PLANNING PROPOSAL

COFFS HARBOUR CITY COUNCIL

Planning Proposal PP-2021-6491
19 Orara Street, Nana Glen & Housekeeping Amendment (Split Zone Clause & Dwelling Permissibility Clause)

March 2022
VERSION 2 Exhibition

PLANNING PROPOSAL STATUS

Stage	**Version / Date** *(blank until achieved)*
Reported to Council – Initiate s3.33 **Version 1 - Pre_Exhibition**	***Version 1 – 14 October 2021***
Referred to DPE s3.34(1) **Version 1 - Pre_Exhibition**	***Version 1 – 27/10/2021***
Gateway Determination s3.34(2) **Version 1 - Pre_Exhibition**	***Version 1 – 29/11/2021***
Amendments Required:	***Yes. Version 2 – 08/03/22*** ***As per the Gateway Determination this planning proposal has been amended to:*** • ***remove proposed draft clauses*** • ***update Environmental Conservation Zone and Environmental Management Zone references*** • ***reflect 2022 Aboriginal Cultural Heritage Assessment findings and recommendations*** • ***reflect public consultation and Government Agency referral requirements***
Public Exhibition – Schedule 1 Clause 4 **Version 2 - Exhibition**	
Reported to Council – Initiate Revised PP s3.33 **Version x - Re_Exhibition**	
Revised PP Sent to the Minister - s3.35(1) **Version x - Re_Exhibition**	
Altered Gateway Determination s3.34(2) **Version x - Re_Exhibition**	
Public Exhibition – Schedule 1 Clause 4 **Version x - Re_Exhibition**	
Reported to Council – Endorsement (or Making of LEP if delegated) s3.36 **Version x - Post Exhibition**	
Endorsed by Council for Submission to Minister for Notification (or Making where not delegated) s3.36(2) **Version x – Post Exhibition**	

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APPENDICES

EXECUTIVE SUMMARY & EXHIBITION INFORMATION

What is a Planning Proposal?

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

A planning proposal assists those who are responsible for deciding whether an LEP amendment should proceed and is required to be prepared by a relevant planning authority. Council, as a relevant planning authority, is responsible for ensuring that the information contained within a planning proposal is accurate and accords with the *Environmental Planning and Assessment Act 1979* and the NSW Department of Planning and Environment's *A guide to preparing planning proposals* 2018 and *A guide to preparing local environmental plans 2018*.

What is the Intent of this Planning Proposal?

The intent of this planning proposal is to amend Coffs Harbour LEP 2013 to address an anomaly affecting the subdivision of certain split zone properties within the Coffs Harbour Local Government Area (LGA) and to amend the minimum lot size map sheet, as it relates to 19 Orara St, Nana Glen for Zone R5 Large Lot Residential. Such amendments will enable subdivision of 19 Orara Street, Nana Glen for large lot residential purposes.

Public Exhibition

This LEP Amendment will be placed on public exhibition in accordance with the Gateway Determination issued by NSW Department of Planning and Environment. Copies of the planning proposal and supportive information can be viewed on Council's Have Your Say Page https://haveyoursay.coffsharbour.nsw.gov.au/ for the duration of the exhibition period.

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

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

Any questions, contact:
Jackson Pfister on (02) 6648 4662
or email jackson.pfister@chcc.nsw.gov.au

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

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

BACKGROUND

Proposal	(1) 19 Orara Street, Nana Glen & (2) Housekeeping for split zone properties
Property Details	1) Lot 1 DP 1163252 and Lot 1 DP 1210495, 19 Orara Street, Nana Glen 2) Coffs Harbour Local Government Area
Current Land Use Zone(s)	1) Zone RU2 Rural Landscape, Zone R5 Large Lot Residential and Zone C2 Environmental Conservation 2) Various zones affecting split zone properties across the LGA
Proponent	1) Keiley Hunter Town Planning 2) Coffs Harbour City Council
Landowner	1) Blaise Jenkinson 2) Various
Location	1) A location map for 19 Orara Street is included below 2) Various

This planning proposal has been prepared in accordance with the Environmental Planning and Assessment Act 1979 and *A guide to preparing planning proposals* (NSW Department of Planning and Environment 2018) and *A guide to preparing local environmental plans* (NSW Department of Planning and Environment 2018).

This planning proposal explains the intended effects of an amendment to Coffs Harbour LEP 2013 to address two matters: 1) an amendment to the minimum lot size at 19 Orara Street, Nana Glen; and 2) amendments to two clauses within Coffs Harbour LEP 2013 relating to split zone lots that apply to the Coffs harbour LGA.

The Site

This planning proposal relates two matters: 1) an amendment to the minimum lot size at 19 Orara Street, Nana Glen, as shown in Figure 1; and 2) amendments to two clauses within Coffs Harbour LEP 2013 relating to split zone lots that apply to the Coffs harbour LGA.

19 Orara Street, Nana Glen

Nana Glen is a hinterland village located approximately 27 km west of Coffs Harbour. The real property description is Lot 1 DP 1163252 and Lot 1 DP 1210495. The site has an area of 19.16 hectares and is a split zoned property: Zone RU2 Rural Landscape, Zone R5 Large Lot Residential and Zone C2 Environmental Conservation under Coffs Harbour LEP.

Table 1: Approximate Area of Land by Zone – 19 Orara Street, Nana Glen

Description	Affected Area (approx)	Pct. Coverage	Property Area (approx)
C2 Environmental Conservation	81627m^2	43%	191579m^2
R5 Large Lot Residential	49987m^2	26%	191579m^2
RU2 Rural Landscape	59173m^2	31%	191579m^2

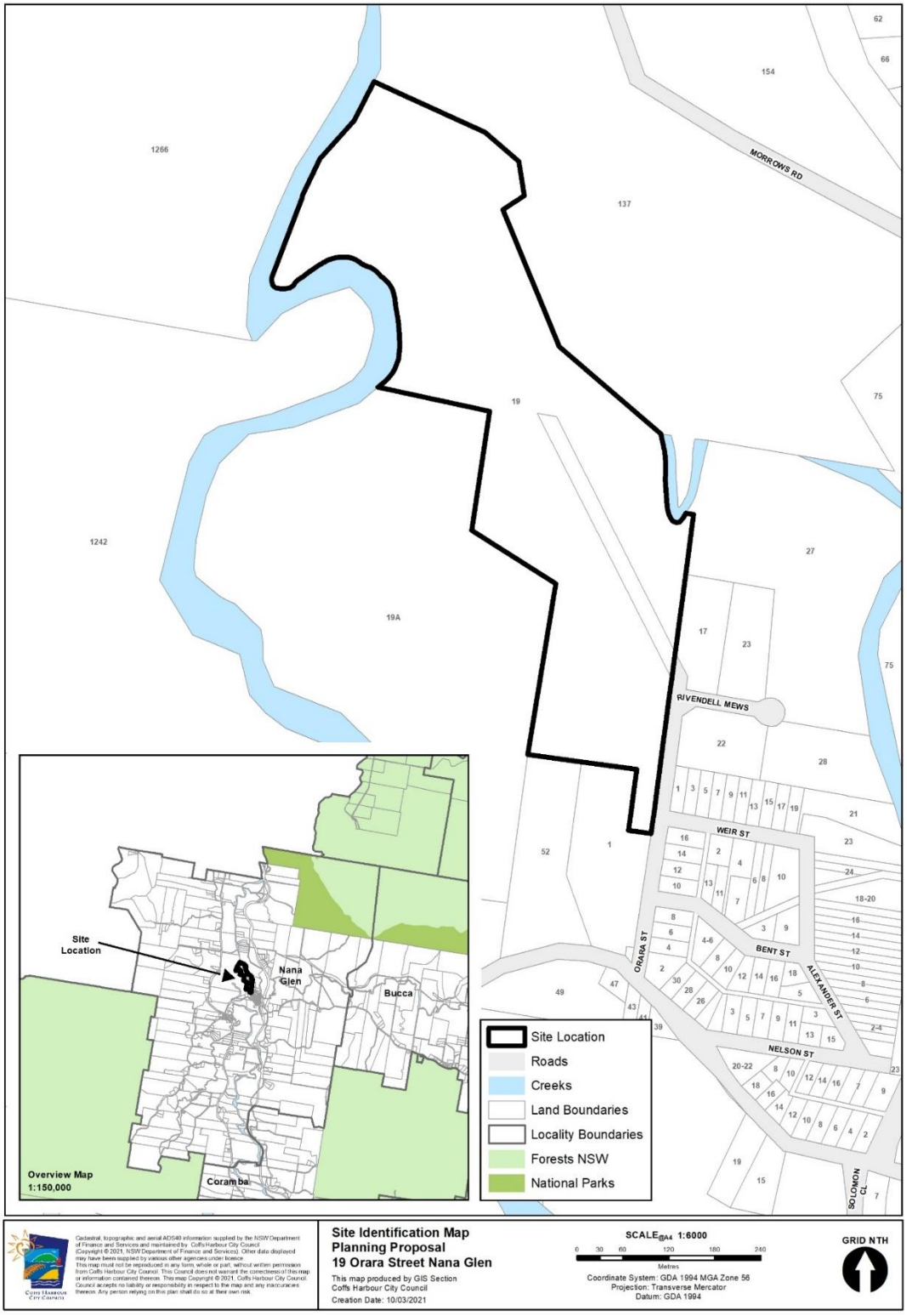


Figure 1: Location Map for 19 Orara Street, Nana Glen

Split Zone Clause & Dwelling Permissibility Amendment

Amendments to two clauses in Coffs Harbour LEP 2013 also have implications to certain split zoned properties across the Coffs harbour LGA. Potential implications have been considered and justified within this report.

PART 1 – OBJECTIVES OR INTENDED OUTCOMES

The objective of this planning proposal is to amend Coffs Harbour LEP 2013 in relation to two matters: 1) to amend the minimum lot size map sheet as it relates to 19 Orara St, Nana Glen for Zone R5 Large Lot Residential; and 2) to address an anomaly affecting the subdivision of certain split zone properties across the Coffs Harbour LGA. Such amendments will enable subdivision of 19 Orara Street, Nana Glen for large lot residential purposes.

PART 2 – EXPLANATION OF PROVISIONS

The intended outcomes of the proposed LEP amendment will be achieved by amending Coffs Harbour LEP 2013 as follows:

1) 19 Orara Street, Nana Glen

- **Amend Coffs Harbour Minimum Lot Size Map** (Sheet LSZ_005A) to change the Minimum Lot Size (MLS) for Zone R5 Large Lot Residential, from Category 'Z' = 2 hectares to Category 'X2'= 8,000 m^2 (see Part 4 – Mapping of this report for existing and proposed maps);

2) Split Zone Clause & Dwelling Permissibility Amendment

- **Amend Clause 4.1A *Minimum subdivision lot sizes for certain split zones*** to support the subdivision of split zone properties with land in one or more business, industrial, recreation, residential, rural or special purpose zone and Zone C2 Environmental Conservation and/or Zone C3 Environmental Management to:
    - clarify that it applies to various combinations of land use zones within the original lot;
    - ensure that residential portions of resulting lots comply with minimum lot size requirements;
    - ensure that the urban portions of resulting lots (business, industrial, special purpose or recreation zone) are suitable for a use permitted in the relevant zone;
    - ensure that where an original lot contains land within Zone RU2 Rural Landscape and a residential and/or urban zone, all of the land within Zone RU2 Rural Landscape is contained within one resulting lot to minimise fragmentation of rural land;
    - ensure that where an original lot contains only Zone RU2 Rural Landscape and Zone C2 Environmental Conservation and/or Zone C3 Environmental Management, the land in the rural zone in resulting lots is not less than the 40ha minimum lot size to minimise fragmentation of rural land;
    - ensure that the subdivision of split zoned lots will not compromise the continued protection and long-term maintenance of any land in Zone C2 Environmental Conservation or Zone C3 Environmental Management; and
    - ensure that a dwelling cannot be lawfully created on residual land within Zone RU2 Rural Landscape and/or Zone C2 Environmental Conservation, and/or Zone C3 Environmental Management where there is a residential and/or urban zone within the resulting lot.

Amend Clause 4.2B *Erection of dwelling houses on land in certain rural and environmental protection zones*, subclause 4.2B(3)(aa), to 'switch off' the intent of "aa" to ensure a dwelling cannot be lawfully created on land within Zone RU2 Rural Landscape and/or Zone C2 Environmental Conservation, and/or Zone C3 Environmental Management where there is a residential or urban zone within the resulting lot created under Clause 4.1A.

The following discussion provides further detail in relation to the proposed amendments to the split zone and permissibility of dwelling clause.

Clause *4.1A Minimum subdivision lot sizes for certain split zones* of Coffs Harbour LEP 2013 enables the subdivision of lots that are within more than one zone in a manner that promotes suitable land use and development. The drafting of this clause is complex and there is currently conflicting interpretations with subclause 4.1A(2) and identified anomalies with 4.1A(3). A discussion of the conflicting interpretations and anomalies for each subclause is provided as follows.

Clause 4.1A (2) of Coffs Harbour LEP 2013 specifies that an original lot must contain land in Zone C2 Environmental Conservation or Zone C3 Environmental Management, as well as land in a business, industrial, recreation, residential, rural or special purpose zone. In this regard, subclause 4.1A (2) does not enable subdivision of land where the original lot contains a combination of land within a residential zone and/or an urban zone, as well as a rural zone, but not an environmental zone.

Additionally, the use of the word 'or' within paragraph (2)(a) of this subclause, has resulted in conflicting interpretations about whether or not it allows for multiple zones in line (2)(a) or only a single zone. It is Councils understanding that the intent of clause 4.1A is for it to cater for properties that contain two or more zones within a single lot, provided that at least one of those zones is an environmental zone listed in paragraph (2)(b). To this end, it is requested that the wording of paragraphs of subclause (2) be amended to remove any ambiguity. It is suggested that the wording include 'one or more' at the start of each line will provide greater clarity.

Subclause 4.1A (3) of Coffs Harbour LEP 2013 enables the subdivision of split zone properties that cannot meet the provisions of Clause 4.1 Minimum subdivision lot size. Paragraph (3)(a) requires that, where a resulting lot contains land in a rural zone, the land in the rural zone in the resulting lot is not to be less than the minimum lot size for that land. To minimise fragmentation and alienation of resource lands, Council supports the intent of this requirement for split zoned lots that only contain land within Zone RU2 Rural Landscape and an environmental zone.

The wording of this clause does however unintentionally preclude the subdivision of a large number of split zone properties within the Coffs Harbour LGA that contain other combinations of land use zones. For example, subdivision cannot be undertaken for split zone lots that meet the minimum lot size requirements for the residential portion of the land or contain sufficient land within an urban zone for its intended purpose, if they also contain land within a rural zone that is less than the 40hectare minimum lot size requirement. Despite the fact that the portion of the land within the rural zone is already significantly fragmented, subdivision of the land within the residential and/or urban zone cannot be undertaken. This is inconsistent with the objectives of this clause.

Approximately 138 split zone properties within the Coffs Harbour LGA include land with combinations of residential, urban, rural and environmental zones. Proponents seeking to subdivide the residential portion of a split zone property, are currently unable to subdivide any of the land if they cannot meet the minimum lot size requirements for the rural zoned portion of the lot, regardless of whether or not all of the rural land in the original lot is proposed to remain the same area in one resulting lot. To address the issues identified for these properties, it is suggested that Clause 4.1A be amended to ensure that;

- one of the resulting lots contains:
  - land in a residential zone that complies with the minimum lot size; and
  - all of the rural land that was in the original lot; and
- all other resulting lots comply with the minimum lot size in relation to that land, excluding any land in Zone C2 Environmental Conservation or Zone C3 Environmental Management.

The intent of this amendment is to enable the subdivision of any residential portion of a split zone property that complies with the minimum lot size, while retaining all of the rural land in the original lot as residual land within one of the resulting lots. Any environmental land within the original lot will be required to meet the requirements of subclause 4.1A (4) (i.e. that the subdivision will not compromise the continued protection and long-term maintenance of any land in Zone C2 Environmental Conservation or Zone C3 Environmental Management in the resulting lots).

To minimise land use conflict within rural and environmental zones, an amendment to clause 4.2B of Coffs Harbour LEP 2013 is also proposed as part of this planning proposal. Clause 4.2B applies to the erection of dwelling houses on land in certain rural and environment protection zones. The clause aims to minimise unplanned rural residential development while enabling the replacement of lawfully erected dwelling houses in rural and environment protection zones. The clause limits the erection of a dwelling house on land within a rural and/or environmental zone unless one of the exceptions provided by subclause 4.2B(3) is met.

One of these exceptions, subclause 4.2B(3)(aa), enables a dwelling to be erected on land within a rural and/or environmental zone if the lot was created under Coffs Harbour LEP 2013, excluding lots create under clause 4.2(3) (i.e. a primary production lot for which a dwelling is prohibited). In this regard, subclause 4.2B(3)(aa) would enable a dwelling to be erected, not just on the residential portion of the lot, but also on the residual portions of split zone lots within a rural and/or environmental zone. This is not Council's intention.

To ensure that a dwelling cannot be lawfully created on the residual rural and/or Environmental portions of a split zone lot created under Clause 4.1A (that also contains an urban and/or residential portion that meets the other provisions of this clause), it is recommended that clause 4.2B(3)(aa) be amended to also exclude clause 4.1A(3).

Details on split zone properties containing rural land within the Coffs Harbour LGA is presented in Table 2 below. The results show that 93% (128) of split zone properties containing land with a combination of residential, urban, rural and environmental zones, do not meet the minimum lot size (40ha) for the rural portion of the lot.

It should be noted that this section of the planning proposal only includes details of the existing number of split zone combinations within the Coffs Harbour LGA which include land within a rural zone, as this is the main issue with the clause. There are however, many other split zone combinations within the Coffs Harbour LGA that will also benefit from the proposed amendment to Clause 4.1A of Coffs Harbour LEP 2013.

Table 2: Split Zone Combinations within the Coffs Harbour LGA Containing a Rural Zone

Split Zone Combination	Count	Lot Size for RU2 Portion		
		< 40ha RU2	≥40ha RU2	> 80ha RU2
C2 RU2 SP2	55	52	2	1
C2 R5 RU2	53	52	1	-
C2 R2 RU2	14	13	1	-
C2 R5 RU3	4	N/A (4)	-	-
RU2 C2 R5 SP2	2	2	-	-
RU2 W1 R2 C2	2	1	1	-
C2 R1 RU2	2	2	-	-
C2 RU2 C3 R2 RE1	1	1	-	-
C2 IN1 RU2 SP2	1	1	-	-
C2 R2 RU2 SP2	1	1	-	-
C2 RU2 RU3 SP2	1	1	-	-
RU2 C2 RE2 R5	1	1	-	-
C2 RE2 RU2	1	1	-	-
Sub Total (Urban/Residential Split Zone Properties with RU2)	138	128	5	1
C2 RU2	1352	1156	129	67
C2 RU2 RU3	6	6	-	-
C2 RU2 W1	4	4	-	-
C1 C2 RU2	1	1	-	-
C2 RU2 W2	1	1	-	-
C1 C2 RU2 RU3	1	-	1	-
Sub Total (Non-Urban/Residential Split Zone Properties with RU2)	1365	1168	130	67
Grand Total	1503	1296	135	68

Table 2 also shows that the majority of split zone properties consist of Zone RU2 Rural Landscape and Zone C2 Environmental Conservation land. 1156 (85%) of RU2 and C2 split zone properties have less than the minimum lot size for the RU2 component, while 197 (15%) are equal to, or greater than the minimum lot size. However, only 67 (5%) of those properties have enough RU2 (≥80ha) land to potentially subdivide.

For split zone properties consisting of only rural and environmental land, it is important to ensure that subdivision of rural land continues to occur only when the rural portion of the lot meets the minimum lot size requirements for that land (i.e. 40ha). Maintaining the minimum lot size requirements for rural and environmental split zone lots ensure that subdivision occurs in a manner where the resulting lot sizes have a practical and efficient layout to meet their intended agricultural use.

PART 3 – JUSTIFICATION

This part provides a response to the following matters in accordance with A guide to preparing planning proposals (NSW Department of Planning and Environment 2018):

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

Section A – Need for the planning proposal

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

1) 19 Orara Street, Nana Glen

Yes. The LEP amendment has been prepared in response to a landowner's request and is accompanied by a number of detailed environmental studies, which are included as appendices to this planning proposal.

The portion of the split zone property proposed for a reduction of minimum lot sizes is included in an existing R5 Large Lot Residential zone and Council's Local Growth Management Strategy (LGMS) 2020, Chapter 6 – Large Lot Residential. Chapter 6 of the LGMS addresses the potential reduction of minimum lot sizes in Zone R5 where sufficiently justified. Section 6.7 within Chapter 6 of the LGMS states the following:

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

Coffs Harbour has a range of existing large lot residential lot sizes that reflect past planning subdivision practice. These lot sizes include two-hectare allotment sizes in Nana Glen, which reflected various constraints including flooding and water table issues. Minimum lot size provisions were addressed in previous Development Control Plans (e.g. under LEP 2000) prior to being included as a development standard under the Standard Instrument Local Environmental Plan (Coffs Harbour LEP 2013).

A principle factor affecting lot size in large lot residential zones is onsite sewage management and the potential for the lot/s to be efficiently serviced by an effective onsite sewage management system. When considering the suitability for a lot to sustainably manage wastewater onsite, an assessment will typically refer to 'available effluent management area'. This broadly refers to available areas (i.e. not built out or used for a conflicting purpose) where onsite sewage management systems will not be unduly constrained by site and soil characteristics. Available area on a developed lot is determined by the following factors:

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

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

The Wastewater Capability Assessment included with this LEP amendment (see Appendix #) includes a comparison of nearby properties within Zone R5 Large Lot Residential, ranging in size from 8,370m^2 to 12,250m^2. The comparison of nearby properties suggests that:

- Flooding has a lesser impact on the portion of the site within Zone R5 Large Lot Residential than the comparison properties;
- At about 8,400m^2 total lot area, between 2,400m^2 – 2,900m^2 area is available for effluent land application, more than two times the 1,000m^2 required as a planning envelope;
- Even accounting for high flood impacted conditions, the available area of ~1,000m2 is able to me met; and
- A minimum lot size of 8,000m^2 is considered suitable for the proposed subdivision of the site.

2) *Split Zone Clause & Dwelling Permissibility Amendment*

Amendments to clauses *4.1A Minimum subdivision lot sizes for certain split zones* and *4.2B Erection of dwelling houses on land in certain rural and environment protection zones* have been identified for amendment as a result of Council's 5 Year Comprehensive Review of Coffs Harbour LEP 2013. This review identifies the need for amendments to clauses 4.1A and 4.2B and notes that further review and amendment of such clauses may be required following testing of an amended clause 4.1A.

Subdivision of 19 Orara Street, Nana Glen cannot occur until such time as this clause is corrected and thus the inclusion of both matters within this planning proposal. The characteristics of 19 Orara Street are similar to at least 72 other split zone properties across the LGA currently inhibited by clause 4.1A. Therefore, the site presents an ideal case study to test and progress initial amendments to the clause through a proponent-led planning proposal. Council has been receiving an increasing number of enquiries from owners of split zone properties seeking to subdivide, however due the issues described above in Part 2 – Explanations of provision of this report, are currently unable to subdivide using clause 4.1A.

Council has held meetings with staff from NSW Department of Planning and Environment regarding the issues identified and suggested amendments to the split zone clause and dwelling permissibility clause outlined in this report. During those discussions it was agreed that undertaking a proponent-led planning proposal presented a logical way to approach to progressing initial amendments to Clause 4.1A (and Clause 4.2B). Discussions with NSW Department of Planning and Environment also noted the complexities of the matter and the vast number of split zone scenarios the clauses cater for. It was also agreed that further review and further amendments may be required following testing of the clause 4.1A. This has been allocated for part two of Council's 5 Year Comprehensive Review of Coffs Harbour LEP 2013 (if required), which also recognises initial amendments are being undertaken as part of this proponent-led planning proposal.

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

Yes. This proponent-led planning proposal includes amendments which relate to an individual site, as well as the broader Coffs Harbour LGA, in relation to the subdivision of split zoned lots.

Council's 5 Year Comprehensive Review of Coffs Harbour LEP 2013 identifies issues with clauses *4.1A Minimum subdivision lot sizes for certain split zones* and *4.2B Erection of dwelling houses on land in certain rural and environment protection zones* that need to be addressed. The issues identified by Council's comprehensive review of its LEP are proposed to be addressed by via a number of LEP amendments, based on resourcing.

The characteristics of 19 Orara Street, Nana Glen, typify the issues raised in the comprehensive LEP review for a number of split zoned properties in the Coffs Harbour LGA. This proponent-initiated planning proposal presents an opportunity to address the issues identified as part of Council's LEP review (relating to split zoned lots) ahead of schedule.

3. Is there a net community benefit?

The Net Community Benefit Criteria is identified in the NSW Government's publication *The Right Place for Business and Services*. This policy document has a focus on ensuring growth within existing centres and minimising dispersed trip generating development. It applies most appropriately to planning proposals that promote significant increased residential areas or densities, or significant increased employment areas or the like.

Whilst this planning proposal will facilitate the subdivision of certain split zoned lots within the Coffs Harbour LGA (including 19 Orara Street, Nana Glen), it is unlikely to promote a significant increase in residential areas or densities, therefore the Net Community Benefit test cannot be properly applied to the proposed LEP amendment.

Section B – Relationship to strategic planning framework

4. Will the planning proposal give effect to the objectives and actions contained within the North Coast Regional Plan 2036?

The proposed LEP amendment is considered to be consistent with the relevant goals, directions and actions within the North Coast Regional Plan 2036 as follows:

GOAL 1 – THE MOST STUNNING ENVIRONMENT IN NSW

- ***Direction 1 - Deliver environmentally sustainable growth***

  Action 1.1 - Focus future urban development to mapped urban growth areas.

  Action 1.2 - Review areas identified as 'under investigation' within urban growth areas to identify and map sites of potentially high environmental value.

  Comment The proposed LEP amendment is not inconsistent with the relevant actions.

  The LEP amendment responds to the environmental attributes of 19 Orara Street, Nana Glen in an appropriate manner by concentrating residential development within Zone R5 Large Lot Residential. The existing Zone C2 Environmental Conservation on the site will be contained within a single resulting lot to ensure its continued protection and long-term maintenance.

  Amendments to clause 4.1A and 4.2B aim to promote environmentally sustainable growth and minimise impacts on environmental values.

Any future planning proposal or subdivision progressed as a result of changes to clause 4.1A will be required to demonstrate consistency with the relevant actions where appropriate.

- ***Direction 2 - Enhance biodiversity, coastal and aquatic habitats, and water catchments***

  Action 2.1 - Focus development to areas of least biodiversity sensitivity in the region and implement the 'avoid, minimise, offset' hierarchy to biodiversity, including areas of high environmental value.

  Action 2.2 - Ensure local environmental plans manage marine environments, water catchment areas and groundwater sources to avoid potential development impacts.

  Comment The proposed LEP amendment relating to 19 Orara Street, Nana Glen is not inconsistent with the relevant actions, given that it seeks to manage and respond to the environmental attributes of the land in a responsible manner. The Biodiversity Assessment (Appendix 7) found that no threatened flora species; threatened ecological communities (TECs) or significant habitat for threatened fauna occurs on the subject site. Additionally, all of the land within Zone C2 Environmental Conservation (including the riparian corridor) is proposed to remain unchanged within one resulting lot. The resulting lot will include all of the Zone C2 Environmental Conservation and RU2 Rural Landscape, and sufficient land within Zone R5 Large Lot Residential for residential development.

  Amendments to clause 4.1A and 4.2B aim to promote environmentally sustainable growth by focusing development outside of any environmentally sensitive area within split zone properties across the LGA. Development to which clause 4.1A applies will also be required to demonstrate to the consent authority that the subdivision will not compromise the continued protection and long-term maintenance of any land in Zone C2 Environmental Conservation or Zone C3 Environmental Management in the resulting lots.

- ***Direction 3 - Manage natural hazards and climate change***

  Action 3.1 - Reduce the risk from natural hazards, including the projected effects of climate change, by identifying, avoiding and managing vulnerable areas and hazards.

  Comment The proposed LEP amendment relating to 19 Orara Street, Nana Glen respond to the environmental attributes of the land in an appropriate manner. Future development within Zone R5 large lot residential will be able to be located appropriately to respond bushfire and flood risk, with sufficient land capability for the safe disposal of wastewater.

  The proposed LEP amendments to clauses 4.1A and 4.2B are not inconsistent with this action.

GOAL 2 – A THRIVING, INTERCONNECTED ECONOMY

- ***Direction 6 - Develop successful centres of employment***

  Action 6.5 - Promote and enable an appropriate mix of land uses and prevent the encroachment of sensitive uses on employment land through local planning controls.

  Action 6.6 - Deliver an adequate supply of employment land through local growth management strategies and local environmental plans to support jobs growth.

  Comment The proposed LEP amendment is not inconsistent with the relevant actions. The LEP amendment seeks to rectify an anomaly to clause 4.1A of Coffs Harbour LEP 2013, affecting split zone properties comprising urban zones (business, industrial, recreation, and special purpose).

- ***Direction 11 - Protect and enhance productive agricultural lands***

  Action 11.1 - Enable the growth of the agricultural sector by directing urban and more residential development away from important farmland and identifying locations to support existing and small-lot primary production, such as horticulture in Coffs Harbour.

  Action 11.3 - Identify and protect intensive agriculture clusters in local plans to avoid land use conflicts, particularly with residential and rural residential expansion.

  Comment *19 Orara Street, Nana Glen*

  The North Coast Regional Plan partially maps 19 Orara Street, Nana Glen, as regionally significant farmland. The LEP amendment (and subsequent subdivision) of this land is unlikely to have any adverse impact on any rural land or any regionally significant farmland within the site.

  The area mapped as regionally significant farmland on the site is entirely within Zone C2 Environmental Conservation and RU2 Rural Landscape, which is currently used for small scale extensive agriculture (grazing stock). This land is proposed to be held as a residual split zoned lot, comprising 5.92ha of Zone RU2 Rural Landscape, 8.1ha of Zone C2 Environmental Conservation and 8,619m^2 of Zone R5 Large Lot Residential. The application demonstrates that a dwelling can be located within Zone R5 Large Lot Residential, well outside of the land mapped as regionally significant farmland.

  The LEP Amendment relating to 19 Orara St, Nana Glen has been assessed against the *Important Farmland Interim Variation Criteria* (Appendix 4).

  Split Zone Clause & Dwelling Permissibility Amendment

  Amendments to clauses 4.1A and 4.2B of Coffs Harbour LEP 2013 have been drafted to ensure that the clauses will continue to protect and enhance productive agricultural lands. While the amendment to clause 4.1A will enable the subdivision of land within Zone RU2 Rural Landscape less than the minimum lot size for the zone, it will ensure that any rural land in an original lot, will remain in one resulting lot. Additionally, the amendment to clause 4.2B will ensure that a dwelling cannot be lawfully created on residual rural and/or Environmental portions of lots which also contain land within a residential and/or urban zone.

GOAL 3 – VIBRANT AND ENGAGED COMMUNITIES

- ***Direction 16 - Collaborate and partner with Aboriginal communities***

  Action 16.2 - Ensure Aboriginal communities are engaged throughout the preparation of local growth management strategies and local environmental plans.

  Comment A search of the Aboriginal Heritage Information Management System (AHIMS) database did not identify registered sites on or near 19 Orara Street, Nana Glen (See Appendix 9). During a site inspection in 2020, the Coffs Harbour and District Local Aboriginal Land Council (CHDLALC) observed the potential for cultural material in the flat area above the flood levy (Appendix 10). A Due Diligence Aboriginal and Cultural Heritage Assessment Report undertaken in 2022 confirmed the location of the archaeologically sensitive area to be within the residual Zone RU2 Rural Landscape portion of the site, outside the extent of the proposed development area (Zone R5 Rural Residential portion of the site) (See Appendix 11). As the archaeologically sensitive area will not be impacted by the proposal, further investigation of it is unnecessary. However, if the archaeologically sensitive area is to be impacted in the future, then further archaeological assessment will be required prior to any works proceeding. In accordance with the Due Diligence Code of Practice (DECCW 2010a), The LEP Amendment relating to 19 Orara St, Nana Glen will not impact on

identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface. The LEP Amendment is supported by CHLALC on the condition that any future development application for the site notifies and consults CHLALC regarding any planned ground disturbance works in the future (See Appendix 10).

Any future planning proposals or development applications for subdivision of land progressed as a result of changes to clause 4.1A of Coffs Harbour LEP 2013 will be required to address any impacts on Aboriginal cultural heritage.

- ***Direction 18 - Respect and protect the North Coast's Aboriginal heritage***

Action 18.1 - Ensure Aboriginal objects and places are protected, managed and respected in accordance with legislative requirements and the wishes of local Aboriginal communities.

Action 18.2 - Undertake Aboriginal cultural heritage assessments to inform the design of planning and development proposals so that impacts to Aboriginal cultural heritage are minimised and appropriate heritage management mechanisms are identified.

Action 18.3 - Develop local heritage studies in consultation with the local Aboriginal community, and adopt appropriate measures in planning strategies and local plans to protect Aboriginal heritage.

Comment A search of the AHIMS database did not identify registered sites on or near 19 Orara Street, Nana Glen (See Appendix 9). During a site inspection in 2020, the CHDLALC observed the potential for cultural material in the flat area above the flood levy (Appendix 10). A Due Diligence Aboriginal and Cultural Heritage Assessment Report undertaken in 2022 confirmed the location of the archaeologically sensitive area to be within the residual Zone RU2 Rural Landscape portion of the site, outside the extent of the proposed development area (Zone R5 Rural Residential portion of the site) (See Appendix 11). As the archaeologically sensitive area will not be impacted by the proposal, further investigation was deemed unnecessary. However, should the archaeologically sensitive area be impacted in the future, then further archaeological assessment will be required prior to any works proceeding. In accordance with the Due Diligence Code of Practice, the LEP Amendment relating to 19 Orara St, Nana Glen will not impact any identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface. The LEP Amendment is supported by CHLALC on the condition that any future development application for the site notifies and consults CHLALC regarding any planned ground disturbance works in the future (See Appendix 10).

Any future planning proposals or development applications for subdivision of land progressed as a result of changes to clause 4.1A of Coffs Harbour LEP 2013 will be required to address any impacts on Aboriginal cultural heritage.

GOAL 3 – VIBRANT AND ENGAGED COMMUNITIES

- ***Direction 22 - Deliver greater housing supply***

Action 22.2 Facilitate housing and accommodation options for temporary residents by: preparing planning guidelines for seasonal and itinerant workers accommodation to inform the location and design of future facilities; and working with councils to consider opportunities to permit such facilities through local environmental plans.

Comment The proposed LEP amendment is not inconsistent with this action, as housing facilitated by the proposed LEP amendment may be used to provide accommodation to seasonal and itinerate workers on nearby farms.

- ***Direction 24 - Deliver well-planned rural residential housing areas***

Action 24.2 Enable sustainable use of the region's sensitive coastal strip by ensuring new rural residential areas are located outside the coastal strip, unless already identified in a local

growth management strategy or rural residential land release strategy approved by the Department of Planning and Environment.

Comment Amendments relating to 19 Orara Street will facilitate a small amount of additional housing within an existing Zone R5 Large Lot Residential located outside the coastal strip and immediately adjacent to residential housing within the Nana Glen village. In this regard, the LEP amendment is considered to be of minor significance and will achieve the overall intent of the North Coast Regional Plan (i.e. the proposal does not undermine the achievement of its vision, land use strategy, goals, direction or actions).

The proposed LEP amendment is not inconsistent with this action. The LEP amendment seeks to enable the subdivision of certain split zoned lots currently inhibited by the wording of clause 4.1A. Future planning proposals submitted as a result of this LEP amendment will be required to demonstrate consistency with the relevant goals, directions and actions within the North Coast Regional Plan 2036.

- ***Direction 25 - Deliver more opportunities for affordable housing***

Action 25.1 - Deliver more opportunities for affordable housing by incorporating policies and tools into local growth management strategies and local planning controls that will enable a greater variety of housing types and incentivise private investment in affordable housing.

Comment Amendments relating to 19 Orara Street will facilitate a small number of additional large lot residential allotments, contributing to the housing supply within the locality.

The proposed LEP amendment is not inconsistent with this action. The LEP amendment seeks to enable the subdivision of certain split zoned lots currently inhibited by the wording of clause 4.1A. This is likely to enable additional opportunities for affordable housing. Future planning proposals will be required to demonstrate consistency with the relevant goals, directions and actions within the North Coast Regional Plan 2036.

5. Will the planning proposal give effect to a Council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?

Coffs Harbour City Council adopted its Local Strategic Planning Statement (LSPS) on 25 June 2020 for the whole of the Coffs Harbour LGA. The LSPS was prepared in accordance with the Environmental Planning and Assessment Act 1979 and Regulation and provides a 20-year land use planning vision for the Coffs Harbour LGA. It identifies 16 Planning Priorities to be delivered in four themes to 2040: connected, sustainable, thriving and leadership. The proposed LEP amendment is consistent with the following relevant planning priorities and associated actions within the adopted LSPS:

Table 3: Consistency with applicable Local Strategic Planning Statement Priorities & Actions

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

6. Is the planning proposal consistent with council's Community Strategic Plan and Local Growth Management Strategy?

MyCoffs Community Strategic Plan 2030

Council's Community Strategic Plan is based on four key themes: Community Wellbeing; Community Prosperity; A Place for Community; and Sustainable Community Leadership. Within each theme there are a number of objectives, and for each objective there are a number of strategies to assist in achieving the objectives. The LEP amendment is generally consistent with the following relevant objectives and strategies within the Plan:

Table 3: Consistency with applicable MyCoffs Community Strategic Plan 2030 Objectives & Actions

Objective	Strategy
An active, safe and healthy community	A2.2 We facilitate positive ageing
A thriving and sustainable local economy	B1.1 We champion business, events, innovation and technology to stimulate economic growth, investment and local jobs
	B1.2 We attract people to work, live and visit in the Coffs Harbour LGA.
Liveable Neighbourhoods with a Defined Identity	C1.1 We create liveable places that are beautiful and appealing
	C1.2 We undertake development that is environmentally, socially and economically responsible

Coffs Harbour Local Growth Management Strategy

This LEP amendment is consistent with the *Coffs Harbour Local Growth Management Strategy*, which has been prepared to achieve the directions and actions contained within the North Coast Regional Plan and to align with the Settlement Planning Guidelines endorsed by NSW Planning and Environment. The Strategy is the mechanism to support effective and integrated planning across the Coffs Harbour LGA and to guide the preparation of updates to Council's LEP and Development Control Plan.

19 Orara Street, Nana Glen

The proposed amendment to the minimum lot size for the residential portion of 19 Orara Street, Nana Glen is consistent with the overall objectives of *Coffs Harbour Local Growth Management Strategy - Chapter 6 Large Lot Residential*.

19 Orara Street, Nana Glen is a split zoned property currently within Zone R5 Large Lot Residential, C2 Environmental Conservation and RU2 Rural Landscape. The proposal seeks to reduce the Minimum Lot Size of the large lot residential portion of the land from 2 hectares to 8,000m^2.

Coffs Harbour Local Growth Management Strategy - Chapter 6 Large Lot Residential is not rigid on a set minimum lot size for large lot residential land and enables undeveloped land within Zone R5 to justify a reduced minimum lot size through an applicant-initiated planning proposal. The proposed reduction in minimum lot size for the subject land is supported by the accompanying land capability assessment

(Appendix 5), which demonstrates that the characteristics of the land are appropriate for 8,000m^2 minimum lots.

Coffs Harbour Local Growth Management Strategy - Chapter 6 Large Lot Residential requires consideration of land use conflicts as part of rezoning proposals. A detailed Land Use Conflict Risk Assessment (LUCRA) (Appendix 8) has been undertaken to support the proposed LEP amendment to identify land use conflict between existing rural land uses and proposed residential lots. The assessment demonstrates that any impacts associated with rural land use are expected to be low, with appropriate building envelope setbacks likely to minimise potential conflict. As such, the proposed lots are considered suitable for residential development based on there being no identified land contamination issues and a low risk of land-use conflict as outlined in the LUCRA assessment.

The user pays principle as outlined by *Coffs Harbour Local Growth Management Strategy - Chapter 6 Large Lot Residential* is appropriate for the LEP amendment to reduce the minimum lot size for the residential portion of 19 Orara Street, Nana Glen.

Split Zone Clause & Dwelling Permissibility Amendment

The proposed amendment to clauses 4.1A seeks to enable the subdivision of split zoned properties across the Coffs Harbour LGA, which are currently inhibited by the wording of the clause. The proposed changes predominantly relate to split zoned properties with a portion of land already zoned for residential and/or urban purposes under the Coffs Harbour LEP 2013. Amendments to clause 4.2B aim to minimize impacts from large lot residential development on land within rural and/or environment zones. In this regard, the proposed amendment is not inconsistent with the overall aims and objectives Coffs Harbour Local Growth Management Strategy.

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

The table provided in Appendix 1 provides an assessment of consistency against each State Environmental Planning Policy (SEPP) relevant to the LEP amendment. In instances when an inconsistency has been identified, appropriate justification and how the LEP amendment addresses the inconsistency has been provided.

7. Is the planning proposal consistent with applicable Ministerial Directions (s117 directions)?

The table provided in Appendix 2 provides an assessment of consistency against Ministerial Planning Directions relevant to the LEP amendment. In instances when an inconsistency has been identified, appropriate justification and how the LEP amendment addresses the inconsistency has been provided.

Section C – Environmental, social and economic impact

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

19 Orara Street, Nana Glen

The application to amend the minimum lot size for 19 Orara Street, Nana Glen is supported by a Biodiversity Assessment carried out by GeoLINK (Appendix 7). This assessment supports the proposal from an ecological perspective, given that the outcomes of the assessment demonstrates that:

- No threatened flora species were recorded within the residential portion of the site;
- No threatened ecological communities occur within the residential portion of the site; and

- No significant habitat for threatened fauna occurs within the residential portion of the site.

Future subdivision of the land may result in minor biodiversity impacts such as:

- Minor loss of native vegetation comprising small numbers of mostly planted trees on the site that are largely not endemic to the area (i.e. Mountain Blue Gum (*Eucalyptus deanei*) and Cadaghi (*Corymbia torelliana*); and
- Minor intensification of human occupation on the site with regard to native fauna (e.g. minor increase in traffic movements); and
- Introduction of weed species during any future construction of the site.

Consequently, biodiversity impacts are considered to be relatively low in the context of the proposal, which can be managed with a relatively high confidence so that such impacts are minimised.

The subject land is mapped as containing secondary and tertiary Koala Habitat within the north-western section of the subject site, and is at the confluence of Bucca Bucca Creek and the Orara River. Given that the proposal seeks to reduce the minimum lot size only for the residential portion of the subject land (in the southern section of the site) and that adequate separation distance is provided by land within Zone RU2 Rural Landscape between the koala habitat, the riparian area and proposed residential land uses, it is highly unlikely that future subdivision of the residential land would negatively impact on these environmental values. Additionally, future development applications lodged for subdivision of the land, will be required to address impacts on the Koala Habitat and riparian areas in accordance with Council's LEP and DCP controls.

Split Zone Clause & Dwelling Permissibility Amendment

Amendments to clauses 4.1A and 4.2B have been written to minimise any potential adverse environmental impacts. The proposed amendments to clause 4.1A and 4.2B aim to promote environmentally sustainable growth by focusing development outside of environmentally sensitive areas. Future development to which clause 4.1A applies, will be required to demonstrate that the proposal will not compromise the continued protection and long-term maintenance of any land within Zone C2 Environmental Conservation or Zone C3 Environmental Management.

The likelihood of adverse impacts on critical habitat, threatened species, populations or ecological communities, or their habitats, will also need to be investigated as part of any future development application for subdivision of the land and for development within each of the resulting lots.

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

19 Orara Street, Nana Glen

The following discussion addresses other likely environmental effects that may result from the LEP Amendment for 19 Orara Street, Nana Glen and how they are proposed to be managed.

- Minimum Lot Size

  The planning proposal is supported by a Wastewater Capability Assessment prepared by consultants Whitehead & Associates (Appendix 5). This assessment includes a site analysis and modelling to determine the maximum lot density suitable for the subject land.

  The site analysis considers the suitability for the proposed resulting lots to sustainably manage wastewater on-site, typically referred to 'available effluent management area'. This broadly refers to

available areas (i.e. not built out or used for a conflicting purpose) where onsite sewage management systems will not be unduly constrained by site and soil characteristics. Available area on a developed lot is determined by the following factors:

- total building area (including dwellings, sheds, pools etc.) which includes a defined building envelope but may extend beyond with additional improvements to a property, such as driveways and paths (impervious areas), and gardens/vegetated areas unsuitable for effluent reuse;
- dams, and intermittent/permanent watercourses running through lots;
- maintenance of appropriate buffer distances from property boundaries, buildings, driveways and paths, dams and watercourses;
- flood prone land;
- excessive slope;
- excessively shallow soils;
- heavy (clay) soils with low permeability;
- excessively poor drainage, shallow groundwater and/or stormwater run-on; and
- excessive shading by vegetation.

The residual areas (areas not otherwise occupied by improvements, buffers, restrictions or conservation vegetation) were then calculated for the selected lots and the available area compared to the wastewater envelope required. A comparison of nearby properties was also conducted that suggests that:

- Flooding has a lesser impact on the Site than the nearby comparison properties;
- At about 8,400m2 total lot area, between 2,400-2, 900m2 area is available for effluent land application, >2x the 1,000m2 required as a planning envelope;
- Even accounting for high flood impacted conditions, the available area of ~1,000m2 is able to be met; and
- A minimum lot size of 8,000m2 is considered suitable for the proposed subdivision of the subject land.

The concept subdivision layout submitted with the application to amend Coffs Harbour LEP is based on a minimum lot size of 8,000m^2, which is considered to be suitable for the subject land.

- Bush Fire Risk

The application is accompanied by a Bushfire Risk Assessment prepared by consultants Land & Fire Assessments Pty Ltd, July 2020, (Appendix 6). This assessment concludes that the proposed 8000m^2 minimum lot size of the land:

- Will not increase the risk to life from bushfire;
- Will not introduce controls that place inappropriate developments in areas exposed to unacceptable bush fire hazard;
- Can provide for appropriate bush fire protection measures to properties at risk of bushfire;
- Is unlikely to result in impacts on the surrounding environment;
- Is unlikely to place additional burden to current evacuation/shelter options for the community; and
- The proposal is capable of complying with Planning for Bush Fire Protection 2019.

- Flood Risk

  Council has assessed the proposal to reduce the minimum lot size for the residential portion of the subject land in relation to flood risk. This assessment has determined that there are no significant issues. The majority of the land within Zone R5 Large Lot Residential is above the 100 Year Flood Extent. Any future development application for subdivision of the residential portion of the land and development on resulting lots will be required to address Council's flood related controls within Coffs Harbour LEP 2013 and Coffs Harbour DCP 2015.

- Land Use Conflict

  The application is accompanied by a Land Use Conflict Risk Assessment prepared by consultants Land & Fire Assessments Pty Ltd, July 2020 (Appendix 8). This assessment has suitably addressed any potential land use conflicts which could arise from the LEP amendment and has demonstrated that future building envelopes are adequate to minimise potential land use conflict.

- Site Contamination

  Following a review of Council's records and a review of historical land uses, the subject land is not considered to be contaminated.

- Cultural Heritage

  search of the AHIMS database did not identify registered sites on or near 19 Orara Street, Nana Glen (See Appendix 9). During a site inspection in 2020, the CHDLALC observed the potential for cultural material in the flat area above the flood levy (Appendix 10). A Due Diligence Aboriginal and Cultural Heritage Assessment Report undertaken in 2022 confirmed the location of the archaeologically sensitive area to be within the residual Zone RU2 Rural Landscape portion of the site, outside the extent of the proposed development area (Zone R5 Rural Residential portion of the site) (See Appendix 11). As the archaeologically sensitive area will not be impacted by the proposal, further investigation was deemed unnecessary. However, should the archaeologically sensitive area be impacted in the future, then further archaeological assessment will be required prior to any works proceeding. In accordance with the Due Diligence Code of Practice, the LEP Amendment relating to 19 Orara St, Nana Glen will not impact any identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface. The LEP Amendment is supported by CHLALC on the condition that any future development application for the site notifies and consults CHLALC regarding any planned ground disturbance works in the future (See Appendix 10). There are no listed European Heritage items within or surrounding the site.

- Visual Impacts

  Future subdivision of the land and development on the resulting lots will change the landscape of the subject land. A minimum lot size of 8,000m^2 is, however, compatible with the large lot residential character of the neighbourhood. Large lot residential lots of 8,000m^2 or greater will provide a suitable visual transition between the residential lots within the Nana Glen township to farmland and river flats.

Split Zone Clause & Dwelling Permissibility Amendment

Amendments to clauses 4.1A and 4.2B of Coffs Harbour LEP 2013 have been drafted to minimise adverse environmental impacts. The proposed amendments to clauses 4.1A and 4.2B aim to promote environmentally sustainable growth by focusing development outside of any environmentally sensitive areas within split zoned properties within the Coffs Harbour LGA.

Future subdivisions relying on the amended clause 4.1A will be required to demonstrate that the proposal will not compromise the continued protection and long-term maintenance of any land within Zone C2 Environmental Conservation or Zone C3 Environmental Management. Such development applications will also need to address on-site effluent disposal, cultural heritage, bushfire risk, land use conflict, contamination and visual impacts.

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

It is unlikely that the LEP amendment will result in any adverse social or economic effects.

19 Orara Street, Nana Glen

- Social benefits include:
  - an increase in land for housing in Nana Glen, which will have flow on benefits to the public school, local shops and sense of community;
  - no impact on existing services due to minimum increase in dwelling yield; and
  - retention of existing large lot residential character of the locality.
- Economic benefits include:
  - the ability to establish future dwellings within a small rural community, with flow on benefits to local businesses such as the Nana Glen General Store; and
  - no impacts to Council's general revenue, as the LEP Amendment is fully funded by the proponent.

Split Zone Clause & Dwelling Permissibility Amendment

Broader social and economic impacts associated with the proposed LEP amendment to Council's split zone clause have been detailed below. It should be noted that specific impacts relating to social fabric, infrastructure and neighborhood character will need to be assessed as part of any resulting planning proposal and/or development application.

- Social benefits include:
  - an increase in land for housing, which will have flow on benefits for affordable housing, local businesses and communities; and
  - less land banking of large lot residential land (i.e. ability for landowners with R5 Large Lot Residential on their land to subdivide).
- Economic benefits include:
  - future LEP amendments will be funded by proponents under the user pays model as outlined in Coffs Harbour Local Growth Management Strategy - Chapter 6 Large Lot Residential; and
  - the establishment of additional residential lots within the Coffs Harbour LGA for future dwellings, generating flow on benefits to local businesses.

Section D – State and Commonwealth interests

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

19 Orara Street, Nana Glen

Yes. The proposal to reduce the minimum lot size for the residential portion of 19 Orara Street, Nana Glen is unlikely to create significant additional demand on existing public infrastructure. The amendment to

Coffs Harbour LEP 2013 will enable the creation of five additional lots, which will be serviced by on-site sewage management systems and tank water on each lot. Vehicular access can be safely achieved from Orara Street subject to some minor works, which can be addressed through the subsequent development application process.

Split Zone Clause & Dwelling Permissibility Amendment

Amendments to clauses 4.1A and 4.2B of Coffs Harbour LEP 2013 may result in additional demand on public infrastructure, as such amendments will facilitate the subdivision of split zoned land that is currently not able to be undertaken. Impacts on public infrastructure, will however be addressed as part of subsequent development applications for subdivision and development on resulting lots. Adequate controls are in place within Council's LEP and DCP to ensure that this matter is addressed appropriately.

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

The NSW Department of Planning and Environment issued a Gateway Determination for the planning proposal on 29 November 2021 (Appendix #12). The Gateway Determination requires consultation on the LEP amendment with the following public authorities:

- NSW Rural Fire Service
- Department of Primary Industries Agriculture
- Heritage NSW
- SNW Department of Natural Resources Access Regulator
- Biodiversity Conservation Division
- Coffs Harbour and District Local Aboriginal Land Council

Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material and given at least 21 days to comment on the proposal.

Note: Following agency consultation, this section of the planning proposal will be updated to include agency consultation.

PART 4 – MAPPING

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

Figure 2: Existing Lot Size Map for 19 Orara Street, Nana Glen (LSZ_005A)

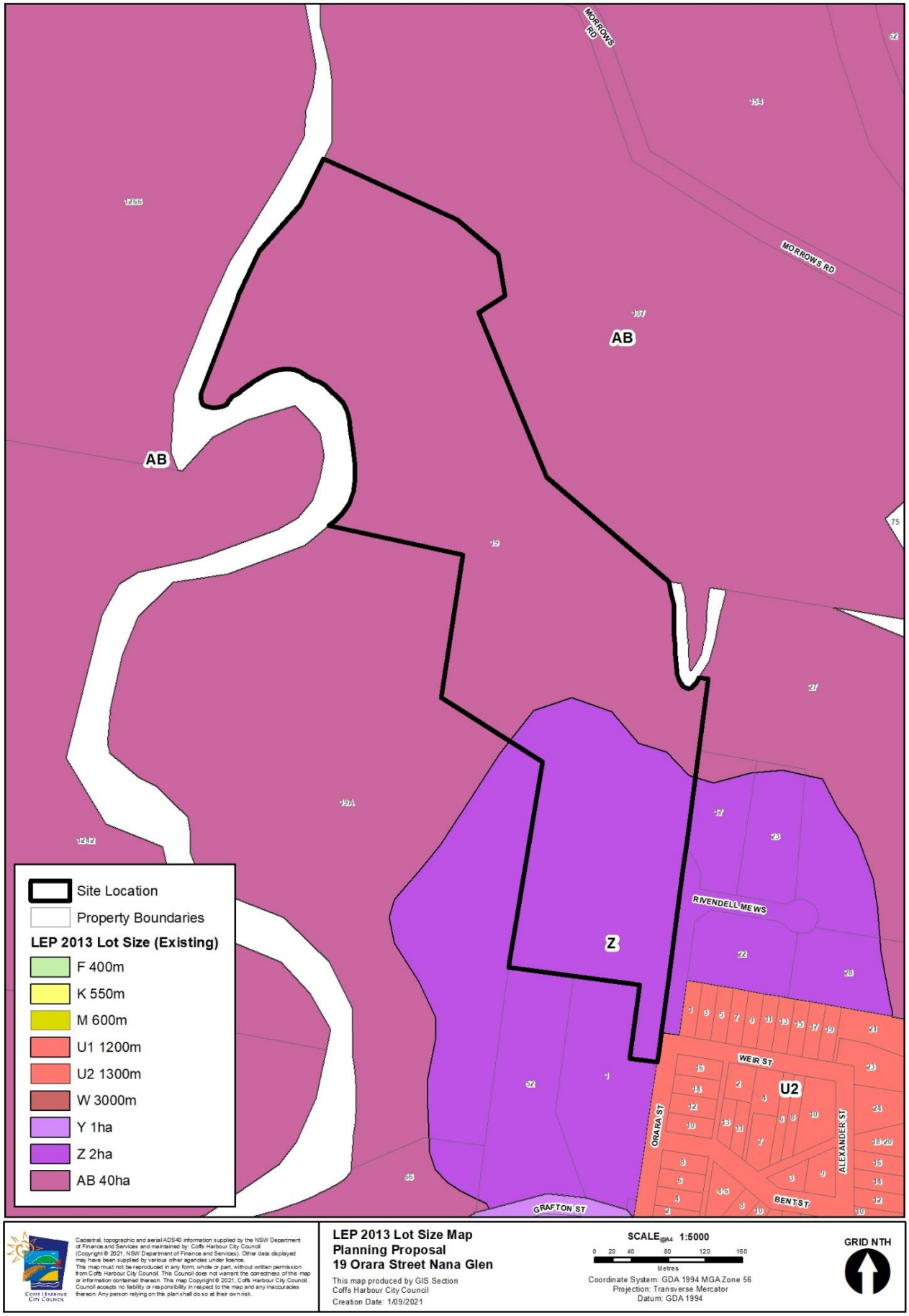
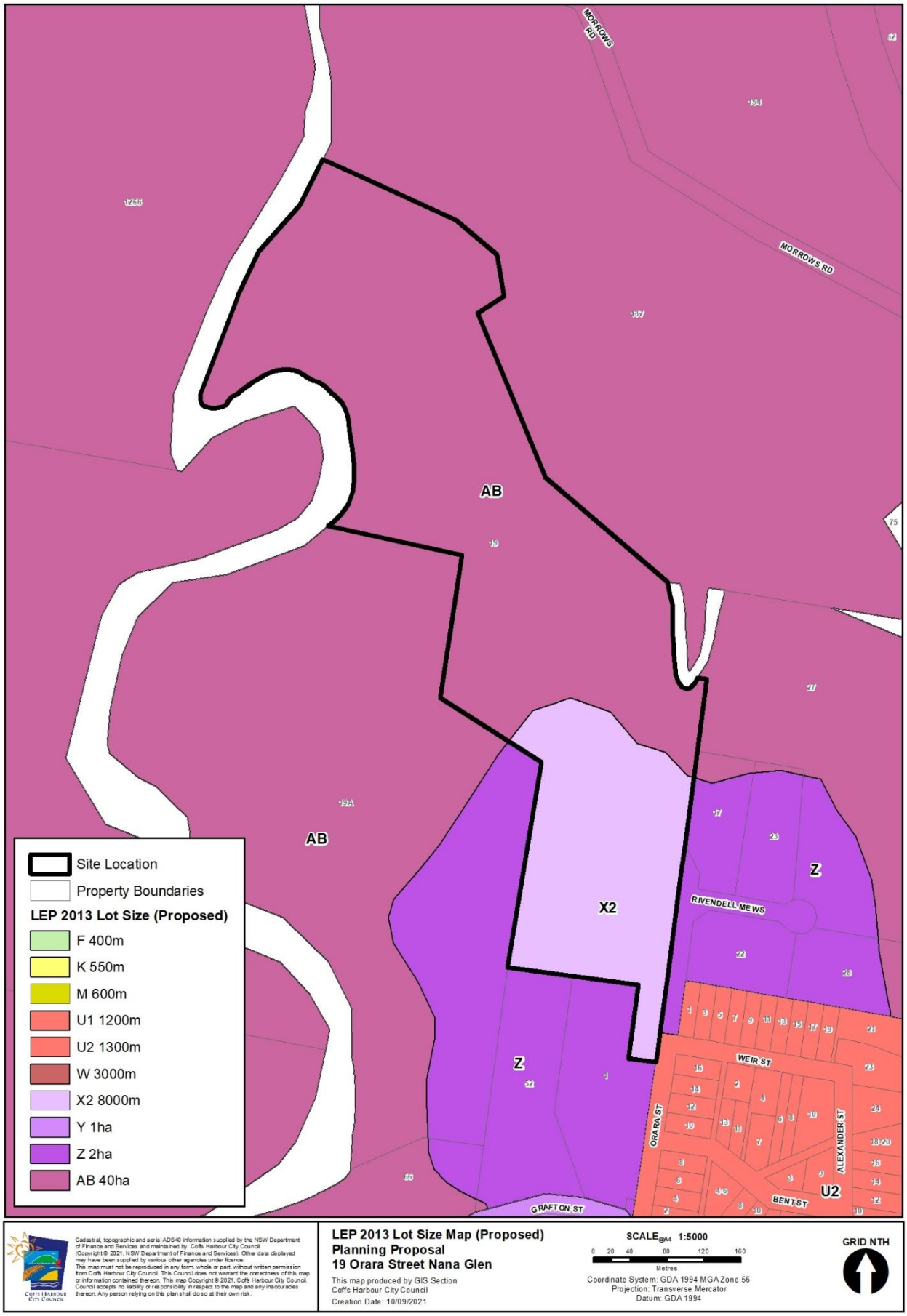


Figure 3: Proposed Amendments to Lot Size Map for 19 Orara Street, Nana Glen (LSZ_005A)



Technical Notes:

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

PART 5 – COMMUNITY CONSULTATION

The Gateway determination issued on the 29 November 2021 by the NSW Department of Planning and Environment specified the community consultation requirements that must be undertaken for the planning proposal.

Public exhibition is required under section 3.34(2)(c) and schedule 1 clause 4 of the Act as follows:

- the planning proposal must be made publicly available for a minimum of 28 days; and
- the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 6.5.2 of A guide to preparing local environmental plans (Department of Planning and Environment, 2018).

Public Exhibition of the planning proposal will include the following:

Advertisement

Placement of an online advertisement in the Coffs Newsroom.

Consultation with affected owners and adjoining landowners

Written notification of the public exhibition to the proponent, the landowner and adjoining/adjacent landowners of 19 Orara Street, Nana Glen.

Website

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

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

PART 6 – PROJECT TIMELINE

The Gateway Determination issued by the NSW Department of Planning and Environment requires the planning proposal to be completed by 29 August 2022. Based on this, the anticipated timeframes for the planning proposal are provided below in Table 5, noting that there can be unexpected delays in the process.

Table 5: Anticipated Timeline

Milestone	Anticipated Timeframe
Decision by Council to initiate the planning proposal	October 2021
Commencement (date of Gateway determination)	November 2021
Public exhibition & agency consultation	March to April 2022
Consideration of submissions	May to June 2022
Reporting to Council for consideration	July 2022
Submission to Minister to make the plan (if not delegated) Submission to Minister for notification of the plan (if delegated)	August 2022

APPENDICES

APPENDIX 1 – CONSIDERATION OF STATE ENVIRONMENTAL PLANNING POLICIES

State Environmental Planning Policy	Applicable	Consistent	Comment
SEPP (Aboriginal Land) 2019	No	N/A	This policy does not apply. This policy only applies land within the Central Coast LGA.
SEPP (Affordable Rental Housing) 2009	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Future development may incorporate housing delivered under this SEPP and relevant provisions will be given detailed consideration during the assessment of a development application.
SEPP (Building Sustainability Index: BASIX) 2004	Yes	Yes	The proposed LEP amendment is consistent with the aims and provisions of this SEPP. Future development incorporating BASIX affected buildings will be subject to the provisions of this SEPP.
SEPP (Coastal Management) 2018	Partly	Yes	1) 19 Orara Street, Nana Glen The land relating to 19 Orara Street, Nana Glen is outside of the coastal area and therefore is not affected by this SEPP. 2) Split Zone Clause & Dwelling Permissibility Amendment Proposed LEP amendments relating to split zone and dwelling permissibility clauses across the Coffs Harbour LGA do not contain provisions that contradict or hinder the application of this SEPP.
SEPP (Concurrences and Consents) 2018	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Future development requiring concurrence will be subject to the provisions of this SEPP.
SEPP (Educational Establishments and Child Care Facilities) 2017	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Any future development incorporating a child care centre or the like would be subject to the provisions of this SEPP.
SEPP (Exempt and Complying Development Codes) 2008	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.

State Environmental Planning Policy	Applicable	Consistent	Comment
			1) 19 Orara Street, Nana Glen The proposed LEP amendment for 19 Orara Street, Nana Glen will have no material effect on exempt or complying development. 2) Split Zone Clause & Dwelling Permissibility Amendment Any future development applicable to this policy will be subject to the relevant provisions of this SEPP.
SEPP (Housing for Seniors or People with a Disability) 2004	Partly	Yes	*1) 19 Orara Street, Nana Glen* Seniors housing is prohibited in Zone R5 Large Lot Residential Zone under Coffs Harbour LEP 2013. The land is also not considered by the SEPP to be zoned for 'urban purposes'. *2) Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Any future development applicable to this policy will be subject to the relevant provisions of this SEPP.
SEPP (Infrastructure) 2007	Yes	Yes	The proposed LEP amendment is consistent with the aims or provisions of this SEPP. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
State Environmental Planning Policy (Koala Habitat Protection) 2019	Partly	Yes	*1) 19 Orara Street, Nana Glen* The subject land is mapped as containing secondary and tertiary Koala Habitat within the north-western section of the subject site. Given that the proposal seeks to reduce the minimum lot size only for the residential portion of the subject land (in the southern section of the site) and that adequate separation distance is provided by land within Zone RU2 Rural Landscape between the koala habitat and proposed residential land uses, it is highly unlikely that future subdivision of the residential land would negatively impact on this habitat. Additionally, future development

State Environmental Planning Policy	Applicable	Consistent	Comment
			applications lodged for subdivision of the land, will be required to address impacts on Koala Habitat in accordance with Council's LEP and DCP controls. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Any future development arising from the LEP amendment(s) that may impact Koala Habitat must comply with the provisions of this SEPP.
State Environmental Planning Policy (Koala Habitat Protection) 2021	Yes	Yes	See discussion above.
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	Yes	Yes	The proposed LEP amendment is consistent with the aims or provisions of this SEPP. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
SEPP No 19 – Bushland in Urban Areas	No	N/A	Coffs Harbour City Council is not listed in Schedule 1 of this policy and thus the policy does not apply to the proposed LEP amendment.
SEPP No 21 – Caravan Parks	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
SEPP No 33 – Hazardous and Offensive Development	No	N/A	This SEPP does not apply. This LEP amendment does not contain specific provisions that reference hazardous and offensive development.
SEPP No 36 – Manufactured Home Estates	Yes	Yes	This SEPP is not directly relevant to this LEP amendment and nothing in this proposed LEP amendment will compromise the efficient application of this SEPP to any future development.
SEPP No 50 – Canal Estate Development	No	N/A	This policy does not apply. The proposed LEP amendment does not contain

State Environmental Planning Policy	Applicable	Consistent	Comment
			specific provisions that reference or propose canal estate development.
SEPP No 55 – Remediation of Land	Yes	Yes	1) 19 Orara Street, Nana Glen Council Mapping and a historical review of land uses on 19 Orara Street, Nana Glen indicates that the property is not subject to land contamination. Additionally, the proposal seeks to subdivide land already within Zone R5 Large Lot Residential. 2) Split Zone Clause & Dwelling Permissibility Amendment The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Any future development applicable to this policy will be subject to the relevant provisions of this SEPP.
SEPP No 64 – Advertising and Signage	Yes	Yes	1) 19 Orara Street, Nana Glen This policy does not apply. The proposed LEP amendment will not result in buildings that are three or more storeys in height. 2) Split Zone Clause & Dwelling Permissibility Amendment The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Any future development applicable to this policy will be subject to the relevant provisions of this SEPP.
SEPP No 65 – Design Quality of Residential Apartment Development	Partly	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
SEPP No 70 – Affordable Housing (Revised Schemes)	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.
SEPP (Primary Production and Rural Development) 2019	Yes	Yes	1) 19 Orara Street, Nana Glen The LEP Amendment relating to 19 Orara Street, Nana Glen is consistent with the aims and provisions of this SEPP. There is currently 5.92ha of Zone RU2 Rural Landscape land within the existing lot.

State Environmental Planning Policy	Applicable	Consistent	Comment
			This land is used for small scale extensive agriculture (grazing of stock). The LEP Amendment does not comprise any changes to the LEP that will reduce the quantity of Zone RU2 within the site. The rural zoned land will be held within a single residual split zoned lot. Clause 4.2B of the LEP will be amended to ensure dwellings can only be erected within Zone R5 Large Lot Residential within the site. A land use risk assessment report prepared by consultants Land & Fire Assessments Pty Ltd, July 2020, found that the building envelopes shown on the Concept Plan of Subdivision accompanying the application to amend Coffs Harbour LEP 2013 are adequate to minimise future potential conflicts, so that the agricultural potential of those lands will not be diminished. Therefore, land use conflict will not be increased following the LEP Amendment. 2) Split Zone Clause & Dwelling Permissibility Amendment The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP. Amendments to clauses 4.1A and 4.2B have been made in a way that will continue to protect and enhance productive agricultural lands. While the amendments to clause 4.1A will enable the subdivision of lots that may have an area of rural land less than the minimum lot size for that land, it will ensure that any rural land in the original lot will remain in one resulting lot. Additionally, the amendment to clause 4.2B ensures that a dwelling cannot be lawfully created on any residual rural and/or Environmental land for a lot created under Clause 4.1A where a residential and/or urban zone is within the same lot.
SEPP (State and Regional Development) 2019	Yes	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the application of this SEPP.

State Environmental Planning Policy	Applicable	Consistent	Comment
SEPP (State Significant Precincts) 2005	No	N/A	The proposed LEP amendment does not relate to a state significant precinct.
SEPP (Urban Renewal) 2010	No	N/A	The proposed LEP amendment does not relate to an urban renewal precinct.
SEPP (Vegetation in Non-Rural Areas) 2017	Yes	Yes	The proposed LEP amendment is consistent with the aims or provisions of this SEPP. This planning proposal does not contain provisions that contradict or hinder the application of this SEPP.

APPENDIX 2 – CONSIDERATION OF MINISTERIAL PLANNING DIRECTIONS

S9.1 Direction	Applicable	Consistent	Comment
1. Employment and Resources			
1.1 Business and Industrial Zones	Applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed business or industrial zone (including the alteration of any existing business or industrial zone boundary).	Yes	*1) 19 Orara Street, Nana Glen* Not Applicable. 19 Orara Street, Nana Glen is within Zone Ru2 Rural Landscape, Zone C2 Environmental Conservation and Zone R5 Large Lot Residential. The proposal will not affect land within an existing and/or proposed business or industrial zone. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment will affect land within an existing or proposed business or industrial zone, as it will facilitate subdivision of certain split zoned land. This LEP amendment; • gives effect to the objectives of this direction, • retains the areas and locations of existing business and industrial zones, • will not reduce the total potential floor space area for employment uses and related public services in business zones, • will not reduce the total potential floor space area for industrial uses in industrial zones, and • ensures that proposed new employment areas accord with a strategy that is approved by the Secretary of the NSW Department of Planning and Environment. Therefore, this LEP amendment is consistent with this direction.
1.2 Rural Zones	Applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed rural zone (including the alteration of any existing rural zone boundary).	Yes	*1) 19 Orara Street, Nana Glen* The LEP amendment does not propose to rezone any rural land or increase permissible dwelling densities within rural zones. The proposed amendment to clause 4.1A will maintain current rural dwelling density controls whilst

S9.1 Direction	Applicable	Consistent	Comment
	Under this direction a planning proposal must: (a) not rezone land from a rural zone to a residential, business, industrial, village or tourist zone. (b) not contain provisions that will increase the permissible density of land within a rural zone (other than land within an existing town or village).		enabling the creation of a residual lot that includes all of the rural zoned land. Additionally, the amendment to clause 4.2B aims to limit development on the rural and environmental portion of the resulting lot. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment will not: • rezone land from a rural zone to a residential, business, industrial, village or tourist zone, or • contain provisions that will increase the permissible density of land within a rural zone. The proposed LEP amendment has been drafted to correct an anomaly in relation to certain split zoned properties that contain land within an urban, rural and environmental zone within a single lot. The amendment to clause 4.1A contains provisions that enable subdivision of certain split zoned lots, provided that one of the resulting lots contains: • land in a residential zone that complies with the minimum lot size; and • all of the rural land that was in the original lot; and • all other resulting lots comply with the minimum lot size in relation to that land, save for environmental zones. The amendment to clause 4.2B aims to limit development on rural and environmental portions of a resulting lot where it also contains residential and/or urban land.
1.3 Mining, Petroleum Production and Extractive Industries	Applies when a relevant planning authority prepares a planning proposal that would have the effect of: (a) prohibiting the mining of coal or other minerals, production of petroleum,	Yes	This planning proposal does not: (a) prohibit the mining of coal or other minerals, production of petroleum, or winning or obtaining of extractive materials, or

S9.1 Direction	Applicable	Consistent	Comment
	or winning or obtaining of extractive materials, or (b) restricting the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance by permitting a land use that is likely to be incompatible with such development.		(b) restrict the potential development of resources of coal, other minerals, petroleum or extractive materials which are of State or regional significance.
1.4 Oyster Aquaculture	Applies when a relevant planning authority prepares any planning proposal that proposes a change in land use which could result in: (a) adverse impacts on a Priority Oyster Aquaculture Area or a "current oyster aquaculture lease in the national parks estate"; or (b) incompatible use of land between oyster aquaculture in a Priority Oyster Aquaculture Area or a "current oyster aquaculture lease in the national parks estate" and other land uses.	N/A	This planning proposal does not affect land within an existing or proposed oyster aquaculture area.
1.5 Rural Lands	Applies when a relevant planning authority prepares a planning proposal that: (a) will affect land within an existing or proposed rural or environment protection zone (including the alteration of any existing rural or environment protection zone boundary), or (b) changes the existing minimum lot size on land within a rural or	No	Justifiably inconsistent for reasons listed below. *1) 19 Orara Street, Nana Glen* 19 Orara Street, Nana Glen is a split zoned property with a spatially isolated 5.92ha portion of Zone RU2 Rural Landscape. The property is partially mapped as regionally significant farmland. As this LEP amendment includes land that is mapped as Regionally Significant Farmland, the planning proposal has addressed the Important Farmland Interim Variation Criteria contained in the

S9.1 Direction	Applicable	Consistent	Comment
	environment protection zone.		North Coast Regional Plan 2036 (see Appendix 4). The area mapped as regionally significant farmland on the site is entirely within Zone C2 Environmental Conservation and Zone RU2 Rural, which is currently used for small scale extensive agriculture. The size of the rural portion of the land (and regionally significant farmland) is insufficient to be a viable agricultural holding. This farmland will not be affected by the proposed LEP amendment for the following reasons: • The LEP amendment will not amend the minimum lot size of the rural or environmental zoned land within the property; • The area of rural zoned land within the property is of an insufficient area to be considered a viable rural holding; • The LEP amendment proposes to amend Clause 4.2B to ensure that dwellings are not permitted within the rural or environmental components of the subject land; and • A land use conflict risk assessment submitted with the application demonstrates that the proposed building areas are unlikely to increase land use conflict with the rural zoned portion of the land. The LEP amendment (and subsequent subdivision of the land) is unlikely to have adverse impacts on rural land and/or regionally significant farmland within the site. Therefore, the inconsistency is considered to be of minor significance. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* Amendments to clauses 4.1A and 4.2B of Coffs Harbour LEP 2013 have

S9.1 Direction	Applicable	Consistent	Comment
			been drafted to protect and enhance productive agricultural lands. While the amendment to clause 4.1A will enable subdivision of lots that may contain Zone RU2 Rural Landscape less than the minimum lot size (40ha), it will ensure that any rural land in the original lot will remain within one resulting lot to minimise fragmentation. Additionally, the amendment to clause 4.2B will ensure that a dwelling cannot be lawfully created on the residual rural and/or Environmental land for a lot created under Clause 4.1A, where the lot contains land within a residential and/or urban zone.
2 Environment and Heritage			
2.1 Environment Protection Zones	(4) A planning proposal must include provisions that facilitate the protection and conservation of environmentally sensitive areas. (5) A planning proposal that applies to land within an environment protection zone or land otherwise identified for environment protection purposes in a LEP must not reduce the environmental protection standards that apply to the land (including by modifying development standards that apply to the land). This requirement does not apply to a change to a development standard for minimum lot size for a dwelling in accordance with clause (5) of Direction 1.5 "*Rural Lands*".	Yes	*1) 19 Orara Street, Nana Glen* The environmental protection standards and development standards that apply to Zone C2 Environmental Conservation are not proposed to be modified. The LEP amendment will not alter any zones or development controls in a manner that would result in any adverse impacts on the protection and conservation of environmentally sensitive areas. The application to amend the minimum lot size for 19 Orara Street, Nana Glen is supported by a Biodiversity Assessment carried out by GeoLINK (Appendix 7). This assessment supports the proposal from an ecological perspective, given that the outcomes of the assessment demonstrates that: • No threatened flora species were recorded within the residential portion of the site; • No threatened ecological communities occur within the residential portion of the site; and

S9.1 Direction	Applicable	Consistent	Comment
			• No significant habitat for threatened fauna occurs within the residential portion of the site. Future subdivision of the land may result in minor biodiversity impacts such as: • Minor loss of native vegetation comprising small numbers of mostly planted trees on the site that are largely not endemic to the area (i.e. Mountain Blue Gum (*Eucalyptus deanei*) and Cadaghi (*Corymbia torelliana*); and • Minor intensification of human occupation on the site with regard to native fauna (e.g. minor increase in traffic movements); and • Introduction of weed species during any future construction of the site. Consequently, biodiversity impacts are considered to be relatively low in the context of the proposal, which can be managed with a relatively high confidence so that such impacts are minimised. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* Amendments to clauses 4.1A and 4.2B have been drafted to minimise any potential adverse environmental impacts. The proposed amendments to clause 4.1A and 4.2B aim to promote environmentally sustainable growth by focusing development outside of environmentally sensitive areas. Future development to which clause 4.1A applies, will be required to demonstrate that the proposal will not compromise the continued protection and long-term maintenance of any land within Zone C2 Environmental Conservation or Zone C3 Environmental Management.

S9.1 Direction	Applicable	Consistent	Comment
2.2 Coastal Protection	Applies to land that is within the coastal zone, as defined under the Coastal Management Act 2016 – comprising the coastal wetlands and littoral rainforests area, coastal vulnerability area, coastal environment area and coastal use area – as identified in *State Environmental Planning Policy (Coastal Management) 2018.* (4) A planning proposal must include provisions that give effect to and are consistent with: (a) the objects of the *Coastal Management Act 2016* and objectives of the relevant coastal management areas, (b) the NSW Coastal Management Manual and associated Toolkit; and (c) the NSW Coastal Design Guidelines 2003, and (c) any relevant Coastal Management Program that has been certified by the Minister, or any Coastal Zone Management Plan under the *Coastal Protection Act 1979* that continues to have effect under the *Coastal Management Act 2016*.	Yes	*1) 19 Orara Street, Nana Glen* The land relating to 19 Orara Street, Nana Glen is outside of the coastal area and therefore is not inconsistent with this planning direction. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendments relating to split zoned land within the Coffs Harbour LGA do not contain provisions that are inconsistent with this planning direction. Future subdivisions as a result of changes to clause 4.1A that are within the coastal zone will be required to demonstrate consistency with State Environmental Planning Policy (Coastal Management) 2018. Future LEP amendments resulting from changes to clause 4.1A relating to land within the coastal zone will be required to include provisions that give effect to and are consistent with the matters outlined within this planning direction. The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction.
2.3 Heritage Conservation	A planning proposal must contain provisions that facilitate the conservation of: (a) items, places, buildings, works, relics, moveable objects or precincts of	Yes	*1) 19 Orara Street, Nana Glen* *European Heritage* 19 Orara Street, Nana Glen does not contain any items listed as Heritage Items in Schedule 5 of Coffs Harbour LEP 2013 or the State Heritage

S9.1 Direction	Applicable	Consistent	Comment
	environmental heritage significance to an area, in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item, area, object or place, identified in a study of the environmental heritage of the area, (b) Aboriginal objects or Aboriginal places that are protected under the *National Parks and Wildlife Act 1974*, and (c) Aboriginal areas, Aboriginal objects, Aboriginal places or landscapes identified by an Aboriginal heritage survey prepared by or on behalf of an Aboriginal Land Council, Aboriginal body or public authority and provided to the relevant planning authority, which identifies the area, object, place or landscape as being of heritage significance to Aboriginal culture and people.		Register. There are no European Heritage issues that would affected by this LEP amendment. *Aboriginal Cultural Heritage* search of the AHIMS database did not identify registered sites on or near 19 Orara Street, Nana Glen (See Appendix 9). During a site inspection in 2020, the CHDLALC observed the potential for cultural material in the flat area above the flood levy (Appendix 10). A Due Diligence Aboriginal and Cultural Heritage Assessment Report undertaken in 2022 confirmed the location of the archaeologically sensitive area to be within the residual Zone RU2 Rural Landscape portion of the site, outside the extent of the proposed development area (Zone R5 Rural Residential portion of the site) (See Appendix 11). As the archaeologically sensitive area will not be impacted by the proposal, further investigation was deemed unnecessary. However, should the archaeologically sensitive area be impacted in the future, then further archaeological assessment will be required prior to any works proceeding. In accordance with the Due Diligence Code of Practice, the LEP Amendment relating to 19 Orara St, Nana Glen will not impact any identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface. The LEP Amendment is supported by CHLALC on the condition that any future development application for the site notifies and consults CHLALC regarding any planned ground disturbance works in the future (See Appendix 10). There are no listed European Heritage items within or surrounding the site. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that

S9.1 Direction	Applicable	Consistent	Comment
			contradict or hinder the objectives of this planning direction.
2.4 Recreation Vehicle Areas	A planning proposal must not enable land to be developed for the purpose of a recreation vehicle area (within the meaning of the *Recreation Vehicles Act 1983*): (a) where the land is within an environment protection zone, (b) where the land comprises a beach or a dune adjacent to or adjoining a beach, (c) where the land is not within an area or zone referred to in paragraphs (a) or (b) unless the relevant planning authority has taken into consideration: (i) the provisions of the guidelines entitled *Guidelines for Selection, Establishment and Maintenance of Recreation Vehicle Areas, Soil Conservation Service of New South Wales, September, 1985*, and (ii) the provisions of the guidelines entitled *Recreation Vehicles Act, 1983, Guidelines for Selection, Design, and Operation of Recreation Vehicle Areas, State Pollution Control Commission, September 1985.*	N/A	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The proposed LEP amendment does not enable land to be developed for the purpose of a recreation vehicle area.
2.6 Remediation of Contaminated Land	This direction applies when a relevant planning authority prepares a planning proposal for land that is within an investigation area within the meaning of the	Yes	*1) 19 Orara Street, Nana Glen* A review of Council records does not identify any past activities at the site that would suggest potential land

S9.1 Direction	Applicable	Consistent	Comment
	Contaminated Land Management Act 1997; or on land which development for the purposes referred to in the contaminated land planning guidelines is being carried out, or where development for the purposes of residential, educational, recreational or childcare purposes; or a hospital is proposed. (4) A planning proposal authority must not include in a particular zone (within the meaning of the local environmental plan) any land specified in paragraph (2) if the inclusion of the land in that zone would permit a change of use of the land, unless: (a) the planning proposal authority has considered whether the land is contaminated, and (b) if the land is contaminated, the planning proposal authority is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for all the purposes for which land in the zone concerned is permitted to be used, and (c) if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, the planning proposal authority is		contamination is a relevant consideration. The proposed LEP amendment is not inconsistent with the objectives of the planning direction. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the application of this planning direction.

S9.1 Direction	Applicable	Consistent	Comment
	satisfied that the land will be so remediated before the land is used for that purpose. In order to satisfy itself as to paragraph (4)(c), the planning proposal authority may need to include certain provisions in the local environmental plan. (5) Before including any land specified in paragraph (2) in a particular zone, the planning proposal authority is to obtain and have regard to a report specifying the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines.		
3. Housing, Infrastructure and Urban Development			
3.1 Residential Zones	(3) This direction applies when a relevant planning authority prepares a planning proposal that will affect land within: (a) an existing or proposed residential zone (including the alteration of any existing residential zone boundary), (b) any other zone in which significant residential development is permitted or proposed to be permitted. (4) A planning proposal must include provisions that encourage the provision of housing that will:	Yes	*1) 19 Orara Street, Nana Glen* This LEP amendment seeks to reduce the minimum lot size for the residential portion of the land to enable the creation of five additional large lot residential lots. The provision of additional large lot residential land will broaden lifestyle choices in a suitable location and assist in the provision of affordable housing options. The proposal will increase the supply of large lot residential land, adjoining existing residential land uses in proximity to local community facilities. Appropriate planning controls are contained within Coffs Harbour LEP 2013 and Coffs Harbour DCP 2015 to ensure that development within Zone R5 Large Lot Residential exhibits design excellence.

S9.1 Direction	Applicable	Consistent	Comment
	(a) broaden the choice of building types and locations available in the housing market, and (b) make more efficient use of existing infrastructure and services, and (c) reduce the consumption of land for housing and associated urban development on the urban fringe, and (d) be of good design. (5) A planning proposal must, in relation to land to which this direction applies: (a) contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and (b) not contain provisions which will reduce the permissible residential density of land.		The LEP amendment does not: • impact upon the existing requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), or • contain provisions which will reduce the permissible residential density of land. The proposed LEP amendment does not contain provisions that contradict or hinder the application of this planning direction. *2) Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the application of this planning direction.
3.2 Caravan Parks and Manufactured Home Estates	Applies when a relevant planning authority prepares a planning proposal. In identifying suitable zones, locations and provisions for caravan parks in a planning proposal, the relevant planning authority must:	Yes	*1) 19 Orara Street, Nana Glen* Caravan parks are prohibited in Zone R5 Large Lot Residential under Coffs Harbour LEP 2013. There are no existing caravan parks located on the subject land. *2) Split* Zone *Clause & Dwelling Permissibility Amendment*

S9.1 Direction	Applicable	Consistent	Comment
	(a) retain provisions that permit development for the purposes of a caravan park to be carried out on land, and (b) retain the zonings of existing caravan parks, or in the case of a new principal LEP zone the land in accordance with an appropriate zone under the Standard Instrument (Local Environmental Plans) Order 2006 that would facilitate the retention of the existing caravan park. In identifying suitable zones, locations and provisions for manufactured home estates (MHEs) in a planning proposal, the relevant planning authority must: (a) take into account the categories of land set out in Schedule 2 of SEPP 36 as to where MHEs should not be located, (b) take into account the principles listed in clause 9 of SEPP 36 (which relevant planning authorities are required to consider when assessing and determining the development and subdivision proposals), and (c) include provisions that the subdivision of MHEs by long term lease of up to 20 years or under the *Community Land Development Act 1989* be permissible with consent.		The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. This proposal does not seek to permit or prohibit development for the purposes of a caravan park or manufacture homes estate. The proposed LEP amendment is not inconsistent with the objectives of the planning direction.

S9.1 Direction	Applicable	Consistent	Comment
3.3 Home Occupations	Planning proposals must permit home occupations to be carried out in dwelling houses without the need for development consent.	Yes	This LEP amendment does not affect home occupation provisions under LEP 2013.
3.4 Integrating Land Use and Transport	Applies when a relevant planning authority prepares a planning proposal that will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes. A planning proposal must locate zones for urban purposes and include provisions that give effect to and are consistent with the aims, objectives and principles of: (a) *Improving Transport Choice – Guidelines for planning and development* (DUAP 2001), and *The Right Place for Business and Services – Planning Policy* (DUAP 2001).	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The proposed LEP amendment is not inconsistent with the objectives of the planning direction.
3.5 Development Near Regulated Airports and Defence Airfields	Applies when a relevant planning authority prepares a planning proposal that will create, alter or remove a zone or a provision relating to land in the vicinity of a licensed aerodrome.	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. This planning proposal does not create, alter or remove a zone or a provision relating to land in the vicinity of a licensed aerodrome.
3.6 Shooting Ranges	Applies when a relevant planning authority prepares a planning proposal that will affect, create, alter or remove a zone or a provision relating to land adjacent to and/or adjoining an existing shooting range.	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. This proposed LEP amendment will not affect, create, alter or remove a zone or a provision relating to land adjacent to and/ or adjoining an existing shooting range.

S9.1 Direction	Applicable	Consistent	Comment
4. Hazard and Risk			
4.1 Acid Sulfate Soils	Applies when a relevant planning authority prepares a planning proposal that will apply to land having a probability of containing acid sulfate soils as shown on the Acid Sulfate Soils Planning Maps.	Yes	*1) 19 Orara Street, Nana Glen* The site is not affected by acid sulfate soils. *2) Split* Zone *Clauses & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The acid sulfate soil provisions of Coffs Harbour LEP 2013 will remain unchanged.
4.2 Mine Subsidence and Unstable Land	Applies when a relevant planning authority prepares a planning proposal that permits development on land that: (a) is within a mine subsidence district, or (b) has been identified as unstable in a study, strategy or other assessment undertaken: (i) by or on behalf of the relevant planning authority, or by or on behalf of a public authority and provided to the relevant planning authority.	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The proposed LEP amendment is unlikely to impact on any mine subsidence area.
4.3 Flood Prone Land	Applies when a relevant planning authority prepares a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land. A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005* (including the *Guideline on*	Yes	*1) 19 Orara Street, Nana Glen* Council has assessed the proposal to reduce the minimum lot size for the residential portion of the subject land in relation to flood risk. This assessment has determined that there are no significant issues. The majority of the land within Zone R5 Large Lot Residential is above the 100 Year Flood Extent. Any future development application for subdivision of the residential portion of the land and development on resulting lots will be required to address Council's flood related

S9.1 Direction	Applicable	Consistent	Comment
	Development Controls on Low Flood Risk Areas). A planning proposal must not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environment Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone. A planning proposal must not contain provisions that apply to the flood planning areas which: (a) permit development in floodway areas, (b) permit development that will result in significant flood impacts to other properties, (c) permit a significant increase in the development of that land, (d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or (e) permit development to be carried out without development consent except for the purposes of agriculture (not including dams, drainage canals, levees, buildings or structures in floodways or high hazard areas), roads or exempt development. A planning proposal must not impose flood related development controls above the residential flood planning level for residential development on land, unless a relevant planning authority		controls within Coffs Harbour LEP 2013 and Coffs Harbour DCP 2015. 2) *Split Zone Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The flood prone land provisions of Coffs Harbour LEP 2013 will remain unchanged.

S9.1 Direction	Applicable	Consistent	Comment
	provides adequate justification for those controls to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General). For the purposes of a planning proposal, a relevant planning authority must not determine a flood planning level that is inconsistent with the *Floodplain Development Manual 2005* (including the *Guideline on Development Controls on Low Flood Risk Areas*) unless a relevant planning authority provides adequate justification for the proposed departure from that Manual to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General).		
4.4 Planning for Bushfire Protection	Applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land. In the preparation of a planning proposal, the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a Gateway determination under section 56 of the Act, and prior to undertaking community consultation in satisfaction of section 57 of the Act, and take into	To be confirmed	*1) 19 Orara Street, Nana Glen* The land is mapped as bushfire prone. As such, future development applications for all development involving bush fire prone lands will be required to comply with the EP&A Act 1979 or Rural Fires Act 1997, depending on the nature of the development and the relevant provisions of Planning for Bush Fire Protection 2019. The Gateway Determination issued by NSW Planning and Environment on the 29 November 2021 requires Council to consult with the NSW Rural Fire Service. Therefore, NSW Rural Fire Service will need to supply comments relevant to S9.1 Direction 4.4 Planning for Bushfire Protection, in order to demonstrate compliance

S9.1 Direction	Applicable	Consistent	Comment
	account any comments so made. A planning proposal must: (a) have regard to *Planning for Bushfire Protection 2006*, (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and (c) ensure that bushfire hazard reduction is not prohibited within the APZ. A planning proposal must, where development is proposed, comply with the following provisions, as appropriate: (a) provide an Asset Protection Zone (APZ) incorporating at a minimum: (i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and (ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road, (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved,		with the requirements of that direction. This section will be updated to reflect comments from NSW Rural Fire Service. 2) *Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction.

S9.1 Direction	Applicable	Consistent	Comment
	provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the *Rural Fires Act 1997*), the APZ provisions must be complied with, (c) contain provisions for two-way access roads which link to perimeter roads and/or to fire trail networks, (d) contain provisions for adequate water supply for firefighting purposes, (e) minimise the perimeter of the area of land interfacing the hazard which may be developed, introduce controls on the placement of combustible materials in the Inner Protection Area.		
5. Regional Planning			
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	Applies when a relevant planning authority prepares a planning proposal for land in the vicinity of the existing and/or proposed alignment of the Pacific Highway. (4) A planning proposal that applies to land located on "within town" segments of the Pacific Highway must provide that: (a) new commercial or retail development must be concentrated within district centres	Yes	*1) 19 Orara Street, Nana Glen* The proposed LEP amendment for 19 Orara Street, Nana Glen will not affect commercial or retail land along the Pacific Highway, North Coast. *2) Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment relating to split zoned properties includes zone SP2 Infrastructure and is therefore likely relate to land in the vicinity of the existing and/or proposed alignment of the Pacific Highway. The LEP amendment relating to the split zone clause and dwelling permissibility clause does not contain

S9.1 Direction	Applicable	Consistent	Comment
	rather than spread along the Highway; (b) development with frontage to the Pacific Highway must consider impacts that the development has on the safety and efficiency of the highway; and (c) for the purposes of this paragraph, "within town" means areas which prior to the draft LEP have an urban zone (e.g. Village, residential, tourist, commercial and industrial etc.) and where the Pacific Highway is less than 80km/hour. (5) A planning proposal that applies to land located on "out-of-town" segments of the Pacific Highway must provide that: (a) new commercial or retail development must not be established near the Pacific Highway if this proximity would be inconsistent with the objectives of this Direction. (b) development with frontage to the Pacific Highway must consider the impact the development has on the safety and efficiency of the highway. (c) For the purposes of this paragraph, "out-of-town" means areas which, prior to		provisions that contradict or hinder the objectives of this planning direction.

S9.1 Direction	Applicable	Consistent	Comment
	the draft local environmental plan, do not have an urban zone (e.g.: "village", "residential", "tourist", "commercial", "industrial", etc.) or are in areas where the Pacific Highway speed limit is 80 km/hour or greater. (6) Notwithstanding the requirements of paragraphs (4) and (5), the establishment of highway service centres may be permitted at the localities listed in Table 1, provided that the Roads and Traffic Authority is satisfied that the highway service centre(s) can be safely and efficiently integrated into the highway interchange(s) at those localities.		
5.10 Implementation of Regional Plans	Planning proposals must be consistent with a Regional Plan released by the Minister for Planning.	Yes	The proposed LEP amendment does not contain provisions that contradict or hinder the objectives of this planning direction. The *North Coast Regional Plan 2036* (NCRP) applies to the Coffs Harbour LGA. The NCRP includes actions on environmental, economic and social (community) opportunities, as well as maintaining character and housing. Specific responses to relevant strategic directions and the accompanying actions contained within the NCRP are provided in Part 3, Section A (3) and Section B (4) of this report above. It is considered that the LEP amendment is consistent with the NCRP.

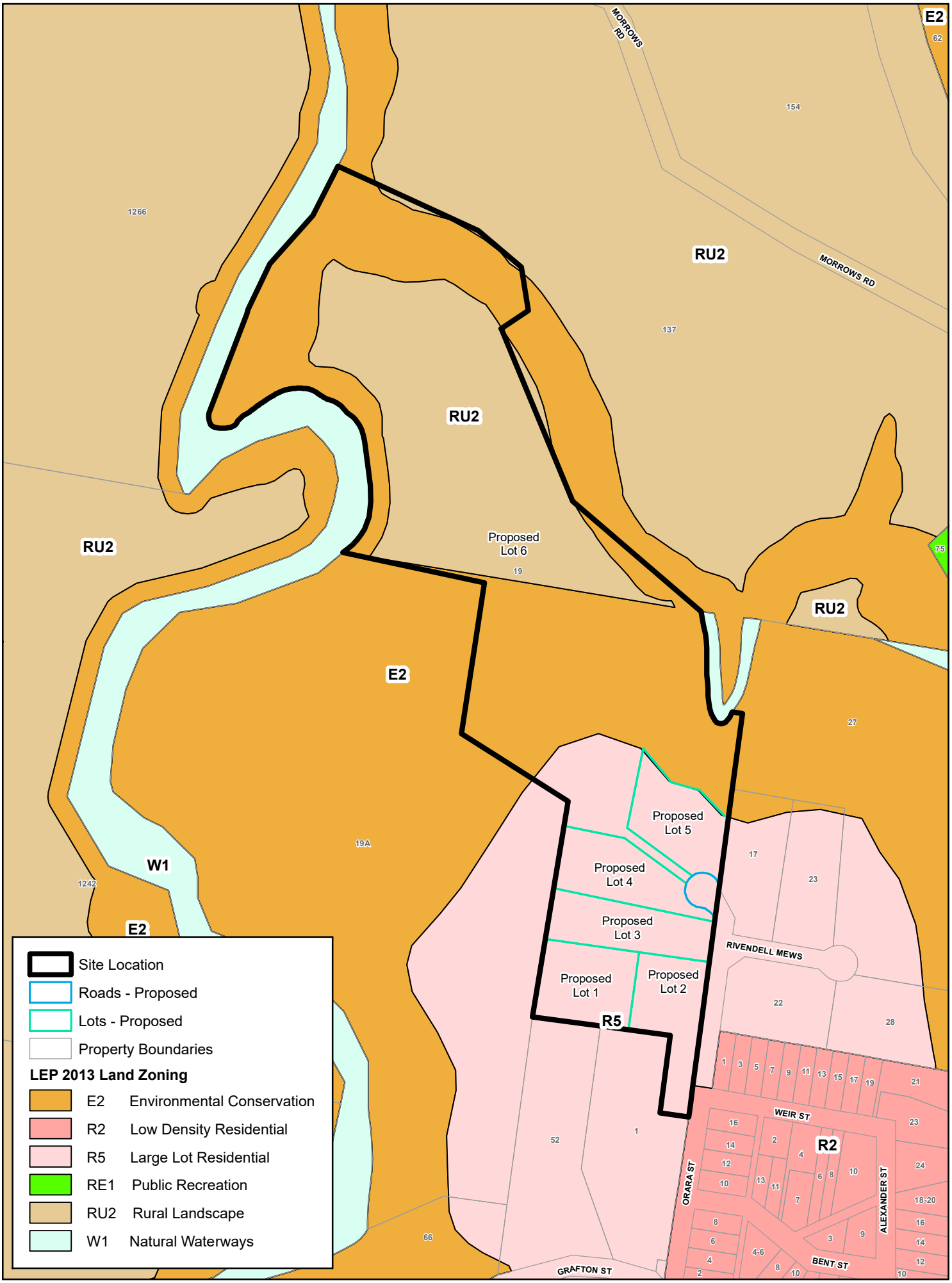
S9.1 Direction	Applicable	Consistent	Comment
5.11 Development of Aboriginal Land Council Land	This direction applies when a planning authority prepares a planning proposal for land shown on the Land Application Map of State Environmental Planning Policy (Aboriginal Land) 2019; or an interim development delivery plan published on the Department's website on the making of this direction.	N/A	The proposed LEP amendment does not affect land shown on the Land Application Map for State Environmental Planning Policy (Aboriginal Land) 2019; or an interim development delivery plan published on the Department's website on the making of this direction.
6. Local Plan Making			
6.1 Approval of Referral Requirements	Applies when a relevant planning authority prepares a planning proposal for land in the vicinity of the existing and/or proposed alignment of the Pacific Highway. (4) A planning proposal that applies to land located on "within town" segments of the Pacific Highway must provide that: (a) new commercial or retail development must be concentrated within district centres rather than spread along the Highway; (b) development with frontage to the Pacific Highway must consider impacts that the development has on the safety and efficiency of the highway; and (c) for the purposes of this paragraph, "within town" means areas which prior to the draft LEP have an urban zone (e.g. Village, residential,	Yes	*1) 19 Orara Street, Nana Glen* The proposed LEP amendment for 19 Orara Street, Nana Glen will not affect commercial or retail land along the Pacific Highway, North Coast. *2) Split* Zone *Clause & Dwelling Permissibility Amendment* The proposed LEP amendment relating to split zoned properties includes zone SP2 Infrastructure and is therefore likely relate to land in the vicinity of the existing and/or proposed alignment of the Pacific Highway. The LEP amendment relating to the split zone clause and dwelling permissibility clause does not contain provisions that contradict or hinder the objectives of this planning direction.

S9.1 Direction	Applicable	Consistent	Comment
	tourist, commercial and industrial etc.) and where the Pacific Highway is less than 80km/hour. (5) A planning proposal that applies to land located on "out-of-town" segments of the Pacific Highway must provide that: (a) new commercial or retail development must not be established near the Pacific Highway if this proximity would be inconsistent with the objectives of this Direction. (b) development with frontage to the Pacific Highway must consider the impact the development has on the safety and efficiency of the highway. (c) For the purposes of this paragraph, "out-of-town" means areas which, prior to the draft local environmental plan, do not have an urban zone (e.g.: "village", "residential", "tourist", "commercial", "industrial", etc.) or are in areas where the Pacific Highway speed limit is 80 km/hour or greater. (6) Notwithstanding the requirements of paragraphs (4) and (5), the establishment of highway service centres		

S9.1 Direction	Applicable	Consistent	Comment
	may be permitted at the localities listed in Table 1, provided that the Roads and Traffic Authority is satisfied that the highway service centre(s) can be safely and efficiently integrated into the highway interchange(s) at those localities.		
6.2 Reserving Land for Public Purposes	(4) A planning proposal must not create, alter or reduce existing zonings or reservations of land for public purposes without the approval of the relevant public authority and the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General).	Yes	The LEP amendment does not create, alter or reduce land reserved for a public purpose.
6.3 Site Specific Provisions	Applies when a relevant planning authority prepares a planning proposal that will allow a particular development to be carried out. (4) A planning proposal that will amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either: (a) allow that land use to be carried out in the zone the land is situated on, or (b) rezone the site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing	Yes	The LEP amendment does not allow a particular development or contain drawings that show details of a particular development.

S9.1 Direction	Applicable	Consistent	Comment
	any development standards or requirements in addition to those already contained in that zone, or (c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended. (5) A planning proposal must not contain or refer to drawings that show details of the development proposal.		

APPENDIX 3 – INDICATIVE SUBDIVISION LAYOUT PLAN FOR 19 ORARA STREET, NANA GLEN



Indicative Large Lot Subdivision Planning Proposal
19 Orara Street Nana Glen

This map produced by GIS Section
Coffs Harbour City Council
Creation Date: 10/03/2021

SCALE@A4 1:5000
0 20 40 80 120 160
Metres
Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA 1994

GRID NTH

APPENDIX 4 – CONSIDERATION OF IMPORTANT FARMLAND INTERIM VARIATION CRITERIA FOR 19 ORARA STREET, NANA GLEN

19 Orara St, Nana Glen has been assessed against the *Important Farmland Interim Variation Criteria* as follows:

Agricultural capability: This section states that the land may be suitable for uses other than farmland if it is isolated from other important farmland and is not capable of supporting sustainable agricultural production.

- *Comment:* The mapped farmland is spatially isolated from other farmland by Zone C2 and a watercourse. The farmland is already fragmented and is not of a size capable of facilitating significant agricultural activity. The LEP amendment proposes to retain all of the existing rural land. Amendments to the split zone clause in Coffs Harbour LEP 2013 will limit the erection of dwellings on the environmental and rural portions of the land to enable its continued use for small scale agriculture.

Land use conflict: This section states that the land may be suitable for uses other than farmland if the land use does not increase the likelihood of conflict and does not impact on current or future agricultural activities in the locality.

- *Comment:* The existing farmland will remain within Zone RU2 Rural Landscape within a single lot. The LEP amendment is unlikely to increase the likelihood of land use conflict, as Zone R5 Large Lot Residential is separated from Zone RU2 Rural Landscape by over 140 metres of Zone C2 Environmental Conservation. The regionally significant farmland (which follows the creek line within Zone C2 Environmental Conservation) is approximately 50m and therefore well separated from the proposed residential portions of the site.

Infrastructure: This section states that the land may be suitable for uses other than farmland, if the delivery of infrastructure required to service the land is physically and economically feasible at no cost to State and Local Government.

- *Comment:* Existing infrastructure available to surrounding residential and large lot residential land is adequate to service the proposal. The application also demonstrates that the land can be serviced appropriately via onsite sewage management systems.

Environment & heritage: This section states that the land may be suitable for uses other than farmland, if the proposed land uses do not have an adverse impact on areas of high environmental value and Aboriginal or historic heritage significance.

- *Comment:* The land will remain within Zone C2 Environmental Conservation and Zone RU2 Rural Landscape, and will continue to be used for small scale extensive agriculture.

APPENDIX 5 – WASTEWATER CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

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Land Capability Assessment for Proposed Subdivision at 19 Orara Street, Nana Glen

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Document Control Sheet

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Client Details	
Client:	Blaize & Sarah Jenkinson
Primary Contact:	Blaize & Sarah Jenkinson

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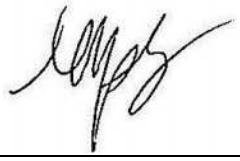
Checked by: Strider Duerinckx 	***Issued by:*** Heather Murphy 

Disclaimer

The information contained in this report is based on independent research undertaken by Heather Murphy of Whitehead & Associates Environmental Consultants Pty Ltd. To my knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an honest appraisal of the site's opportunities and constraints, subject to the limited scope and resources available for this project, and follow relevant best practice standards and guidelines where applicable, including:

- AS/NZS 1547: *On-site Domestic Wastewater Management* (Standards Australia / Standards New Zealand, 2012); and
- Environment & Health Protection Guidelines: *On-site Sewage Management for Single Households* (Department of Local Government, 1998);

Copyright Note

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1. Introduction

Whitehead & Associates Environmental Consultants Pty Ltd ('W&A') were engaged by Blaize & Sarah Jenkinson to undertake a Land Capability Assessment (LCA) for the proposed subdivision of 19 Orara Street, Nana Glen (Lot 1 DP 1163525 and Lot 1 DP 1210495) (the 'Site'), as shown on Figure 1.

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

2. Proposed Development

Based on plans of the proposed subdivision layout (Ref: Newnham Karl Weir and Partners Pty Ltd. Plan of Proposed Subdivision of Lot 1 DP 1163252 & Lot 1 DP 1210495 Orara Street – Nana Glen. Dated: 16/1/20), it is understood that the Site is proposed to be subdivided from two into six (6) lots:

- Proposed Lot 1-5 will be of 8,025-8,442m2;
- Proposed Lot 6 will include the residual land and will be 14.94ha (Figure 2); and
- Proposed Lot 1 will include the existing dwelling, while Proposed Lots 2-6 will include a proposed building area of 18 x 24m (432m^2), with an additional 6m offset area surrounding the building envelope (Figure 2).

3. Scope of Work

The LCA was undertaken by Heather Murphy and Strider Duerinckxof W&A. The study methodology included:

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

4. Site Details

The Site is located on the northern side of the eastern portion of the Nana Glen village at the end of Orara Street (Figure 1). The Site is zoned R5 Large Lot Residential, E2 Environmental Conservation and RU2 Rural Landscape and is approximately 19ha of cleared grass paddocks.

The Site is located on a low spur ridgeline that runs to the north-northwest from a local low hill. In the southern portion of the Site that is being developed, the ground surface slopes very gently to gently to the north-northwest to north and then to the north-northeast. The northern portion of the Site is raised flood terraces and radiates around the ridgeline and falls down towards the Orara River to the west and the Bucca Bucca Creek to the northeast. The Site includes the confluence of these two waterways in the northern corner.

4.1. Existing OSMS

The existing OSMS on Proposed Lot 1 consists of a round concrete septic tank and a single absorption trench of approximately 20m that runs to the north (Figure 3). The trench does not extend past the proposed subdivision boundary and has sufficient buffer to the proposed boundary. As such, the OSMS will not require upgrade as part of the subdivision.

An OSMS is present attached to a shed on proposed Lot 3. The trench straddles the Lot 1-3 boundary and is impacted by the subdivision. It is to be decommissioned as part of the subdivision works.

4.2. Site Constraints

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

Table 1 Site Constraints

Constraint	Degree of Limitation		
	Minor	Moderate	Major
Landform: All lots: divergent midslope location.	All lots		
Exposure: All lots: Good exposure. No trees.	All lots		
Slope: All lots: <1-6% from north-northwest to north-northeast.	All lots		
Rocks and Rock Outcrops: No rock outcrops were observed on the Site.	All lots		
Erosion Potential: No active erosion was noted. The gentle slopes combined with the highly erodible subsoils would give a moderate risk of erosion.		All lots	

Constraint	Degree of Limitation		
	Minor	Moderate	Major
Climate: The Site experiences a sub-tropical-temperate climate, typical of north-eastern NSW.	All lots		
Vegetation: All lots: Open grassland.	All lots		
Fill: None noted in the area proposed for reduced lot size.	All lots		
Surface Waters: All lots: Proposed EMAs >100m over grassed paddock to the north-northeast to Bucca Bucca Creek and Orara River, which are both perennial waterways.	All lots		
Groundwater: (NSW Office of Water: Groundwater Bore Search) The closest registered domestic bore is over 300m to the south of Proposed Lot 2's EMA (GW070811). The bore is 35m deep, with the standing water level at 12m and water bearing zones at 16-22m and 30-33m in fractured bedrock. **Groundwater vulnerability?** Clay subsoil, distance and deep groundwater depth indicate that the risk to groundwater would be minimal.	All lots		
Stormwater run-on and upslope seepage: All lots: The midslope position of the proposed EMAs would have moderate run-on from upslope areas.		All lots	
Flood Potential: A small portion of Proposed Lot 5 and Proposed Part Lot 6 are impacted by maximum flood extents on the CHCC flood mapping (Figure 3). DLG (1998) Guidelines only require effluent application to land to be located above the 1 in 20 flooding extents, which are lower in height than the 1 in 100 flood heights, therefore impacting less of the proposed Lots. Proposed EMAs have been nominated outside the flood zone to be conservative for subdivision requirements.	All lots		
Available Effluent Application Area All Lots have sufficient area available for the application of effluent, and reserve EMAs.	All lots		

Photograph 1 – Looking south at the existing dwelling on Proposed Lot 1 with septic and trench in front of the dwelling on the right.

Photograph 2 – Looking north from boundary between Proposed Lot 1 and 2 over Lot 3.

Photograph 3 – Looking north from Proposed Lot 4 over Lot 6 in centre.

4.3. Soil Survey and Description

4.3.1. Regional Soils

We reviewed the Soil Landscapes of the Coffs Harbour 1:100,000 Sheet (Milford, 1999) which indicates that there are two mapped soil landscapes on the Site; of which only Averys Creek Soil Landscape falls within the area identified for subdivision.

Averys Creek Soil Landscape is an erosional landscape located on undulating low hills, generally as lower slopes beneath steeper hills and mountains on late Carboniferous metasediments of the Coffs Harbour association. Soils are moderately deep to deep, moderately well-drained Yellow Podzolic Soils on steeper mid-lower slopes and lower slopes, with Red Podzolic Soils in more sheltered areas.

Limitations include strongly acid soils with low subsoil permeability and fertility and high erodibility. The soil is characterised by thick dark clay loam topsoil (up to 300mm) and dull brown clay loam deep topsoil (up to 150mm) underlain by brown pedal light to medium clay (up to 700mm) underlain by brown moderately pedal light medium to medium clay. Bedrock is typically greater than 1.5m depth.

4.3.2. Site Soils

Site soils were assessed by drilling six (6) boreholes using a hand auger (Figure 3) to 1.1m depth. In general, these soils comprised:

- Approximately 150-200mm of clay loam topsoil, dark brown to dark reddish brown, no mottling, with earthy structure and up to 5% gravel or no gravel; overlying
- Approximately 150-300mm of clay loam, brown to reddish brown, with red brown to dark brown mottling, strong structure and up to 15% quartz & ironstone gravel in BH1 only; overlying
- At least 600-900mm of light clay to silty clay loam, red to red brown to dark red brown, with yellow and orange to no mottling, strong structure and up to 2-5% quartz and ironstone gravel.

Competent bedrock was not encountered in the boreholes. The borehole logs are provided in Appendix A.

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

Table 2 Soil Assessment

Parameter	Constraint
Depth to bedrock or hardpan (m): Boreholes were terminated at 1.1m depth in light clay. It is believed that competent bedrock will be located at >1.5m based on soil landscape and position.	Moderate
Depth to high soil watertable: The depth of the vadose zone (i.e. non-saturated soil material above watertable) was greater than 1.1m at the time of the investigation. The depth to the permanent groundwater aquifer is expected to be 12m depth based on local groundwater bores.	Minor
Coarse Fragments (%): The boreholes contained <5% gravel in the light clay layer only.	Minor
Hydraulic loading rate: Soil structure: Strong Soil texture: Light clay 0.4/0.5-1.1m Permeability category: Category 5a Hydraulic loading recommended: 8mm/day for primary, and 12mm/day secondary treated effluent into an absorption bed field and 3mm/day for SSI. **Reasons for the hydraulic loading recommendation:** Strongly structured light clay subsoils.	Moderate
$pH_{(CaCl)}$: 4.4 pH Units from BH1 0.6-0.8m. Strongly acidic soils.	Major
Electrical Conductivity (dS/m): 0.14 dS/m from BH1 0.6-0.8m. Not saline.	Minor
Dispersiveness: The Emerson Aggregate Test is a measure of soil dispersibility and susceptibility to erosion and structural degradation. It assesses the physical changes that occur in a single ped of soil when immersed in water, specifically whether the soil slakes and falls apart or disperses and clouds the water. An EAT was recorded as Class 3/6 for BH1 0.6-0.8m. The instability of these aggregates are expected to increase slightly with the application of effluent.	Moderate
Sodicity (ESP): The ESP is a measure of how readily the soils allow sodium from wastewater to be substituted in the soil lattice for other cations. Once accepted, the weak sodium bonds allow increased structural degradation of the soil, increasing the erosion risk. The ESP of BH1 0.6-0.8m was 0.8%. The ESP infers a minimal potential for structural degradation due to sodium salts already present.	Minor

Parameter	Constraint
Cation Exchange Capacity: Like ESP, the CEC is a measure of how easily the soils hold and exchange excess cations from the effluent. These cations, such as potassium, magnesium and calcium are used by plants as a nutrient source. The higher the CEC the more likely plant growth will be aided by the application of effluent. CEC was measured in BH1 0.6-0.8m at 14.1 cmol/kg, which indicates that this soil type has moderate ability to accept and release excess nutrients from effluent.	Moderate
Phosphorus Adsorption: Phosphorus is a cation present in effluent. It is required only to a limited extent by plants as a trace nutrient, but if there is an excess of phosphorus in environments where other limiting factors are not present (such as waterways), excess phosphorus can result in very high plant growth. Typically on land, excess phosphorus is taken up by soil adsorption, or is flushed out of the soil into groundwater or surface water bodies. The Site soils in BH1 0.6-0.8m has a Psorp of 1,171mg/kg in the subsoil.	Minor

5. Minimum Lot Size Analysis

A minimum lot size analysis and modelling were completed to determine the maximum lot density suitable for subdivision on the Site.

5.1. Methodology

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

- total building area (including dwellings, sheds, pools etc.) which includes a defined building envelope but may extend beyond with additional improvements to a property, such as driveways and paths (impervious areas), and gardens/vegetated areas unsuitable for effluent reuse;
- dams, intermittent and permanent watercourses running through lots;
- maintenance of appropriate buffer distances from property boundaries, buildings, driveways and paths, dams and watercourses;
- flood prone land;
- excessive slope;
- excessively shallow soils;
- heavy (clay) soils with low permeability;
- excessively poor drainage, shallow groundwater and/or stormwater run-on; and
- excessive shading by vegetation.

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

5.2. MLS Buffer Distances

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

- 250m from domestic groundwater bores;
- 100m from permanent watercourses;
- 40m from intermittent watercourses and dams;
- 12m from downslope property boundaries and 6m from upslope property boundaries; and
- 6m from downslope buildings and 3m from upslope buildings.

In addition, ASNZS1547:2012 provides suggested buffer distances that include buffers to inground water tanks and swimming pools, cuttings and recreation areas. In the comparative lot assessment by W&A these additional land use situations were also buffered.

5.3. MLS Comparative Lots Assessed

Three, nearby R5 zoned, representative lots were selected that have already been subdivided (Table 3) (Figures 1 and 4).

Table 3: Comparative Lots Assessed

Lot	DP	Address	Lot Area (m^2)
2	1215696	17 Rivendell Mews	8,373
3	1215696	23 Rivendell Mews	8,648
5	1215696	28 Rivendell Mews	12,253

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

5.4. MLS Assessed Available EMA

Table 4 shows the assessment of available effluent management area for each of the three lots. As is evident, the variability of lot sizes and on-lot improvements and restrictions of developed lots makes selection of a “typical” lot difficult, however comparison of the three

lots with site and soil constraints at the Site indicates that flooding is a greater issue on the three comparative lots assessed than at the Site.

From the sample selection of lots investigated (Table 4), the two lot sizes of approximately 8,300-8,600m^2 (Lots 2 and 3) provided an available effluent application area of 28-35% of the lots, representing 2,423-2,937m^2. These are at least two times the maximum wastewater envelope of 1,010m^2 required.

Lot 3 is an anomaly given 66% of the lot is flood affected, and the maximum wastewater envelope adopted in this study is not available on that property given the primary treated effluent buffers. As such standard primary treatment would not be applicable for that lot and a higher grade of treatment such as secondary treatment with a reduced footprint would be applicable.

Considering the minimal impact of flooding on the proposed lots on the Site, Proposed Lots 5 and 6 have a flood impacted area of 21-24% of the proposed lot area, which is a similar range to the existing comparison lots above.

Table 4: Minimum Lot Size Assessment Results

Lot	Lot Area (m^2)	Developed Area (m^2)	Flood prone (m^2)	Total Restricted Area (m^2)	Available Eff. Application Area (m^2)	Percent of Lot Available for Eff. Disp. (%)	>1010m^2 Area Available for Primary Treatment?
2	8,373	3,010	2,426	5,436	2,937	35	Yes
3	8,648	3,136	3,089	6,225	2,423	28	Yes
5	12,253	2,947	8,191	11,138	1,115	9	No

5.5. Discussion

A comparison of nearby properties suggests that:

- Flooding has a lesser impact on the Site than the comparison properties;
- At about 8,400m2 total lot area, between 2,400-2,900m^2 area is available for effluent land application, >2x the 1,000m^2 required as a planning envelope;
- Even accounting for high flood impacted conditions, the available area of ~1,000m2 is able to me met; and
- A minimum lot size of 8,000m^2 is considered suitable for the proposed subdivision of the Site.

6. Recommended OSMS Combination

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

Based on the site and soil constraints, particularly flood impacts, and the positioning of the building envelopes and subdivision boundaries, the minimum treatment and land application combination selected for Proposed Lot 1, 3-6 are:

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

Alternatively, treatment to a secondary standard and land application by subsurface irrigation or absorption would also be acceptable

As Proposed Lot 2 has greater constraints placed on it by restricted buffers to boundaries, the minimum treatment and land application combination recommended would be:

- Secondary treatment and subsurface application into an appropriately sized absorption bed field.

Alternatively, treatment to a secondary standard and land application by subsurface irrigation may be acceptable subject to appropriate development conditions.

7. Effluent Management Areas

7.1. Design Hydraulic Load

For hydraulic loading purposes a proposed dwelling of four bedrooms on rainwater tanks was assumed for the proposed lots. AS/NZS1547:2012 recommends that a wastewater generation load of 120L per person per day for households supplied by rainwater tanks be used as a basis for wastewater system design. The hydraulic load for the existing and proposed dwellings is based on 1.5 persons per bedroom. The design hydraulic loading for a four bedroom dwelling under full occupancy is presented in Table 5.

Table 5 Proposed Design Hydraulic Load

No. of Bedrooms	Design Wastewater Load (L/day)
4	720

7.2. Sizing of Effluent Management Areas

2.4.1 Primary Treatment – Proposed Lot 1, 3-6

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

Precipitation + Effluent Applied = Evapotranspiration + Percolation + Storage

Mean monthly rainfall data was conservatively utilised in the modelling. Mean data has a higher rainfall than median data typically adopted for domestic wastewater investigations. The water balance conservatively assumes a retained rainfall coefficient of 0.9; that is, generally 90% of rainfall will percolate into the soil and 10% will run off. Given the gentle slopes and good groundcover at the Site, this is considered a conservative value. The rainfall hydraulic load is incorporated into the water balance to ensure that runoff from the EMA will not occur under typical (design) climate conditions.

The input data and results for the primary treated trench/ bed water balance are presented in Table 6, and calculation sheets in Appendix C.

A conservative nutrient balance was also undertaken, which calculates the minimum buffer around a trench or bed to enable nutrients to be assimilated by the soils and vegetation. The nutrient balance used here is based on the simplistic DLG (1998) methodology, but improves this by more accurately accounting for natural nutrient cycles and processes. It acknowledges that a proportion of nitrogen will be retained in the soil through processes such as ammonification (the conversion of organic nitrogen to ammonia) and a certain amount will be lost by denitrification, microbial digestion and volatilisation (Patterson, 2003). Patterson (2002) estimates that these processes may account for up to 40% of total nitrogen loss from soil. In this case, a more conservative estimate of 20% is adopted for the nitrogen losses due to soil processes. A summary of the nutrient balance is provided in Table 6.

Table 6: Inputs and Results of Primary Treatment Modelling

Data Parameter	Units	Value	Comments
Hydraulic load	L/day	720	6 persons occupancy
Precipitation	mm/month	Nana Glen (Cowling Close)	BoM, mean monthly
Pan Evaporation	mm/month	Coffs Harbour	BoM, mean monthly
Retained rainfall	unitless	0.9	Proportion of rainfall that remains onsite and infiltrates the soil, allowing for 10% runoff.
Crop Factor	unitless	0.6-0.8	Expected annual range for vegetation based on monthly values.
Design Loading Rate (DLR) - Primary	mm/day	8	Maximum rate for design purposes, based on light clay subsoils.
Effluent total nitrogen concentration	mg/L	60	Target effluent quality for primary treatment systems.
Nitrogen lost to soil processes (denitrification and volatilisation)	annual percentage	20	Patterson (2002).
Effluent total phosphorus concentration	mg/L	15	Target effluent quality for primary treatment systems.
Soil phosphorus sorption capacity	mg/kg	1,171	Value based on soil testing
Nitrogen uptake rate by plants	kg/Ha/yr	250	Conservative estimated value.
Phosphorus uptake rate by plants	kg/Ha/yr	25	Conservative estimated value.
Design life of system (for nutrient management)	years	50	Reasonable minimum service life for system.

Data Parameter	Units	Value	Comments
Minimum primary treatment trench/ bed basal area for hydraulic load (m^2)			**106m^2. 212m^2 absorption trench field footprint**
Minimum primary treatment trench/ bed area for total phosphorus load, without off-site export			**146m^2**
Minimum primary treatment trench/ bed area for total nitrogen load, without off-site export			**505m^2**

Based on modelling:

- A reserve EMA of 505m^2 has been nominated for a four bedroom dwelling for Proposed Lot 1. The proposed location of the reserve EMA is shown on Figure 5;
- Based on modelling, an EMA and reserve EMA of 505m^2 each have been nominated for a four bedroom dwelling for Proposed Lots 3-6. The proposed locations of the EMAs are shown on Figure 5.

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

2.4.2 Secondary Treatment – Proposed Lot 2

Water and nutrient balance modelling were also undertaken to determine sustainable sizing of trench/bed and irrigation EMAs for secondary treated effluent. Irrigation areas are calculated to achieve no net excess of water and hence zero storage for all months.

A conservative nutrient balance has also been undertaken. Table 7 below contains the input data and results of the water and nutrient balances.

Table 7: Inputs and Results of Secondary Treatment Water Balance Modelling

Data Parameter	Units	Value	Comments
Hydraulic load	L/day	720	6 persons occupancy
Precipitation	mm/month	Nana Glen (Cowling Close)	BoM, mean monthly
Pan Evaporation	mm/month	Coffs Harbour	BoM, mean monthly
Retained rainfall	unitless	0.9	Proportion of rainfall that remains onsite and infiltrates the soil, allowing for 10% runoff.
Crop Factor	unitless	0.6-0.8	Expected annual range for vegetation based on monthly values.
Design Irrigation Rate (DIR)	mm/day	3	Maximum rate for design purposes, based on light clay subsoils.

Data Parameter	Units	Value	Comments
DLR - Secondary	mm/day	8	Maximum rate for design purposes, based on light clay subsoils.
Effluent total nitrogen concentration	mg/L	30	Target effluent quality for secondary treatment systems.
Nitrogen lost to soil processes (denitrification and volatilisation)	annual percentage	20	Patterson (2002).
Effluent total phosphorus concentration	mg/L	10	Target effluent quality for secondary treatment systems.
Soil phosphorus sorption capacity	mg/kg	1,171	Value based on soil testing.
Nitrogen uptake rate by plants	kg/Ha/yr	250	Conservative estimated value.
Phosphorus uptake rate by plants	kg/Ha/yr	25	Conservative estimated value.
Design life of system (for nutrient management)	years	50	Reasonable minimum service life for system.
Minimum secondary treatment irrigation area for hydraulic load, without wet weather storage (m^2)			**490m^2**
Minimum secondary treatment trench/ bed basal area for hydraulic load (m^2)			**67m^2**
Minimum secondary treatment EMA for total phosphorus load, without off-site export			**97m^2. 123m^2 absorption trench field footprint**
Minimum secondary treatment EMA for total nitrogen load, without off-site export			**252m^2**

Based on modelling:

- An EMA and reserve EMA of 252m^2 each have been nominated for a four bedroom dwelling for Proposed Lot 2. The proposed locations of the EMAs are shown on Figure 5.

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

8. Buffers

Buffer distances or setbacks from EMAs are required to minimise risk to public health, maintain public amenity and protect sensitive environments. The buffers from DLG (1998) are presented in Table 6 below.

Table 6: Available Buffers

Site Feature	DLG (1998) Buffer	Achievable?
Intermittent watercourses, drainage channels and dams	40m	Yes
Permanent waterways	100m	Yes
Domestic groundwater bore	250m	Yes
Property boundary	Primary - 6m downslope and sideslope, 12m upslope Secondary – 3m downslope and sideslope, 6m upslope	Primary - Lots 1,3-6 Secondary - Lot 2
Driveway and building	6m downslope of / 3m upslope	Yes

9. Conclusions & Recommendations

Having undertaken a land capability assessment for the proposed subdivision of 19 Orara Street, Nana Glen, W&A consider that there is the opportunity for the sustainable application of wastewater following subdivision of the existing lot into Proposed Lots 1-6.

We recommend that:

- A minimum lot size of 8,000m^2 is suitable for the subdivision to allow for all reasonable development configurations (dwelling, shed, swimming pool, recreation, driveways etc) and sustainable wastewater application.
- Proposed Lot 1 - Wastewater continue to be treated to a minimum primary level with subsurface soil absorption land application. A reserve EMA of 505m^2 minimum has been nominated for a four bedroom dwelling, with final details to be confirmed during application for upgrade of the existing OSMS;
- Proposed Lot 2 - Wastewater be treated to a minimum secondary level with subsurface soil absorption land application. A primary and reserve EMA of 252m^2 minimum each has been nominated for a four bedroom dwelling, with final details to be confirmed during application for individual dwelling construction;
- Proposed Lot 3-6 - Wastewater be treated to a minimum primary level with subsurface soil absorption land application. A primary and reserve EMA of 505m^2 minimum each has been nominated for a four bedroom dwelling, with final details to be confirmed during application for individual dwelling construction; and
- The OSMS attached to the shed on Proposed Lot 3 is to be decommissioned in accordance with NSW Health requirements. If required, the wastewater from the shed is to be incorporated into future dwelling wastewater designs for the lot.

For any future system we recommend that:

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

10. References

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

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

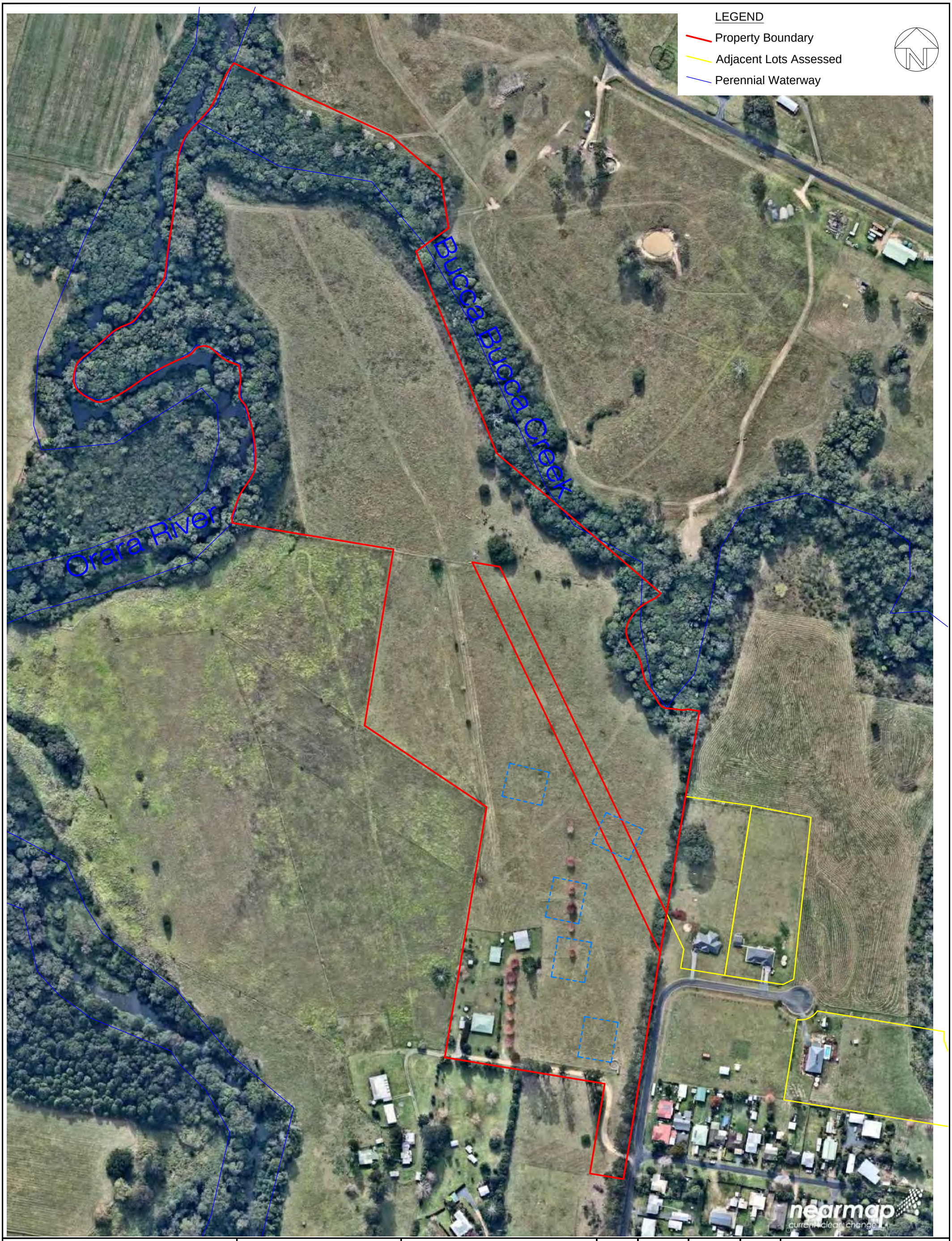
Milford, H. B., (1999) *Soil Landscapes of the Coffs Harbour 1:100 000 Sheet*, Department of Land and Water Conservation Soil Landscape Series.

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

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

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

FIGURES



Whitehead & Associates Environmental Consultants	Client: BLAIZE & SARAH JENKINSON	Title: SITE LOCATION	Drawn:	Reviewed:	Approved:	Date:	Scale: 1:3000 Approx @ A3
0 50 100 150 Horizontal Scale (metres) 1:3000	Project: LAND CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN	Source: CHCC 2019 & NEARMAP 2019	HM	SD	SD	29/4/20	Job No: 2656 / Sheet: 1 of 1
		Note: AERIAL PHOTOGRAPHS & BOUNDARIES ARE INDICATIVE ONLY	All units in m unless otherwise specified				Drawing No: Figure 1 / Revision No: 1

LEGEND

- Property Boundary
- Perennial Waterway
- Subdivision Boundary
- Easement
- Proposed Building Area plus 6m Offset
- Existing Building

Orara River

Bucca Bucca Creek

BDY. OF RIVER BANK

153.41
51.735
45.235
35.585
192.64
191.78
145
158.29
130.12
10.56
225.045
388.01
143.72
80.64
32.245
30.115

PT.6
14.94 Ha
BY DED'N

PT.6
(8649m²)

5
8038m²

4
8157m²

3
8314m²

2
8425m²

1
8025m²

Shed
Shed
Dwelling

EXISTING SHEDS

EXISTING DWELLING

"A"
"B"
"C"
"D"

3
D.P.1163252

2
D.P.1163252

2 3 4
1 5
D.P. 1215696

1
D.P. 771522

RIVENDELL MEWS

WEIR ST.

0 50 100 150
Horizontal Scale (metres) 1:3000

Whitehead & Associates
Environmental Consultants

Client: BLAIZE & SARAH JENKINSON

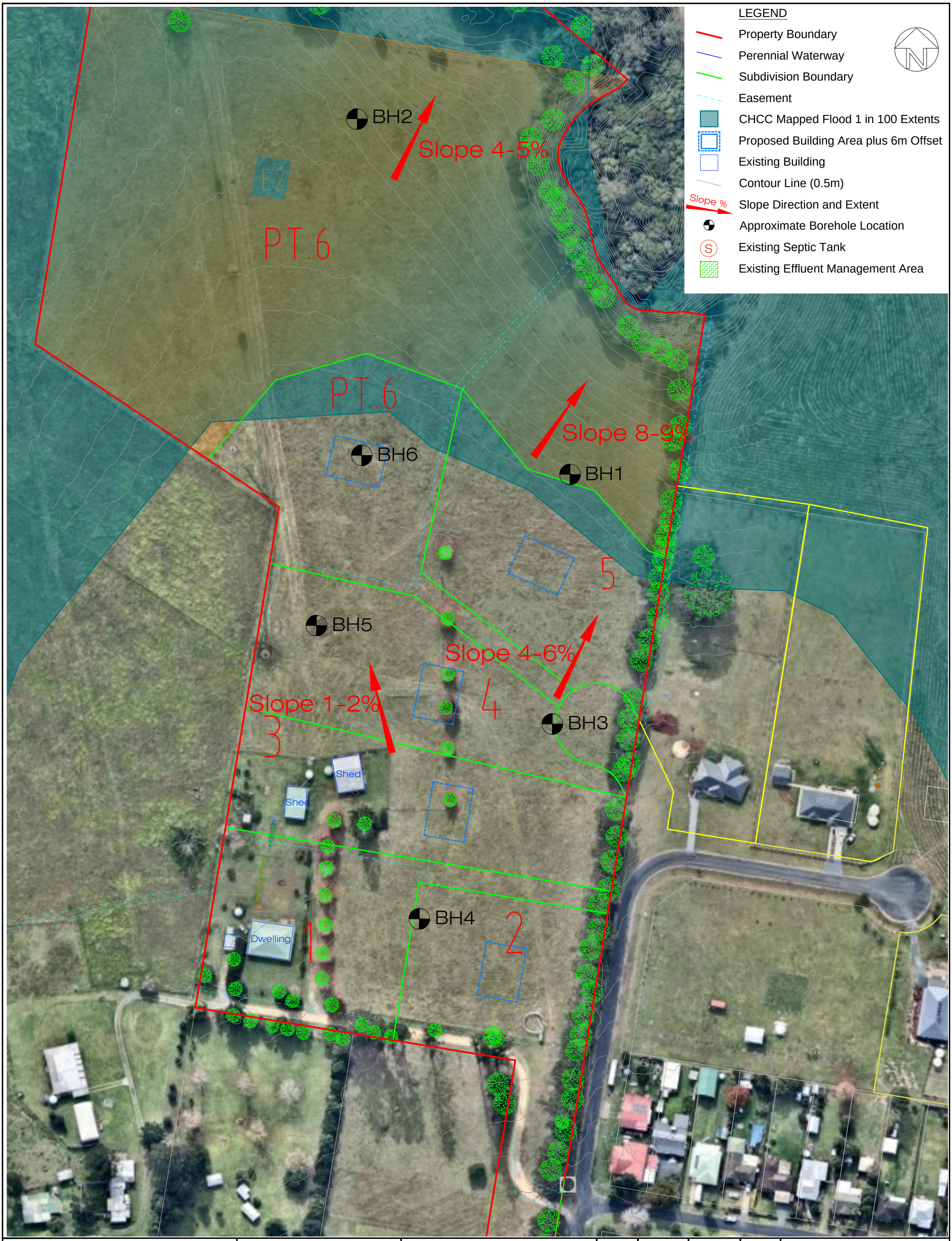
Project: LAND CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

Title: PROPOSED SUBDIVISION LAYOUT

Source: NEWNHAM KARL WEIR AND PARTNERS PTY LTD. PLAN OF PROPOSED SUBDIVISION. 16/1/2020.

Note: AERIAL PHOTOGRAPHS & BOUNDARIES ARE INDICATIVE ONLY

Drawn:	Reviewed:	Approved:	Date:	Scale: 1:3000 Approx @ A3	
HM	SD	SD	29/4/20	Job No: 2656	Sheet: 1 of 1
All units in m unless otherwise specified				Drawing No: Figure 2	Revision No: 1



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0 25 50 75
Horizontal Scale (metres) 1:1500

Client: BLAIZE & SARAH JENKINSON

Project: LAND CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

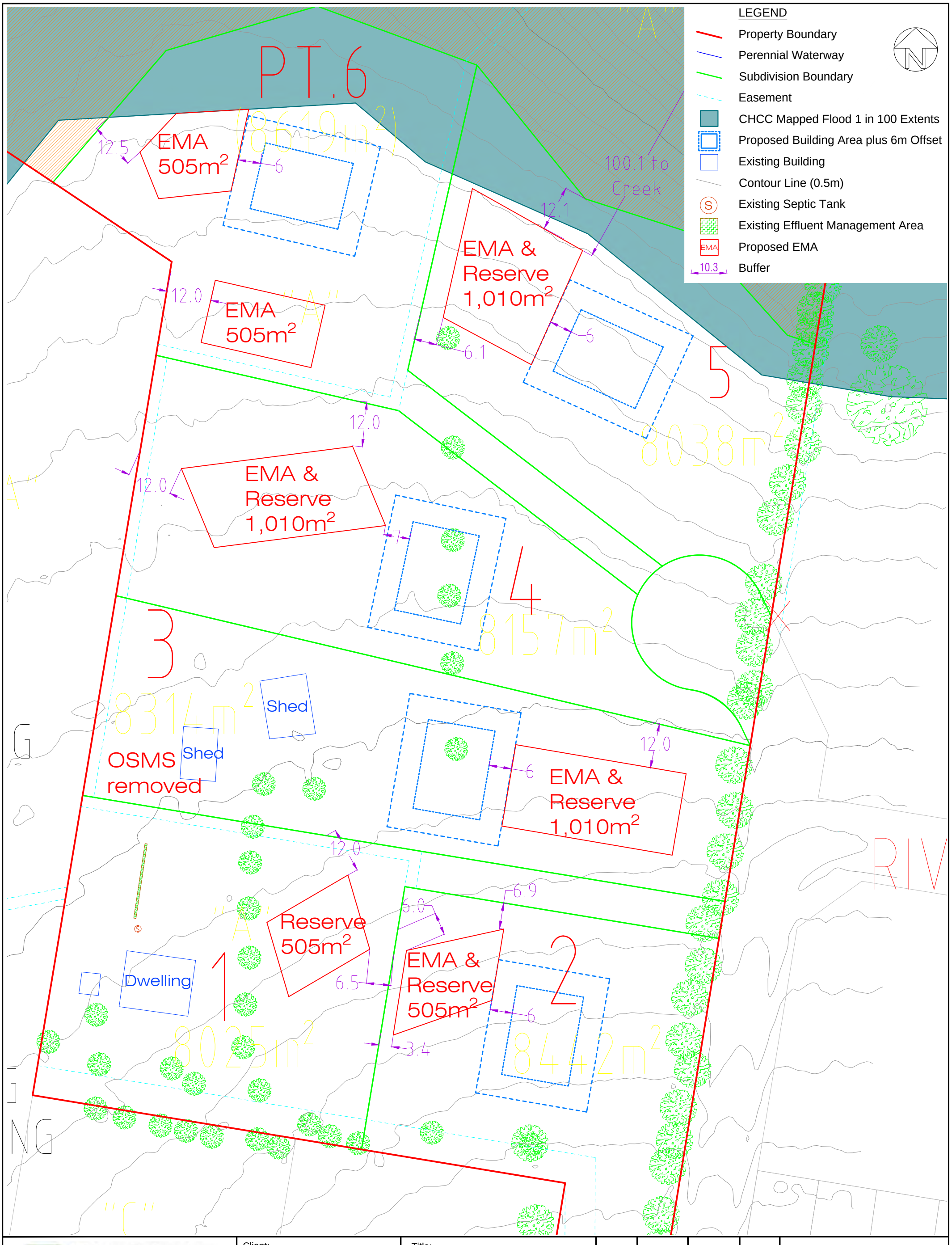
Title: EXISTING SITE LAYOUT

Source: NEWNHAM KARL WEIR AND PARTNERS PTY LTD. PLAN OF PROPOSED SUBDIVISION. 16/1/2020. & NEARMAP 2019

Note: AERIAL PHOTOGRAPHS & BOUNDARIES ARE INDICATIVE ONLY

Drawn:	Reviewed:	Approved:	Date:	Scale: 1:1500 Approx @ A3	
HM	SD	SD	29/4/20	Job No: 2656	Sheet: 1 of 1
All units in m unless otherwise specified				Drawing No: Figure 3	Revision No: 1

Whitehead & Associates Environmental Consultants	Client: BLAIZE & SARAH JENKINSON	Title: MINIMUM LOT SIZE ASSESSMENT	Drawn:	Reviewed:	Approved:	Date:	Scale: 1:1000 Approx @ A3
0 25 50 Horizontal Scale (metres) 1:1000	Project: LAND CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN	Source: CHCC 2019 & NEARMAP 2019	HM	SD	SD	29/4/20	Job No: 2656 / Sheet: 1 of 1
		Note: AERIAL PHOTOGRAPHS & BOUNDARIES ARE INDICATIVE ONLY	All units in m unless otherwise specified				Drawing No: Figure 4 / Revision No: 1



Whitehead & Associates Environmental Consultants	Client: BLAIZE & SARAH JENKINSON	Title: PROPOSED SUBDIVISION EFFLUENT MANAGEMENT AREAS	Drawn:	Reviewed:	Approved:	Date:
0 15 30 45 Horizontal Scale (metres) 1:900	Project: LAND CAPABILITY ASSESSMENT FOR 19 ORARA STREET, NANA GLEN	Source: NEWNHAM KARL WEIR AND PARTNERS PTY LTD. PLAN OF PROPOSED SUBDIVISION. 16/1/2020. Note: AERIAL PHOTOGRAPHS & BOUNDARIES ARE INDICATIVE ONLY	HM	SD	SD	29/4/20

Scale: 1:900 Approx @ A3			
All units in m unless otherwise specified	Job No: 2656	Sheet: 1 of 1	
	Drawing No: Figure 5	Revision No: 1	

APPENDIX A

Borehole Logs

Whitehead & Associates
Environmental Consultants

Key to Soil Borelogs

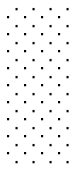
Symbols

W	Watertable depth	**S**	Sample collected
X	Depth of refusal		

Moisture condition

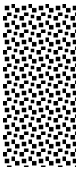
D	Dry
SM	Slightly moist
M	Moist
VM	Very moist
W	Wet / saturated

Graphic Log and Textures



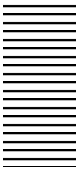
S - Sand
LS - Loamy sand
CS - Clayey sand

SCL - Sandy clay loam
FSCL - Fine sandy CL
CL - Clay loam
SiCL - Silty clay loam

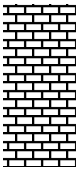


Gravel (G)

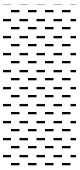
SL - Sandy loam



LC - Light clay
SC - Sandy clay
SiC - Silty clay



Parent material (stiff)



L - Loam
LFS - Loam fine sandy
SiL - Silty loam

MC - Medium clay
HC - Heavy clay

Parent material (weathered)

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH1**
Client:	Blaize & Sarah Jenkinson	Logged by:	Mei Wong
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	11 April 2019

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark brown	Nil	<5% gravel	SM	Topsoil
	0.2								
	0.3		Clay loam	Strong	Brown	Red brown	15% gravel quartz & ironstone	SM	Residual B1
	0.4								
	0.5		Light clay	Strong	Red	Yellow & orange	<2% gravel	SM	Residual
	0.6								
S	0.7								
	0.8								
	0.9								
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH2**
Client:	Blaize & Sarah Jenkinson	Logged by:	Mei Wong
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	11 April 2019

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark brown	Nil	Nil	SM	Topsoil
	0.2								
	0.3		Clay loam	Strong	Brown	Red brown	Nil	SM	Residual B1
	0.4								
	0.5								
	0.6		Light clay	Strong	Red	Yellow & orange	<2% gravel	SM	Residual B2
	0.7								
	0.8								
	0.9								
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH3**
Client:	Blaize & Sarah Jenkinson	Logged by:	Mei Wong
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	11 April 2019

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark brown	Nil	Nil	SM	Topsoil A1
	0.2								
	0.3		Clay loam	Strong	Brown	Red brown	Nil	SM	Residual B1
	0.4								
	0.5								
	0.6		Light clay	Strong	Red	Yellow & orange	<5% gravel	SM	Residual B2
	0.7								
	0.8								
	0.9								
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH4**
Client:	Blaize & Sarah Jenkinson	Logged by:	Heather Murphy
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	29 April 2020

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark reddish brown	Nil	Nil	SM	Topsoil A1
	0.2		Clay loam	Strong	Reddish brown	Dark brown	Nil	SM	Residual B1
	0.3								
	0.4		Light clay	Strong	Red brown	Nil	Nil	SM	Residual B2
	0.5								
	0.6					Strong brown	2% quartz gravel		
	0.7								
	0.8						2% ironstone		
	0.9		Silty clay	Strong	Orange brown	Yellow brown & pink	2% ironstone	SM	
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH5**
Client:	Blaize & Sarah Jenkinson	Logged by:	Heather Murphy
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	29 April 2020

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark reddish brown	Nil	Nil	SM	Topsoil A1
	0.2								
	0.3		Silty clay loam	Strong	Dark red brown	Nil	Nil	SM	Residual B1
	0.4								
	0.5								
	0.6								
	0.7								
	0.8								
	0.9								
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

Soil Bore Log

Whitehead & Associates
Environmental Consultants

Project	2656	**Borehole No.:**	**BH6**
Client:	Blaize & Sarah Jenkinson	Logged by:	Heather Murphy
Site:	19 Orara Street, Nana Glen	Excavation method:	Hand Auger
Loc:	Figure 2	Date:	29 April 2020

PROFILE DESCRIPTION

Samples	Depth (m)	Graphic Log	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture	Comments
	0.1		Clay loam	Earthy	Dark reddish brown	Nil	Nil	SM	Topsoil A1
	0.2								
	0.3		Silty clay loam	Strong	Dark red brown	Nil	Nil	SM	Residual B1
	0.4								
	0.5								
	0.6								
	0.7								
	0.8								
	0.9								
	1.0								
	1.1								
	1.2		Borehole terminated @ 1.1m						
	1.3								
	1.4								
	1.5								

APPENDIX B

Soil Chemistry

Client: Blaize & Sarah Jenkinson | **Project No.:** 2656

Site: 19 Orara Street, Nana Glen

Whitehead & Associates
Environmental Consultants

Sheet 1 - Soil Sampling Results

Site	Sample Name	Sample Depth (mm)	Texture Class	EAT [1]	Rating [2]	pH f [3]	pH (CaCl) 1:5 [4]	Rating	EC 1:5 (µS/cm)	ECe (dS/m) [5]	Rating	CEC (me/100g)	Rating	ESP (%)	Rating	P-sorp. (mg/kg)	Rating		
2656	BH1 0.6-0.8m	600-800	LC	3(6)	Moderate	n/t	4.4	Strongly acid	17	0.14	Non-saline	14.1	M	0.8	NS	1171.0	VH		

Notes:-

n/a not available

n/t not tested

Ratings based on data in *Interpreting Soil Test Results: what do all the numbers mean?* [2nd ed.] (Hazelton & Murphy, 2007)

[1] The modified Emerson Aggregate Test (EAT) provides an indication of soil susceptibility to dispersion. To AS1289

[2] Ratings describe the likely hazard associated with land application of treated wastewater.

[3] pH measured in the field using Raupac Indicator.

[4] pH measured on 1:5 soil:water suspensions using a *Hanna Combo* hand-held pH/EC/temp meter.

[5] Electrical conductivity of the saturated extract (Ece) = $EC_{1:5}$(µS/cm) x MF / 1000. Units are dS/m. MF is a soil texture multiplication factor.

[6] External laboratories used for the following analyses, if indicated:

- CEC (Cation exchange capacity)
- Psorb (Phosphorus sorption capacity)
- Bray Phosphorus
- Organic carbon
- Total nitrogen

APPENDIX C

Water & Nutrient Balance Calculations

Nominated Area Water Balance & Storage Calculations

Site Address: 19 Orara Street, Nana Glen

Whitehead & Associates
Environmental Consultants

INPUT DATA

Design Wastewater Flow	Q	720	L/day
Daily DLR		8.0	mm/day
Crop Factor	C	0.6-0.8	unitless
Retained Rainfall Coefficient	RRc	0.9	untiless
Void Space Ratio	V	0.3	unitless
Rainfall Data	Nana Glen (Cowling Close) - Mean		
Evaporation Data	Coffs Harbour MO - Average		

Flow Allowance	120	l/p/d
Water Saving Fittngs	N	100%
No. of bedrooms	4	bdr
Occupancy	1.5	p/room

Nominated Land Application Area	106	sqm
Trench/Bed wetted thickness	0.1	m
Trench/Bed Width	1.2	m

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Median Rainfall	R	\	mm/month	185.3	166.7	184.9	135.2	109.4	95.6	60.1	60.6	49.8	88.4	119.1	132.4	**1371.4**
Average Evaporation	E	\	mm/month	192.2	156.8	148.8	114	86.8	69	77.5	105.4	135	164.3	171	192.2	**1606**
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	80	61	41	47	63	95	131	137	154	**1206.44**
Percolation	B	DLRxD	mm/month	248.0	224	248.0	240.0	248.0	240.0	248.0	248.0	240.0	248.0	240.0	248.0	**2920.0**
Outputs		ET+B	mm/month	401.8	349.44	367.0	319.8	308.8	281.4	294.5	311.2	334.5	379.4	376.8	401.8	**4126.4**
INPUTS																
Retained Rainfall	RR	R*RRc	mm/month	166.77	150.03	166.41	121.68	98.46	86.04	54.09	54.54	44.82	79.56	107.19	119.16	**1248.75**
Effluent Irrigation	W	(QxD)/L	mm/month	210.6	190.2	210.6	203.8	210.6	203.8	210.6	210.6	203.8	210.6	203.8	210.6	**2479.2**
Inputs		RR+W	mm/month	377.3	340.2	377.0	325.5	309.0	289.8	264.7	265.1	248.6	290.1	311.0	329.7	**3728.0**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month		0.0	0.0	33.1	52.0	52.9	80.9	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-81.4	-30.7	33.1	18.8	0.9	28.0	-99.5	-153.8	-286.4	-297.7	-219.5	-240.1	**-203.1**
Cumulative Storage	M		mm	0.0	0.0	33.1	52.0	52.9	80.9	0.0	0.0	0.0	0.0	0.0	0.0	**218.8**
Maximum Bed Storage Depth for Area	BS		mm	**80.90**	Exceeds available storage in trench/bed based on nominated de					No, proceed to length calculation						

Total length based on nominated width	88.3	m
No. of beds	5	
Individual bed lengths	17.7	
Spacing of beds	1.5	
Width of LAA	12	
Application area	212	

Nutrient Balance

Site Address: 19 Orara Street, Nana Glen

Whitehead & Associates
Environmental Consultants

Please read the attached notes before using this spreadsheet.

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE = **505 m^2**

INPUT DATA [1]

Wastewater Loading			Nutrient Crop Uptake				
Hydraulic Load	720	L/Day	Crop N Uptake	250 kg/ha/yr	which equals	68	$mg/m^2/day$
Effluent N Concentration	60	mg/L	Crop P Uptake	25 kg/ha/yr	which equals	7	$mg/m^2/day$
% Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal	**Phosphorus Sorption**				
Total N Loss to Soil	8640	mg/day	P-sorption result	1171 mg/kg	which equals	16394	kg/ha
Remaining N Load after soil loss	34560	mg/day	Bulk Density	1.4 g/cm^2			
Effluent P Concentration	15	mg/L	Depth of Soil	1 m			
Design Life of System	50	yrs	% of Predicted P-sorp. [2]	0.75 Decimal			

METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer		
Nitrogen	505	m^2
Phosphorus	146	m^2

Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)		
Nominated LAA Size	505	m^2
Predicted N Export from LAA	-0.01	kg/year
Predicted P Export from LAA	-9.74	kg/year
Phosphorus Longevity for LAA	232	Years
Minimum Buffer Required for excess nutrient	0	m^2

PHOSPHORUS BALANCE

STEP 1: Using the nominated LAA Size

Nominated LAA Size	505	m^2				
Daily P Load	0.0108	kg/day	→	Phosphorus generated over life of system	197.1	kg
Daily Uptake	0.0034589	kg/day	→	Phosphorus vegetative uptake for life of system	0.125	kg/m^2
Measured p-sorption capacity	1.6394	kg/m^2				
Assumed p-sorption capacity	1.230	kg/m^2	→	Phosphorus adsorbed in 50 years	1.230	kg/m^2
Site P-sorption capacity	620.92	kg	→	Desired Annual P Application Rate	13.681	kg/year
				which equals	0.03748	kg/day
P-load to be sorbed	2.68	kg/year				

NOTES

[1]. Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as,

- *Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households*
- *Appropriate Peer Reviewed Papers*
- *EPA Guidelines for Effluent Irrigation*
- *USEPA Onsite Systems Manual.*

[2]. A multiplier, normally between 0.25 and 0.75, is used to estimate actual P-sorption under field conditions which is assumed to be less than laboratory estimates.

Nominated Area Water Balance & Storage Calculations

Site Address: 19 Orara Street, Nana Glen

Whitehead & Associates
Environmental Consultants

INPUT DATA

Design Wastewater Flow	Q	720	L/day
Daily DLR		12.0	mm/day
Crop Factor	C	0.6-0.8	unitless
Retained Rainfall Coefficient	RRc	0.9	untiless
Void Space Ratio	V	0.3	unitless
Rainfall Data	Nana Glen (Cowling Close) - Mean		
Evaporation Data	Coffs Harbour MO - Average		

Flow Allowance	120	l/p/d
Water Saving Fittngs	N	100%
No. of bedrooms	4	bdr
Occupancy	1.5	p/room

Nominated Land Application Area	67	sqm
Trench/Bed wetted thickness	0.1	m
Trench/Bed Width	1.2	m

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Median Rainfall	R	\	mm/month	185.3	166.7	184.9	135.2	109.4	95.6	60.1	60.6	49.8	88.4	119.1	132.4	**1371.4**
Average Evaporation	E	\	mm/month	192.2	156.8	148.8	114	86.8	69	77.5	105.4	135	164.3	171	192.2	**1606**
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	80	61	41	47	63	95	131	137	154	**1206.44**
Percolation	B	DLRxD	mm/month	372.0	336	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0	**4380.0**
Outputs		ET+B	mm/month	525.8	461.44	491.0	439.8	432.8	401.4	418.5	435.2	454.5	503.4	496.8	525.8	**5586.4**
INPUTS																
Retained Rainfall	RR	R*RRc	mm/month	166.77	150.03	166.41	121.68	98.46	86.04	54.09	54.54	44.82	79.56	107.19	119.16	**1248.75**
Effluent Irrigation	W	(QxD)/L	mm/month	333.1	300.9	333.1	322.4	333.1	322.4	333.1	333.1	322.4	333.1	322.4	333.1	**3922.4**
Inputs		RR+W	mm/month	499.9	450.9	499.5	444.1	431.6	408.4	387.2	387.7	367.2	412.7	429.6	452.3	**5171.1**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month		0.0	0.0	28.3	42.6	38.7	62.1	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-86.2	-35.0	28.3	14.2	-3.9	23.4	-104.3	-158.6	-291.0	-302.5	-224.1	-244.9	**-235.7**
Cumulative Storage	M		mm	0.0	0.0	28.3	42.6	38.7	62.1	0.0	0.0	0.0	0.0	0.0	0.0	**171.7**
Maximum Bed Storage Depth for Area	BS		mm	**62.12**	Exceeds available storage in trench/bed based on nominated de					No, proceed to length calculation						

Total length based on nominated width	55.8	m
No. of beds	3	
Individual bed lengths	18.6	
Spacing of beds	1.5	
Width of area	6.6	
Application area	123	

Nutrient Balance

Site Address:

19 Orara Street, Nana Glen

Whitehead & Associates
Environmental Consultants

Please read the attached notes before using this spreadsheet.

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE = 252 m^2

INPUT DATA [1]

Wastewater Loading			Nutrient Crop Uptake					
Hydraulic Load	720	L/Day	Crop N Uptake	250	kg/ha/yr	which equals	68	$mg/m^2/day$
Effluent N Concentration	30	mg/L	Crop P Uptake	25	kg/ha/yr	which equals	7	$mg/m^2/day$
% Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal	**Phosphorus Sorption**					
Total N Loss to Soil	4320	mg/day	P-sorption result	1171	mg/kg	which equals	16394	kg/ha
Remaining N Load after soil loss	17280	mg/day	Bulk Density	1.4	g/cm^2			
Effluent P Concentration	10	mg/L	Depth of Soil	1	m			
Design Life of System	50	yrs	% of Predicted P-sorp. [2]	0.75	Decimal			

METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer		
Nitrogen	252	m^2
Phosphorus	97	m^2

Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)		
Nominated LAA Size	252	m^2
Predicted N Export from LAA	0.00	kg/year
Predicted P Export from LAA	-4.21	kg/year
Phosphorus Longevity for LAA	155	Years
Minimum Buffer Required for excess nutrient	0	m^2

PHOSPHORUS BALANCE

STEP 1: Using the nominated LAA Size

Nominated LAA Size	**252.288**	m^2				
Daily P Load	0.0072	kg/day	→	Phosphorus generated over life of system	131.4	kg
Daily Uptake	0.001728	kg/day	→	Phosphorus vegetative uptake for life of system	0.125	kg/m^2
Measured p-sorption capacity	1.6394	kg/m^2				
Assumed p-sorption capacity	1.230	kg/m^2	→	Phosphorus adsorbed in 50 years	1.230	kg/m^2
Site P-sorption capacity	310.20	kg	→	Desired Annual P Application Rate	6.835	kg/year
				which equals	0.01873	kg/day
P-load to be sorbed	2.00	kg/year				

NOTES

[1]. Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as,

- *Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households*
- *Appropriate Peer Reviewed Papers*
- *EPA Guidelines for Effluent Irrigation*
- *USEPA Onsite Systems Manual.*

[2]. A multiplier, normally between 0.25 and 0.75, is used to estimate actual P-sorption under field conditions which is assumed to be less than laboratory estimates.

APPENDIX 6 – BUSH FIRE RISK ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

Land & Fire Assessments Pty Ltd

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BUSHFIRE ASSESSMENT

S.100B *RURAL FIRES ACT*

For Planning Proposal and Rural Residential Subdivision
19 Orara Street, Nana Glen, NSW

Prepared By: Paola Rickard
BPAD – Level 3 Accredited Practitioner – BPAD-21855
Land & Fire Assessments Pty Ltd

For: Mr Mark Rutledge
Report No: LFA20011
Date: 24 July 2020

BPAD
Bushfire
Planning & Design
Accredited Practitioner
Level 3

Disclaimer

Land & Fire Assessments Pty Ltd (LFA) have conducted work concerning the environmental status of the site, which is the subject of this report, and has prepared this report on the basis of that assessment. The work was conducted, and the report has been prepared, in response to specific instructions from the client or a representative of the client and in reliance on certain data and information made available to LFA. The analysis, evaluations, opinions and conclusions presented in this report are based on that information, and they could change if the information is in fact inaccurate or incomplete.

Due consideration has been given to site conditions and to appropriate legislation and documentation available at the time of preparation of the report. As these elements are liable to change over time, the report should be considered current at the time of preparation only. Should further information become available regarding the conditions at the site, LFA reserves the right to review the report in the context of the additional information. LFA has made no allowance to update this report and has not taken into account events occurring after the time its assessment was conducted.

This report is intended for the sole use of the client and only for the purpose for which it was prepared. Any representation contained in the report is made only to the client unless otherwise noted in the report. Any third party who relies on this report or on any representation contained in it does so at his or her own risk

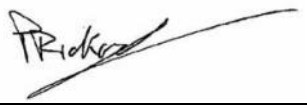
Revision List

Revision No.	Revision Date	Report Title	Report Author	Field Survey By	Status
00	20.07.20	Bushfire Assessment_s.100B *Rural Fires Act*_For Planning Proposal and Rural Residential Subdivision, 19 Orara Street, Nana Glen, NSW	Main Author: Paola Rickard (LFA - Senior Environmental Planner & BPAD – Level 3 Accredited Practitioner –no. BPAD 21855)	Paola Rickard undertaken on the 19.05.20	Draft
01	24.07.20				Final

Paola Rickard contact detail: 0427 809 352

TABLE OF CONTENTS

Summary Compliance Table

Site Details	Lot 1 DP 1163252 & Lot 1 DP 1210495, 19 Orara Street, Nana Glen, NSW; Coffs Harbour City Council LGA
Proposal	Planning Proposal (change to the Minimum Lot Size from 2 ha to 8,000m^2) and six lots rural Residential Subdivision (as per Fig. 4 proposed subdivision)
Bushfire Prone Land Map	Category 1 & Vegetation Buffer - see Fig. 1
Planning context	s. 4.46 of the *Environmental Planning and Assessment Act 1979* and s. 100B of the *Rural Fires Act 1997; section 9.1(2) of the Environmental Planning and Assessment Act 1979 - Directions (specifically Direction 4.4 Planning for Bushfire Protection)*
Bushfire planning guideline and relevant chapter	Planning for Bushfire Protection 2019 (PBP) Chapter 5 - Residential and Rural Subdivision; s. 4.4.1 Consideration of bush fire issues; Appendix 1
Application complies with 'Deemed - to Satisfy' (DtS) provisions	Yes, all DtS provisions met
Consultation with RFS Commissioner	Required under direction 4.4 and for issuing of Bush Fire Safety Authority
Compliance statement	This Assessment demonstrated that the proposed Planning Proposal and six lots rural Residential Subdivision complies with the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures in accordance with PBP
Full Name of Accredited Practitioner	Paola Rickard - Land & Fire Assessments Pty Ltd
Qualification	BPAD – Level 3 Accredited Practitioner - Accreditation no. BPAD-21855, valid to 2/08/2020
Date	20 July 2020
Signature	

1. Introduction

1.1 Background & Planning Context

This Bushfire Assessment report has been prepared by Land & Fire Assessments Pty Ltd (LFA) in accordance with the relevant provisions of Planning for Bushfire Protection (PBP) 2019 in its entirety and the development complies with all relevant Acceptable Solutions in this version of PBP. This assessment has been prepared on behalf of Mr Mark Rutledge to support **Planning Proposal and six lots Rural Residential Subdivision of Lot 1 DP 1163252 & Lot 1 DP 1210495, 19 Orara Street, Nana Glen, NSW**. The site is shown on Figs. 1 & 2. Nana Glen is located in the Coffs Harbour City Council (CHCC) Local Government Area approximately 30 km north west of Coffs Harbour.

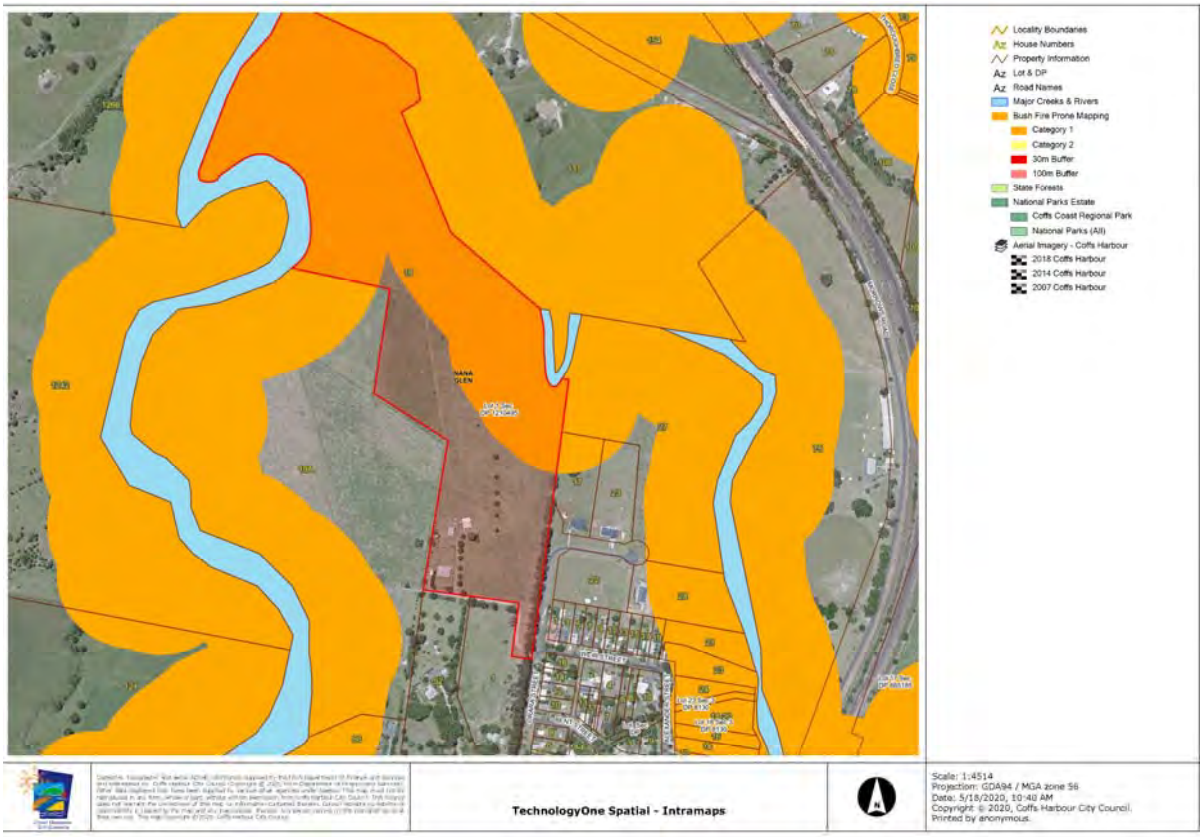


Figure 1. The site (i.e. red shading) & Bushfire prone land as applicable to 19 Orara Street Nana Glen, NSW

The proposal applies to the southern portion of the land only, which is zoned R5 - Large Lot Residential in the Coffs Harbour Local Environmental Plan 2013. The rest of the property is zoned E2 - Environmental Conservation and RU2 – Rural Landscape (refer to Fig. 3). Concerning the portion of the site zoned R5 – Large Lot Residential, it is proposed to retain the same zoning, but instead to change the current Minimum Lot Size from 2 hectares to 8,000m^2 to allow a 6-lot subdivision on the land shown on Fig. 1. The proposal area is only marginally affected to the north east by the Bush Fire Prone Land mapping, as shown on Fig. 1. Nevertheless, the proposal triggers the need to address the bushfire planning provisions.

Although, the Site is already zoned for residential use, the change in lot size will require the submission of a Planning Proposal. Notably, PBP 2019 requires consideration of bushfire issues, as detailed in s. 4.4.1, when preparing a draft LEP or planning proposal. The emphasis is on early consultation and inclusion of a bushfire assessment that demonstrate compliance with the s.9.1(2) Directions (specifically Direction 4.4 Planning for Bushfire Protection) and PBP. Accordingly, an initial pre-submission brief concerning the Planning Proposal and subdivision was sent on the 9 June 2020 to the Rural Fire Service (RFS) Customer Service Centre - Coffs Harbour. The RFS response was received on

the 9 July 2020 and it is outlined in s.1.3 of this report.

The Minister for Planning, under section 9.1(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) issues directions that relevant planning authorities (such as local councils) must follow when preparing planning proposals for new Local Environmental Plans (LEP) and amending LEPs. Direction 4.4 Planning for Bushfire Protection identifies matters for consideration for rezoning that will affect, or are in proximity to land mapped as bush fire prone.

The key principle is to ensure that future development is capable of complying with PBP. To achieve this, it is necessary to undertake a constraint assessment of the Site to identify potential bush fire risks to the individual site and proposed forms of development. The assessment requirements are detailed in s. 4.4.1 of PBP 2019. These measures, summarised below, will be evaluated for compliance in this assessment (as well as the feedback received from the RFS – see s.1.3):

1. Assessment of the suitability of the land for the proposed development given the bush fire risk and existing land uses
2. The proposal must demonstrate that the required APZs can be met on the development site and that the road network can support evacuation demands numbers in the event of an emergency.
3. It is important that new development does not increase the level of bush fire risk to the existing community. A traffic report prepared by a suitably qualified traffic consultant may be required in circumstances where issues relating to access/egress are identified.
4. In addition to the review of any layout designs, consideration must also be given to the LEP provisions relating to minimum lot sizes to ensure appropriate APZs can be accommodated within future subdivisions.

Under s. 4.46 of the *Environmental Planning and Assessment Act 1979* and s. 100B of the *Rural Fires Act 1997* a **Bushfire Safety Authority (BFSA)** is required from the Commissioner of the NSW Rural Fire Service (RFS) for the following reasons:

- The Site contains land designated as 'Category 1 & Buffer' on Council's Bushfire Prone Land Map, hence the site occurs on bushfire prone land; and
- Development proposed for the Site is considered a 'high risk' development as it involves a rural subdivision.

Clause 44 of the *Rural Fires Regulation 2013* specifies the points to be considered in preparing an application for a Bush Fire Safety Authority (BFSA). In addition, PBP 2019 states that it must be demonstrated that the proposal satisfies the broad aim and objective of PBP, the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures (BPMs).

Chapter 5 of PBP sets the specific objectives, and the specifications and requirements for Bushfire Protection Measures for Residential and Rural Subdivision Development. These measures, summarised below, will be assessed for compliance in this assessment:

- Asset Protection Zones/Bushfire Attack Level;
- Access;
- Services; and
- Landscaping and Maintenance

Furthermore, address of Direction 4.4 Planning for Bushfire Protection is undertaken in s.3 of this report.

Figure 2. The site and the proposal area (blue circle) within the locality context. Source: https://maps.six.nsw.gov.au/

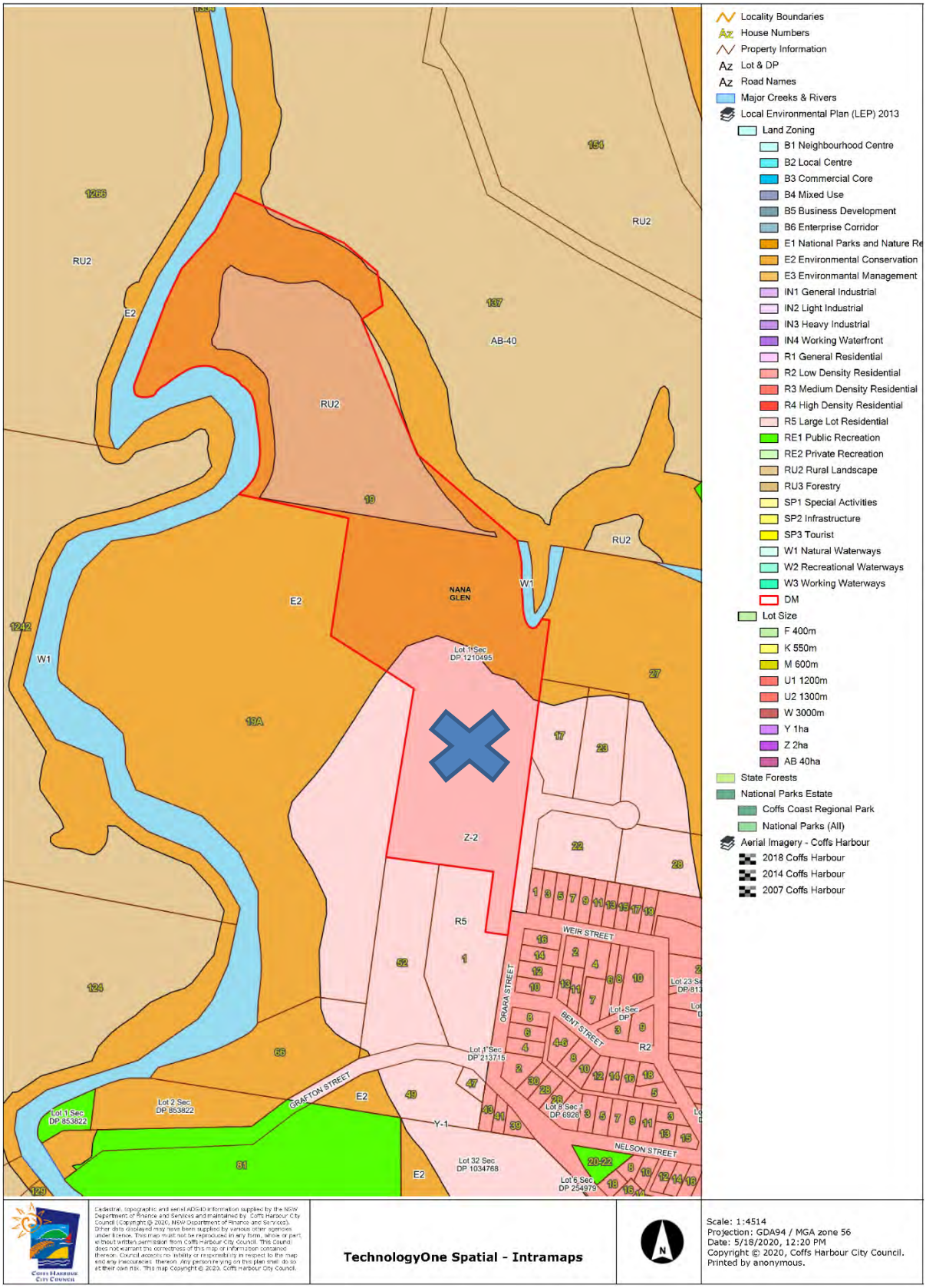


Figure 3. Land zoning applicable to the site (red boundary). The proposal applies to the southern portion of the land only (marked by X), which is zoned R5 - Large Lot Residential (Z-2)

1.2 The Subject Site

The land, which is approx. 19.15 ha in size, is located at 19 Orara Street and has direct access to the street. The land in context with the locality is shown on Fig. 2. It entails a large grazing property and includes an existing dwelling (to be retained). The land is bounded by Bucca Bucca Creek along the northern and north eastern boundaries, by the Orara River along the north western boundary and large grazing properties to the north, north east, west and south west. To the south east are large lot and medium density residential properties. Concerning the proposal area (i.e. the Subject Site), it is surrounded by grazing properties and to the east and south east by residential development. The land and the Subject Site are cleared and flat, as shown on Figs. 1, 2 & 5 and Plates 1-5. To the north east of the proposal area is the Wet Sclerophyll Forest (i.e. Forest vegetation formation) along Bucca Bucca Creek and a planted single row and wide spaced windbreak is found along the eastern boundary.

Plate 1. looking SE at entry to site, planted single row and wide spaced windbreak along the eastern boundary

Plate 2. Looking SE towards neighbouring residential lots

Plate 3. Looking north across the planning proposal area (the Subject Site)

Plate 4. Looking NE at the Wet Sclerophyll Forest occurring along Bucca Bucca Creek. The proposed subdivision northern boundary corresponds approx. to the fence in the foreground. The Grassland beyond is zoned E2 despite the fact that it is part of the same grazing property

Plate 5. Looking NW to the rest of the property which will entail the residue. The land on the foreground is zoned E2, whilst that in the background up to the tree line is zoned RU2

As noted, a weatherboard dwelling with steel roof is found on the land (Plate 6) and it will be retained within proposed lot 1. The dwelling will require some upgrades to improve protection.

Plate 6. Weatherboard dwelling found on site

The existing driveway access to the dwelling and neighbouring Lot 2 DP1163252, shown on Plates 7-9 consists of an unsealed all-weather access. This access which is an existing Right Of Carriageway to Lot 2 DP 1163252 will be retained. The access driveway leads to the public road networks at the intersection with Orara Street, Rivendell Mews and Weir Street (Plates 10-14). As part of the proposed subdivision, Rivendell Mews will be extended (Plate 14). Orara Street and Rivendell Mews consist of 6m wide carriageways within a 20m wide road reserve. Weir Street consists of a 5.5m wide carriageway within a 20m wide road reserve.

Plate 7. Looking east along existing access road and Right Of Carriageway to Lot 2 DP1163252

Plate 8. Looking south east along existing access road towards entry points to Orara Street

Plate 9. Looking west at the entry point from Orara Street. This access which is an existing Right Of Carriageway to Lot 2 DP 1163252 will be retained

Plate 10. Looking east from entry point at intersection with Orara Street (to the right), Rivendell Mews (to the left) and Weir Street

Plate 11. Looking north along Rivendell Mews. Proposal site to the left. Note single row and wide spaced windbreak

Plate 12. Looking south along Orara Street

Plate 13. Looking north further along Rivendell Mews. Proposal site to the left

Plate 14. Looking north at point where Rivendell Mews will be extended as part of the subdivision proposal (see Fig. 4)

1.3 Proposed Development & RFS Pre-Submission Feedback

The proposed development entails a Planning Proposal to amend the minimum lot size from 2 ha to 0.8 ha. It is also proposed to subdivide the land into six lots, as shown on Fig. 4. The proposal applies to the southern portion of the land (see Figs. 2 & 3) only, which is zoned R5 - Large Lot Residential. The rest of the property is zoned E2- Environmental Conservation and RU2 – Rural Landscape. Specifically, proposed lots 1-5, which will be at a minimum 8,000 m^2 in size and proposed lot 6 (the residue), which will be 14.94 ha in size and included an 8,619m^2 portion of R5 zoned land. The existing dwelling and shed are to be retained in proposed lot 1. Agricultural landuse (eg. grazing) will be retained for the residue lot 6. According to Mr Mark Rutledge the residue is large enough to be viable as a grazing property (with a future residential dwelling). It is unclear why this otherwise cleared grazing land was split with an E2 zoning in the middle of the allotment.

As part of the proposed subdivision, minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site will be require. Native trees on the site that may be removed include planted Mountain Blue Gum (*Eucalyptus deani*) and Cadaghi (*Corymbia torelliana*) which are not endemic to the area. Specifically, a number of Cadaghi and Mountain Blue Gum are likely to be impact by the construction of the cul de sac extension of Rivendell Mews (Plate 14) as well as two driveway entry points to proposed lots 1 & 3 from Rivendell Mews. According to GeoLINK (2020), the proposed development impacts entails '*Minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. (…) These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised*.'

As noted in s.1.1, an initial pre-submission brief concerning the Planning Proposal and subdivision was sent on the 9 June 2020 to the Rural Fire Service (RFS) Customer Service Centre - Coffs Harbour. The response by Alan Bawden [RFS Team Leader - Development Assessment and Planning - Planning and Environment Services (North)], which was received on the 9 July 2020, is as follows:

> The NSW RFS has received and reviewed your email and attached document.
>
> In response the NSW RFS provides the following comment
> 1. future subdivision to comply with PBP19
> 2. any DA must provide a discussion on the existing formation Orara and Weir Streets
> 3. new works for Orara street to comply with PBP19 including upgrading of existing public road formations
> 4. existing access arrangements to lot 2 DP1163252
>
> In summary the planning proposal needs to address any roadside vegetation and impact road formation works will impact on remnant trees.

The RFS comments will be addressed specifically in s. 2. With regard to Lot 2 DP 1163252, access to this lot will be from the Right Of Carriageway 8m wide, shown as 'C' on the concept subdivision plan (Fig. 4). There is already an unsealed road which is located on this Right Of Carriageway, which services the dwelling located on that lot.

1.4 Site & Surrounding Vegetation, Topography and Slope

A Biodiversity Assessment to evaluate the biodiversity values of the proposal has been undertaken by GeoLINK (2020). As noted in s. 1.2 and shown on Figs. 1, 2 & 5 and Plates 1-5, the land and the Planning Proposal area is cleared and used for grazing with few scattered trees and landscaping around the

existing dwelling. Following is GeoLINK (2020) description of the vegetation present within the Subject Site:

> It is dominated by introduced pasture grasses including Kikuyu (*Cenchrus clandestinus*), Narrow-leaved Carpet Grass (*Axonopus fissifolius*) and African Parramatta Grass (*Sporobolus africanus*).
>
> Woody vegetation at the site includes isolated planted paddock trees comprising 12 Pecan trees (*Carya illinoinensis*) and six Camphor Laurel (*Cinnamomum camphora*) predominantly within areas outside of the subject site.
>
> Vegetation within the subject site includes two isolated planted Hoop Pine (*Araucaria cunninghamii*), a Mulberry Tree (*Morus sp.*) and two rows of planted Liquid Amber (*Liquidambar styraciflua*). A planted windrow extends along the eastern boundary of the subject site comprising six Hoop Pines, seven Cadaghi (*Corymbia torelliana*) and ~30 Large Mountain Blue Gum (*Eucalyptus deani*) (all >50 cm dbh).
>
> Native vines/understorey species within this windrow include Common Silkpod (*Parsonsia straminea*), Cockspur Thorn (*Maclura cochinchinensis*) and Blady Grass (*Imperata cylindrica*).
>
> The northern portion of the site, occurring outside the proposal footprint is bordered by the Orara River and Bucca Bucca Creek which are mapped by Coffs Harbour Council as comprising the following two native vegetation communities:
>
> - Orara River: *CH_FrW07 - River Oak Riparian Forest of the Orara River Valley*
> - Bucca Bucca Creek: *CH_WSF01 - Coast and Hinterland Riparian Flooded Gum Bangalow Palm Wet Forest.*

The vegetation to the north east of the proposal area along Bucca Bucca Creek is classified by Keith (2004) as the North Coast Wet Sclerophyll Forest, which correspond to the Forest vegetation formation in PBP 2020. Therefore, the potential bushfire hazard vegetation within the assessment area include the Forest vegetation along Bucca Bucca Creek and Grassland as shown on Fig. 5.

Normally, the Forest vegetation would be considered the Classified vegetation and the slope under the classified vegetation would be used to determined required Asset protection Zones (APZs) or setbacks. However, in this case the Forest vegetation entails a very small portion of the assessment area (approximately 80m away from the closest proposed lot boundary, namely lot 5). **However, the vegetation, which will most significantly influence the bushfire behaviour for each aspect, is the Grassland vegetation. Similarly, the effective slope is that under the vegetation which will most significantly influence the bushfire behaviour**.

The planted single row and wide spaced windbreak along the eastern boundary, and the managed land within the surrounding residential development to the east and south are all considered to be vegetation regarded as low threat; therefore, are excluded from the determination of the Bushfire Attack Level (BAL). The site assessment overview and slope analysis are detailed on Fig. 5 and further slope analysis is shown in Appendix A. The Subject Site elevation range from 85m AHD to the south east to 68m to the north east and 74m AHD to the north west.

Thus, the **Classified vegetation is Grassland on a slope range of 0-5^0**, as shown on Fig. 5.

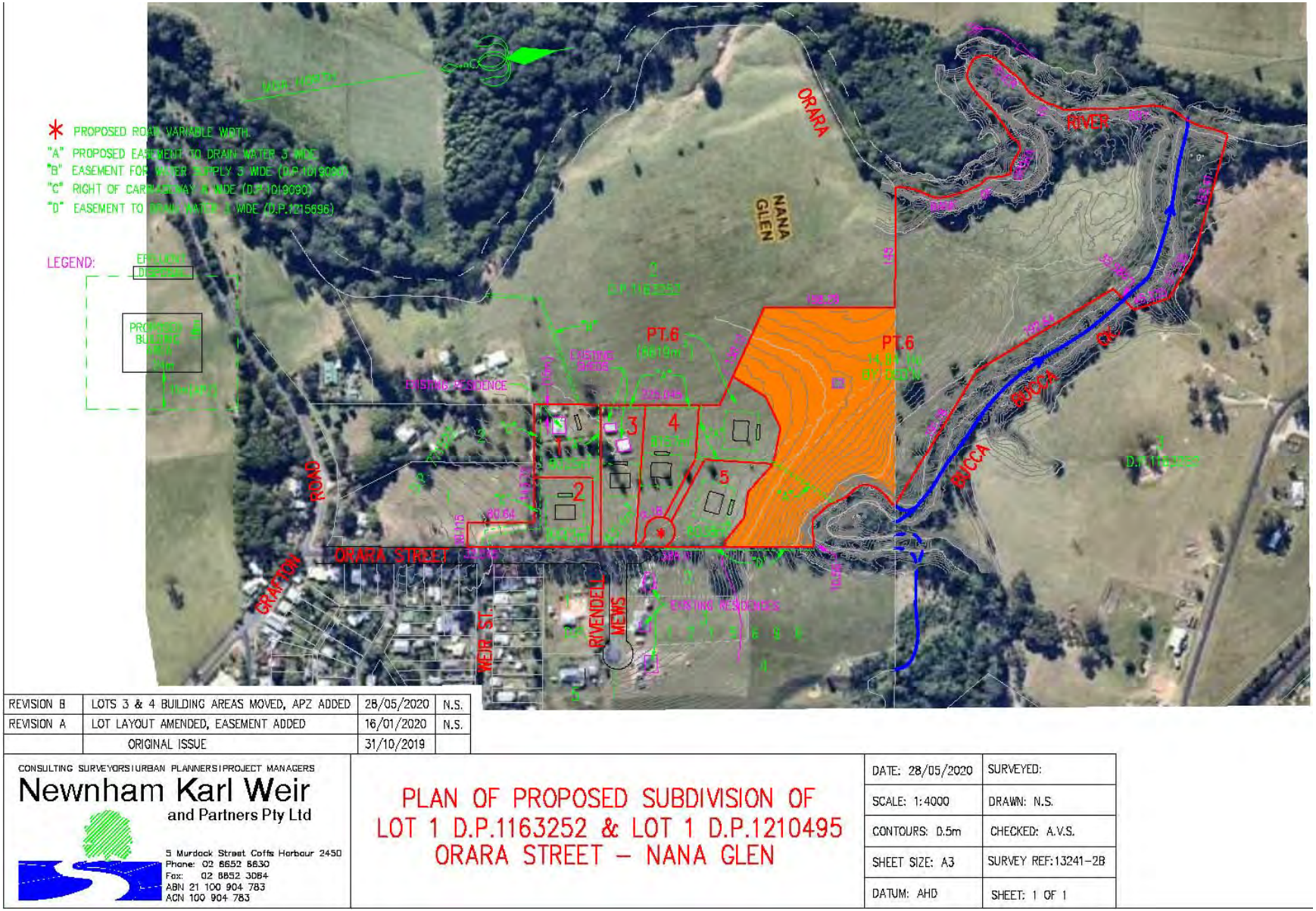


Figure 4. Proposed subdivision

Figure 5. Site assessment area, vegetation and managed land and slope analysis using Nikon Laser Rangefinder (refer to Appendix A for slope analysis using 2m contours intervals). Source: CHCC Intramaps

1.5. Risk Assessment and Consultant Qualifications

The proposed development Site is surrounded by predominantly cleared land (Grassland used for grazing) and large lots residential development. Therefore, the potential bushfire hazard is considered to be a low bushfire risk.

This report has been prepared by Paola Rickard.

The Fire Protection Association Australia (FPA) has in place the Bushfire Planning and Design Accreditation Scheme (BPAD), which is recognised by the NSW Rural Fires Services (RFS). Paola Rickard is a **BPAD - Level 3 Accredited Practitioner** (Accreditation no. BPAD 21855) and is listed on the FPA Australia web site register.

BPAD- Level 3 Accredited Practitioner can perform the following:

- *BPAD- Level 3 Accredited Practitioner meet specific requirements in relation to identifying bushfire prone land, assessing potential bushfire impact, and submitting designs and plans, both deemed to satisfy and alternate solution, to meet the performance requirements of the Building Code of Australia and the specific state or territory legislation, for subdivisions, new buildings or modification to existing buildings aiming to minimise the risk to future developments, their occupants and responding emergency services from a bushfire event.*

Paola holds a **Graduate Diploma in Design for Bush Fire Prone Areas with Distinction** from the University of Western Sydney and is a **bronze corporate member of the Fire Protection Association Australia (FPA Australia)**. She is a participating **member of the FPA Technical Advisory Committee (TAC) /20 Bushfire Safety**. The TAC provides a nationally focussed forum for discussion between practitioners, fire services and regulators on the design and construction of property in areas prone to bushfires.

From 2015 to 2019, Paola was appointed as a **BPAD member to the NSW Bushfire Working Group (NSWBWG)** set up by FPA Australia. The NSWBWG provide a forum to discuss the application, interpretation and periodic review of NSW Government-based bushfire related regulatory requirements governing land use planning and building construction in areas subject to bushfire impact.

Paola also holds a **Bachelor Degree in Applied Science, a Certificate in Bushland Regeneration**, and is a member of the **Australian Association Bush Regenerators**. She has over 18 years of experience in flora surveys and vegetation management issues, and **has been undertaking bushfire assessments since 2003.**

Paola has attended the "NSW Consulting Planners Bushfire Training Course" in Sydney in 2003 and has attended the "Planning for Bushfire Protection Short Course" held by the University of Technologies (UTS) Sydney in 2007. She has obtained certification for the short course. In November 2010, Paola attended the "One-day Planning for Bushfire Prone Areas Update Course" conducted by the Centre for Local Government UTS, Sydney. Additionally, Paola has a 'Basic Bush Fire Awareness' certificate and has experience in fire control and planning while living on a rural land sharing community.

2. Bushfire Protection Measures for Residential Subdivision

2.1 Introduction

Bushfire Protection Measures for Residential and Rural Subdivision are detailed in Chapter 5 of PBP 2019. The specific objectives for 'residential and rural residential subdivision development' are:

- *Minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks, should be avoided);*
- *Minimise vegetated corridors that permit the passage of bush fire towards buildings;*
- *Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;*
- *Ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanism;*
- *Ensure the ongoing maintenance of APZs;*
- *provide adequate access from all properties to the wider road network for residents and emergency services;*
- *provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and*
- *Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.*

Additionally, PBP identifies the performance criteria and acceptable solutions for the various proposed Bushfire Protection Measures (BPMs). The relevant BPMs criteria and acceptable solutions with regard to residential and rural residential subdivision development are outlined in Sections 2.2 to 2.4 of this report.

2.2 Asset Protection Zones/Bushfire Attack Level

Asset Protection Zones (APZs) are buffer areas between development and a fire hazard, which aim to protect human life and property. The APZ comprises an Inner Protection Area (IPA) and an Outer Protection Area (OPA). These areas are to be managed to reduce the bushfire hazard. Appendix B provides guidance concerning the general requirements for APZs and appropriate landscaping and property maintenance.

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

At the subdivision level it is required to demonstrate that proposed dwellings can be accommodated so that potential building footprint is not exposed to radiant heat levels exceeding 29kW/m^2 for each proposed lot.

According to Table A1.12.3 of PBP 2019 for residential subdivisions the minimum APZ distances are calculated to achieve a radiant heat of no more than 29kW/m^2 (i.e. BAL-29). In this case the setbacks (APZs) requirements are 11m from each of the elevations (i.e. to east, west, north & south) of the proposed dwelling envelopes. The 11 m APZ will also apply to each of the elevations of the existing dwelling (refer to Fig. 4 which shows this is achievable).

Therefore, **11m setbacks (or APZ) will be required surrounding each dwelling**. **The proposed subdivision layout shown in Fig. 4 demonstrate that such APZs are easily met**. Such setbacks would achieve BAL-29 and thus meet this key requirement for subdivisions.

In summary, the proposed development is capable of complying with the APZ requirements set in Appendix 4 of PBP 2019. Guidance concerning the general requirements for APZs and appropriate landscaping and property maintenance is provided in Appendix B of this report.

Consideration of specific construction standards applicable to the proposal are not required at the subdivision application stage. As noted, the key requirement is to ensure that future dwellings can be accommodated so that a potential building footprint is not exposed to radiant heat levels exceeding 29kW/m^2. This proposal can easily achieve such requirement.

Concerning the existing dwelling, s. 5.1.3 of PBP notes that existing dwellings located on the land would benefit from improved bushfire protection measures. The existing dwelling will require some upgrades to improve protection, including non-combustible screens to all openable windows and enclosing the underfloor where less than 400m above finished ground level with non-combustible material. Also, timber balustrade and timber steps are in part requiring repairs and are combustible which does not meet the BAL-29 requirements. Static water supply will also need to be provided (discussed in s. 2.4). In any case, any upgrades would be conditionals on receiving approval for the subdivisions and would not be required to be implemented until the Construction Certificate stage.

2.3 Access

The provision of PBP 2019 specify the following criteria concerning access provisions, namely:

- Performance Criteria: to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area

The proposed subdivision layout is to ensure that compliance with the access requirements can be achieved. Perimeter roads are not mandated for rural subdivisions; however, all subdivisions of more than 3 allotments need to have more than one access in and out of the development. The current layout provides direct access to the public road for all the proposed lots.

As noted in s. 1.2, the current driveway access to the existing dwelling and to neighbouring Lot 2 DP1163252, shown on Plates 7-9, consists of an unsealed all-weather access. This access, which is an existing Right Of Carriageway to Lot 2 DP 1163252 within an 8m wide easement, will be retained. The access is well formed and ~4m in width or more and on a flat gradient.

The access driveway leads to the public road networks at the intersection with Orara Street, Rivendell Mews and Weir Street (Plates 10-14). As part of the proposed subdivision, Rivendell Mews will be extended (Plate 14). Orara Street and Rivendell Mews consist of 6m wide carriageways within a 20m wide road reserve. Weir Street consists of a 5.5m wide carriageway within a 20m wide road reserve. Notably, according to table 5.3b (PBP 2019) non-perimeter roads such as Orara Street, Rivendell Mews and Weir Street need to be a minimum 5.5 carriageway width kerb to kerb; thus, these public roads, meet such requirement. The proposed extension of Rivendell Mews, will entail the construction of 12m outer radius turning circle (see Fig. 4) since it will be a dead-end road. Notably, the Rivendell Mews dead end will be approx. 180m from the intersection with Orara Street and Weir Street, which are both through public roads. Although a dead end, such extension meets the requirements of PBP by being no more that 200m in length from a through public road and incorporating the required 12m outer radius turning circle.

In summary, the proposed layout (see Fig. 4) indicates that following provisions can be complied with:

- Direct access to the public road for all the proposed lots is provided. The existing Right Of Carriageway to Lot 2 DP 1163252 within an 8m wide easement (shown as 'C' on the concept subdivision plan - Fig. 4) will be retained.
- 4m carriageway minimum, two-wheeled drive and all-weather roads for property access driveways and suitable turning areas can be provided for each proposed dwelling.

- Suitable access for category 1 fire appliance within 4m of static water supply (see s. 2.4) can be provided for each future dwelling.
- Minimum vertical clearance of 4 m to any overhanging obstructions (applies to both property access and Rivendell Mews extension) can be met.
- PBP requires all roads to be through roads. However, when this is not achievable as per Rivendell Mews the following is allowable and can be implemented:
    - dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end. The proposal layout (Fig. 4) ensure that the turning circle dimensions and the 200m maximum distance can be complied with the Rivendell Mews extension.

2.4 Water, Gas and Electricity Supply

Intent of measures: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

Reticulated water infrastructure does not service this property or the new developments at Rivendell Mews past the intersection with Weir Street. Provision of water supply for the proposed future lots will need to comply with the acceptable solution detailed on Table 1 applicable to non-reticulated developments, including the provision of Static Water Supply with a capacity of 10,000 L/lot including the existing dwelling. In terms of electrical transmission lines, existing supply is overhead, and if reticulated or bottled gas is provided it will comply with the relevant requirements stated in Table 1.

Table 1. Performance criteria and Acceptable Solutions for water, gas and electricity supply (as per Table 5.3c PBP 2019)

Performance Criteria	Acceptable Solutions
• Adequate water supply is provided for firefighting purposes • water supplies are located at regular intervals • the water supply is accessible and reliable for firefighting operations • flows and pressure are appropriate • the integrity of the water supply is maintained	• reticulated water is to be provided to the development where available. • A static water and hydrant supply is provided for non- reticulated development or where reticulated water supply cannot be guaranteed; and • Static water supply shall comply with table 5.3d. ***Note: for this proposal that equates to 10,000 L/lot including the existing dwelling*** • fire hydrant spacing, design and sizing comply with the relevant clauses of Australian Standard AS 2419.1:2005; • hydrants are not located within any road carriageway; • reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads. • fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005 • all above-ground water service pipes are metal, including and up to any taps.
Electricity Services Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.	• Where practicable, electrical transmission lines are underground. • Where overhead electrical transmission lines are proposed: o lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; o no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.

Performance Criteria	Acceptable Solutions
Gas Services Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• Reticulated or bottled is installed and maintained in accordance with AS/NZS 1596:2014 *-the storage and handling of LP Gas*, the requirements of relevant authorities, and metal piping is used; • All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side; • connections to and from gas cylinders are metal; • polymer-sheathed flexible gas supply lines are not used; and • above-ground gas service pipes are metal, including and up to any outlets.

3. Address of Direction 4.4 Planning for Bushfire Protection

The RFS practice note '2/12 - Planning Instruments and Policies' requires that the following be addressed to support a Planning Proposal.

Part 1 – Objectives or Intended Outcomes relating to bush fire prone land that is:
Protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and encourage sound management of bush fire prone areas.

Response: The proposed minimum lot size reduction from 2ha to 0.8ha is a compatible landuse on this land as the Site occurs in proximity to rural residential development allotments of similar size. The proposed development Site is surrounded by predominantly cleared land (Grassland) and large to medium lots residential development. The Site is currently grazed and the agricultural landuse (eg. grazing) would be retained for the residue lot 6. The residue is almost 15ha in size and deemed to be viable as a grazing property (with a future residential dwelling). Therefore, the potential bushfire hazard is considered to be a low bushfire risk.

Part 2 – Explanation of the Provisions - The identified objectives can be achieved by ensuring that new controls imposed on development will:

- *not increase the risk to life from bush fire,*
  Response: The proposal will not increase the risk to life from bushfire as adequate controls can be implemented in the subdivision design to minimise such risk.

- *not introduce controls that place inappropriate developments in areas exposed to unacceptable bush fire hazard,*
  Response: As noted previously, the proposal is surrounded by predominantly cleared land (Grassland) and medium to large lots residential development. Potential Grassland vegetation hazard occur on generally level floodplain paddocks, which are used for grazing purposes, and the agricultural landuse (eg. grazing) would be retained for the residue lot 6. The proposed development area is only marginally affected to the north east by the Bush Fire Prone Land 'Buffer', as shown on Fig. 1. Accordingly, the development will not be exposed to unacceptable bush fire hazard.

- *ensure that appropriate bush fire protection measures can be afforded to property at risk of bushfire,*
  Response: Appropriate bushfire protection measures can be accommodated at the proposal Site as demonstrated in s. 2.

- *minimise negative impacts on the surrounding environment,*
  Response: The proposed subdivision development occurs on predominantly cleared land with no native vegetation of significance remaining. According to GeoLINK (2020), the proposed development impacts entails '*Minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. (…) These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised.*'

- *ensure that provision is made for adequate evacuation/shelter options for the community,*
  Response: The proposed six lots subdivision does not increase the potential bushfire risk and thus existing measures are already in place at the locality level.

- *and ensure that development is capable of complying with Planning for Bush Fire Protection 2006 (PBP).*
  Response: The development is capable of complying with the relevant Residential and Rural Residential provisions detailed in Chapter 5 of PBP 2019 as demonstrated in s. 2. Notably, PBP 2019 is the currently legislated document, and it provides updated and more robust provisions than those detailed in PBP 2006.

Part 3 – Justification - The level of justification should be proportionate to the impact that the planning proposal will have.

Response: The proposed change in minimum lot size will not have an undue impact on the locality in terms of bushfire risk. This assessment has found that the proposal can comply with the Direction 4.4 Planning for Bushfire Protection and is capable of complying with PBP.

4. Recommendations & Compliance

This Bushfire Assessment report has been prepared by LFA in accordance with the relevant provisions of PBP 2019 on behalf of Mr Mark Rutledge to support **Planning Proposal and six lots rural Residential Subdivision of Lot 1 DP 1163252 & Lot 1 DP 1210495, 19 Orara Street, Nana Glen, NSW.**

Specifically, this assessment reviewed suitability of the Site for landuse intensification and the proposed subdivision application. As part of the proposed subdivision, minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site will be require. According to GeoLINK (2020), 'These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised.'

Direction 4.4 Planning for Bushfire Protection identifies matters for consideration for landuse intensification proposals that will affect, or are in proximity to land mapped as bush fire prone.

A key principle should be to ensure that future development is capable of complying with PBP. To achieve this, it is necessary to undertake a constraint assessment of the Site in respect to bushfire to identify potential bush fire risks to the proposed forms of development (i.e. reduction of minimum lot size from 2ha to 0.8ha and associated six lots subdivision).

Thus, this bushfire assessment found that the proposal:

- will not increase the risk to life from bush fire;
- will not introduce controls that place inappropriate developments in areas exposed to unacceptable bush fire hazard;
- can provide for appropriate bush fire protection measures to properties at risk of bushfire;
- does not have adverse impacts on the surrounding environment;
- does not place additional burden to current evacuation/shelter options for the community; and
- the proposed development is capable of complying with Planning for Bush Fire Protection.

An initial pre-submission brief concerning the Planning Proposal and subdivision was sent on the 9 June 2020 to the RFS Customer Service Centre - Coffs Harbour. The response by the RFS indicated that apart from the requirement that future subdivision comply with PBP19, further detail had to be provided concerning the exiting road network and proposed public road extension, the existing access arrangement to lot 2 DP1163252 and the potential impacts on road side vegetation.

The RFS comments where addressed specifically in s. 2 and the following was found to apply to the proposed subdivision:

- The assessment found that the **applicable bushfire protection measures and acceptable solutions as they apply to the proposed subdivision can be met and the following is noted:**
    - According to Table A1.12.3 of PBP 2019 for residential subdivisions the minimum APZ distances are calculated to achieve a radiant heat of no more than 29kW/m^2 (i.e. BAL-29). In this case the setbacks (APZs) requirements are 11m from each of the elevations (i.e. to east, west, north & south) of the proposed dwelling envelopes. The 11 m setback will also apply to each of the elevations of the existing dwelling. The proposed layout (see Fig. 4) demonstrates compliance with the APZ requirements.
    - Concerning the existing dwelling, it would benefit from improved bushfire protection measures. Static water supply (10,000 L in capacity) will also need to be provided. In any case, any upgrades would be conditionals on receiving approval for the subdivisions and would not be required to be implement until the Construction Certificate stage.

- Direct access to the public road for all the proposed lots is provided. The existing Right Of Carriageway 8m wide, shown as 'C' on the concept subdivision plan (Fig. 4) to Lot 2 DP 1163252 will be retained.
- As part of the proposed subdivision, Rivendell Mews will be extended. Orara Street and Rivendell Mews consist of 6m wide carriageways within a 20m wide road reserve. Weir Street consists of a 5.5m wide carriageway within a 20m wide road reserve. Notably, according to table 5.3b (PBP 2019) non-perimeter roads such as Orara Street, Rivendell Mews and Weir Street need to be a minimum 5.5m carriageway width kerb to kerb; thus, these public roads, meet such requirement.
- The proposed extension of Rivendell Mews, will entail the construction of 12m outer radius turning circle (see Fig. 4) since it will be a dead-end road. Notably, the Rivendell Mews dead end will be approx. 180m from the intersection with Orara Street and Weir Street, which are both through public roads. Although a dead end, such extension meets the requirements of PBP by being no more that 200m in length from a through public road and incorporating the required 12m outer radius turning circle.
- Reticulated water infrastructure does not service this property or the new developments at Rivendell Mews past the intersection with Weir Street. Provision of water supply for the proposed future lots including the existing dwelling will need to comply with the acceptable solution detailed on Table 1 applicable to non- reticulated developments, including the provision of Static Water Supply with a capacity of 10,000L/lot. In terms of electrical transmission lines, existing supply is overhead, and if reticulated or bottled gas is provided it will comply with the relevant requirements stated in Table 1.

In conclusion, this Assessment demonstrates that the proposed **Planning Proposal and six lots rural Residential Subdivision complies with the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures in accordance with PBP**.

Therefore, a Bushfire Safety Authority is respectfully requested from the Commissioner of the NSW Rural Fire Service (RFS).

References

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Appendices

Appendix A - Detailed Slope Calculation

Figure A1. Detailed slope calculations using the 2m contour intervals for wet sclerophyll forest to the NE of proposal- the laser range finder confirmed the slope range to be 19-20 degrees for the vegetated slope

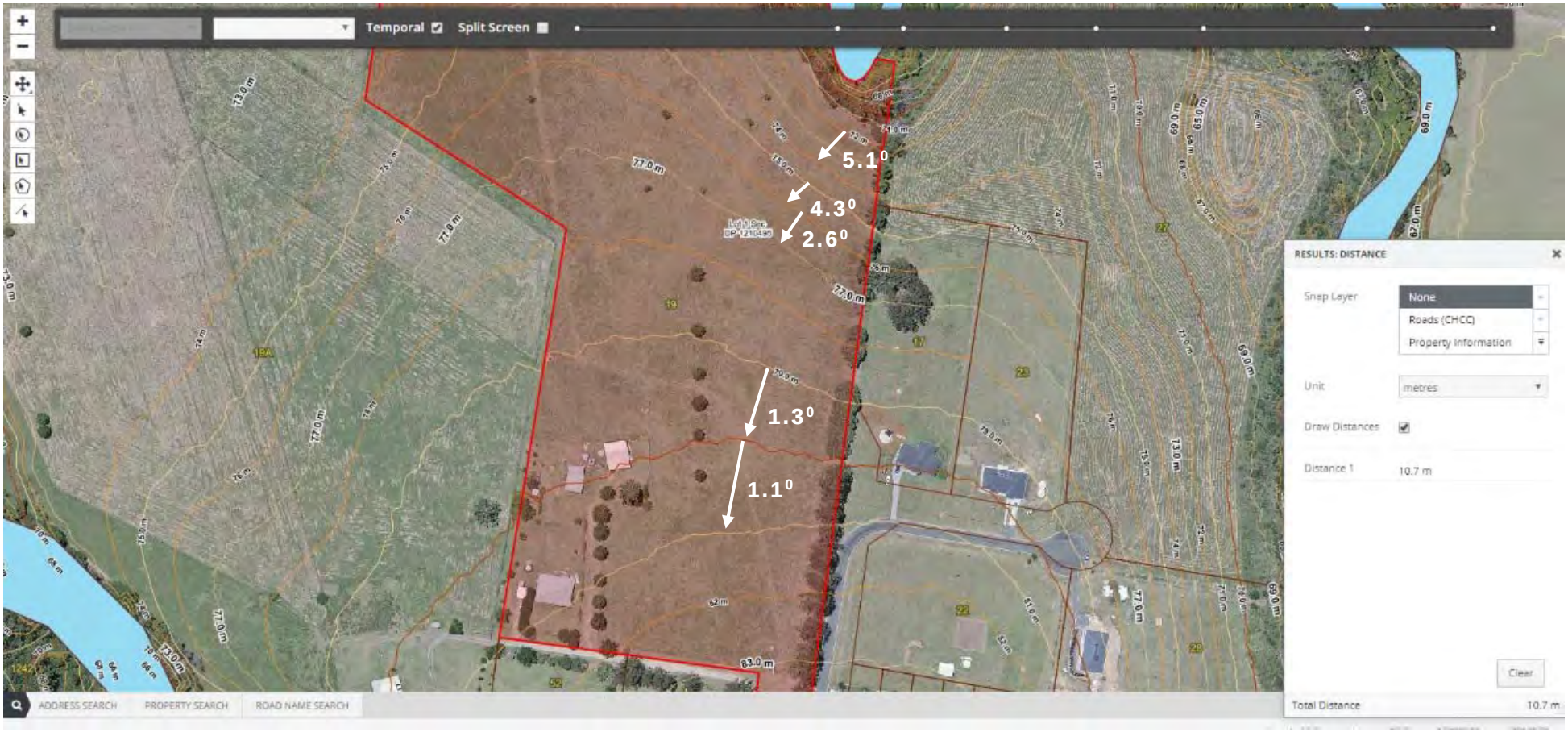

Figure A2. Detailed slope calculations using the 2m contour intervals for subdivision area. The laser range finder confirmed the slope range to be 1.4-3.2 degrees for the grassland area

Appendix B - APZs Requirements and Landscaping

B.1 General Requirement for Asset Protection Zones

Asset Protection Zones (APZs) are buffer areas between development and a fire hazard, which aim to protect human life and property. The APZ comprises an Inner Protection Area (IPA) and an Outer Protection Area (OPA). These areas are to be managed to reduce the bushfire hazard. The general requirements for APZs are described in Tables 1B and 2B.

Table 1B. Inner Protection Area (IPA) General Requirements

Specifications and Management	
Location	The IPA extends from the edge of the OPA to the development.
Purpose	Ensures that the presence of fuel, which could become involved in fire, is minimised.
Depth	Varies from 10 to 100 metres.
Fuel Loading	Minimum fine fuel at ground level, which could be set alight by bushfire.
Vegetation Requirements	Do not touch or overhang the building; Are well spread out and do not form a continuous canopy; Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period; and Are located far enough away from the house so that they will not ignite the house by direct flame contact or radiated heat emissions.
Uses Within the Area	Tennis courts, swimming pools and gardens are permitted. Woodpiles, wooden sheds, combustive material storage areas, large quantities of garden mulch, stacked flammable building materials are not permitted.
Maintenance	This Area should be regularly mowed and all fuel removed e.g. fallen branches, leaf build-up.

Table 2B. Outer Protection Area (OPA) General Requirements

Specifications and Management	
Location	Located adjacent to the hazard. Originally the OPA would have formed part of the bushfire hazard but becomes an area where the fuel loadings are reduced.
Purpose	Reduction of fuel in this area substantially decreases the intensity of an approaching fire and restricts the pathway of crown fuels; reducing the level of direct flame, radiant heat and ember attack on the IPA.
Depth	Varies from 0 to 25 metres.
Fuel Loading	Fine fuel loads should be kept to a level where the fire intensity expected will not impact on adjacent developments. In the absence of any policy to the contrary, 8 tonnes per hectare of fuel is commonly used. In grasslands, fuel height should be maintained below 10 centimetres.
Vegetation Requirements	Any trees and shrubs should be maintained in such a manner that the vegetation is not continuous.
Maintenance	This Area should be regularly mowed and all excess fuels should be removed e.g. fallen branches, leaf build-up.

The RFS has also developed "Standards for Asset Protection Zones" which should be consulted for APZ specifications. Standards for Asset Protection Zones can be downloaded from <https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf>

B.2 Landscaping and Property Maintenance

B.2.1 Landscaping Features & Principles

Bushland vegetation provides the fuel which feeds wildfires; however, by providing adequate separation distance between the bush and buildings will effectively prevent the spread of bushfire. Still vegetation is not always the foe when it comes to bushfires and it is possible to use managed vegetation as a tool to reduce fire risk. According to many practitioners and researchers (Ramsay & Rudolph 2006; CFA 2004; RFS 2006; Queensland Government 2000; RFS undated), a well-designed garden can reduce bushfire hazard near buildings. In summary, homes and garden can blend with the natural environment and be landscaped to minimise the impact of fire at the same time.

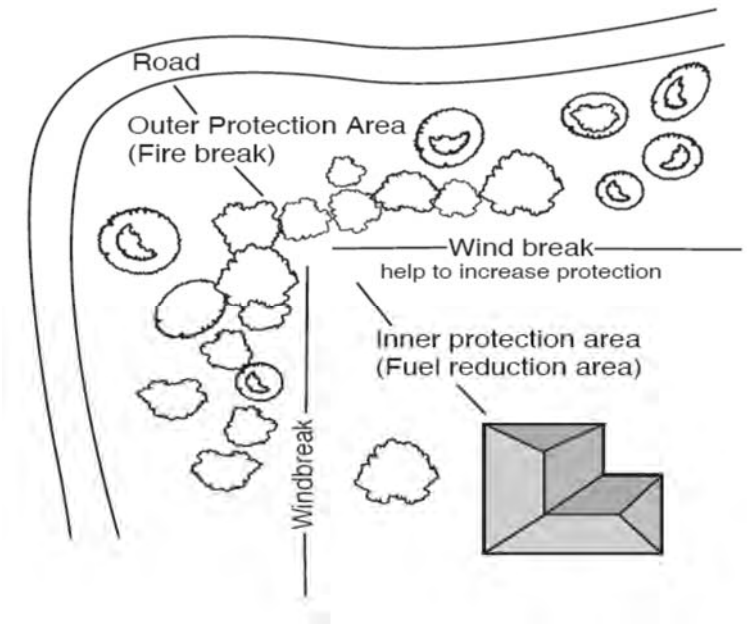

Figure 1B. Example of landscaped design aimed at minimising the impact of fire. Source RFS (undated)

According to the RFS (undated), this can be achieved by providing an effective Asset Protection Zone (APZ), which incorporates features such as fire resistant plants, radiant heat barriers and windbreaks in the landscape layout as shown on Fig. 1B. The key features required when using landscaping as tool to reduce bushfire risk are summarised as follows (Ramsay & Rudolph 2006; RFS undated; RFS 2006):

- Plants with low flammability are selected (eg. broad leaves with high moisture and mineral content, smooth-trunk species with high branches, etc.)
- Vegetation does not provide a continuous path to the house
- Vegetation is located far enough away from the asset so that plants will not ignite the asset by direct flame contact or radiant heat emission
- Planted (or cleared) vegetation is into clumps rather than continuous rows
- Planted or retained species possesses attributes which makes them a good barrier against bushfire and wind attack
- Low branches are pruned two metres from the ground to prevent a ground fire from spreading into trees
- Lawn is planted and maintained around the future dwellings as this will slow the fire and reduce fire intensity. Alternatively, non-flammable pathways directly around the dwelling are provided
- Shrubs and other plants do not directly abut the dwelling. Where this does occur, gardens should contain low-flammability plants and non-flammable ground cover such as pebbles and crush tile
- Brush type fencing and planting “pencil pine” type trees next to buildings are avoided, as these are highly flammable.

Therefore, the features noted above and the principles listed in the following section should be applied to the landscaping and property maintenance for future dwellings.

B.2.2 Vegetation Management

Vegetation management is the responsibility of individual landowners and should, as per PBP, include:

- *Maintaining a low cut lawn;*
- *Keeping areas around the garden free of fuel;*
- *Utilising non-combustible fencing materials;*
- *Breaking up tree and shrub canopies by defining garden beds;*
- *Using non-flammable mulch;*
- *Ensuring tree branches do not overhang roofs;*
- *Ensuring tree canopies are not continuous; and*
- *Installing windbreaks in the direction from which fires are likely to approach.*

B.2.3 Property Maintenance

Property maintenance should, as per PBP, include:

- *Removal of material such as litter from the roof and gutters;*
- *Ensure painted surfaces are in good condition with decaying timbers being given particular attention to prevent the lodging of embers within gaps;*
- *Check pumps and water supplies are available and in working order;*
- *Driveways are in good condition with trees not being too close and forming an obstacle during smoky conditions;*
- *Check tiles and roof lines for broken tiles or dislodged roofing materials;*
- *Screens on windows and doors are in good condition without breaks or holes in flyscreen material and frames are well fitting into sills and window frames;*
- *Drenching or spray systems are regularly tested before the commencement of the fire season;*
- *Hoses and hose reels are not perished and fittings are tight and in good order;*
- *Doors are fitted with draught seals and well maintained;*
- *Mats are of non-combustible material or in areas of low potential exposure; Woodpiles, garden sheds and other combustible materials are located downslope and well away from the house; and*
- *Trees and other vegetation in the vicinity of power lines and tower lines should be managed and trimmed in accordance with the specifications in "Vegetation Safety Clearances" issued by Energy Australia (NS179 April 2002).*

APPENDIX 7 – ECOLOGICAL ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

Biodiversity Assessment

Lot 1 DP1163252, 19 Orara Street, Nana Glen – Subdivision

PO Box 119
Lennox Head NSW 2478
T 02 6687 7666

PO Box 1446
Coffs Harbour NSW 2450
T 02 6651 7666

PO Box 1267
Armidale NSW 2350
T 02 6772 0454

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info@geolink.net.au

Prepared for: Keilly Hunter Town Planning

UPR	*Description*	*Date Issued*	*Issued By*
3611-1005	First issue	15/06/2020	David Havilah

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Executive Summary

GeoLINK has been engaged to prepare a Biodiversity Assessment to assess the biodiversity values of part of Lot 1 DP1163252, 19 Orara Street, Nana Glen to inform a planning proposal for rezoning and a development application to subdivide the site to create five additional lots. The proposal relates to the portion of the site currently zoned R5 (Large Lot Residential) under the Coffs Harbour Local Environmental Plan (LEP) 2013 and, as such, this report focuses on biodiversity impacts within this area which is referred to hereafter as the 'subject site'. The report gives broader consideration to residual land within the northern portion of the site zoned as E2 (Environmental Conservation) which would be unchanged by the rezoning/subdivision proposal.

Results of the field assessment are summarised as follows:

- No threatened flora species were recorded at the subject site
- No threatened ecological communities (TECs) occur at the subject site
- No significant habitat for threatened fauna occurs at the subject site.

The proposed rezoning and subdivision of the site may result in potential biodiversity impacts, which may include:

- Minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area.
- Minor intensification of human occupation on the site with regard to native fauna (e.g. minor increase in traffic movements).
- Introduction of weed species during any future construction of the site.

These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised.

Review of statutory instruments relevant to the proposed rezoning was completed as follows:

- State Environmental Planning Policy (SEPP) 44 - Koala Habitat Protection 2019: Where an approved Comprehensive Koala Plan of Management (CKPoM) is in place, the SEPP defers to this plan. The Coffs Harbour City Koala Plan of Management (CHCKPoM) was prepared in accordance with the requirements of SEPP 44 and introduced in January 1995. The subject site is not mapped as Primary, Secondary or Tertiary Koala habitat as per the CHCKPoM; therefore the site is not subject to any further requirements within the CHCKPoM.
- *Biodiversity Conservation Act 2016* (BC Act): The proposal is unlikely to significantly affect threatened species or communities. Land mapped as being of biodiversity value (BV) (as per the Office of Environment and Heritage (OEH) Biodiversity Values Map and Threshold Tool) occurs in the northern portion of the site associated with the riparian zone of the Orara River. The proposal relates to the southern portion of the site and would not impact on any area of BV land. The proposal would require negligible loss of vegetation comprising small numbers of mostly planted trees on the site. As such loss of native vegetation on the site would not exceed 0.5 ha. Accordingly the proposal would not trigger the Biodiversity Offsets Scheme (BOS) and does not require a Biodiversity Development Assessment Report (BDAR).
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act): Review of Matters of Environmental Significance (MNES) listed in the Act indicates that rezoning and subsequent development of the site is unlikely to significantly affect threatened species or communities listed in the EPBC Act.

1. Introduction

1.1 Background

GeoLINK has been engaged to prepare a Biodiversity Assessment to assess the biodiversity values of part of Lot 1 DP1163252, 19 Orara Street, Nana Glen to inform a planning proposal for rezoning and a development application to subdivide the site to create five additional lots.

On this basis, this assessment has been prepared to:

- Identify any ecological constraints to the proposal (e.g. habitat for threatened species or communities listed in the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- Identify any significant trees or fauna habitat features of biodiversity importance
- Examine the proposal against relevant statutory requirements.

1.2 The Site

The site comprises part of Lot 1 DP1163252, 19 Orara Street, Nana Glen (Coffs Harbour Local Government Area (LGA)) (refer to **Illustration 1.1**). It is within the Coffs Coast and Escarpment subregion of the NSW North Coast bioregion as per the Interim Biogeographic Regionalisation for Australia, Version 7. At a local level the site forms part of the 'Clarence – Richmond Alluvial Plains' Mitchell Landscape (DECC 2008a). Photographs of the site are provided at **Appendix A**.

The portion of the site which is subject to the rezoning application is currently zoned R5 (Large Lot Residential) under the Coffs Harbour Local Environmental Plan (LEP) 2013. The adjoining northern portion of the site is zoned as E2 (Environmental Conservation) (refer to **Figure 1.1**).

As the rezoning/development application proposal relates to the portion of the site currently zoned R5, this report focuses on biodiversity impacts within this area which is referred to hereafter referred to as the 'subject site'. The report gives broader consideration to residual land within the northern portion of the site zoned as E2 which would be unchanged by the rezoning/subdivision proposal.

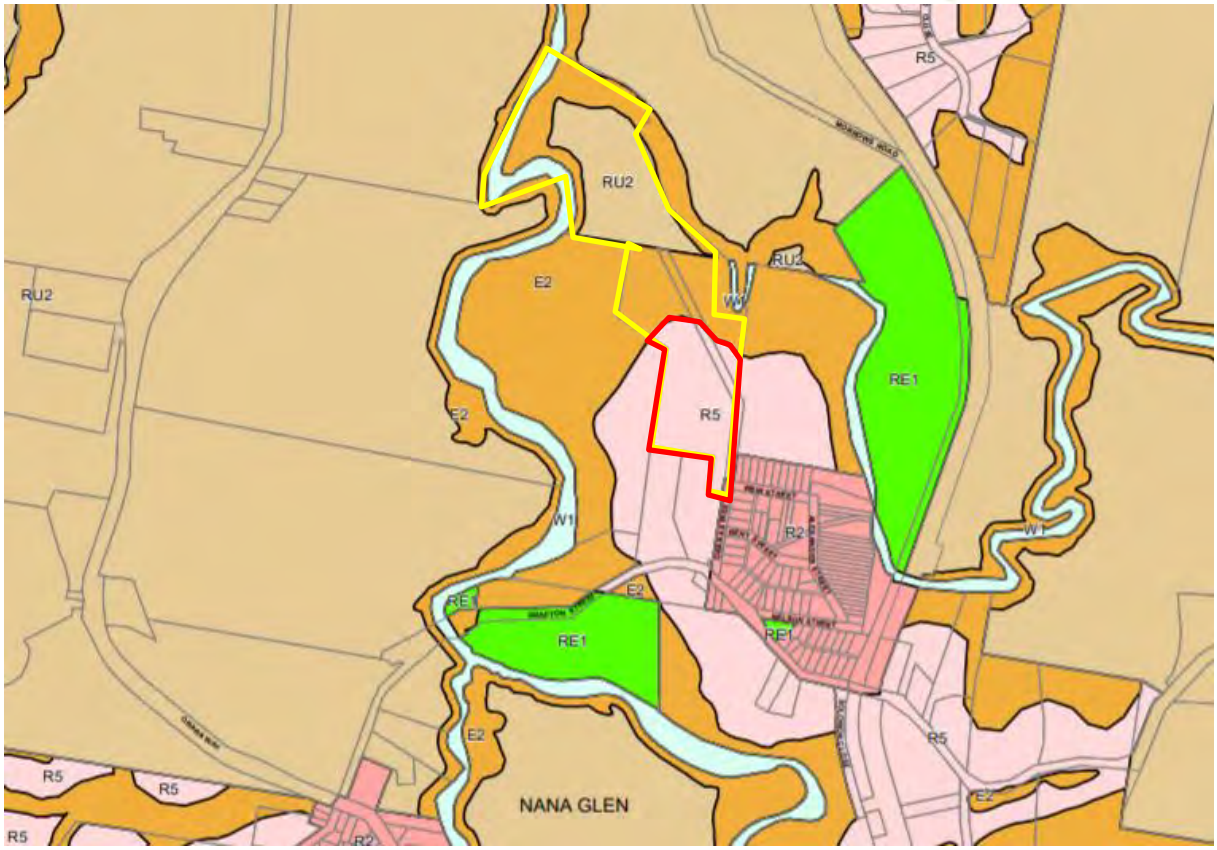


Figure 1.1 Shows the Coffs Harbour LEP Land Zoning Map, yellow line indicates Lot 1 DP1163252 red line indicates the area to which the proposal applies.

1.3 The Proposal

The proposal seeks to amend the minimum lot size from two hectares to 8000 m² in order to facilitate a six lot subdivision. Land zoned E2, occurring in the north of the site, would be unchanged by the proposal and would remain as residual land. A plan of the proposed subdivision is included in **Appendix B.**

0 2 Km

Site Locality - Illustration 2.1

GeoLINK environmental management and design

Biodiversity Assessment - 19 Orara St, Nana Glen
3611-1004

Information shown is for illustrative purposes only
Drawn by: AB Checked by: RE Reviewed by: JOL
Source of base data: OpenStreetMap
Date: 03/06/2020

2. Methodology

2.1 Desktop Review

The following desktop review was completed prior to field assessment:

- A search of the BioNet Wildlife Atlas (10 km x 10 km grid centred on the site); completed 15 May 2020
- A search of the Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) within a five kilometre radius of the site; completed 15 May 2020
- Review of Council's online mapping in relation to environmental values of the site
- Review of the Biodiversity Values Map and Threshold tool.

Details of the methodology used for field assessment are provided in Section 2.2.

2.2 Field Assessment

A field assessment was completed 15 May 2020, using the following methodology:

- Walking survey to identify vegetation types, Threatened Ecological Communities (TECs) and threatened flora/fauna species listed in the BC Act or EPBC Act
- Identification of hollow-bearing trees (or other significant habitat features) and potential habitat for threatened fauna
- GPS location of mature trees occurring on the site
- Opportunistic fauna survey.

3. Vegetation Results

3.1 Desktop Analysis

3.1.1 Database Search Results

BioNet search results identified records of nine threatened flora species listed under the BC Act (including four species also listed in the EPBC Act) within a 10 km x 10 km area centred on the site. The search results also identified 12 TECs listed under the BC Act (including seven of which are also listed in the EPBC Act) with potential to occur in the site locality.

PMST results identified habitat for 25 threatened flora species and one threatened ecological community within a 10 km radius of the site. The results of database searches are included in **Appendix C**.

3.2 Site Assessment

3.2.1 Vegetation

Vegetation occurring on the site is shown in **Illustration 3.1** with photographs of the site provided in **Appendix A**.

The site has been previously cleared of native vegetation and has a recent history of grazing and human occupation. It is dominated by introduced pasture grasses including Kikuyu (*Cenchrus clandestinus*), Narrow-leaved Carpet Grass (*Axonopus fissifolius*) and African Parramatta Grass (*Sporobolus africanus*).

Woody vegetation at the site includes isolated planted paddock trees comprising 12 Pecan trees (*Carya illinoinensis*) and six Camphor Laurel (*Cinnamomum camphora*) predominantly within areas outside of the subject site.

Vegetation within the subject site includes two isolated planted Hoop Pine (*Araucaria cunninghamii*), a Mulberry Tree (*Morus sp.*) and two rows of planted Liquid Amber (*Liquidambar styraciflua*). A planted windrow extends along the eastern boundary of the subject site comprising six Hoop Pines, seven Cadaghi (*Corymbia torelliana*) and ~30 Large Mountain Blue Gum (*Eucalyptus deani*) (all >50 cm dbh). Native vines/understorey species within this windrow include Common Silkpod (*Parsonsia straminea*), Cockspur Thorn (*Maclura cochinchinensis*) and Blady Grass (*Imperata cylindrica*).

The northern portion of the site, occurring outside the proposal footprint is bordered by the Orara River and Bucca Bucca Creek which are mapped by Coffs Harbour Council as comprising the following two native vegetation communities (refer to **Illustration 3.1**):

- Orara River: *CH_FrW07 - River Oak Riparian Forest of the Orara River Valley*
- Bucca Bucca Creek: *CH_WSF01 - Coast and Hinterland Riparian Flooded Gum Bangalow Palm Wet Forest.*

3.2.2 Threatened Flora

No threatened flora species listed under the BC Act or EPBC Act were recorded at the site. Given the small size of the site and survey effort undertaken, the potential for threatened flora to occur undetected at the site is considered to be very low.

3.2.3 Threatened Ecological Communities

Vegetation along the Orara River in the northern portion of the site (outside the proposed footprint) comprises *CH_FrW07 - River Oak Riparian Forest of the Orara River Valley* as mapped by Council. This vegetation is broadly indicative of the Threatened Ecological Community (TEC), *Lowland rainforest on floodplain in the NSW North Coast Bioregion*. No areas of this TEC occur within the proposal area.

3.2.4 Priority Weeds

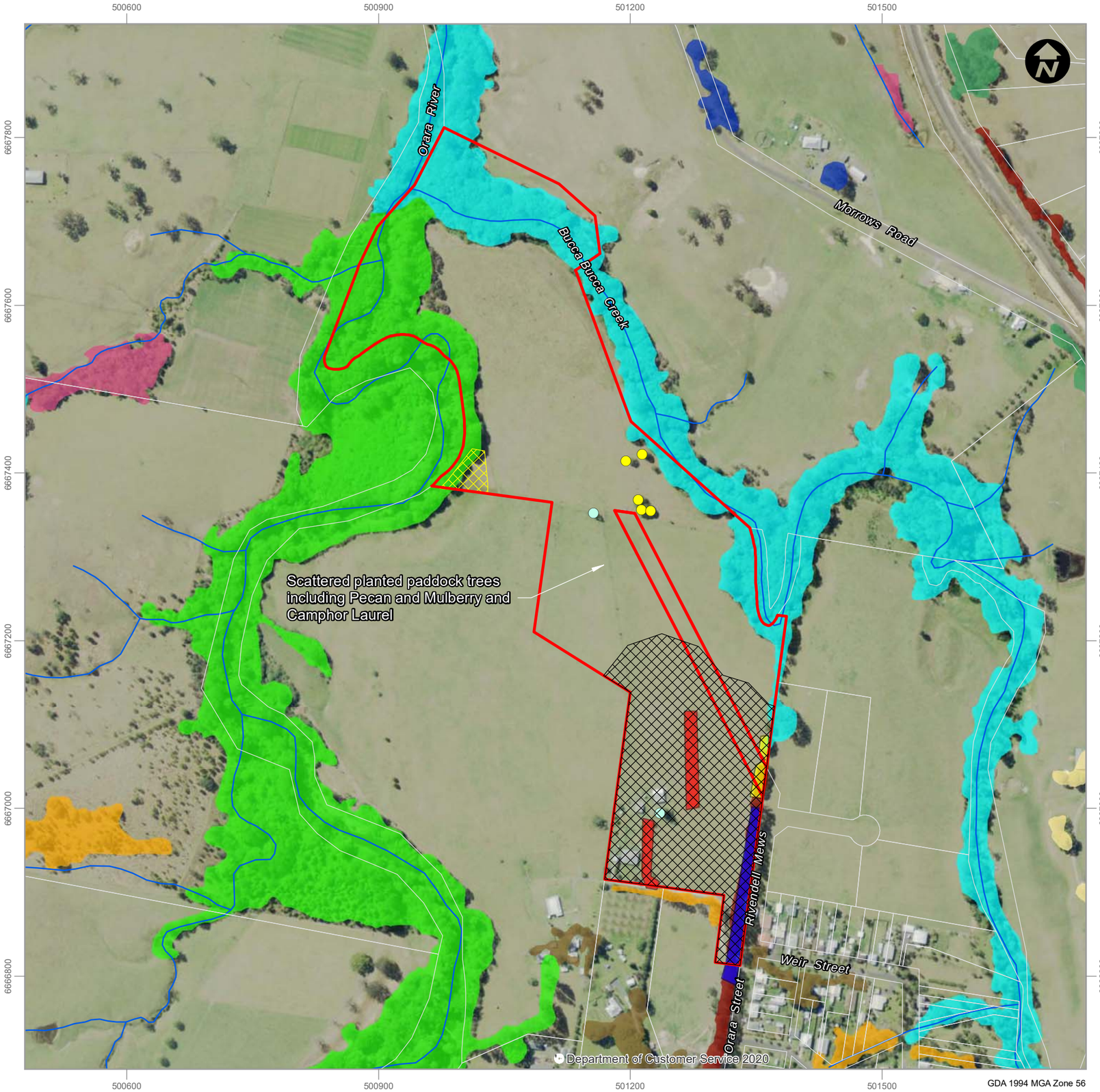
The site includes a number of agricultural and environmental weeds as well as the following Priority Weeds as listed in the *Biosecurity Act 2015*:

- Fireweed (*Senecio madagascariensis*) occurs throughout the site
- Tropical Soda Apple (*Solanum viarum*) occurs in a small area within the north-western portion of the site (outside of the area subject to the proposal).

Relevant biosecurity duties must be enacted by land managers for weeds listed as Priority Weeds under the Biosecurity Act.

3.2.5 Condition

The site is highly modified and disturbed from historic clearing and grazing.



LEGEND

- Site boundary
- Cadastre
- Area subject to rezoning
- Tropical Soda Apple
- Row of planted Cadaghi
- Row of planted Liquid Amber
- Row of planted Mountain Blue Gum

CHCC Finescale Vegetatin Mapping

- Camphor laurel, CH_EX02
- Coast and Hinterland Riparian Flooded Gum Bangalow Wet Forest, CH_WSF01
- Environmental plantings, CH_P03
- Exotic vegetation, CH_EX03
- Foothills Grey Gum - Ironbark - Mahogany Dry Forest, CH_DOF05
- Foothills Turpentine - Grey Gum - Ironbark Moist Shrubby Forest, CH_WSF17
- Lowlands Swamp Box - Paperbark - Red Gum Dry Forest, CH_DOF06
- Native remnant vegetation, CH_NRV01
- River Oak Riparian Forest of the Orara River Valley, CH_FrW07
- Watercourse
- Camphor Laurel
- Hoop pine

0 100 Metres

The Site and Environmental Constraints - Illustration 3.1

GeoLINK environmental management and design

Biodiversity Assessment - 19 Orara St, Nana Glen
3611-1003

Information shown is for illustrative purposes only
Drawn by: AB Checked by: RE Reviewed by: JOL
Source of base data: DFSI
Date: 12/06/2020

4. Fauna Habitat

4.1 Desktop Analysis

BioNet search results identified records of 40 threatened fauna species listed under the BC Act (including eight species listed in the EPBC Act) within a 10 km x 10 km area centred on the site.

Protected Matters Search Tool results identified:

- Habitat for 28 threatened fauna species within 10 km of the site
- Habitat for 16 migratory fauna species within 10 km of the site.

The results of database searches are included in **Appendix C**. A potential occurrence assessment was undertaken for threatened fauna species derived from the database searches (refer to **Appendix D**).

4.2 Site Features

4.2.1 Habitat Values

Habitat values of the site are generally low given the lack of native vegetation and existing use of the site which has a high level of human visitation and current land use for cattle grazing. No hollow-bearing trees, possum dreys or nests were identified at the site.

Exotic/native trees at the site may provide foraging resources for frugivorous/nectivorous fauna utilising habitats within the broader area associated with the site.

The Orara River and Bucca Bucca Creek provide riparian and aquatic habitat to a range of fauna species including potential threatened fauna species. The riparian vegetation and aquatic habitat associated with these waterways will not be impacted by the proposal.

4.2.2 Connectivity

The planted row of Mountain Blue Gum, Cadaghi and Hoop Pine provides minor fauna connectivity values for fauna moving through the area. Good quality fauna connectivity associated with the Orara River and Bucca Bucca Creek occur more broadly at the site but will not be impacted by the proposal.

4.2.3 Threatened and Significant Fauna Habitat

No threatened fauna species were confirmed at the site. The site provides poor quality habitat for threatened fauna due to the lack of native vegetation and associated habitat. While several species of microchiropteran bats may use the site as part of aerial foraging habitat on an opportunistic or seasonal basis, the proposal will not affect roosting habitat for these species. The Rose-crowned Fruit Dove (*Ptilinopus regina*) is known to occur in Lowland Rainforest and feed on Camphor Laurel fruits, several of which occur at the site.

No Koala feed trees or areas of mapped Primary, Secondary or Tertiary Koala habitat as defined in the CHCKPoM occur within the subject site.

Based on the desktop analysis and habitat present, the following threatened fauna species have some (albeit minor) potential to occur at the site (refer to potential occurrence assessment at **Appendix D**):

- Rose-crowned Fruit-dove
- Grey-headed Flying-fox
- Large Bentwing-bat
- Little Bentwing-bat
- Greater Broad-nosed bat
- Eastern Coastal Free-tailed bat.

5. Impacts and Mitigation

5.1 Potential Impacts of the Proposal

The proposed rezoning and subdivision of the site may result in potential biodiversity impacts, which may include:

- Minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area.
- Minor intensification of human occupation on the site with regard to native fauna (e.g. minor increase in traffic movements).
- Introduction of weed species during any future construction of the site.

These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised.

5.2 Recommendations

To minimise biodiversity impacts which may result from the proposed rezoning and future development of the site, the following measures should be considered:

- Loss of native vegetation should be minimised wherever possible.
- Pre-clearing surveys of the site should be undertaken by a suitably qualified ecologist immediately prior to vegetation clearing commencing.
- Any future landscaping at the site should make use of locally endemic species with a focus on providing flowering or fruiting resources for native fauna.
- Erosion and sediment control measures should be implemented (in accordance with the *Landcom/ Department of Housing Managing Urban Stormwater; Soils and Construction Guidelines*) and maintained to prevent sediment moving off site and sediment laden water entering any water course.
- Care would be taken to minimise the spread of weeds or animal/plant pathogens (such as chytrid fungus or myrtle rust) into or throughout the site or surrounding area by regularly carefully cleaning and maintaining plant and equipment in accordance with accepted guidelines (e.g. by adoption and implementation of the ‘Arrive Clean, Leave Clean’ guidelines (DoE 2015); Saving Our Species Hygiene Guidelines (DPIE 2020)).

6. Statutory Requirements

The following sections examine the findings of the site assessment with regard to relevant statutory requirements which require consideration for the development application.

6.1 State Environmental Planning Policy (SEPP) Koala Habitat Protection 2019

State Environmental Planning Policy No.44 - Koala Habitat Protection (SEPP 44) applies to all LGAs listed under Schedule 1, which includes the Coffs Harbour LGA. Where an approved CKPoM is in place the SEPP defers to this plan. The CHCKPoM was prepared in accordance with the requirements of SEPP 44 and introduced in January 1995.

The subject site is not mapped as Primary, Secondary or Tertiary Koala habitat as per the CHCKPoM; therefore the site is not subject to any further requirements within the CHCKPoM. It is noted that areas of mapped Secondary and Tertiary Koala habitat occurs within the north-western section of the site associated with the Orara River riparian zone (refer to **Figure 6.1**) however these areas would be unaffected by the proposal.

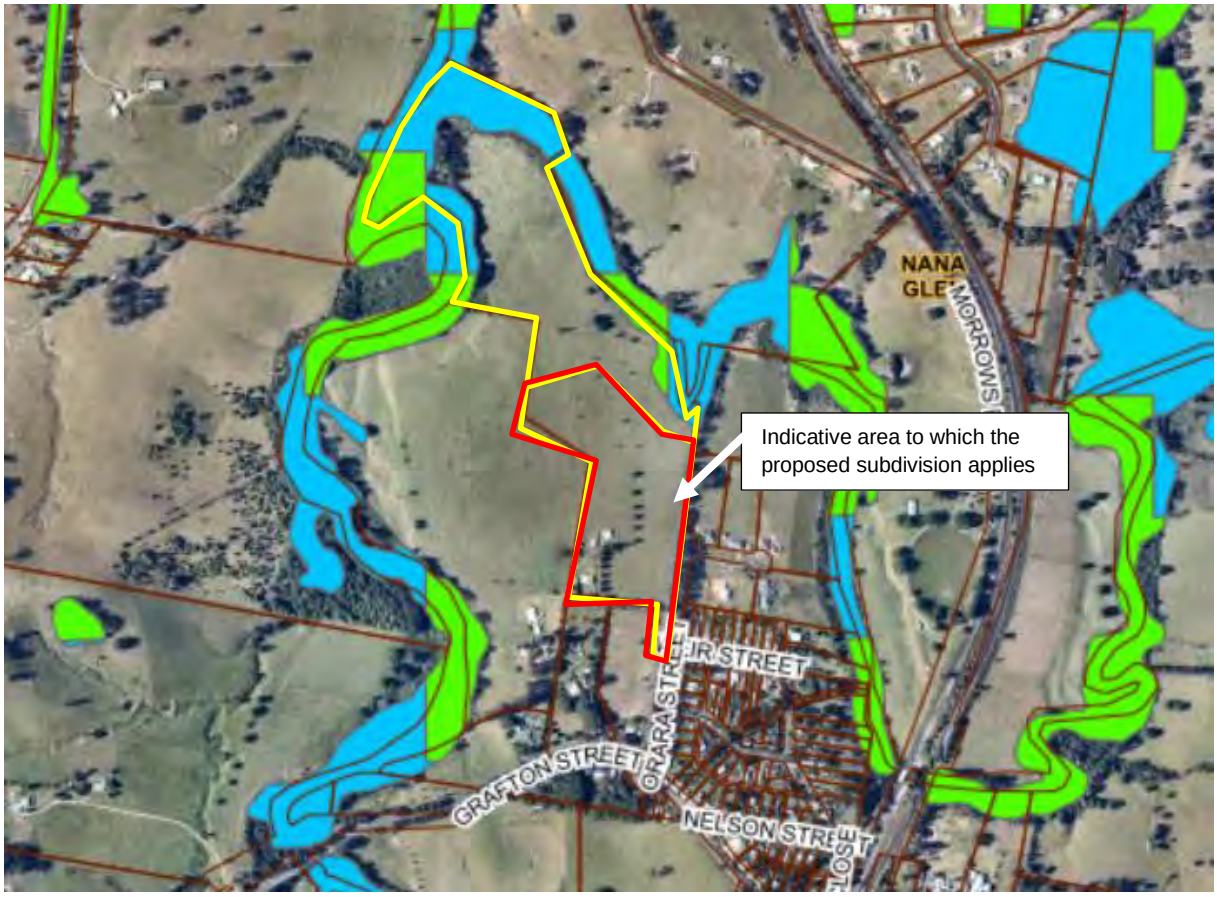


Figure 6.1 Koala habitat mapping within the locality indicates Secondary and Tertiary Koala Habitat, Yellow line indicates Lot 1 DP1163252 red line indicates the subject site.

6.2 Biodiversity Conservation Act 2016 (BC Act)

6.2.1 Biodiversity Offsets Scheme (BOS)

To determine whether development as part of a future rezoning of the site would trigger the Biodiversity Offsets Scheme (BOS), the following steps were taken:

1. Review of the OEH Biodiversity Value Map in relation to the site (refer to **Figure 6.2**): https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BVMap. The Map shows areas of BV land associated with the riparian zone of the Orara River occurring in the northern portion of the site. The proposal relates to the southern portion of the site and would not impact on any area of BV land.
2. Review of clearing requirements to determine if the proposal exceeds BOS thresholds. The site is currently mapped as having a minimum lot size of two hectares as per Coffs Harbour LEP. The BOS native vegetation clearing threshold (as per Part 7.2 of the Biodiversity Conservation Regulation 2017) for a minimum lot size of two hectares is 0.5 hectares.

The proposal would require negligible loss of vegetation comprising small numbers of mostly planted trees on the site. As such loss of native vegetation on the site would not exceed 0.5 ha. The proposal would not impact on any area of mapped BV land. Accordingly the proposal would not trigger the BOS and does not require a Biodiversity Development Assessment Report (BDAR).

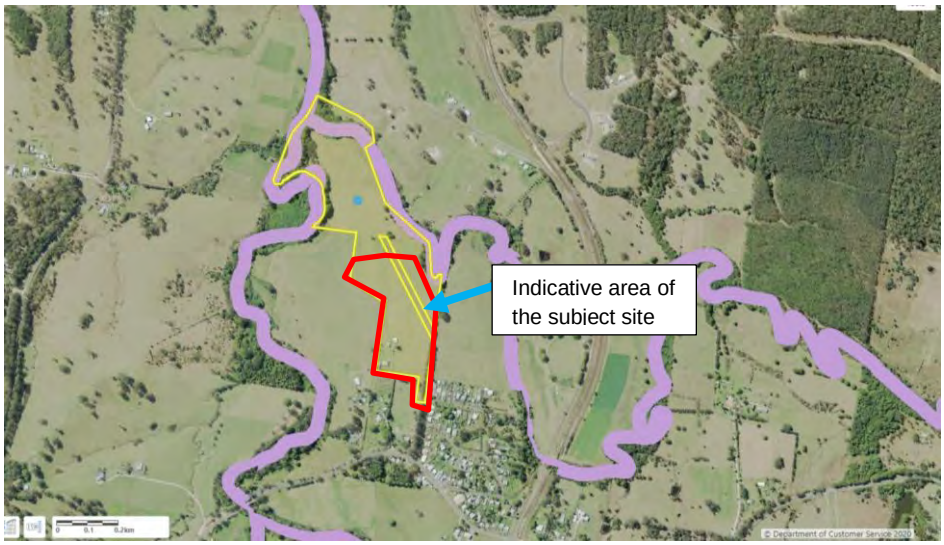


Figure 6.2 Biodiversity Value mapped land associated with the site. Purple indicates mapped BV land; the yellow line indicates Lot 1 DP 1163252 and the red line indicates the subject site.

6.2.2 Five-part Tests

The BC Act requires a test of significance (five-part test) when assessing whether an action, development or activity is likely to significantly affect threatened species, ecological communities or their habitats. Based on the potential for several threatened fauna species to occur at the site, tests of significance have been completed (refer to **Appendix E**). The tests of significance concluded that habitat for threatened species would be unlikely to be significantly affected by the proposal.

6.3 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Under the EPBC Act, actions that have, or are likely to have, a significant impact on a MNES require approval from the Australian Government Minister for the Environment (the Minister). The nine matters of national environmental significance protected under the EPBC Act are:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Nationally threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mines)
- A water resource, in relation to coal seam gas development and large coal mining development.

Based on the search results and site assessment, no significant impacts to any MNES would be likely to result from the Proposal (refer to **Table 6.1** below), therefore referral to the Minister is not required.

Table 6.1 Assessment of MNES

Matter	***Impact***
Any impact on a World Heritage property?	
No World Heritage properties occur within 10 km of the site.	Nil
Any impact on a National Heritage place?	
No National Heritage places occur within 10 km of the site.	Nil
Any impact on a Wetland of International Importance?	
No wetlands of international importance (Ramsar sites) occur within five kilometres of the site.	Nil
Any impact on nationally threatened species and ecological communities?	
Habitat for one threatened ecological community and 54 threatened species is identified within 10 km of the site. No threatened flora species or TECs occur at the site. The Proposal would not result in the removal of any significant areas of habitat for any threatened fauna species in a local context and would not contribute significantly to any listed key threatening processes. On this basis, the Proposal is unlikely to significantly impact on any nationally threatened species or ecological communities.	Low
Any impact on Migratory species?	
Habitat for 16 migratory species is identified within 10 km of the site. No migratory fauna species were recorded at the site (refer to Section 4.1). No migratory species are likely to be significantly affected by the Proposal given that no significant habitat would be affected.	Low
Any impact on a Commonwealth marine area?	
No Commonwealth marine areas occur within 10 km of the site.	Nil
Any impact on the Great Barrier Reef Marine Park?	
The Proposal will not impact on the Great Barrier Reef Marine Park (Queensland).	Nil
Does the project involve a nuclear action?	
No nuclear actions are proposed.	Nil
Does the project involve impacts to a water resource, in relation to coal seam gas development and large coal mining development?	
The Proposal is not a mining development	Nil

6.4 Coffs Harbour Development Control Plan (DCP) 2015

A review Part E of Coffs Harbour Council's DCP (2015) was undertaken to assess if any 'compensatory plantings' would be likely to be required for the proposal. Based on vegetation occurring on the site, no compensatory plantings are required for the proposal as no 'high conservation value vegetation' types listed in the DCP would be impacted including:

- Native old growth, hollow-bearing or ecologically/aesthetically significant trees
- Endangered ecological communities, over-cleared vegetation types and high value arboreal habitats
- Primary Koala habitat
- Secondary Koala habitat
- Riparian zones
- Steep land.

References

Phillips, S. & Callaghan, J. (2011). The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas *Phascolarctos cinereus*. Australian Zoologist: 2011, Vol. 35, No. 3, pp. 774-780.

Scotts, D. (2003). *Key Habitats and Corridors for Forest Fauna. Occasional Paper 32.* NSW NPWS.

Copyright and Usage

Appendix A

Photographs

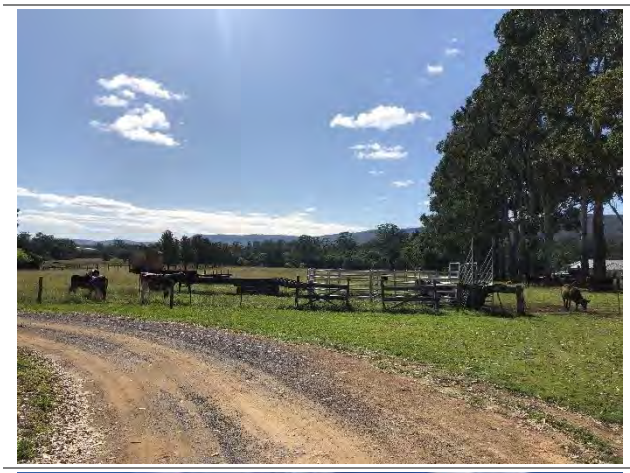
	Plate 1. View to the north of the site from the existing access within Lot 2 and planted windrow of Mountain Blue Gum.
	Plate 2. View to the south of the site.
	Plate 3. View to the west of the existing dwelling to be retained on Lot 1.

	Plate 4. View to the east of the cul de sac entry for Lots 4, 5 and 6. Yellow arrows indicate trees which may be impacted by construction of the new entry (two Cadaghi and three Mountain Blue Gum).

Appendix B

Proposal Design

MGA NORTH

✳ PROPOSED ROAD VARIABLE WIDTH.

"A" PROPOSED EASEMENT TO DRAIN WATER 3 WIDE.

"B" EASEMENT FOR WATER SUPPLY 3 WIDE (D.P.1019090)

"C" RIGHT OF CARRIAGEWAY 8 WIDE (D.P.1019090)

"D" EASEMENT TO DRAIN WATER 3 WIDE (D.P.1215696)

LEGEND:

EFFLUENT DISPOSAL

6m OFFSET

PROPOSED BUILDING AREA 18m 24m

ORARA

RIVER IS ORARA BANK OF RIVER BDY.

153.41

35.585

57.735

45.235

145

158.29

192.64

BUCCA CK.

191.18

BUCCA

2
D.P.1163252

3
D.P.1163252

"B"

PT.6
(8619m²)

130.12

PT.6
14.94 Ha
BY DED'N

E2

EXISTING SHEDS

EXISTING RESIDENCE

"A"

225.045

"C"

1
8025m²

3

4
8157m²

"A"

2

D.P. 771522

1

"C"

143.72

80.64

30.115

2
8442m²

8314m²

5

8038m²

"A"

ROAD

GRAFTON

ORARA STREET

32.245

388.01

"D"

10.56

2

EXISTING RESIDENCES

3

1 2 1 5 6 9 6

WEIR ST.

1

D.P.

RIVENDELL MEWS

4

1

5

REVISION A	LOT LAYOUT AMENDED, EASEMENT ADDED	16/01/2020	N.S.
	ORIGINAL ISSUE	31/10/2019	

CONSULTING SURVEYORS | URBAN PLANNERS | PROJECT MANAGERS

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and Partners Pty Ltd

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Fax: 02 6652 3064
ABN 21 100 904 783
ACN 100 904 783

PLAN OF PROPOSED SUBDIVISION OF LOT 1 D.P.1163252 & LOT 1 D.P.1210495 ORARA STREET – NANA GLEN

DATE: 16/01/2020	SURVEYED:
SCALE: 1:4000	DRAWN: N.S.
CONTOURS: 0.5m	CHECKED: A.V.S.
SHEET SIZE: A3	SURVEY REF:13241–2A
DATUM: AHD	SHEET: 1 OF 1

Appendix C

Database Search Results

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Communities in selected area [North: -30.08 West: 152.96 East: 153.06 South: -30.18] returned 0 records for 12 entities.
Report generated on 15/05/2020 7:20 AM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Community				*Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	V	K	
Community				*Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community				*Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*		Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	CE	K	
Community				*Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions*		Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3	CE	K	
Community				*Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion*		Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3	CE	K	
Community				*Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions*		Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions	E3	E	K	
Community				*Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion*		Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3		K	

Community	*Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	E	K	
Community	*Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community	*Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions*	Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3		K	
Community	*White Box Yellow Box Blakely's Red Gum Woodland*	White Box Yellow Box Blakely's Red Gum Woodland	E3	CE	P	
Community	*White Gum Moist Forest in the NSW North Coast Bioregion*	White Gum Moist Forest in the NSW North Coast Bioregion	E3		K	

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Entities in selected area [North: -30.08 West: 152.96 East: 153.06 South: -30.18] returned a total of 693 records of 49 species.
Report generated on 15/05/2020 7:18 AM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3075	*^^Mixophyes iteratus*		Giant Barred Frog	E1,P,2	E	24	
Animalia	Amphibia	Hylidae	3169	*Litoria brevipalmata*		Green-thighed Frog	V,P		1	
Animalia	Reptilia	Elapidae	2645	*Cacophis harriettae*		White-crowned Snake	V,P		2	
Animalia	Reptilia	Elapidae	2677	*Hoplocephalus stephensii*		Stephens' Banded Snake	V,P		1	
Animalia	Aves	Columbidae	0025	*Ptilinopus magnificus*		Wompoo Fruit-Dove	V,P		19	
Animalia	Aves	Apodidae	0334	*Hirundapus caudacutus*		White-throated Needletail	P	V,C,J,K	24	
Animalia	Aves	Ciconiidae	0183	*Ephippiorhynchus asiaticus*		Black-necked Stork	E1,P		13	
Animalia	Aves	Accipitridae	0230	*Lophoictinia isura*		Square-tailed Kite	V,P,3		1	
Animalia	Aves	Accipitridae	8739	*Pandion cristatus*		Eastern Osprey	V,P,3		2	
Animalia	Aves	Turnicidae	0013	*Turnix maculosus*		Red-backed Button-quail	V,P		1	
Animalia	Aves	Cacatuidae	0265	*^^Calyptorhynchus lathami*		Glossy Black-Cockatoo	V,P,2		33	
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*		Little Lorikeet	V,P		9	
Animalia	Aves	Strigidae	0248	*Ninox strenua*		Powerful Owl	V,P,3		7	
Animalia	Aves	Tytonidae	0252	*Tyto longimembris*		Eastern Grass Owl	V,P,3		1	
Animalia	Aves	Tytonidae	0250	*Tyto novaehollandiae*		Masked Owl	V,P,3		8	
Animalia	Aves	Tytonidae	9924	*Tyto tenebricosa*		Sooty Owl	V,P,3		10	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*		Brown Treecreeper (eastern subspecies)	V,P		2	
Animalia	Aves	Meliphagidae	0603	*Anthochaera phrygia*		Regent Honeyeater	E4A,P	CE	1	
Animalia	Aves	Pomatostomidae	8388	*Pomatostomus temporalis temporalis*		Grey-crowned Babbler (eastern subspecies)	V,P		1	
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*		Varied Sittella	V,P		1	
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*		Spotted-tailed Quoll	V,P	E	2	
Animalia	Mammalia	Dasyuridae	1017	*Phascogale tapoatafa*		Brush-tailed Phascogale	V,P		2	
Animalia	Mammalia	Dasyuridae	1045	*Planigale maculata*		Common Planigale	V,P		1	
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*		Koala	V,P	V	46	
Animalia	Mammalia	Petauridae	1136	*Petaurus australis*		Yellow-bellied Glider	V,P		7	
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*		Squirrel Glider	V,P		5	
Animalia	Mammalia	Pseudocheiridae	1133	*Petauroides volans*		Greater Glider	P	V	4	

Animalia	Mammalia	Potoroidae	1187	*Aepyprymnus rufescens*	Rufous Bettong	V,P		1	
Animalia	Mammalia	Macropodidae	1245	*Macropus parma*	Parma Wallaby	V,P		1	
Animalia	Mammalia	Macropodidae	1234	*Thylogale stigmatica*	Red-legged Pademelon	V,P		1	
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	55	
Animalia	Mammalia	Molossidae	1329	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		3	
Animalia	Mammalia	Vespertilionidae	1353	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	1	
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		1	
Animalia	Mammalia	Vespertilionidae	1357	*Myotis macropus*	Southern Myotis	V,P		2	
Animalia	Mammalia	Vespertilionidae	1369	*Phoniscus papuensis*	Golden-tipped Bat	V,P		1	
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		3	
Animalia	Insecta	Petaluridae	I138	*Petalura litorea*	Coastal Petaltail	E1		1	
Plantae	Flora	Apocynaceae	1233	*Marsdenia longiloba*	Slender Marsdenia	E1	V	1	
Plantae	Flora	Myrtaceae	8724	*Angophora robur*	Sandstone Rough-barked Apple	V	V	1	
Plantae	Flora	Myrtaceae	4283	*Rhodamnia rubescens*	Scrub Turpentine	E4A		18	
Plantae	Flora	Myrtaceae	4284	*Rhodomyrtus psidioides*	Native Guava	E4A		2	
Plantae	Flora	Rhamnaceae	5592	*Pomaderris queenslandica*	Scant Pomaderris	E1		19	
Plantae	Flora	Rutaceae	11598	*Boronia hapalophylla*	Shannon Creek Boronia	E1,P		2	
Plantae	Flora	Rutaceae	9099	*Boronia umbellata*	Orara Boronia	V,P	V	222	
Plantae	Flora	Sapotaceae	11957	*Niemeyera whitei*	Rusty Plum, Plum Boxwood	V		103	
Plantae	Flora	Simaroubaceae	9497	*Quassia sp. Moonee Creek*	Moonee Quassia	E1	E	9	
Animalia	Mammalia	Miniopteridae	1346	*Miniopterus australis*	Little Bent-winged Bat	V,P		14	
Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		4	

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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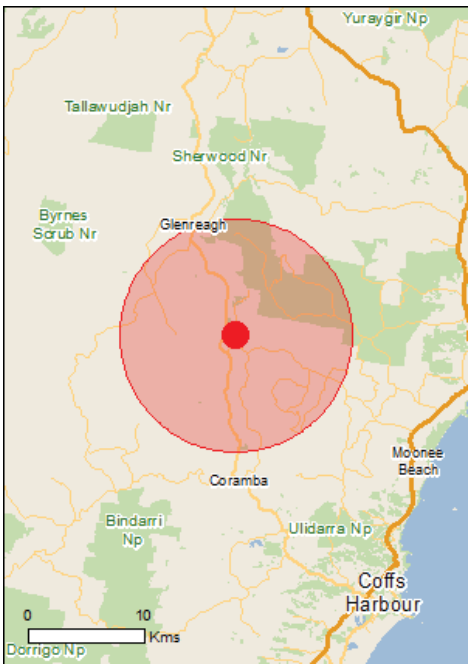

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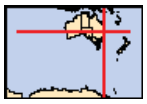

Summary

Matters of National Environmental 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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	54
Listed Migratory Species:	16

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 http://www.environment.gov.au/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 Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	23
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	6
Regional Forest Agreements:	1
Invasive Species:	40
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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.

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Atrichornis rufescens Rufous Scrub-bird [655]	Endangered	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Maccullochella ikei Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat known to occur within area
Frogs		
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Endangered	Species or species habitat known to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within 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
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys oralis Hastings River Mouse, Koontoo [98]	Endangered	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area

Name	Status	Type of Presence
Plants		
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat known to occur within area
Angophora robur Sandstone Rough-barked Apple [56088]	Vulnerable	Species or species habitat known to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Boronia umbellata Orara Boronia [56301]	Vulnerable	Species or species habitat known to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat may occur within area
Eucalyptus tetrapleura Square-fruited Ironbark [7490]	Vulnerable	Species or species habitat may occur within area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat likely to occur within 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
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
Marsdenia longiloba Clear Milkvine [2794]	Vulnerable	Species or species habitat likely to occur within area
Melichrus sp. Newfoundland State Forest (P.Gilmour 7852) Hairy Melichrus [82048]	Endangered	Species or species habitat likely to occur within area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat likely to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [55742]	Endangered	Species or species habitat likely to occur within area
Samadera sp. Moonee Creek (J.King s.n. Nov. 1949) [86885]	Endangered	Species or species habitat known to occur within area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat likely to occur within area
Sarcochilus hartmannii Waxy Sarcochilus, Blue Knob Orchid [4124]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Triplarina imbricata [64543]	Endangered	Species or species habitat may occur within area
Tylophora woollsii [20503]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [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.

Name
Commonwealth Land - Australian Telecommunications Commission

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Breeding likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Coramba	NSW
Forestry Management Areas in Coffs Harbour (FMZ2)	NSW
Sherwood	NSW
Twelve Sixty	NSW
UNE Special Management Zone No1	NSW
UNE_LNE_OldGrowth	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-30.12415 153.0115

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 D

Potential for Threatened Fauna Occurrence

Table D.1 Threatened Fauna Potential Occurrence Assessment

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Amphibians						
Litoria brevipalmata	Green-thighed Frog	V	-	Rainforest, moist to dry eucalypt forest and heath, typically where surface water gathers after rain.	No suitable habitat on the site	Unlikely
Mixophyes balbus	Stuttering Frog	E	V	Cool rainforest, moist eucalypt forest and occasionally along creeks in dry eucalypt forest. Typically at elevations between 200 and 1420m above sea level in their northern range.	No suitable habitat on the site	Low
Mixophyes iteratus	Giant Barred Frog	E	E	Deep, damp leaf litter in rainforests, moist eucalypt forest and near dry eucalypt forest.	No suitable habitat on the site, suitable habitat associated with the Orara River.	Low
Avifauna						
Anthochaera phrygia	Regent Honeyeater	CE	CE	Dry open forest and woodland with an abundance of nectar-producing eucalypts, particularly box-ironbark woodland, swamp mahogany forests, and riverine sheoak woodlands.	No suitable habitat on the site	Unlikely
Atrichornis rufescens	Rufous Scrub-bird	V	-	Subtropical, warm temperate, cool temperate rainforest and moist eucalypt forest with rainforest mid-storey. Moist, densely vegetated lower levels with deep leaf litter.	No suitable habitat on the site	Unlikely
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1000 m.	No suitable habitat on the site	Unlikely
Climacteris picumnus	Brown Treecreeper	V	-	Eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range, and less commonly on coastal plains and ranges.	No suitable habitat on the site	Unlikely

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Daphoenositta chrysoptera	Varied Sittella	V	-	Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	No suitable habitat on the site	Unlikely
Dasyornis brachypterus	Eastern Bristlebird	E	E	High elevation open forest, woodland with dense tussock or sedge understorey adjacent to rainforest or wet eucalypt forest.	No suitable habitat on the site	Unlikely
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.	No suitable habitat on the site	Unlikely
Erythrotriorchis radiatus	Red Goshawk	CE	V	Open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water. Typically found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers. Population in NSW is naturally small (probably only one pair) and lies at extreme of the natural range of the species in Australia.	No suitable habitat on the site	Unlikely
Glossopsitta pusilla	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.	No suitable habitat on the site	Unlikely
Hirundapus caudacutus	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.	No suitable habitat on the site	Unlikely

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Lathamus discolor	Swift Parrot	E	CE	On mainland Australia foraging occurs where eucalypts are flowering profusely or where abundant lerp infestations occur.	No suitable habitat on the site	Unlikely
Lophoictinia isura	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.	No suitable habitat on the site	Unlikely
Ninox strenua	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.	No suitable habitat on the site	Unlikely
Pandion cristatus	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.	No suitable habitat on the site	Unlikely
Pomatostomus temporalis temporalis	Grey-crowned Babbler	V	-	Open woodlands dominated by mature eucalypts, with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs.	Marginal habitat on the site. Scarce records locally.	Unlikely
Ptilinopus magnificus	Wompoo Fruit-dove	V	-	Rainforests, low-elevation moist eucalypt forest, and Brush Box forests.	No suitable habitat on the site	Unlikely
Ptilinopus regina	Rose-crowned Fruit-dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.	Camphor Laurel associated with the site provides suitable foraging habitat.	Possible

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Rostratula australis	Australian Painted Snipe	E	E	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.	No suitable habitat on the site	Unlikely
Turnix maculosus	Red-backed Button-quail	V	-	Grassland, sedgelands near creeks. Swamps and wetlands.	No suitable habitat on the site	Unlikely
Turnix melanogaster	Black-breasted Button-quail	CE	V	Drier rainforests and vine scrubs, often in association with Hoop Pine and a deep moist leaf litter layer. During drought it may move to adjacent wetter rainforests.	No suitable habitat on the site	Unlikely
Tyto longimembris	Eastern Grass Owl	V	-	Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains.	No suitable habitat on the site	Unlikely
Tyto novaehollandiae	Masked Owl	V	-	Dry eucalypt forest and woodlands.	No suitable habitat on the site	Unlikely
Tyto tenebricosa	Sooty Owl	V	-	Dry, subtropical and warm temperate rainforests and wet eucalypt forests. Nest in large tree hollows.	No suitable habitat on the site	Unlikely
Mammals						
Aepyprymnus rufescens	Rufous Bettong	V	-	Tall moist eucalypt forest to open woodland with tussock grass understorey.	No suitable habitat and generally too degraded on the site.	Unlikely
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Near cave entrances and crevices in cliffs.	No suitable habitat on the site	Unlikely
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	No suitable habitat and generally too degraded on the site.	Unlikely
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	Moist and dry eucalypt forest and rainforest, particularly at high elevations.	No suitable habitat on the site	Unlikely
Macropus parma	Parma Wallaby	V	-	Moist eucalypt forest with thick shrubby understorey, often with nearby grassy areas and rainforest margins.	No suitable habitat on the site	Unlikely

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	Occurs in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosts in tree hollows.	Potential foraging habitat associated with the site and surrounds.	Possible
Miniopterus australis	Little Bentwing-bat	V	-	Moist eucalypt forest, rainforest and dense coastal scrub.	Potential foraging habitat associated with the site and surrounds.	Possible
Miniopterus orianae oceanensis	Large Bentwing-bat	V	-	Forest or woodland, roost in caves, old mines and stormwater channels.	Potential foraging habitat associated with the site and surrounds.	Possible
Myotis macropus	Southern Myotis	V	-	Bodies of water, rainforest streams, large lakes, reservoirs.	Potential foraging habitat associated with Orara River. No suitable habitat on the site.	Low
Petauroides volans	Greater Glider	-	V	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands.	No suitable habitat on the site including suitable hollows	Unlikely
Petaurus australis	Yellow-bellied Glider	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.	No suitable habitat on the site including suitable hollows	Unlikely
Petaurus norfolcensis	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.	No suitable habitat on the site including suitable hollows	Unlikely
Petrogale penicillata	Brush-tailed Rock-wallaby	E	V	North-facing cliffs and dry eucalypt forest and woodland, inhabiting rock crevices, caves, overhangs during the day, and foraging in grassy areas nearby at night.	No suitable habitat on the site	Unlikely

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Phascogale tapoatafa	Brush-tailed Phascogale	V	-	Drier forests and woodlands with hollow-bearing trees and sparse ground cover.	No suitable habitat on the site including suitable hollows	Unlikely
Phascolarctos cinereus	Koala	V	V	Appropriate food trees in forests and woodlands, and treed urban areas.	No preferred food trees on the site.	Unlikely
Phoniscus papuensis	Golden-tipped Bat	V	-	Rainforest and adjacent sclerophyll forest. Roosts in abandoned hanging Yellow-throated Scrubwren and Brown Gerygone nests.	No suitable habitat on the site	Unlikely
Planigale maculata	Common Planigale	V	-	Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.	No suitable habitat and generally too degraded on the site.	Unlikely
Potorous tridactylus tridactylus	Long-nosed Potoroo	V	V	Cool temperate rainforest, moist and dry forests, and wet heathland, inhabiting dense layers of grass, ferns, vines and shrubs.	No suitable habitat on the site	Unlikely
Pseudomys novaeholanndiae	New Holland Mouse	-	V	Occurs in open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	No suitable habitat on the site	Unlikely
Pseudomys oralis	Hastings River Mouse	E	E	Dry open forests with dense, low groundcover with diverse mix of ferns, grass, sedges and herbs.	No suitable habitat on the site	Unlikely
Pteropus poliocephalus	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.	Potential foraging habitat associated with the site and surrounds.	Possible
Scoteanax rueppellii	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.	Potential foraging habitat associated with the site and surrounds.	Possible
Thylogale stigmatica	Red-legged Pademelon	V	-	Rainforest, vine scrub, moist eucalypt forest with dense understorey and ground cover.	No suitable habitat on the site	Unlikely

Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Reptiles						
Cacophis harriettae	White-crowned Snake	V	-	Low to mid-elevation dry eucalypt forest and woodland with well-developed litter layer.	No suitable well developed leaf litter on the site	Unlikely
Saiphos reticulatus	Three-toed Snake-tooth Skink	V	E	Rainforest and occasionally moist eucalypt forest, on loamy or sandy soils.	No suitable habitat on the site	Unlikely
Insects						
Argynnis hyperbius inconstans	*Australian Fritillary*	E	CE	Open swampy coastal habitat where the caterpillar's food plant, Arrowhead Violet (*Viola betonicifolia*) occurs.	No suitable habitat on the site	Unlikely
Coastal Petaltail	*Petalura litorea*	E	-	Permanent wetlands, swamps and bogs with some free water and open vegetation. Restricted to coastal and near coastal lowlands between Coffs Harbour and Ballina.	No suitable habitat on the site	Unlikely
Phyllodes imperialis smithersi	*Pink Underwing Moth*	E	E	Undisturbed subtropical rainforest below 600 m. Breeding habitat is restricted to areas where the caterpillar's food plant, a native rainforest vine, *Carronia multisepalea*, grows in a collapsed shrub-like form.	No suitable habitat on the site	Unlikely

Appendix E

Tests of Significance

Tests of significance ('five-part tests') under Section 7.3 of the BC Act have been completed for the following threatened species:

Fauna:

Birds

- Rose-crowned Fruit-dove.

Flying-foxes

- Grey-headed Flying-fox.

Microbats

- Large Bent-winged Bat
- Little Bent-winged Bat
- Greater Broad-nosed Bat
- Eastern Coastal Free-tailed bat.

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

Rose Crowned Fruit-dove

The Rose-crowned Fruit-dove occupies habitat niches in moist sclerophyll and rainforests, predominantly along the east coast of NSW. It feeds on ripe fruits from a diverse range of fruit bearing species including figs, palms, trees, shrubs and vines. These birds are thought to be effective medium to long distance vectors for seed dispersal due their locally nomadic behavior. Breeding takes place from spring to summer within a stick nest where typically a single egg is laid. Both parent birds take turns to incubate the egg.

Threatening processes for these species include:

- Clearing and fragmentation of low to mid-elevation rainforest due to coastal development and grazing
- Logging and roading in moist eucalypt forest with well-developed rainforest understorey
- Burning, which reduces remnant rainforest habitat patches
- Infestation of rainforest habitat by invasive weeds
- Removal of Camphor Laurel food source without appropriate mitigation measures.

Potential Impacts of the Proposal

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. As Camphor Laurels are associated with the site, this represents potential foraging habitat for this species.

Despite the potential minor negative impacts of the Proposal on the subject species, the Proposal is considered unlikely to have a significant impact on a local viable population of any of the subject species for the following reasons:

- The vegetation within the site is mostly in low condition and unlikely to constitute key habitat for the subject species
- Considering the relatively small area of vegetation clearing required for the Proposal, relative to the extent of habitat available locally the habitat disturbance required is not significant and the current population carrying capacity of the study area for all of the subject species would largely be retained
- The foraging range of the subject species is likely to extend beyond the confines of the site into other areas of equivalent or better quality native forest habitat.

On this basis it would be highly unlikely that an adverse effect on the life cycle of the Rose-crowned Fruit-dove could occur such that a viable local population of the species is likely to be placed at risk of extinction.

Grey-headed Flying-fox (GHFF)

Grey-headed Flying-foxes (GHFF) have a distribution that typically extends approximately 200 km from the coast of Eastern Australia, from Rockhampton in Queensland to Adelaide in South Australia. Foraging areas include subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. GHFF feed on the nectar and pollen of native trees, in particular *Eucalyptus, Melaleuca* and *Banksia*, and fruits of rainforest trees and vines, as well as from cultivated gardens and orchards. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. GHFF may travel up to 50 km from the camp to forage; commuting distances are more often <20 km.

Threatening processes for this species include:

- Clearing of woodlands for agriculture
- Loss of roosting and foraging sites
- Electrocution on powerlines, entanglement in netting and on barbed-wire
- Heat stress
- Conflict with humans
- Incomplete knowledge of abundance and distribution across the species' range.

Potential Impacts from the Proposal

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. Vegetation to be removed provides a very small area of potential foraging habitat for this species. No known roost habitat would be affected.

In a local context, the works are unlikely to result in significant impacts to foraging resources for GHFF. On this basis, it would be highly unlikely that an adverse effect on the life cycle of GHFF would occur such that a viable local population of the species is likely to be placed at risk of extinction.

Large and Little Bent-winged

Bent-winged bats occur in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Roosting occurs in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. Little Bent-winged bats often share roosting sites with the Common Bent-winged bat and, in winter, the two species may form mixed clusters.

In NSW, the largest maternity colony is in close association with a large maternity colony of Large Bent-winged bats and appears to depend on the large colony to provide the high temperatures needed to rear its young. Maternity colonies form in spring and birthing occurs in early summer. Males and juveniles disperse in summer. Only five nursery sites/maternity colonies are known in Australia.

Threatening processes for these species include:

- Disturbance of colonies, especially in nursery or hibernating caves, may be catastrophic
- Destruction of caves that provide seasonal or potential roosting sites
- Changes to habitat, especially surrounding maternity/nursery caves and winter roosts
- Pesticides on insects and in water consumed by bats bio accumulates, resulting in poisoning of individuals
- Predation from foxes, particularly around maternity caves, winter roosts and roosts within culverts, tunnels and under bridges
- Predation from feral cats, particularly around maternity caves, winter roosts and roosts within culverts, tunnels and under bridges
- Introduction of exotic pathogens such as the White-nosed fungus
- Hazard reduction and wildfire fires during the breeding season
- Large scale wildfire or hazard reduction can impact on foraging resources
- Poor knowledge of reproductive success and population dynamics.

Potential Impacts from the Proposal

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. Infrequent vegetation on the site and cleared pastoral areas may comprise potential fly-over foraging habitat for these species.

In a local context, the works are unlikely to result in significant impacts to foraging habitat for Bent-winged bats and no roost habitat would be affected.

On this basis, it would be highly unlikely that an adverse effect on the life cycle of the Large or Little Bent-winged bats would occur such that a viable local population of these species is likely to be placed at risk of extinction.

Greater Broad-nosed Bat

The Greater Broad-nosed bat utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although usually roosting in tree hollows, the species has also been found in buildings. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. Little is known of the reproductive cycle, however a single young is born in January; prior to birth, females congregate at maternity sites located in suitable trees, where they appear to exclude males during the birth and raising of a single young.

Threatening processes for this species include:

- Disturbance to roosting and summer breeding sites
- Foraging habitats are being cleared for residential and agricultural developments, including clearing by residents within rural subdivisions
- Loss of hollow-bearing trees
- Pesticides and herbicides may reduce the availability of insects or result in the accumulation of toxic residues in individuals' fat stores
- Changes to water regimes are likely to impact food resources, as is the use of pesticides and herbicides near waterways.

Potential Impacts from the Proposal

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. Infrequent vegetation on the site and cleared pastoral areas may comprise potential fly-over foraging habitat for these species.

In a local context, the works are unlikely to result in significant impacts to foraging for the Greater Broad-nosed bat and no roost habitat would be affected.

On this basis, it would be highly unlikely that an adverse effect on the life cycle of the Greater Broad-nosed bat would occur such that a viable local population of these species is likely to be placed at risk of extinction.

Eastern Coastal Freetailed-bat

The Eastern Coastal Freetailed-bat occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. They typically roost in tree hollows but will also roost under bark or in man-made structures. Usually solitary but also recorded roosting communally; probably insectivorous.

Threatening processes for this species include:

- Loss of hollow-bearing trees
- Loss of foraging habitat
- Application of pesticides in or adjacent to foraging areas
- Artificial light sources spilling onto foraging and/or roosting habitat
- Large scale wildfire or hazard reduction burns on foraging and/or roosting habitat.

Potential Impacts from the Proposal

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. Infrequent vegetation on the site and cleared pastoral areas may comprise potential fly-over foraging habitat for these species.

In a local context, the works are unlikely to result in significant impacts to foraging habitat for Eastern Coastal Freetailed-bats and no roost habitat would be affected. On this basis, it would be highly unlikely that an adverse effect on the life cycle of the Eastern Coastal Freetailed-bat would occur such that a viable local population of the species is likely to be placed at risk of extinction.

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

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

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

No endangered ecological communities or critically endangered ecological communities would be impacted by the proposal.

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

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

Fauna:

- Birds (Rose-crowned Fruit-dove): Extremely minor contraction of low quality foraging habitat associated with the site.
- Flying-foxes (GHFF): Extremely minor contraction of low quality foraging habitat associated with the site.
- Microbats (Large Bent-winged bat, Eastern Coastal Freetailed-bat, Greater Broad-nosed Bat, Little Bent-winged bat): Extremely minor contraction of low quality foraging habitat associated with the site. No removal of roosting habitat.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

Fauna:

- Rose-crowned Fruit-dove: No significant fragmentation of habitat would occur; the works (both in construction and operational phases) are unlikely result in significant barriers to dispersal.
- Flying-foxes (Grey-headed Flying-fox): No significant fragmentation of habitat would occur; the works (both in construction and operational phases) are unlikely result in significant barriers to dispersal.
- Microbats (Large Bent-winged bat, Eastern Coastal Freetailed-bat, Greater Broad-nosed Bat, Little Bent-winged bat): No significant fragmentation of habitat would occur; the works (both in construction and operational phases) are unlikely result in significant barriers to dispersal.

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

Fauna:

- Rose-crowned Fruit-dove: Habitat to be removed is minor in a local context where dry and wet sclerophyll forests occur extensively.
- Flying-foxes (Grey-headed Flying-fox): Habitat to be removed is minor in a local context where dry/ wet sclerophyll forests occur extensively.
- Microbats (Large Bent-winged bat, Eastern Coastal Freetailed-bat, Greater Broad-nosed Bat, Little Bent-winged bat): Habitat to be removed is minor in a local context where fragmented forest communities occur extensively.

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

No areas of outstanding biodiversity value have been declared in Coffs Harbour LGA.

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

A key threatening process (KTP) is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species or ecological communities. KTPs listed in the BC Act, and whether the Proposal is recognised as a KTP is shown in **Table E.1**.

Table E.1 Key Threatening Processes

Key Threatening Process (as per Schedule 4 of the BC Act)	***Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?***		
	Likely	***Possible***	***Unlikely***
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)			✓
Alteration of habitat following subsidence due to longwall mining			✓
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands			
Anthropogenic climate change		✓	
Bushrock removal			✓
Clearing of native vegetation		✓	
Competition and grazing by the feral European Rabbit (*Oryctolagus cuniculus*)			✓
Competition and habitat degradation by feral goats (*Capra hircus*)			✓
Competition from feral honeybees (*Apis mellifera*)			✓
Death or injury to marine species following capture in shark control programs on ocean beaches			✓
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments			✓
Forest eucalypt dieback associated with over-abundant psyllids and bell miners			✓
Habitat degradation and loss by Feral Horses, *Equus caballus*			✓
Herbivory and environmental degradation caused by feral deer			✓
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition			✓
Importation of red imported fire ants (*Solenopsis invicta*)			✓
Infection by *Psittacine circoviral* (beak and feather) disease affecting endangered psittacine species and populations			✓
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis			✓
Infection of native plants by *Phytophthora cinnamomi*			✓
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae			✓
Introduction of the large earth bumblebee (*Bombus terrestris*)			✓
Invasion and establishment of exotic vines and scramblers			✓
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)			✓
Invasion and establishment of the Cane Toad (*Bufo marinus*)			✓
Invasion, establishment and spread of Lantana (*Lantana camara*)			✓
Invasion of native plant communities by African Olive (*Olea europaea L. subsp. cuspidata*)			✓
Invasion of native plant communities by *Chrysanthemoides monilifera* (bitou bush and boneseed)			✓
Invasion of native plant communities by exotic perennial grasses			✓
Invasion of the Yellow Crazy Ant (*Anoplolepis gracilipes*) into NSW			✓

Key Threatening Process (as per Schedule 4 of the BC Act)	*Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?*		
	Likely	*Possible*	*Unlikely*
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants			✓
Loss of hollow-bearing trees			✓
Loss or degradation (or both) of sites used for hill-topping by butterflies			✓
Predation and hybridisation by feral dogs (*Canis lupus familiaris*)			✓
Predation by the European Red Fox (*Vulpes vulpes*)			✓
Predation by the feral cat (*Felis catus*)			✓
Predation by *Gambusia holbrooki* (Plague Minnow or Mosquito Fish)			✓
Predation by the Ship Rat (*Rattus rattus*) on Lord Howe Island			✓
Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)			✓
Removal of dead wood and dead trees			✓

The Proposal may be characteristic of four KTPs:

- Minor clearing of woody native vegetation on site
- The Proposal incrementally contributes to *Anthropogenic climate change*, through the generation of carbon dioxide during operation of machinery and vehicles and associated fuel consumption however the impact is not considered significant.

On this basis, the degree that the Proposal would contribute to any threatening process is not considered likely to place the local population of any of the subject species or communities at significant risk of extinction.

Conclusion

The proposal may involve minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area.

Given that the site only contains minor areas of marginal habitat and land occurring in the locality supports extensive areas of better quality vegetation/habitat, it is considered unlikely that the local population of any of the subject species/communities would be placed at significant risk of extinction as a result of the Proposal, and a Biodiversity Development Assessment Report (BDAR) is not required for the proposal.

APPENDIX 8 – LAND USE CONFLICT RISK ASSESSMENT FOR 19 ORARA STREET, NANA GLEN

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LAND USE CONFLICT RISK ASSESSMENT

For Planning Proposal and Rural Residential Subdivision
19 Orara Street, Nana Glen, NSW

Prepared By: Paola Rickard
Land & Fire Assessments Pty Ltd

For: Mr Mark Rutledge
Project No.: LFA20011
Date: 24 July 2020

Disclaimer

Land & Fire Assessments Pty Ltd (LFA) have conducted work concerning the environmental status of the site, which is the subject of this report, and has prepared this report on the basis of that assessment. The work was conducted, and the report has been prepared, in response to specific instructions from the client or a representative of the client and in reliance on certain data and information made available to LFA. The analysis, evaluations, opinions and conclusions presented in this report are based on that information, and they could change if the information is in fact inaccurate or incomplete.

Due consideration has been given to site conditions and to appropriate legislation and documentation available at the time of preparation of the report. As these elements are liable to change over time, the report should be considered current at the time of preparation only. Should further information become available regarding the conditions at the site, LFA reserves the right to review the report in the context of the additional information. LFA has made no allowance to update this report and has not taken into account events occurring after the time its assessment was conducted.

This report is intended for the sole use of the client and only for the purpose for which it was prepared. Any representation contained in the report is made only to the client unless otherwise noted in the report. Any third party who relies on this report or on any representation contained in it does so at his or her own risk

Revision List

Revision No.	Revision Date	Report Title	Report Author	Field Survey By	Status
00	21.07.2020	Land Use Conflict Risk Assessment - For Planning Proposal and Rural Residential Subdivision, 19 Orara Street, Nana Glen, NSW	Main Author: Paola Rickard (LFA - Senior Environmental Planner)	Paola Rickard undertaken on the 19.05.20	Draft for review
01	24.07.2020				Final

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1. Introduction and Background

1.1 Introduction

Land & Fire Assessments Pty Ltd (LFA) has been commissioned by Mr Mark Rutledge to prepare a Land Use Conflict Risk Assessment (LUCRA) to support **Planning Proposal and six lots Rural Residential Subdivision of Lot 1 DP 1163252 & Lot 1 DP 1210495, 19 Orara Street, Nana Glen, NSW**. The site is shown on Figs. 1 & 2. Nana Glen is located in the Coffs Harbour City Council (CHCC) Local Government Area approximately 30 km north west of Coffs Harbour.

The proposal applies to the southern portion of the land only, which is zoned R5 - Large Lot Residential in the Coffs Harbour Local Environmental Plan 2013. The rest of the property is zoned E2 - Environmental Conservation and RU2 – Rural Landscape (refer to Fig. 3). Concerning the portion of the site zoned R5 – Large Lot Residential, it is proposed to retain the same zoning, but instead to change the current Minimum Lot Size from 2 hectares to 8,000m^2 to allow a 6-lot subdivision on the land shown on Fig. 1.

As part of the Development Application for the subdivision, it is required to address the Coffs Harbour City Council (CHCC) Development Control Provisions (DCP), specifically:

- C1.5 SUBDIVISION-DESIGN REQUIREMENTS FOR RURAL AND LARGE LOT RESIDENTIAL ZONES

C1.5 also details the provisions regarding the preparation of a LUCRA. The relevant clause states:

> (2) Subdivisions are to incorporate **adequate buffers between dwelling envelopes and adjoining agricultural land to ensure that the agricultural potential of those lands will not be diminished** (refer to the Land Use Conflict Risk Assessment Guide prepared by the NSW Department of Primary Industries).

The LUCRA will address land use interface issues and risks between rural land uses and the proposed rural residential development. The LUCRA will be prepared in accordance with the Land Use Conflict Risk Assessment Guide, which has been promoted by the NSW Department of Primary Industries (DPI 2011) and is based on Learmonth *et al* (2007).

The purpose of the LUCRA is to identify landuse compatibility and potential conflict between neighbouring landuses, and therefore, assists in the identification of the potential for future landuse conflict. The LUCRA aims to:

- *Objectively assess the effect and level of proposed landuse on neighbouring land uses;*
- *Accurately identify the risk of conflict between neighbouring land uses;*
- *Complement development control and buffer requirements with an understanding of likely landuse conflict;*
- *Proactively address landuse issues and risks before a new landuse proceeds or before a dispute arises; and*
- *Highlight or recommend strategies to help minimise conflict and contribute to the negotiation, proposal, implementation and evaluation of separation strategies.*

In summary, the LUCRA is a tool aimed at:

- Identifying the effects of the landuse on neighbouring landuse; and
- Evaluate the level of impact of these effects.

In order to achieve those aims, a four-step assessment process is undertaken as follows:

1. **Information Gathering** – The site geophysical characteristics, the nature of the development proposed and the surrounding landuses are described.
2. **Risk Level Evaluation** - Each proposed activity is recorded and an assessment of potential landuse conflict level is assigned. The higher the risk level, the more attention it will require.

3. **Identification of Risk Mitigation Management Strategies** – Management strategies are identified which can assist in lowering the risk of potential conflict.
4. **Record Results –** Key issues, risk level and recommended management strategies are recorded and summarised.

Accordingly, this landuse conflict risk assessment will utilise the aforementioned four-step assessment process**.**

Figure 1. The site and the proposal area (blue circle) within the locality context. Source: https://maps.six.nsw.gov.au/

2. Information Gathering (Step 1)

2.1 The Subject Site

The land (i.e. Lot 1 DP 1163252 & Lot 1 DP 1210495), which is approx. 19.15 ha in size, is located at 19 Orara Street and has direct access to the street. The land in context with the locality is shown on Fig. 2. The proposal applies to the southern portion of the land only, which is zoned R5 - Large Lot Residential in the Coffs Harbour Local Environmental Plan 2013. The rest of the property is zoned E2 - Environmental Conservation and RU2 – Rural Landscape (refer to Fig. 3). Concerning the portion of the site zoned R5 – Large Lot Residential, it is proposed to retain the same zoning, but instead to change the current Minimum Lot Size from 2 hectares to 8,000m^2 to allow a 6-lot subdivision on the land shown on Fig. 1.

The site entails a large grazing property (as shown on Figs. 1, 2 & 4 and Plates 1-7) and includes an existing dwelling (to be retained). The land is bounded by Bucca Bucca Creek along the northern and north eastern boundaries, by the Orara River along the north western boundary and large grazing properties to the north, north east, west and south west (Plate 8). To the south east are large lot and low-density residential properties (Plates 9-11). Concerning the proposal area (i.e. the Subject Site), it is surrounded by grazing properties, and to the east and south east by residential development (Plates 7 & 12-15). The land and the Subject Site are cleared and flat. The Subject Site elevation range from 85m AHD to the south east to 68m to the north east and 74m AHD to the north west. To the north east of the proposal area is the Wet Sclerophyll Forest (i.e. Forest vegetation formation) along Bucca Bucca Creek and a planted single row and wide spaced windbreak is found along the eastern boundary. The proposal site is outside of the 100-year ARI Flood Extent and is not mapped as Primary, Secondary or Tertiary Koala habitat as per the Coffs Harbour Comprehensive Koala Plan of Management (CHCKPoM).

The current driveway access to the dwelling and neighbouring Lot 2 DP1163252 is an existing Right Of Carriageway to Lot 2 DP1163252 and will be retained. The access driveway leads to the public road networks at the intersection with Orara Street, Rivendell Mews and Weir Street (Plate 12). As part of the proposed subdivision, Rivendell Mews will be extended (Plate 7).

Plate 1. looking SE at entry to site, planted single row and wide spaced windbreak along the eastern boundary

Plate 2. Looking SE towards neighbouring residential lots

Plate 3. Looking north across the planning proposal area (the Subject Site)

Plate 4. Looking NE at the Wet Sclerophyll Forest occurring along Bucca Bucca Creek. The proposed subdivision northern boundary corresponds approx. to the fence in the foreground. The Grassland beyond is zoned E2 despite the fact that it is part of the same grazing property

Plate 5 (top). Looking NW to the rest of the property which will entail the residue. The land on the foreground is zoned E2, whilst that in the background up to the tree line is zoned RU2

Plate 6. Looking north east to large lot residential development abutting the proposal site

Plate 7. Looking north at point where Rivendell Mews will be extended as part of the subdivision proposal (see Fig. 4). Note the large lot residential development (shown on Plate 6) abutting the proposal site and dwelling located ~25m from grazing land

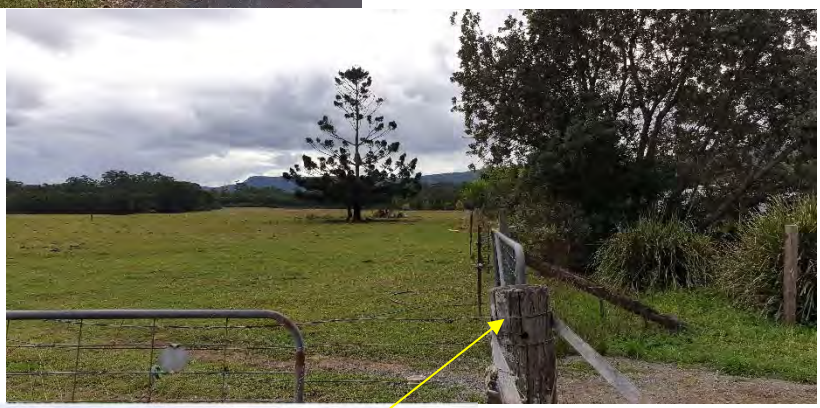


Plate 8. Looking north west along western boundary of site and exiting dwelling location with neighbouring grazing land (i.e. Lot 2 DP1163252)

Plate 9. Looking south west to exiting dwelling on Lot 2 DP1163252. Current RoW access to be retained. Closed gate leads to grazing paddock shown on Plate 8

Plate 10. Large lot residential landuse immediately to the south of proposal and existing dwelling

Plate 11. Horse paddock and large lot residential also to the south of the proposal and adjoining the low density residential along Orara Street

Plate 12. Looking east from entry point at intersection with Orara Street (to the right), Rivendell Mews (to the left) and Weir Street. Low density residential is found adjacent to proposal site

Plate 13. Looking north along Rivendell Mews. Proposal site to the left

Plate 14. Looking east at newly destablished residential development on Rivendell Mews

Plate 15. Residential development on Rivendell Mews

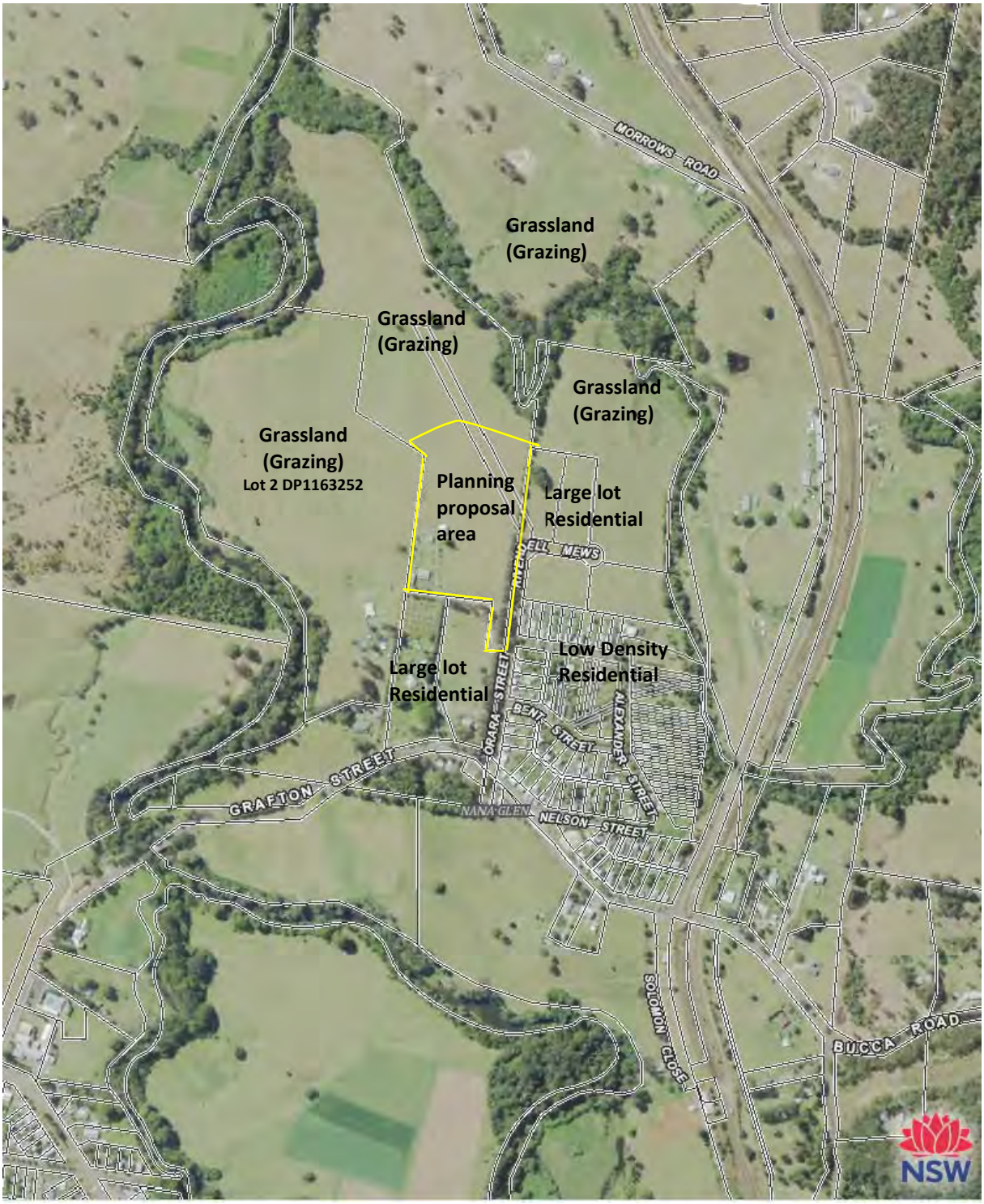


Figure 2. The planning proposal area within the locality context, and predominant landuse. Source: https://maps.six.nsw.gov.au/

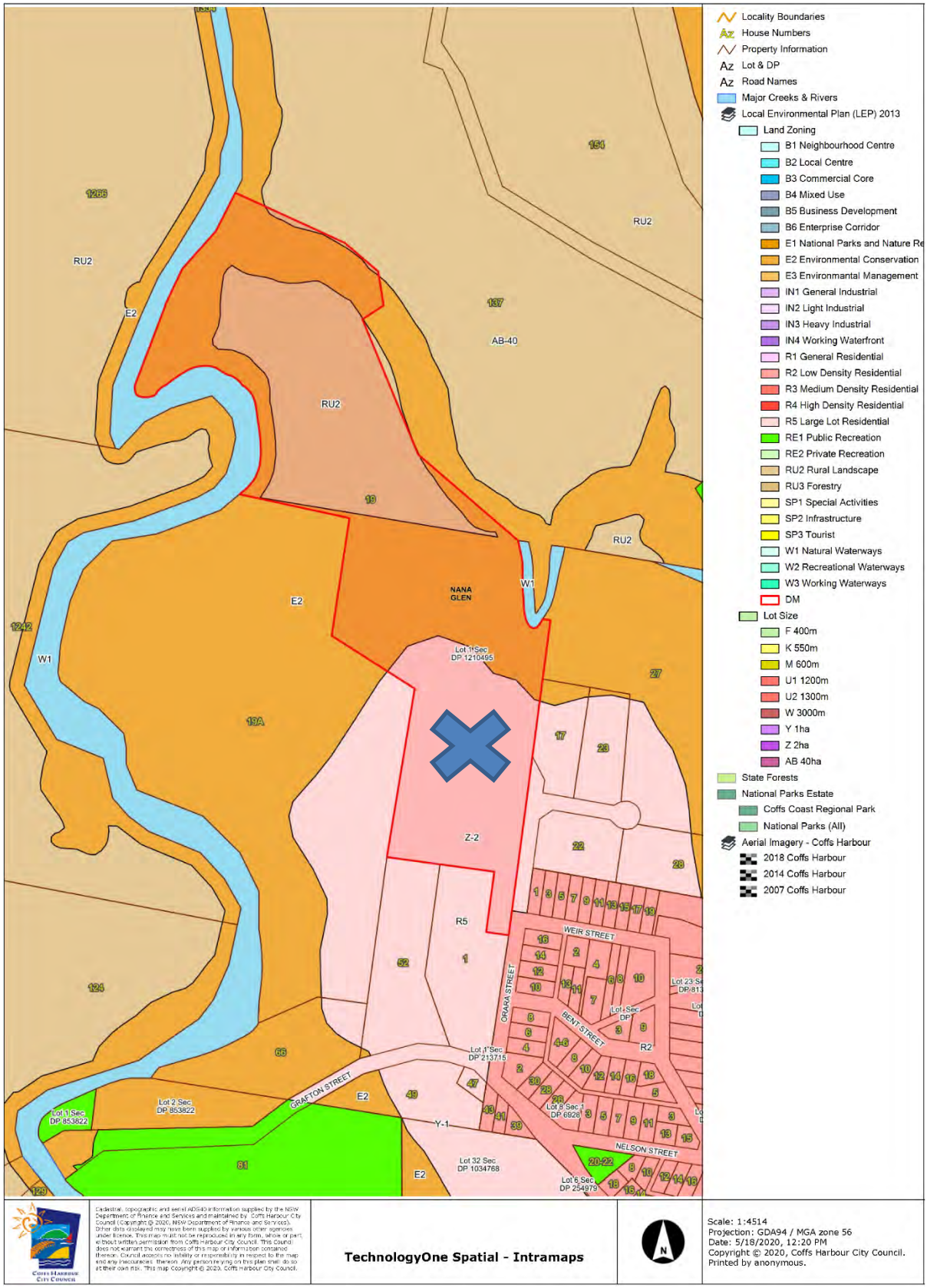


Figure 3. Land zoning applicable to the site (red boundary). The proposal applies to the southern portion of the land only (marked by X), which is zoned R5 - Large Lot Residential (Z-2)

2.2 Proposed Development & Planning Provisions

The proposed development entails a Planning Proposal to amend the minimum lot size from 2 ha to 0.8 ha. It is also proposed to subdivide the land into six lots, as shown on Fig. 4. The proposal applies to the southern portion of the land (see Figs. 2 & 3) only, which is zoned R5 - Large Lot Residential. The rest of the property is zoned E2- Environmental Conservation and RU2 – Rural Landscape. Specifically, proposed lots 1-5, which will be at a minimum 8,000 m^2 in size and proposed lot 6 (the residue), which will be 14.94 ha in size and included an 8,619m^2 portion of R5 zoned land. The existing dwelling and sheds are to be retained within proposed lot 1. Agricultural landuse (eg. grazing) will be retained for the residue lot 6. According to Mr Mark Rutledge the residue is large enough to be viable as a grazing property (with a future residential dwelling).

As part of the proposed subdivision, minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site will be require. Native trees on the site that may be removed include planted Mountain Blue Gum (*Eucalyptus deani*) and Cadaghi (*Corymbia torelliana*), which are not endemic to the area. Specifically, a number of Cadaghi and Mountain Blue Gum are likely to be impact by the construction of the cul de sac extension of Rivendell Mews (Plate 7) as well as two driveway entry points to proposed lots 1 & 3 from Rivendell Mews. According to GeoLINK (2020), the proposed development impacts entails '*Minor loss of exotic/native vegetation comprising small numbers of mostly planted trees on the site. Native trees on the site that may be removed include planted Mountain Blue Gum and Cadaghi which are not endemic to the area. (…) These impacts are considered to be relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised*.'

As noted in s. 1.1, it is required to address the Coffs Harbour City Council (CHCC) Development Control Provisions (DCP), specifically:

- C1.5 SUBDIVISION-DESIGN REQUIREMENTS FOR RURAL AND LARGE LOT RESIDENTIAL ZONES

C1.5 also details the provisions regarding the preparation of a LUCRA. The relevant clause states:

> (2) Subdivisions are to incorporate **adequate buffers between dwelling envelopes and adjoining agricultural land to ensure that the agricultural potential of those lands will not be diminished** (refer to the Land Use Conflict Risk Assessment Guide prepared by the NSW Department of Primary Industries).

In summary, the proposed change in lot size and rural residential subdivision is to occur over currently grazing land already zoned for large lot residential landuse. The proposal area is surrounded by grazing land, and low density to large lot residential development. Notably, the planning proposal area is already zoned for rural residential landuse (R5 - Large Lot Residential with 2Ha Minimum lot Size) in proximity of grazing land to the north and west. Nevertheless, this landuse conflict assessment will evaluate potential landuse conflict arising from the proposed **residential land uses and the grazing properties to north and west.**

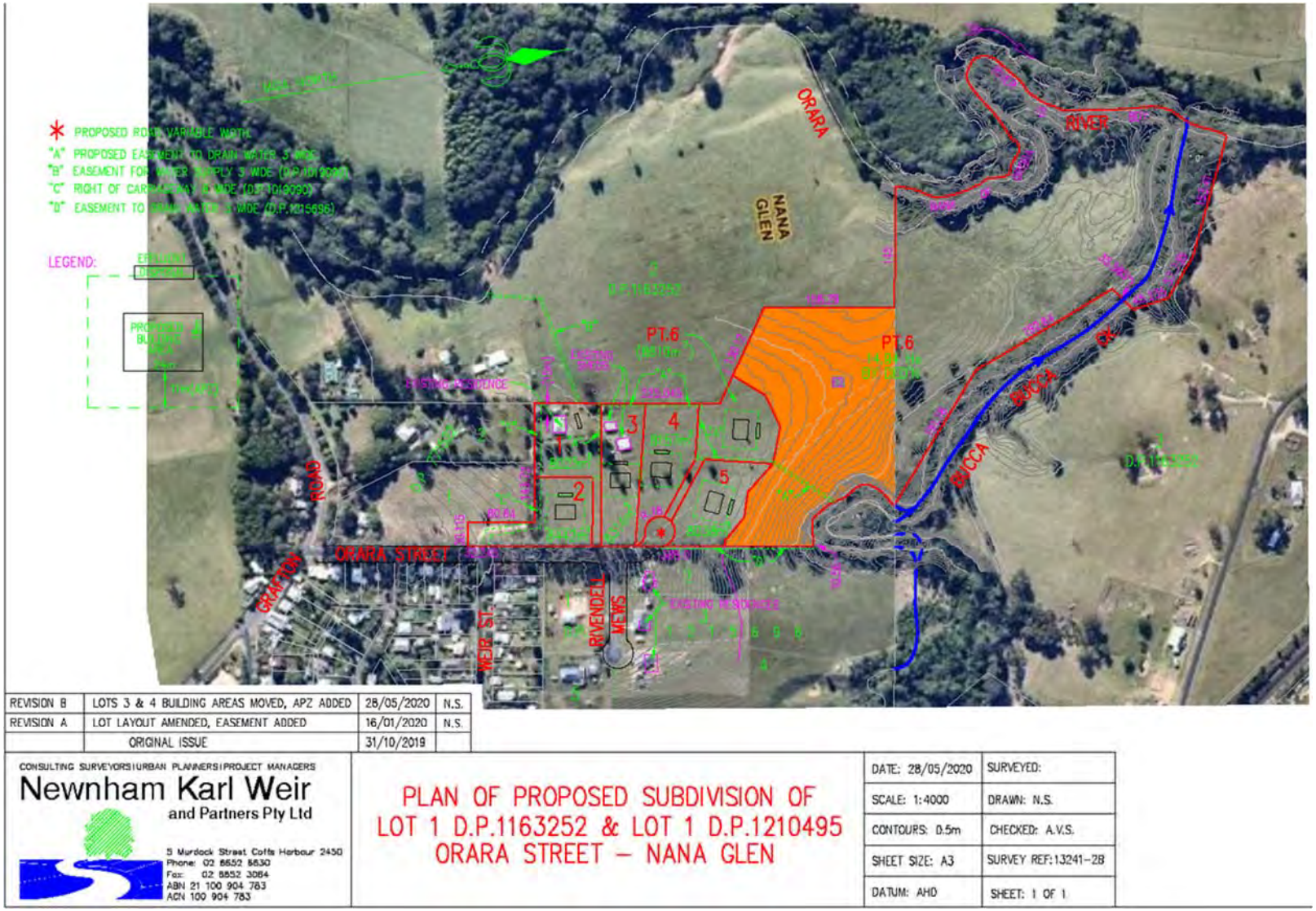


Figure 4. Proposed subdivision

2.3 Site History and Land Use

The site (i.e. Lot 1 DP 1163252 & Lot 1 DP 1210495) has been utilised as a grazing property and occasional horticulture (pecan trees) for a number of decades. Review of Google aerial imagery shows that the site has been utilised for grazing since at least 2004. The surrounding properties have similarly remained consistent with the current landuse apart from the construction of the last portion of Rivendell Mew, which was established circa 2016. No other information has been provided about former landuse. Review of CHCC Intramaps indicates that no banana cultivation occurred on the site or in its proximity. Similarly, no contaminated or potential contaminated land is found on the land or in its proximity. As noted previously, the land is bounded by Bucca Bucca Creek along the northern and north eastern boundaries, and by the Orara River along the north western boundary. An existing dwelling, sheds, and various farm infrastructure (eg. fenced paddocks, throughs, etc) are present on the property.

The land is zoned R5 - Large Lot Residential in the Coffs Harbour Local Environmental Plan 2013. The rest of the property is zoned E2 - Environmental Conservation and RU2 – Rural Landscape (refer to Fig. 3).

2.4 Surrounding Land Use

Adjoining landuse to the planning proposal site, which are illustrated on Fig. 2, are as follows:

- North: Grazing land
- East: Large Lot Residential & Low Density Residential
- South: Large Lot Residential
- West: Grazing land

The proposed rural residential subdivision will be consistent with surrounding landuse to the east and south. Notably, the planning proposal area is already zoned for rural residential landuse (R5 - Large Lot Residential with 2Ha Minimum lot Size) in proximity of grazing land to the north and west. Nevertheless, this landuse conflict assessment will evaluate potential landuse conflict arising from the proposed increased density (0.8Ha Minimum lot Size) residential land uses and the grazing properties to north and west.

2.5 Landuse Summary & Activities Arising from the Proposal

As noted, this landuse conflict assessment will evaluate potential landuse conflict arising from the proposed **residential land uses and the grazing properties to north and west.** It is necessary to identify any potential causes for conflict, which may arise from the development of the Site. Table 1 summarises the proposal within the context of the locality and surrounding landuse and the activities/impacts which may occur on neighbouring properties.

Table 1. Activities likely to occur as a result of the proposal

Parameter	Details
The nature of the landuse change & development proposed	The proposal will result in the introduction of higher density (0.8ha minimum lot size) rural residential landuse within land currently utilised for grazing, but already zoned for residential landuse (2Ha minimum lot size). There are exiting dwelling/rural infrastructures at the site.
The nature of the precinct where the land use change & development is proposed	The proposed change in lot size and rural residential subdivision is to occur over currently grazing land already zoned for large lot residential landuse. The proposal area is surrounded by grazing land, and low density to large lot residential development.
Topography, climate & natural features	The land and the Subject Site are cleared and flat. The Subject Site elevation range from 85m AHD to the south east to 68m to the north east and 74m AHD

Parameter	Details
	to the north west. To the north east of the proposal area is the Wet Sclerophyll Forest (i.e. Forest vegetation formation) along Bucca Bucca Creek and a planted single row and wide spaced windbreak is found along the eastern boundary. The proposal site is outside of the 100-year ARI Flood Extent. The soil type consists of the Averys Creek Landscape with moderately deep to deep, moderately well drained Yellow Podzolic Soils (Milford 1999). The climate in the Coffs Harbour LGA is typical of subtropical northern NSW, with warm summers and mild winters. The prevailing morning wind is from the southwest with calm conditions being experienced 15% of the time, and the prevailing afternoon winds are from the north east and south with calm conditions being experienced 3% of the time (refer to Appendix B - Wind Direction Rose from Coffs Harbour MO Weather Station - Site number: 059040).
Typical industries & land uses in the area	Industries: Predominantly grazing Land uses: Residential, grazing and rural lifestyle
The main activities of the proposed land use for the development & regularity of activity	The main activities associated with the proposed residential subdivision are the same as the ones associated with the existing surrounding development to the east and south, these are: o Low Density and Large lots Residential development: o Activities: mowing, traffic = some noise - ongoing; o Construction activities = noise, dust, loss of amenity- high intensity short duration
The main activities of adjoining land uses & their regularity	Land to the north and west: o Grazing- Activities: slashing, tractor use some odour – ongoing Land to east and south: o Low Density and Large lots Residential development: o Activities: mowing, traffic = some noise - ongoing; o Construction activities = noise, dust, loss of amenity- high intensity short duration
Compatibility of the proposal with surrounding land use issues	**The proposal is wholly compatible with the predominant surrounding landuse, i.e. rural landuse (grazing) and rural residential landuse.** However, despite the fact that the proposal is compatible with the surrounding land use, the potential landuse conflict with the grazing land on neighbouring property to the west and existing property (residue lot) to the north.

3. Risk Level Evaluation (Step 2)

3.1 Risk Evaluation & Ranking

As noted in Table 1, the main activities associated with the proposed development are the same as the ones associated with the predominant surrounding development. However, the DCP provisions requires that buffers between dwelling envelopes and adjoining agricultural land are to be considered to ensure that the agricultural potential of those lands will not be diminished.

Accordingly, this assessment focuses on the adequacy of the following buffers between the proposed dwelling envelopes on the lots (refer to Fig. 4), which interface with the grazing landuse to the north and west, namely:

- Proposed lot 1 – exiting dwelling separation to grazing land to the west = 15m
- Proposed Lot 2 – no interface with grazing land- so no further consideration required
- Proposed Lot 3 - dwelling envelope separation to grazing land to the west = ~75m
- Proposed Lot 4 - dwelling envelope separation to grazing land to the west = ~55m
- Proposed Lot 5 - dwelling envelope separation to grazing land to the north = ~20m
- Proposed Lot 6 - dwelling envelope separation to grazing land to the north & west = ~25-30m. Notably this is the residue lot and will include the remaining grazing land; therefore, the landuse for this lot will be the same as existing, i.e. farm house associated with grazing land.

Each proposed activity is recorded in Table 2 and an assessment of known landuse conflict level is assigned accordingly. Ranking is given before and after ameliorating measures are applied to mitigate the given activity impacts. The higher the risk level, the more attention it will require in order to reduce the ranking level. Risk rankings are derived from the risk ranking table attached as Appendix A.

Table 2. Risk Evaluation & Ranking

Activity	Identified Hazard	Risk Ranking	Control Methods	Controlled Ranking
o Building, access and services construction - intense activity, limited duration	Noise/Dust/Loss of Amenity	4C	o Adherence to approved daytime construction hours o Adherence to relevant legislation specifically re dust/noise management and implementation of erosion control measures o Good communication with neighbour	5C
Grazing o animals freely moving, some odour & noise o noise from occasional slashing	Some odour Some noise	4B	o Good communication with neighbour o 15-75m wide respective building envelopes setbacks from western and northern boundary of proposed subdivision as shown on Fig. 4 o Prevailing morning winds are from the southwest, and the prevailing afternoon winds are from the southeast and north east south. Thus, the prevailing winds do not blow directly onto the future residential dwellings from a westerly or northerly direction	5C

Activity	Identified Hazard	Risk Ranking	Control Methods	Controlled Ranking
o Mowing - activity common within surrounding rural residential landuse and not significantly increased because of the proposal	Noise	N/A	none	N/A

3.2 Potential Conflict Issues (Risk Ratings)

In summary, the main issues arising from the proposal are:

- Noise/Dust/Loss of Amenity (temporary only) – from the building construction works
- Noise/Odour – from the grazing to the west and north

Table 2 gives a risk value for each of the above identified potential conflict areas before (Risk Ranking) and after (Controlled Ranking) a mitigating measure is applied. A rating of High, Medium and Low is then assigned to each risk ranking based on a combination of 'Probability' of occurrence and 'Consequence' from the activity. Thus, the rating of the potential landuse conflict risks identified on Table 2 is displayed on Table 3. **It must be noted that, the highlighted scoring shown on Table 3 reflects the impact rating for the Controlled Ranking values.**

Table 3. Landuse Conflict Risk Assessment Matrix (Yellow highlight = Risk Rating for Controlled Ranking)

		Likelihood of a dispute/conflict over land use/activity				
		Almost Certain (A)	**Likely (B)**	**Possible (C)**	**Unlikely (D)**	**Rare (E)**
Likely consequence from a dispute/conflict over land use/activity	**Major consequences & impacts almost certain (1)**	HIGH (25)	HIGH (24)	HIGH (22)	MEDIUM (19)	LOW (15)
	High consequences & impacts likely (2)	HIGH (23)	HIGH (21)	MEDIUM (18)	LOW (14)	LOW (10)
	Moderate consequences & impacts possible (3)	HIGH (20)	MEDIUM (17)	LOW (13)	LOW (9)	LOW (6)
	Minimal consequences & impacts unlikely (4)	MEDIUM (16)	LOW (12)	LOW (8)	LOW (5)	LOW (3)
	Low consequence & impacts rare (5)	LOW (11)	LOW (7)	LOW (4)	LOW (2)	LOW (1)

The resulting risk rating of 4 shown on Table 3, which corresponds to the Controlled Ranking values of 5C is deemed an acceptable risk (refer to Appendix A). **This is because the identified potential conflict areas can be mitigated effectively with appropriate controls (summarised in s.3.1 and detailed in s. 4) and therefore yields a 'Low' likelihood of conflict and impact**.

4. Risk Mitigation Management Strategies (Step 3)

4.1 Control Measures

A number of measures have been listed on Table 2 to mitigate the potential landuse conflict which might arise from the proposal. These are as follows:

1. Good communication with neighbour
2. Adherence to relevant legislation
3. 15-75m wide respective building envelopes setbacks, specifically:
    a. Proposed lot 1 – exiting dwelling separation to grazing land to the west = 15m
    b. Proposed Lot 2 – no interface with grazing land- so no further consideration required
    c. Proposed Lot 3 - dwelling envelope separation to grazing land to the west = ~75m
    d. Proposed Lot 4 - dwelling envelope separation to grazing land to the west = ~55m
    e. Proposed Lot 5 - dwelling envelope separation to grazing land to the north = ~20m
    f. Proposed Lot 6 - dwelling envelope separation to grazing land to the north & west = ~25-30m. Notably this is the residue lot and will include the remaining grazing land; therefore, the landuse for this lot will be the same as existing, i.e. farm house associated with grazing land.

The building envelopes setbacks (i.e. buffers) detailed at point 3, forms part of the development proposal. The following section will address in more detail the landuse buffer provisions.

4.2 Landuse Buffers

The DCP does not prescribe minimum buffers to adjoining agricultural landuse. Similarly, the LUCRA Guide (DPI 2011) does not specifically propose minimum buffers to agriculture landuse including grazing. It instead notes that the LUCRA process prompts land use managers to identify operators of adjacent properties to the effects of a proposed land use on neighbouring land, describe and record the main activities of the land uses, evaluate the type of activities on adjacent properties and their frequency, and finally identify the level of management strategies required to minimise such effects.

Accordingly, this assessment has assessed this proposal in the context of the locality characteristics. It is noted that the current low density and large lot residential landuse in the locality coexist with adjoining grazing land. Indeed, some large lots (see Plate 11) such as those to the south of the proposal incorporate horse paddocks or the recent residential dwelling on 17 Rivendell Mew is located just 25m from grazing land (Plates 6 & 7).

Furthermore, any potential impacts (some odour and noise) on the proposed residential lots from neighbouring grazing land are considered to be minor (risk raking of 4B = Low likelihood of conflict and impact), as shown on Table 2 even before available separation buffers are considered. In addition, the prevailing morning winds are from the southwest, and the prevailing afternoon winds are from the southeast and north east south. Thus, the prevailing winds do not blow directly onto the future residential dwelling from a westerly or northerly direction.

In summary, this LUCRA has duly appraised the potential conflicts which could arise from the proposal and has deemed that the building envelopes setbacks (i.e. buffers) detailed at point 3 (s. 4.1) and shown on Fig. 4 are adequate to minimise future potential conflicts.

5. Summary, Conclusion & Recommendations (Step 4)

This LUCRA has been commissioned by Mr Mark Rutledge to support **Planning Proposal and six lots Rural Residential Subdivision of Lot 1 DP 1163252 & Lot 1 DP 1210495, 19 Orara Street, Nana Glen, NSW**.

Essentially, it was found that the proposed rural residential subdivision will be consistent with surrounding landuse to the east and south. Notably, the planning proposal area is already zoned for rural residential landuse (R5 - Large Lot Residential with 2Ha Minimum lot Size) in proximity of grazing land to the north and west. Nevertheless, this landuse conflict assessment evaluated the potential landuse conflict arising from the proposed increased density (0.8Ha Minimum lot Size) residential land uses and the grazing properties to north and west.

The main activities associated with the proposed development are the same as the ones associated with the existing landuse; thus, the proposal is wholly compatible with the predominant surrounding landuse, i.e. rural landuse (grazing) and rural residential landuse. However, the DCP provisions requires that buffers between dwelling envelopes and adjoining agricultural land are to be considered to ensure that the agricultural potential of those lands will not be diminished.

The DCP does not prescribe minimum buffers to adjoining agricultural landuse. Similarly, the LUCRA Guide (DPI 2011) does not specifically propose minimum buffers to agriculture landuse including grazing. Accordingly, the separation distances (buffers) between the proposed dwelling envelopes on the lots (refer to Fig. 4), which interface with the grazing landuse to the north and west were assessed for adequacy.

Following the risk evaluation, ranking and rating step by step process, a risk rating of 4 (see Table 3) was determined, which is deemed an acceptable risk. This is because the identified potential conflict areas can be mitigated effectively with appropriate control and therefore results in a 'Low' likelihood of conflict and impact. Furthermore, any potential impacts (some odour and noise) on the proposed residential lots from neighbouring grazing land are considered to be minor (risk raking of 4B = Low likelihood of conflict and impact), as shown on Table 2 even before available separation buffers are considered. In addition, the prevailing morning winds are from the southwest, and the prevailing afternoon winds are from the southeast and north east south. Thus, the prevailing winds do not blow directly onto the future residential dwellings from a westerly or northerly direction.

The control measures to be implemented to reduce the risk of landuse conflict are as follows:

1. Good communication with neighbour
2. Adherence to relevant legislation
3. 15-75m wide respective building envelopes setbacks as proposed in Fig. 4, specifically:
    a. Proposed lot 1 – exiting dwelling separation to grazing land to the west = 15m
    b. Proposed Lot 2 – no interface with grazing land - so no further consideration required
    c. Proposed Lot 3 - dwelling envelope separation to grazing land to the west = ~75m
    d. Proposed Lot 4 - dwelling envelope separation to grazing land to the west = ~55m
    e. Proposed Lot 5 - dwelling envelope separation to grazing land to the north = ~20m
    f. Proposed Lot 6 - dwelling envelope separation to grazing land to the north & west = ~25-30m. Notably this is the residue lot and will include the remaining grazing land; therefore, the landuse for this lot will be the same as existing, i.e. farm house associated with grazing land.

The building envelopes setbacks (i.e. buffers) detailed at point 3, forms part of the development proposal.

In summary, this LUCRA has duly appraised the potential conflicts which could arise from the proposal and has deemed that the building envelopes setbacks (i.e. buffers) detailed at point 3 and shown on Fig. 4 are adequate to minimise future potential conflicts so that the agricultural potential of those lands will not be diminished.

6. References

GeoLINK 2020, *Biodiversity Assessment Lot 1 DP1163252, 19 Orara Street, Nana Glen – Subdivision*, Report dated 15 June 2020.

Learmonth R., Whitehead R., Boyd B., & Fletcher S., 2007, *Living and Working in Rural Areas. A handbook for managing land use conflict issues on the NSW North Coast,* Centre for Coastal Agricultural Landscapes.

Department of Primary Industry (DPI) 2011, *Land Use Conflict Risk Assessment (LUCRA) Guide*, <http://www.dpi.nsw.gov.au/land-and-water/land-use/lup/development-assessment2/lucra>.

Milford H.B. 1999, *Soil Landscapes of the Coffs Harbour 1:100 000 Sheet - Department of Land and Water Conservation*, Sydney.

Appendices

Appendix A – Risk Ranking & Rating

Risk Ranking

The consequences (environmental/public health and amenity) are combined with a 'probability' (of those outcomes) in the Risk Ranking table to identify the risk rank of each environmental/public health and amenity impact.

Measure of Consequence (Severity of Environmental Impact) table

Level: 1	**Descriptor: Severe**
Description	• Severe and/or permanent damage to the environment • Irreversible • Severe impact on the community • Neighbours are in prolonged dispute and legal action involved
Example/ Implication	• Harm or death to animals, fish, birds or plants • Long term damage to soil or water • Odours so offensive some people are evacuated or leave voluntarily • Many public complaints and serious damage to Council's reputation • Contravenes Protection of the Environment & Operations Act and the conditions of Council's licences and permits. Almost certain prosecution under the POEO Act
Level: 2	**Descriptor: Major**
Description	• Serious and/or long-term impact to the environment • Long-term management implications • Serious impact on the community • Neighbours are in serious dispute
Example/ Implication	• Water, soil or air impacted, possibly in the long term • Harm to animals, fish or birds or plants • Public complaints. Neighbour disputes occur. Impacts pass quickly • Contravenes the conditions of Council's licences, permits and the POEO Act • Likely prosecution
Level:3	**Descriptor: Moderate**
Description	• Moderate and/or medium-term impact to the environment and community • Some ongoing management implications • Neighbour disputes occur
Example/ Implication	• Water, soil or air known to be affected, probably in the short term • No serious harm to animals, fish, birds or plants • Public largely unaware and few complaints to Council • May contravene the conditions of Council's Licences and the POEO Act • Unlikely to result in prosecution
Level: 4	**Descriptor: Minor**
Description	• Minor and/or short-term impact to the environment and community • Can be effectively managed as part of normal operations • Infrequent disputes between neighbours

Example/ Implication	• Theoretically could affect the environment or people but no impacts noticed • No complaints to Council • Does not affect the legal compliance status of Council
Level: 5	**Descriptor: Negligible**
Description	• Very minor impact to the environment and community • Can be effectively managed as part of normal operations • Neighbour disputes unlikely
Example/ Implication	• No measurable or identifiable impact on the environment • No measurable impact on the community or impact is generally acceptable

Probability (Measure of Likelihood of Risk) table

Level	Descriptor	Description
A	Almost certain	Common or repeating occurrence
B	Likely	Known to occur, or it has occurred
C	Possible	Could occur or 'I've heard it happening'
D	Unlikely	Could occur in some circumstances, but not likely to occur
E	Rare	Practically impossible

Risk Rating

The risk ranking matrix yields a risk ranking from 25 to 1. It covers each combination of five levels of 'probability' - a letter A to E as defined in **Probability (Measure of Likelihood of Risk) table** - and 5 levels of 'consequence', - a number 1 to 5 as defined in **Measure of Consequence (Severity of Environmental Impact) table** - to identify the risk ranking of each impact. For example an activity with a 'probability' of D and a 'consequence' of 3 yields a risk rank of 9

	Probability				
Consequence	**A**	**B**	**C**	**D**	**E**
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

	HIGH
	MEDIUM
	LOW

A risk rating of 20-25 would normally be deemed as an unacceptable risk
A risk rating of less than 20 would normally be deemed as an acceptable risk

Appendix B - Wind Direction Rose

Source: Coffs Harbour MO Weather Station - Site number: 059040

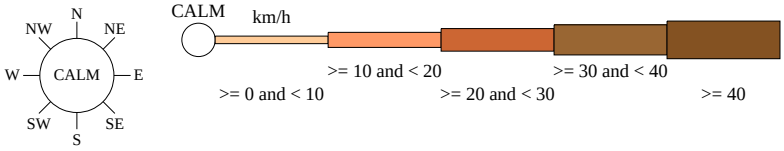
Rose of Wind direction versus Wind speed in km/h (01 Feb 1943 to 24 Aug 2015)

Custom times selected, refer to attached note for details

COFFS HARBOUR MO

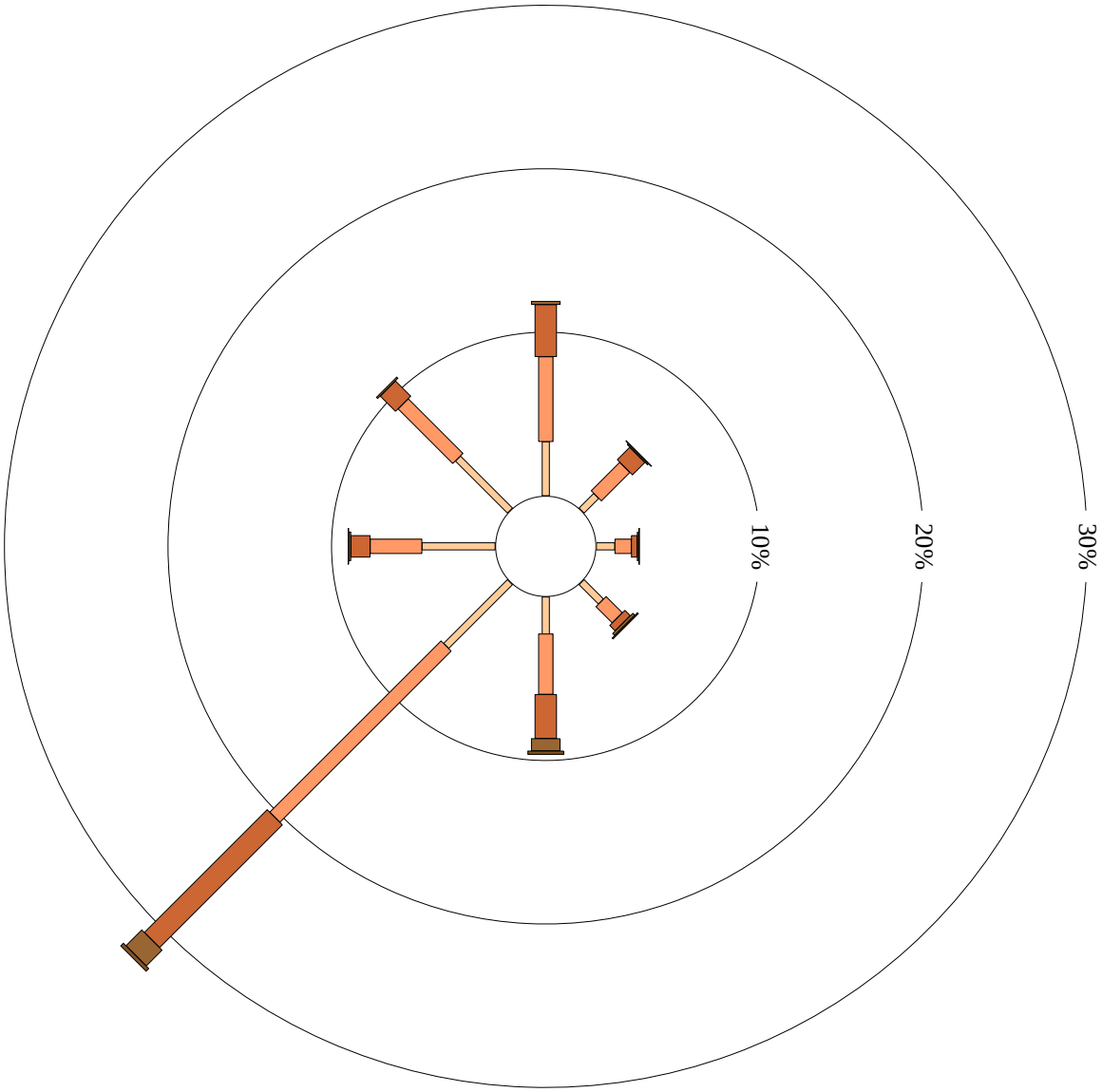
Site No: 059040 • Opened Jan 1943 • Closed Aug 2015 • Latitude: -30.3107° • Longitude: 153.1187° • Elevation 5m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am
24228 Total Observations

Calm 15%



Rose of Wind direction versus Wind speed in km/h (01 Feb 1943 to 24 Aug 2015)

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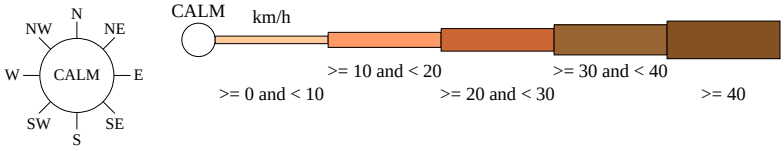
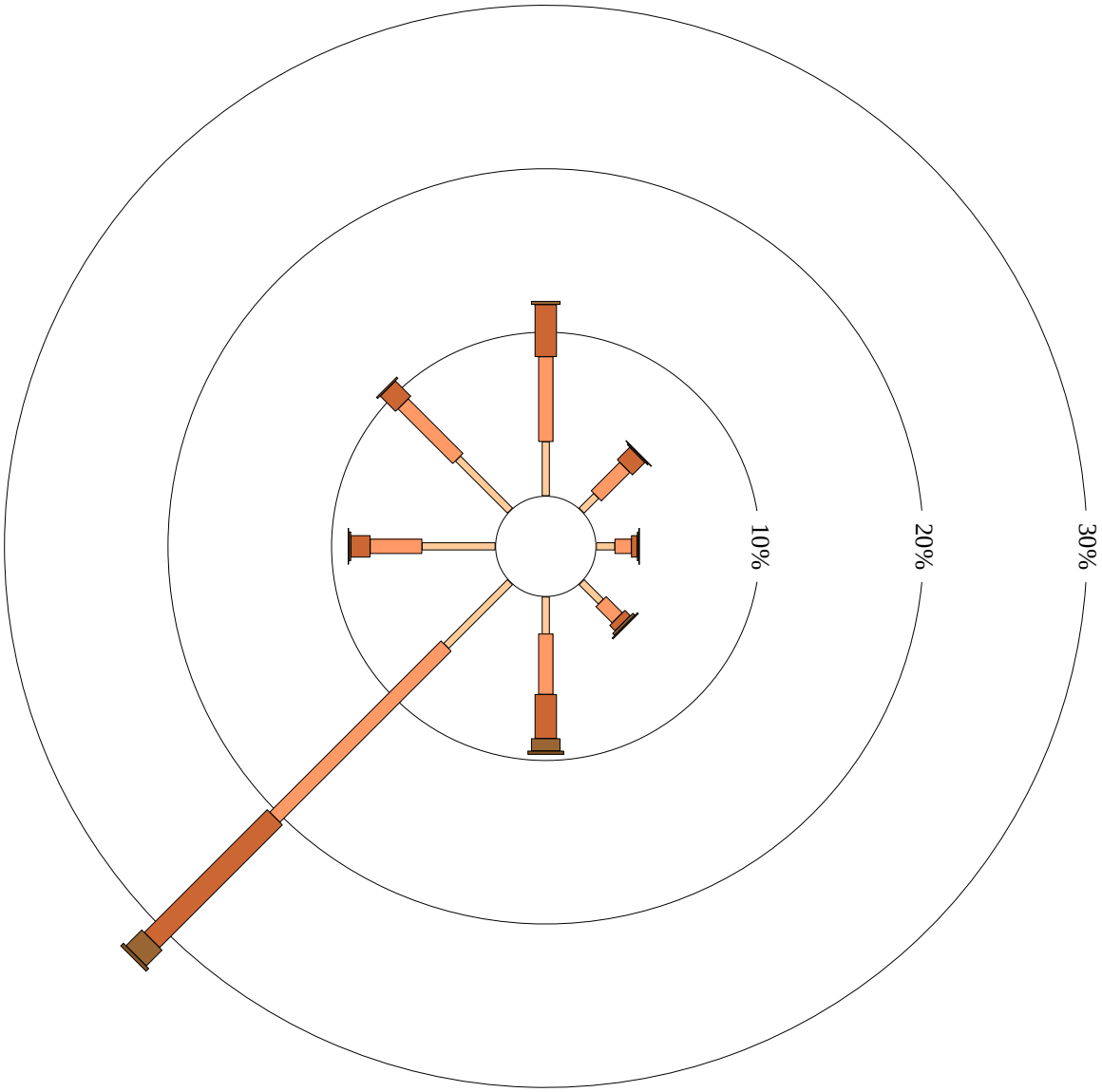
Site No: 059040 • Opened Jan 1943 • Closed Aug 2015 • Latitude: -30.3107° • Longitude: 153.1187° • Elevation 5m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am
24228 Total Observations

Calm 15%



APPENDIX 9 – AHIMS SEARCH RESULTS FOR 19 ORARA STREET, NANA GLEN

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : 161019

Client Service ID : 456910

Grahame Fry

10 Bailey Avenue
Coffs Harbour New South Wales 2450

Attention: Grahame Fry

Email: grahamecfry@yahoo.com.au

Date: 16 October 2019

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1163252 with a Buffer of 50 meters, conducted by Grahame Fry on 16 October 2019.

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

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

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

APPENDIX 10 – CHLALC SITE INSPECTION REPORTS FOR 19 ORARA STREET, NANA GLEN 2020 & 2022

Coffs Harbour & District Local Aboriginal Land Council

Cnr Pacific Highway & Arthur Street, Coffs Harbour NSW 2450
PO Box 6150, Coffs Harbour Plaza NSW 2450
Phone (02) 6652 8740 Fax: (02) 6652 5923

CLIENT DETAILS

Client Name:	Blaize Jenkinson
Site for inspection	19 Orara St, Nana Glen
Client contact name	Grahame Fry

COFFS HARBOUR AND DISTRICT LOCAL ABORIGINAL LAND COUNCIL

Site officer name	Mark Flanders
Date	20th May 2020
Start Time	9am
Nature of the works	Planning Proposal and Development Application to permit five (5) new lots of a minimum 8000m2

SITE OFFICER OBSERVATIONS

Notes – Sites Officer only

- The area of interest was fully examined by the Senior Sites Officer
- 99% ground cover with low surface visibility
- The large flat area above the flood levy identified as having Potential Archaeological Deposits – further investigation required
- Low lying area unlikely to have cultural material
- Artefact material visible at adjacent properties suggesting potential for cultural material in the flat area above the flood levy

Recommendations

1. That the proponent engage a suitably qualified archaeologist to undertake test pits to assess the area highlighted as having potential archaeological deposits (PAD) identified, this have been identified by the Senior Sites Officer as "the large flat area above the flood levy"
2. That the proponent follow the recommendation of the archaeologists

Observations compiled by Senior Sites Officer, Uncle Mark Flanders.
Report approved and signed off by:

N Brennan

Nathan Brennan
Chief Executive Officer
CH&DLALC
23rd June 2020

Coffs Harbour & District Local Aboriginal Land Council

Cnr Pacific Highway & Arthur Street, Coffs Harbour NSW 2450
PO Box 6150, Coffs Harbour Plaza NSW 2450
Phone (02) 6652 8740 Fax: (02) 6652 5923

CLIENT DETAILS

Client Name:	Everick Heritage Pty Ltd
Site for inspection	19 Orara Street, Nana Glen
Client contact name	Alyce Cameron

COFFS HARBOUR AND DISTRICT LOCAL ABORIGINAL LAND COUNCIL

Site officer name	Daniel Flanders and Narina Ferguson
Date	Wednesday 2nd February 2022
Start Time	8:30am – 12:30pm
Nature of the works	Sub-Division from1 lot into 6 Lots.

SITE OFFICER OBSERVATIONS

Artefacts	**Dreaming site**	**Midden material**	**Campsite**	**Ceremony ground**
None	None	None	Possibility	None
Scar trees	**Skeletal remains**	**Increase site**	**Men/Women's area**	**Other (specify)**
None	None	None	N/A	Possible Campsite Trail

Notes – Sites Officer only
• The area of interest was fully examined by the Senior Cultural Site Officer. • No physical finds were recorded on the day of inspection. • The potential for artefacts to be uncovered and harmed in this area is **Moderate** for ground disturbance based activities – this is due to the high level of physical evidence of pre-European occupation in the Nana Glen area and particularly at the confluence of Orara and Bucca Rivers.
Recommendations
1. The Sub-Division Application is endorsed by CHDLALC on the condition that DA be lodged and CHDLALC be notified and consulted for any planned ground disturbance works in future. 2. Shall further earthworks (Excavation) within the DA Project Area be required, please contact CHDLALC with at least 2 weeks written notice, the Lands Council will review applicable information and may appoint a Cultural Sites Officer to perform site monitoring during ground disturbance works to ensure the protection of cultural items and to ensure cultural safety of workers onsite. 3. 2x Cultural Site officers must be present to supervise as spotters during the removal/stripping back of topsoil to clay layer in the nominated project area. 4. An exclusion zone from any earth-disturbance works be applied to the yellow hatched area marked in map attached to this report. 5. Unexpected finds procedure to be implemented to any future ground disturbance works as per relevant cultural heritage protection legislation. 6. Contact the Land Council or Heritage Division should any unexpected finds be uncovered.

Observations compiled by Senior Sites Officer, Daniel Flanders.

Coffs Harbour & District Local Aboriginal Land Council

Cnr Pacific Highway & Arthur Street, Coffs Harbour NSW 2450
PO Box 6150, Coffs Harbour Plaza NSW 2450
Phone (02) 6652 8740 Fax: (02) 6652 5923

Report approved and signed off by:

M Smith

Matthew Smith
Programs Coordinator
CH&DLALC
22nd February 2022

APPENDIX 11 – ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT FOR 19 ORARA STREET, NANA GLEN

EVERICK HERITAGE

19 Orara Street

Nana Glen, NSW

Aboriginal Heritage Due Diligence Assessment

Prepared for Keiley Hunter Town Planning

February 2022

Report Reference:

FINAL Cameron, A. and M. Finlayson 2022. *19 Orara Street Nana Glenn: Aboriginal Due Diligence Assessment Report.* Everick Heritage Pty Ltd unpublished report prepared for Keiley Hunter Town Planning.

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Ver.	Author(s)	Review Type	Sections Edited	Date	Authorised
1, 2	M. Finlayson	Draft	All	18.01.22–31.01.22	V. Edmonds
3	A. Cameron	Draft	All	05.02.22	V. Edmonds
4	A. Cameron	Draft	All	17.02.22	V. Edmonds
5	A. Cameron	Final	All	18.02.22	V. Edmonds

Executive Summary

Everick Heritage (the Consultant) were engaged by Keiley Hunter Town Planning (the 'Proponent') to provide a due diligence Aboriginal cultural heritage assessment in support of the proposed residential subdivision at 19 Orara Street, Nana Glen, New South Wales (the Project) (NSW).

The lands subject to assessment are located on Lot 1 DP 1163252 and Lot 1 DP 1210495, at 19 Orara Street, Nana Glen, NSW (the Project Area). The Project comprises a residential subdivision of Lot 1 DP 1163252 and Lot 1 DP 1210495 at 19 Orara Street, Nana Glen, NSW (the Project). A Planning Proposal and Statement of Environmental Effects (SEE) has been prepared for the Project by Keiley Hunter Town Planning to permit for five new lots with a minimum size of 8000 metres square (the Proposed Works). The proposed new lots are situated in the southern section of the Project Area.

A search of the Aboriginal Heritage Information Management System (AHIMS) was conducted on 18 January 2022 (Client Service ID: 652008). The extensive AHIMS search resulted in four previously recorded Aboriginal sites and no Aboriginal Places being identified.

The search of the AHIMS database did not identify registered sites within the Project Area. One previously identified area of archaeological sensitive was identified during a previous site inspection in May 2020, and the location of the archaeologically sensitive area was confirmed during the current assessment.

In accordance with the Due Diligence Code of Practice (DECCW 2010a), the Proposed Works within the Project Area will not impact on identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface.

It was found that:

- No previously recorded Aboriginal sites are located within the Project Area.

- One archaeologically sensitive area that had been previously identified had its location confirmed and mapped during the current assessment. This archaeologically sensitive area is outside of the extent of the Proposed Works.
- The assessment concludes that the extent of the Proposed Works is of low Aboriginal archaeological sensitivity and low archaeological potential.

The following recommendations are made:

- In accordance with the Due Diligence Code of Practice, the proposed activity can proceed with caution, with no further Aboriginal archaeological investigation, assessment or mitigation measures required.
- Unexpected Aboriginal objects remain protected by the *NPW Act*. If any such objects, or potential objects, are uncovered in the course of the activity, work in the vicinity must cease, and Heritage NSW, and Coffs Harbour and District LALC be contacted for advice. Sites officers from the Coffs Harbour and District LALC could be engaged as 'spotters' during the topsoil removal inside the Proposed Works extent to assist the Proponent to implement the Aboriginal Objects find procedure.
- If suspected human remains are discovered and/or harmed in, on or under the land within the Project Area, the following actions must be undertaken:
  - The remains must not be harmed/further harmed
  - Immediately cease all works at that location
  - Secure the area to avoid further harm to the remains
  - Notify the NSW Police and the Environment Line (Department of Planning, Industry and Environment) on 131 555 as soon as practicable and provide any details of the remains and their location
  - Do not recommence any work at the location unless authorised in writing by Heritage NSW or Department of Planning, Industry and Environment.

Contents

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Figures

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FIGURES

Definitions and abbreviations

ACHR means Aboriginal Cultural Heritage Regulation

AHIMS means Aboriginal Heritage Information Management System

AHIP means Aboriginal Heritage Impact Permit

ALR Act means *Aboriginal Land Rights Act 1983 (NSW)*

Commonwealth Act means *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)*

Consultant means Everick Heritage Pty Ltd

DECCW means Department of Environment, Climate Change and Water (now Heritage NSW)

Due Diligence Code of Practice means Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales

DPC means Department of Premier & Cabinet

EPBC Act means *Environment Protection and Diversity Conservation Act 1999 (Cth)*

Everick Heritage means Everick Heritage Pty Ltd

ha means hectare

km means kilometres

LALC means Local Aboriginal Land Council

LEP means Local Environmental Plan

LGA means Local Government Area

m means metres

mm means millimetres

NPW Act means *National Parks and Wildlife Act 1974 (NSW)*

NPW Regulation means *National Parks and Wildlife Regulation 2009*

NSW means New South Wales

PAD means Potential Archaeological Deposit

Project Area means area shown in Figure 1 1

Proponent means Keiley Hunter Town Planning.

1. Introduction

1.1. Project Background

Everick Heritage (the Consultant) were engaged by Keiley Hunter Town Planning (the 'Proponent') to provide a due diligence Aboriginal cultural heritage assessment in support of the proposed residential subdivision at 19 Orara Street, Nana Glen, New South Wales (the Project) (NSW).

1.2. Project Area

The lands subject to assessment are located on Lot 1 DP 1163252 and Lot 1 DP 1210495, at 19 Orara Street, Nana Glen, NSW (the Project Area; Figure 1-1). The Project Area is located at the confluence of the Orara River and the Bucca Bucca Creek in the Parish of Orara, County of Fitzroy. The Project Area is located within the Coffs Harbour and District Local Aboriginal Land Council (LALC) (CHDLALC) area.

1.3. Project Description

The Project comprises a residential subdivision of Lot 1 DP 1163252 and Lot 1 DP 1210495 at 19 Orara Street, Nana Glen, NSW (the Project). A Planning Proposal and Statement of Environmental Effects (SEE) has been prepared for the Project by Keiley Hunter Town Planning to permit for five new lots with a minimum size of 8000 m^2 (the Proposed Works). The proposed new lots are all situated in the southern section of the Project Area (Figure 1-2 and Figure 1-3).

1.4. Methodology

This assessment consisted of the following tasks, in line with Steps 1-5 of the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (Due Diligence Code of Practice) (Department of Environment, Climate Change & Water 2010a):

- Assess the nature of the works activities with consideration of ground surface disturbance and the potential to impact on mature indigenous trees which may be culturally modified.

- Assess the presence and nature of recorded Aboriginal sites in the surrounds of the Project Area through database searches and other sources of information such as relevant archaeological reports.
- Assess the past and present landscape features of the Project Area.
- Present evidence and findings from the site inspection.
- Assess the archaeological potential of the Project Area and any likely impact of the works on landforms of archaeological potential.
- Provide recommendations for mitigation of impact to any Aboriginal archaeological values.

1.5. Authors and contributors

Matt Finlayson (Consultant Archaeologist, Everick Heritage) prepared this due diligence assessment. Matt has three (3) years' experience as a consultant and holds a Bachelor of Arts in Archaeology and a Master of Heritage Management. Alyce Cameron (Senior Archaeologist, Everick Heritage) conducted the visual inspection of the Project Area. Alyce has over 12 years of experience in cultural heritage management in NSW. Alyce also provided a quality and compliance review of this report.

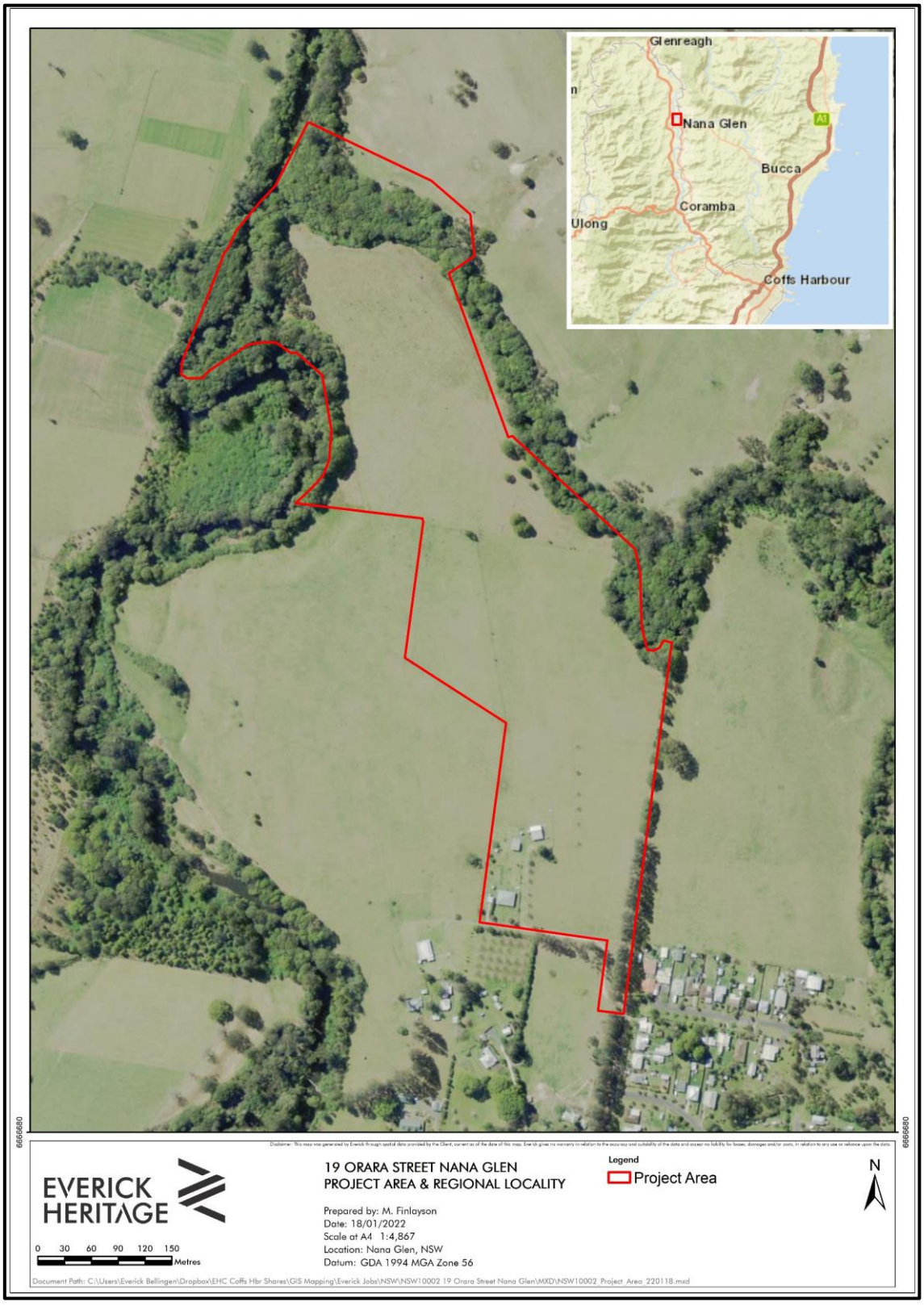

Figure 1-1: Project Area.

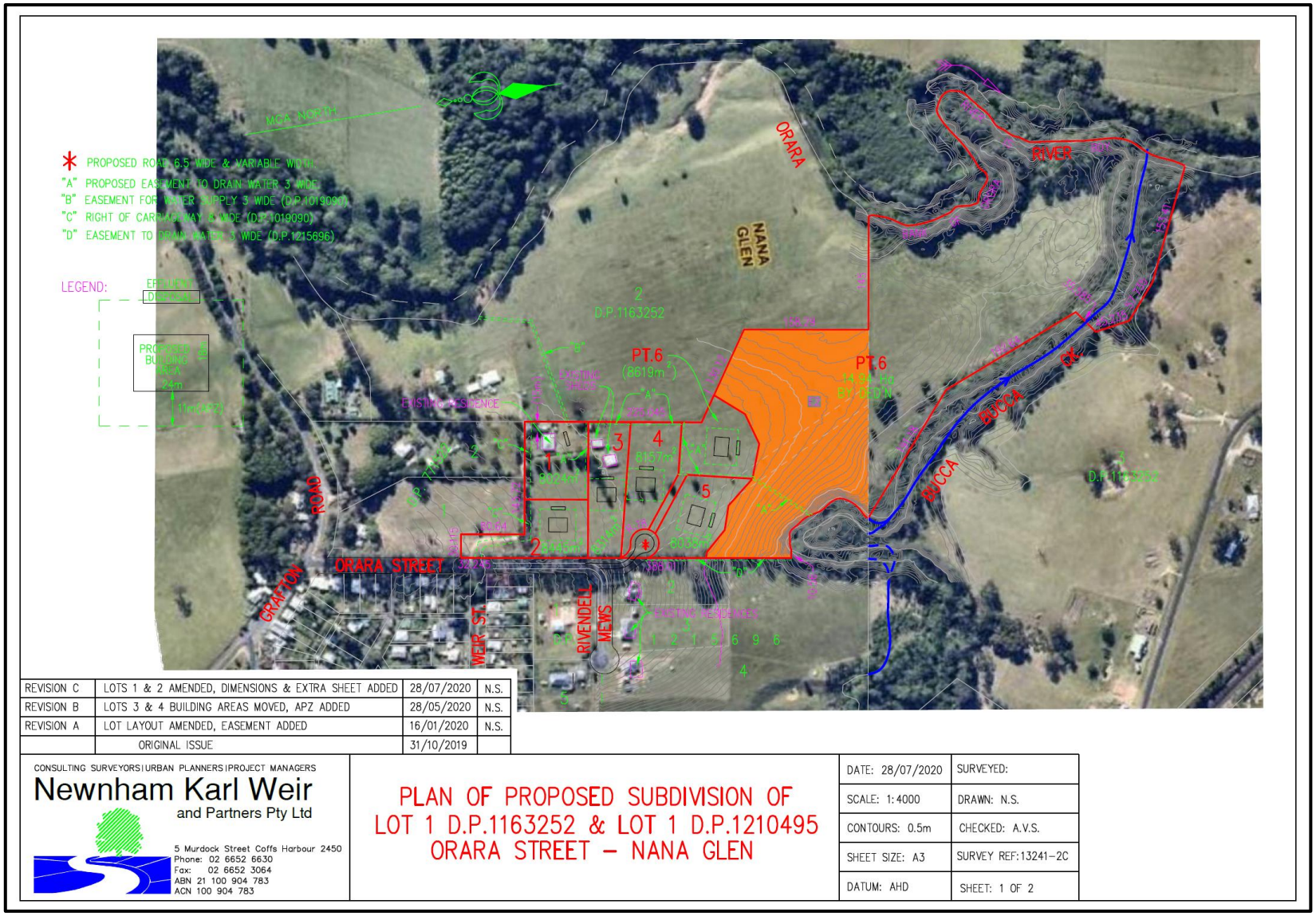

Figure 1-2: Plan of proposed subdivision.

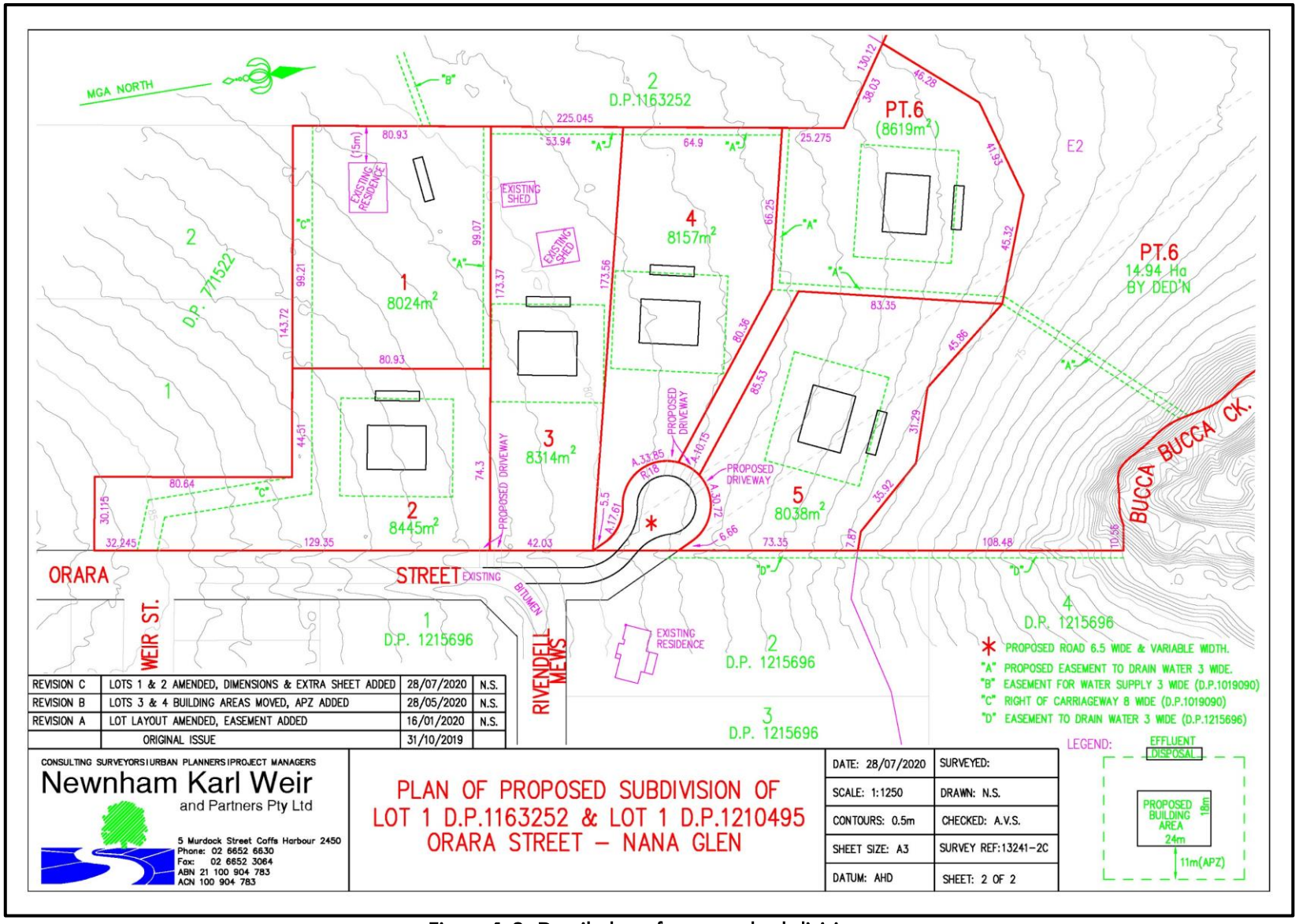

Figure 1-3: Detail plan of proposed subdivision.

2. Legislative Context

2.1. Commonwealth legislation

2.1.1. Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)

Most State Aboriginal heritage databases provide protection for those sites with physical evidence. The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* (*Commonwealth Act)*, deals with Aboriginal cultural property in a wider sense. Such cultural property includes any places, objects, and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. In most cases, archaeological sites and objects registered under the *National Parks and Wildlife Act 1974 (NSW) and Heritage Act 1977 (NSW)* will also be Aboriginal places subject to the provisions of the *Commonwealth Act*.

There is no cut-off date, and the *Commonwealth Act* may apply to contemporary Aboriginal cultural property as well as ancient sites. The *Commonwealth Act* takes precedence over State cultural heritage legislation where there is conflict. The responsible Minister may make a declaration under Section 10 of the *Commonwealth Act* in situations where state or territory laws do not provide adequate protection of heritage places.

2.2. State legislation

2.2.1. National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act 1974 (NSW) (NPW Act)* provides statutory protection to all Aboriginal places and objects. An Aboriginal object is defined as:

> *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.*

An Aboriginal Place is declared by the Minister under section 86 of the *NPW Act.* Aboriginal Places are recognised for their special significance to Aboriginal culture. Aboriginal Places gazetted under the *NPW Act* are listed on the State Heritage Register established under the *Heritage Act 1977 (NSW)*.

The protection provided to Aboriginal objects applies regardless of the level of their significance or issues of land tenure. Aboriginal objects and places are afforded statutory protection in that it is an offence to knowingly or unknowingly desecrate and Aboriginal object or place under section 86 of the *NPW Act*.

In accordance with section 89A, any person who is aware of the location of an Aboriginal object must notify the Chief executive in the prescribed manner within a reasonable time of becoming aware of that object. The prescribed manner is through preparation and submission of an Aboriginal Site Recording Form to the Aboriginal Heritage Information Management System (AHIMS) (DECCW 2010b: 14).

In order to undertake a proposed activity which is likely to involve harm to an Aboriginal object or Aboriginal Place it is necessary to apply to Heritage NSW (Department of Premier and Cabinet) for an Aboriginal Heritage Impact Permit (AHIP). AHIPs are issued by the Aboriginal Heritage Regulation Team (Heritage NSW) under section 90 of the *NPW Act* and permit harm to certain Aboriginal objects and Aboriginal Places.

2.2.2. National Parks and Wildlife Regulation 2009 (NSW)

The Due Diligence Code of Practice was adopted by the *National Parks and Wildlife Regulation 2009 (NSW) (NPW Regulation)* and introduced in October 2010 by Heritage NSW (formerly DECCW). The aim of this guideline is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an AHIP.

A due diligence assessment should take reasonable and practicable steps to ascertain whether there is a likelihood that Aboriginal objects will be disturbed or impacted during the proposed development. If it is assessed that sites exist or have a likelihood of existing within the development area and may be impacted by the proposed development, further archaeological investigations may be required along with an AHIP. If it is found to be unlikely that Aboriginal sites exist within the study area and the due diligence assessment has been conducted according to the Due Diligence Code of Practice, work may proceed without an AHIP.

This due diligence assessment seeks to comply with the *NPW Act,* by assisting the Proponent in meeting their obligations under the *NPW Act*.

2.2.3. Native Title Act 1994 (NSW)

The Native Title Act 1994 (NSW) was introduced to work in conjunction with the Commonwealth *Native Title Act 1993 (Cth).* Native Title claims, registers and Indigenous Land Use Agreements are administered under the *Native Title Act 1994 (NSW)*. A search was conducted of the Native Title register on 13 January 2021 but no claims were noted.

2.2.4. Aboriginal Lands Right Act 1983 (NSW)

The *Aboriginal Land Rights Act 1983 (NSW) (ALR Act)* was introduced to compensate Aboriginal people in NSW for dispossession of their land. The *ALR Act* also established Aboriginal Land Councils (at State and Local levels). The *ALR Act* enables Local Aboriginal Land Councils (LALCs) to claim Crown Land in NSW that is owned and managed by the state government. LALCs can have land transferred to them in freehold title if at the time of the claim the land is, among other requirements:

- Able to be lawfully sold or leased
- Not lawfully used or occupied
- Not needed nor likely to be needed as residential lands
- Not needed nor likely to be needed for an essential public purpose including nature conservation.

Land acquired under the NSW land claims process after 1994 is subject to *Native Title Act 1994 (NSW).* These LALCs have a statutory obligation under the *ALR Act* to:

a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and

b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The Project Area is within the boundary of the Coffs Harbour and District LALC (CHDLALC). Preparation of this due diligence would fulfil CHDLALC's obligations under the *ALR Act.*

2.3. Local Legislation

2.3.1. Coffs Harbour Local Environmental Plan 2013 (LEP)

The *EP&A Act* requires councils to consider environmental effects when assessing new developments. Heritage is one of the matters for consideration. Sites of environmental heritage (including historic heritage sites and sometimes Aboriginal heritage sites) are protected by gazetted Local Environment Plans (LEP) and Development Control Plans (DCP) which specify the constraints on development in the vicinity of these sites unless being assessed under Part 5 of the *EP&A Act* (see below). The Coffs Harbour LEP 2013 has provided a Schedule (Schedule 5) of Environmental Heritage which provides statutory protection for those items listed. There are no Aboriginal sites listed on Schedule 5 of the Coffs Harbour LEP.

A listed environmental heritage item is an item that is either:

a) designated as an item of environmental heritage in Schedule 5 of the Coffs Harbour LEP 2013; or

b) designated as an item of environmental heritage by the DCP 2015.

As per Part 5 Clause 5.10(2) of the Coffs Harbour LEP 2013, for listed heritage items, a person must have the consent of the Council for:

a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

   i. a heritage item,

   ii. an Aboriginal object,

   iii. a building, work, relic or tree within a heritage conservation area,

b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

d) disturbing or excavating an Aboriginal Place of heritage significance,

e) erecting a building on land:

i. on which a heritage item is located or that is within a heritage conservation area, or

ii. on which an Aboriginal Object is located or that is within an Aboriginal Place of heritage significance; and

f) subdividing land:

i. on which a heritage item is located or that is within a heritage conservation area, or

ii. on which an Aboriginal Object is located or that is within an Aboriginal Place of heritage significance.

Consent should only be given once the Council considers the effect of the proposed development on the heritage significance of the area. The Council may also require a heritage management document to be prepared. This document must assess the extent to which the carrying out of the proposed development would affect the heritage significance of the area concerned. After this the Council may also require a heritage conservation management plan for the heritage item that was assessed.

If the proposed development will require the demolition of a nominated State Heritage item, then the Council must notify the Heritage Council of the application and consider any responses received within 28 days. Similarly, if the development is on an archaeological site, the Council must notify the Heritage Council of intentions to grant consent and consider any responses received within 28 days.

Should the development be on an Aboriginal Place of heritage significance, the Council must notify the local Aboriginal communities about the application and consider any responses received within 28 days. Additionally, the Council must consider the effect that the development would have on the heritage significance of the Aboriginal Place and any Aboriginal Objects that are known or likely to be within the development. This must be done by means of an adequate investigation and assessment.

The Council may also grant consent for a development on a heritage item, land, or Aboriginal place that would not otherwise be allowed in this Plan, if the Council is satisfied that:

a) the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and

b) the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and

c) the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and

d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and

e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area.

3. Background

The purpose of this section is to assist in the prediction of:

- The potential of the landscape over time to have accumulated and preserved Aboriginal objects.
- The ways Aboriginal people have used the landscape in the past with reference to the presence of resource areas, surfaces for art, other focal points for activities and settlement.
- The likely distribution of the material traces of Aboriginal land use based on the above.

3.1. Environmental Context

3.1.1. Soil landscapes of the Project Area

The soil profile for the Project Area is defined as being the 'Orara' and 'Averys Creek' soil landscapes (Milford 1999). The characteristics of the Orara soil landscape are as follows (Milford 1999:117):

> Landscape— level to undulating alluvial terraces and floodplains of the Orara River and its tributaries, downstream of Nana Glen on the Orara River and downstream from Lower Bucca. Local relief to 10 metres (m); slopes to 5%, occasionally to 10%; elevation 50 - 80 m. Cleared open-forest.
>
> Soils— deep (>280 centimetres (cm)), moderately well-drained alluvial Brown Earths (Gn3.21) on floodplains; with deep (>250 cm), well-drained Siliceous Sands (Uc1.43) in prior channels; moderately deep to deep (>120 cm), imperfectly drained Alluvial Soils in areas of frequent deposition; plus deep (>200 cm), moderately well drained Red-Brown Earths (Dr3.12), structured Brown Earths (Gn3.21) and Brown Podzolic Soils (Db3.21) on terraces.

The characteristics of the Averys Creek soil landscape are as follows (Milford 1999:160):

> Landscape— undulating low hills generally as lower slopes beneath steeper hills and mountains on late Carboniferous metasediments of the Coffs Harbour association in the drier north-western Eastern Escarpment and Orara Valley. Local relief to 90 m; slopes to 10%; elevation to 120 m. Partially cleared, tall open-forest and occasional tall closed-forest.

Soils— moderately deep to deep, moderately well drained Yellow Podzolic Soils (Dy2.21) on steeper mid-lower slopes; and moderately deep to deep, moderately well-drained Yellow Podzolic Soils (Dy2.12; Dy5.41) on lower slopes; with moderately deep to deep, moderately well-drained Red Podzolic Soils (Dr2.21) in more sheltered areas

3.1.2. Topography & Hydrology

The Project Area is generally alluvial riverine plain sloping to the north. The Project Area is approximately 72 m above sea level at the north of the Project Area and 82 m to the south, further from Bucca Bucca Creek. There is an elevated area in the southernmost portion of the Project Area which is at a slightly higher elevation than the surrounding flood levy. The majority of the Project Area consists of a gentle to moderate slope which begins at Grafton Street approximately 150 m south of the Project Area.

The Project Area is located adjacent south of the confluence of the Orara River and Bucca Bucca Creek. The location of the Project Area, especially the elevated flat in the northern portion would have provided an ample location of local fishing and / or gathering of river rock stone tool materials.

3.1.3. Vegetation

The majority of original native vegetation has been cleared from the Project Area to provide for livestock grazing land. Regrowth riverine vegetation is however present along the Orara River and Bucca Bucca Creek.

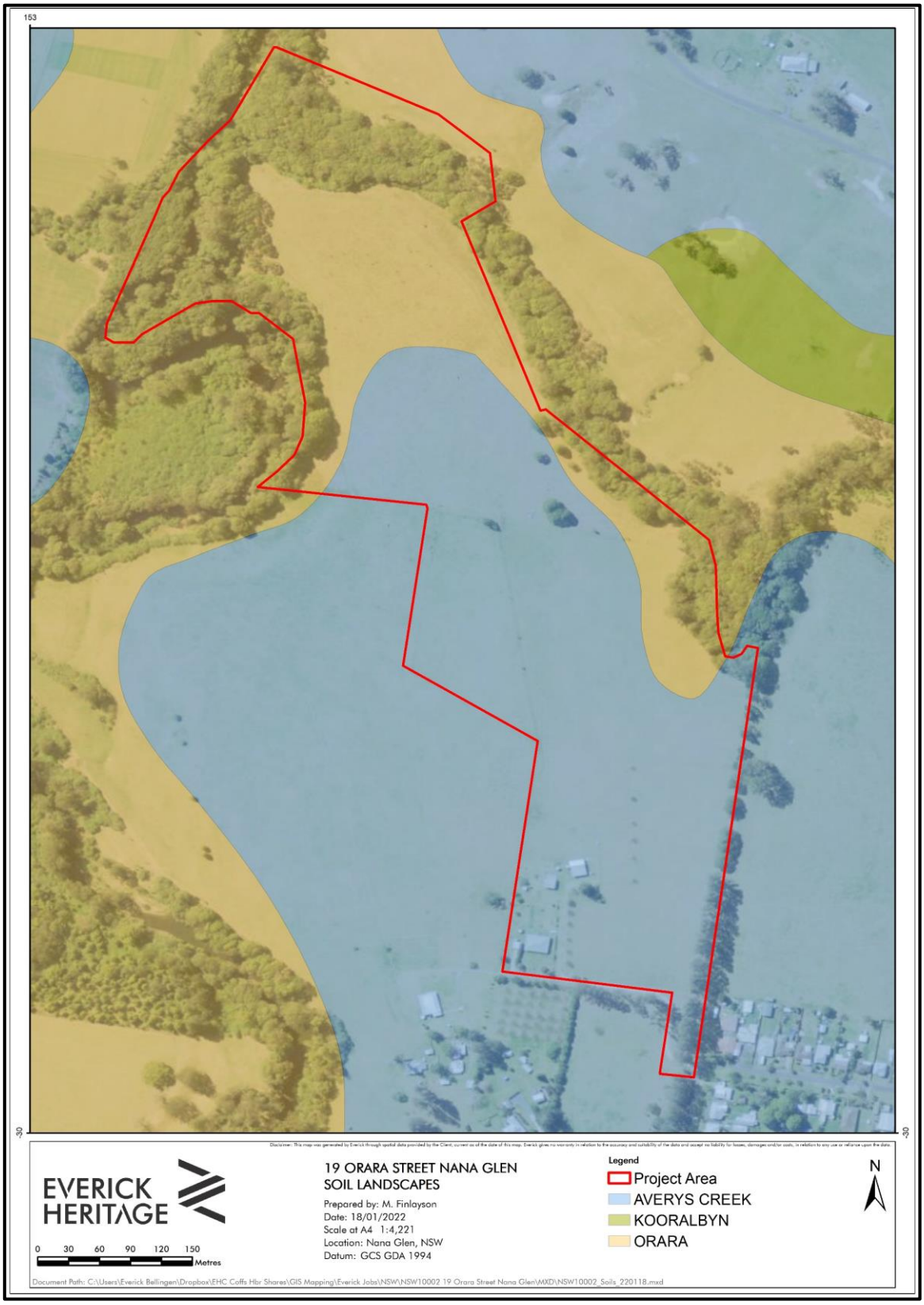

Figure 3-1: Soil landscapes of the Project Area

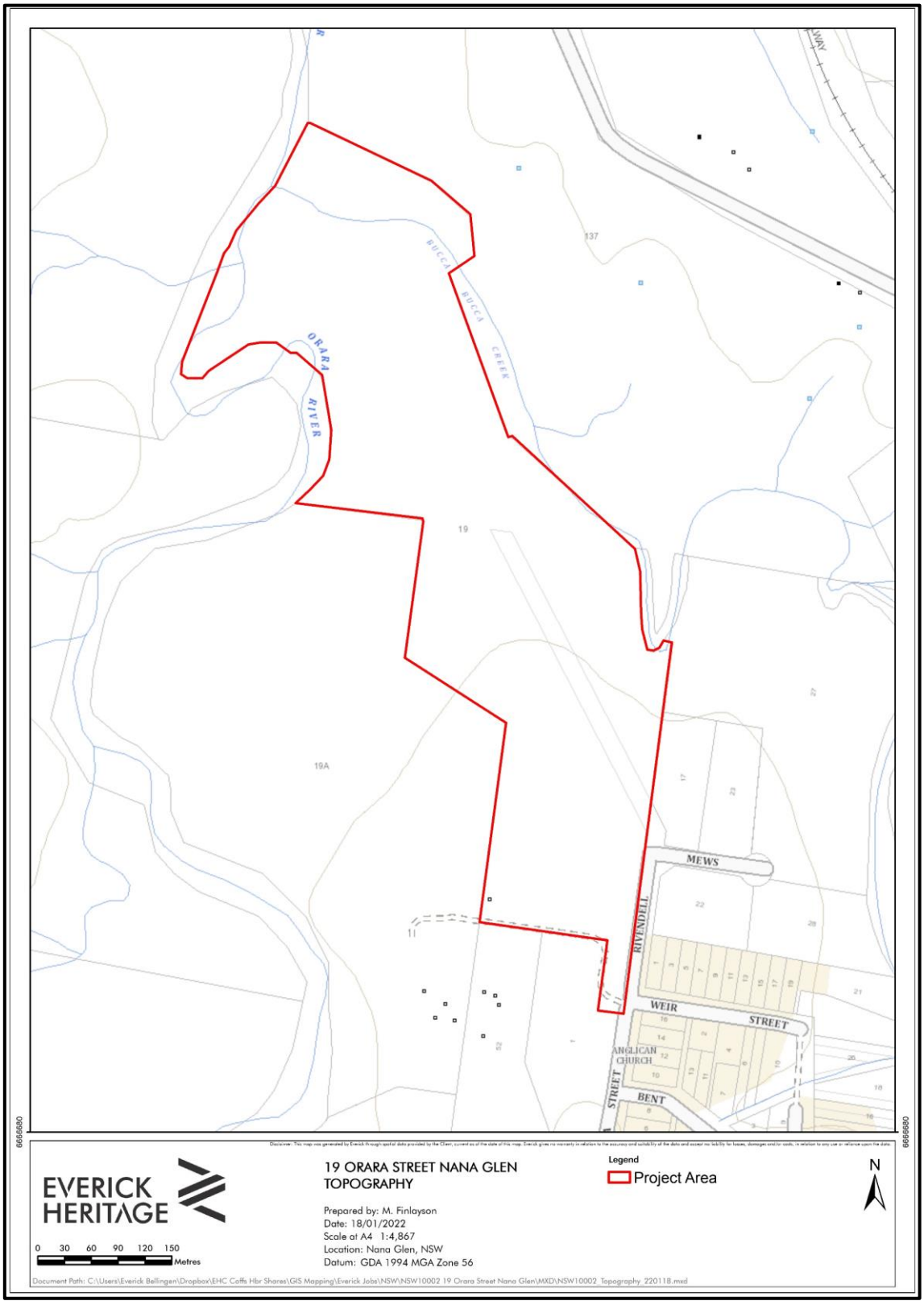

Figure 3-2: Topography of the Project Area

3.2. Past and Present Land Use

The earliest historical aerial able to be publicly assessed is dated to 1954. By 1954 the Project Area had been predominantly cleared, however several differences are discernible from the c. 2021 imagery:

- The Project Area appears to have comprised a mix of grazing land and agricultural cropping, as evidenced by the presence of tilled plots.
- The surrounds of Bucca Bucca Creek and the Orara River have thinner surrounding vegetation which has regrown since 1954.
- The surrounding landscape has not been as urbanised and the township is smaller than at present.

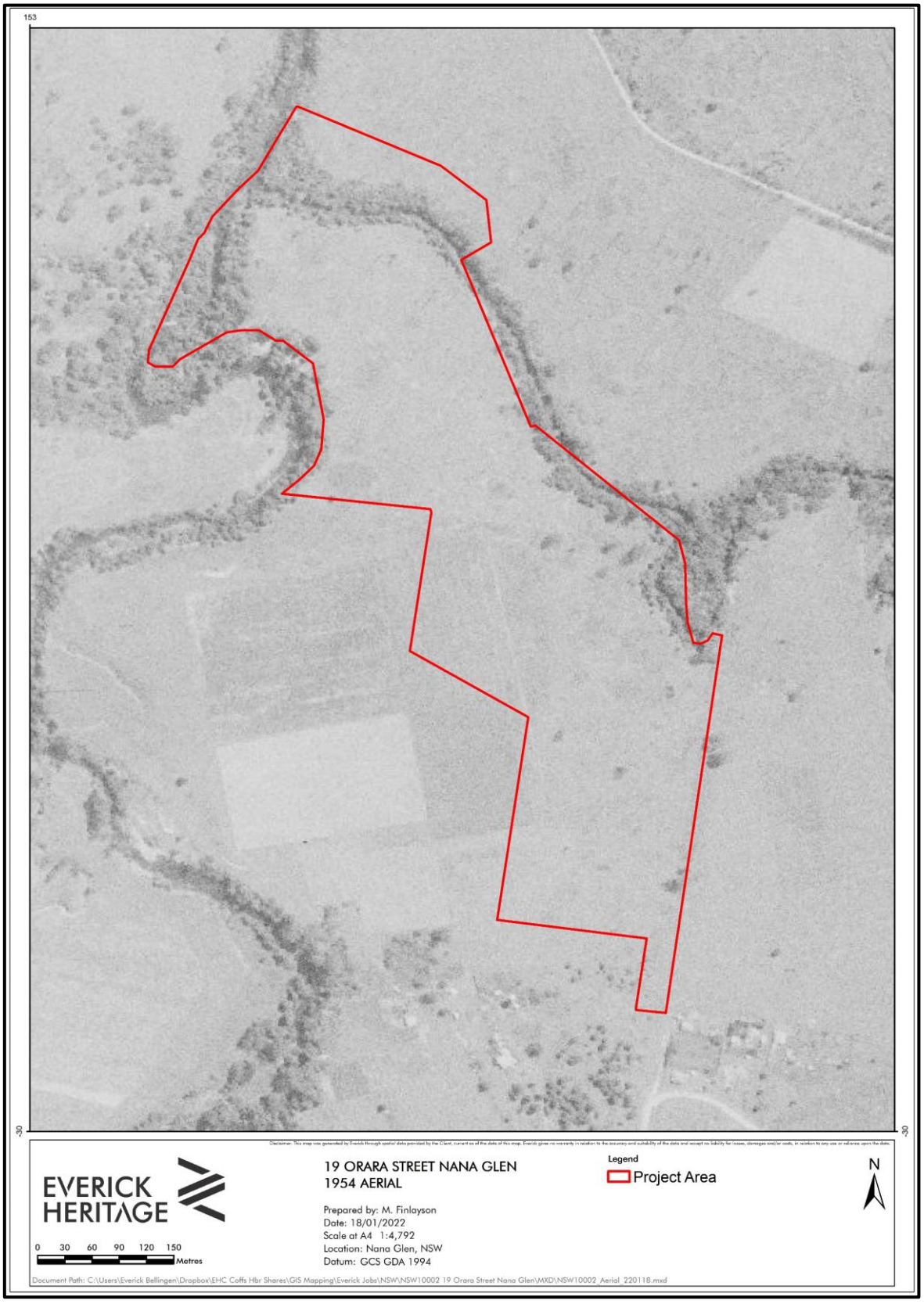

Figure 3-3: 1954 aerial.

3.3. Ethnohistoric Context

The Project Area is located within the Gumbayngirr Nation/Language Area which is broadly known to include the lands north of Nambucca Heads, south of the Clarence River and west up to the Great Dividing Range (Thomas 2013:1).

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

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

3.4. Archaeological Context

3.4.1. Database Searches

Caution should be taken when using the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) database to reach conclusions about site prevalence or distribution. For example, a lack of sites in a given area should not be seen as evidence that the area was not occupied by Aboriginal people. It may simply be an indication that it has not been surveyed for cultural heritage, or that the surveys were undertaken in areas of poor surface visibility. Further to this, care needs to be taken when looking at the classification of sites. For example, the decision to classify a site an artefact scatter containing shell, rather than a midden can be a highly subjective exercise, the threshold for which may vary between archaeologists. It is also important to note that the nature and location of Aboriginal sites

can be culturally sensitive information and should only be made publicly available with the consent of the Aboriginal community.

A search of AHIMS was conducted on 18 January 2022 (Client Service ID: 652008) with the following parameters:

- Lat, Long: -30.15, 152.99
- Lat, Long: -30.11, 153.05

Four (4) previously recorded Aboriginal sites and zero Aboriginal Places were identified in the search (Table 3-1). There are no previously recorded sites within the Project Area. The coordinates for Orara River Bridge Axe (#21-3-0033) have been recorded in AGD and have been provided using old topographic maps, as such the centroid for this site cannot be considered to be accurate.

All four sites recorded in the general region of the Project Area consist of artefact scatters and / or open camp sites. Figure 3-4 shows the location of these registered Aboriginal sites in relation to the Project Area.

Table 3-1: AHIMS features within vicinity of the Project Area

Site ID	Site Name	Easting	Northing	Site Type
21-3-0033	Orara River Bridge Axe;	500500	6666300	Isolated Find
22-1-0554	Nana Glen	501328	6666398	Artefact scatter
22-1-0107	SKP A12	500250	6667550	Open Camp Site
22-1-0537	Nana Glen Road Cutting Orara Way	500322	6667674	Artefact scatter

3.4.2. Other Database Searches

The following heritage registers were accessed on the 18th of January 2022:

- World Heritage List (Australian Heritage Council/ UNESCO)
- The National Heritage List (Australian Heritage Council)
- Commonwealth Heritage List (Australian Heritage Council
- Register of the National Estate (Australian Heritage Council): This is a non-statutory list which it retained as archive of the previous listing process.

- The State Heritage Register (NSW Heritage Office)
- The Register of the National Trust of Australia: This is a non-statutory listing
- Coffs Harbour Local Environment Plan (LEP) (2013)
- AHIP Public Register.

There are no sites listed in the above databases or registers in proximity to the Project Area.

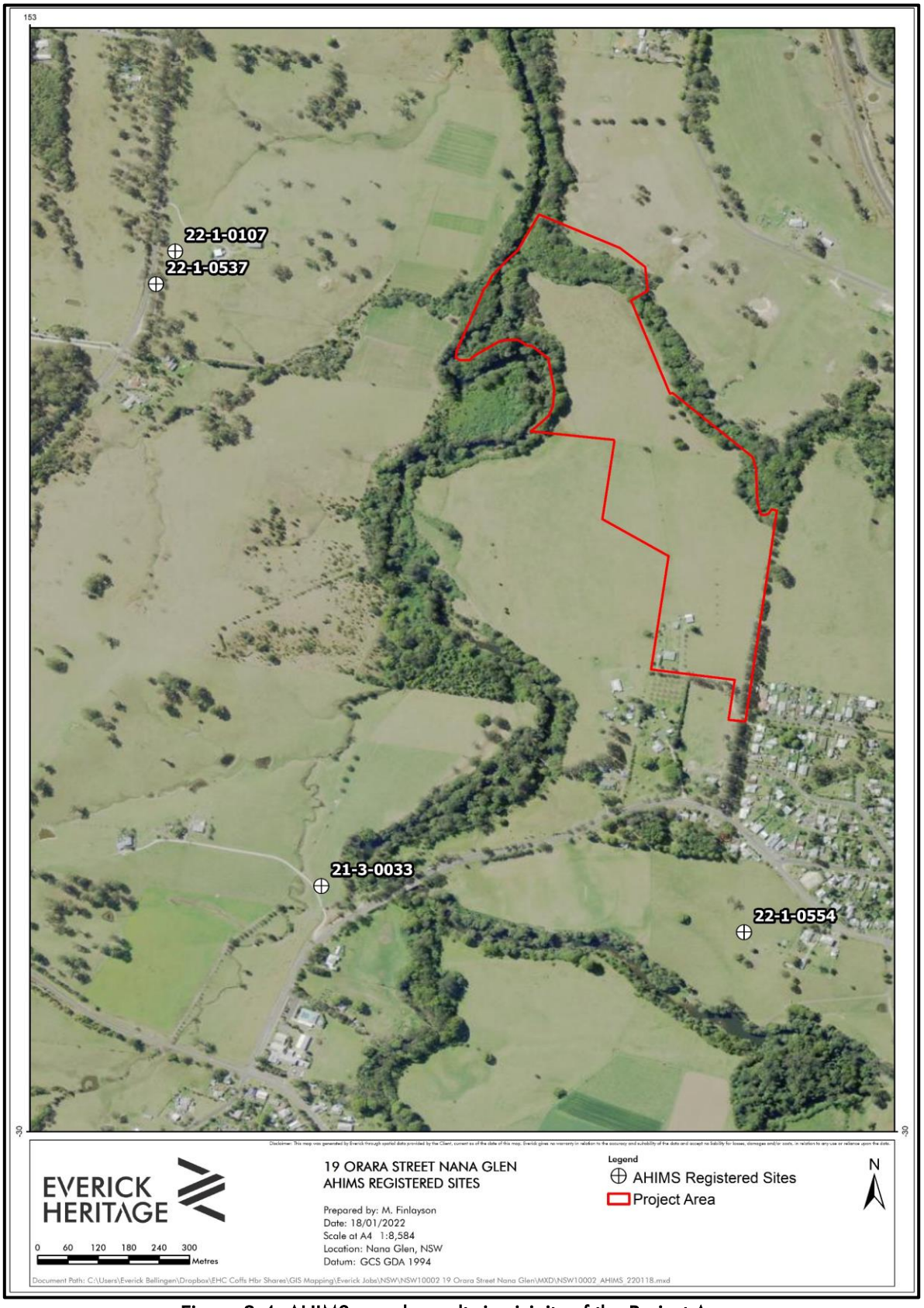

Figure 3-4: AHIMS search results in vicinity of the Project Area.

3.4.3. Previous Archaeological Assessments

Everick Heritage were engaged in 2020 (Everick 2021) to provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Fire Access and Fire Trail program undertaken by National Parks and Wildlife Service in Sherwood Nature Reserve, located between Glenreagh and Woolgoolga and to the north east of Nana Glen. While inland from the coast, the landforms of Sherwood Nature Reserve comprise sandstone ridges and escarpments overlooking the Glenreagh township to the west, as opposed to Nana Glen which is situated within a river catchment and alluvial floodplains. The study identified that Sherwood Nature Reserve contains ceremonial sites relating to both men's and women's activities. For the purposes of the study, the information is restricted. In general, Aboriginal sites within Sherwood Nature Reserve are typically located around the escarpment area and waterholes (including springs, falls and swamps) which are ceremonial type sites.

The archaeological assessment for the Coffs Harbour Bypass (Kelleher Nightingale 2019) provides the largest replicable study as it traverses a range of landforms which are relatively similar to the Project Area in terms of topography and hydrology. The following models are extracted from the bypass assessment report:

> Within the study area, ridgelines and crests were identified as displaying generally good archaeological potential,…Within the hinterland, many of these landscape features have suffered disturbance as a result of European land use including intensive agriculture; however, test excavation and Aboriginal community consultation have confirmed that artefacts and sites can still occur through the landscape. This includes intangible cultural heritage features as well as artefact sites.
>
> The majority of the newly identified sites were dispersed, low-density subsurface deposits within a variably disturbed landscape. The presence of low artefact densities in these areas may reflect transitory or low-intensity landscape use as people moved across Country. Lower-lying landforms and slopes within the coastal plain have also been more heavily affected by sustained European land use, erosion and colluvial mixing, flooding, and more landscape disturbance, potentially affecting the survivability of intact deposits. Several of the PADs subject to testing were located on slopes which showed the effects of colluvial movement, negatively impacting the survivability of intact archaeological deposit. The more intact and stable deposits identified during the test program occurred on level spur crests and saddles, particularly in the more elevated foothills/hinterland below the escarpment. Despite evident disturbance (particularly from banana cultivation), some intact deposits exhibiting at least moderate archaeological information were

> found to remain, and have the potential to provide important information on Aboriginal landscape use of these elevated landforms (Kelleher Nightingale 2019).

The archaeological investigation of the Pacific Highway Sapphire to Woolgoolga upgrade was undertaken from Sapphire Beach to Arrawarra (Collins 2007). The assessment identified low density artefacts scatters and concluded that historic ground disturbance was a significant factor affecting the presence and integrity of Aboriginal sites within the alignment. The report made the following conclusion which is directly relevant to the study:

> Apart from PADs identified at S2W-9 (potential traditional campsite), S2W-11 (potential traditional ceremonial and/or historic activity area) and S2W-13 (potential historic burial), the recorded archaeological sites and PADs occur on coastal ramp ridges/spurs. Of these, S2W-4 is believed to represent a seasonal base camp used into the European contact period. This site is of high cultural/social significance. The concept design has been revised to preserve this significance. On the basis of past subsurface investigation results, the remaining coastal ramp sites/PADs are probably associated with temporary camping and/or task-specific activities by small groups ranging from S2W-4 and other coastal base camps. These sites either have low, low-moderate or other potential cultural/social significance. (Collins 2007:54-55)

The Coffs Harbour and District LALC undertook a pedestrian survey and site inspection of the Project Area in May 2020 (see Appendix B). The sites officer who conducted the assessment, Mr Mark Flanders, examined the Project Area and identified:

> The large flat area above the flood levy identified as having Potential Archaeological Deposits – further investigation required.

The location of the archaeologically sensitive area was confirmed during the site inspection for this assessment (see Section 4.3).

3.5. Summary and Predictive Model

With consideration for the archaeological context of the Orara River Valley and the Project Area, the following predictive model is provided:

> Aboriginal objects if present are likely to comprise isolated artefacts and artefact scatters. Scarred Trees are unlikely to be encountered due to the history of logging in the Project Area and surrounds.

4. Visual Inspection

4.1. Aims

The primary aims of the visual inspection were:

- To establish if the Project Area contained areas of ground disturbance and map the extent and nature of that disturbance.
- Identify any Aboriginal objects present within the Project Area and any landscape features in the which are highly likely to contain Aboriginal objects, that is areas of Potential Archaeological Deposits (PAD).

4.2. Timing, Personnel and Methodology

The visual inspection was undertaken of the Project Area on foot on 2 February 2022 by Alyce Cameron (Senior Archaeologist, Everick Heritage). Daniel Flanders and Narina Ferguson from Coffs Harbour and District LALC were present as sites officers. A report the Coffs Harbour and District LALC will be provided under a different cover as it has not been provided at this time.

A photographic record and field notes were kept of the inspection. GPS tracks were taken to record any noted features during the inspection.

4.3. Results

The survey focused on identifying any visible ground surface present inside the Project Area, as well as determining the location which had been classified as being a sensitive location during the CHDLALC inspection in May 2020 (see Appendix B).

The survey was conducted through use of meandering transects to cover the extent. This method was utilized to best understand the level of potential impact that construction of new residences including sub-surface amenities and landscaping would have on Aboriginal cultural heritage values. Table 4-1 shows representative photographs of the Project Area. With consideration for the overcast weather providing

even lighting and the quality of exposures, if any Aboriginal objects were present within these exposures they would have been identified during visual inspection.

The Project Area is situated on a gentle to moderate slope adjacent to Bucca Bucca Creek and the Orara River. The southern boundary of the Project Area is the highest elevated position inside the Project Area and consists of a landscaped driveway with planted trees sloping towards the north. There is also an existing house and farm buildings (such as sheds) located in the southwest corner of the Project Area. The southern paddock where the extent of the Proposed Works is located, has been previously ploughed and used for cattle grazing. There are several old water toughs / wells located throughout the Project Area (see Figure 4-3). The slope descends from the south of the Project Area towards to the north towards the nearby watercourses. The slope changes to steeply descend towards the banks of the watercourses.

The northern most portion of the Project Area consists of the archaeologically sensitive area (see Appendix B and Figure 4-5) which is elevated above the flood levy. There are several swales to the north of the archaeologically sensitive area indicating that at least the northern portion of the Project Area may have been prone to large scale flooding of Bucca Bucca Creek and Orara River in the past.

The Project Area has been cleared of original native vegetation and is currently used for grazing cattle. Parts of the Project Area, in particular the southern portion, has been previously used for agriculture, specifically the farming of garlic. Conversations with the landowner indicate that the ploughing for this was approximately 50 cm in depth.

Ground Surface Visibility (GSV) was generally low at 10% due to tall grass prevalent across the Project Area that significantly limited observations of the bare ground surface. Exposures comprised patches of exposed surface usually around fence lines, the base of paddock trees and gates, giving 90% visibility where these exposures were present. Soil across the site is a consistent mid brown loam.

No Aboriginal sites were recorded during the site inspection. The location of the archaeologically sensitive area was confirmed during the assessment and this location is shown in Figure 4-7.

Table 4-1: Survey photography.

Photograph	Description
	Figure 4-1: View south of the Project Area from centre.
	Figure 4-2: View north of Project Area from southern boundary.
	Figure 4-3: Example of water tough / well present inside Project Area.

Photograph	Description
	Figure 4-4: Typical GSV conditions due to tall grass.
	Figure 4-5: View northwest of archaeologically sensitive area in northern portion of Project Area.
	Figure 4-6: View south across Proposed Works location towards southern boundary of Project Area.

Figure 4-7: Location of archaeologically sensitive area.

5. Assessment of Archaeological Sensitivity

5.1. Discussion

Archaeological sensitivity is closely related to observed levels of ground disturbance. However, other factors are also considered when assessing archaeological sensitivity, such as whether Aboriginal objects were located on the surface, and whether the area is within a sensitive landform unit according to the predictive statements.

Landscape features may indicate the presence of Aboriginal objects, as a result of Aboriginal people's use of those features in their everyday lives and for traditional cultural activities. It is essential to determine whether the site contains landscape features that indicate the likely existence of Aboriginal objects. The Due Diligence Code of Practice (2010a: 12) defines these landscapes as:

- within 200 m of waters, or
- located within a sand dune system, or
- located on a ridge top, ridge line or headland, or
- located within 200 m below or above a cliff face, or
- within 20 m of or in a cave, rock shelter, or a cave mouth.

The Project Area is noted to be within 200 m proximity of 'waters' being Bucca Bucca Creek and Orara River at the northern extent of the Project Area. The site inspection determined that the impacts from the proposed works (situated at the southern most end of the Project Area) would not have been advantageous as a camping area. Aboriginal objects would more likely be encountered on the identified sensitive area adjacent and just above the flood levy. The location of the archaeologically sensitive area is shown on Figure 5-1. As this sensitive area is outside the extent of the Proposed Works, and will not be impacted, further assessment of it is unwarranted at this time.

Part 8A, Clause 80B (4) of the *NPW Regulation* states that land is disturbed if it is has been the subject of human activity that has changed the land's surface, being changes that remain clear and observable. Examples of activities that may have caused disturbance are provided in the *NPW Regulation* as:

(a) soil ploughing,

(b) construction of rural infrastructure (such as dams and fences),

(c) construction of roads, trails and tracks (including fire trails and tracks and walking tracks),

(d) clearing of vegetation,

(e) construction of buildings and the erection of other structures,

(f) construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure),

(g) substantial grazing involving the construction of rural infrastructure,

(h) construction of earthworks associated with anything referred to in paragraphs (a)-(g).

The visual inspection has confirmed that disturbed land occurs partially within the Project Area as a result of (a), (b), (d), (e) and (g).

Figure 5-1: Proposed Works and location of archaeologically sensitive area.

5.2. Conclusions

A search of the AHIMS database did not identify registered sites with the Project Area. The location of the archaeologically sensitive area identified during a previous site inspection (see Appendix B) was confirmed to be outside the extent of the Proposed Works. As this archaeologically sensitive area will not be impacted by the proposal, further investigation of it is unnecessary. However, if the archaeologically sensitive area is to be impacted in the future, then further archaeological assessment will be required prior to any works proceeding.

In accordance with the Due Diligence Code of Practice (DECCW 2010a), the Proposed Works within the Project Area will not impact on identified Aboriginal objects, or areas where Aboriginal objects are likely to occur beneath the ground surface.

6. Recommendations

The following recommendations regarding Aboriginal heritage are based on consideration of:

- Statutory requirements under the *NPW Act*
- Due Diligence Code of Practice (DECCW 2010a)
- There are no identified impacts to known or unknown Aboriginal archaeological deposits.

It was found that:

- No previously recorded Aboriginal sites are located within the Project Area.
- One archaeologically sensitive area that had been previously identified (see Appendix B) had its location confirmed and mapped during the current assessment. This archaeologically sensitive area is outside the extent of the Proposed Works and will not be impacted by the Project.
- The assessment concludes that the extent of the Proposed Works is of low Aboriginal archaeological sensitivity and low archaeological potential.

The following recommendations are made:

- In accordance with the Due Diligence Code of Practice, the proposed activity can proceed with caution, with no further Aboriginal archaeological investigation, assessment or mitigation measures required.
- Unexpected Aboriginal objects remain protected by the *NPW Act*. If any such objects, or potential objects, are uncovered during the activity, work in the vicinity must cease, and Heritage NSW, and Coffs Harbour and District LALC be contacted for advice. Sites officers from the Coffs Harbour and District LALC could be engaged as 'spotters' during the topsoil removal inside the Proposed Works extent to assist the Proponent to implement the Aboriginal Objects find procedure.
- If suspected human remains are discovered and/or harmed in, on or under the land within the Project Area, the following actions must be undertaken:
    - The remains must not be harmed/further harmed.
    - Immediately cease all works at that location.
    - Secure the area to avoid further harm to the remains.

- Notify the NSW Police and the Environment Line (Department of Planning, Industry and Environment) on 131 555 as soon as practicable and provide any details of the remains and their location.
- Do not recommence any work at the location unless authorised in writing by Heritage NSW or Department of Planning, Industry and Environment.

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

Appendix A - AHIMS database search results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : NSW10002
Client Service ID : 652008

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-3-0033	Orara River Bridge Axe;	AGD	56	500500	6666300	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Mr.Gordon Atkinson					**Permits**		
22-1-0554	Nana Glen	GDA	56	501328	6666398	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Coffs Harbour City Council - cnr Coff and Castle Streets,Mr.Marten Bouma					**Permits**		
22-1-0107	SKP A12	AGD	56	500250	6667550	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**	1338	
22-1-0537	Nana Glen Road Cutting Orara Way	GDA	56	500322	6667674	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Coffs Harbour City Council - cnr Coff and Castle Streets,Mr.Marten Bouma					**Permits**		

**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 18/01/2022 for Matthew Finlayson for the following area at Lat, Long From : -30.15, 152.99 - Lat, Long To : -30.11, 153.05. Number of Aboriginal sites and Aboriginal objects found is 4

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.

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Appendix B – Coffs Harbour and District LALC report (2020)

Coffs Harbour & District Local Aboriginal Land Council

Cnr Pacific Highway & Arthur Street, Coffs Harbour NSW 2450
PO Box 6150, Coffs Harbour Plaza NSW 2450
Phone (02) 6652 8740 Fax: (02) 6652 5923

CLIENT DETAILS

Client Name:	Blaize Jenkinson
Site for inspection	19 Orara St, Nana Glen
Client contact name	Grahame Fry

COFFS HARBOUR AND DISTRICT LOCAL ABORIGINAL LAND COUNCIL

Site officer name	Mark Flanders
Date	20th May 2020
Start Time	9am
Nature of the works	Planning Proposal and Development Application to permit five (5) new lots of a minimum 8000m2

SITE OFFICER OBSERVATIONS

Notes – Sites Officer only

- The area of interest was fully examined by the Senior Sites Officer
- 99% ground cover with low surface visibility
- The large flat area above the flood levy identified as having Potential Archaeological Deposits – further investigation required
- Low lying area unlikely to have cultural material
- Artefact material visible at adjacent properties suggesting potential for cultural material in the flat area above the flood levy

Recommendations

1. That the proponent engage a suitably qualified archaeologist to undertake test pits to assess the area highlighted as having potential archaeological deposits (PAD) identified, this have been identified by the Senior Sites Officer as "the large flat area above the flood levy"
2. That the proponent follow the recommendation of the archaeologists

Observations compiled by Senior Sites Officer, Uncle Mark Flanders.
Report approved and signed off by:

N Brennan

Nathan Brennan
Chief Executive Officer
CH&DLALC
23rd June 2020

Office of Environment & Heritage
NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : 161019
Client Service ID : 456910

Grahame Fry
10 Bailey Avenue
Coffs Harbour New South Wales 2450
Attention: Grahame Fry
Email: grahamecfry@yahoo.com.au

Date: 16 October 2019

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1163252 with a Buffer of 50 meters, conducted by Grahame Fry on 16 October 2019.

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

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

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

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

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

Important information about your AHIMS search

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

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

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

Gateway Determination

Planning proposal (Department Ref: PP-2021-6491)*: to amend the minimum lot size for 19 Orara Street, Nana Glen to facilitate large lot residential subdivision and to amend clauses 4.1A and 4.2B to support the subdivision of split zone properties.*

I, the Acting Director, Northern Region at the Department of Planning, Industry and Environment, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to the Coffs Harbour Local Environmental Plan (LEP) 2013 to amend the minimum lot size for 19 Orara Street, Nana Glen to facilitate large lot residential subdivision and to amend clauses 4.1A and 4.2B to support the subdivision of split zone properties should proceed subject to the following conditions:

1. Prior to undertaking public exhibition:

   (a) an Aboriginal cultural heritage assessment shall be prepared. Following preparation of the Aboriginal cultural heritage assessment, the planning proposal shall be updated, to capture any recommendations;

   (b) all E2 Environmental Conservation zone and E3 Environmental Management zone references contained within the planning proposal are to be updated to reference C2 Environmental Conservation and C3 Environmental Management zones; and

   (c) the planning proposal is to be updated to remove proposed clauses.

2. Public exhibition is required under section 3.34(2)(c) and schedule 1 clause 4 of the Act as follows:

   (d) the planning proposal must be made publicly available for a minimum of **28 days**; and

   (e) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 6.5.2 of *A guide to preparing local environmental plans* (Department of Planning and Environment, 2018).

3. Consultation is required with the following public authorities/organisations under section 3.34(2)(d) of the Act and/or to comply with the requirements of relevant section 9.1 Directions:

   - NSW Rural Fire Service
   - Department of Primary Industries – Agriculture
   - Heritage NSW

- Natural Resources Access Regulator
- Biodiversity Conservation Division
- Coffs Harbour and District Local Aboriginal Land Council

Each public authority/organisation is to be provided with a copy of the planning proposal and any relevant supporting material and given at least 21 days to comment on the proposal.

4. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

5. The planning proposal authority is authorised as the local plan-making authority to exercise the functions under section 3.36(2) of the Act subject to the following:

   (a) the planning proposal authority has satisfied all the conditions of the Gateway determination;
   (b) the planning proposal is consistent with section 9.1 Directions or the Secretary has agreed that any inconsistencies are justified; and
   (c) there are no outstanding written objections from public authorities.

6. The time frame for completing the LEP is to be **9 months** following the date of the Gateway determination.

Dated 29 day of November 2021.

Craig Diss
Acting Director, Northern Region
Local and Regional Planning
Department of Planning, Industry and Environment

Delegate of the Minister for Planning and Public Spaces