision. Landscaping and fencing associated with any future dwellings could be designed and maintained in accordance with PBP 2019 Appendix 4 and Section 7.6.



4. Recommendations and Conclusion

4.1 Recommendations

It is recommended that the following bushfire protection measures are applied to the proposed development and be included in the consent for approval:

- The area to the north of each proposed dwelling envelope be managed as an APZ for a minimum distance of 20 m. This APZ can be separated into two distinct zones, a 10 m Inner Protection Area (IPA) and 10 m Outer Protection Area (OPA).
- For proposed Lot 5, a 9 m APZ setback from the eastern boundary is required to offset the hazard contained within adjoining the North Coast Railway corridor and a 20 m APZ to the south to offset the forest vegetation on adjoining land.
- The location of the proposed community title access road along the southern boundary of the site provides a managed, physical separation barrier of approximately 11 m between the building envelopes to the north and grassland hazard to the south. This applies also to the shared driveway access handle / right-of-way servicing proposed Lots 4 and 5.
- Services to be installed in accordance with Section 5.3c of PBP 2019.
- Proposed building envelopes can comply with BAL 12.5 construction standards.
- Non-combustible gutter and valley leaf guards be installed on the existing dwelling on the residual lot.

4.2 Conclusion

This Bushfire Hazard Assessment has taken into consideration the proposed LEP amendment and subdivision concept plans, existing vegetation, effective slope, local bushfire risk conditions and FDI. Adequate and appropriate bushfire protection measures are available, and can be implemented, to facilitate a proposed future community title subdivision on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW. The proposed development meets the aims and objectives for residential and rural residential subdivisions and complies with Section 100B of the *Rural Fires Act 1997*. The proposed LEP amendment and potential future subdivision is acceptable from a bushfire hazard perspective.



References

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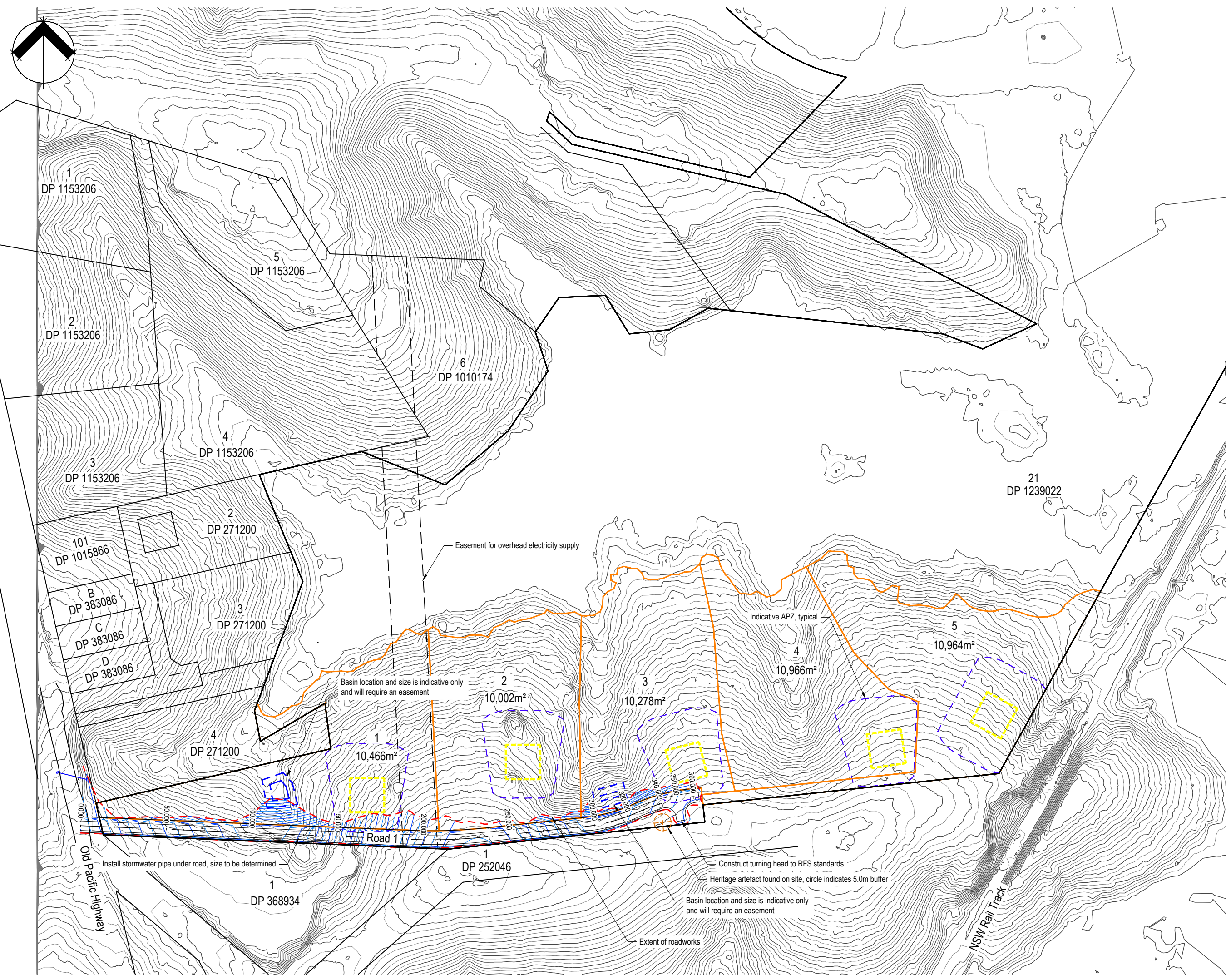
The dimensions, number, size and shape of lots shown on drawings are subject to detailed engineering design, final survey and Council conditions of consent.

Topographic information presented on the drawings is suitable only for the purpose of the document as stated above. No reliance should be placed upon topographic information contained in this report for any purpose other than that stated above.



Appendix A

Concept Subdivision Plan



- Notes:
- Existing and design contours are at 0.5m intervals.
 - Subdivision boundaries are subject to final survey, tree locations and ecological survey.

PRELIMINARY

| Rev. | Description | Date | Des. | App. | Chk. |
|------|-------------|------|------|------|------|
| | | | | | |

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Project Title

Gordon Road Subdivision

Client

Ashley & Tracee Porter

| | | | | | |
|----------|-----|-------|------------|---------|-----|
| Designed | JLC | Drawn | JLC | Checked | |
| Approved | KHP | Date | 19/09/2024 | | KHP |

XREFs

Scale

metres 0 10 20 30 40 50

Drawing Title

Concept Design Layout

Drawing Number

4200/C010

Revision

-



Appendix D

Preliminary Site Investigation (PSI)

Preliminary Site Contamination Investigation

35 Gordon Road, Raleigh NSW



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Certification

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1. Introduction

1.1 Summary of the Planning Proposal

GeoLINK has been engaged to prepare a Phase 1 Preliminary Site Contamination Investigation (this document) to facilitate amendment of the Bellingen Local Environmental Plan 2010 (BLEP 2010) on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW. The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots and common access road under community title provisions, and a residual lot. The subject area that is proposed to have the lot size controls amended for this purpose is already zoned R5 Large Lot Residential.

A Preliminary Site Investigation (PSI) of contaminated land issues is required by the client for 'due-diligence'. The PSI was undertaken to provide information on the potential for contamination at the site and the compatibility of the site for the proposed development from a contaminated land perspective.

For over 20 years, the State Environmental Planning Policy No 55 – Remediation of Land and the Contaminated Land Planning Guidelines have guided planning and development decisions about managing contaminated land in NSW. The content of this state environmental planning policy (SEPP) is now in Chapter 4 of the State Environmental Planning Policy (Resilience and Hazards) 2021.

Ministerial Direction 4.4 – Remediation of Contaminated Land under Section 9.1 of the *Environmental Planning and Assessment Act 1979* includes requirements for considering contamination when preparing an LEP amendment. The objective is to reduce the risk of harm to human health and the environment by ensuring that contamination and remediation are considered by planning proposal authorities.

The NSW Environment Protection Authority also has powers under the *Contaminated Land Management Act 1997* to deal with contamination that is serious enough to justify regulation under this legislation.


The above guidelines ensure that Council is not to give consent to any development on land unless:

- It has considered whether the land is contaminated, and
- If the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
- If the land requires remediation to be made suitable for any purpose for which the development is proposed to be carried out. It is satisfied that the land will be remediated before the land is used for that purpose.

1.2 Scope and Objective

The objectives of this PSI are to determine the likelihood of contamination from past practices, identify the likely nature of any potential contamination, provide recommendations for further sampling if necessary, and potential options for remediation. The tasks involved in undertaking this assessment are to:

- Identify the land use history of the site, with particular attention to any uses that may have led to potential contamination
- Assess the site condition and surrounding environment to determine any visual signs of contamination, sensitive environments or potential 'hot spots'

- 
-
- Where the site assessment indicates that soil sampling and analyses are warranted:
 - Design a soil sampling pattern for the subject site; and
 - Undertake sampling and analyse individual samples for a range of potential contaminants in relation to the environmental and health investigation levels recommended NSW EPA Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme, 3rd Edition (2017) and the NEPC – Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater (1999).

This preliminary assessment report is written in accordance with NSW Environment Protection Guidelines for *Consultants Reporting on Contaminated Land* (2020) and *NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013).

2. Site Identification

2.1 The Site and Locality

The site is described in Real Property terms as Lot 21 DP1239022, 35 Gordon Road Raleigh and is located approximately 3.5 km north-west of the Urunga Central Business District. Gordon Road is approximately 300 m east of the Pacific Highway / Waterfall Way interchange and is accessed via the Old Pacific Highway (refer to **Illustration 1.1**). The Bellinger River is located to the north, with the North Coast rail corridor extending along the eastern boundary of the site.

The site is irregular shaped and consist of an existing residential dwelling and detached shed which is accessed from Gordon Road and is centrally located on an elevated portion of the site (**Plate 2.1**). The area around the dwelling/ to the north and east comprise of flat, open agricultural land (improved pastures) used for cattle grazing (**Plate 2.2**). Large lot rural-residential properties associated with the Gordon Road estate are located to the west. Areas of consolidated coastal wetland forest vegetation is located to the south of the existing dwelling along an area of low-lying land subject to flood inundation with an intermittent watercourse (not mapped) which drains east into a more permanent feature (mapped) as it meanders through the site to the north-west (**Plate 2.3**). The southern portion of the site is elevated, north facing and partially cleared open forest with a managed understory (**Plate 2.4**).

Illustration 1.1 and **1.2** provides an overview of the site locality and analysis of environmental features present onsite.



Plate 2.1 View showing existing residential dwelling (residual lot)



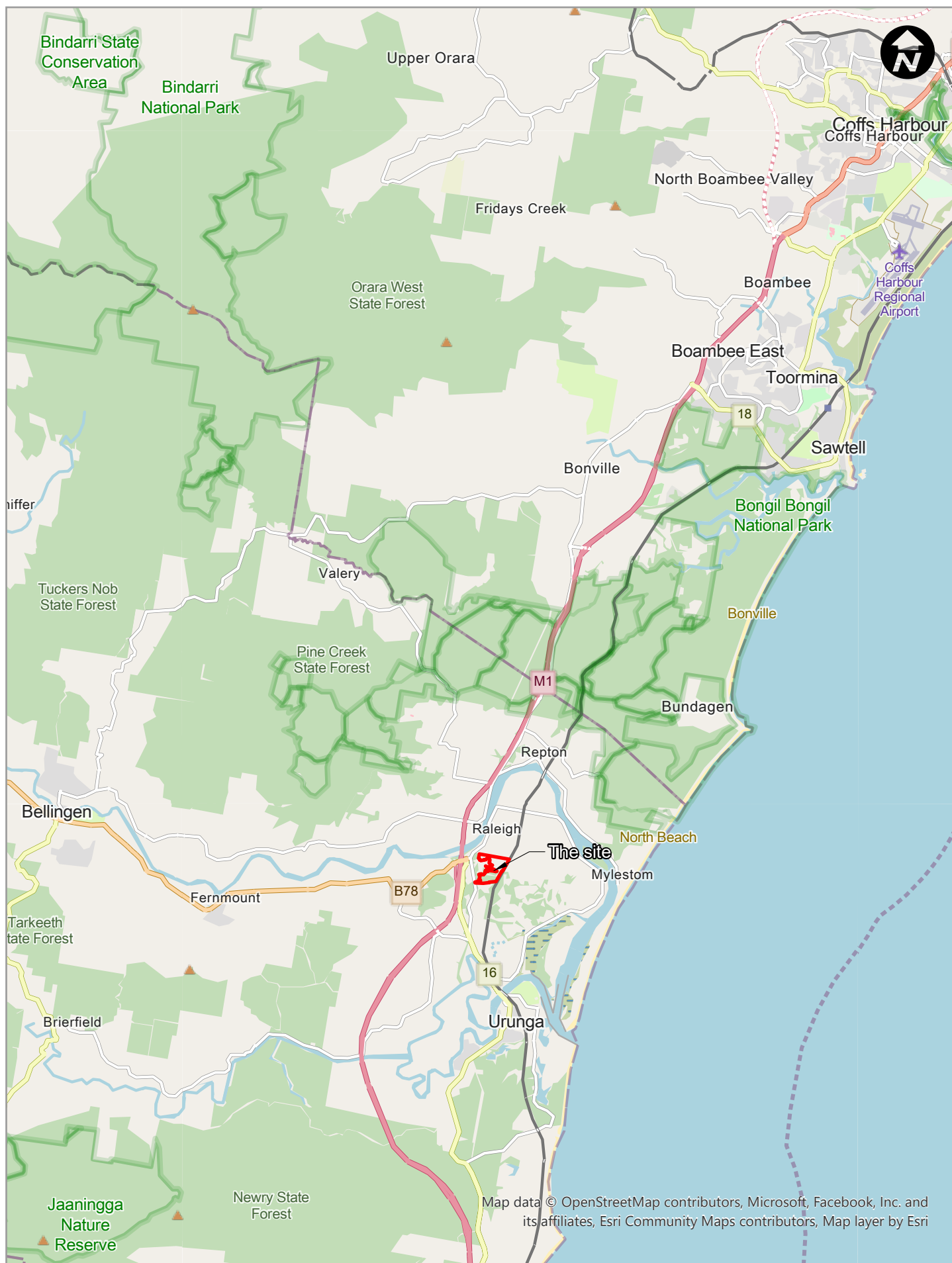
Plate 2.2 View north from dwelling showing extent of agricultural grazing farmland



Plate 2.3 View east showing low-lying drainage/ watercourse traversing through the site



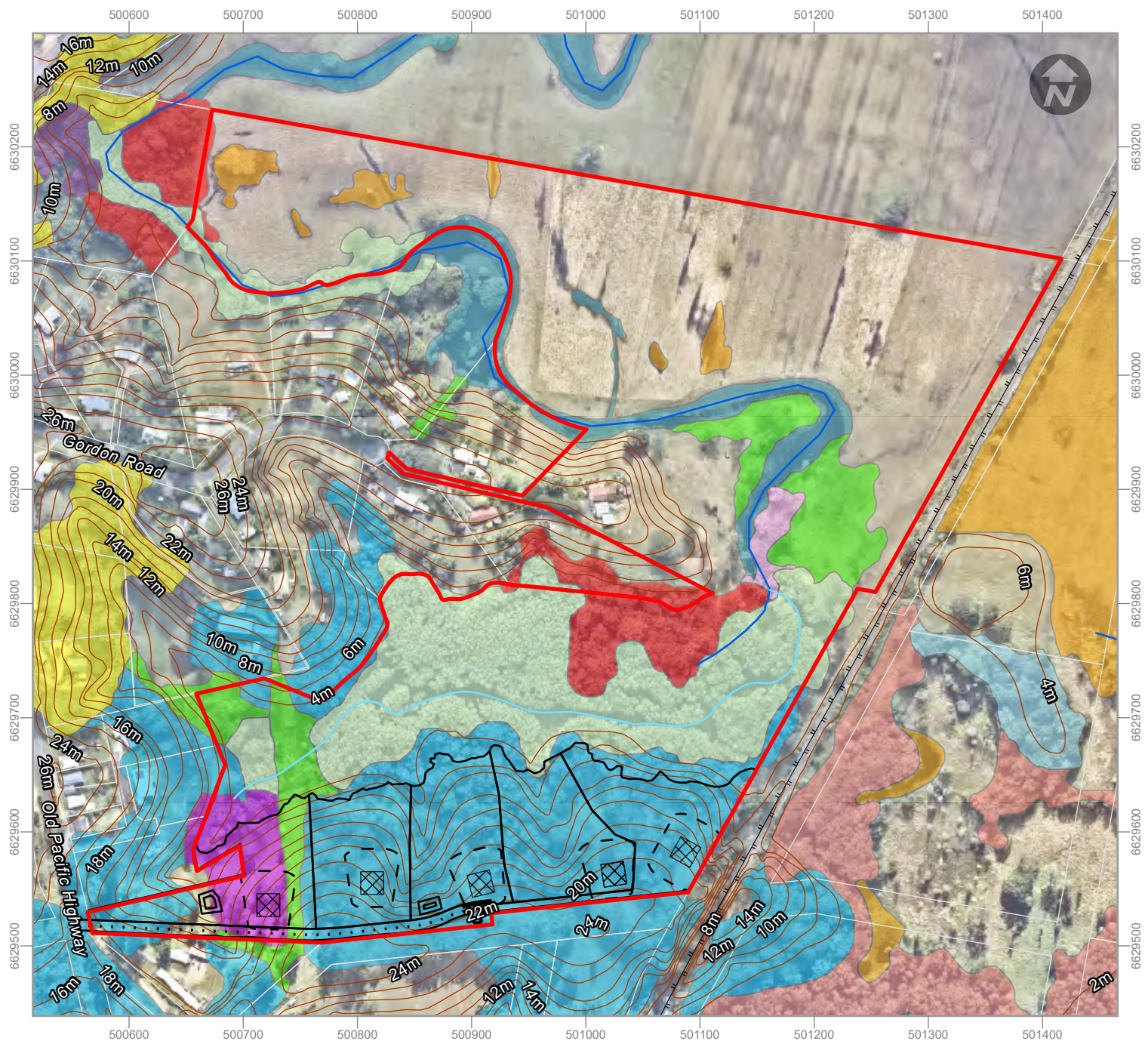
Plate 2.4 View north-west showing the extent of the managed understory of the elevated portion of the open forest



0 2.5 km

Site Locality - Illustration 2.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: RE Reviewed by: KHP
 Source of base data: OpenStreet Map
 Date: 20/09/2024
 Revision: A



LEGEND

- Site boundary
- Cadastre
- Building envelope
- Asset protection zone
- Proposed subdivision concept
- North Coast Railway
- Contours at 2m intervals
- Watercourse
- Indicative location of intermittent watercourse

Bellingen LGA Vegetation Mapping 2013

- Blackbutt - Red Mahogany - Bloodwood dry open forest on infertile sandy soils of low coastal rises and hills, NSW North Coast Bioregion and South Eastern Queensland Bioregion
- Broad-leaved Paperbark - Swamp Oak - Tall Sedge swamp forest on alluvial soils
- Camphor laurel
- Exotic vegetation
- Flooded Gum moist open forest of sheltered lower slopes and gullies
- Knotweed wet meadow forland on alluvial soils of coastal floodplains
- Lagoon forland freshwater wetlands of coastal floodplains
- Native remnant vegetation
- Swamp Mahogany - Willow Bottlebrush - Broad-leaved Paperbark forested wetland
- Swamp Oak Forested Wetland of Estuaries
- Tallowwood - Small-fruited Grey Gum - Forest Oak dry open forest
- Turpentine - Blackbutt - Tallowwood - Forest Oak ferny moist forest of the escarpment ranges of the Mid North Coast

0 100 Metres

Site Analysis - Illustration 2.2



3. Site Characteristics

3.1 Geology

The Geological Survey of NSW Coffs Harbour 1:100,000 Soil Landscape Map and Handbook (Milford, 1999) indicates the site has soils belonging to the Pine Creek Soil Landscape. This is an erosional landscape located on weathered Permian-aged metasediments of the Bellingen Slate unit, consisting of dark micaceous slate, lithofeldspathic sandstone, and minor meta conglomerate.

Subsoils only varied slightly across the site depending on location on the slope. In general, the soils at the site comprised:

- 0-100mm of a very dark brown loam topsoil, with typically <15% quartz gravel, and a earthy structure; overlying
- 200-400mm of a dark brown fine clay loam, with dark brown and pale orange-brown mottles, a moderate blocky structure, and 5-10% coarse fragments; overlying
- 300-500mm of a dark reddish brown to brown light clay, with yellow-brown and brown mottles, a moderate blocky structure, and <5% coarse fragments; overlying

A yellowish brown silty clay, with slight yellow and pale grey mottling, a slightly slaty structure, and 5-20% weathered slate and quartz.

3.2 Topography

The landform is dominated by rolling low hills up to 24 m AHD, that are dominated by narrow rounded crests and long side slopes and foot slopes. Slope gradients are typically between 4-8% within the development footprint.

3.3 Hydrogeology

No permanent watercourses are in close proximity to the Site. The Bellinger River is located approximately 850 m north of the site. The ephemeral drainage line located within the centre of the site (north of the proposed subdivision) is mapped as a potential tributary to the Bellinger River.

A network of small intermittent waterways traverses to the east/ north-east into a more defined waterway. This then extends across the site to the north-west before dispersing further north across the low-lying floodplain of Raleigh. These are best characterised as first order streams. There are also medium sized agricultural dams located to the north of the site.

A search of WaterNSW online groundwater register (<https://realtimedata.waternsw.com.au/>) indicates that there is one groundwater well (GW303035) located greater than 400 m to the north of the site (refer to **Plate 3.1**). Information supplied via the work summary sheet suggest that 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 >15m depth given the water bearing zone details provided.

Based on regional topography and the location of the surface water bodies, it is considered that groundwater flow at the site is likely to be towards the north-east.



Plate 3.1 Location of the registered bore (source: <https://realtimedata.watarnsw.com.au/>)

3.4 Acid Sulfate Soils

According to the Acid Sulfate Soils Map within the Bellingen Local Environmental Plan (2010), the site is mapped as being subject to Class 5 Acid Sulfate Soils (ASS). This indicates that the site is within 500 m of actual/ potential acid sulphate soils which occur to the north. The presence of acid sulfate soils is generally limited to elevations of less than 10 m AHD. Further assessment of acid sulfate soils or potential acid soils is considered not warranted.

3.5 Flood Characteristics

The lower northern portion of the Site is mapped as being within the 'Flood Planning Area' and 'Probable Maximum Flood' levels as per BSC online Floodplain Risk Management Study Mapping (refer to **Plate 3.2**).

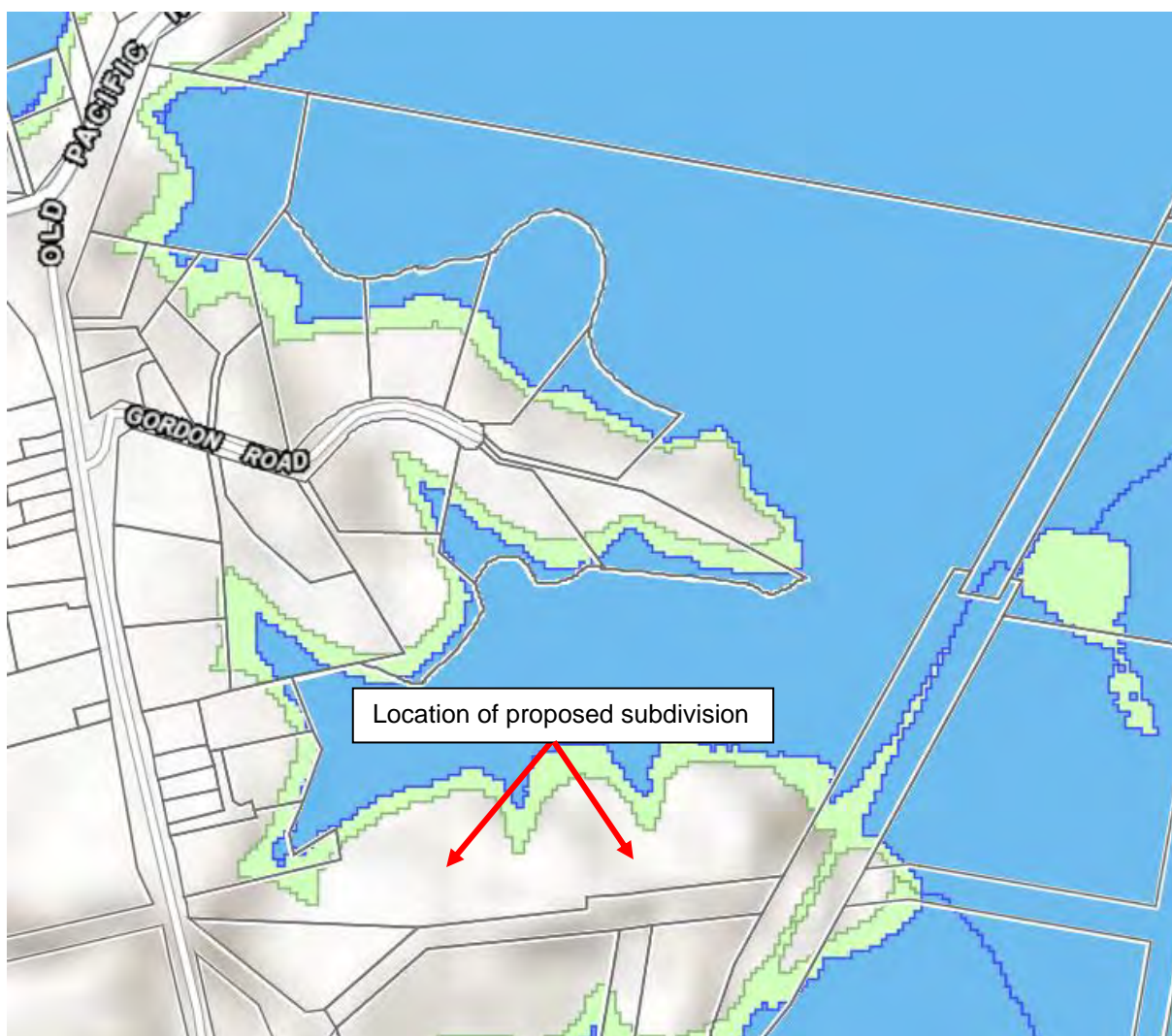


Plate 3.2 BSC online flood planning map showing extent of flood prone areas throughout the site – location of proposed subdivision not subject to flood inundation

4. Site History

A review of the site history was undertaken to determine whether current or past activities may have contributed to contamination of the site. The site history was obtained by:

- A review of a selection of historical aerial photographs (requested from NSW Financial Services & Innovation; Spatial Services division), NSW Land and Property Information 'SIX Maps' and Google Earth satellite images.
- A search of NSW Office of Environment and Heritage (OEH) records for contaminated sites (refer to **Appendix A**)
- A search of Department of Primary Industries (DPI) records of cattle dip sites (refer to **Appendix B**).

There were no previous contamination assessments (relating to the subject site) made available to GeoLINK for review at the time of preparing this report.

4.1 Aerial Photography

A review of a selection of historical aerial photographs was undertaken and included checking the NSW Land and Property Information 'SIX Maps' and Google Earth historical images. A description of the observed changes in the study area images is provided in **Table 4.1**.

No significant changes within the development footprint were observed other than vegetation disturbance which varied from 1979 through to 2012. Significant changes to the north of the site occurred in the form of residential development (Gordon Road estate) from early 2000's and infill development to the west (off the Old Pacific Highway) during late 2010's. The historical aerial photography review indicates a potential for the following land contaminating activities to have occurred on within the proposed subdivision footprint:

- moderate-scale agricultural activities – livestock grazing.

Further assessment of these potential land contaminating activities is considered warranted as undertaken below.

Table 4.1 Historical Land Uses

| Year | Image Source | Observations |
|------|---|---|
| 1974 | Aerial Photo (NSW Financial Services & Innovation; Spatial Services division) (refer Figure 4.1 to 4.3) | Historical imagery taken from 1974 which shows the extent of vegetation cover across the site. It is evident that large portions of the site were previously cleared and being managed as part of the wider use of the site (improved pastures/ grazing to the north on the lower floodplains of the Bellinger River). The subject site consisted of open forest, concentrated within the empirical drainage lines/ gullies |
| 1979 | | Imagery shows further vegetation disturbance in the development footprint. To the north, an internal access road and house pad can be seen. |
| 1984 | | The subject site remains largely undisturbed within the subdivision footprint other than further vegetation removal. To the north, a residential dwelling (current residence) has been constructed along with internal single gravel track which traverses through the site. Residential dwellings are present further to the west. |

| Year | Image Source | Observations |
|-----------|---|---|
| 2004-2020 | Google Earth imagery (refer to Figure 4.4 and 4.5) | <p>Significant changes to the north of the proposed subdivision footprint occurred in the form of residential development (Gordon Road estate) from early 2000's and infill development to the west (off the Old Pacific Highway) during late 2010's.</p> <p>The Sitefootprint continued to show no significant signs of disturbance other than re-growth/ weed infestation in previously cleared areas of the site. Discussions with the current landowners had identified that the site had not been adequately managed or grazed from 1990 through to 2011 (approximate timeframe). During this time, the groundcover and mid-story of the site had been extensively overcome by invasive species/ noxious weeds and some native saplings which is evident on the satellite imagery from 2011. In addition, the landowners had stated that after significant flood events during mid 2000's, emphasis was placed on reinstating the subject area to allow for cattle grazing to occur.</p> |



Plate 4.1 Aerial Image of site in 1974 (red polygon represents approximate boundary of the development site)



Plate 4.2 Aerial Image of site in 1979 (red polygon represents approximate boundary of the development site)




Plate 4.3 Aerial Image of site in 1984 (red polygon represents approximate boundary of the development site)



Plate 4.4 Aerial Image of site in 2004 (red polygon represents approximate boundary of the development site)



Plate 4.5 Aerial Image of site in 2020 (red polygon represents approximate boundary of the development site)



The historical aerial photography review indicates a potential for the following land contaminating activities to have occurred on within the proposed subdivision footprint:

- minor-scale agricultural activities – livestock grazing. It is noted that there was no evidence of cropping activities from the aerial photographs.

Further assessment of this potential land contaminating activity is warranted as undertaken below.

4.2 Regulatory Authorities

4.2.1 Department of the Environment and Energy National Pollutant Inventory

A search of the Department of the Environment and Energy National Pollutant Inventory revealed no known sources of emissions of relevant toxic substances in proximity to the site.

4.2.1 NSW Environment Protection Authority

A search of the NSW Office of Environment and Heritage records revealed that no notices under the Environmentally Hazardous Chemicals Act (1985) and the Contaminated Land Management Act (maintained under Section 308 of the Protection of the Environment Operations Act 1997) have been issued within the study area or on land adjacent to the study area (refer to **Appendix A**). A former registered antimony process plant south is located approximately 4.5 km south of the site (south of the Urunga township).

4.2.2 NSW Department of Primary Industries

A search of the NSW Department of Primary Industries Cattle Dip Site Locator did not identify any historic cattle dip sites within or adjacent to the site (**Appendix B**).

4.3 Previous Contamination Assessment


There were no previous contamination assessments made available to GeoLINK for review at the time of preparing this report relating to the subject site.

4.4 Previous Contamination Assessment

Based on the desk-top site history assessment, the subject property is likely to have been used for moderate scale agriculture. Minor potential for residue contaminants associated with past agricultural practices are possible within the proposed development footprint. On this basis, the primary activities of environmental concern and associated chemicals of potential concern (COPC) are associated with agricultural activities on the land as listed in Table 4.2.

Table 4.2 Chemicals of Concern

| Potential for Contamination | Chemical of Concern |
|--|---|
| Fuel leakage or spills | Hydrocarbons and metals (e.g. lead). |
| Cattle grazing activities, including the potential use of pesticides and fertilisers | Pesticides (organo-chlorines and organophosphorus pesticide). |



Industrial/ Agricultural chemicals that present a potential contamination risk are those commonly used in the 1940s to 1980s and may have been used within the subject property. These include pesticides, fungicides, herbicides, and fertilisers that contain toxic contaminants such as arsenic pentoxide, lead arsenate, cadmium, mercury organo-chlorines, Dichlorodiphenyltrichloroethane (DDT), dieldrin and organo-phosphates (Schedule 1, NRRC, 2007). Heavy metals from paints, especially lead also have a risk of contamination due to its prevalent use historically.

Some of the potential pollutants persist in the soil while others break down over time. Due to the soil type and geology of the subject site, it is considered that most agricultural chemicals, are likely to be concentrated within the first 150 mm of soil (NSW EPA, 1997). Such pollutants have the potential to be transported off-site with soil during surface flow events. Due to the historical land use at the property, the likelihood of land contamination within the site via the agricultural land use is considered to be low.



5. Site Investigation

5.1 Site inspection

A comprehensive site inspection was undertaken on 15 November 2023, focusing on the proposed subdivision footprint. The purpose of the site inspection was to make observations of the site and adjacent land uses to determine its potential for land contamination from previous land uses and practices. Soil sampling was also conducted on-site (refer to **Section 6**).

5.2 Waste

No significant amounts of waste were identified during the site inspection other than small piles of green waste. No evidence of former structures were identified onsite (building pad, materials etc.) thus supporting the historical imagery observations in Section 4.1.

5.3 Fill

There was no visual evidence to suggest the presence of potential filling material on the site based on the detailed site inspection.

5.4 Asbestos

No visible asbestos in surface soils should be present for residential and open space land use, and both the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) and Workplace Health and Safety (WHS) regulations require removal of visible asbestos prior to any work activities that may disturb it.

There was no visual evidence of potential asbestos containing materials observed on the surface of the site. Therefore, a hazardous building material survey is not required to be undertaken.

5.5 Phytotoxicity

There was no visual evidence of phytotoxic impact (i.e. plant stress or dieback) observed on the site. Vegetation on adjoining properties also appeared healthy.

5.6 Odours and Staining

There was no evidence of odours or staining detected on the site.

5.7 Incidence and Complaints

There was no anecdotal information provided to suggest any incidents had occurred at the site or complaints had been made about the site.



5.8 Adjacent Land Uses

Current land use activities observed adjacent to the site did not suggest a significant potential for off-site land use activities to be affecting the site (in the context of contamination). On this basis, further assessment of potential off-site sources of contamination is not considered warranted.



6. Conceptual Site Model and Potential for Contamination

A Conceptual Site Model (CSM) is a qualitative description of the mechanisms by which potential and/or complete exposure pathways exist between known or potential sources of property impacts, and human or environmental receptors.

In order for a human receptor to be exposed to a chemical contaminant derived from the site, a complete exposure pathway must exist. An exposure pathway describes the course a chemical or physical agent takes from the source to the exposed individual and generally includes the following elements:

- A source and mechanism of chemical release.
- A retention or transport medium (or media where chemicals are transferred between media).
- A point of potential human contact with the contaminated media.
- An exposure route (e.g. ingestion, dermal absorption, inhalation) at the point of exposure.

Where one or more of the above elements is missing, the exposure pathway is considered to be incomplete and there is therefore no direct risk to the receptors. Where this is identified, the exposure pathway does not warrant further assessment. Where a plausible linkage may exist or has the potential to exist, the exposure pathway may be considered further, for example by sampling and a qualitative or quantitative risk assessment.

Based on the site inspection and the information attained and reviewed during this PSI, the following elements of the preliminary CSM have been developed.

6.1 Potential migration and exposure pathways

Identified potential transport mechanisms at the site for the nominated COPCs include:

- Direct run-off of COPCs via surface water into adjoining intermittent drainage channels.
- Vertical seepage of COPCs into the underlying soils and into the local groundwater system.
- Migration of COPCs through groundwater flow.

Potential exposure pathways associated with the sources and COPCs identified are as follows:

- Incidental ingestion of soils and/ or groundwater during any form of ground penetrating works or groundwater abstraction.
- Incidental ingestion and dermal contact with surface water on the site.
- Inhalation of dust derived from soil at the site.
- Inhalation of vapours on the site during surface and/or intrusive construction works (future maintenance works).
- Dermal contact with impacted soils, materials and/ or groundwater.

6.2 Potential Receptors

The nearest sensitive human receptors identified at the site comprise:

- Current occupants/ tenants of the site.
- Adjoining residential land users/ occupants.
- Future land users.

6.3 Source-pathway-receptor linkage

Potentially complete linkages between the identified sources, migration and exposure pathways for the identified COPCs, and potential receptors are summarised below in **Table 6.1**

Table 6.1 Potentially complete source-pathway-receptor linkages

| Chemicals of Potential Concern (COPCs) | Exposure Pathways | Receptors |
|--|--|--|
| Herbicides and Agricultural Products | | |
| OCPs, OPPs, Arsenic | <ul style="list-style-type: none"> - Incidental ingestion and dermal contact with surface and subsurface soil at the Site - Inhalation of dust derived from soil at the site - Incidental ingestion and dermal contact with surface water at the Site, and discharging from the Site | <ul style="list-style-type: none"> - Current occupants/visitors to the Site - Maintenance workers (intrusive and non-intrusive activities) - Adjoining residential land users/occupants |
| Use of Domestic Quantities of Chemicals, Oils and Fuels On Site | | |
| Hydrocarbons (BTEX, TPH, PAHs), Lead | <ul style="list-style-type: none"> - Incidental ingestion and dermal contact with surface and subsurface soil at the Site - Inhalation of volatile CoCs derived from soil at the Site - Incidental ingestion and dermal contact with surface water at the Site, and discharging from the Site | <ul style="list-style-type: none"> - Current occupants/visitors to the Site - Maintenance workers (intrusive and non-intrusive activities) - Adjoining residential land users/occupants |

7. Soil Sampling

Soil sampling was conducted at the Site on 15 November 2023 to assess the presence of chemicals of potential concern as listed previously. Samples were taken across the proposed subdivision development footprint. The following sampling, analysis and data quality objectives have been adopted in order to:

- Confirm the soils on the subject site do not pose a risk to human health or the environment.
- Employ quality assurance when sampling, assessing and during evaluation of the soils.
- Ensure that decontamination techniques are applied during the sampling procedure and that no cross contamination of samples occurs.

7.1 Sampling Methodology

7.1.1 Sampling Locations

In accordance with NSW EPA Guidelines (1995), a combination of systematic and judgemental sampling protocols were used to determine whether any residue contaminants or 'hot spots' are present across the proposed subdivision development footprint. This included representative samples within/ adjacent to the nominated building envelopes and topographical features such as gully's where contaminants may have settled. The maximum number of discrete samples that are allowed is four (NEPC 2013). Therefore, a total of 12 individual sub-samples were collected across the site and composited into three as shown in **Illustration 7.1**.

7.1.2 Sampling Method

Upper soil profile samples were collected using a mortised auger (refer to **Plate 7.1**). Samples were taken from the top 300 mm at each of the three composite sampling locations. The samples were placed in sample bags, sealed and immediately stored in a chilled esky. The sampling procedure utilised in this investigation was in accordance with AS 4482.1 – 2005.



Plate 7.1 Samples were collected using a motorised auger and were taken from the top 300 mm at each sampling locations

7.2 Analysis of Samples

The soil samples were analysed for the following contaminants of concern:

- Heavy metals.
- Pesticides (organo-chlorines and organo-phosphates).

7.3 Quality Assurance


All sampling was undertaken using the same quality assurance methodology. Prior to the site inspection, the equipment was thoroughly washed and decontaminated. To ensure there was no cross-contamination during the sampling procedure, the equipment was washed before each soil sample was taken. A chain of custody form, which identified the sample identification code, the collection date and the type of analysis to be undertaken, was completed and despatched with the samples (attached in **Appendix C**).

All samples were sealed and placed in a chilled esky for delivery to the laboratory.

The data validation process is used to assess the representativeness of analytical results and the effects of the sampling program on data quality. The quality assurance and quality control (QA/QC) methods adopted are based on requirements of Standards Australia and NEPM procedures. Data quality is typically discussed in terms of Precision, Accuracy, Representativeness, Comparability and Completeness. These are referred to as the PARCC parameters. A summary of the conformance of the sampling program is summarised in **Table 7.1**.

Table 7.1 Summary of QAQC Conformance

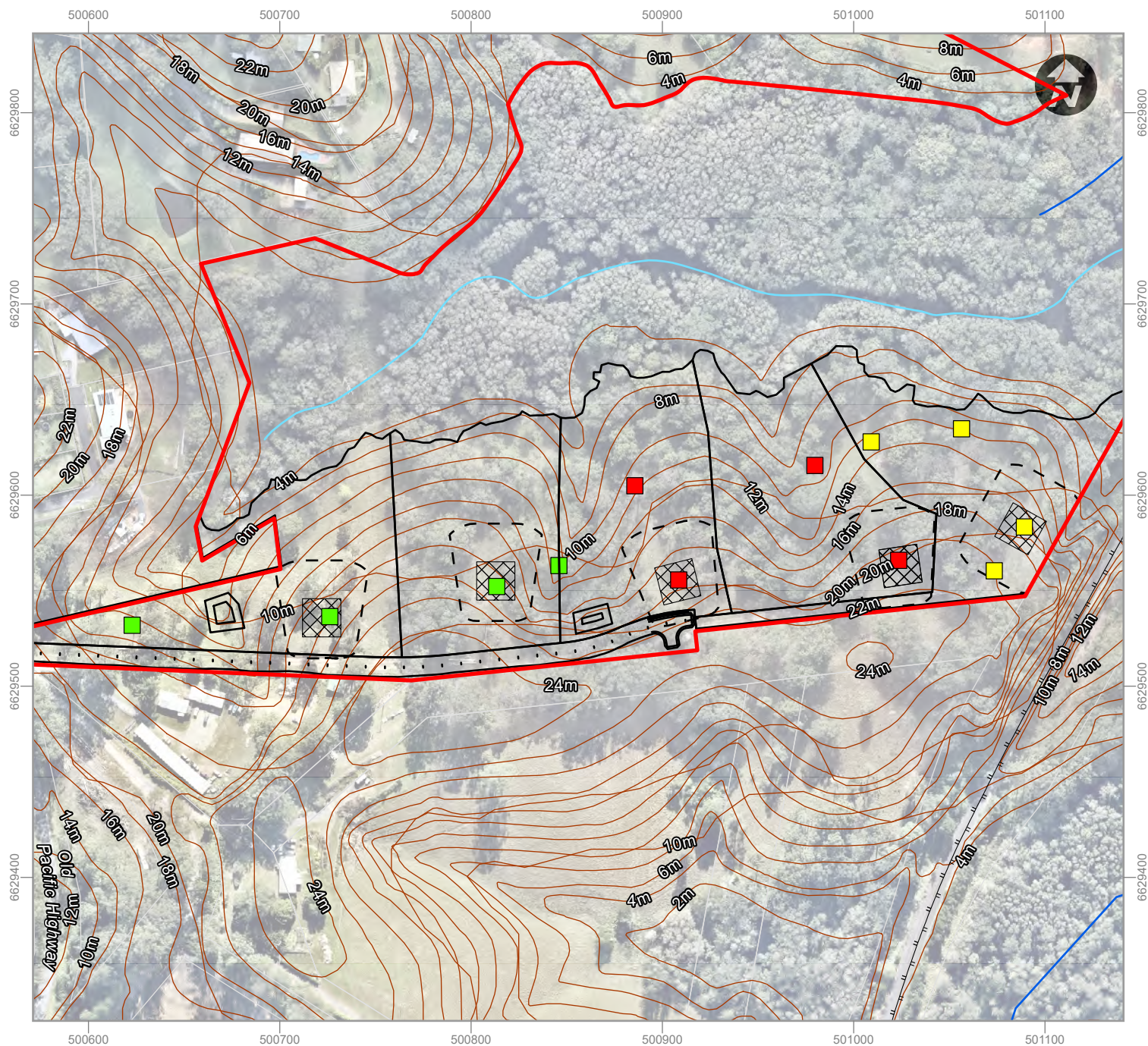
| Data Quality Indicator | Within Compliance | Comments |
|--|-------------------|---|
| Accuracy | | |
| Laboratory control spike sample recoveries reported within prescribed limits | Yes | Primary laboratory control spike sample concentrations were within laboratory's acceptable limits. |
| Matrix spike sample results reported within prescribed limits | Yes | Matrix spike sample concentrations were within the laboratory's acceptance limits. |
| Surrogate spike sample results reported within prescribed limits | N/A | Surrogate spikes are not part of the method/report for TRH and Lead. |
| Laboratory method blanks reported within prescribed limits | Yes | Laboratory method blanks were reported within the prescribed limits as set by the laboratory. |
| All analyses NATA Accredited | Yes | All analysis was undertaken by a NATA accredited laboratory. |
| Representativeness | | |
| Samples delivered to laboratory within sample holding times, chilled and with correct preservative | Yes | All samples were delivered to the laboratory chilled and with the correct preservative, and all samples were extracted and analysed within the correct holding times. |



| Data Quality Indicator | Within Compliance | Comments |
|--|-------------------|---|
| Sample blanks reported results below detection limits | N/A | Rinsate samples were not taken. Reusable equipment was thoroughly decontaminated using 'Decon 90' and rinsed between each sample. Cross-contamination of samples is therefore considered unlikely to have impacted the validity of the sampling and assessment process (as per AS4482.1 (2005). |
| Samples collected in accordance with regulatory procedures | Yes | Refer to the Methodology section of this report. |
| Same standard operation procedures (SOPs) applied during each sampling event | Yes | The same sampling procedures were applied to each sampling event. |
| LORs below the adopted assessment criteria | Yes | Laboratory LORs were not reported above the adopted assessment criteria in all samples analysed. |
| Qualified sampler | Yes | Samples collected by personnel with appropriate qualifications in environmental science or similar. |
| Same type of sample preservation and analysis techniques | Yes | The same type of sample preservation and analysis technique was adopted for all samples. |
| Completeness | | |
| All laboratory data reviewed and presented in this report (i.e. COCs, SRNs, COAs and QCRs) | Yes | All laboratory data represented in this report has been reviewed and provided. |
| All sample results reported | Yes | Refer to Appendices at the end of this report. |
| All laboratory QA/ QC data reviewed | Yes | Refer to Appendices at the end of this report. |
| Relative percent differences (RPDs) calculated | Yes | Refer to Appendices at the end of this report. |
| Samples analysed using NATA accredited methods | Yes | All laboratory analysis was undertaken by a laboratory accredited by NATA for the proposed analysis. |

7.4 Sampling Results

The analysis results are contained in **Appendix D**. The results are discussed in the following section.



LEGEND

- Site boundary
- Cadastre
- Building envelope
- Asset protection zone
- Proposed subdivision concept
- North Coast Railway
- Contours at 2m intervals
- Watercourse
- Indicative location of intermittent watercourse
- Composite sample 1
- Composite sample 2
- Composite sample 3

0 60 Metres

Sampling Locations - Illustration 7.1

8. Assessment

The laboratory results have been assessed against relevant guideline criteria to determine the following:

- Potential risks to public health and the environment associated with any disturbance of contaminated soils.
- The need for further investigation and evaluation if necessary.
- Any potential remediation measures that may be required.

8.1 Assessment Criteria


The objective of this assessment is to determine if contamination is present at levels that pose an unacceptable risk to human health and the environment. The acceptable limits of the parameters tested are based on the NSW EPA *Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme (3rd edition (2017))* and the National Environment Protection Council (NEPC) 1999 – *Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater* (amended 2013) ('the guidelines').

Table 1A(1) of the guidelines presents Health Investigation Levels for soil contaminants (HILs). HILs are scientifically based, generic assessment criteria designed to be used in the first stage (Tier 1 or 'screening') of an assessment of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on a reasonable worst-case scenario for specific land-use settings.

Health-based criteria adopted for this investigation are taken from the guidelines and are presented in Error! Reference source not found..

Table 8.1 Adopted health-based criteria for contamination assessment

| Analyte | Criteria |
|--|----------|
| Health-based investigation level (mg/ kg) for Residential with gardens and accessible soil (home-grown produce contributing < 10 % fruit and vegetable intake; no poultry), including children's day-care centres, preschools, primary schools, townhouses, villas | |
| Arsenic | 100 |
| Cadmium | 20 |
| Chromium (VI) | 100 |
| Copper | 7,000 |
| Lead | 300 |
| Manganese | 3,800 |
| Nickel | 400 |
| Zinc | 7,400 |
| Mercury (inorganic) | 200 |
| Beryllium | 70 |



| Analyte | Criteria |
|--|----------|
| Boron | 5,000 |
| Cobalt | 100 |
| Selenium | 200 |
| Chlorpyrifos | 170 |
| Organo-chlorines (Aldrin and dieldrin) | 7 |
| Organo-phosphates (DDT, DDD, DDE) | 260 |

Source: Table 1A(1) and Table 1A(3) of National Environment Protection Council (NEPC) 1999 – Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater (amended 2013).

8.2 Interpretation of Sampling Results

Analysis results are summarised in **Table 8.2** and can be viewed in full in **Appendix D**. The soil sample results do not exceed any of the relevant health-based or ecological-based investigation level criteria.


8.3 Implications for the Potential Development of the Site

The soil contaminant levels reported from within the proposed subdivision footprint are considered unlikely to pose a significant risk to human health or the environment.

It is considered that the soil contaminant levels reported are not prohibitive to the proposed development (i.e. subdivision of land for large lot residential).

Table 8.2 Soil Sample Results (mg/ kg)

| Analyte | Sample 1 | Sample 2 | Sample 3 | 'Residential A' Guideline Limit |
|-----------------------|----------|----------|----------|---------------------------------|
| Moisture % | 19.5 | 21.4 | 23.2 | - |
| Silver (mg/ kg DW) | <1 | <1 | <1 | - |
| Arsenic (mg/ kg DW) | 4.72 | 6.87 | 6.78 | 100 |
| Lead (mg/ kg DW) | 9.92 | 12.3 | 16.5 | 300 |
| Cadmium (mg/ kg DW) | <0.5 | <0.5 | <0.5 | 20 |
| Chromium (mg/ kg DW) | 16.2 | 17.8 | 20.4 | 100 |
| Copper (mg/ kg DW) | 10.8 | 15.5 | 25.1 | 7,000 |
| Manganese (mg/ kg DW) | 178 | 252 | 615 | 3,800 |
| Nickel (mg/ kg DW) | 3.21 | 6.71 | 8.59 | 400 |
| Selenium (mg/ kg DW) | <1 | <1 | <1 | - |
| Zinc (mg/ kg DW) | 9.56 | 21.8 | 25.9 | 7,400 |
| Mercury (mg/ kg DW) | <0.10 | <0.10 | <0.10 | 200 |



| Analyte | Sample 1 | Sample 2 | Sample 3 | 'Residential A' Guideline Limit |
|-----------------------|----------|----------|----------|---------------------------------|
| Iron (% DW) | 2.14 | 2.52 | 2.60 | - |
| Aluminium (% DW) | 1.31 | 1.49 | 1.72 | - |
| Beryllium (mg/ kg DW) | <1 | <1 | <1 | 70 |
| Boron (mg/ kg DW) | 2.53 | 1.64 | 2.27 | 5,000 |
| Cobalt (mg/ kg DW) | <1 | 1.11 | 1.97 | 100 |

Pesticide Analysis Screen

| | | | | |
|---|------|------|------|-----|
| DDT+DDE+DDD (mg/ kg) | <0.1 | <0.1 | <0.1 | 260 |
| Aldrin + Dieldrin (mg/ kg) | <0.1 | <0.1 | <0.1 | 7 |
| Chlordane (mg/ kg) | <0.1 | <0.1 | <0.1 | 50 |
| Endosulfan (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Endrin (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Heptachlor (mg/ kg) | <0.1 | <0.1 | <0.1 | 7 |
| HCB (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Methoxychlor (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Other Organochlorine Pesticides (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Chlorpyrifos (mg/ kg) | <0.1 | <0.1 | <0.1 | - |
| Other Organophosphate Pesticides (mg/ kg) | <0.1 | <0.1 | <0.1 | - |



9. Conclusion and Recommendations

Based on a review of the available desktop data, observations made during the site inspection and sampling and laboratory testing results, it is determined that the soil within the proposed concept subdivision development footprint is not subject to contamination by previous land uses and practices. It is considered that the soil contamination status reported is not prohibitive to the proposed LEP amendment and future large lot residential development. Therefore, no further investigation (detailed site assessment) is required.



References

- Morand, D. T. (2001) *Erosional Landscape Coffs Harbour 1:100,000 Soil Landscape Map and Handbook*. NSW Department of Land and Water Conservation
- NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.
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The dimensions, number, size and shape of lots shown on drawings are subject to detailed engineering design, final survey and Council conditions of consent.

Topographic information presented on the drawings is suitable only for the purpose of the document as stated above. No reliance should be placed upon topographic information contained in this report for any purpose other than that stated above.



Appendix A

NSW Office of Environment and Heritage Register

[Home](#) [Public registers](#) [Contaminated land record of notices](#)

Search results

Your search for:LGA: BELLINGEN SHIRE COUNCIL

Matched 9 notices relating to 1 site.

[Search Again](#)

[Refine Search](#)

| Suburb | Address | Site Name | Notices related to this site |
|--------|----------------|---|------------------------------|
| URUNGA | Hillside DRIVE | Former Antimony Process plant | 9 current |

Page 1 of 1

8 February 2024

For business and industry ^

For local government ^

Contact us

131 555 (tel:131555)

Online (<https://www.epa.nsw.gov.au/about-us/contact-us/feedback>)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (<https://www.epa.nsw.gov.au/about-us/contact-us/locations>)

[Accessibility \(https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index\)](https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)

[Disclaimer \(https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/disclaimer\)](https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/disclaimer)

[Privacy \(https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/privacy\)](https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/privacy)

[Copyright \(https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/copyright\)](https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/copyright)


in
([https://au.li](https://au.linkedin.com/company/epa-nsw))
environmer
protection-
authori-
ty-
([https://www](https://www.epa.gov.au))


Find us on
twitter
([https://twitter](https://twitter.com/epa_nsw))



Appendix B

Department of Primary Industries – Cattle Dip



Cattle dip site locator

This search retrieved 0 dip sites.

For more information about each dip site, click on the name below.

Dip name

Road

Town/Locality

Council

Find dip sites

Dip name

Road

Town/Locality

Raleigh

Council

---select all---



Search

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Industry& Investment NSW or the user's independent adviser.



Appendix C

Chain of Custody



Southern Cross University
PO Box 157 Lismore NSW 2480
P: +61 2 6620 3678
E: eal@scu.edu.au
www.scu.edu.au/eal
ABN: 41 995 651 524

Sample Receipt Notification (SRN)

Project: **EAL/P7687**
Customer: **Geolink - Coffs Harbour**
Contact: **Kale Hardie Porter**
Client Job ID: **4200**
No. of Samples: **3 x Soil**
Date Received: **17 NOV 2023**
Comments: **Standard Request**

Billers: **Geolink - Coffs Harbour - Accounts Payable Annika Korsgaard**

| | | Test Request | |
|----------------|------------------|--------------------|---------------------------------|
| | | ADMIN | SS-PACK-005 |
| Sample Text ID | Client Sample ID | Admin Batch Charge | Contaminated Site Assessment 1a |
| P7687/001 | Comp SP 1 | 1 | 1 |
| P7687/002 | Comp SP 2 | 0 | 1 |
| P7687/003 | Comp SP 3 | 0 | 1 |
| Total | | 1 | 3 |



Sample Receipt Notification (SRN) for EAL/P7687

Page 2 of 2

Test Descriptions

| Test List Item | Item Description |
|----------------|---|
| ADMIN | Admin Batch Charge Charge per batch to cover batch handling / reporting. |
| SS-PACK-005 | Contaminated Site Assessment 1a Dry and Grind Basic Texture Metals (Cu, Pb, Cd, Zn, As, Se, Fe, Mn, Ag, Cr, Ni, Al, Hg, B, Co, Be) SUB Pesticides (OPs, OCs) |



PO Box 157 (Military Road)
LISMORE NSW 2480
T: 02 6620 3678 E: eal@scu.edu.au W: www.scu.edu.au

Sample Submission Form (SSF) - Chain of Custody (COC)

Submitting Client Details

Quote Id: **EAL06979**
Job Ref: **4200**
Company: **Geolink**
Contact: **Kate Hardie-Porter**
Phone:
Mobile: **0411579168**
Email: **khardieporter@geolink.net.au**
Postal address:

Billing Client Details

☒ Tick if same as submitting details
ABN:
Company:
Contact:
Phone:
Mobile:
Email:
Postal address:

Payment Method:

- ☐ Purchase Order
☐ Cheque
☐ Credit/Debit Card (EAL staff will call/then dispose of details)
☐ Invoice (prior approval)

Relinquished: **KTH**

Received: **PM**

Time/Date: **16/11/23**

Time/Date: **17/11 8:08am**

Preservation:

none (freezer bricks) ice - acidified - filtered - other

Condition on receipt:

ambient (cool - frozen - other)

Please note compositing or mixing of samples MUST be written on the Sample Submission Form. Otherwise, each sample listed will be analysed and charged separately.

In submitting samples, the Client agrees to the EAL Laboratory Services Terms and Conditions. These Terms and Conditions are available on the EAL website: scu.edu.au/eal, or on request.

Comments:

Likelihood and nature of Hazardous material:

| Lab ID | Sample ID | Sample Depth | Sampling Date | Sampling Time | Sampler | Your Client | Crop ID | Sample Type (e.g. water, leaf, soil) | | | | | | |
|--------|---------------|--------------|---------------|---------------|---------|-------------|---------|---|--|--|--|--|--|--|
| | Comp SP 1,2,3 | | 15/11/23 | | | | | Soil | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |



Appendix D

Laboratory Results

RESULTS OF SOIL ANALYSIS

3 samples supplied by Geolink - Coffs Harbour on 17/11/2023. Lab Job No. P7687.

Samples submitted by Kale Hardie Porter. Your Job: 4200.

PO Box 1446 COFFS HARBOUR NSW 2450

| ANALYTE | METHOD | Sample 1 | Sample 2 | Sample 3 | MAX | RESIDENTIAL A Guideline Limit | | RESIDENTIAL B Guideline Limit | |
|---|------------|-----------|-----------|-----------|--------|-------------------------------|-----------------------|-------------------------------|-----------------------|
| | REFERENCE | Comp SP 1 | Comp SP 2 | Comp SP 3 | LEVELS | Composite - Column A | Individual - Column A | Composite - Column B | Individual - Column B |
| | Job No. | P7687/1 | P7687/2 | P7687/3 | | See note 1a | See note 1a | See note 1b | See note 1b |
| TEXTURE (SAND, CLAY, SILT) | ** inhouse | Silt | Silt | Silt | .. | .. | .. | .. | .. |
| MOISTURE % | ** C | 19.5 | 21.4 | 23.2 | .. | .. | .. | .. | .. |
| SILVER (mg/kg DW) | a | <1.0 | <1.0 | <1.0 | <1 | na | na | na | na |
| ARSENIC (mg/kg DW) | a | 4.72 | 6.87 | 6.78 | 7 | 25 | 100 | 125 | 500 |
| LEAD (mg/kg DW) | a | 9.92 | 12.3 | 16.5 | 17 | 75 | 300 | 300 | 1,200 |
| CADMIUM (mg/kg DW) | a | <0.5 | <0.5 | <0.5 | <0.5 | 5 | 20 | 38 | 150 |
| CHROMIUM (mg/kg DW) | a | 16.2 | 17.8 | 20.4 | 20 | (<25) | (<100) | (<125) | (<500) |
| COPPER (mg/kg DW) | a | 10.8 | 15.5 | 25.1 | 25 | 1,500 | 6,000 | 7,500 | 30,000 |
| MANGANESE (mg/kg DW) | a | 178 | 252 | 615 | 615 | 950 | 3,800 | 3,500 | 14,000 |
| NICKEL (mg/kg DW) | a | 3.21 | 6.71 | 8.59 | 9 | 100 | 400 | 300 | 1,200 |
| SELENIUM (mg/kg DW) | a | <1 | <1 | <1 | <1 | 50 | 200 | 350 | 1,400 |
| ZINC (mg/kg DW) | a | 9.56 | 21.8 | 25.9 | 26 | 1,850 | 7,400 | 15,000 | 60,000 |
| MERCURY (mg/kg DW) | a | <0.10 | <0.10 | <0.10 | <0.05 | 10 | 40 | 30 | 120 |
| IRON (% DW) | a | 2.14 | 2.52 | 2.60 | 3 | na | na | na | na |
| ALUMINIUM (% DW) | a | 1.31 | 1.49 | 1.72 | 2 | na | na | na | na |
| BERYLLIUM (mg/kg DW) | a | <1 | <1 | <1 | <1 | 15 | 60 | 23 | 90 |
| BORON (mg/kg DW) | a | 2.53 | 1.64 | 2.27 | 3 | 1,125 | 4,500 | 10,000 | 40,000 |
| COBALT (mg/kg DW) | a | <1 | 1.11 | 1.97 | 2 | 25 | 100 | 150 | 600 |
| PESTICIDE ANALYSIS SCREEN | | | | | | | | | |
| Hexachlorobenzene (HCB) (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 3 | 10 | 5 | 20 |
| Alpha BHC (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| Lindane (gamma BHC) (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| Heptachlor (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 2 | 6 | 3 | 10 |
| Aldrin (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 2 | 6 | 3 | 10 |
| Beta BHC (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| Delta BHC (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| Heptachlor epoxide (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 2 | 6 | 3 | 10 |
| o,p'-DDE (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| Alpha Endosulfan (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Gamma Chlordane (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 13 | 50 | 23 | 90 |
| Alpha Chlordane (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 13 | 50 | 23 | 90 |
| trans-Nonachlor (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| p,p'-DDE (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| Dieldrin (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | 2 | 6 | 3 | 10 |
| Endrin (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | 3 | 10 | 5 | 20 |
| o,p'-DDD (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| o,p'-DDT (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| Beta Endosulfan (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| p,p'-DDD (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| p,p'-DDT (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 60 | 240 | 150 | 600 |
| Endosulfan sulphate (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 68 | 270 | 100 | 400 |
| Endrin Alderhyde (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 3 | 10 | 5 | 20 |
| Methoxychlor (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 75 | 300 | 125 | 500 |
| Endrin Ketone (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 3 | 10 | 5 | 20 |
| Isoctin (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | .. | .. | .. | .. |
| Mirex (mg/kg) | c | <0.1 | <0.1 | <0.1 | <0.1 | 3 | 10 | 5 | 20 |
| Organochlorine Pesticides SUM (mg/kg) | c | <1 | <1 | <1 | <1 | .. | .. | .. | .. |
| Dichlorvos (mg/kg) | c | <0.5 | <0.5 | <0.5 | <0.5 | .. | .. | .. | .. |
| Dimethoate (mg/kg) | c | <0.5 | <0.5 | <0.5 | <0.5 | .. | .. | .. | .. |
| Diazinon (Dimpylate) (mg/kg) | c | <0.5 | <0.5 | <0.5 | <0.5 | .. | .. | .. | .. |
| Fenitrothion (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Malathion (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Chlorpyrifos (Chlorpyrifos Ethyl) (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | 40 | 160 | 85 | 340 |
| Parathion-ethyl (Parathion) (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Bromophos Ethyl (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Methidathion (mg/kg) | c | <0.5 | <0.5 | <0.5 | <0.5 | .. | .. | .. | .. |
| Ethion (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Azinphos-methyl (Guthion) (mg/kg) | c | <0.2 | <0.2 | <0.2 | <0.2 | .. | .. | .. | .. |
| Organophosphate Pesticides SUM (mg/kg) | c | <1.7 | <1.7 | <1.7 | <1.7 | .. | .. | .. | .. |

METHODS REFERENCE:

a. ¹⁵Nitric/HCl digest - APHA 3125 ICPMSb. ¹⁵Nitric/HCl digest - APHA 3120 ICPOES

c. Analysis sub-contracted - SGS report no. SE 256970

** denotes these test procedure or calculation are as yet not NATA accredited but quality control data is available

NOTES:

1a. HIL A ■ Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

1b. HIL B ■ Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

1c. HIL C ■ Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space.

1d. HIL D ■ Commercial/Industrial, includes premises such as shops, offices, factories and industrial sites.

(REFERENCE: Health Investigation Guidelines from NEPM (National Environmental Protection, Assessment of Site Contamination, Measure), 2013; Schedule B1).

2. Environmental Soil Quality Guidelines, Page 40, ANZECC, 1992.

3a. Table 1 Maximum values of specific contaminant concentrations for classification without TCLP (NSW EPA 2014, Waste Classification Guidelines Part 1: Classifying Waste)

3b. Table 2 Maximum values for leachable concentrations and specific contaminant concentrations when used together (NSW EPA 2014, Waste Classification Guidelines Part 1: Classifying Waste)

4. Analysis conducted between sample arrival date and reporting date.

5. ** NATA accreditation does not cover the performance of this service.

6. .. Denotes not requested.

7. This report is not to be reproduced except in full.

8. All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).

9. Results relate only to the samples tested.

10. This report was issued on 4/12/2023.

Additional NOTES:

DW = Dry Weight. na = no guidelines available





Appendix E

Biodiversity Assessment

Biodiversity Assessment Report

Planning Proposal for 35 Gordon Road, Raleigh



GeoLINK Consulting Pty Ltd

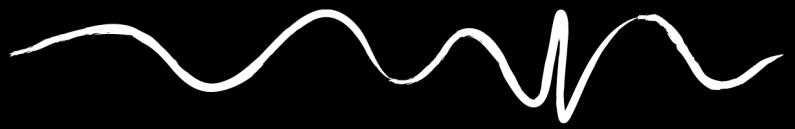
PO Box 119
Lennox Head NSW 2478
T 02 6687 7666

PO Box 1446
Coffs Harbour NSW 2450
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Certification



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Executive Summary

GeoLINK has been engaged by Tracee and Ashley Porter to prepare a Biodiversity Assessment Report (BAR) to support a Planning Proposal to facilitate amendment of the Bellingen Local Environmental Plan (BLEP) 2010 to change the minimum lot size controls and refine the zoning arrangement in response to ecological assessment findings, on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW.

The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential) and common access road under community title provisions, and a residual lot. Notably, the subject area that is proposed to have the lot size controls amended for this purpose is already zoned R5 Large Lot Residential. However, it is subject to a broad application of a 10-hectare minimum lot size that also covers the RU1 Primary Production and C2 Environmental Conservation zones that affect Lot 21 DP1239022.

The site is described in real property terms as Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW. It is an irregular shaped allotment and has an area of approximately 29 ha. The site is located in a semi-rural residential setting, approximately 3.5 km north-west of Urunga Central Business District and is approximately 300 m east of the Pacific Highway/ Waterfall Way interchange and is accessed via the Old Pacific Highway. Bellinger River is located further to the north, with the North Coast rail corridor extending along the eastern boundary of the site.

Land proposed for amendments to the BLEP 2010 to facilitate future subdivision comprises elevated north facing land including partially cleared open woodland dominated by Tallowwood (*Eucalyptus microcorys*), Grey Ironbark (*Eucalyptus siderophloia*), Turpentine (*Syncarpia glomulifera*), Blackbutt (*Eucalyptus pilularis*), Thick-leaved Mahogany (*Eucalyptus carnea*) and Pink Bloodwood (*Corymbia intermedia*). Subdominant trees include Red Ash (*Alphitonia excelsa*) and Pink Flowered Doughwood (*Melicope elleryana*). This vegetation is representative of Plant Community Type (PCT) 3250 *Northern Foothills Blackbutt Grass Forest*.


Vegetation to the north of the land proposed for amendments to the BLEP 2010 includes consolidated areas of swamp sclerophyll forest within a low-lying area of occasionally inundated land associated with an intermittent waterway. Vegetation in this area is dominated by Broad-leaved Paperbark (*Melaleuca quinquenervia*) with occasional Swamp Mahogany (*Eucalyptus robusta*), Swamp Oak (*Casuarina glauca*) and Pink-flowered Doughwood. This vegetation is representative of PCT 4000 *Northern Estuarine Paperbark Sedge Forest*.

Open woodland occurring on the land proposed for amendments to the BLEP 2010/ future development is not indicative of a Threatened Ecological Community (TEC). Areas to the north outside of the proposed subdivision/ development area comprise of swamp sclerophyll forest (PCT 4000) and are representative of the following TECs:

- *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions* listed under the BC Act.
- *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland* listed under the EPBC Act.

No threatened flora species were detected at the site.

Several threatened fauna species are considered to have a moderate-high potential to occur at the site. Nearly all of these species are highly mobile and likely to utilise the site on occasion as foraging habitat as part of broader local foraging ranges. The primary Koala food trees, Tallowwood, Swamp Mahogany, and Small-fruited Grey Gum are common at the site. BioNet Koala records are largely



absent within the locality of Raleigh, including from the land associated with the site, which can be effectively viewed as an island isolated from other Koala habitats due to the Pacific Highway to the west, the Bellinger River to the north and east, and the Kalang River to the south. Therefore, Koalas are considered to have a low likelihood of occurring at the site.

The proposed Local Environmental Plan (LEP) amendment and future development on the site would aim to avoid impacts to HEV areas as follows:

- As part of the Planning Proposal, all areas of mapped PCT 4000 are proposed to be incorporated into a revised and enhanced C2 zone on the site. This includes a narrow area of land between the existing C2 and R5 zones that is currently zoned RU1 Primary Production and will equate to an approximate 93% increase to the current C2 zone (from approximately 3.96ha to 7.65ha). This would have a substantial complementary ecological benefit.
- As part of a future Development Application (DA) on the site, mature trees would be retained to the maximum extent possible. It is noted that the subdivision concept plan has been designed to locate building envelopes, bushfire asset protection zones (APZs), and boundary fences to avoid and minimise impacts on mature trees where possible.
- As part of a future DA on the site a comprehensive Vegetation Management Plan would be prepared for all C2 zoned land on the site including fencing, weed control and revegetation measures to ensure this land is effectively managed for conservation into the future.

Residual impacts of a future five lot residential subdivision on the site are likely to comprise removal of selected mature trees on the site which have been estimated to represent < 0.5 ha of PCT 3250.

The proposal for amendment of the LEP and a future five lot residential subdivision on the site can be undertaken with relatively low biodiversity impacts. Relevant statutory instruments would need to be addressed as part of a future development application on the site in the event the Planning Proposal is approved.



1. Introduction and Background

1.1 Introduction

GeoLINK has been engaged by Tracee and Ashley Porter to prepare a Biodiversity Assessment Report (BAR) to support a Planning Proposal to facilitate amendment of the Bellingen Local Environmental Plan 2010 (BLEP 2010) to primarily change part of the lot size controls on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW and associated ancillary zoning changes in response to the ecological findings detailed in this report. The proposal is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots and common access road under community title provisions, and a residual lot. The subject area that is proposed to have the lot size controls amended for this purpose is already zoned R5 Large Lot Residential. The aim of this assessment is to identify any ecological constraints or High Environmental Values (HEVs) on the site which may include:

- Littoral Rainforest, Coastal Wetlands and proximity areas for these mapped under Chapter 2 (Coastal Management) of State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.
- Areas of Outstanding Biodiversity Value declared under the Biodiversity Conservation (BC) Act.
- Nationally Important Wetlands listed in the Directory of Important Wetlands including a 50 m wide buffer.
- Riparian zones of third order streams and above including a buffer consistent with Appendix 3 of the BAM.
- Over-cleared vegetation types identified in the Vegetation Information System (VIS) database as more than 70% cleared.
- Threatened Ecological Communities (TECs) identified in the VIS database or by comparison with the NSW Threatened Species Scientific Committee's Final Determination.
- Key habitats for threatened species including:
 - Breeding habitats of both species credit species and ecosystem credit species with known breeding occurrence.
 - Core koala habitat
 - Breeding, foraging and/or congregation habitats for migratory shorebird species with known occurrence.
 - Known habitat for populations of species credit species,
- Old Growth Forest.

The report provides information on how impacts to areas of HEV are to be avoided and minimised as part of the development of the Planning Proposal to fulfil requirements of the *Biodiversity Conservation Act 2016* (BC Act 2016). The proposal is also examined against relevant statutory instruments.

1.2 The Site

The site is described in real property terms as Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW. It is an irregular shaped allotment and has an area of approximately 29 ha. The site is located in a semi-rural residential setting, approximately 3.5 km north-west of Urunga Central Business District (CBD) and is approximately 300 m east of the Pacific Highway/ Waterfall Way interchange and is accessed via the Old Pacific Highway. Bellinger River is located further to the north, with the North Coast rail corridor extending along the eastern boundary of the site. **Illustration 1.1** provides a site locality map.

The site, shown in more detail in **Illustration 1.2**, consists of an existing dwelling and detached shed which is accessed from Gordon Road and is centrally located on an elevated portion of the site (**Plate 1.1**). The area around the dwelling/ to the north and east comprise of flat, open agricultural land (improved pastures) used for cattle grazing (**Plate 1.2**). Large lot rural-residential properties associated with the Gordon Road estate are located to the west. Areas of consolidated coastal wetland forest vegetation are located to the south of the existing dwelling along an area of low-lying land subject to flood inundation with an intermittent watercourse which drains east into a more permanent feature as it meanders through the site to the north-west. The southern portion of the site is elevated, north-facing and partially cleared open forest with a managed understory and grassland (**Plates 1.3 and 1.6**). This area is zoned R5 Large Lot Residential and is intended for the creation of five related 1 ha lots.

1.3 The Proposal

The proposal is to amend the Bellingen Local Environmental Plan 2010 (BLEP 2010) Lot Size Map to change the minimum lot size applicable to the R5 Large Lot Residential Zone on the subject land from 10 ha to 1 ha. The intention is to ultimately enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots and common access road under community title provisions, and a residual lot encompassing the existing dwelling and rural/ environmental lands. It is also proposed to make ancillary refinements to the site's zoning for 'housekeeping' purposes and also extend the C2 Environmental Conservation zone as recommended by this report.



Plate 1.1 View showing existing residential dwelling



Plate 1.2 View north from dwelling showing extent of agricultural grazing farmland



Plate 1.3 View south showing area of proposed LEP amendment and large lot residential subdivision.



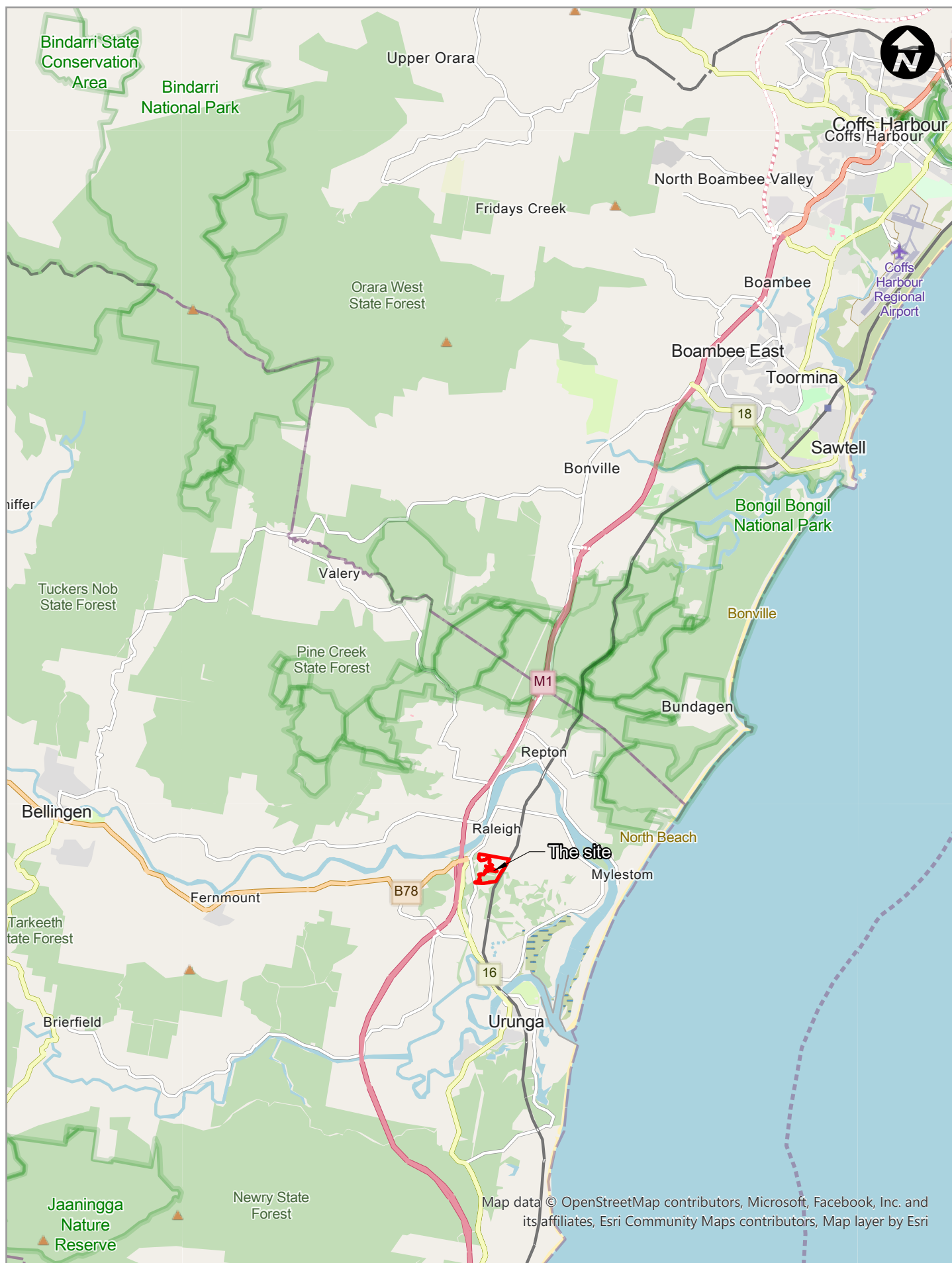
Plate 1.4 View north-west showing the extent of the managed understory of the elevated portion of the open forest and area of proposed LEP amendment large lot residential subdivision.



Plate 1.5 Largely clear area of proposal site looking west to Old Pacific Highway. Adjacent dwelling indicates beginning of adjoining residential zone.



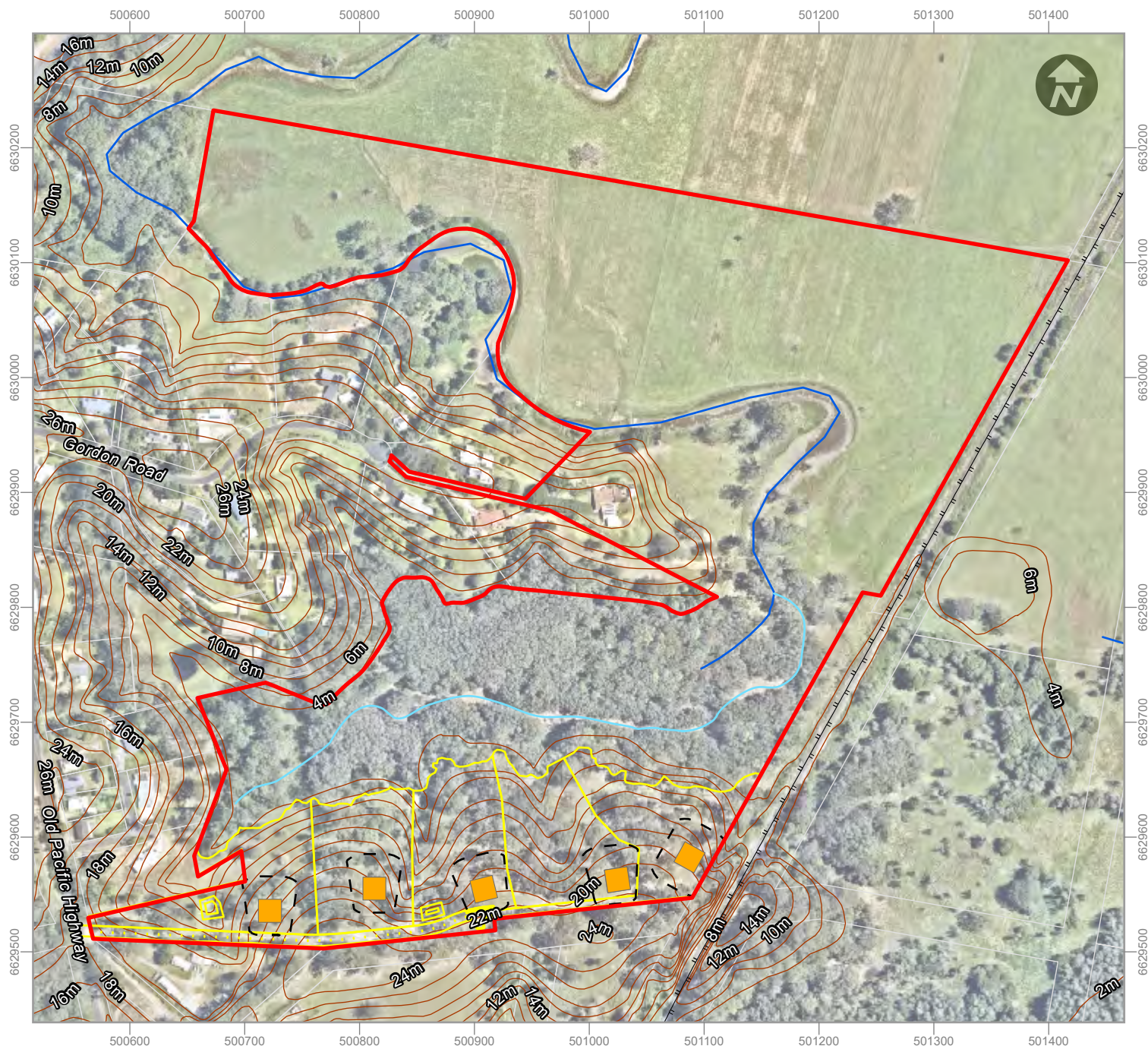
Plate 1.6 Internal to the proposal area looking east, showing managed land with interspersed trees and existing farm road.



0 2.5 km

Site Locality - Illustration 2.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by DGH Reviewed by: KHP
 Source of base data: OpenStreet Map
 Date: 20/09/2024
 Revision: A



LEGEND

- ▬ Site boundary
- ▬ Cadastre
- |—|—| North Coast Railway
- Contours at 2m intervals
- Watercourse
- Indicative location of intermittent watercourse
- Building envelope
- - - Asset protection zone
- Proposed subdivision concept

0 100 Metres

The Site - Illustration 1.2



2. Methodology

2.1 Introduction

The site (as defined in **Illustration 1.2** was assessed over two days (3rd August and 9th August 2023) by senior ecologist, David Havilah. Locations of significant features were taken using a global positioning system (GPS) device. Weather conditions during the survey period were sunny and periodically overcast.

Prior to the survey the following desktop analysis was completed:

- Searches of the BioNet Wildlife Atlas (10 km x 10 km grid centred on the site).
- Searches of the protected Matters Search Tool for any Matters of National Environmental Significance (MNES) occurring within a 5km radius of the site.
- Review of Koala habitat and vegetation mapping held by LCC.

Details of survey methodology are provided below in **Sections 2.2** and **2.3**.

2.2 Flora

The flora assessment utilised the following methodology:

- Random meander of the site whilst undertaking the following:
 - Targeted surveys for threatened flora species and Threatened Ecological Communities (TECs) within appropriate habitat on the site.
 - Recording the GPS location of isolated paddock trees.
 - Undertaking mapping of vegetation communities occurring at the site.
 - Completing a general flora inventory.

2.3 Fauna

The fauna assessment utilised the following methodology:

- Opportunistic survey of all fauna based on visual or aural observations.
- Targeted diurnal searches for Koalas within all Koala feed trees on the site.
- Targeted Koala scat surveys beneath Koala feed trees on the site.
- Undertaking fauna habitat assessments.

3. Flora

3.1 Desktop Analysis

3.1.1 Database Search Results

3.1.1.1 BioNet Wildlife Atlas

BioNet search results (February 2024) as included in **Appendix B** returned:

- Records of 8 threatened flora species within 5 km of the site including 5 species listed in the EPBC Act (refer to **Table 3.1**).
- Records of 18 TECs from within 5 km of the site (refer to **Table 3.2**).


Table 3.1 Threatened Flora Recorded within 5 km of the Site

| Scientific Name | Common Name | BC Act | EPBC Act |
|-----------------------------------|-------------------|--------|----------|
| <i>Dendrobium melaleucaphilum</i> | Spider Orchid | E | - |
| <i>Hicksbeachia pinnatifolia</i> | Red Boppel Nut | V | V |
| <i>Marsdenia longiloba</i> | Slender Marsdenia | E | V |
| <i>Niemeyera whitei</i> | Rusty Plum | V | - |
| <i>Parsonsia dorrigoensis</i> | Milky Silkpod | V | E |
| <i>Rhodamnia rubescens</i> | Scrub Turpentine | CE | - |
| <i>Rhodomyrtus psidioides</i> | Native Guava | CE | - |
| <i>Sophora tomentosa</i> | Silverbush | E | - |

V = Vulnerable; E = Endangered, CE = Critically Endangered

Table 3.2 TECs within 5 km of the Site

| TEC | BC Act | EPBC Act |
|--|--------|----------|
| Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community | - | E |
| Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland | E | - |
| Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| Littoral Rainforest and Coastal Vine Thickets of Eastern Australia | - | CE |
| Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions | E | - |



| TEC | BC Act | EPBC Act |
|--|--------|----------|
| Lowland Rainforest of Subtropical Australia | - | CE |
| Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion | E | - |
| Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions | E | - |
| Subtropical and Temperate Saltmarsh | - | V |
| Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion | E | - |
| Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | - | E |
| Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions | E | - |
| White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner | E | - |
| White Gum Moist Forest in the NSW North Coast Bioregion | E | - |

E = Endangered, CE = Critically Endangered

3.1.1.2 EPBC Protected Matters Search Tool

The Protected Matters Search Tool results (February 2024) as included in **Appendix B** identified:

- Habitat for 16 EPBC listed threatened flora species within 5 km of the site.
- Habitat for 6 EPBC listed TECs within 5 km of the site.



3.2 Site Assessment

3.2.1 Vegetation Communities

Land proposed for amendment of the LEP to facilitate future large lot residential subdivision comprises elevated north facing land including partially cleared open woodland dominated by Tallowwood (*Eucalyptus microcorys*), Grey Ironbark (*Eucalyptus siderophloia*), Turpentine (*Syncarpia glomulifera*), Blackbutt (*Eucalyptus pilularis*), Thick-leaved Mahogany (*Eucalyptus carnea*) and Pink Bloodwood (*Corymbia intermedia*). Subdominant trees include Red Ash (*Alphitonia excelsa*) and Pink Flowered Doughwood (*Melicope elleryana*). Midstorey vegetation is absent with the groundlayer including mostly exotic pasture grasses including Broad-leaved Paspalum (*Paspalum mandiocanum*), Narrow-leaved Carpet Grass (*Axonopus fissifolius*) and Kikuyu (*Cenchrus clandestinus*) with occasional native grasses including Blady Grass (*Imperata cylindrica*) and Couch (*Cynodon dactylon*). This vegetation is representative of Plant Community Type (PCT) 3250 Northern Foothills Blackbutt Grass Forest.

Vegetation to the north of the land proposed for LEP amendment and future large lot residential development includes consolidated areas of swamp sclerophyll forest within a low-lying area of occasionally inundated land associated with an intermittent waterway. Vegetation in this area is dominated by Broad-leaved Paperbark (*Melaleuca quinquenervia*) with occasional Swamp Mahogany (*Eucalyptus robusta*), Swamp Oak (*Casuarina glauca*) and Pink-flowered Doughwood. The midstorey is sparse including regrowth of the aforementioned species and occasional weeds such as Winter Senna (*Senna pendula* var. *glabrata*) and Lantana (*Lantana camara*). Groundcover within this area is absent within regularly inundated areas and dominated by Tall Saw-sedge (*Gahnia clarkei*) elsewhere. This vegetation is representative of PCT 4000 Northern Estuarine Paperbark Sedge Forest.

Vegetation communities occurring on the site are shown on **Illustration 3.1**. A flora inventory for the site is included in **Appendix B**.

3.2.2 Threatened Ecological Communities

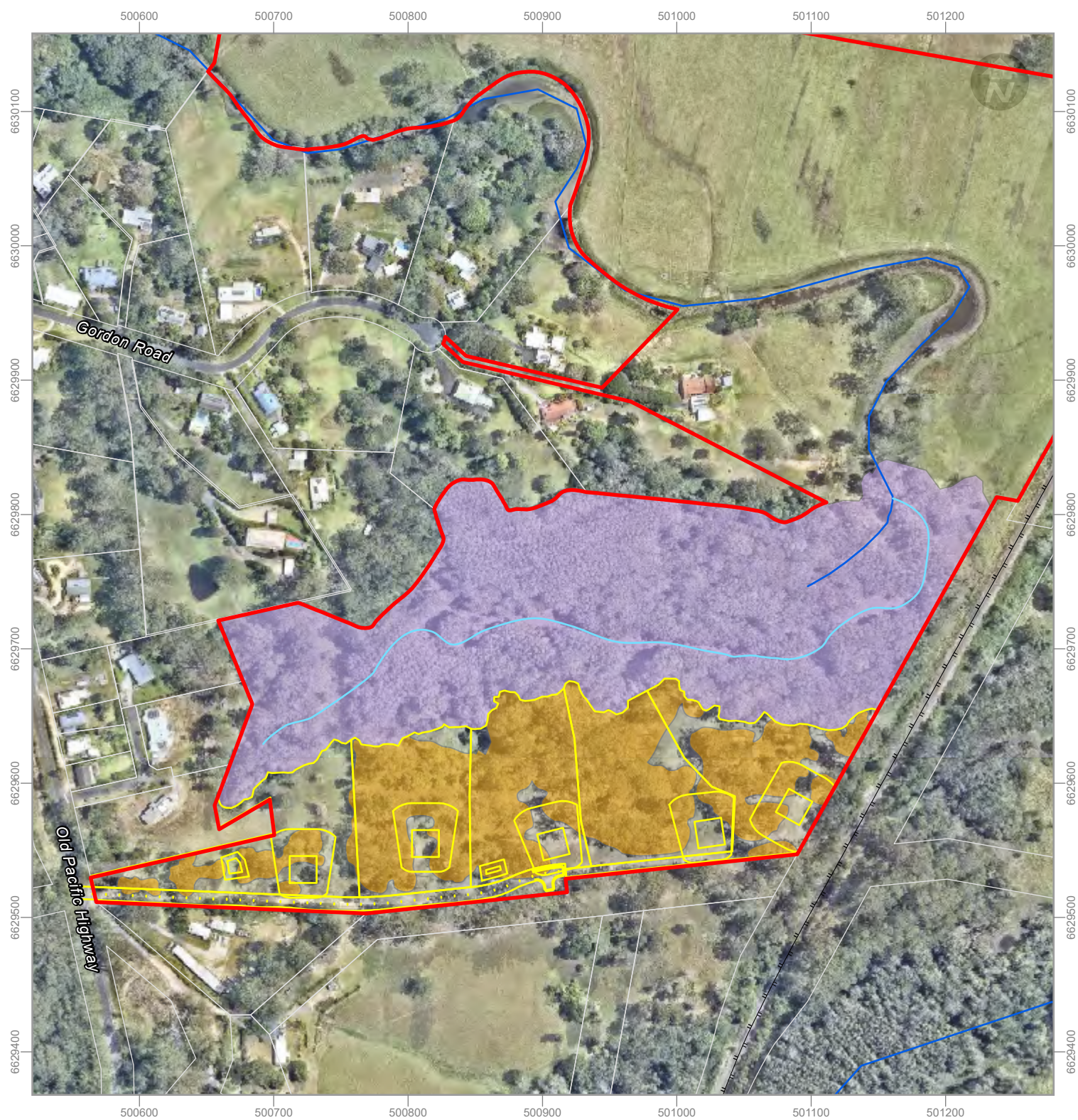
Open woodland occurring on the land proposed for LEP amendment/ future development is not indicative of a Threatened Ecological Community (TEC).

Areas of swamp sclerophyll forest (PCT 4000) are representative of the following TECs:

- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions listed under the BC Act.
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland listed under the EPBC Act.

3.2.3 Threatened Flora

No threatened flora species were detected at the site.



LEGEND

- Cadastre
- PCT 3250 Northern Foothills Blackbutt Grassy Forest
- PCT 4000 Northern Estuarine Paperbark Sedge Forest (TEC)
- Proposed subdivision concept
- Indicative location of intermittent watercourse
- North Coast Railway
- Watercourse

0 80 Metres

Vegetation Map - Illustration 3.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: DGH Reviewed by: KHP
 Source of base data: Nearmap 28/12/2023
 Date: 20/09/2024
 Revision: A

4. Fauna

4.1 Desktop Analysis

4.1.1 Database Searches

4.1.1.1 BioNet Wildlife Atlas

BioNet search results (February 2024) as included in **Appendix B** returned:

- Records of 53 threatened fauna species within 5 km of the site including 14 species listed in the EPBC Act (refer to **Table 4.1**).

Table 4.1 Threatened Fauna Recorded within 5 km of the Site (excl marine/ pelagic species)

| Scientific Name | Common Name | BC Act | EPBC Act |
|------------------------------------|---------------------------|--------|----------|
| Amphibian | | | |
| <i>Crinia tinnula</i> | Wallum Froglet | V | - |
| <i>Litoria brevipalmata</i> | Green-thighed Frog | V | - |
| Avifauna | | | |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | E | E |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | E | CE |
| <i>Calyptorhynchus lathami</i> | Glossy Black-Cockatoo | V | V |
| <i>Charadrius leschenaultii</i> | Greater Sand Plover | V | - |
| <i>Coracina lineata</i> | Barred Cuckoo-shrike | V | - |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella | V | - |
| <i>Ephippiorhynchus asiaticus</i> | Black-necked Stork | E | - |
| <i>Esacus magnirostris</i> | Beach Stone-curlew | CE | - |
| <i>Glossopsitta pusilla</i> | Little Lorikeet | V | - |
| <i>Grus rubicunda</i> | Brolga | V | - |
| <i>Haematopus fuliginosus</i> | Sooty Oystercatcher | V | - |
| <i>Haematopus longirostris</i> | Pied Oystercatcher | E | - |
| <i>Haliaeetus leucogaster</i> | White-bellied Sea-eagle | V | - |
| <i>Hieraaetus morphnoides</i> | Little Eagle | V | - |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | - | V |
| <i>Irediparra gallinacea</i> | Comb-crested Jacana | V | - |
| <i>Ixobrychus flavicollis</i> | Black Bittern | V | - |
| <i>Lichenostomus fasciocularis</i> | Mangrove Honeyeater | V | - |



| Scientific Name | Common Name | BC Act | EPBC Act |
|---|-------------------------|--------|----------|
| <i>Lophoictinia isura</i> | Square-tailed Kite | V | - |
| <i>Ninox strenua</i> | Powerful Owl | V | - |
| <i>Numenius madagascariensis</i> | Eastern Curlew | - | CE |
| <i>Oxyura australis</i> | Blue-billed Duck | V | - |
| <i>Pandion cristatus</i> | Eastern Osprey | V | - |
| <i>Pomatostomus temporalis temporalis</i> | Grey-crowned Babbler | V | - |
| <i>Ptilinopus magnificus</i> | Wompoo Fruit-dove | V | - |
| <i>Ptilinopus regina</i> | Rose-crowned Fruit-dove | V | - |
| <i>Ptilinopus superbus</i> | Superb Fruit-dove | V | - |
| <i>Stagonopleura guttata</i> | Diamond Firetail | V | - |
| <i>Sternula albifrons</i> | Little Tern | E | - |
| <i>Tyto longimembris</i> | Eastern Grass Owl | V | - |
| <i>Tyto novaehollandiae</i> | Masked Owl | V | - |
| <i>Tyto tenebricosa</i> | Sooty Owl | V | - |

Mammals

| | | | |
|---------------------------------------|---------------------------------|---|---|
| <i>Dasyurus maculatus</i> | Spotted-tailed Quoll | V | E |
| <i>Falsistrellus tasmaniensis</i> | Eastern False Pipistrelle | V | - |
| <i>Micronomus norfolkensis</i> | Eastern Coastal Free-tailed Bat | V | - |
| <i>Miniopterus australis</i> | Little Bent-winged Bat | V | - |
| <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat | V | - |
| <i>Myotis macropus</i> | Southern Myotis | V | - |
| <i>Nyctophilus bifax</i> | Eastern Long-eared Bat | V | - |
| <i>Petauroides volans</i> | Greater Glider | - | E |
| <i>Petaurus australis australis</i> | Yellow-bellied Glider | V | V |
| <i>Petaurus norfolcensis</i> | Squirrel Glider | V | - |
| <i>Phascogale tapoatafa</i> | Brush-tailed Phascogale | V | - |
| <i>Phascolarctos cinereus</i> | Koala | V | E |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | V | V |
| <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | V | - |

V = Vulnerable; E = Endangered, PE = Presumed Extinct



4.1.1.2 EPBC Protected Matters Search Tool

The Protected Matters Search Tool results (February 2024) as included in **Appendix B** identified:

- Habitat for 75 EPBC listed threatened fauna species within 5 km of the site.
- Habitat for 58 EPBC listed Migratory species within 5 km of the site.

4.1.2 BSC Koala Habitat Mapping

BSC Koala Habitat Mapping as shown in **Figure 4.1** depicts vegetation on much of the site as being 'Secondary B Koala Habitat'. A smaller area of 'Secondary A Koala Habitat' occurs in the south western corner of the site. Further discussion of Koala Habitat on the site is provided in **Section 6.1**.

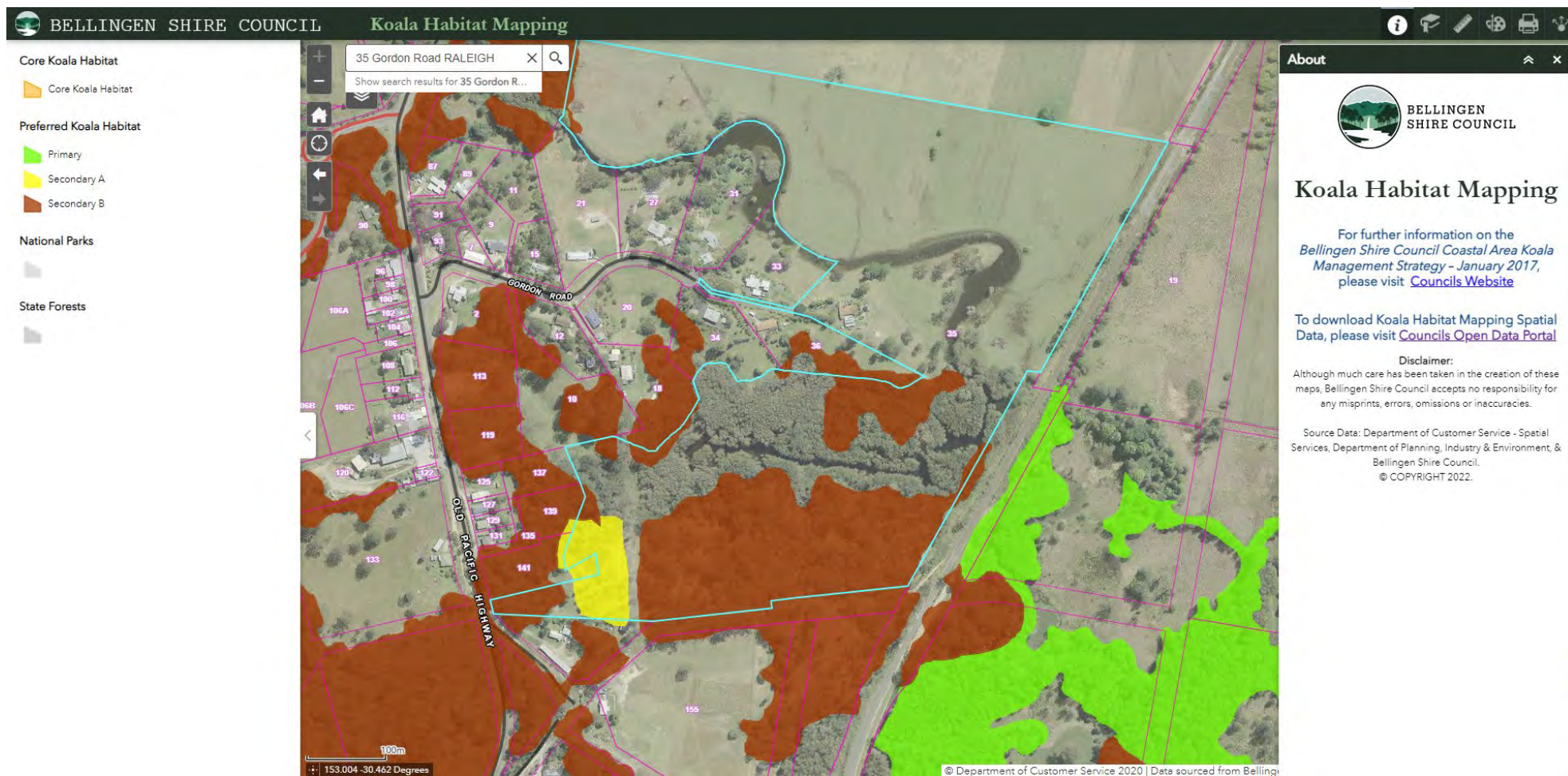


Figure 4.1 BSC Koala Habitat Mapping for the Site



4.2 Site Assessment

4.2.1 Fauna Habitats

Although currently subject to cattle grazing as part of a broader and historical primary production operation the site includes a range of fauna habitats summarised as follows:

- Wetland areas to the north of the land proposed for LEP amendment/ future development, including habitat for wetland birds, amphibians and aquatic fauna species. The microbat species, Southern Myotis (*Myotis macropus*) may forage upon standing water when present. It is noted that such areas represent ephemeral wetland areas having been observed to lack water during drier conditions.
- Small numbers of Forest Oak (*Allocasuarina torulosa*) occur on and surrounding the site providing potential foraging habitat for the Glossy Black-cockatoo.
- Occasional fleshy-fruited plants occur at the site which may provide potential foraging resources for frugivorous bird and flying-foxes.
- Mature eucalypts on the site providing pollen/ nectar resources for fauna seasonally as well as perching/ roosting/ nesting habitat for locally occurring bird species. A small number of hollow-bearing trees occur on the site providing potential denning/ nesting habitat for hollow obligate fauna species and potential roosting habitat for a number of microbat species.
- The primary Koala food trees, Tallowwood, Swamp Mahogany and Small-fruited Grey Gum are common at the site. BioNet Koala records are largely absent from the land associated with the site (refer to **Figure 4.2**) which is effectively an island isolated from other Koala habitat by the Pacific Motorway/ Giinagay Way/ Old Pacific Highway to the west, the Bellinger River to the north and east, and the Kalang River to the south. Further details in relation to potential Koala habitat at the site are addressed in **Section 6.1**.
- Habitat associated with the site and surrounds provides potential aerial foraging habitat for insectivorous microbat species.

Habitats associated with the land proposed for the LEP amendment/ future subdivision are in a low-moderate condition generally lacking a native ground and midstory flora assemblage and lacking microhabitat features including coarse woody debris and leaf litter.

4.2.2 Threatened Fauna

No threatened fauna species were recorded during the surveys. Targeted surveys for Koala scats beneath primary Koala feed trees on the site did not locate any Koala scats. A threatened species potential occurrence assessment was completed for the site based on the results of database searches. Threatened fauna species which were considered to have a moderate to high potential to occur at the site are listed below. It is noted the site is considered to mostly provide areas of foraging habitat for these species as part of broader foraging ranges occurring locally.

- Black-necked Stork (*Ephippiorhynchus asiaticus*)
- Little Lorikeet (*Glossopsitta pusilla*)
- Brolga (*Grus rubicunda*)
- Wompoo Fruit-dove (*Ptilinopus magnificus*)
- Rose-crowned Fruit-dove (*Ptilinopus superbus*)
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*)
- Little Bent-winged Bat (*Miniopterus australis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*)
- Eastern Long-eared Bat (*Nyctophilus bifax*)
- Grey-headed Flying-fox (*Pteropus poliocephalus*)
- Greater Broad-nosed Bat (*Scoteanax rueppellii*).

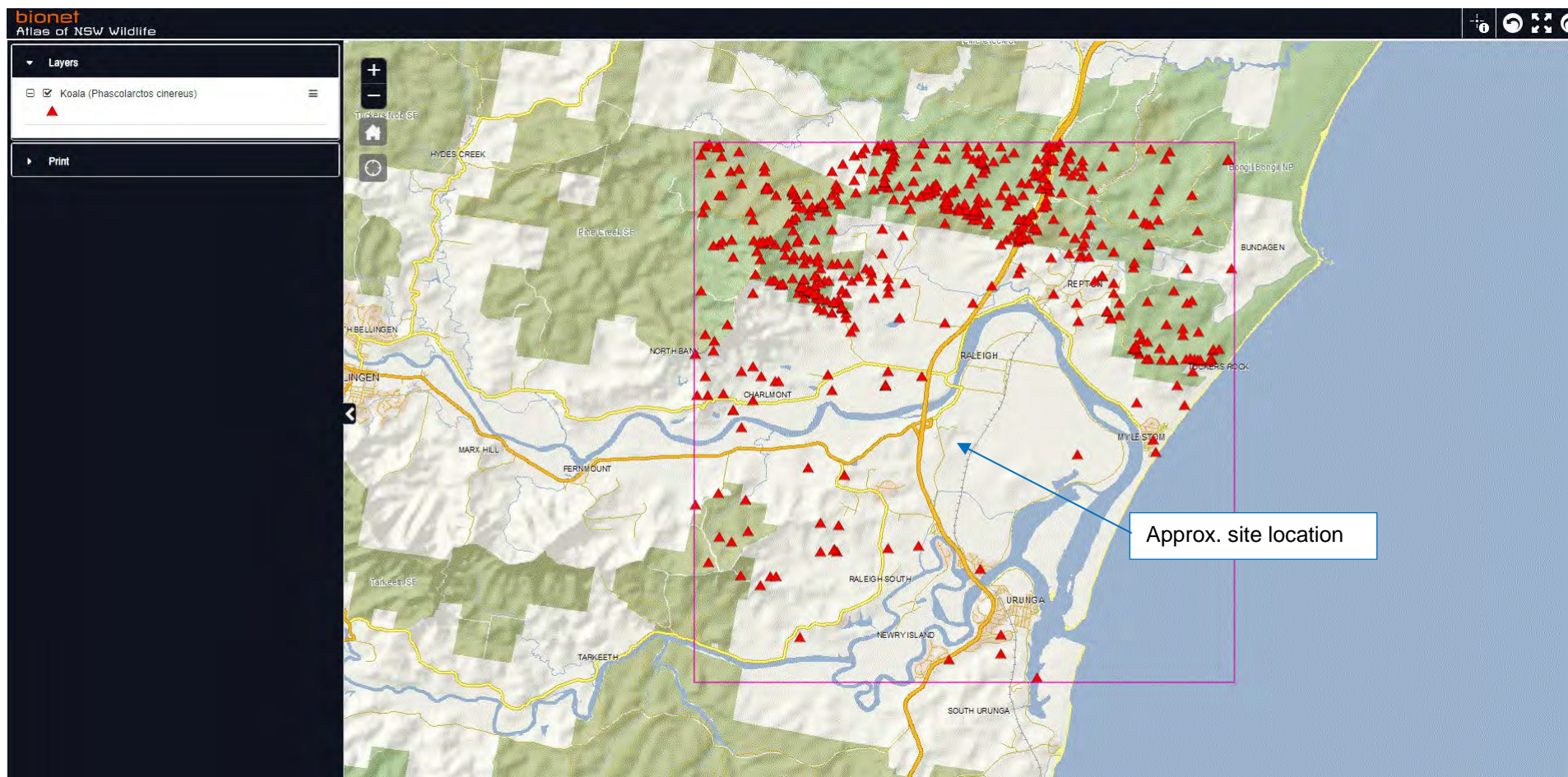


Figure 4.2 BioNet Koala Records within 5 km of the Site



5. Impacts and Mitigation

5.1 HEV Areas

Based on advice received from the Biodiversity, Conservation and Science group (NE Branch) within the Department of Climate Change, Energy, Environment and Water (formally known as the Biodiversity Conservation Division, or BCD), Areas of High Environmental Value (HEV) are to be defined with sufficient measures taken by proponents to avoid/ minimise impacts to such areas as part of Planning Proposals. HEV areas include:


- Littoral Rainforest, Coastal Wetlands and proximity areas for these mapped under Chapter 2 (Coastal Management) of SEPP (Resilience and Hazards) 2021.
- Areas of Outstanding Biodiversity Value declared under the BC Act.
- Nationally Important Wetlands listed in the Directory of Important Wetlands including a 50 m wide buffer.
- Riparian zones of third order streams and above including a buffer consistent with Appendix 3 of the BAM.
- Over-cleared vegetation types identified in the Vegetation Information System (VIS) database as more than 70% cleared.
- Threatened Ecological Communities (TECs) identified in the VIS database or by comparison with the NSW Threatened Species Scientific Committee's Final Determination.
- Key habitats for threatened species including:
 - Breeding habitats of both species credit species and ecosystem credit species with known breeding occurrence.
 - Core koala habitat
 - Breeding, foraging and/or congregation habitats for migratory shorebird species with known occurrence.
 - Known habitat for populations of species credit species.
- Old Growth Forest.

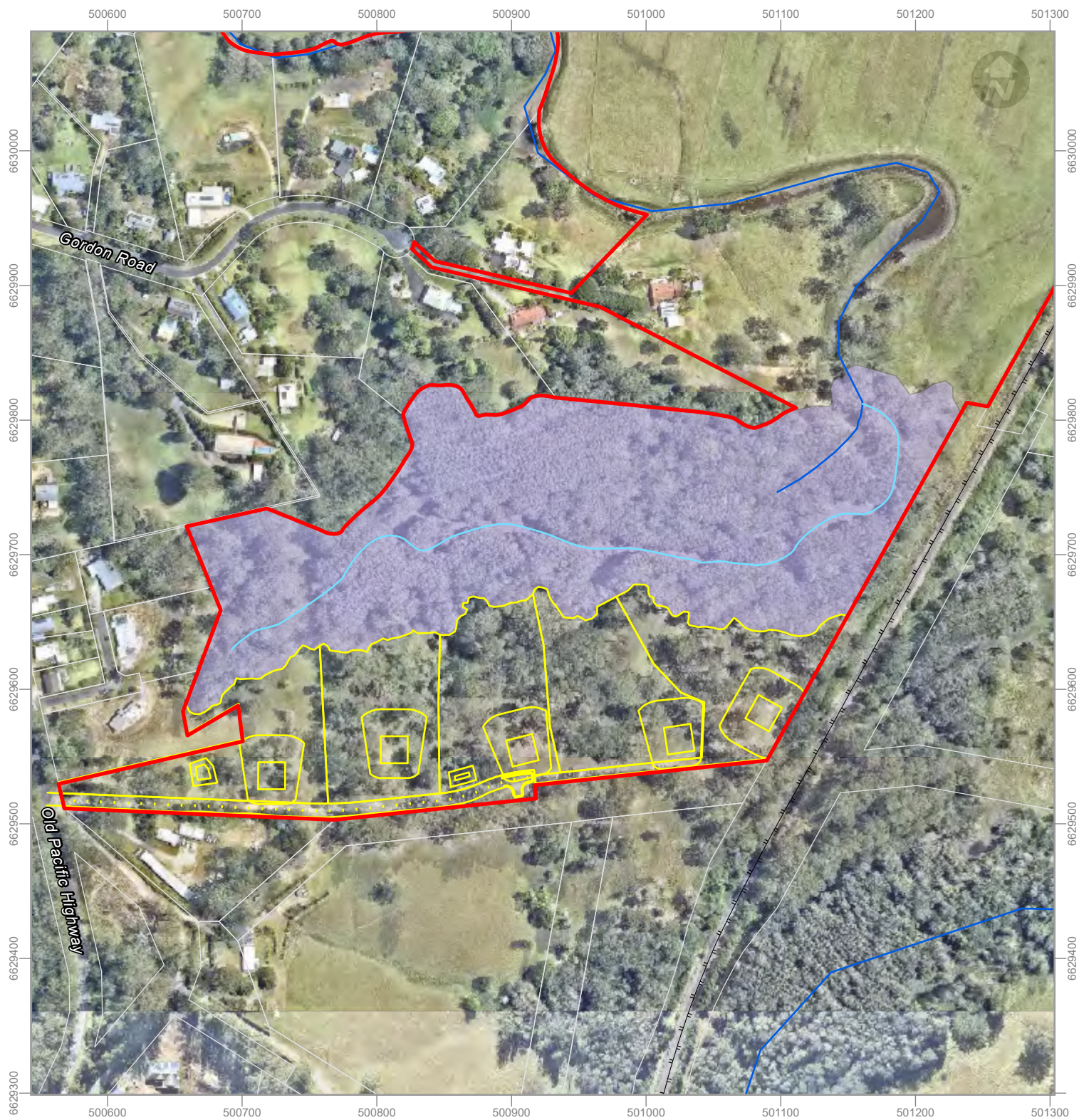
Based on the above, areas of HEV occur on the site associated with the low-lying areas of Swamp Sclerophyll Forest TEC as defined by PCT 4000 (refer to **Illustration 5.1**).

5.2 Avoid/ Minimise Recommendations

The *Biodiversity Conservation Act 2016* provides a framework whereby proponents must demonstrate that proposals have been developed to avoid/ minimise impacts to biodiversity including those on HEV land. In order to address avoid/ minimise requirements in relation to the Planning Proposal the proponent proposes the following:

- As part of the Planning Proposal all areas of mapped PCT 4000 are proposed to be incorporated into a revised and enhanced C2 zone on the site. This includes a narrow area of land zoned as RU1 Primary Production and will equate to an approximate 93% increase to the current C2 zone (from approximately 3.96ha to 7.65ha) and would have a substantial complementary ecological benefit.
- As part of a future Development Application (DA) on the site mature trees would be retained to the maximum extent possible. It is noted that the subdivision concept plan has been designed to locate building envelopes, bushfire asset protection zones (APZs), and boundary fences, to avoid and minimise impacts on mature trees where possible.

- 
- As part of a future DA on the site a comprehensive Vegetation Management Plan would be prepared for all C2 zoned land on the site including fencing, weed control and revegetation measures to ensure this land is effectively managed for conservation into the future.



LEGEND

- ▬ Site boundary
- ▬ Cadastre
- High environmental value (HEV) area
- ▬ Proposed subdivision concept
- ▬ Indicative location of intermittent watercourse
- ▬ North Coast Railway
- ▬ Watercourse

0 80 Metres

Areas of HEV - Illustration 5.1

Information shown is for illustrative purposes only
 Drawn by: AB Checked by: DGH Reviewed by: KHP
 Source of base data: Nearmap 28/12/2023
 Date: 20/09/2024
 Revision: A



5.3 Residual Impacts of LEP amendment and Development

5.3.1 Clearing of Native Vegetation

A future five lot residential development on the site would require the clearing of some native trees within the under scrubbed woodland on the site which is representative of a degraded form of PCT 3250. Preliminary area calculations for impacted vegetation based on the concept layout (including nominated building envelopes, APZs, road footprint and lot boundaries) suggest that clearing of < 0.5 ha is achievable. It appears that hollow-bearing trees can be avoided as part of a future development application for subdivision on the site.

5.3.2 Indirect Impacts

Indirect impacts are development related activities not associated with clearing for the development footprint and may include matters such as increased noise, dust, light spill, weeds and pathogens and edge effects that can be reasonably attributed to the development. Based on the construction requirements and nature of the proposed development (large lot residential development), anticipated indirect development may include:

1. Minor disturbance (noise, human activity, machine operations) to locally occurring fauna species during future industrial area development and construction.
2. Potential for reduced water quality and altered hydrology due to stormwater management on the site.
3. Minor increased risk of roadkill from increased vehicular movements on surrounding roads and the site. It is noted that this is likely to be low as a result of the creation of five new residential lots.
4. Ongoing disturbance to local fauna during occupation of the site from noise, light, human presence.
5. Potential for weeds to be imported to the site and surrounding environments during the construction stage of the proposal.

5.3.3 Prescribed Impacts

Prescribed impacts are those that may affect biodiversity values in addition to, or instead of, impacts from clearing vegetation, and include (as per cl. 6.1 of the BC Regulation):

- *the impacts of development on the habitat of threatened species or ecological communities associated with:*
 - *karst, caves, crevices, cliffs, and other geological features of significance*
 - *rocks*
 - *human made structures*
 - *non-native vegetation*
- *the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range*
- *the impacts of development on movement of threatened species that maintains their life cycle*
- *the impacts of development on water quality, waterbodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development)*
- *the impacts of wind turbine strikes on protected animals*
- *the impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community.*

An analysis of prescribed impacts is detailed in **Table 5.1**.

Table 5.1 Assessment of Future Prescribed Impacts

| Prescribed impacts | Response |
|---|---|
| <p><i>the impacts of development on the habitat of threatened species or ecological communities associated with:</i></p> <ul style="list-style-type: none"> - karst, caves, crevices, cliffs, and other geological features of significance - rocks - human made structures - non-native vegetation | <p>The site does not support karst geology and no rock features likely to provide habitat are evident. No human made structures or non-native vegetation occur within the proposed area for the LEP amendment / future development</p> |
| <p><i>the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range</i></p> | <p>The proposed LEP amendment and future subdivision of the subject land would have a minor and incremental impact on fauna connectively locally. The scale of this impact would be unlikely to substantially affect habitat connectively for fauna species occurring in the locality. It is noted that connectively for threatened species is compromised locally by the Pacific Highway to the west.</p> |
| <p><i>the impacts of development on movement of threatened species that maintains their life cycle</i></p> | <p>Refer above.</p> |
| <p><i>the impacts of development on water quality, waterbodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development)</i></p> | <p>Intermittent watercourses occur immediately north of the land proposed for the LEP amendment / future subdivision which drain east into a more permanent feature as it meanders through the site to the north-west. The creation of five additional residential lots on the site has the potential to impact waterways to the north of the site however are considered likely to be effectively mitigated by best practice stormwater management approaches.</p> |
| <p><i>the impacts of wind turbine strikes on protected animals</i></p> | <p>The Proposal is not a wind farm development.</p> |
| <p><i>the impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community</i></p> | <p>The Proposal would result in a very minor increase in vehicular traffic on surrounding roads (Old Pacific Highway) and the feeder road into the site. The increased risk of fauna strike as a result in traffic increases are likely to be negligible given that only five additional residential lots would be facilitated by the planning proposal.</p> |

5.4 Mitigation Measures

Proposed mitigation measures are provided in the event that the proposal proceeds to a future development application.

Table 5.2 Biodiversity Mitigation Measures

| Mitigation | | Reason |
|---------------------|---|---|
| Design | | |
| 1 | Clearing of native trees will be avoided/ minimised in the proposed future layout for the subject land with all infrastructure (including building envelopes, APZs, boundary fences and driveways) to minimise impacts to trees to the maximum extent possible | To ensure that biodiversity impacted are avoided/ minimised as required under the BC Act. |
| 2 | Exterior lighting would be designed and installed in accordance with 'soft lighting' principles | To limit spill into adjacent habitats. |
| Construction | | |
| 3 | An environmental work method statement would be prepared for high risk works such as vegetation clearing and earthworks. | To prevent harm or pollution to the environment. |
| 4 | Erosion and sediment control measures must be installed in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) with specific controls installed around watercourses. | To prevent sediment moving off-site and sediment laden water entering adjacent land. |
| 5 | Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request. | To ensure sediment controls are functional and appropriate. |
| 6 | Work areas are to be stabilised progressively during the works. | To minimise opportunities for soil transport during rainfall events. |
| 7 | Measures must be implemented during construction works so that machinery and plant do not introduce weed seed or propagules to the site (e.g., by adoption and implementation of the 'Arrive Clean, Leave Clean' guidelines (DoE 2015). | To minimise biodiversity risks from weed degradation. |
| 8 | Biosecurity risk weeds are to be managed according to requirements under the <i>Biosecurity Act 2015</i> and/or Council management measures. | To minimise biodiversity risks from weed degradation and meet statutory requirements. |
| 9 | Establishment of tree protection zones (TPZs) for all trees to be retained on the site must be undertaken in accordance with <i>Australian Standard 4970-2009 Protection of trees on development sites</i> . TPZs are to be marked with flagging tape and appropriate no-go area signage. | To ensure retained trees are protected during construction works |
| 10 | Any tree pruning or protection works must be completed by a certificate 5 arborist and in accordance with <i>Australian Standard 4970-2009 Protection of trees on development sites</i> . | To ensure tree health is maintained by professional accepted practices. |
| 11 | The extent of the proposal must be clearly pegged/ marked on site by a surveyor, consistent with final approved plans/ designs. | To prevent over clearing. |

| Mitigation | | Reason |
|------------------------------|---|--|
| 12 | Pre-clearing surveys must be undertaken each morning prior to vegetation clearing by an ecologist or spotter-catcher to ensure nesting or roosting fauna are not present within vegetation to be removed. | To minimise risks to fauna. |
| 13 | Vegetation removed would not be burnt. Vegetation removed would be chipped and mulched for reuse onsite where suitable. | To reduce air pollution /carbon emissions. |
| 13 | Prior to clearing commencing, a pre-clearing ecologist survey must be undertaken to identify any hollow-bearing trees within clearing areas and mark them with red and white flagging tape. | To minimise risks to fauna |
| 14 | <p>All hollow-bearing trees must be removed in accordance with a two-stage clearing process:</p> <ul style="list-style-type: none"> ■ Trees surrounding the hollow-bearing tree are to be cleared initially. ■ A period of 48 hours must pass prior to the hollow-bearing tree being removed. <p>Felling of hollow-bearing trees would be supervised by an ecologist.</p> | To minimise risks to fauna |
| 15 | Where trunk hollows or limbs hollows require removal, an arboreal inspection of the hollow would be undertaken by the arborist. | To minimise risks to fauna |
| 16 | If threatened fauna is discovered, then work would stop immediately, and a plan would be formulated by the ecologist/ wildlife carer to determine the most appropriate course of action. | To minimise risks to fauna |
| 17 | If the hollow is found to be occupied by a non-threatened arboreal mammal or reptile, where appropriate the hollow entrance would be covered (e.g., stuffed with a pillowcase) and the tree limb cut at a suitable distance from the hollow to avoid any fauna impact. | To minimise risks to fauna. |
| 18 | All hollow limbs and trunks containing fauna or are not able to be thoroughly inspected would be lowered to the ground using roping techniques. | To minimise risks to fauna. |
| 19 | All hollows and habitat trees would be inspected by an ecologist after being lowered to the ground. | To minimise risks to fauna. |
| Operation/ Occupation | | |
| 20 | A Vegetation Management Plan (VMP) will be prepared for all C2 zoned land on the site. The VMP will prescribe management measures to conserve/ enhance retained areas of vegetation on the subject lot. Such measures will include weed control requirements, fencing and active restoration methods (planting of native vegetation) to enhance native vegetation on the subject lot. The VMP is to outline appropriate and measurable biometric benchmark targets for success and include appropriate monitoring to measure the success of the plan. | To enhance and conserve retained high value vegetation on the subject lot. |



6. Statutory Requirements

The following sections examine the findings of the site assessment with regard to relevant statutory requirements which require consideration for a future development application on the site.

6.1 Bellinghen Shire Koala Plan of Management and Bellinghen DCP – Chapter 16 Koala Habitat

The *Bellinghen Shire Council Coastal Area – Core Koala Habitat Comprehensive Koala Plan of Management* (CKPoM) was previously adopted by Bellinghen Shire Council under the provisions of Clause 13 of State Environmental Plan No.44 – Koala Habitat Protection (now repealed). The site is mapped as containing areas of Secondary B and Secondary A Koala habitat (refer to **Figure 4.1**). The site is not depicted as including core Koala habitat in the CKPoM.

The provisions of CKPoM apply to land:

- a) Identified as being core Koala habitat on the Core Koala Habitat Map and
- b) That have an area of more than 1 ha.

A future development on the site would not trigger requirements of the CKPoM directly however Koala management requirements of the Bellinghen Development Control Plan (DCP) – Chapter 16 Koala Habitat Protection would need to be addressed. Requirements of this chapter of the DCP apply to developments within the Bellinghen Shire Coastal Area Koala Planning Area that have an area of 0.4 ha or more and have been identified as containing *preferred Koala habitat* (including Secondary habitat which is mapped on the site).

As part of a future DA on the site the DCP requires that:

- A Koala Habitat Assessment Report (KHAR) and Koala Activity Report (KAR) must be prepared.
- Development Criteria included in Section 16.7 of the DCP must be addressed.
- The Habitat Compensation Policy must be addressed in relation to the loss of Koala food trees.

6.2 Biodiversity Conservation Act 2016 (BC Act)

6.2.1 Biodiversity Offset Scheme (BOS)

Entry into the Biodiversity Offset Scheme (BOS) applies to local development (as part of a DA) that exceeds the BOS thresholds which include clearing on land within the Biodiversity Values (BV) Map or clearing of an area that exceeds the area clearing threshold for a particular site. No parts of the site are depicted on the BV Map (refer to **Figure 6.1**).

The land subject to the planning proposal and potential future subdivision has a current minimum lot size of 10 ha (as per the Bellinghen Local Environmental Plan 2010). On this basis, up to 0.5 ha of native vegetation (including grasses, groundcovers, trees and shrubs) may be cleared for a future development on the site without triggering the BOS). Under the proposed lot size amendments, this area would be subject to a minimum lot size of 1 ha, which retains the same 0.5 ha BOS threshold. It appears that clearing of native vegetation required for the proposal is likely to be restricted below 0.5 ha. Native vegetation clearing calculations will need to be undertaken when a final subdivision layout is prepared as part of a future DA on the site to determine if the BOS is triggered. If this is the case a Biodiversity Development Assessment Report (BDAR) would be required to be prepared to support a future DA which would determine biodiversity credit obligations for the proposal.



Figure 6.1 Biodiversity Values Mapping for the site (shown in blue)

6.2.2 Section 5A Assessments (5 Part Tests)

In the event that the BOS is not triggered, an updated Biodiversity Assessment Report (BAR) would be required to support a future DA on the site.

As a number of potentially occurring threatened species have been identified for the site, Section 5A Assessments (Five Part tests) would be required for these species (as part of an update to this report) should a proposal for subdivision on the subject land proceed to a development application. Based on the anticipated impacts of the concept layout it is unlikely that any threatened species would be significantly impacted by the proposal.

6.3 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act protects/ regulates matters of national environmental significance (MNES), including:

- World heritage properties.
- National heritage places.
- Wetlands of international importance.
- Nationally threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- A water resource, in relation to coal seam gas development and large coal mining development.

Based on the search results and site assessment, significant impacts to any MNES would not be likely to result from the proposal (refer to **Table 6.1.**)

Table 6.1 Assessment of MNES

| | |
|--|-------|
| | |
| <i>Any impact on a World Heritage property?</i> | |
| No World Heritage properties occur within a 5 km radius of the site. | Nil |
| <i>Any impact on a National Heritage place?</i> | |
| No National Heritage places occur within a 5 km radius of the site. | Nil |
| <i>Any impact on a Wetland of International Importance?</i> | |
| No wetlands of international importance (Ramsar sites) occur within a 5 km radius of the site. | Nil |
| <i>Any impact on the Great Barrier Reef Marine Park?</i> | |
| The Great Barrier Reef Marine park is distant from the site. | Nil |
| <i>Any impact on a Commonwealth marine area?</i> | |
| No Commonwealth marine areas occur within a 5 km radius of the site. | Nil |
| <i>Any impact on nationally threatened species and ecological communities?</i> | |
| <p>One EPBC listed TEC, <i>Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland</i> occurs on the site. This TEC is to be conserved on the site as part of a C2 zone. As such impacts to this TEC would be minimal.</p> <p>No EPBC listed threatened flora species were detected at the site.</p> <p>A number of EPBC listed fauna species may utilise the site on occasion primarily for foraging habitat. No Important Habitat for such species occurs at the site and as such the LEP amendment and future subdivision as proposed is unlikely to have a significant impact on any EPBC listed threatened fauna species.</p> | Minor |
| <i>Any impact on Migratory species?</i> | |
| Habitat for 58 migratory species is identified within a 5 km radius of the site. The site is not considered to represent Important Habitat for any listed Migratory Species. As such no Migratory Species are considered likely to be significantly impacted by the proposed LEP amendment and future subdivision. | Minor |



7. Summary and Conclusions

Findings of this report are summarised as follows:

Site Results

- The area proposed for the LEP amendment and future five lot, large lot residential subdivision, comprises open (under scrubbed) woodland which contains mature eucalypts representative of PCT 3250 which is not representative of a Threatened Ecological Community (TEC).
- Areas of PCT 4000 representative of Swamp Sclerophyll Forest TEC occur to the north of the area proposed for future development. Such areas are considered to be High Environmental Value (HEV areas) and would not be adversely impacted.
- No threatened flora species were detected at the site.
- Several threatened fauna species are considered to have a moderate-high potential to occur at the site. Nearly all of these species are highly mobile and likely to utilise the site on occasion as foraging habitat as part of broader local foraging ranges.
- The primary Koala food trees, Tallowwood, Swamp Mahogany and Small-fruited Grey Gum are common at the site. BioNet Koala records are largely absent from the land associated with the site which is effectively an island isolated from other Koala habitat by the Pacific Motorway/ Giinagay Way/ Old Pacific Highway to the west, the Bellinger River to the north and east, and the Kalang River to the south. Koalas are considered to have a low likelihood of occurring at the site.

Impacts

- The proposed LEP amendment and future development on the site would aim to avoid impacts to HEV areas as follows:
 - As part of the Planning Proposal all areas of mapped PCT 4000 are proposed to be incorporated into a revised and extended C2 zone on the site. This includes small areas of land zoned as RU1 Primary Production and will equate to an approximate 93% increase to the C2 zone and provide a substantial complementary ecological conservation benefit.
 - As part of a future Development Application (DA) on the site, mature trees would be retained to the maximum extent possible. It is noted that the subdivision concept plan has been designed to locate building envelopes, bushfire asset protection zones (APZs), and boundary fences to avoid and minimise impacts mature trees where possible.
 - As part of a future DA on the site a comprehensive Vegetation Management Plan would be prepared for all C2 zoned land on the site including fencing, weed control, and revegetation measures to ensure this land is effectively managed for conservation into the future.
- Residual impacts of a future five large lot residential subdivision on the site are likely to comprise removal of selected mature trees on the site which have been estimated to represent <0.5 ha of PCT 3250.

Conclusion

Based on the above the proposal for amendment of the LEP and a future five large lot residential subdivision on the site can be undertaken with relatively low biodiversity impacts. Relevant statutory instruments would need to be addressed as part of a future development application on the site in the event the Planning Proposal is approved.



David Havilah
Senior Ecologist



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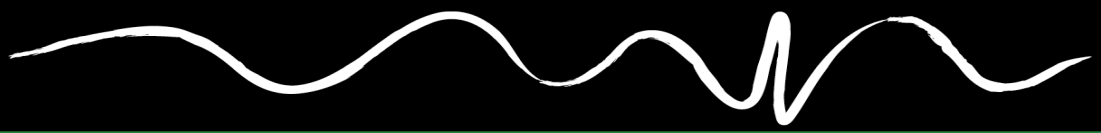
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Appendix A

Database Searches



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 12-Dec-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

| | |
|--|------|
| World Heritage Properties: | None |
| National Heritage Places: | None |
| Wetlands of International Importance (Ramsar | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Area: | 1 |
| Listed Threatened Ecological Communities: | 7 |
| Listed Threatened Species: | 93 |
| Listed Migratory Species: | 59 |

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

| | |
|---|------|
| Commonwealth Lands: | 1 |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 77 |
| Whales and Other Cetaceans: | 12 |
| Critical Habitats: | None |
| Commonwealth Reserves Terrestrial: | None |
| Australian Marine Parks: | None |
| Habitat Critical to the Survival of Marine Turtles: | None |

Extra Information

This part of the report provides information that may also be relevant to the area you have

| | |
|---|------|
| State and Territory Reserves: | 4 |
| Regional Forest Agreements: | 1 |
| Nationally Important Wetlands: | None |
| EPBC Act Referrals: | 3 |
| Key Ecological Features (Marine): | None |
| Biologically Important Areas: | 5 |
| Bioregional Assessments: | None |
| Geological and Bioregional Assessments: | None |

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

| Feature Name | Buffer Status |
|-------------------------|---------------------|
| EEZ and Territorial Sea | In buffer area only |

Listed Threatened Ecological Communities

[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

| Community Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|---------------------------------------|---------------------|
| Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community | Endangered | Community likely to occur within area | In feature area |
| Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland | Endangered | Community likely to occur within area | In feature area |
| Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland | Endangered | Community may occur within area | In buffer area only |
| Littoral Rainforest and Coastal Vine Thickets of Eastern Australia | Critically Endangered | Community likely to occur within area | In buffer area only |
| Lowland Rainforest of Subtropical Australia | Critically Endangered | Community likely to occur within area | In feature area |
| Subtropical and Temperate Coastal Saltmarsh | Vulnerable | Community likely to occur within area | In buffer area only |
| Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions | Endangered | Community likely to occur within area | In feature area |

Listed Threatened Species

[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| BIRD | | | |
| Anthochaera phrygia Regent Honeyeater [82338] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Atrichornis rufescens Rufous Scrub-bird [655] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Botaurus poiciloptilus Australasian Bittern [1001] | Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714] | Endangered | Species or species habitat may occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea antipodensis gibsoni Gibson's Albatross [82270] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| Diomedea epomophora Southern Royal Albatross [89221] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea exulans Wandering Albatross [89223] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Erythroriorchis radiatus Red Goshawk [942] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Falco hypoleucos Grey Falcon [929] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Grantiella picta Painted Honeyeater [470] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Hirundapus caudacutus White-throated Needletail [682] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Lathamus discolor Swift Parrot [744] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380] | Vulnerable | Species or species habitat known to occur within area | In buffer area only |
| Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered | Species or species habitat may occur within area | In feature area |
| Macronectes halli Northern Giant Petrel [1061] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|--|---------------------|
| Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Pachyptila turtur subantarctica Fairy Prion (southern) [64445] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Phoebetria fusca Sooty Albatross [1075] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Pterodroma neglecta neglecta Kermadec Petrel (western) [64450] | Vulnerable | Foraging, feeding or related behaviour may occur within area | In buffer area only |
| Rostratula australis Australian Painted Snipe [77037] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Sternula nereis nereis Australian Fairy Tern [82950] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche carteri Indian Yellow-nosed Albatross [64464] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Thalassarche cauta Shy Albatross [89224] | Endangered | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|------------------------|--|---------------------|
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche melanophris Black-browed Albatross [66472] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche salvini Salvin's Albatross [64463] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche steadi White-capped Albatross [64462] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Turnix melanogaster Black-breasted Button-quail [923] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| FISH | | | |
| Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Serirolella brama Blue Warehou [69374] | Conservation Dependent | Species or species habitat known to occur within area | In buffer area only |
| Thunnus maccoyii Southern Bluefin Tuna [69402] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |
| FROG | | | |
| Litoria aurea Green and Golden Bell Frog [1870] | Vulnerable | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| INSECT | | | |
| Argynnis hyperbius inconstans Australian Fritillary [88056] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Phyllodes imperialis smithersi Pink Underwing Moth [86084] | Endangered | Species or species habitat may occur within area | In buffer area only |
| MAMMAL | | | |
| Balaenoptera musculus Blue Whale [36] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] | Endangered | Species or species habitat known to occur within area | In feature area |
| Eubalaena australis Southern Right Whale [40] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Notamacropus parma Parma Wallaby [89289] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Petauroides volans Greater Glider (southern and central) [254] | Endangered | Species or species habitat known to occur within area | In feature area |
| Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600] | Vulnerable | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|---------------------|
| Petrogale penicillata Brush-tailed Rock-wallaby [225] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104] | Endangered | Species or species habitat known to occur within area | In feature area |
| Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Pseudomys novaehollandiae New Holland Mouse, Pookila [96] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Pseudomys oralis Hastings River Mouse, Koontoo [98] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Pteropus poliocephalus Grey-headed Flying-fox [186] | Vulnerable | Roosting known to occur within area | In feature area |
| PLANT | | | |
| Acronychia littoralis Scented Acronychia [8582] | Endangered | Species or species habitat known to occur within area | In feature area |
| Allocasuarina thalassoscopica [21927] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Arthraxon hispidus Hairy-joint Grass [9338] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Bertya sp. Clouds Creek (M. Fatemi 4) [84675] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Cryptostylis hunteriana Leafless Tongue-orchid [19533] | Vulnerable | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Cynanchum elegans White-flowered Wax Plant [12533] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Parsonsia dorrigoensis Milky Silkpod [64684] | Endangered | Species or species habitat known to occur within area | In feature area |
| Persicaria elatior Knotweed, Tall Knotweed [5831] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Phaius australis Lesser Swamp-orchid [5872] | Endangered | Species or species habitat known to occur within area | In feature area |
| Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [55742] | Endangered | Species or species habitat may occur within area | In buffer area only |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|---|---------------------|
| Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Rhodomyrtus psidioides Native Guava [19162] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Sarcochilus fitzgeraldii Ravine Orchid [19131] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Thesium australe Austral Toadflax, Toadflax [15202] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Vincetoxicum woollsii listed as Tylophora woollsii [40080] | Endangered | Species or species habitat known to occur within area | In feature area |
| Zieria prostrata Headland Zieria [56782] | Endangered | Species or species habitat may occur within area | In buffer area only |
| REPTILE | | | |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|---|-----------------|
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Breeding likely to occur within area | In feature area |
| Wollumbinia georgesi Georges' Snapping Turtle, Bellinger River Sawshell Turtle, Georges Helmeted Turtle [86072] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |

| SHARK | | | |
|--|------------------------|--|---------------------|
| Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751] | Critically Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Carcharodon carcharias White Shark, Great White Shark [64470] | Vulnerable | Species or species habitat known to occur within area | In buffer area only |
| Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453] | Conservation Dependent | Species or species habitat may occur within area | In buffer area only |
| Rhincodon typus Whale Shark [66680] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Sphyrna lewini Scalloped Hammerhead [85267] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |

| Listed Migratory Species | | [Resource Information] | |
|---|---------------------|--|-----------------|
| Scientific Name | Threatened Category | Presence Text | Buffer Status |
| Migratory Marine Birds | | | |
| Anous stolidus Common Noddy [825] | | Species or species habitat likely to occur within area | In feature area |
| Apus pacificus Fork-tailed Swift [678] | | Species or species habitat likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Ardenna grisea Sooty Shearwater [82651] | | Species or species habitat likely to occur within area | In feature area |
| Calonectris leucomelas Streaked Shearwater [1077] | | Species or species habitat may occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea epomophora Southern Royal Albatross [89221] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea exulans Wandering Albatross [89223] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | Species or species habitat likely to occur within area | In feature area |
| Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered | Species or species habitat may occur within area | In feature area |
| Macronectes halli Northern Giant Petrel [1061] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat may occur within area | In feature area |
| Phoebetria fusca Sooty Albatross [1075] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Sternula albifrons Little Tern [82849] | | Species or species habitat may occur within area | In buffer area only |
| Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche carteri Indian Yellow-nosed Albatross [64464] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Thalassarche cauta Shy Albatross [89224] | Endangered | Species or species habitat may occur within area | In feature area |
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche melanophris Black-browed Albatross [66472] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche salvini Salvin's Albatross [64463] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche steadi White-capped Albatross [64462] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Migratory Marine Species | | | |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat may occur within area | In buffer area only |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|---|---------------------|
| Balaenoptera musculus Blue Whale [36] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Carcharhinus longimanus Oceanic Whitetip Shark [84108] | | Species or species habitat may occur within area | In buffer area only |
| Carcharodon carcharias White Shark, Great White Shark [64470] | Vulnerable | Species or species habitat known to occur within area | In buffer area only |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Eubalaena australis as Balaena glacialis australis Southern Right Whale [40] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Lamna nasus Porbeagle, Mackerel Shark [83288] | | Species or species habitat may occur within area | In feature area |
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat known to occur within area | In buffer area only |
| Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033] | | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|---|---------------------|
| Mobula birostris as Manta birostris Giant Manta Ray [90034] | | Species or species habitat may occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Breeding likely to occur within area | In feature area |
| Orcinus orca Killer Whale, Orca [46] | | Species or species habitat may occur within area | In buffer area only |
| Rhincodon typus Whale Shark [66680] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942] | | Species or species habitat may occur within area | In buffer area only |
| Migratory Terrestrial Species | | | |
| Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651] | | Species or species habitat known to occur within area | In feature area |
| Hirundapus caudacutus White-throated Needletail [682] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Monarcha melanopsis Black-faced Monarch [609] | | Species or species habitat known to occur within area | In feature area |
| Myiagra cyanoleuca Satin Flycatcher [612] | | Species or species habitat known to occur within area | In feature area |
| Rhipidura rufifrons Rufous Fantail [592] | | Species or species habitat known to occur within area | In feature area |
| Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946] | | Species or species habitat known to occur within area | In feature area |
| Migratory Wetlands Species | | | |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat may occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Gallinago hardwickii Latham's Snipe, Japanese Snipe [863] | | Species or species habitat known to occur within area | In feature area |
| Gallinago megala Swinhoe's Snipe [864] | | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| Gallinago stenura Pin-tailed Snipe [841] | | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| Limosa lapponica Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In buffer area only |
| Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Numenius minutus Little Curlew, Little Whimbrel [848] | | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| Pandion haliaetus Osprey [952] | | Breeding known to occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | | Species or species habitat likely to occur within area | In feature area |

Other Matters Protected by the EPBC Act

Commonwealth Lands

[Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

| Commonwealth Land Name | State | Buffer Status |
|---|-------|---------------------|
| Communications, Information Technology and the Arts - Telstra Corporation Limited | | |
| Commonwealth Land - Telstra Corporation Limited [11358] | NSW | In buffer area only |

| Listed Marine Species | [Resource Information] | | |
|--|--|--|-----------------|
| Scientific Name | Threatened Category | Presence Text | Buffer Status |
| Bird | | | |
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Anous stolidus Common Noddy [825] | | Species or species habitat likely to occur within area | In feature area |
| Apus pacificus Fork-tailed Swift [678] | | Species or species habitat likely to occur within area overfly marine area | In feature area |
| Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|---|-----------------|
| Ardenna grisea as Puffinus griseus Sooty Shearwater [82651] | | Species or species habitat likely to occur within area | In feature area |
| Bubulcus ibis as Ardea ibis Cattle Egret [66521] | | Breeding likely to occur within area overfly marine area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Calonectris leucomelas Streaked Shearwater [1077] | | Species or species habitat may occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Diomedea epomophora Southern Royal Albatross [89221] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Diomedea exulans Wandering Albatross [89223] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | Species or species habitat likely to occur within area | In feature area |
| Gallinago hardwickii Latham's Snipe, Japanese Snipe [863] | | Species or species habitat known to occur within area overfly marine area | In feature area |
| Gallinago megala Swinhoe's Snipe [864] | | Foraging, feeding or related behaviour likely to occur within area overfly marine area | In buffer area only |
| Gallinago stenura Pin-tailed Snipe [841] | | Foraging, feeding or related behaviour likely to occur within area overfly marine area | In buffer area only |
| Haliaeetus leucogaster White-bellied Sea-Eagle [943] | | Species or species habitat known to occur within area | In feature area |
| Hirundapus caudacutus White-throated Needletail [682] | Vulnerable | Species or species habitat known to occur within area overfly marine area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| Lathamus discolor Swift Parrot [744] | Critically Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |
| Limosa lapponica Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In buffer area only |
| Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered | Species or species habitat may occur within area | In feature area |
| Macronectes halli Northern Giant Petrel [1061] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Merops ornatus Rainbow Bee-eater [670] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Monarcha melanopsis Black-faced Monarch [609] | | Species or species habitat known to occur within area overfly marine area | In feature area |
| Myiagra cyanoleuca Satin Flycatcher [612] | | Species or species habitat known to occur within area overfly marine area | In feature area |
| Neophema chrysostoma Blue-winged Parrot [726] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Numenius minutus Little Curlew, Little Whimbrel [848] | | Foraging, feeding or related behaviour likely to occur within area overfly marine area | In buffer area only |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Pachyptila turtur Fairy Prion [1066] | | Species or species habitat known to occur within area | In feature area |
| Pandion haliaetus Osprey [952] | | Breeding known to occur within area | In feature area |
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat may occur within area | In feature area |
| Phoebetria fusca Sooty Albatross [1075] | Vulnerable | Species or species habitat may occur within area | In buffer area only |
| Rhipidura rufifrons Rufous Fantail [592] | | Species or species habitat known to occur within area overfly marine area | In feature area |
| Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037] | Endangered | Species or species habitat likely to occur within area overfly marine area | In feature area |
| Stercorarius skua as Catharacta skua Great Skua [823] | | Species or species habitat may occur within area | In buffer area only |
| Sternula albifrons as Sterna albifrons Little Tern [82849] | | Species or species habitat may occur within area | In buffer area only |
| Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946] | | Species or species habitat known to occur within area overfly marine area | In feature area |
| Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Thalassarche carteri Indian Yellow-nosed Albatross [64464] | Vulnerable | Species or species habitat likely to occur within area | In buffer area only |
| Thalassarche cauta Shy Albatross [89224] | Endangered | Species or species habitat may occur within area | In feature area |
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Thalassarche melanophris Black-browed Albatross [66472] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche salvini Salvin's Albatross [64463] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Thalassarche steadi White-capped Albatross [64462] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | | Species or species habitat likely to occur within area overfly marine area | In feature area |
| Fish | | | |
| Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187] | | Species or species habitat may occur within area | In buffer area only |
| Festucalex cinctus Girdled Pipefish [66214] | | Species or species habitat may occur within area | In buffer area only |
| Filicampus tigris Tiger Pipefish [66217] | | Species or species habitat may occur within area | In buffer area only |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|---------------------|
| Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229] | | Species or species habitat may occur within area | In buffer area only |
| Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231] | | Species or species habitat may occur within area | In buffer area only |
| Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240] | | Species or species habitat likely to occur within area | In buffer area only |
| Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242] | | Species or species habitat may occur within area | In buffer area only |
| Lissocampus runa Javelin Pipefish [66251] | | Species or species habitat may occur within area | In buffer area only |
| Maroubra perserrata Sawtooth Pipefish [66252] | | Species or species habitat may occur within area | In buffer area only |
| Solegnathus dunckeri Duncker's Pipehorse [66271] | | Species or species habitat may occur within area | In buffer area only |
| Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183] | | Species or species habitat may occur within area | In buffer area only |
| Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184] | | Species or species habitat may occur within area | In buffer area only |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|---|---------------------|
| Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277] | | Species or species habitat may occur within area | In buffer area only |
| Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279] | | Species or species habitat may occur within area | In buffer area only |
| Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280] | | Species or species habitat may occur within area | In buffer area only |
| Urocampus carinirostris Hairy Pipefish [66282] | | Species or species habitat may occur within area | In buffer area only |
| Vanacampus margaritifer Mother-of-pearl Pipefish [66283] | | Species or species habitat may occur within area | In buffer area only |
| Reptile | | | |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Foraging, feeding or related behaviour known to occur within area | In feature area |
| Hydrophis elegans Elegant Seasnake [1104] | | Species or species habitat may occur within area | In buffer area only |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Breeding likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Pelamis platurus Yellow-bellied Seasnake [1091] | | Species or species habitat may occur within area | In buffer area only |
| Whales and Other Cetaceans [Resource Information] | | | |
| Current Scientific Name | Status | Type of Presence | Buffer Status |
| Mammal | | | |
| Balaenoptera acutorostrata Minke Whale [33] | | Species or species habitat may occur within area | In buffer area only |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat may occur within area | In buffer area only |
| Balaenoptera musculus Blue Whale [36] | Endangered | Species or species habitat may occur within area | In buffer area only |
| Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60] | | Species or species habitat may occur within area | In buffer area only |
| Eubalaena australis Southern Right Whale [40] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Grampus griseus Risso's Dolphin, Grampus [64] | | Species or species habitat may occur within area | In buffer area only |
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat known to occur within area | In buffer area only |
| Orcinus orca Killer Whale, Orca [46] | | Species or species habitat may occur within area | In buffer area only |
| Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942] | | Species or species habitat may occur within area | In buffer area only |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|---|--------|--|---------------------|
| Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51] | | Species or species habitat may occur within area | In buffer area only |
| Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418] | | Species or species habitat likely to occur within area | In buffer area only |
| Tursiops truncatus s. str. Bottlenose Dolphin [68417] | | Species or species habitat may occur within area | In buffer area only |

Extra Information

| State and Territory Reserves | | | [Resource Information] |
|------------------------------|-----------------|-------|--|
| Protected Area Name | Reserve Type | State | Buffer Status |
| Bongil Bongil | National Park | NSW | In buffer area only |
| Jaaningga | Nature Reserve | NSW | In buffer area only |
| Jagun | Nature Reserve | NSW | In buffer area only |
| Nunguu Mirral | Aboriginal Area | NSW | In buffer area only |

| Regional Forest Agreements | | [Resource Information] |
|---|-----------------|--|
| Note that all areas with completed RFAs have been included. | | |
| RFA Name | State | Buffer Status |
| North East NSW RFA | New South Wales | In feature area |

| EPBC Act Referrals | | | [Resource Information] | |
|--|-----------|-----------------------|--------------------------|---------------------|
| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
| Controlled action | | | | |
| Nambucca Heads to Urunga Pacific Highway Upgrade, NSW | 2013/6963 | Controlled Action | Post-Approval | In feature area |
| Not controlled action | | | | |
| Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia | 2015/7522 | Not Controlled Action | Completed | In feature area |
| Referral decision | | | | |
| Breeding program for Grey Nurse Sharks | 2007/3245 | Referral Decision | Completed | In buffer area only |

| Biologically Important Areas | | | |
|------------------------------|-----------|----------|---------------|
| Scientific Name | Behaviour | Presence | Buffer Status |

| Scientific Name | Behaviour | Presence | Buffer Status |
|---|-----------|-----------------|---------------------|
| Dolphins | | | |
| Tursiops aduncus | | | |
| Indo-Pacific/Spotted Bottlenose Dolphin [68418] | Breeding | Likely to occur | In buffer area only |
| Seabirds | | | |
| Ardeenna carneipes | | | |
| Flesh-footed Shearwater [82404] | Foraging | Known to occur | In buffer area only |
| Procellaria parkinsoni | | | |
| Black Petrel [1048] | Foraging | Likely to occur | In buffer area only |
| Sharks | | | |
| Carcharias taurus | | | |
| Grey Nurse Shark [64469] | Foraging | Known to occur | In buffer area only |
| Whales | | | |
| Megaptera novaeangliae | | | |
| Humpback Whale [38] | Foraging | Known to occur | In buffer area only |

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

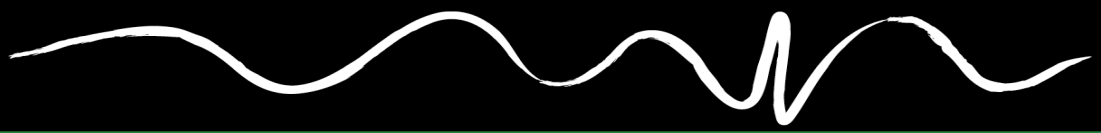
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Appendix B

Flora Inventory

Table B.7.1 Flora Inventory

| Family | Scientific Name | Common Name |
|-----------------------------|---|------------------------|
| Adiantaceae | <i>Adiantum hispidulum</i> | Rough Maidenhair |
| Adiantaceae | <i>Asplenium australasicum</i> | Bird's Nest Fern |
| Apiaceae | <i>Centella asiatica</i> | Pennywort |
| Apocynaceae | <i>Gomphocarpus physocarpus</i> * | Balloon Cotton Bush |
| Asteraceae | <i>Ageratina adenophora</i> * | Crofton Weed |
| Asteraceae | <i>Ageratina riparia</i> * | Mistflower |
| Asteraceae | <i>Ageratum houstonianum</i> * | Ble Billygoat Weed |
| Asteraceae | <i>Ambrosia artemisiifolia</i> * | Annual Ragweed |
| Asteraceae | <i>Bidens pilosa</i> * | Farmer's Friends |
| Asteraceae | <i>Cirsium vulgare</i> * | Spear Thistle |
| Asteraceae | <i>Conyza bonariensis</i> * | Flaxleaf Fleabane |
| Asteraceae | <i>Senecio madagascariensis</i> * | Fireweed |
| Blechnaceae | <i>Blechnum cartilagineum</i> | Gristle Fern |
| Caryophyllaceae | <i>Stellaria media</i> * | Common Chickweed |
| Casuarinaceae | <i>Allocasuarina torulosa</i> | Forest Oak |
| Casuarinaceae | <i>Casuarina glauca</i> | Swamp Oak |
| Euphorbiaceae | <i>Breynia oblongifolia</i> | Coffee Bush |
| Euphorbiaceae | <i>Breynia oblongifolia</i> | Breynia |
| Euphorbiaceae | <i>Glochidion ferdinandi</i> var. <i>fernandi</i> | Cheese Tree |
| Fabaceae | <i>Vigna</i> sp. | <i>Vigna</i> sp. |
| Fabaceae | <i>Acacia melanoxylon</i> | Blackwood |
| Fabaceae (Caesalpinioideae) | <i>Senna pendula</i> var. <i>glabrata</i> * | Winter Senna |
| Fabaceae (Faboideae) | <i>Desmodium intortum</i> * | Green-leaved Desmodium |
| Lauraceae | <i>Cinnamomum camphora</i> * | Camphor Laurel |
| Lomandraceae | <i>Lomandra longifolia</i> | Spiny-headed Mat-rush |
| Luzuriagaceae | <i>Eustrephus latifolius</i> | Wombat Berry |
| Malvaceae | <i>Sida rhombifolia</i> * | Paddy's Lucerne |
| Menispermaceae | <i>Stephania japonica</i> var. <i>discolor</i> | Snake Vine |
| Moraceae | <i>Ficus coronata</i> | Creek Sandpaper Fig |
| Moraceae | <i>Ficus fraseri</i> | Forest Sandpaper Fig |

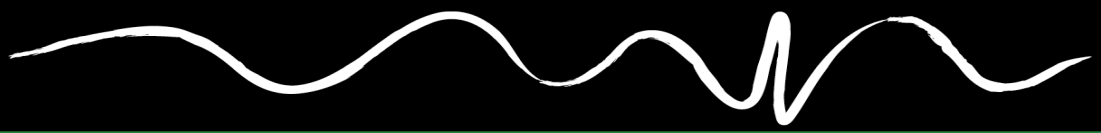


| | | |
|----------------|--------------------------------|----------------------------|
| Moraceae | <i>Ficus obliqua</i> | Small-leaved Fig |
| Moraceae | <i>Maclura cochinchinensis</i> | Cockspur |
| Moraceae | <i>Trophis scandens</i> | Burny Vine |
| Myrtaceae | <i>Lophostemon suaveolens</i> | Swamp Turpentine |
| Myrtaceae | <i>Melaleuca quinquenervia</i> | Broad-leaved Paperbark |
| Myrtaceae | <i>Ptilidostigma glabrum</i> | Plum Myrtle |
| Myrtaceae | <i>Psidium cattleianum</i> * | Cherry Guava* |
| Myrtaceae | <i>Syncarpia glomulifera</i> | Turpentine |
| Myrtaceae | <i>Acmena smithii</i> | Lilly Pilly |
| Myrtaceae | <i>Callistemon salignus</i> | Willow Bottlebrush |
| Myrtaceae | <i>Corymbia intermedia</i> | Pink Bloodwood |
| Myrtaceae | <i>Eucalyptus acmenoides</i> | White Mahogany |
| Myrtaceae | <i>Eucalyptus microcorys</i> | Tallowwood |
| Myrtaceae | <i>Eucalyptus pilularis</i> | Blackbutt |
| Myrtaceae | <i>Eucalyptus propinqua</i> | Small-fruited Grey Gum |
| Myrtaceae | <i>Eucalyptus robusta</i> | Swamp Mahogany |
| Myrtaceae | <i>Eucalyptus siderophloia</i> | Northern Grey Ironbark |
| Myrtaceae | <i>Lophostemon confertus</i> | Brush Box |
| Ochnaceae | <i>Ochna serrulata</i> * | Ochna* |
| Oleaceae | <i>Notelaea longifolia</i> | Large Mock-olive |
| Passifloraceae | <i>Passiflora suberosa</i> * | Corky Passionfruit |
| Passifloraceae | <i>Passiflora edulis</i> * | Common Passionfruit* |
| Passifloraceae | <i>Passiflora subpeltata</i> * | White Passionfruit* |
| Phormiaceae | <i>Dianella longifolia</i> | <i>Dianella longifolia</i> |
| Phytolaccaceae | <i>Phytolacca octandra</i> * | Inkweed* |
| Pittosporaceae | <i>Pittosporum multiflorum</i> | Orange Thorn |
| Pittosporaceae | <i>Pittosporum undulatum</i> | Sweet Pittosporum |
| Pittosporaceae | <i>Pittosporum revolutum</i> | Hairy Pittosporum |
| Poaceae | <i>Axonopus fissifolius</i> | Narrow-leaved Carpet Grass |
| Poaceae | <i>Chloris gayana</i> * | Rhodes Grass |
| Poaceae | <i>Cynodon dactylon</i> | Common Couch |
| Poaceae | <i>Imperata cylindrica</i> | Blady Grass |
| Poaceae | <i>Melinis repens</i> * | Red Natal Grass |



| | | |
|--------------|---|-------------------------|
| Poaceae | <i>Microlaena stipoides</i> var. <i>stipoides</i> | Weeping Grass |
| Poaceae | <i>Oplismenus aemulus</i> | Basket Grass |
| Poaceae | <i>Ottochloa gracillima</i> | Shade Grass |
| Poaceae | <i>Paspalum mandiocanum</i> * | Broad-leaved Paspalum |
| Poaceae | <i>Paspalum urvillei</i> * | Vasey Grass |
| Poaceae | <i>Pennisetum alopecuroides</i> | Swamp Foxtail |
| Poaceae | <i>Setaria sphacelata</i> * | Pigeon Grass |
| Poaceae | <i>Sporobolus africanus</i> * | Paramatta Grass |
| Poaceae | <i>Themeda australis</i> | Kangaroo Grass |
| Polygonaceae | <i>Rumex sagittate</i> * | Turkey Rhubarb |
| Rhamnaceae | <i>Alphitonia excelsa</i> | Red Ash |
| Rosaceae | <i>Rubus rosafolius</i> | Native Raspberry |
| Rosaceae | <i>Eriobotrya japonica</i> * | Loquat* |
| Rutaceae | Rutaceae <i>Coffea</i> sp.* | Coffee Bush* |
| Rutaceae | <i>Melicope elleryana</i> | Pink-flowered Doughwood |
| Sapindaceae | <i>Guioa semiglauc</i> | Guioa |
| Sapindaceae | <i>Jagera pseudorhus</i> var. <i>pseudorhus</i> | Foambark Tree |
| Smilacaceae | <i>Smilax australis</i> | Lawyer Vine |
| Solanaceae | <i>Solanum mauritianum</i> * | Wild Tobacco Bush |
| Verbenaceae | <i>Lantana camara</i> * | Lantana |
| Verbenaceae | <i>Verbena bonariensis</i> * | Purpletop |
| Verbenaceae | <i>Verbena rigida</i> * | Veined Verbena |

*Introduced species



Appendix C

Threatened Fauna Potential Occurrence

Potential of Occurrence Assessment

A potential of occurrence assessment was completed to assess the likelihood of occurrence of each threatened species or population identified within the subject site. All threatened biodiversity identified in background research were considered. The assessment is based on the habitat profile for the species and other habitat information in the Threatened Species Profile Database (Environment Energy and Science Group). The assessment also takes into consideration the dates and locations of nearby records and information about species populations in the locality.

Threatened Fauna Potential Occurrence Assessment

For this proposed activity, the likelihood of occurrence of threatened and migratory fauna species and populations was determined based on the criteria shown in **Table C1**.


Table C.1 Potential of occurrence criteria for threatened species and populations of fauna

| Potential of occurrence | Criteria |
|-------------------------|---|
| Known | The species was observed in the subject site either during the current survey or during another survey less than one year prior. |
| High | A species has a high likelihood of occurrence if: <ul style="list-style-type: none">■ the subject site contains or forms part of a large area of high-quality suitable habitat■ important habitat elements (i.e. for breeding or important life cycle periods such as winter foraging periods) are abundant within the subject site■ the species has been recorded recently in similar habitat in the locality■ the subject site is likely to support resident populations or to contain habitat that is visited by the species during regular seasonal movements or migration. |
| Moderate | A species has a moderate likelihood of occurrence if: <ul style="list-style-type: none">■ the subject site contains or forms part of a small area of high-quality suitable habitat■ the subject site contains or forms part of a large area of marginal habitat■ important habitat elements (i.e. for breeding or important life cycle periods such as winter foraging periods) are sparse or absent within the subject site■ the subject site is unlikely to support resident populations or to contain habitat that is visited by the species during regular seasonal movements or migration but is likely to be used occasionally during seasonal movements and/or dispersal. |
| Low | A species has a low likelihood of occurrence if: <ul style="list-style-type: none">■ potentially suitable habitat exists but the species has not been recorded recently (previous 10 years) in the locality despite intensive survey (i.e. the species is considered to be locally extinct)■ the species is considered to be a rare vagrant, likely only to visit the subject site very rarely; e.g. during juvenile dispersal or exceptional climatic conditions (e.g. extreme drought conditions in typical habitat of inland birds). |
| None | Suitable habitat is absent from the subject site. |


Table C.2 Threatened Fauna Potential Occurrence Assessment*

*Migratory/pelagic marine species identified in the search results are not assessed as no habitat occurs at the site


| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|----------------------------------|-----------------------|--------|----------|--|--|
| | | BC Act | EPBC Act | | |
| Amphibian | | | | | |
| <i>Crinia tinnula</i> | Wallum Froglet | V | - | Acid paperbark and sedge swamps known as 'wallum', this is a banksia-dominated lowland heath ecosystem characterised by acidic waterbodies. | Low – the site is marginal habitat and only one BioNet record (1996) within search area. |
| <i>Litoria brevipalmata</i> | Green-thighed Frog | V | - | Rainforest, moist to dry eucalypt forest and heath, typically where surface water gathers after rain. | Low – marginal habitat on the site and only two BioNet records within search area both north of the Bellinger River. |
| Avifauna | | | | | |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | E | E | Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes. | Low – vegetation on the site is marginal habitat for this species given disturbed nature. |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | E | CE | Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes. | None – suitable habitat is absent from the site. |
| <i>Calyptorhynchus lathami</i> | Glossy Black-Cockatoo | V | V | Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1,000 m. | Low –she-oaks representing foraging habitat are scarce on the site. |
| <i>Charadrius leschenaultii</i> | Greater Sand Plover | V | - | Wide sandy beaches, mangroves, saltmarsh, mudflats and exposed reefs. | None - suitable habitat is absent from the site |
| <i>Coracina lineata</i> | Barred Cuckoo-shrike | V | - | Rainforest, eucalypt woodlands, swamp woodlands and timber along watercourses. | Low – marginal habitat on the site. Only for historical records of this species from the 1980s and 1990s within the search area. |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella | V | - | Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. | Low – a number BioNet records in locality but marginal habitat on the site. |




| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|-----------------------------------|---------------------------|--------|----------|--|---|
| | | BC Act | EPBC Act | | |
| <i>Ephippiorhynchus asiaticus</i> | Black-necked Stork | E | - | Swamps, mangroves, mudflats, dry floodplains. | Moderate – may forage within PCT 4000 on occasion. |
| <i>Esacus magnirostris</i> | Beach Stone-curlew | CE | - | Tidal flats at the mouth of estuaries or on open beaches. | None – suitable habitat is absent from the site. |
| <i>Glossopsitta pusilla</i> | Little Lorikeet | V | - | Forages in open Eucalyptus forest and woodland; also feeds on Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. | Moderate – suitable habitat on the site and recent records in locality |
| <i>Grus rubicunda</i> | Brolga | V | - | Shallow swamps, floodplains, grasslands and pastoral lands, usually in pairs or parties. | Moderate – may forage on the site on occasion |
| <i>Haematopus fuliginosus</i> | Sooty Oystercatcher | V | - | Intertidal rocky and coral reefs, mostly ocean shores. | None – suitable habitat is absent from the site |
| <i>Haematopus longirostris</i> | Pied Oystercatcher | E | - | Open beaches, intertidal flats, sandbanks and occasionally rocky headlands. | None – suitable habitat is absent from the site |
| <i>Haliaeetus leucogaster</i> | White-bellied Sea-eagle | V | - | Coastal habitats and around terrestrial wetlands characterised by the presence of large areas of open water (larger rivers, swamps, lakes, ocean). Habitats may include freshwater swamps, lakes, reservoirs, billabongs, saltmarsh and sewage ponds in addition to bays and inlets, beaches, reefs, lagoons, estuaries and mangroves. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Hieraaetus morphnoides</i> | Little Eagle | V | - | Open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | - | V | Most often recorded aerial foraging above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy. Breeding does not occur in Australia. | Low – may forage over the site but unlikely to utilise the site itself. |




| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|----------------------------------|---------------------|--------|----------|--|---|
| | | BC Act | EPBC Act | | |
| <i>Irediparra gallinacea</i> | Comb-crested Jacana | V | - | Among vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams. | None – no permanent waterways on the site |
| <i>Ixobrychus flavicollis</i> | Black Bittern | V | - | Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves. | Low – marginal habitat and only two BioNet records from the 1990s within the search area. |
| <i>Lichenostomus fasciolaris</i> | Mangrove Honeyeater | V | - | Mangrove forest, also near coastal forests and woodlands including casuarina and paperbark swamps. | Low – marginal habitat and only one BioNet record in the search area south of Urunga. |
| <i>Lophoictinia isura</i> | Square-tailed Kite | V | - | Dry woodland and open forest, particularly along major rivers and belts of trees in urban or semi-urban areas. Home ranges can extend over at least 100 km ² . | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Ninox strenua</i> | Powerful Owl | V | - | Woodland and open forest to tall moist forest and rainforest. Requires large tracts of forest or woodland habitat but may also occur in fragmented landscapes. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Numenius madagascariensis</i> | Eastern Curlew | - | CE | Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats and sometimes saltmarsh of sheltered coasts. | None – suitable habitat is absent from the site. |
| <i>Oxyura australis</i> | Blue-billed Duck | V | - | Deep water in large permanent wetlands and swamps with dense aquatic vegetation. | None – the site lacks permanent waterbodies. |
| <i>Pandion cristatus</i> | Eastern Osprey | V | - | Littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. Typically occur in coastal areas but occasionally travel inland along major rivers. Wetland habitats include inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |



| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|---|-------------------------|--------|----------|--|---|
| | | BC Act | EPBC Act | | |
| <i>Pomatostomus temporalis temporalis</i> | Grey-crowned Babbler | V | - | Open woodlands dominated by mature eucalypts, with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs. | Low – marginal habitat and only two BioNet records in search area south of Urunga. |
| <i>Ptilinopus magnificus</i> | Wompoo Fruit-dove | V | - | Rainforests, low-elevation moist eucalypt forest, and Brush Box forests. | Moderate – suitable habitat on the site and recent records in locality |
| <i>Ptilinopus regina</i> | Rose-crowned Fruit-dove | V | - | Subtropical and dry rainforest, moist eucalypt forest and swamp forest. | Moderate – suitable habitat on the site and recent records in locality |
| <i>Ptilinopus superbus</i> | Superb Fruit-dove | V | - | Subtropical and dry rainforest, moist eucalypt forest and swamp forest. | Low – marginal habitat and only one BioNet record in search area. |
| <i>Stagonopleura guttata</i> | Diamond Firetail | V | - | Grassy eucalypt woodlands, open forest, mallee, temperate grassland, and secondary grassland derived from other communities, riparian areas, and sometimes in lightly wooded farmland. | Low – high disturbance at site limits potential and only one BioNet record (1996) in search area. |
| <i>Sternula albifrons</i> | Little Tern | E | - | Coastal waters, bays, shallow inlets, salt or brackish lakes. | None – suitable habitat is absent from the site |
| <i>Tyto longimembris</i> | Eastern Grass Owl | V | - | Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Tyto novaehollandiae</i> | Masked Owl | V | - | Dry eucalypt forest and woodlands. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| <i>Tyto tenebricosa</i> | Sooty Owl | V | - | Dry, subtropical and warm temperate rainforests and wet eucalypt forests. Nest in large tree hollows. | Low – may forage in the broader locality but unlikely to utilise the site as permanent habitat. |
| Mammals | | | | | |
| <i>Dasyurus maculatus</i> | Spotted-tailed Quoll | V | E | Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops. | Low – marginal habitat on the site and no recent BioNet records within the search area |



| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|---------------------------------------|---------------------------------|--------|----------|---|--|
| | | BC Act | EPBC Act | | |
| <i>Falsistrellus tasmaniensis</i> | Eastern False Pipistrelle | V | - | Moist and dry eucalypt forest and rainforest, particularly at high elevations. | Moderate – could the site as foraging habitat on occasion. |
| <i>Micronomus norfolkensis</i> | Eastern Coastal Free-tailed Bat | V | - | Occurs in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosts in tree hollows. | Moderate – could the site as foraging habitat on occasion. |
| <i>Miniopterus australis</i> | Little Bent-winged Bat | V | - | Moist eucalypt forest, rainforest and dense coastal scrub. | Moderate – could the site as foraging habitat on occasion. |
| <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat | V | - | Forest or woodland, roost in caves, old mines and stormwater channels. | Moderate – could the site as foraging habitat on occasion. |
| <i>Myotis macropus</i> | Southern Myotis | V | - | Bodies of water, rainforest streams, large lakes, reservoirs. | Moderate – could the site as foraging habitat on occasion. |
| <i>Nyctophilus bifax</i> | Eastern Long-eared Bat | V | - | Lowland subtropical rainforest and wet and swamp eucalypt forest, extending to adjacent moist eucalypt forest. | Moderate – could the site as foraging habitat on occasion. |
| <i>Petauroides volans</i> | Greater Glider | - | E | Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands. | Low – high level of disturbance on the site limits potential to occur. |
| <i>Petaurus australis australis</i> | Yellow-bellied Glider | V | V | Tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Dens in tree hollows of large trees, often in family groups. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. | Low – high level of disturbance on the site limits potential to occur. |
| <i>Petaurus norfolcensis</i> | Squirrel Glider | V | - | Blackbutt, bloodwood and ironbark eucalypt forest with heath understorey in coastal areas, and box-ironbark woodlands and River Red Gum forest inland. | Low – marginal suitable habitat. BioNet records occur north of the Bellinger River and south of Urunga. No records occur in proximity to the site. |



| Scientific Name | Common Name | Status | | Habitat Requirement (EPBC Act SPRAT and/ or DPIE Threatened Species Profiles) | Potential of occurrence |
|-------------------------------|-------------------------|--------|----------|---|---|
| | | BC Act | EPBC Act | | |
| <i>Phascogale tapoatafa</i> | Brush-tailed Phascogale | V | - | Drier forests and woodlands with hollow-bearing trees and sparse ground cover. | Low – marginal habitat at the site and only three historical BioNet records of the species within the search area. |
| <i>Phascolarctos cinereus</i> | Koala | V | E | Appropriate food trees in forests and woodlands, and treed urban areas. | Low – BioNet records show a paucity of records in the area of land between the Pacific Highway and the Bellinger River. |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | V | V | Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. | High – likely to forage on the site on occasion. |
| <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | V | - | Woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. | Moderate – could the site as foraging habitat on occasion. |



Appendix F

On-site Effluent Suitability Assessment

On-site Sewage Suitability Assessment

35 Gordon Road, Raleigh



Quality solutions. Sustainable future.



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1. Summary of Assessment

GeoLINK has prepared an on-site effluent disposal suitability assessment to support a proposed amendment of the Bellingen Local Environmental Plan 2010 (BLEP 2010) and large lot residential future subdivision. The proposal aims to change part of the zoning and minimum lot size controls on Lot 21 DP1239022, 35 Gordon Road Raleigh, NSW referred to herein as 'the site'. It is intended to enable the subdivision of the existing lot into seven lots, through the creation of five large lot residential lots (within an existing area already zoned R5 Large Lot Residential), common access road under community title provisions, and a residual lot. Refer to **Appendix A** for subdivision concept design and **Illustration 1.1** and **1.2** for site locality and features.

This report details the site inspection of the property on 5 September 2023 and provides a description of the site and its environs as well as an assessment of the issues to be considered for the installation of on-site wastewater management systems. The assessment has been undertaken with reference to:

- Bellingen Shire Council Development Control Plan (2017) Chapter 10 - *On-Site Sewage Management*
- AS/NZS 1547: On-site Domestic Wastewater Management (Standards Australia/Standards New Zealand, 2012)
- Environment & Health Protection Guidelines: On-site Sewage Management for Single Households (Department of Local Government, 1998).

System designs for various household sizes have been developed in accordance with AS/NZS 1547:2012. Sizing of the treatment units was undertaken using the Clarence Valley Council On-Site Sewage Management System Design Model (Land Application Area Calculator) modified for Coffs Coast rainfall conditions.


The site is situated in a semi-rural residential setting, a short distance north from the coastal town of Urunga. The site is a large (~ 29 ha) and is predominantly zoned RU1 Primary Production under Bellingen Local Environment Plan (2010), comprising improved pastures located to the north and east of the existing residential dwelling. Pockets of established forested wetland vegetation (mapped C2 Environmental Conservation and C3 Environmental Management) are centrally located along an intermittent watercourse which drains into a more permanent feature as it meanders through the site (from west to east/ north-east).

The proposed future subdivision is confined to the southern portions of the site along the southern boundary and is already zoned R5 Large Lot Residential. This portion of the site is elevated, north-facing, and partially cleared open forest with a managed understory (cattle grazing observed during the site inspection). Review of the Biodiversity Values Map and Threshold Tool indicates that no parts of the site are mapped on the Biodiversity Value Maps. Surrounding land uses comprise rural residential development and cattle grazing.

There is no nearby centralised sewerage system for feasible connection. It is noted that Bellingen Shire Council, in partnership with the NSW Government, is investing and planning to deliver the Sewering Coastal Villages Project, which will see sewer connected to local coastal villages, including parts of Raleigh. However, the subject site is not within the proposed associated service area of the project. Given this and that proposal is for large lot residential, on-site sewage management systems (OSMS) would be proposed/required.

The site is considered suitable for the proposal, which would include installation of an OSMS for each of the proposed lots based on the following possible designs; a two to five-bedroom dwelling with any of the following wastewater management combinations:

- Primary Septic System
- Secondary Aerated Wastewater Treatment System (AWTS) with additional disinfection

- 
- Conventional absorption trench/bed for land disposal
 - Surface/sub-surface irrigation (SSI) for land disposal.

Key environmental constraints that were identified was the unmapped intermittent waterway, located downslope and to the north of the proposed lots and steep side-slopes in excess of 12% were observed immediately west/ east of the gullies. To address these constraints, it is recommended that:

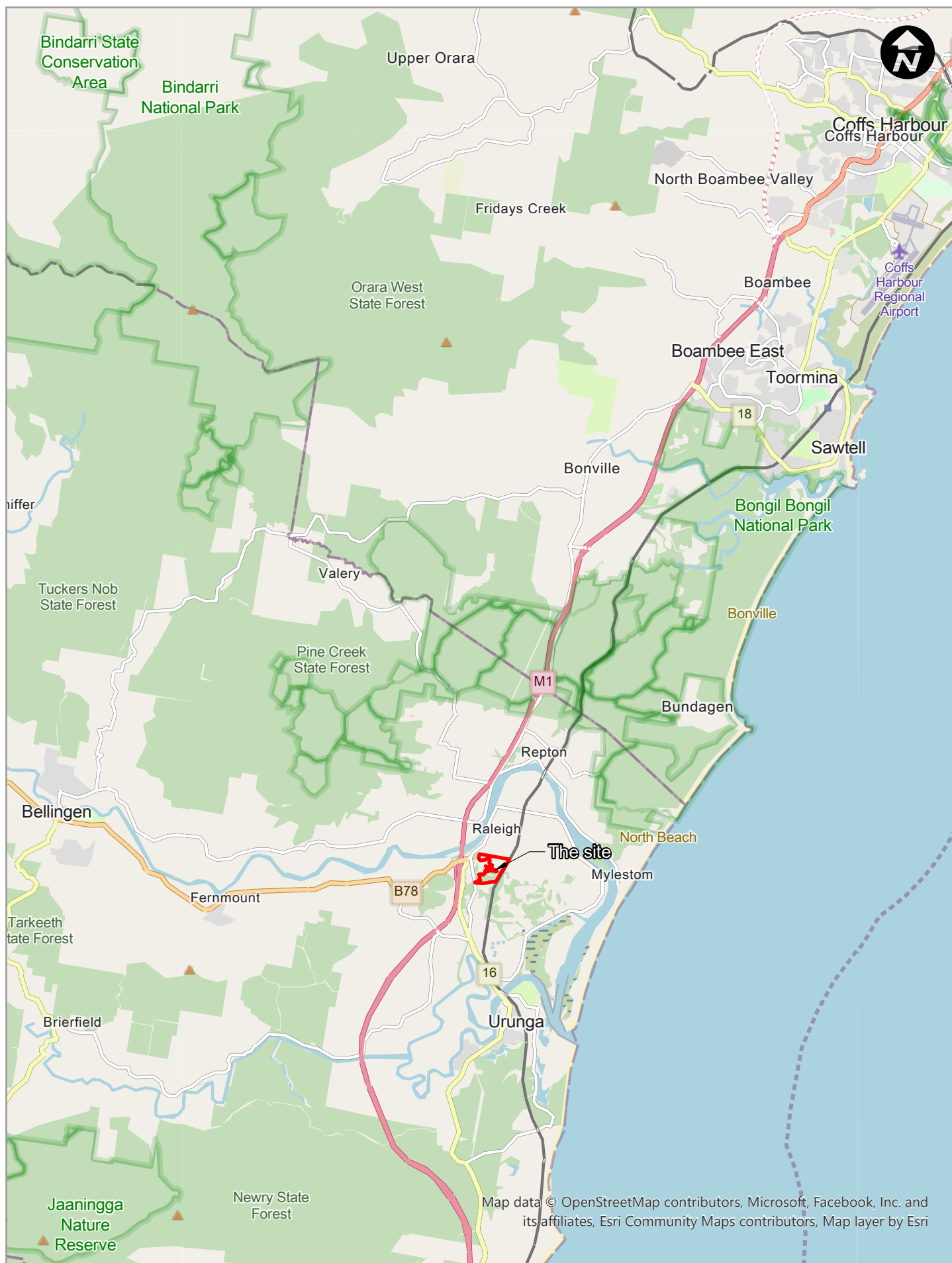
- Secondary systems to be installed for any land application/disposal areas that are within 15-40 m of the unmapped intermittent watercourse north of the proposed subdivision (refer to **Illustration 3.1**). Given that the proposed lots have very little encroachment into the 40m buffer zone and there is a large portion of available land outside the buffer zone for each proposed lot, any requirement for secondary treatment is unlikely.
- Land applications areas such as absorption trenches/ beds are to be situated parallel to contours and are not to be located on slopes steeper than 12%.
- Surface dripper-under-mulch options, if required, may be considered over sub-surface drip irrigation but added maintenance and monitoring conditions will be required to ensure that the mulch cover remains in place over the drippers. This would be an alternative solution to areas that may have mature trees/ roots within the land application areas.

To support the above design considerations, a pathogen die-off calculation has been undertaken. Calculation results indicate that offsite contamination into the adjoining tributaries is considered low risk, particularly given that identified buffers can be applied/ achieved, along with secondary treatment requirements (if required). Final design details for on-site sewage are to be provided for each individual lot at the time of development application.

The indicative area required for on-site disposal for each proposed lot based on both primary and secondary systems (for a two-to-five-bedroom dwellings) is in the range of:

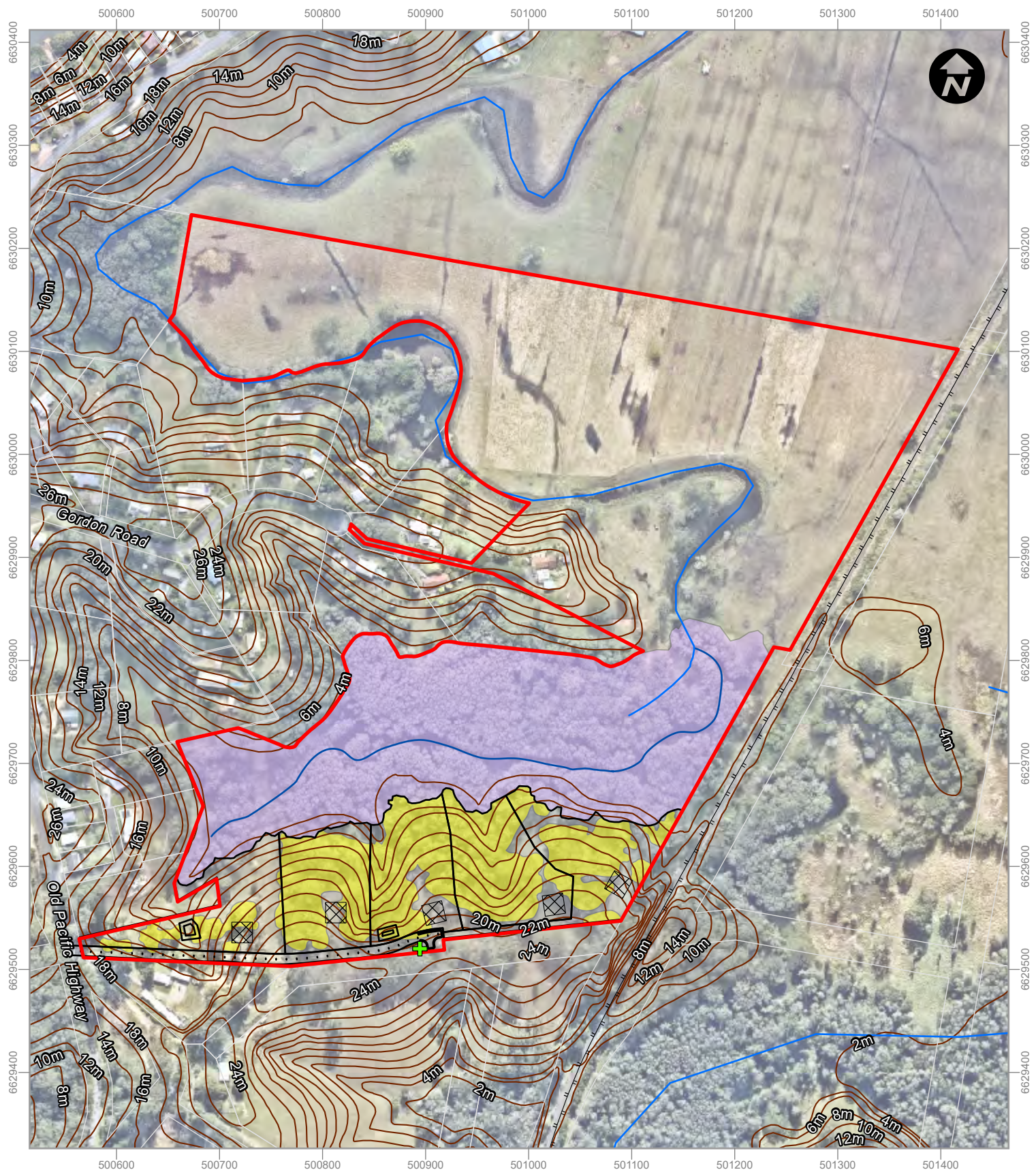
- 66.6 m² to 166 m² for primary treatment systems with conventional absorption trench/ bed
- 56.3 m² to 140.6 m² for secondary treatment systems with conventional absorption trench/ bed
- 121.2 m² to 342.6 m² for secondary treatment systems with surface/sub-surface irrigation (SSI)

The above calculations factor in the hydraulic, nitrogen and phosphorous loading requirements based on the soil classifications on-site. Soil permeability was not directly measured but can be inferred from observed soil properties. AS/NZS1547:2000 describes conservative application rates for various soil and application combinations. Soil depth, colour, mottling and drainage characteristics are also important to consider and should guide selection of appropriate loading rates.



0 2.5 km

Site Locality - Illustration F.1



LEGEND

- | | | |
|--|--|--|
| Site boundary | Proposed building envelope | Contours at 2m intervals |
| Cadastre | Proposed subdivision concept | + Heritage artifact |
| PCT 3250 Northern Foothills Blackbutt Grassy Forest | Watercourse | |
| PCT 4000 Northern Estuarine Paperbark Sedge Forest (TEC) | Indicative location of intermittent watercourse | |
| | <div style="position: absolute; left: -5px; top: 5px; width: 1px; height: 5px; background: black;"></div><div style="position: absolute; left: 15px; top: 5px; width: 1px; height: 5px; background: black;"></div> North Coast Railway | |

0 100 Metres

Proposed Subdivision Layout and Site Analysis - Illustration 1.2



2. Site Assessment

2.1 Site Context

The site is described in real property terms as Lot 21 DP1239022, 35 Gordon Road Raleigh and is located approximately 3.5 km north-west of the Urunga Central Business District. Gordon Road is approximately 300 m east of the Pacific Highway / Waterfall Way interchange and is accessed via the Old Pacific Highway (refer to **Illustration 1.1**). The Bellinger River is located to the north, with the North Coast rail corridor extending along the eastern boundary of the site.

The site is irregular shaped and consists of an existing residential dwelling and detached shed which is accessed from Gordon Road and is centrally located on an elevated portion of the site (**Plate 2.1**). The area around the dwelling/ to the north and east comprise of flat, open agricultural land (improved pastures) used for cattle grazing (**Plate 2.2**). Large lot rural-residential properties associated with the Gordon Road estate are located to the west. Areas of consolidated coastal wetland forest vegetation is located to the south of the existing dwelling along an area of low-lying land subject to flood inundation with an intermittent watercourse (not mapped) which drains east into a more permanent feature (mapped) as it meanders through the site to the north-west (**Plate 2.3**). The southern portion of the site is elevated, north facing and partially cleared open forest with a managed understory (**Plate 2.4**).

Illustration 1.1 and **1.2** provides an overview of the site locality and analysis of environmental features present onsite.



Plate 2.1 View showing existing residential dwelling (residual lot)



Plate 2.2 View north from dwelling showing extent of agricultural grazing farmland



Plate 2.3 View east showing low-lying drainage/ watercourse traversing through the site



Plate 2.4 View north-west showing the extent of the managed understory of the elevated portion of the open forest

2.2 Existing On-site Wastewater Management System (Residual Lot)

An on-site wastewater management system servicing the existing residential dwelling was inspected/assessed on 7 November 2022. The system consists of primary treatment with conventional absorption trench/s of unknown size (refer to **Plates 2.5** and **2.6**). Discussions with the homeowners indicate that the system was last inspected and approved by BSC during their 5 yearly inspection program. At the time of inspection, disturbance above the LAA had occurred as a result of landscaping activities (removal of shrubs etc.) which further increased good sun exposure of this area.

Given that the system has been inspected and approved by BSC, it is recommended that no further actions are required i.e. the system does not need to be upgraded as a result of the proposed subdivision. The system was determined to be performing satisfactorily (no leaks/seepage, odours or mechanical issues) and is sized appropriately to the dwelling and lot size.



Plate 2.5 Existing primary septic tank which is performing satisfactorily (no leaks/seepage, odours or mechanical issues) and is sized appropriately for the dwelling



Plate 2.6 Photo taken looking west showing the identified LAA. No apparent signs of absorption trench failure.

2.3 Flooding

The lower northern portion of the site is mapped as being within the 'Flood Planning Area' and 'Probable Maximum Flood' levels as per BSC online Floodplain Risk Management Study Mapping (refer to **Plate 2.7**). Given that the proposed lots are elevated, minimum 1 ha in size and outside of the mapped flood contour levels, future required land application/disposal areas for treated effluent will not be subject to future flooding events.

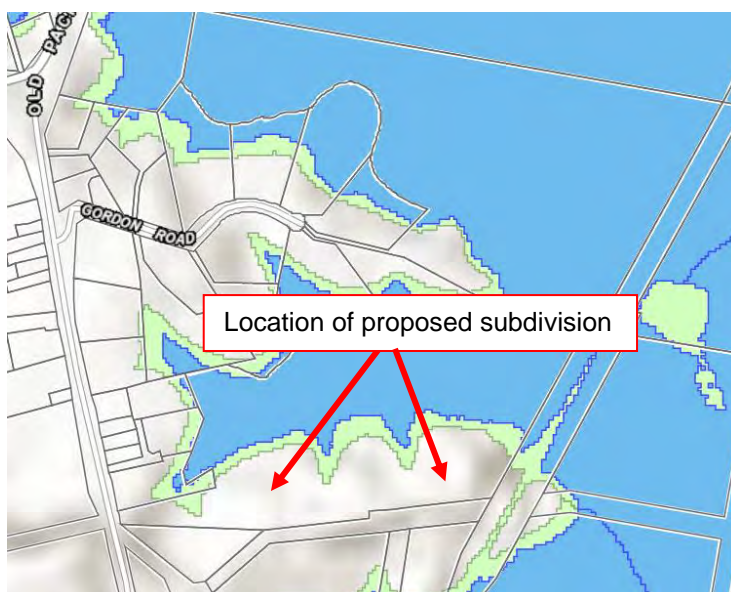


Plate 2.7 BSC online flood planning map showing extent of flood prone areas throughout the site – location of proposed subdivision not subject to flood inundation

2.4 Site Inspection and Soil Assessment

The site within the proposed subdivision footprint was inspected on 7 November 2022. Weather was fine with only minor precipitation occurring within 48 hours prior to the inspection. As a result, surface soils were relatively moist in the upper soil profile. The site inspection involved the assessment of a range of site constraints including landform, slope, aspect, drainage, flooding and proximity to sensitive environments (refer to **Table 2.2**).

A soil survey involving the drilling of seven bore holes to a depth of approximately 1000 mm were excavated throughout the proposed subdivision footprint (refer to **Illustration 2.1**). Sample locations were selected based on topographical features, in order to get an adequate snapshot of the soil composition throughout the site including texture, structure, depth and colour (refer to **Table 2.1**). Soil samples were obtained. Photographs taken during the soil analysis screening can be viewed in **Appendix B**.

Coffs Harbour 1:100,000 Soil Landscape Map and Handbook (Milford,1999) indicates the site has soils belonging to the Pine Creek Soil Landscape. This is an erosional landscape located on weathered Permian-aged metasediments of the Bellingen slate unit, consisting of dark micaceous slate, lithofeldspathic sandstone, and minor meta conglomerate.

The landform is dominated by rolling low hills up to 24 m AHD, that are dominated by narrow rounded crests and long side slopes and foot slopes. Slope gradients are typically between 4-8% within the development footprint (refer to nominated building envelopes in **Appendix A**). Soils are typically moderately well drained yellow and brown earths on crests and slopes, but also yellow and brown podsols (acid soils with strong texture contrast between loam topsoils and clay subsoils in the lower portions of the site). The soils can have moderate fertility, strong acidity, low subsoil permeability, occasional stoniness, and erosion hazard on steeper slopes. Refer to **Table 2.1** for soil landscape assessment.

With reference to Table 5.1 of AS/NZS 1547:2012, soil analysis of the test bores determined that the soils found throughout the site were consistent with class 5 (light clays) and were strongly structured to a depth of 1000 mm.

Table 2.1 Soil Landscape and Assessment

| Key Feature | Description |
|----------------------------|--|
| Soil Landscape | <i>Pine Creek (9436wa)</i> - Erosional Landscape Coffs Harbour 1:100,000 Soil Landscape Map and Handbook (Milford,1999) |
| Soil Texture/Soil Horizons | Subsoils only varied slightly across the site depending on location on the slope. In general, the soils at the site comprised: <ul style="list-style-type: none">- 0-100mm of a very dark brown loam topsoil, with typically <15% quartz gravel, and a earthy structure; overlying- 200-400mm of a dark brown fine clay loam, with dark brown and pale orange-brown mottles, a moderate blocky structure, and 5-10% coarse fragments; overlying- 300-500mm of a dark reddish brown to brown light clay, with yellow-brown and brown mottles, a moderate blocky structure, and <5% coarse fragments; overlying- A yellowish-brown silty clay, with slight yellow and pale grey mottling, a slightly slaty structure, and 5-20% weathered slate and quartz. |



| Key Feature | Description |
|-------------------------------|--|
| Soil Permeability | K_{sat} of 0.12 – 0.5 m/d, based on strongly structured light clays - Table 5.2 in AS/NZS 1547:2014. |
| Phosphorous Sorption Capacity | High, based on <i>Pine Creek</i> Soil Landscape (Milford, 1999). Therefore 10,000 kg/ha was adopted in calculations. |



LEGEND

- Site boundary
- Cadastre
- 40m watercourse buffer
- Proposed building envelope

- Proposed subdivision concept
- Indicative location of intermittent watercourse
- North Coast Railway

- Bore hole sample location



Bore Hole Sampling Locations - Illustration 2.1



2.5 General Site Assessment and Consideration of Constraints

Table 2.2 below details the results of the general assessment conducted for the site and identifies some manageable constraints for on-site sewage management implementation.

Table 2.2 General Site Assessment and Consideration of Constraints

| <i>Site Feature</i> | <i>Condition</i> | <i>Limitation</i> | <i>Design Consideration</i> |
|--|---|-------------------|--|
| Slope Angle | Landform is dominated by rolling low hills which have a long back-slope towards the north with a gradient less than 10%. Steeper, more defined side-slopes in excess of 20% gradient falls towards the gully's of each foot-slope. The nominated land applications areas are located on mid-slopes that are generally within 5-8%. | Minor | Land applications areas using methods such as absorption trenches/ beds are to be situated parallel to contours and are not to be located on slopes steeper than 12%. |
| Slope Shape | Most of the site contains convex side slopes that are gently undulating. | None | n/a |
| Aspect | The site supports a northerly aspect with good solar access throughout the year. | None | n/a |
| Exposure | Full sun and wind exposure expected throughout all proposed lots. Established mature trees are present throughout the site however, good canopy separation along with no mid-story or ground vegetation supports good exposure for future systems. | None | n/a |
| Boulders/ Floaters/Rock Outcrops | None observed | None | n/a |
| Buffer Distances | Permanent watercourses: No permanent watercourses in close proximity to the Site. Bellinger River is located approximately 850 m north of the site. The ephemeral drainage line located within the centre of the site (north of the proposed subdivision) is mapped as a potential tributary to Bellinger River. | None | Refer to comment below regarding the ephemeral drainage lines located within the site. |
| | Intermittent watercourses: A network of small intermittent waterways traverse to the east/ north-east into a more defined waterway. This then extends across the site to the north-west before dispersing further north across the low-lying floodplain of Raleigh. These are best characterised as first order streams. There are also medium sized agricultural dams located to the north of the site. | Moderate | Table R1 of AS/NZS 1547:2012 (Guidelines for Horizontal and Vertical Setback Distances) requires a setback range of 15 - 100 m buffer from LAAs to surface water bodies. Based on the constraint scale in Table R2, any proposed systems within 20 m of the central ephemeral drainage line will require secondary treatment |



| Site Feature | Condition | Limitation | Design Consideration |
|--------------|--|------------|---|
| | | | <p>(via AWTS + disinfection). Given this, a buffer at the lower end (i.e. 15m) of the scale is deemed appropriate.</p> <p>To support the above design consideration, a pathogen die-off calculation has been undertaken for the nominated systems (refer to Appendix C). The conservative calculations (with regard to k-sat and porosity) indicate that pathogen die-off occurs within approximately 4.92m of the potential land application areas. An alternate scenario has also been modelled with respect to effluent being absorbed and dispersed in the more permeable topsoil. This calculation shows that pathogen die-off occurs within approximately 14.43m of the potential land application areas.</p> <p>These results indicate that offsite contamination into the tributaries to the Bellinger River is considered low risk given that secondary treatment systems with disinfection would be required where proximal to the intermittent watercourse.</p> |
| | <p>Groundwater wells: A search of WaterNSW online groundwater register (https://realtimedata.waternsw.com.au/) Indicates that there one groundwater well (GW303035) located within 500 m of the site (refer to Appendix D for complete work summary). This bore is</p> <p>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 >15m depth given the water bearing zone details provided in Appendix D.</p> <p>Based on regional topography and the location of the surface water bodies, it</p> | None | <p>Table R1 of AS/NZS 1547:2012 (Guidelines for Horizontal and Vertical Setback Distances) state that a horizontal distance of 15-50 m from the LAA to a registered bore is required.</p> |



| Site Feature | Condition | Limitation | Design Consideration |
|----------------------------|--|------------|--|
| | is considered that groundwater flow at the site is likely to be towards the north-east. | | |
| | Property boundaries, driveways and buildings: AS/NZS 1547:2012 (Table R1) requires setback distance ranges of: <ul style="list-style-type: none"> – 1.5 to 50 m for property boundaries – 2.0 to >6 m for buildings/ houses – 3.0 m for retaining walls | None | On-site systems can adopt stated buffers. The proposed large lots (1 ha minimum) are capable of complying with the guidelines for setback distances, as per the Australian/New Zealand Standard on-site domestic wastewater strategy (AS/NZS 1547:2012). |
| Depth to Groundwater | AS/NZS 1547:2012 requires a setback range of 0.6-1.5 m to groundwater (Table R1). Test bores did not encounter any water seepage during soil investigation works. Recorded water bearing zones from the drillers work summary sheets (Appendix D) range from 27 m to 47 m. | None | Refer to previous discussion regarding groundwater and pathogen die-off calculations. |
| Run-on and Upslope Seepage | The site inspection identified minor potential for run-on/upslope seepage onto the proposed land application areas given site slope and positioning of the nominated envelopes. | Minor | Catchment drains/ diversion mounds or similar designs to be applied upslope of the land application area. This is to be incorporated into the site-specific on-site wastewater assessment design required at dwelling DA stage per lot. |
| Flooding Potential | Refer to Section 2.3 of this report. | Minor | Nominated land application areas are elevated and outside of the mapped flood areas to the north. |
| Soil pH | Soil Salinity - saline soils can impeded plant growth (i.e. limited plant growth on land application areas can impair evapotranspiration potential). The site is mapped as being subject to Class 5 Acid Sulfate Soils (ASS). This indicates that the site is within 500 m of actual/ potential acid sulphate soils which occur to the north. Soil samples were analysed for pH using a hand held pH /EC meter. The measured pH for the samples analysed ranged between 5.8 and 6.2. | None | n/a |
| Electrical Conductivity | Electrical conductivity of a saturated extract (EC _e) was calculated by | None | n/a |



| Site Feature | Condition | Limitation | Design Consideration |
|------------------------------------|---|-------------------|---|
| | measuring the electrical conductivity of 1:5 soil in water suspension. The EC _e readings ranged between 0.02dS/m and 0.24ds/m, which indicates that the soils tested are non-saline. | | |
| Modified Emerson Aggregate Class | <p>Modified Emerson Aggregate Tests were undertaken on the soil samples to assess soil dispersibility and susceptibility to erosion and structural degradation. A solution of SAR5 was utilised rather than water to simulate sodium concentrations in wastewater.</p> <p>The analysed soils exhibited reactions typical of minor limitations to effluent application unless deeper soils are disturbed and exposed to the surface.</p> | Minor | Gypsum can also be applied to the bottom of new trench/bed systems to reduce solid dispersion and maximise soil structure |
| Vegetation Indicating Waterlogging | No vegetation indicating waterlogging was observed across the proposed lots. | None | n/a |
| Fill | No fill was present during the time of inspection. | None | n/a |
| Erosion/Mass Movement | Some evidence of erosion within the intermittent drainage line. | None | n/a |



3. On-site Sewage Management Options

Multiple runs of the Clarence Valley Council On-Site Sewage Management System Design Model (Land Application Area Calculator – modified for Coffs Coast rainfall and soil data) were undertaken to calculate the potential land application areas for a range of likely dwelling scenarios that could be developed as a result of the proposed subdivision (an example of a model run is provided in **Appendix E**). It is assumed that any development would consist of a minimum two-bedroom occupancy dwelling using harvested roof water with standard water saving measures in place.

The treatment systems modelled include:

- Primary treatment using a septic tank
- Secondary treatment with an aerated wastewater treatment system (AWTS)

Due to the minor site constraints detailed within **Table 2.2** regarding the intermittent waterway (not mapped), located downslope and to the north of the proposed lots, secondary treatment would be required for systems that are within 40 m of this waterway. Only a small portion of the proposed lots will encroach on the 40m waterway buffer zone, as such it is unlikely that secondary treatment would be required for any future residence. Final design details for on-site sewage are to be provided for each individual lot at the time of development application.

The disposal systems modelled include:

- Conventional absorption trench/ bed
- Sub-surface irrigation (SSI)

A number of likely dwelling configurations have been considered from two to five bedrooms. **Table 3.1** summarises the assessment results and demonstrates required land application areas based on potential treatment systems installed and the size of the dwelling to be constructed. **Illustration 3.1** demonstrates that the maximum land application areas based on a five-bedroom configuration (detailed in **Table 3.1**) can be positioned within each of the proposed lots with consideration of all site constraints and buffers (refer to **Table 2.2**)

Table 3.1 Required Land Application Area (m²) for Multiple Development Options

| No. of Bedrooms | Treatment and Disposal Options (m²) | | |
|------------------------|---|--------------------------------------|---|
| | Septic + Conventional Absorption Trench/ bed | AWTS + Absorption Trench/Beds | AWTS + Sub-Surface Drip Irrigation |
| 2 | 66.6 | 56.3 | 121.2 |
| 3 | 99.9 | 84.4 | 205.6 |
| 4 | 133.2 | 112.5 | 274.1 |
| 5 | 166.5 | 140.6 | 342.6 |

Data used in the model includes:

- Daily effluent flow per person = 120 L/day (roof water harvest supply with standard water saving devices)
- Facilities/ water usage = toilet, bathroom, laundry and kitchen



- Depth to water table = assumed greater than 2.0 m
- Soil texture/structure below systems = lightly structured class 5 clays
- Soil texture in root zone = loams and clay loams



LEGEND

- | | | | |
|------------------------|--|------------------------------|---|
| Site boundary | AWTS and absorption trench/beds (140.6m ²) | Proposed building envelope | Watercourse |
| Cadastre | Septic and conventional absorption trench/ bed (166.5 m ²) | Proposed subdivision concept | Indicative location of intermittent watercourse |
| 40m watercourse buffer | AWTS and sub-surface drip irrigation (342 m ²) | North Coast Railway | |

0 40 Metres

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On-site Sewage Assessment - 35 Gordon Road, Raleigh
4200-1023

Indicative Land Application Areas - Illustration 3.1

Information shown is for illustrative purposes only
Drawn by: AB Checked by: RE Reviewed by: KHP
Source of base data: Nearmap 25/07/2022
Date: 20/09/2024
Revision: A



4. Conclusion and Recommendations

Following the site assessment and calculations utilising the modified Clarence Valley Council's On-Site Sewage Management System Design Model (Land Application Area Calculator), the proposed LEP amendment and future potential Large Lot Residential subdivision at Lot 21 DP1239022, 35 Gordon Road Raleigh can be considered suitable to accommodate an on-site wastewater management system for each lot across several likely dwelling options. It is recommended that:

- Secondary systems to be installed for any land application/disposal areas that are within 40 m of the unmapped intermittent watercourse north of the proposed subdivision (refer to **Illustration 3.1**). Given that there is very little encroachment into the 40m buffer zone and there is a large portion of available land outside the buffer zone for each proposed lot, any requirement for secondary treatment is unlikely. However, if necessary, this could be accommodated.
- Land applications areas such as absorption trenches/ beds are to be situated parallel to contours and are not to be located on slopes steeper than 12%.
- Surface dripper-under-mulch options (if required) may be considered over sub-surface drip irrigation but added maintenance and monitoring conditions will be required to ensure that the mulch cover remains in place over the drippers. This would be an alternative solution to areas that may have mature trees/ roots within the land application areas.

In addition to the above, the following recommendations apply to all systems:

- An OSMS should be designed by an experienced professional, taking into account the expected flows and the recommendations detailed within this report.
- Council requires that sub-surface irrigation systems must be designed and/or certified, installed and maintained by a Certified Irrigation Designer or suitably qualified persons.
- An OSMS should be installed by an experienced plumber, ensuring that effluent is distributed evenly across the entire area serviced.
- Complete and permanent vegetation cover must be established throughout the entire LAA (grass preferred to maximise evapotranspiration and nutrient uptake).
- Where there is potential for stormwater run-on/seepage, the construction of upslope diversion berms/catch drains is to be implemented.
- Vehicles and stock should be prevented from entering the LAAs by appropriate screening or fencing.

Final design details for on-site sewage would be provided for each individual lot at the time of development application, however this assessment demonstrates that on-site wastewater management systems are feasible and suitable for the proposal/site.



Attachments:

Appendix A- Concept Subdivision Plan

Appendix B- Photos of Soil Investigation

Appendix C- Pathogen Die-off Calculations

Appendix D- Groundwater Wells Work Summary

Appendix E- Water and Nutrient Balance- Conventional Beds (Example)

Glossary

| | |
|------|--|
| AWTS | Aerated Wastewater Treatment System |
| DLR | Design Loading Rate |
| ETA | Evapotranspiration absorption |
| LAA | Land Application Area (effluent disposal area) |
| OSMS | On-Site Sewage Management System |
| SSI | Sub-surface irrigation |



References

Bellingen Shire Council Development Control Plan (2017) Chapter 10 - *On-Site Sewage Management*

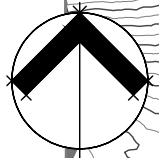
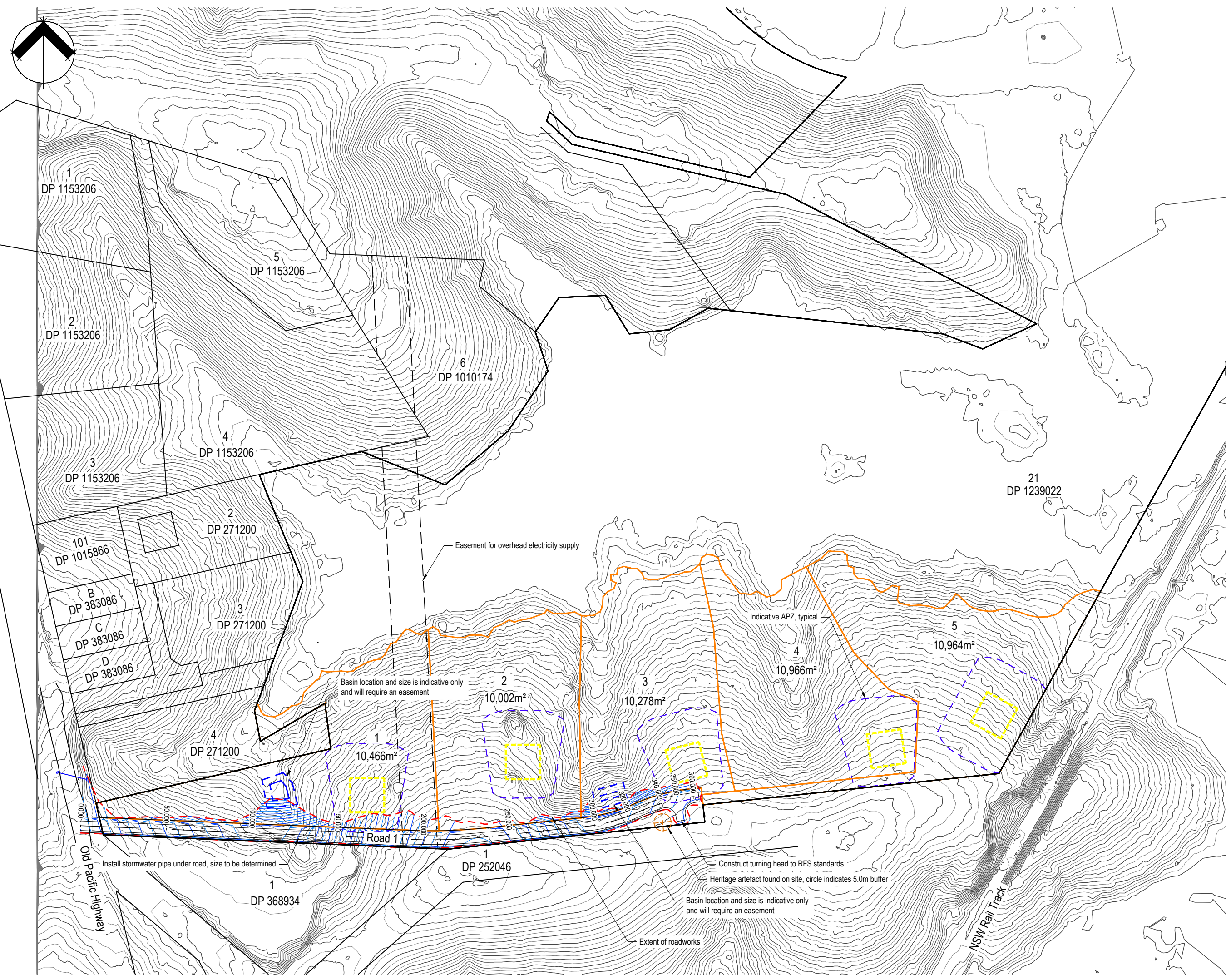
Standards Australia/Standards New Zealand .(2012). *AS/NZS 1547:2012 On-site Domestic Wastewater Management*.

WaterNSW online groundwater register (<https://realtimedata.watarnsw.com.au/>) accessed 09/11/2022



Appendix A

Concept Subdivision Plan



- Notes:
- Existing and design contours are at 0.5m intervals.
 - Subdivision boundaries are subject to final survey, tree locations and ecological survey.

PRELIMINARY

| Rev. | Description | Date | Des. | App. | Chk. |
|------------|-------------|------|------|------|------|
| | | | | | |
| Amendments | | | | | |

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This drawing must not be relied upon for any purpose other than that for which it was prepared or by any person or corporation other than the referred client.

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quality solutions sustainable future

| | | | | | |
|-------------------------|-----|-------|------------|---------|--|
| Project Title | | | | | |
| Gordon Road Subdivision | | | | | |
| Client | | | | | |
| Ashley & Tracee Porter | | | | | |
| Designed | JLC | Drawn | JLC | Checked | |
| Approved | KHP | Date | 19/09/2024 | KHP | |
| XREFs | | | | | |
| Scale | | | | | |
| metres 0 10 20 30 40 50 | | | | | |

| | | |
|-----------------------|--|----------|
| Drawing Title | | |
| Concept Design Layout | | |
| Drawing Number | | Revision |
| 4200/C010 | | - |



Appendix B

Photos of Soil Investigation



seven bore holes were undertaken to determine the soils present onsite



Analysis of soil profile identified class 5: strongly structured clay loams extending down to depths of 850-1000 mm



Ribbon test performed were consistent with Class 5 Soils - plastic bolus, slight resistance to shearing, medium size sand grains visible in finer matrix, 50-55 mm ribbon



pH and Electrical Conductivity undertaken on-site



Appendix C

Pathogen Die-off Calculations



| | | | | | | | | | |
|--|---|-------------------------|---|--|--|--|--|--|--|
| Part 1: Calculate Time for Viral & Bacterial Die-off | | | | | | | | | |
| This part estimates the <i>time</i> required for viruses originating in the effluent to be inactivated (i.e. reduced to acceptable numbers by natural mortality processes) as they move downgradient in the groundwater. The assumption is that, during this travel time, bacteria will also have been reduced to acceptable numbers, since they generally survive for lesser times than viruses (Cromer, Gardner, & Beavers). | | | | | | | | | |
| $M_t/M_o = e^{-kt}$ | | | | | | | | | |
| where | M_t/M_o is a dimensionless ratio between the viral concentration in the groundwater at any time t (M_t) and the viral concentration in the effluent at the time of its application to the subsurface (M_o) t is the travel time (days) of the viruses in the groundwater k is the first order rate of die-off and is dependent on temperature where $k=(T-8.5)/20$ T is groundwater temperature ($^{\circ}\text{C}$) | | | | | | | | |
| For treated effluent from a secondary treatment on-site system, M_t/M_o should be 0.001 (3 orders of magnitude reduction) | | | | | | | | | |
| For primary treated effluent from a septic tank, M_t/M_o should be 0.00001 (5 orders of magnitude reduction) | | | | | | | | | |
| For raw wastewater, M_t/M_o should be 0.0000001 (7 orders of magnitude reduction) | | | | | | | | | |
| For greywater, M_t/M_o should be 0.00001 (5 orders of magnitude reduction) | | | | | | | | | |
| Input: | | 0.001 | M_t/M_o (dimensionless ratio of viral concentrations) | | | | | | |
| | | 15 | T (groundwater temperature, $^{\circ}\text{C}$) | | | | | | |
| Calculate k : | | $k = (T-8.5)/20$ | | | | | | | |
| | | = 0.325 | ↩calculated automatically | | | | | | |
| Calculate t : | | $M_t/M_o = e^{-kt}$ | | | | | | | |
| therefore | | $t = \ln(M_t/M_o) / -k$ | | | | | | | |
| | | = 21.3 days | ↩calculated automatically | | | | | | |



Part 2: Calculate Setback Distance (for worst case scenario with effluent being absorbed and dispersed in topsoil)

This part estimates the *distance* the groundwater has travelled during the travel time; this is the *setback distance*.

$$\text{Setback distance } d_g = \{t - (d_v \cdot P/K)\} / (P/K \cdot i)$$

where:

d_g is the horizontal distance (metres) from the land application area to the point at which viral die-off has been achieved

t is the travel time (days) of the viruses in the groundwater

d_v is the vertical distance (metres) from the land application area to the water table

P is the effective porosity of the soil (as a fraction: eg 0.2 instead of 20%)

K is the saturated hydraulic conductivity (permeability) of the soil/aquifer (m/day)

i is the groundwater gradient (as a fraction: eg 0.01 instead of 1 in 100)

| | | |
|--------|------|--|
| Input: | 1.2 | d_v (vertical distance to the water table in metres) |
| | 0.22 | P (effective porosity of the soil) |
| | 3 | K (saturated hydraulic conductivity in metres/day) (Table 5.1 in AS NZS 1547-2012) |
| | 0.05 | i (groundwater gradient - conservatively assumed to be same as surface slope) |

Calculate d_g : 14.43 metres ⇐ calculated automatically

Part 2: Calculate Setback Distance (for standard operation with effluent being absorbed and dispersed in subsoil)

This part estimates the *distance* the groundwater has travelled during the travel time; this is the *setback distance*.

$$\text{Setback distance } d_g = \{t - (d_v \cdot P/K)\} / (P/K \cdot i)$$

where:

d_g is the horizontal distance (metres) from the land application area to the point at which viral die-off has been achieved

t is the travel time (days) of the viruses in the groundwater

d_v is the vertical distance (metres) from the land application area to the water table

P is the effective porosity of the soil (as a fraction: eg 0.2 instead of 20%)

K is the saturated hydraulic conductivity (permeability) of the soil/aquifer (m/day)

i is the groundwater gradient (as a fraction: eg 0.01 instead of 1 in 100)

| | | |
|--------|------|--|
| Input: | 1.2 | d_v (vertical distance to the water table in metres) |
| | 0.32 | P (effective porosity of the soil) |
| | 1.5 | K (saturated hydraulic conductivity in metres/day) (Table 5.1 in AS NZS 1547-2012) |
| | 0.05 | i (groundwater gradient - conservatively assumed to be same as surface slope) |

Calculate d_g : 4.92 metres ⇐ calculated automatically



Appendix D

Groundwater Well Work Summary



Location of the registered bore (<https://realtime.data.waternsw.com.au/>)

WaterNSW Work Summary

GW303035

Licence: 30WA312888

Licence Status: CURRENT

Authorised Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Work Type: Bore

Work Status:

Construct.Method: Rotary Air

Owner Type:

Commenced Date:

Completion Date: 04/02/2002

Final Depth: 48.00 m

Drilled Depth: 48.00 m

Contractor Name: COASTAL DRILLING PTY LTD

Driller: Robert Leslie Tanner

Assistant Driller:

Property: HARRISON 1 Gordon Rd
RALEIGH 2454 NSW
GWMA: -
GW Zone: -

Standing Water Level
(m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen
By:

County
Form A: RALEIGH
Licensed: RALEIGH

Parish
SOUTH BELLIN
SOUTH
BELLINGEN

Cadastre
LT 2 DP 1010174
Whole Lot
2//1010174

Region: 30 - North Coast

CMA Map:

River Basin: - Unknown

Grid Zone:

Scale:

Area/District:

Elevation: 0.00 m (A.H.D.)

Northing: 6629991.000

Latitude: 30°27'44.1"S

Elevation Unknown

Easting: 500764.000

Longitude: 153°00'28.7"E

Source:

GS Map: -

MGA Zone: 56

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|------|------|-----------|------------------|----------|--------|-----------------------|----------------------|----------|---|
| 1 | | Hole | Hole | 0.00 | 48.00 | 165 | | | Down Hole Hammer |
| 1 | 1 | Casing | Pvc Class 9 | -0.03 | 48.00 | 152 | | | Seated on Bottom, Glued |
| 1 | 1 | Opening | Slots - Vertical | 27.00 | 31.00 | 152 | | 0 | Sawn, PVC Class 9, SL: 100.0mm, A: 2.60mm |
| 1 | 1 | Opening | Slots - Vertical | 43.00 | 47.00 | 152 | | 0 | Sawn, SL: 100.0mm, A: 2.60mm |

Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|----------|--------|---------------|----------|------------|------------|-------------|----------------|---------------|-----------------|
| 27.00 | 31.00 | 4.00 | Unknown | 18.00 | | 0.38 | | | |
| 43.00 | 47.00 | 4.00 | Unknown | 18.00 | | 0.63 | 48.00 | 02:00:00 | 190.00 |

Drillers Log


| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|----------|--------|---------------|-----------------------------|---------------------|----------|
| 0.00 | 27.00 | 27.00 | Weathered Brown Shale | Shale | |
| 27.00 | 31.00 | 4.00 | Brown Shale Reef Quartz W/B | Shale | |
| 31.00 | 43.00 | 12.00 | Grey Shale | Shale | |
| 43.00 | 47.00 | 4.00 | Black Slate Reef Quartz W/B | Shale | |
| 47.00 | 48.00 | 1.00 | Black Slate | Slate | |



Appendix E

Water and Nutrient Balance – AWTs with Conventional Trench Option (Example)

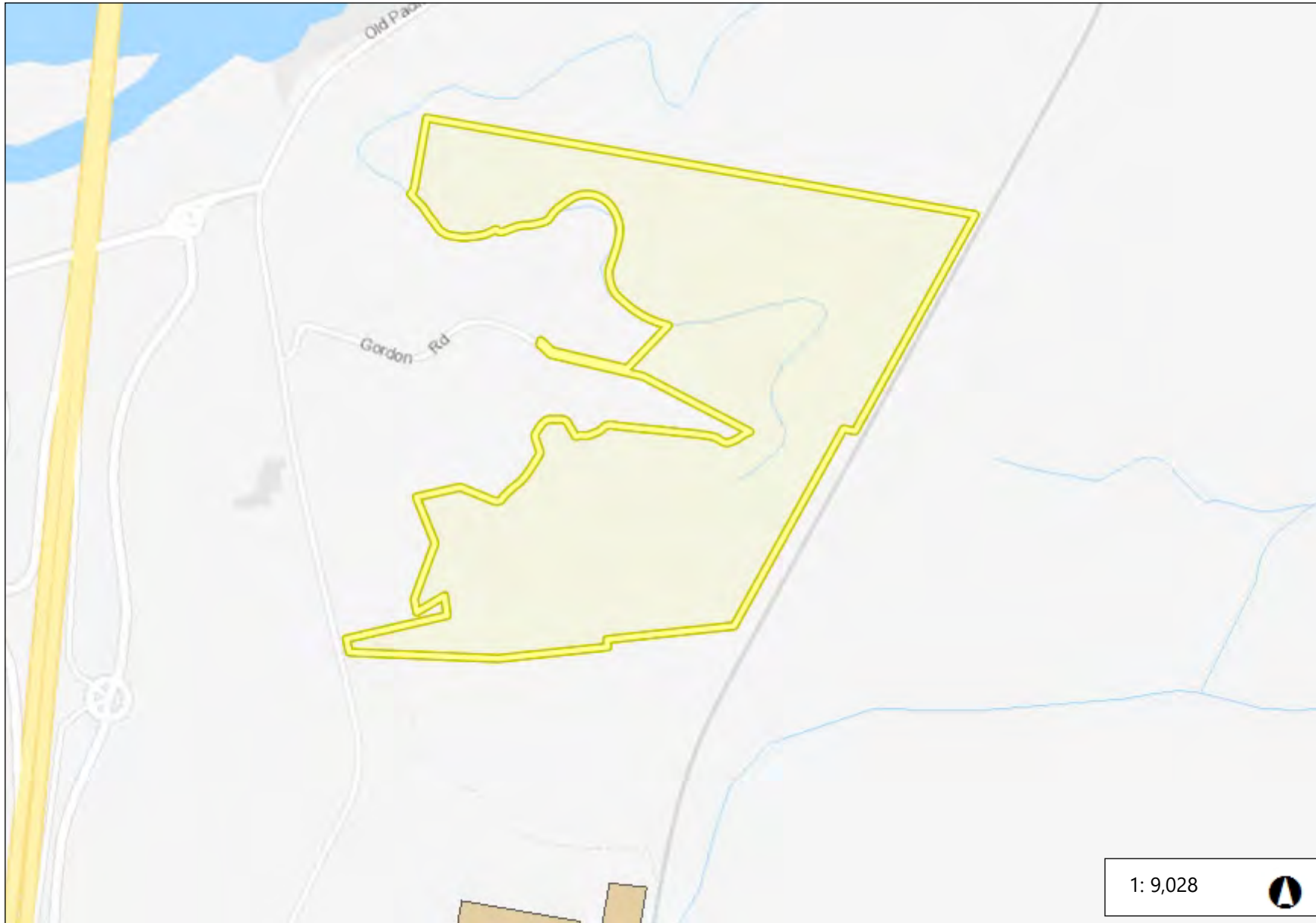


| | |  | |
|-------------------------------------|---|--|---------------------------|
| | | CVC On-site Wastewater Model (Single Rural Households) | |
| | | Default | User-defined |
| 1 Client | Ashley and Tracee Porter | | |
| 2 Address | 35 Gordon Road, Raleigh | | |
| 3 User info | <input type="radio"/> Simplified (casual user) <input checked="" type="radio"/> Advanced (consultants) | What's this? | |
| 4 Site | Block size (m2) | | 10000 |
| | Buffer (m) from land application area to | Gully (Intermittant) >40 | |
| | Water (L/p.d) from | Roof water harvest + std. water sav.devic 115 | 120 |
| | Bedrooms | | 5 |
| 5 Wastewater components | Toilet <input checked="" type="checkbox"/> Bathroom <input checked="" type="checkbox"/> Laundry <input checked="" type="checkbox"/> Kitchen <input checked="" type="checkbox"/> Total wastewater flow (L/d) [needs caution if user-defined] | 900 | |
| 6 Soil info | ne; usual; Clay; Walloon Coal Measures....Woombah, Gulmarrad, Ashby | | |
| Likely dispersive soil | Phosphorus sorption (kg/ha.m) calc. from Morand 2001 data | 10090 | 10000 |
| | Depth to water table (m) reference Morand 2001 | 2.0 | |
| | Depth to bedrock (m) reference Morand 2001 | 1.0 | 2.0 |
| | Light clays - strongly structured | DLR (mm/d) 12.0 | |
| | | Read note | |
| 7 Treatment system | Secondary: AWT5 | | |
| | Nitrogen removal % (default gives BOD 20mg/L treatment) | 20% | |
| 8 Land application system | Septic absorption trench | | |
| | Depth of trench (mm) | 600 | |
| 9 Land Application Area required | Hydraulic area (m2)* | 69.6 | Calc Area |
| | Nitrogen area (m2) | 0.0 | |
| | Phosphorus area (m2) | 140.6 | |
| | Required land application area (LAA) (m2) | 140.6 | |
| What's this result? | Land application area including area of trench separation (m2) | 306 | Print |



Appendix G

Database Searches



Legend

- State Environmental Planning
- State Heritage Register
- Aboriginal Place
- Local Environmental Plan**
 - Aboriginal Place
 - Conservation Area - General
 - Conservation Area - Landscape
 - Heritage Conservation Area
 - Item - Aboriginal
 - Item - Archaeological
 - Item - General
 - Item - Landscape
- World Heritage Site
- Local Environmental Plan
 - Cluster (label denotes number)
- SEPP Centroid**
 - 1
 - 2 - 0
 - 1
 - 2
 - 3+
- World Heritage Areas NSW Ce**
 - 1
 - 2 - 0
 - 1

1: 9,028



458.6 0 229.31 458.6 Meters

Notes

Notes



Appendix H

Council and Agency Scoping (Pre-lodgement) Consultation



Friday 11 August 2023

Jacob Sickinger
Senior Environmental Planner
GeoLINK
By email: jsickinger@geolink.net.au

Dear Jacob,

RE: Scoping Proposal Advice – 35 Gordon Rd Raleigh

I refer to your Scoping proposal submitted to Council in respect of the abovementioned property, and a meeting held with relevant NSW Government Agencies on 13 June 2023.

As per relevant provisions of the Local Environmental Plan Making Guideline, the following advice is provided.

1. Any minutes of the meeting

The key matters discussed at the meeting related to NSW Government Agency concerns. A copy of the Minutes from the meeting, provided from the perspective of both agencies who attended the meeting are provided as Appendix A & B to this advice.

I note that the DPE liaised with DPI Agriculture in respect of this matter who advised that although the land is mapped as important farmland, they do not have an objection to the reduction of the minimum lot size as it is already zoned R5 Large Lot Residential.

Other matters raised by Council included the need to address the offsetting provisions contained within Chapter 16 of the Bellingen Shire Development Control Plan 2017 in respect of any clearing of Preferred Koala Habitat mapped by Council and the potential issues / implications of doing this on the same site.

Council also raised the prospect of the proponent considering the voluntary potential allocation of additional Environmental Protection Zones on High Environmental Value Land as an ancillary component of the overall proposal.

2. Any recommended changes to the scope of the proposal, where considered appropriate nomination of the planning proposal category (basic, standard, complex or principal LEP)

Council is not supportive of the submission of a combined Planning Proposal and Development Application. It is Council's experience that the timeframes associated with assessment of Planning Proposal Requests are

lengthy and subject to extended delays in reply from NSW Government Agencies. In these circumstances, it is not possible to process a Development Application within reasonable timeframes which reflects adversely upon Councils' overall DA determination statistics.

Noting that the land is presently zoned R5 Large Lot Residential, and the proposed use would potentially be consistent with the objectives of that zone, it is possible that the proposal could be considered as a "Standard" LEP in accordance with the LEP Making Guideline.

Council notes that NSW Government Biodiversity & Conservation have indicated they are unlikely to support the proposal. Consideration should be given to the merit of proceeding with the proposal in view of this. Council also notes that it may not be delegated with the ability to act as the Local Plan Making Authority in respect of matter where it is not possible to resolve the objections of a government authority.

3. Confirmation of council assessment fees, likely consultation requirements, and assessment timeframes and milestones

As discussed in the meeting, the preparation of a planning proposal to facilitate this matter has not been identified as a matter of strategic significance to Council that would justify the diversion of Council strategic planning resources towards its completion. Accordingly, and as per the provisions of Section 3.32(3) of the Environmental Planning & Assessment Act 1979 (the Act) (reprinted below) it would be the intention of Council, prior to accepting any planning proposal for further assessment within the NSW Planning Portal to obtain a quote/s from an appropriately qualified planning consultant to assess and process the application on Councils behalf, and to obtain your prior agreement to the payment of all relevant costs associated with this arrangement.

In addition to this, the Application Fees for proponent led Planning Proposals, as extracted from the 2023-24 Fees & Charges document are detailed below.

| Planning Proposal NOTE: the full cost of any supporting studies deemed necessary by Council shall be separately borne by the Proponent, and formalised in agreement with Council | | | | | |
|--|--|-------------------|--------------------|------|-----|
| Planning Proposal not scheduled in Councils' Delivery Plan and Operational Plan – Stage 1 – Lodgement fee through to Gateway Determination. | \$2,500.00 | \$0.00 | \$2,500.00 | each | N |
| continued on next page ... <div>2023/2024 Fees & Charges Page 38 of 116</div> | | | | | |
| Name | Fee (excl. GST) | Year 23/24 GST | Fee (incl. GST) | Unit | GST |
| Planning Proposal [continued] | | | | | |
| Planning Proposal not scheduled in Councils' Delivery Plan and Operational Plan – Stage 2 Advertising Fee. | \$770.00 | \$0.00 | \$770.00 | each | N |
| Planning Proposal not scheduled in Councils' Delivery Plan and Operational Plan – Stage 3 – Exhibition through to Publication. | \$6,500.00 | \$0.00 | \$6,500.00 | each | N |
| Planning Proposal scheduled in Councils Delivery Plan and Operational Plan | NOTE: the full cost of any supporting studies deemed necessary by Council shall be separately borne by the Proponent, and formalised in agreement with Council | | | each | N |



Should Council resolve to seek a Gateway Determination in respect of this matter, it would be the intention of Council to undertake requisite consultation with NSW Government Agencies following the receipt of any relevant Gateway Determination that may be obtained, and prior to the public exhibition of the proposal.

Council is not prepared to commit to any assessment timeframes or milestones at this stage of the planning process.

4. Recommended investigations and studies to support and justify the proposal, including the requirements in Attachment C of this guideline

Council is broadly in agreement with the proposed investigation and studies that you have contemplated completing to justify the proposal in Section 5 with the following exceptions;

- A Preliminary Assessment of the potential for land contamination, including soil testing where necessary, should be undertaken in accordance with the Bellingen Shire Council Contaminated Land Policy & Guidelines.
- Council is of the view that an assessment of Aboriginal Cultural Heritage should be undertaken by an appropriately qualified Consultant to support the proposal.
- An assessment by an appropriately qualified assessment regarding wastewater disposal is required, addressing relevant On-site Sewage Management legislation.
- Council notes the comments from DPE regarding flood planning matters and flags that a more rigorous analysis of flooding isolation and evacuation routes is likely to be required by NSW Government Agencies upon referral. It is difficult to predict what these comments will look like as the planning policy position is still evolving, however you may wish to refer to the "Interim response to assessing flood-affected planning proposals and state-led rezonings" published by the DPE.
- A review of aerial photography of the subject property indicates a denudation of the vegetative cover over the area proposed to be subdivided since 2011 (See comparison images below from 31/7/2011 and 10/7/23).

Council is unaware of a legal basis for the reduction in vegetative cover in this area. It is requested that any planning proposal assessment of flora and fauna impacts addresses the legal framework by which the reduction in vegetation cover in this area was undertaken. This is because it is considered important that any decisions made regarding an uplift in the development potential of land, having regard to a revised assessment of environmental value, should not be seen to deliver benefit in respect of clearing activities if they were not undertaken in accordance with relevant legislative requirements.

Image from July 31 2011

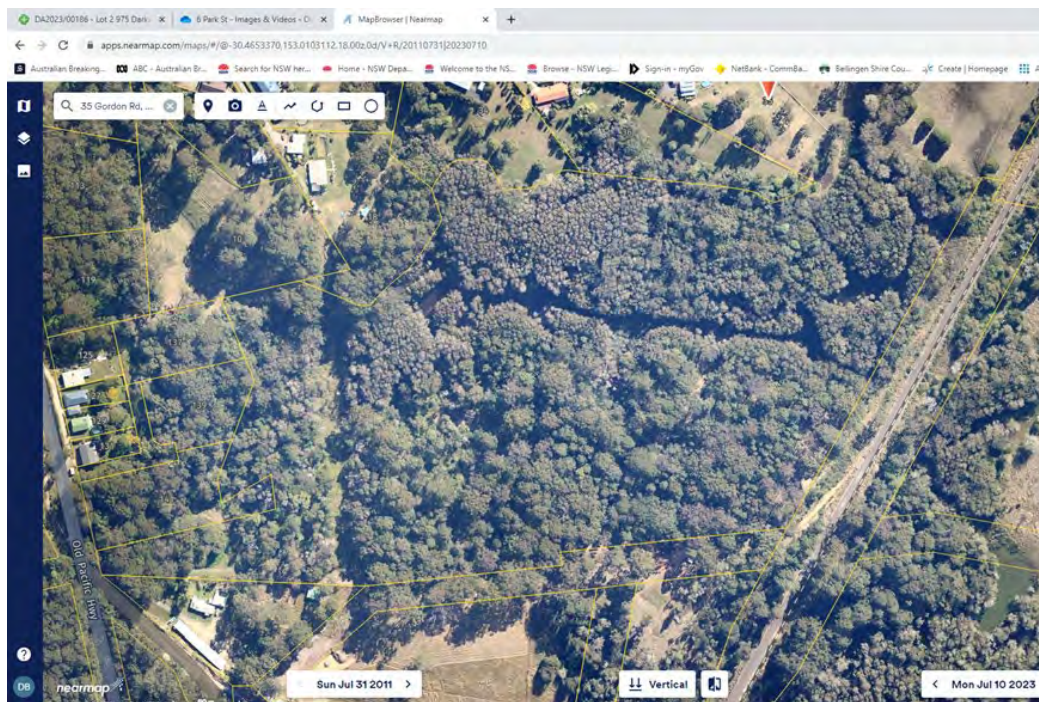
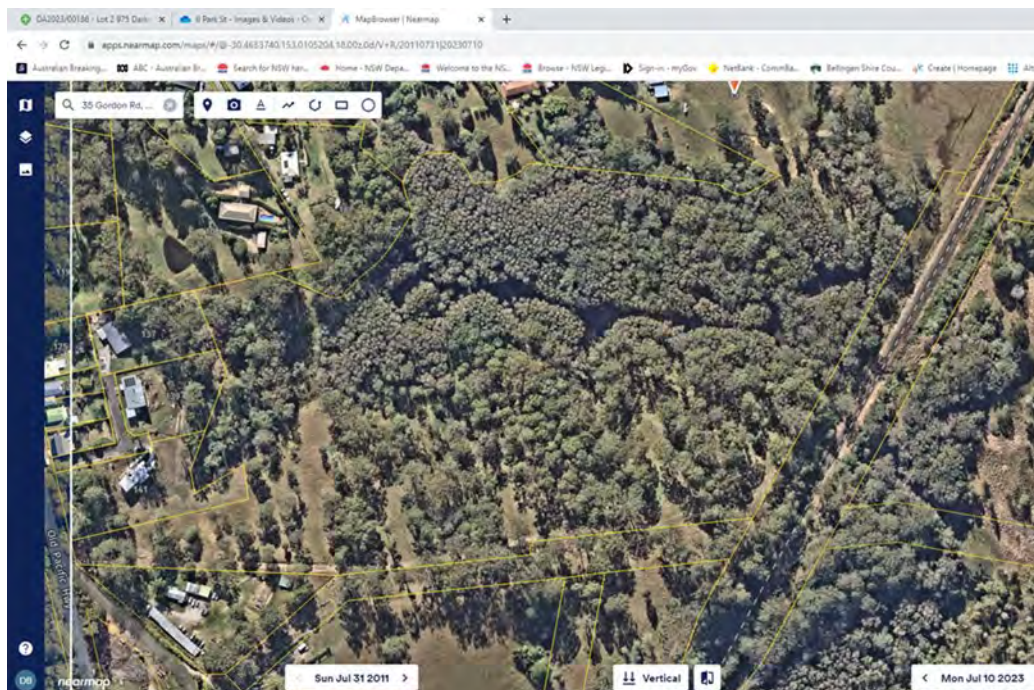


Image from July 10 2023





5. Preliminary advice as to whether the proposal has strategic and site-specific merit

Subject to appropriate investigation and resolution of key matters outlined in this response and in your submission (in particular, biodiversity impacts and the stated intention of Biodiversity & Conservation to not support the proposal) it is considered that the proposal could potentially demonstrate adequate strategic and site specific merit.

6. A copy of authority/agency comments

As attached.

Kind Regards,

Daniel Bennett
Senior Strategic Planner

APPENDIX B

From: [Lucy Walker](#)
To: [Daniel Bennett](#)
Cc: [Kate Campbell](#)
Subject: Scoping Proposal - 35 Gordon Rd, Raleigh NSW 2454 - Change LSZ from 10ha to 1ha
Date: Monday, June 19, 2023 12:24:57 PM
Attachments: [image001.png](#)

Hi Daniel,

Thank you for the opportunity to attend the scoping meeting in relation to the proposed planning proposal to reduce the minimum lot size for part of 35 Gordon Street, Raleigh.

Please find a summary of the comments provided by the Northern Region at the meeting on 13 June 2023 to follow.

- Willing to explore the possibility of reducing minimum lot size given the land is already zoned R5 Large Lot Residential.
- Need to be able to justify the provisions of the Growth Management Strategy which allocates a 10 ha minimum lot size due to site constraints.
- Biodiversity will be a key consideration for the proposal. Further advice to be provided by the Division of Biodiversity and Conservation.
- Need to consider the extent of 1 in 100 and PMF flood events including evacuation routes and relevant hazard and risk categories.
- Need to demonstrate that infrastructure and servicing is capable of being achieved with particular regard to access and onsite sewerage management.
- Bushfire will also be a consideration for the site.

If you require any further assistance in relation to this proposal, please do not hesitate to contact Kate or I.

Regards

Lucy Walker
Manager, Local and Regional Planning
Northern Region | Department of Planning and Environment
T 02 5778 1402 | E Lucy.Walker@planning.nsw.gov.au
155-157 Marius Street, Tamworth.
www.dpie.nsw.gov.au



The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically

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APPENDIX A

From: [Troy Northey](#)
To: [Daniel Bennett](#)
Cc: [Dimitri Young](#); [Bill Larkin](#)
Subject: Scoping report for Planning Proposal Gordon Road Raleigh
Date: Thursday, June 22, 2023 2:36:08 PM
Attachments: [image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
Importance: High

Attention: Mr Daniel Bennett

Dear Mr Bennett

Thank you for meeting with the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment on 13 June 2023 to discuss the Scoping Report prepared by Geolink (May 2023) for a future planning proposal at 35 Gordon Road, Raleigh. We appreciated the opportunity to provide input at this early stage of the proposal.

The following points are issues that we have identified with the scoping report (and subsequent future planning proposal), which we discussed at the meeting;

1. The planning area is located in the coastal strip mapped by the North Coast Regional Plan 2041 (NCRP) and is not within an identified urban growth area in the NCRP. Strategy 1.5 of the NCRP clearly states that new R5 zoned (Large lot residential) housing is to be directed away from the coastal strip. We note that the planning system allows new residential housing to be created by rezoning land or by changing the Minimum Lot Size (MLS) of land.
2. Although the planning area is zoned R5, the approved Bellingen Growth Management Strategy 2007 applied an MLS of 10ha to the R5 zoned land in the planning area due to its environmental constraints. This was applied so that only one rural residential dwelling would be permissible to reduce the impacts to the biodiversity values of the land.
3. The yet-to-be-prepared Planning Proposal seeks to create new rural residential housing in the planning area by reducing the MLS from 10 ha to 1 ha, which would increase the number of rural residential dwellings permissible and hence increase the impacts to the planning area's biodiversity values.
4. The scoping report significantly underestimates clearing required for the proposal with a undersized building envelopes, which do not allow for a standard dwelling footprint, ancillary buildings such as sheds, driveways, realistic APZs, and effluent disposal areas. New boundary fence lines would also need to be cleared.
5. Parts of the planning area are highly likely to meet the High Environmentally Value (HEV) land

criteria and will be impacted through clearing for new boundaries. Noting that land to the north of the lots and extending onto the proposed lots in some areas where new boundaries are proposed are highly likely to align with a coastal floodplain Endangered Ecological Community (EEC).

6. In accordance with the NSW RFS boundary clearing code the location of the proposed northern boundary of the R5 lots would enable a boundary clearing width of 25m permissible for the proposed northern boundary fence within the RU1 zone, noting this area is highly likely to be coastal floodplain EEC and HEV land.

For the reasons noted above, it is unlikely the BCD would support the planning proposal as detailed in the scoping report.

If you have any questions about this advice, please do not hesitate to contact Mr Bill Larkin, Senior Conservation Planning Officer, at bill.larkin@environment.nsw.gov.au or 6659 8216.

Yours sincerely



Troy Northey

A/Director, North East

Biodiversity and Conservation

Department of Planning and Environment

T 02 6670 8655 M 0472 802 719 E troy.northey@environment.nsw.gov.au

dpie.nsw.gov.au

Level 2
135 Murwillumbah Street
Murwillumbah NSW 2484



Department of Planning and Environment



I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

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Appendix I

Combined Agency Comments



General Manager
Bellingen Shire Council
PO Box 117
BELLINGEN NSW 2454

Attention: Mr Daniel Bennett

Dear Mr Griffioen

RE: 35 Gordon Road, Raleigh – Planning Proposal (PP-2024-2189)

Thank you for your notification via the NSW Planning Portal dated 31 March 2025 about the planning proposal (PP) at 35 Gordon Road, Raleigh, seeking comments from the Conservation Programs, Heritage and Regulation Group (CPHR) of the NSW Department of Climate Change, Energy, the Environment and Water. I appreciate the opportunity to provide input.

We have reviewed the document supplied and advise that several issues are apparent with the assessment for biodiversity. These issues are discussed in detail in **Attachment 1** to this letter.

In summary:

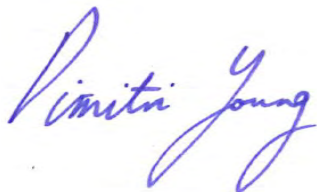
- the PP does not fully accord with Strategy 1.5 of the North Coast Regional Plan 2041 (NCRP).
- the PP does not assess the suitability of land use zones over the entire landholding.
- the PP does not include a planning mechanism to ensure appropriate long-term management of high environmental value (HEV) land.

CPHR recommends:

1. The PP acknowledge that it accords with the text in the NCRP but not with the wording of NCRP Strategy 1.5.
2. The scope of the PP and the planning area be expanded to review and assess the occurrence of HEV land and the application of appropriate land use zones over the whole of Lot 21 DP1239022.
3. The planning proposal be revised to include either:
 - a) a planning agreement committing the landholder to the preparation and implementation of a vegetation management plan (VMP) to manage the C2 zoned land in the planning area, with the VMP to be lodged with the first development application for large lot residential land uses in the planning area; or
 - b) a site-specific development standard under the Local Environmental Plan, or other planning mechanism as appropriate, requiring a VMP to be registered on the title prior to any subdivision of the planning area.

If you have any further questions about this issue, please contact Mr Bill Larkin, Team Leader Planning North East, CPHR, on 6659 8216 or at bill.larkin@environment.nsw.gov.au.

Yours sincerely



DIMITRI YOUNG
Senior Team Leader Planning North East
Conservation Programs, Heritage and Regulation Group

12 May 2025

Enclosure: Attachment 1: Detailed DCCEEW CPHR Comments – 35 Gordon Road, Raleigh Planning Proposal (PP-2024-2189)

cc: Ms Sandra Bush – Senior Planning Officer DPHI, Mr Paul Garnet- - Manager Local and Regional Planning DPHI

Attachment 1: Detailed DCCEEW CPHR Comments – 35 Gordon Road, Raleigh Planning Proposal (PP-2024-2189)

The Conservation Programs, Heritage and Regulation Group (CPHR) of the NSW Department of Climate Change, Energy, the Environment and Water has reviewed the Planning Proposal (PP) for 35 Gordon Road, Raleigh.

We understand the main components of the PP include amending the Bellingen Local Environment Plan 2010 (LEP) to:

- re-align boundaries between R1 – General Residential, RU1 – Primary Production, R5 – Large Lot Residential and C2 – Environmental Conservation land use zones
- reduce the Minimum Lot Size (MLS) in R5 zoned land from 10 ha to 1 ha
- increase the MLS in RU1 and C2 zoned land from 10 ha to 20 ha.

CPHR provides the following comments on the PP.

The PP does not fully accord with Strategy 1.5 of the North Coast Regional Plan 2041 (NCRP)

The planning area is in the coastal strip mapped by the NCRP and is not within an identified urban growth area in the NCRP.

The part of the planning area zoned R5 is in the approved Bellingen Growth Management Strategy 2007, which applied an MLS of 10 ha to the land due to its environmental constraints. This was applied so that only one rural residential dwelling would be permissible to reduce the impacts to the biodiversity values of the land.

We note the planning system allows new residential housing to be created by rezoning land or by changing the MLS of land.

The PP seeks to create new rural residential housing in the planning area by reducing the MLS from 10 ha to 1 ha, which would increase the number of rural residential dwellings permissible and hence increase the impacts to the planning area's biodiversity values. Each new R5 zoned lot to be enabled by the PP would require clearing for building envelopes, ancillary buildings such as sheds, driveways, bushfire Asset Protection Zones, effluent disposal areas and new boundary fence lines.

The NCRP text states:

'New rural residential release areas must promote sustainable land use outcomes and are to be located outside the more environmentally sensitive and constrained coastal strip.'

Strategy 1.5 in the NCRP does not refer to new release areas, just new rural residential housing as follows:

'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 and Environment and is to be directed away from the coastal strip.'

Due to this inconsistency in the NCRP, the PP accords with the NCRP text but not with the wording in Strategy 1.5.

Our inspection of the planning area on 5 May 2025 indicated the land zoned R5 and subject to the reduced MLS does not contain any areas of High Environmental Value (HEV).

CPHR acknowledges that new rural residential release areas in the coastal strip are undesirable, but that there is still demand for rural residential housing there.

Hence, in this instance, as the land subject to the proposed reduced MLS does not contain areas of HEV, and since the PP has increased the land zoned C2 to cover further areas of HEV in other parts of the planning area, it would seem reasonable to enable additional rural residential housing in the R5 zoned part of the planning area via the PP.

CPHR recommendation:

1. The PP acknowledge that it accords with the text in the NCRP but not with the wording of Strategy 1.5.

The PP has not assessed the suitability of land use zones over the entire landholding

Planning proposals offer opportunities to consider appropriate land uses for the entire planning area and to include analysis of all opportunities and constraints present to determine appropriate future land use zones. CPHR expects the planning area to encompass the whole of Lot 21 DP1239022 (the landholding).

The PP intends to re-align land use zones within the southern third of the landholding but has not justified retention of the RU1 zone over the remainder of the property.

Although CPHR supports the proposed expansion of the C2 zone in the planning area and the increased MLS to preclude future fragmentation of the C2-zoned land, the central and northern parts of the landholding appear to contain potential freshwater wetland and fringing forested wetland vegetation (refer to Figure 1 below).



Figure 1: Freshwater wetland and fringing woody vegetation within the central and northern portions of the landholding encircled in yellow.

Given low-lying portions of the property are situated on a coastal floodplain, freshwater wetland and forested wetland communities in the planning area are likely to be representative of freshwater wetland and coastal floodplain endangered ecological communities (EECs) listed in the *Biodiversity Conservation Act 2016* (BC Act).

Areas containing EECs represent HEV land in the NCRP and Strategy 3.1 of the NCRP requires strategic planning to consider opportunities to avoid and protect HEV land by applying appropriate mechanisms such as conservation zones.

CPHR recommendation:

2. The scope of the PP and the planning area be expanded to review and assess the occurrence of HEV land and the application of appropriate land use zones over the whole of Lot 21 DP1239022.

[A planning mechanism is required to ensure appropriate long-term management of HEV land](#)

Strategy 3.1 of the NCRP requires strategic planning and local plans to protect biodiversity values by applying appropriate mechanisms to protect HEV land within a planning area.

Although the C2 zone will be applied to most areas of HEV land in the planning area, future management of the HEV land has not been detailed in the PP.

CPHR would expect HEV land zoned for conservation to be subject to a vegetation management plan (VMP) for preparation at the development application stage. This would be secured at the planning proposal stage either by a planning agreement exhibited with the planning proposal or by a site-specific development standard under the Local Environmental Plan, or other planning mechanism as appropriate, requiring a VMP to be registered on the title prior to any subdivision of the planning area.

CPHR recommendation:

3. The planning proposal be revised to include either:
 - a) a planning agreement committing the landholder to the preparation and implementation of a VMP to manage the C2 zoned land in the planning area, with the plan to be lodged with the first development application for large lot residential land uses in the planning area; or
 - b) a site-specific development standard under the Local Environmental Plan, or other planning mechanism as appropriate, requiring a VMP to be registered on the title prior to any subdivision of the planning area.

Mr Mark Griffioen
General Manager
Bellingen Shire Council
PO Box 117
Bellingen NSW 2454

Attention: Daniel Bennett
dbennett@bellingen.nsw.gov.au

PP2024-2189 - Rezone part of Lot 21 DP 1239022, 35 Gordon Road, Raleigh and amend Minimum Lot Size

Dear Mr Griffioen

Thank you for the opportunity to comment on the above planning proposal, as referred through the NSW Planning Portal on 31 March 2025.

The NSW Department of Primary Industries and Regional Development, Agriculture and Biosecurity (the Department) collaborates and partners with our stakeholders to protect and enhance the productive and sustainable use and resilience of agricultural resources and the environment.

It is understood the proposal seeks to:

- Amend the Bellingen Local Environmental Plan 2010 (LEP) Lot Size Map to change the minimum lot size (MLS) affecting the R5 Large Lot Residential zone portion of the subject land from 10ha to 1ha and apply a 20ha minimum lot size over the remaining land; and
- Amend the Bellingen LEP Land Zoning Map to extend the zoned area of C2 Environmental Conservation to cover land identified as high environmental value (HEV) and refine the R5 zone.

The Department has reviewed the Planning Proposal and associated documentation and does not provide an objection based on the following:

- The proposed reduction to the MLS from 10ha to 1ha relates to an existing R5 zoned portion of the subject land. Whilst this effectively enables five additional dwellings in the southern portion of the subject land, the expansion of the C2 zoned area across the northern boundary of the existing R5 land will provide an effective natural vegetative and separation buffer to the residual RU1 Primary Production land should the R5 subdivision progress.

- The proposed increase of the MLS from 10ha to 20ha for the C2 and RU1 land will prevent further subdivision of that part of the land used primarily for agricultural production. This is supported and provides a positive agricultural outcome for the part of the land identified as important farmland under the North Coast Regional Plan 2041.
- The extension of the C2 zone, as verified through a biodiversity assessment as being of high environmental value (HEV), is consistent with regional and local planning principles relating to the protection of HEV.

It is noted that the Bellingen Local Strategic Planning Statement 2020 – 2040 provides an action for the development of a Rural Land Strategy (RLS) and *‘consistent with actions within the Bellingen Shire Local Housing Strategy 2020-2040, the Rural Lands Strategy will also review the suitability of existing land within the R5 - Large Lot Residential Zone for either agricultural use, or subdivision into smaller lots to meet the demand for larger lifestyle lots whilst protecting the further incursion of lifestyle lots into productive agricultural areas’*.

Ideally, this proposal would form part of the RLS study to enable the consideration of this proposal as part of the broader analysis of R5 lands across the LGA. However, given the strategic location of the R5 lands adjacent to existing residential and rural-residential development, the access and connectivity to services, including the proximity to Urunga, and the minimal impact on agricultural production, the Department does not oppose progressing the proposal prior to the RLS development in this instance.

Should you require clarification on any information in this response, please contact me on 0412 424397 or email landuse.ag@dpird.nsw.gov.au.

Sincerely



Selina Stillman
Agricultural Land Use Planning Officer
Climate and Natural Resources | Agricultural Land Use Planning
North Coast Region

30 April 2025



RFS



Bellingen Shire Council
PO Box 117
BELLINGEN NSW 2454

Your reference: (REF-3578) PP-2024-2189
Our reference: SPI20250401000069

ATTENTION: Daniel Bennett

Date: Monday 19 May 2025

Dear Sir/Madam,

**Strategic Planning Instrument
Rezoning – Planning Proposal
Bellingen Local Environmental Plan 2010 - LEP Amendment - 35 Gordon Road Raleigh**

I refer to your correspondence dated 31/03/2025 inviting the NSW Rural Fire Service (NSW RFS) to comment on the above Strategic Planning document.

The NSW RFS has considered the information submitted and provides the following comments.

The planning proposal is to rezone land from Rural to Environmental and to reduce minimum size lot map over the southern portion of lot 21 to permit a 5 lot Rural residential subdivision.

The subject land is mapped cat 1 bushfire prone land. The submitted bushfire report establishes that asset protection zones, construction and access can comply with Planning for Bushfire protection guidelines.

The NSW RFS has no objection to the planning proposal. Council needs to be satisfied that vegetation management practices will need to be undertaken on the proposed subdivision lots. Further vegetation management will also be required over the proposes single access road's from Old Pacific Highway to each building envelope.

For any queries regarding this correspondence, please contact Alan Bawden on 1300 NSW RFS.

Yours sincerely,

Allyn Purkiss
**Manager Planning & Environment Services
Built & Natural Environment**

Postal address

NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
4 Murray Rose Ave
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