



Agricultural Land Assessment

Final Report

Department of Regional NSW

18 January 2024

→ **The Power of Commitment**





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Executive summary

The Richmond Valley Regional Job Precinct (RJP) includes an investigation area comprising multiple sites in the Casino area with potential to unlock new industrial lands and create more jobs in the high-value agriculture, food processing, manufacturing and renewable energy sectors.

GHD completed this Agricultural Land Assessment Report of a portion of Area 3 Johnston Street industrial area and surrounds precinct to consider the agricultural significance of the land from an agricultural perspective and the suitability of the site for inclusion as part of the Richmond Valley RJP investigation area. This report assesses the agricultural component of 3c only which covers an area of approximately 27.24 hectares, is owned by Richmond Valley Council and is located in close proximity to the current urban centre.

This report will be used to guide the NSW Department of Planning and Environment's assessment of any proposed alternative agricultural land use or rezoning associated with an Urban Growth Area variation being considered in the current review of the Richmond Valley Growth Management Strategy and other studies being completed as part of the Richmond Valley RJP project. Any variation to the Urban Growth Area boundary can also be assessed in conjunction with the North Coast Regional Plan. These strategies and plans will provide the strategic case for potential changes to land use (e.g., for additional employment land) for future economic development.

Relevant policies, guidelines and reports were reviewed to establish the foundations that underpin the site's current agricultural production status and determine whether any policies or guidelines are potentially in conflict with any proposed development of the site.

Areas 3c and surrounding agricultural land is zoned RU1 under the Richmond Valley Local Environment Plan 2012 and the site is mapped as Regionally Significant Farmland. As such, the site potentially has high agricultural value for the region, and any alternative land use could negatively impact on the region's economy by removing its agricultural potential. The Regionally Significant Farmland mapping potentially conflicts with its consideration within the Richmond Valley RJP process to modify the agricultural land from extensive agricultural land uses to intensive plant agriculture, plant nurseries or an extension of the Urban Growth Area.

GHD completed research and analysis of the site and the Richmond Valley LGA, including land and soil capability, land use, agricultural production and agricultural employment. The land and soil capability classification mapping of the site is Class 3 (i.e., high capability land) which has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available, and widely accepted management practices, although careful management is required to avoid environmental degradation. Its land use is classified as "grazing modified pastures" and the site represents 0.065% of this type of land use within the Richmond Valley LGA.

The land is adjacent to other land mapped as Regionally Significant Farmland, but the subject land and surrounding agricultural land have a range of constraints that limit potential agricultural production so that the likely best use of the land in its current state of development is extensive cattle production. The constraints on the site which limit its current agricultural production include being flood prone; has extensive gilgai formation; and has infrastructure that is in poor condition (e.g., poor road access, uncertain livestock drinking water supply and poor subdivision fencing). Flooding risk means that landfill and flood mitigation measures are required if future developments require structures to be situated above inundation levels.

This assessment involved a combination of desktop research and a site inspection on 8 December 2021 to obtain first-hand knowledge of the site to better understand its current land use, land capability and condition, including land use on surrounding agricultural land. GHD undertook consultation with Richmond Valley Council, NSW Department of Primary Industries and three adjacent agricultural landholders to ascertain past and current uses of the site and also understand how this site fits into the broader Richmond Valley RJP investigation area including consideration of the potential to modify the land for intensive plant agriculture, plant nurseries or an extension of the Urban Growth Area.

The potential alternative land uses may give rise to land use conflicts with neighbouring properties. Land use conflicts occur when one land use is perceived to infringe upon a neighbouring land use. A Land Use Conflict Risk Assessment (LUCRA) was undertaken to ensure that a proposed alternative land use can be mitigated so that it does not impact on the current or future agricultural activities in the locality. The LUCRA also considered biosecurity risk which could occur if the RJP site was developed. The productivity and profitability of agricultural production depends in part on the management of pests and diseases, including the prevention of incursion of pests and diseases onto properties.

This Agricultural Land Assessment has considered the relevant clauses of Section 117 of the *NSW Environmental Planning and Assessment Act 1979* (specifically Section 9.1 Ministerial Directions) and regionally significant plans and policies. This assessment includes analysis which considers the descriptions of the site and its potential future use given its Regionally Significant Farmland status (the body of the report includes a series of assessment tables that documents the reasoning).

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.3 and the assumptions and qualifications contained throughout the Report.

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1 Introduction

1.1 Background

The Richmond Valley Regional Job Precinct (RJP) investigation area comprises multiple sites in the Casino area with potential to unlock new industrial lands and create more jobs in the high-value agriculture, food processing, manufacturing, and renewable energy sectors. The subject site for this agricultural land assessment is referred to as Area 3c, and is zoned under the Richmond Valley Local Environmental Plan 2012 as IN1 General Industrial (Sewerage Treatment Plant) and RU1 Primary Production. Areas 3a and 3c includes the Richmond Valley Sewerage Treatment Plant, the Primex Field Days site and the agricultural component of the land and covers an area of 83.3 hectares. This Agricultural Land Assessment assesses the agricultural component of Area 3c only which covers an area of approximately 27.24 hectares and is referred to throughout this report as Area 3c. This parcel of land is owned by Richmond Valley Council and the area of investigation is shaded yellow in Figure 1.1 below while provides an overview of the investigation areas associated with the broader Richmond Valley Job Precinct.



Figure 1.1 Area 3c (agriculture) investigation area

The RU1 land at the site and adjoining RU1 land surrounding the site is mapped as Regionally Significant Farmland within the Northern Rivers Farmland Protection Project – Final Recommendations Report (2005) and as such has potentially high agricultural value for the region, and any alternative non-agricultural land use should be carefully considered to ensure it would not negatively impact on the region's economy. The Regionally Significant Farmland mapping potentially conflicts with its consideration within the Richmond Valley RJP process as a future industrial precinct and possible use for agricultural ancillary development (i.e., food packaging, food production etc.).

This agricultural land assessment of the site and its surrounds identifies compliance or otherwise with the above considerations and considers whether any proposed alternative land uses would have a detrimental impact on future agricultural land uses at the site and on adjoining land.

It is noted that the site is mapped as flood prone land and the hydraulic model of the Richmond River catchment, developed for the Richmond Valley Flood Study Update (RVFSU) has been updated to include allowance for development fill within Area 3 and also identify flood mitigation strategies through creating additional capacity for flow from west to east to the north of Area 3.

As this site adjoins a number of different land users, GHD has considered adjacent land uses and prepared a Land Use Conflict Risk Assessment (LUCRA) (see section 3) to assess the potential of any negative impacts on surrounding land use and provide options for mitigation of potential impacts.

In addition to assessing the risk of land use conflict, GHD has also considered biosecurity risk which could occur if the RJP site was developed based on guidelines included in the NSW Department of Primary Industries' recently released *The Guide to Biosecurity Risk Management in Land Use Planning and Development* (October 2020).

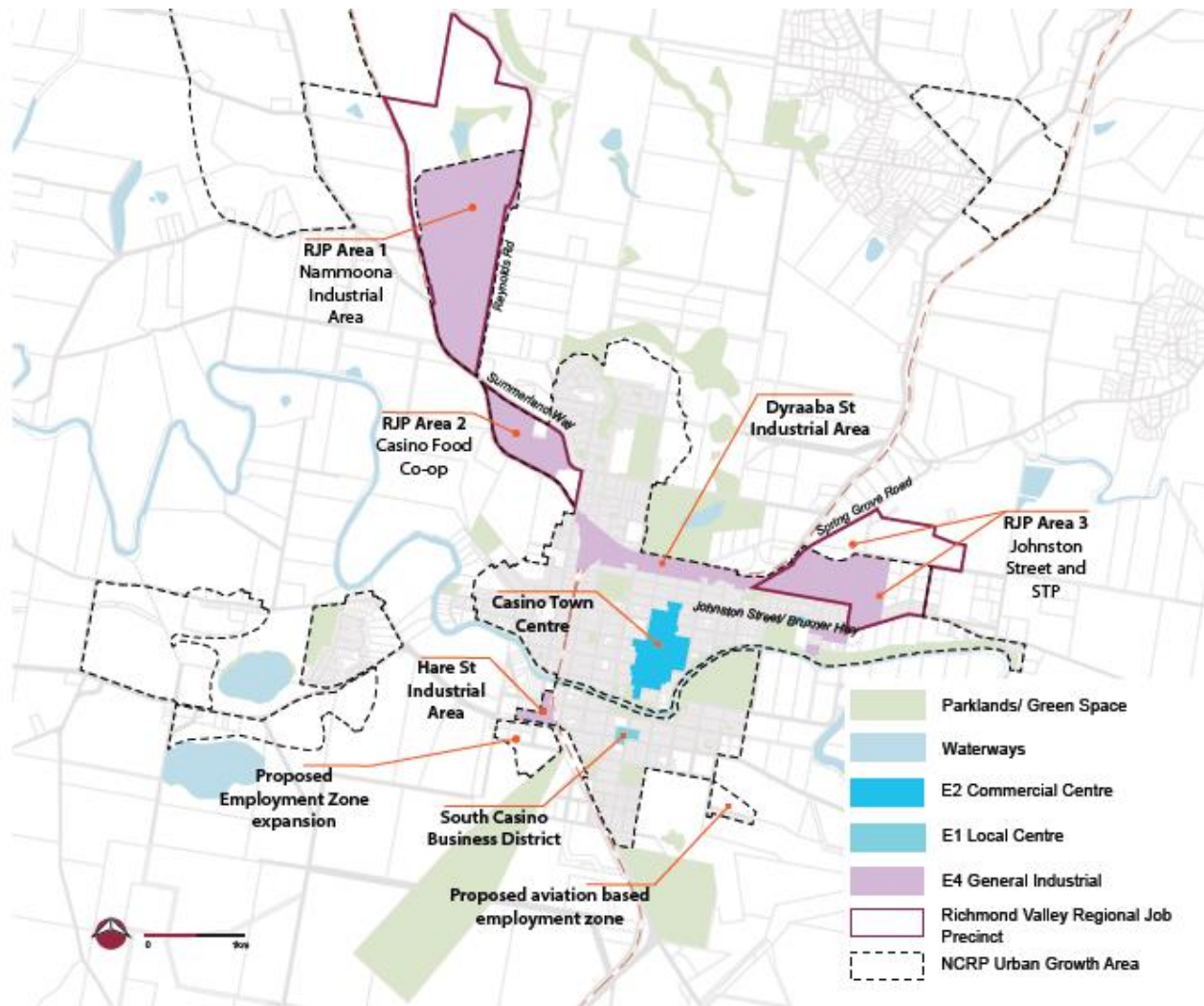


Figure 1.2 Richmond Valley Regional Job Precinct

1.1.1 Context for consideration of alternative uses of the site

This report will be used to guide the NSW Department of Planning and Environment's assessment of any proposed alternative land use or rezoning in conjunction with an Urban Growth Area (UGA) variation being considered in the current review of the Richmond Valley Growth Management Strategy (GMS) and other studies being completed as part of the Richmond Valley Regional Job Precinct (RJP) project. Any variation to the Urban Growth Area (UGA) boundary can also be considered in the current review of the North Coast Regional Plan. These strategies and plans will provide the strategic case for potential changes to land use (e.g., for additional employment land) for future economic development.

The site is mapped as Regionally Significant Farmland within the Northern Rivers Farmland Protection Project – Final Recommendations Report (2005). The mapping has the aim of protecting important farmland from urban and rural residential development and developing planning principles to assist that protection.

As such, any change in land use will need to address the following Section 9.1 Directions within the *Environmental Planning and Assessment Act 1979* (previously section 117(2)) which includes section 5.3 Farmland of State and Regional Significance on the NSW Far North Coast (including in Richmond Valley Council), with the objectives of this direction being:

- To ensure that the best agricultural land will be available for current and future generations to grow food and fibre.
- To provide more certainty on the status of the best agricultural land, thereby assisting councils with their local strategic settlement planning.
- To reduce land use conflict arising between agricultural use and non-agricultural use of farmland as caused by urban encroachment into farming areas.

A planning proposal may be inconsistent with the terms of this direction only if council can satisfy the Secretary of the Department of Planning and Environment (or an officer of the Department nominated by the Secretary) that the planning proposal is consistent with:

- The North Coast Regional Plan, or
- Section 4 of the report titled Northern Rivers Farmland Protection Project – Final Recommendations, February 2005, held by the Department of Planning and Environment.

The finalised North Coast Regional Plan 2041 was released in December 2022 and is the updated plan which sets a 20-year strategic land use planning framework for the region. The North Coast Regional Plan 2036 includes in Appendix A the Urban Growth Area Variation Principles, and in Appendix B Important Farmland Interim Variation Criteria. This agricultural assessment has considered these principles and criteria from the North Coast Regional Plan 2036 in Section 4 which was available at the time of writing this report.

The Northern Rivers Farmland Protection Project states on page 27 that Regionally Significant Farmland mapping is not an absolute constraint to future strategic urban development. However, Councils when preparing new urban settlement strategies under clause 38 of the North Coast Regional Environmental Plan can consider regionally significant farmland for future urban use if all of the following apply:

- The proposed new urban area or use would form part of the urban areas of Lismore, Murwillumbah, Kyogle, Casino or Ballina and no viable alternative land is available in proximity to those towns, or it would form a minor 'rounding-off' on the edge of an urban centre which would make good planning sense given the nature of the locality.
- It would be adjacent or close to an existing zoned urban area.
- It would not significantly undermine the integrity of a regionally significant farmland area by creating wedges or spikes of urban development.
- It would not compromise local or regional agricultural potential by alienating agricultural infrastructure or agricultural transport routes, or decreasing 'critical mass' for any existing agricultural industry.
- It would not create impacts which would compromise the agricultural use of nearby regionally significant land.
- It would not be located in an area where there was an identified risk of land use conflict near an existing agricultural enterprise.
- It would not involve filling part of a floodplain unless consistent with a floodplain management plan prepared in accordance with the Floodplain Management Manual.

This agricultural land assessment report includes a detailed examination of the agricultural capability of the site (see Section 2) and, if proposed for future urban development within the Richmond Valley Growth Management Strategy (GMS) and other studies being completed as part of the Richmond Valley Regional Job Precinct (RJP) project, an analysis of the removal of the agricultural land against each of the above criteria (see Section 4).

1.1.2 Policies and Guidelines summary

In addition to the policies and plans listed above, this Agricultural Land Assessment has also been guided by a range of local, regional and state-wide policies and guidelines that describe the importance of retaining agricultural land, and the necessity that any change in land use requires justification.

Appendix A includes a list of relevant policies, guidelines and reports that will be referred to throughout the assessment when considering the site's current agricultural production status and determining whether any policies or guidelines are potentially in conflict with any proposed development of the site.

1.2 Consultation

For this assessment, GHD has undertaken consultation with key stakeholders including the site owner (Richmond Valley Council) and adjoining agricultural landholders. A site inspection was undertaken on 8 December 2021 and a meeting was held with representatives from Richmond Valley Council who assisted in providing background understanding of the site and the importance of agricultural production to the local economy and any relevant local planning strategies. GHD has also had a meeting with NSW Department of Primary Industries to understand any specific regional or state-wide policies and strategies which should be considered, and also provide their perspectives on alternative land uses. A summary of the stakeholder consultation conducted with adjoining agricultural landholders is included in Section 2.1.2.

1.3 Scope and limitations

This report has been prepared by GHD for the Department of Regional NSW (DRNSW) and may only be used and relied on by the Department of Regional NSW for the purpose agreed between GHD and Department of Regional NSW as set out in this report.

GHD otherwise disclaims responsibility to any person other than the Department of Regional NSW arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

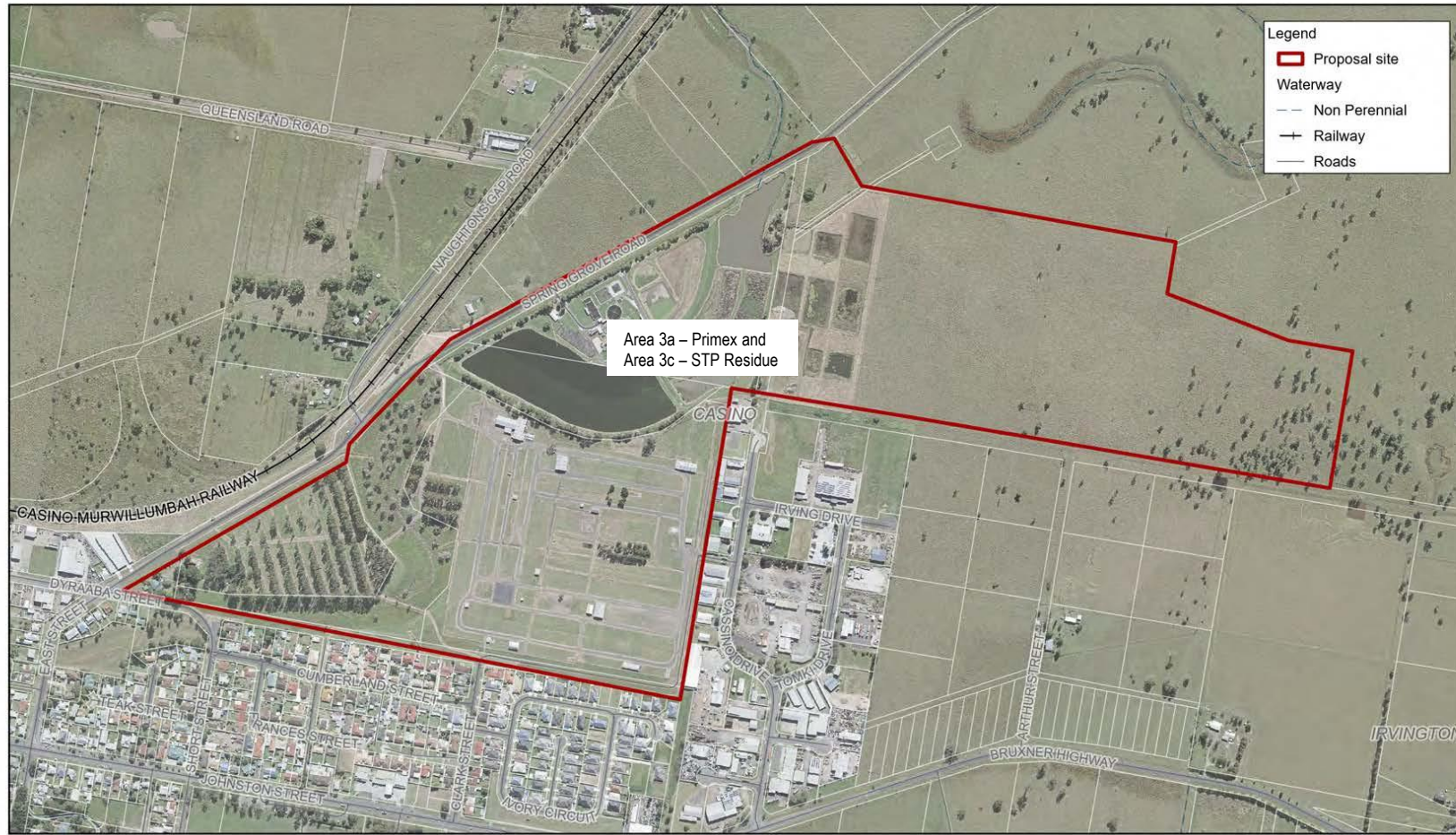
The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer Section 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

This report has been prepared to inform the master planning process for the Richmond Valley RJP. The findings and recommendations have been developed where possible in collaboration with other disciplines. It is acknowledged that some of the recommendations in this report may not be included in the Master Plan, such as where they are out of scope for the RJP, conflict with other elements of the project or are proposed to be managed via an alternate mechanism.

1.4 Assumptions

This analysis has relied on data as referenced in the following sections. This data includes but is not limited to Council, State Government GIS data, information and studies which are publicly available. Where consultation has been appropriate this has also been used to support investigation and evaluation of needs within the Regional Job Precincts.

This report is subject to, and must be read in conjunction with, the limitations set out and the assumptions and qualifications contained throughout the report.



<p>Paper Size ISO A4</p> <p>0 100 200</p> <p>Metres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 56</p> 	   	<p>Department of Regional NSW Richmond Valley RJP</p> <p>Site Overview Area 3a –and Area 3c</p>	<p>Project No. 12565732 Revision No. 1 Date 10/01/2023</p> <p>FIGURE 1-3</p>
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Figure 1.3 Richmond Valley Regional Job Precinct

2 Agricultural capability and production at Area 3c and in the Richmond Valley LGA

The following section provides an overview of the agricultural capability and production at Area 3c (agriculture), as well as the broader Richmond Valley LGA. This section has been informed by a desktop analysis and a site inspection.

2.1 The site

This Agricultural Land Assessment has been prepared to analyse the eastern part of the area known as Area 3c (agriculture) and excludes the existing Sewerage Treatment Plant, which is located at the western end of the site and adjacent to the Primex Field Days site. The area immediately adjacent to the western boundary of Area 3c (agriculture) has been reserved for a future expansion of the Sewerage Treatment Plant. The site also adjoins existing industrial land in Casino. The site is flood prone, and Richmond Valley Council has recently completed a baseline analysis and the *Regional Jobs Precinct Flood Impact Assessment* (FIA) which included a flood and drainage assessment with particular focus on Area 3. The inundation of Area 3 during regional flood events, is due to water entering the site from the west and east. The FIA has taken into account stakeholder feedback on flood planning levels and acceptable impact criteria. The FIA model was updated to include allowance for fill within Area 3 and the FIA identified the need for flood mitigation involving creating additional capacity for flow from west to east to the north of Area 3. Two mitigation solutions were shown to be viable when mitigating peak flood level impacts; one reinstating a flow path through the land currently occupied by the sewage treatment plant (STP) and the second creating a flow path in Crown Land north of Spring Grove Road. Extents of filling were then optimised to minimise any residual flood impacts remaining after the mitigation. Note that during GHD's site inspection on 8 December 2021 there was inundation over the full extent of the site as a result of recent intense local rainfall.

The following sections provide an overview of agricultural capability and production at Area 3c in particular, and more broadly across the Richmond Valley LGA.

2.1.1 Site inspection and land use

A site inspection was undertaken on 8 December 2021 to assess the agricultural capability of Area 3c (agriculture) and adjoining land uses. GHD also completed a broader regional inspection to understand the extent and importance of agriculture to the broader Richmond Valley LGA. The following sections provide an overview of agricultural production at the site and the broader LGA.

The site was covered with tall pasture growth at the time of inspection, and it appeared that it had not been grazed or used for other types of agricultural production in recent months (see photos in Appendix B). Pastures were dominated by paspalum and water tolerant sedges, interspersed with low densities of white clover and weed species (thistles).

There were no trees on the site. This contrasts with aerial images (e.g., Figure 1.1 above) which shows trees growing in the eastern part of the site. It appears the trees were cleared relatively recently but the purpose of clearing is unknown.

The majority of the site was inundated to depths ranging from 200 mm to above 500 mm, and only small areas were not covered in water. A single soil sample was taken from one of the few small areas not inundated. The soil testing results are described below in section 2.1.3.

The site is also extensively covered by gilgai formations. The extent and depth of the gilgai formation was unable to be measured during the site inspection because of the inundation and tall pasture growth, however a recent NSW SIX photo of the eastern section of the site clearly shows the high density of "melon holes" on the site (see Figure 2.1 below).

While there was no current agricultural or livestock production at the time of inspection, its most suitable use in its current state of development is extensive cattle grazing. Extensive cattle grazing was occurring on adjoining agricultural land to the north, east and south on land that appeared to be similar to the site (i.e., naturalised *paspalum* pastures on gilgai land formation). It is assumed that historically, extensive cattle grazing was the predominant land use.

In addition, cropping activity was evident on one adjoining block to the south, although this crop land was fully inundated at the time of inspection (see photo 5, Appendix B). Consultation with the land owner confirmed that the block had been “rowed-up” and later planted with soybeans. Further to the east, but not adjoining the site, is a tea tree plantation (Blue Dog Agriculture Tea Tree Oil).

2.1.2 Consultation

Phone consultation with three surrounding landholders was completed in early February 2022, with the outcomes documented below.

All three landholders carry out agricultural production varying from cattle grazing, annual cropping (wheat, soybeans) and perennial cropping (tea tree).

The landholders all noted that their land was similar to Area 3c (agriculture) initially, but land that is now cropped has been deep ripped and laser levelled to assist with drainage. They all consider soil is of good quality but in need of soil and landform amelioration to maximise production. The small area of the site means it is unlikely to be commercially viable in its own right for a soil-based agricultural activity. Viability of a soil-based enterprise would be possible if it was part of a larger agricultural holding.

Landholders consider that the major constraint on Area 3c (agriculture) land is gilgai micro-relief (melon hole country) so that land is subject to seasonal flooding due to localised storms. Storm events with rainfall of 50-100 mm results in pools developing in melon holes that persist for long periods and impact on management, and severely impact access.

Other constraints include absence of livestock handling yards, poor fencing (especially sub-division fencing) and uncertainty of livestock drinking water supply. A water delivery pipe from the STP to Blue Dog Agriculture tea tree farm is located within a road reserve along the southern boundary.

Soils on the site are considered to be excellent for annual and perennial cropping if levelled and drained and any soil fertility deficiencies are addressed.

Landholders were questioned about the potential for land use conflict should Area 3c (agriculture) be developed for purposes other than extensive livestock grazing. The adjacent landholders were supportive of employment generating activities at Casino and if employment generating development required landfill and construction of facilities, any impacts could most likely be mitigated and would be addressed during the planning process. These impacts include flood and drainage management as well as noise and lighting management. These could be mitigated by appropriate buffers (distance and vegetative). There are examples of vegetative buffers in the vicinity that are effective at controlling noise and light from routine agricultural practices. The impacts are more fully described in the LUCRA in section 3.

The landholders stated that clearing of trees was observed from about September 2021. Inquiries were made on the reasons for clearing but responses were not forthcoming.

2.1.3 Soil analysis

A soil sample was collected adjacent to the northern boundary of Area 3c (agriculture) in order to determine the soil characteristics, agronomic properties and suitability for ongoing agricultural activities. Due to extensive flooding over the full extent of the site, only one soil sample was able to be collected to a depth in the range of 0-10 cm.

The detailed soil analysis has been included in Appendix C. The soil consists of a clay loam (brownish colour) and the initial soil results indicate an absence of a regular fertiliser program across the site. Main soil features of significance are:

- **pH:** The pH is quite low, demonstrating a slightly acidic soil, however the pH could be raised through the application and incorporation of lime to raise the pH by 1 unit. A pH below 5.2 could result in plants suffering aluminium toxicities. Based on the soil's clay loam texture class, an application of 2.5 tonnes per hectare (t/ha) of lime or 1.35 t/ha of Calciprill would achieve an optimal pH of 6.5.
- **Nitrate Nitrogen (N):** The nitrogen levels are low; nitrogen is essential at sowing to promote early vigour of the crop/pasture.
- **Phosphorus (P):** The current level of phosphorous is below optimal. Phosphorus is essential for cell division and development of young plants and is vital at sowing.
- **Potassium (K):** is an essential nutrient in the regulation of water throughout the plant. The biggest responses to K will be seen through the clover content of the pasture. Applying K should only be done once the clover percentage comprises more than 20 per cent of the pasture base. Greater pasture growth responses will be noted from applying all other nutrients prior to an application of K.

Applications of Nitrogen, Phosphorous and Potassium should be applied in a blend at sowing or top dressed and will increase the overall fertility and production of the paddock.

Adjacent agricultural landholders consider soil is of good quality but in need of soil and landform amelioration to maximise production. Soils on the site are considered to be excellent for annual and perennial cropping if levelled and lasered to achieve appropriate drainage.

Leycester is the identified soil landscape within Area 3c (Agriculture). The Soils, Geology and Contamination Technical Report (ERM 2022) provides an overview of the soil landscape associated with the site. The characteristics are consistent with the above analysis including the landscape consisting of level to gently undulating broad to extensive alluvial plains of extremely low relief. Soils are classified as being poor to moderately well drained alluvial black earths and structured clays throughout the floodplains. The site has a number of limitations with soils being moderately erodible and also subject to moderate shrink-swell and localised waterlogging.

2.1.4 Infrastructure

Area 3c (Agriculture) does not include significant infrastructure on the site itself or in its vicinity which is critical to agricultural production within the LGA. The site includes boundary fencing which is in fair condition and suitable for containing livestock. There is one subdivision fence which is in poor condition. There is one livestock drinking water trough which is also in poor condition (see photo 4 Appendix B). The source of livestock drinking water for reticulation to this trough was not confirmed. There are no livestock handling yards on the site.

Access to the site appears to be via the STP on a track that is not weatherproof.

Irrigation water is potentially available at the site from excess water at the STP. Currently, irrigation water is delivered from the STP via an underground water pipe along the southern boundary to the Blue Dog tea tree plantation.

The site is remote from and not essential to major agricultural industries in Casino (see sections 2.7 - 2.9) and is not part of any agricultural transport routes for those industries.

2.1.5 Potential conflict with adjoining land

Land use conflicts occur when one land use is perceived to infringe upon a neighbouring land use. In rural areas, land use conflicts commonly occur between agricultural and residential uses due to their potential incompatibility. A LUCRA has been completed to ensure that any proposal does not adversely impact on the operation of existing rural enterprises. This was undertaken using the Department of Industry *Land Use Conflict Risk Assessment Guide* (DPI Guide 2011). Refer to section 3 for the LUCRA completed for Area 3c (agriculture).

The assumed relocation of the STP has identified that control measures will be required to limit development with the 7ou (odour unit) contour to the east of the proposed site.

2.1.6 Land constraints

While the land is mapped as Regionally Significant Farmland, there are a number of constraints on its agricultural production potential which are summarised as follows:

Flood prone: The land is currently mapped as flood prone; The FIA provides guidelines for acceptable changes in flood levels for various land uses. At the date of site inspection, Area 3c (agriculture) and adjoining agricultural land was inundated. While many agricultural enterprises can be established on flood prone land, the frequency and duration of inundation can limit enterprise choice. Typically, more intensive soil-based cropping enterprises may not be sustained on land subject to frequent inundation.

Gilgai: Across Area 3c (Agriculture) the landscape is characterised by gilgai microrelief (refer to Figure 2.1 below) (sometimes referred to as 'melonholes') such that during and following periods of rain, the gilgai depressions fill with water and the landscape is then dotted with an array of shallow wetlands, thus potentially limiting cultivation. Smoothing of gilgai can be completed using agricultural machinery, however smoothing removes topsoil from the higher parts, depositing it in the lower parts and exposing areas of subsoil which can impact crop establishment and production. Smoothing also alters the nutrient cycling of the soil. Experiments show that phosphorus availability and soil nitrogen levels in the surface soil decrease significantly with smoothing. Smoothing also increases the acidity of the exposed subsoils (Queensland Wetlands Program 2013).

Infrastructure: Access, livestock drinking water supply and subdivision fencing are in poor condition. Expenditure on each of these would be required if the site was to reach its potential.

Inundation risks: Because of the low lying, flood prone nature of the site, any alternative development other than its current most suitable use as extensive cattle grazing will likely require land forming (e.g., infill or levees) to protect crops or infrastructure, including buildings, glass houses and access roads, above flood levels. The impact of levees or infill on water flow on adjoining land would need investigation. In addition, if infill was sourced from off-site, the biosecurity risk implications would need investigation, including the potential introduction of weeds, pests and diseases.



Figure 2.1 Area 3c (agriculture) with an inset showing the extent of gilgai microrelief across the site

2.2 Land use zoning

Area 3c (agriculture) is zoned as RU1 Primary Production under the Richmond Valley Local Environmental Plan (LEP) 2012, with the objectives of the zone being:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To ensure that development does not unreasonably increase the demand for public services or public facilities.

Land uses permitted without consent in the zone include extensive agriculture; forestry; home occupations; horticulture; and viticulture.

There are a number of land uses permitted with consent in the zone. Land uses of an agricultural nature include Aquaculture; Cellar door premises; Environmental protection works; Farm buildings; Farm stay accommodation; Flood mitigation works; Intensive livestock agriculture; Intensive plant agriculture; Plant nurseries; Rural industries; Rural supplies; Rural workers' dwellings; Water supply systems.

Land adjoining the site to the south is zoned as IN1 General Industrial, while land to the north, east and south-east are zoned as RU1 Primary Production. RU1 Primary Production land accounts for 69% of all land use zoning across the Richmond Valley LGA, followed by RU3 Forestry (16%) and C1 National Parks and Nature Reserves (12%) (see Table 2.1).

Table 2.1 Land use zoning in the Richmond Valley Council LGA and Area 3c (agriculture)

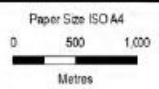
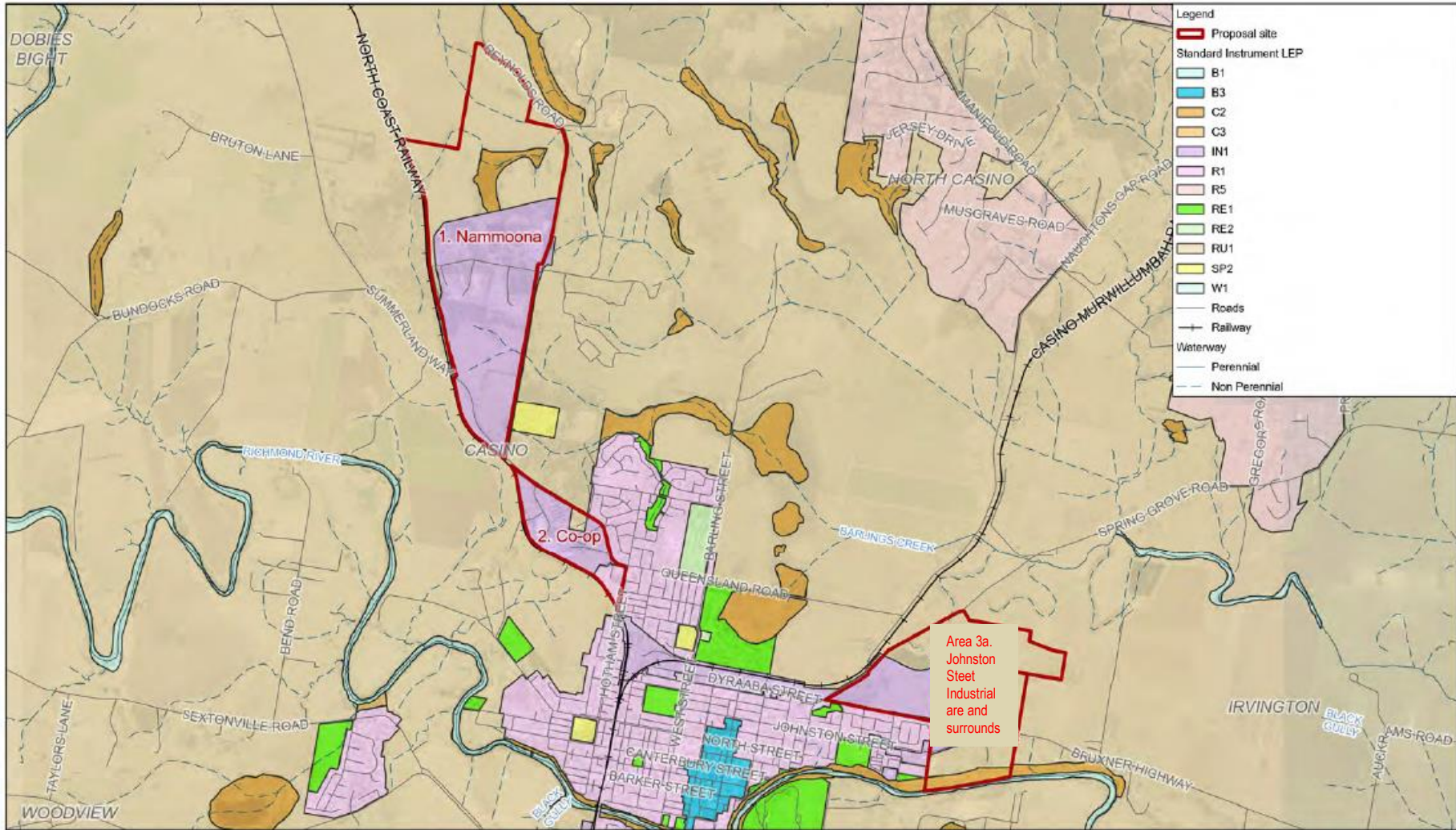
Land use zone	Richmond Valley LGA		Area 3c (agriculture)	
	Area (ha)	%	Area (ha)	%
B1 – Neighbourhood Centre	0.86	<0.01%	-	-
B2 – Local Centre	8.80	<0.01%	-	-
B3 – Commercial Core	33.93	0.01%	-	-
C1 – National Parks and Nature Reserves	36,014.14	12%	-	-
C2 – Environmental Conservation	3,691.36	1%	-	-
C3 – Environmental Management	666.83	0.2%	-	-
IN1 – General Industrial	331.06	0.1%	-	-
R1 – General Residential	789.71	0.3%	-	-
R5 – Large Lot Residential	827.53	0.3%	-	-
RE1 – Public Recreation	292.91	0.1%	-	-
RE2 – Private Recreation	192.99	0.1%	-	-
RU1 – Primary Production	209,302.82	69%	27.24	100%
RU2 – Rural Landscape	0.00	<0.01%	-	-
RU3 – Forestry	49,295.13	16%	-	-
RU5 – Village	351.62	0.1%	-	-
SP1 – Special Activities	1.11	<0.01%	-	-
SP2 – Infrastructure	479.63	0.2%	-	-
W1 – Natural Waterways	2,293.14	1%	-	-
W2 – Recreational Waterways	24.04	0.01%	-	-
Total	304,597.62	100%	27.24	100%

Council has confirmed a desire to use the non-fill areas for uses related to industrial development (e.g. parking, display areas, bioretention basins).

It has been confirmed that some use of the non-fill areas in conjunction with industry can be considered. Industrial zones have therefore been retained on the non-fill areas in the revised Structure Plan concept for Area 3, noting that there will be a need to restrict the type of uses that can take place in these areas.

DPE advise that the use of the non-fill land for open use such as agricultural machinery display and carparking associated with adjoining businesses on the fill area is likely to be acceptable. The installation of closed sheds or buildings which may take up flood storage or redirect flows is not acceptable. Solid fencing which may impede flood flows or redirect flows elsewhere adversely impacting on neighbouring properties, is also unacceptable.

The general objective is to avoid any use of the non-fill areas which could be subject to unacceptable impacts due to flooding and/or which may impact on the level or flow of floodwater in the locality.



Map Projection: Mercator Auxiliary Sphere
 Horizontal Datum: WGS 1984
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 Richmond Valley RJP

Project No. 12565732
 Revision No. 1
 Date 10/01/2023

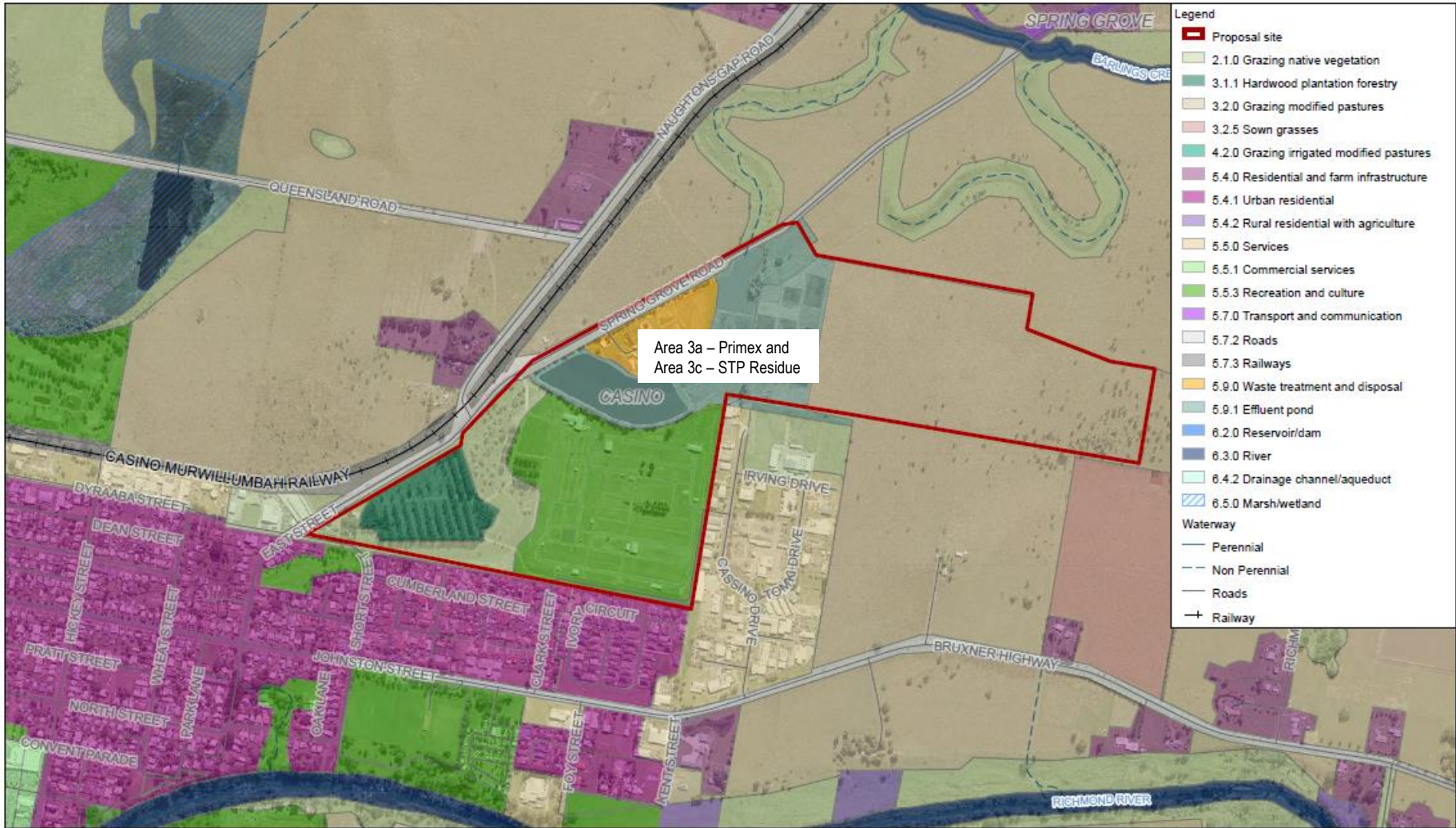
Land Zoning

FIGURE 2-2

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Data source: Imagery - Richmond Regional Council, NSW, Imagery © Department of Customer Service 2020. Created by: agoodie

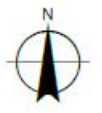
Figure 2.2 Land Zoning



- Legend**
- Proposal site
 - 2.1.0 Grazing native vegetation
 - 3.1.1 Hardwood plantation forestry
 - 3.2.0 Grazing modified pastures
 - 3.2.5 Sown grasses
 - 4.2.0 Grazing irrigated modified pastures
 - 5.4.0 Residential and farm infrastructure
 - 5.4.1 Urban residential
 - 5.4.2 Rural residential with agriculture
 - 5.5.0 Services
 - 5.5.1 Commercial services
 - 5.5.3 Recreation and culture
 - 5.7.0 Transport and communication
 - 5.7.2 Roads
 - 5.7.3 Railways
 - 5.9.0 Waste treatment and disposal
 - 5.9.1 Effluent pond
 - 6.2.0 Reservoir/dam
 - 6.3.0 River
 - 6.4.2 Drainage channel/aqueduct
 - 6.5.0 Marsh/wetland
- Waterway**
- Perennial
 - - - Non Perennial
 - Roads
 - + Railway

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Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Department of Regional NSW
 Richmond Valley RJP

Project No. 12565732
 Revision No. 0
 Date 15/12/2021

Land Use
 Area 3a -and Area 3c

FIGURE 2-3

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Date source: Imagery - Richmond Regional Council, NSW Imagery © Department of Customer Service 2020. Created by: dibanali

Figure 2.3 Land Use

2.3 Land use

A summary of the mainland uses within Area 3c (agriculture) and Richmond Valley LGA is provided in Table 2.2 and shown in

The LGA covers almost 304,610 hectares of land, with nature conservation and natural environments comprising 36% of total land use. Agricultural related land use is also of significance, with grazing native vegetation and grazing modified pastures accounting for almost 17% and 14% of the total land areas within Richmond Valley LGA, respectively. Production native forests account for 16% of all land uses within the Richmond Valley LGA.

Area 3c (agriculture) are classified as grazing modified pastures and the site area represents 0.065% of this type of land use within the Richmond Valley LGA.

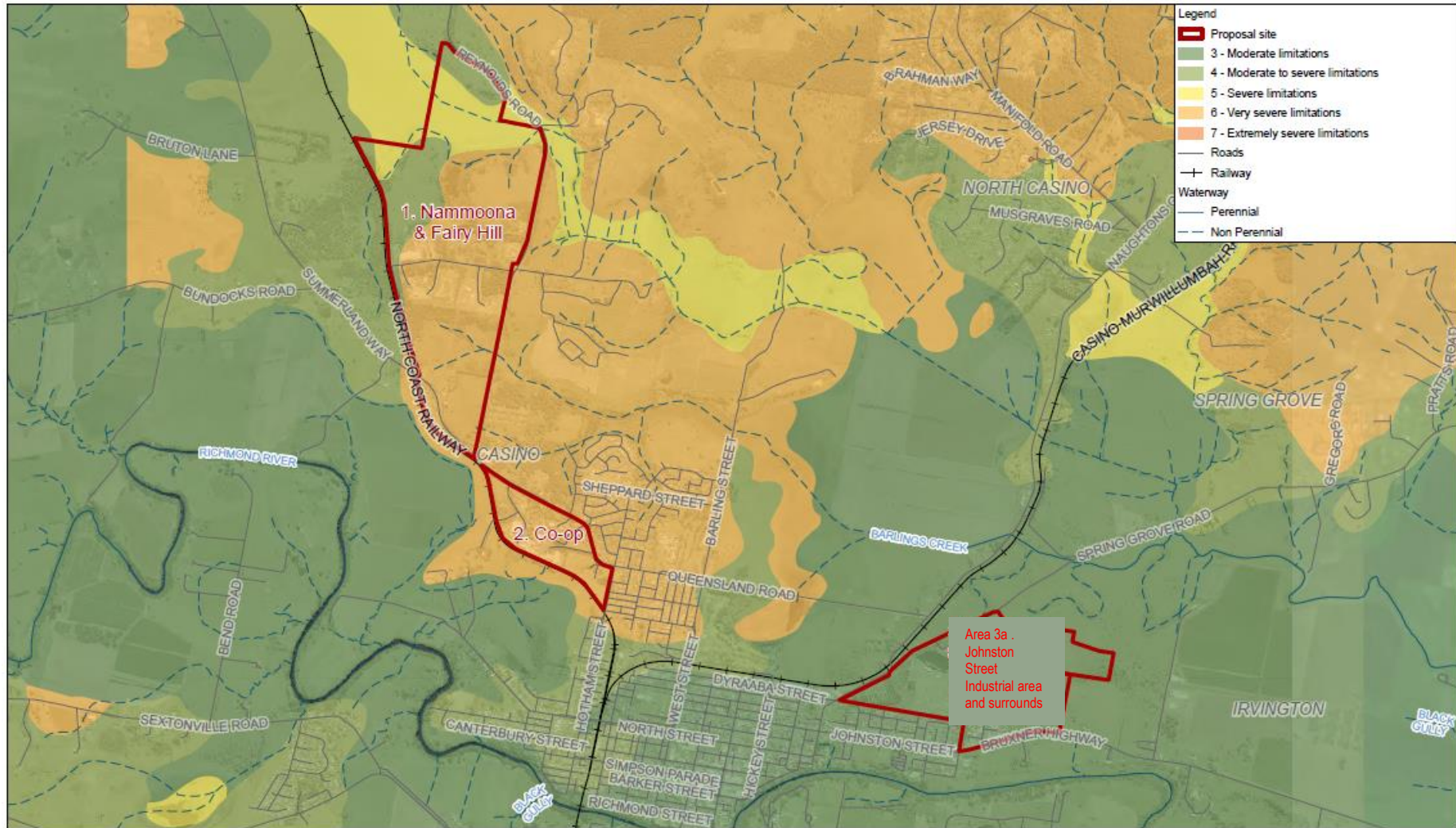
Table 2.2 Land use in the Richmond Valley LGA and Area 3c (agriculture)

Landuse 2017 (Tertiary)	Richmond Valley LGA		Area 3c (agriculture)	
	Area (ha)	%	Area (ha)	%
1.0 Conservation and Natural Environments	109,496.30	36%		
2.1.0 Grazing native vegetation	51,215.89	17%		
2.2.0 Production native forests	48,988.55	16%		
3.1.0 Plantation forests	58.12	0.02%		
3.1.1 Hardwood plantation forestry	5,327.19	2%		
3.1.2 Softwood plantation forestry	4,075.79	1%		
3.1.3 Other forest plantation	3,929.20	1%		
3.2.0 Grazing modified pastures	41,650.55	14%	27.24	100%
3.2.1 Native/exotic pasture mosaic	4,968.01	2%		
3.2.5 Sown grasses	646.17	0.21%		
3.3.0 Cropping	7,185.55	2%		
3.3.1 Cereals	130.98	0.04%		
3.3.5 Sugar	4,621.11	2%		
3.4.0 Perennial horticulture	595.68	0.20%		
3.5.0 Seasonal horticulture	22.64	0.01%		
3.6.2 Abandoned land	26.39	0.01%		
3.6.5 Abandoned perennial horticulture	19.23	0.01%		
4.0 Production from Irrigated Agriculture and Plantations	2,476.73	1%		
5.1 Intensive Horticulture	44.01	0.01%		
	Area (ha)	%	Area (ha)	%
5.2.0 Intensive Animal Production	290.53	0.10%		
5.3.0 Manufacturing and industrial	110.15	0.04%		
5.4.0 Residential and farm infrastructure	5,611.99	2%		
5.5.0 Services	648.43	0.21%		
5.6.0 Utilities	120.55	0.04%		
5.7.0 Transport and communication	2,053.15	1%		
5.8.0 Mining	256.73	0.08%		
5.9.0 Waste treatment and disposal	34.00	0.01%		
5.9.1 Effluent pond	31.95	0.01%		

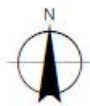
Landuse 2017 (Tertiary)	Richmond Valley LGA		Area 3c (agriculture)	
5.9.2 Landfill	0.24	0.00%		
5.9.5 Sewage/sewerage	3.53	0.00%		
6.2.0 Reservoir/dam	292.53	0.10%		
6.3.0 River	4,671.24	2%		
6.4.0 Channel/aqueduct	149.19	0.05%		
6.5.0 Marsh/wetland	4,829.14	2%		
6.6.0 Estuary/coastal waters	28.48	0.01%		
Total	304,609.92	100%	27.24	100%

Source: State Government of NSW and Department of Planning and Environment (2019) - Landuse Mapping for NSW 2017

* Some land use categories have been grouped together where the individual land areas are relatively small.



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Horizontal Datum: WGS 1984
Grid: GCS WGS 1984



Regional
NSW



Department of Regional NSW
Richmond Valley RJP

Project No. 12565732
Revision No. 1
Date 18/01/2023

Land and Soil Capacity

FIGURE 2-4

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Figure 2.4 Land and Soil Capacity

2.4 Land and soil capability

Most agricultural enterprises depend on the local natural resource base that determines the suitability of a location for a specific enterprise. There is a range of natural resources that need to be considered including soil type, topography, and climate and water availability. The land and soil capability assessment scheme uses the biophysical features of the land and soil including landform, slope gradient, drainage, climate and soil properties to provide a broad-scale assessment of land capability. Land capability for agricultural production in the Richmond Valley LGA is a function of a range of natural resource conditions including geomorphology, topography, vegetation and soils.

Land in NSW is commonly classified according to the capability of land to remain stable under particular land uses. Land capability systems classify land in terms of inherent physical characteristics or constraints and consider the optimum use of land rather than the maximum use and in general will not change over time. The 8-class classification is shown in Table 2.3 and shows that Class 1 to Class 3 are considered to be capable of being regularly cultivated while the remaining classes are not capable of being regularly cultivated and are suitable for grazing. It should be noted, however, that the adoption of nil-till or minimum till cropping technology can extend the capability of Class 4 and above land as suitable for cultivation.

Table 2.3 Land and soil capability

Broad category	LSC Class	General definition
Land capable of being regularly cultivated and used for a wide variety of land uses (cropping, grazing, horticulture, forestry, nature conservation) (Slope <10%)	1	Extremely high capability land: Land has no limitations. No special land management practices required. Land capable of all rural land uses and land management practices.
	2	Very high capability land: Land has slight limitations. These can be managed by readily available, easily implemented management practices. Land is capable of most land uses and land management practices, including intensive cropping with cultivation.
	3	High capability land: Land has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation.
Land capable of a variety of land uses (cropping with restricted cultivation, pasture cropping, grazing, some horticulture, forestry, nature conservation) (Slope 10% - 20%)	4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.
	5	Moderate–low capability land: Land has high limitations for high-impact land uses. Will largely restrict land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation.
Land capable for a limited set of land uses (grazing, forestry and nature conservation, some horticulture) (Slope 20% - 33%)	6	Low capability land: Land has very high limitations for high-impact land uses. Land use restricted to low-impact land uses such as grazing, forestry and nature conservation. Careful management of limitations is required to prevent severe land and environmental degradation.
Land generally incapable of agricultural land use (selective forestry and nature conservation) (Slope > 33%)	7	Very low capability land: Land has severe limitations that restrict most land uses and generally cannot be overcome. On-site and off-site impacts of land management practices can be extremely severe if limitations not managed. There should be minimal disturbance of native vegetation.
	8	Extremely low capability land: Limitations are so severe that the land is incapable of sustaining any land use apart from nature conservation. There should be no disturbance of native vegetation.
Other	98	Rock and disturbed terrain
	99	Water

Source: NSW OEH (2012) The land and soil capability assessment scheme – second approximation

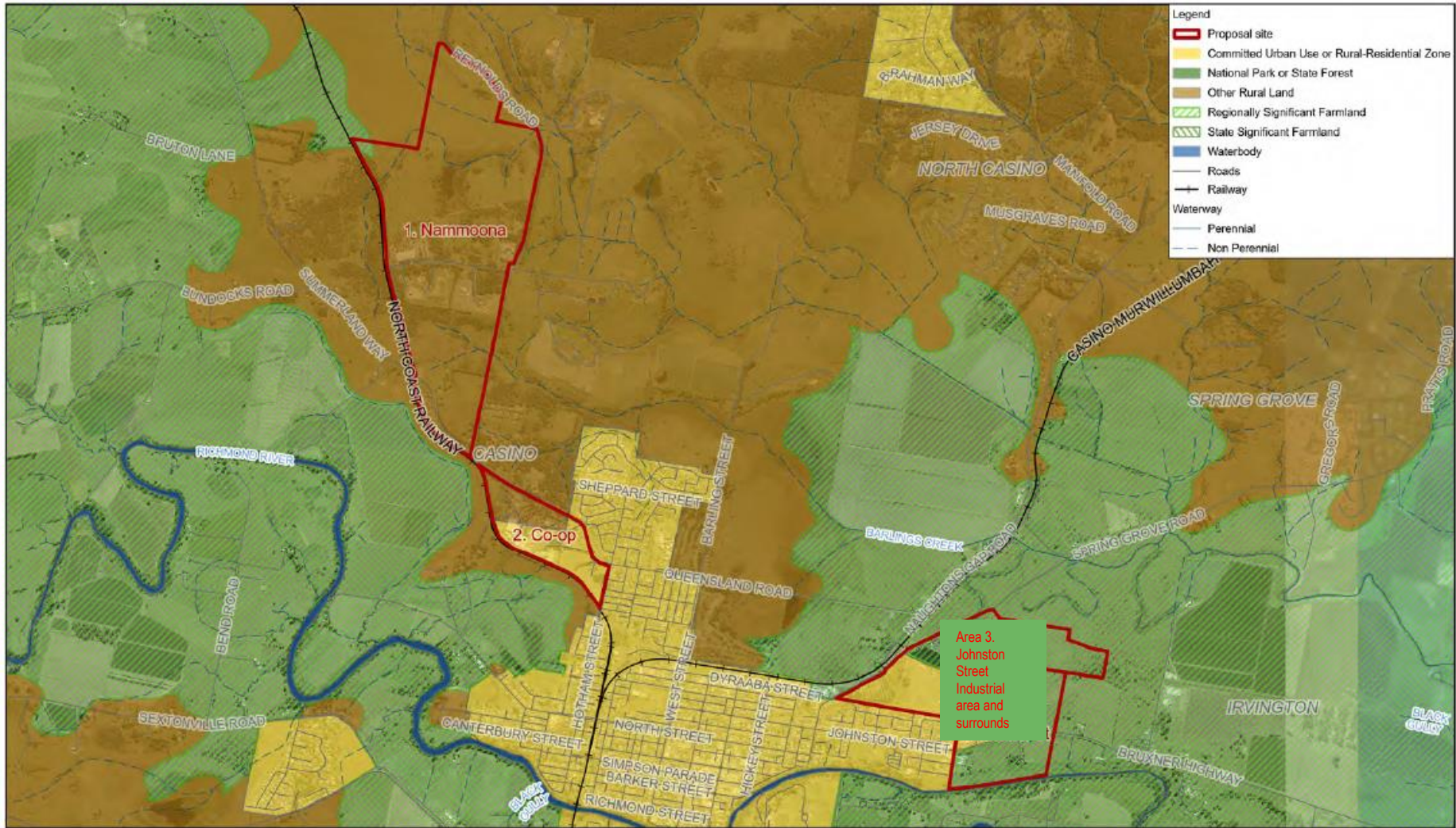
Table 2.4 and Figure 2.4 provide an overview of the land and soil capability for the subject site and also a comparison to the broader Richmond Valley LGA. Approximately 16% of all land within the Richmond Valley LGA is classified as Class 3 land (high capability land) and has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available, and widely accepted management practices, although careful management is required to avoid environmental degradation. Class 4 and Class 5 land accounts for almost 45% of all land within the LGA and is moderate capability land, which is capable of a variety of land uses, however has limitations for a number of high impact land uses. Class 5 land is generally restricted to grazing.

Area 3c (agriculture) is classified as Class 3 land as assessed under the NSW land and soil capability assessment scheme, which is considered to be capable of being regularly cultivated and used for a wide variety of land uses. Note, however, that GHD considers that because the site is flood prone and as the landscape is typical gilgai microrelief landscape, it is not suitable for regular cultivation without soil and landform amelioration.

Table 2.4 Land and soil capability in Richmond Valley Council LGA and Area 3c (agriculture)

Land and Soil Capability	Richmond Valley LGA		Area 3c (agriculture)	
	Area (ha)	%	Area (ha)	%
3	48,392.22	16%	27.24	100%
4	85,078.21	28%	-	-
5	51,182.95	17%	-	-
6	73,136.63	24%	-	-
7	12,092.83	4%	-	-
8	32,218.53	11%	-	-
98	1,355.07	0.4%	-	-
99	18.83	0.01%	-	-
Total	303,475.27	100%	27.24	100%

Source: State Government of NSW and Department of Planning and Environment (2013) - Land and Soil Capability Mapping for NSW



Horizontal Datum: WGS 1984
Grid: GCS WGS 1984



Department of Regional NSW
Richmond Valley RJP

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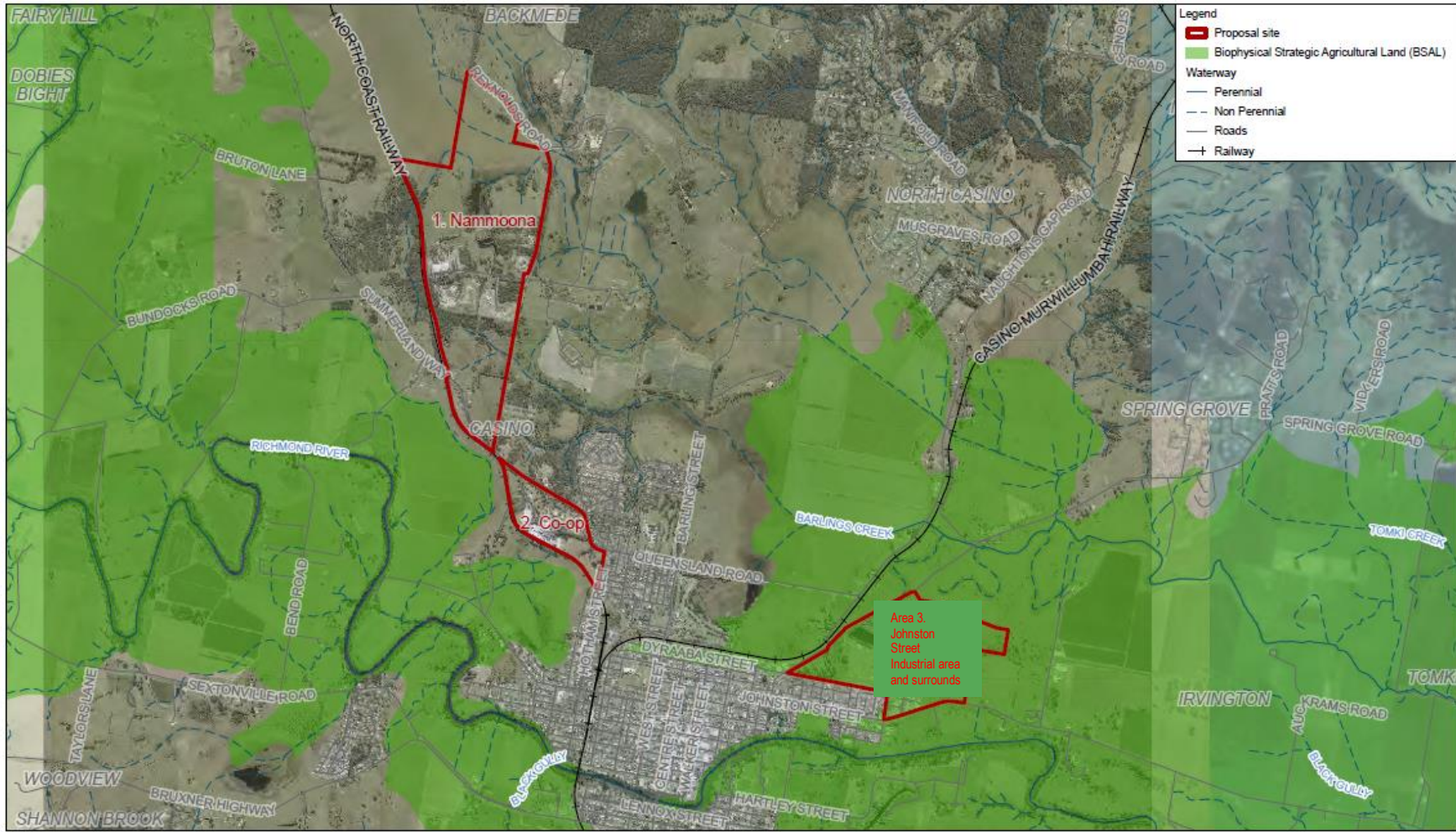
Northern Rivers Farmlands
Protection Project

FIGURE 2-5

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Figure 2.5 Northern Rivers Farmlands Protection Project



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 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Department of Regional NSW
 Richmond Valley RJP

Project No. 12565732
 Revision No. 1
 Date 18/01/2023

Biophysical Strategic Agricultural
 Land (BSAL)

FIGURE 2-6

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 Print date: 18 Jan 2023 - 10:44

Data source: Imagery - Richmond Regional Council, BSAL - NSW DPIE 2021NSW_Imagery © Department of Customer Service 2020. Created by: spods

Figure 2.6 Biophysical Strategic Agricultural Land (BSAL)

2.5 Northern Rivers Farmland Protection Project Mapping

The Northern Rivers Farmland Protection Project seeks to protect important farmland from urban and rural residential development by mapping farmland and developing planning principles.

Table 2.5 and Figure 2.5 show the Richmond Valley Council LGA land areas for different land uses. Regionally Significant Farmland comprises 19% of the total LGA land area and Area 3c (agriculture) and adjoining land are included in this category. The entire area of Area 3c including the STP has been identified as Regionally Significant Farmland. Area 3c (agriculture) accounts for 0.049% of the Regionally Significant Farmland mapped in the Richmond Valley LGA.

Table 2.5 Northern Rivers Farmland Protection Mapping

Northern Rivers Land Use Category	Richmond Valley LGA		Area 3c (agriculture)	
	Area (ha)	%	Area (ha)	%
Committed Urban Use or Rural-Residential Zone	2,211.95	1%	-	-
National Park or State Forest	67,417.90	23%	-	-
Other Rural Land	161,282.73	56%	-	-
Regionally Significant Farmland	55,921.59	19%	27.24	100%
Waterbody	899.55	0.3%	-	-
Total	287,733.72	100%	27.24	100%

2.6 Strategically significant agricultural land

Strategic agricultural land is identified under the NSW Government's Strategic Regional Land Use Policy (2012). Strategic agricultural land is highly productive land that has unique natural resource characteristics (such as soil and water resources) and socio-economic value (such as high productivity, infrastructure availability and access to markets). Two categories of strategic agricultural land have been identified by the NSW Government: critical industry clusters and biophysical strategic agricultural land.

2.6.1 Critical industry clusters

Critical industry clusters are concentrations of highly productive industries within a region that are related to each other, contribute to the identity of that region and provide significant employment opportunities. Two critical industry clusters exist in NSW – for equine and viticulture industries in the Upper Hunter region.

No critical industry clusters have been identified by the NSW Government on or adjacent to the subject site.

2.6.2 Biophysical strategic agricultural land

Biophysical strategic agricultural land (BSAL) is land with high quality soil and water resources capable of sustaining high levels of productivity. A total of 2.8 million hectares of BSAL has been identified and mapped at a regional scale across the State by the NSW Government. BSAL is located throughout the Richmond Valley LGA in and covers an area of 33,494 ha as show in Figure 2.6. The area mapped as BSAL land covers a smaller area than the Regionally Significant Farmland mapped in Table 2.5 above due to the mapping methodology being undertaken at a regional scale rather than state-wide.

As addressed in Section 2.1.6 the BSAL mapping might not be truly reflective of the strategic agricultural status of the land because, as discussed by the Northern Rivers Farmland Protection Project, the mapping will include inliers of land of lower quality.

2.7 Value of agricultural production

The gross value of agricultural production from the Richmond Valley Council LGA was over \$70 million in 2020-21 (see Table 2.6). Livestock processing (beef and dairy) accounted for 37% of the gross value of agricultural production followed by dairy products (17%). Broadacre cropping also contributes significantly to the gross value of production in the Richmond Valley LGA, accounting for approximately 17% of agricultural gross value of production (GVP). In addition, Casino is the regional centre for the Richmond Valley LGA and located within the RJP is the Casino Food Co-op, Australia's largest meat processing co-operative, and also the Northern Rivers Livestock Exchange, the fourth largest saleyards for beef throughput in NSW.

Table 2.6 Gross value of agricultural production Richmond Valley Council LGA

Commodity	Richmond Valley Council LGA	% of total
Broadacre crops	\$11,981,475	16.88%
Hay	\$769,384	1.08%
Nurseries, cut flowers or cultivated turf	\$4,214,475	5.94%
Fruits and nuts	\$1,781,093	2.51%
Vegetables	\$3,576,310	5.04%
Livestock products - wool	\$26,510	0.04%
Livestock products - milk	\$12,206,257	17.19%
Livestock products - eggs	\$1,756,405	2.47%
Livestock slaughterings - cattle and calves	\$26,384,283	37.16%
Livestock slaughterings - sheep and lambs	\$4,509	0.01%
Livestock slaughterings - pigs	\$7,343,842	10.34%
Livestock slaughterings - poultry	\$953,146	1.34%
Total	\$70,997,690	100.00%

Source: ABS (2022b) Agricultural Commodities Produced, Australia, 2021-22, Value of Agricultural Commodities Produced, Australia, 2020-21

2.7.1 Agricultural production – livestock

As outlined above, livestock enterprises are an important component of the local agricultural economy. The poultry industry is comprised of both meat birds and layers with over 1.1 million birds. The cattle industry (beef and dairy cattle) comprises 42,438 head of cattle across 200 establishments. The Northern Rivers Livestock Exchange (NRLX) is the fourth largest for cattle transactions in NSW behind Wagga Wagga and Dubbo. The NRLX accounts for 10% of NSW cattle throughput with 103,700 head of cattle processed through the yards in 2020/21, an increase of 21.4% on the number processed the previous financial year (MLA 2022) as producers retain livestock to rebuild herds following the prolonged drought. The NRLX draws in cattle from all locations within the Northern Rivers region.

Table 2.7 Livestock numbers Richmond Valley Council LGA

	Total numbers	No. of establishments
Dairy cattle	5,372	16
Beef cattle	37,067	190
Sheep and lamb	778	7
Poultry - layers	24,018	2
Poultry - meat birds	36,464	1
Pigs	15,848	8

Source: ABS (2022a) Agricultural Commodities Produced, Australia, 202-21, Estimates by Local Government Areas

2.8 Agricultural employment

An analysis of employment for the Richmond Valley LGA is presented in Table 2.8. Agriculture, forestry and fishing is the fifth largest employer by occupation accounting for 628 jobs (8.7%). Manufacturing is the largest employer, employing 1,148 people (15.9%), closely followed by health care and social assistance employing 930 people (12.9%). Note that Manufacturing includes processing of agricultural produce and that the Casino Food Co-op is Australia's largest meat processing co-operative and employs over 1,000 employees across their three facilities.

Table 2.8 Employees by industry of occupation

	Richmond Valley Council LGA	% of total
Agriculture, Forestry and Fishing	628	8.7%
Mining	58	0.8%
Manufacturing	1,148	15.9%
Electricity, Gas, Water and Waste Services	64	0.9%
Construction	452	6.3%
Wholesale Trade	109	1.5%
Retail Trade	633	8.8%
Accommodation and Food Services	557	7.7%
Transport, Postal and Warehousing	287	4.0%
Information Media and Telecommunications	35	0.5%
Financial and Insurance Services	52	0.7%
Rental, Hiring and Real Estate Services	92	1.3%
Professional, Scientific and Technical Services	175	2.4%
Administrative and Support Services	158	2.2%
Public Administration and Safety	343	4.8%
Education and Training	825	11.4%
Health Care and Social Assistance	930	12.9%
Arts and Recreation Services	94	1.3%
Other Services	238	3.3%
Inadequately described/Not stated	325	4.5%
Total	7,209	100.0%

Source: ABS 2021 Census Working Population Profile – Richmond Valley (A)

*Small random adjustments have been made to all cell values by ABS to protect the confidentiality of data. These adjustments may cause the sum of rows or columns to differ by small amounts from the table totals.

2.9 Economic development

“A guide to economic development in the Richmond Valley” (RVC 2019) provides a summary of industries of importance in the LGA, including:

- Casino Food Co-op (formerly the Northern Cooperative Meat Company) contributes significantly to the \$374.6M of economic activity generated by the meat industry.
- Richmond Dairies which exports to numerous countries.
- The Council-owned Northern Rivers Livestock Exchange which had a turnover in excess of \$113M in 2016/17.
- Australia's largest beef jerky producer, New World Foods, is located in Casino.

- The region has sugar cane growers supporting the Broadwater Sugar Mill (Sunshine Sugar operates as a partnership between the grower-owned NSW Sugar Milling Co-operative Limited and the Australian family-owned agribusiness Manildra Group).
- Emerging industries such as Blue Dog tea tree, Mara Foods and OzRice.

The Guide outlines how Richmond Valley Council is working together with the NSW Government to create an environment which will attract significant businesses to the region.

“Invest Regional NSW – Richmond Valley Regional Job Precinct, Investment Attraction – opportunities analysis” (Regional NSW 2021) identifies key investor target groups for the RJP in the Richmond Valley LGA. The report takes into account the endowments, strengths and challenges of the Richmond Valley and the surrounding region of the Northern Rivers. These include the abundance of fertile agricultural land and the related food processing industry, the positive view from Council and community in relation to industry development and attracting jobs as well as the opportunities for development of renewable energy and circular economy enterprises.

In particular, the report explores how the Richmond Valley RJP can be a catalyst to create new jobs in the agriculture, manufacturing and renewable energy sectors. The report outlines the key endowments & strengths and challenges for the food and agribusiness sector and the key investor target groups.

The “Local Strategic Planning Statement: Beyond 20-20 Vision” (RVC May 2020) outlines that manufacturing is the standout contributor to RVC’s economy which produced \$711.7 m of output, or 40.7% of the LGA’s total output. The agriculture/forestry/fishing sector contributed \$124.2 m to annual output. The Manufacturing sector is heavily weighted towards food production, with major contributors being the Casino Food Co-op, Casino; Richmond Dairies, Casino; Sunshine Sugar, Broadwater; and New World Foods, Casino. There is leather production mainly attributable to Casino Hide Tannery, wood products from various timber mills in the area, and chemical products mainly attributable to Tea Tree Oil Distillation facilities throughout the LGA.

The Planning Statement states that Council supports the protection of important farmland due to its importance to the economy but encourages a level of common sense and flexibility when considering areas mapped as Regionally Significant Farmland to ensure Council’s planning provisions accommodate the changing needs for agriculture, manufacturing and emerging agribusiness and agritourism opportunities.

“Regional Jobs and Investment Packages: North Coast Region of New South Wales Local Investment Plan, May 2017” – this Plan identified those industries with potential for investment across the region and identified a number of critical industry areas such as Agribusiness and Food Processing, Manufacturing, the Digital Economy, Health and Aged Care, the Visitor Economy, and Education and Local Government.

For Food & Agribusiness, strategic priorities were:

- Value-Add: Ready Made Meals for export.
- Applied Technology: Agri-tech & Robotics.
- Digital Connectivity: Paddock to Plate Monitoring.
- Freight/Supply Chain & Tourism Infrastructure: Cool/Cold Stores, Food Trails, Regional Accommodation.
- Skilled Workforce: Applied Technology.

Area 3c (Agriculture) is potentially suited to the strategic priorities outlined above. RJP investigations are considering opportunities to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.

3 Land use conflict risk assessment

Land use conflicts occur when one land use is perceived to infringe upon a neighbouring land use. In rural areas, land use conflicts commonly occur between agricultural and residential uses. Potential alternative land uses at Area 3c (agriculture), including land uses permitted with consent within the current RU1 zone, or land uses proposed within an expanded UGA boundary, could give rise to conflict with adjoining landholders. A land use conflict risk assessment (LUCRA) has been prepared to assess the potential of any negative impacts on surrounding land use and provide options for mitigation of potential impacts. This LUCRA has been developed based on *the Land Use Conflict Risk Assessment Guide* (DPI, 2011) and the *Living and Working in Rural Areas – A handbook for managing land use conflicts on the NSW North Coast* (DPI, 2007).

There are four key steps in undertaking a LUCRA. These are:

- Gather information about proposed land use change and associated activities.
- Evaluate the risk level of each activity.
- Identify risk reduction management strategies.
- Record LUCRA results.

A risk assessment matrix (Table 3.1) has been adopted to assess potential land use conflict risks from the proposal. It has been used to identify the effects of the proposed land use on neighbouring land uses and identifies a risk rating for each impact based on the probability (P) of occurrence and the consequence (C) of the impact.

This LUCRA has been prepared to cover developments on the land that require land formation and infrastructure development that is considered to be more intensive than the current land use (extensive livestock grazing). Such developments could include intensive plant agriculture or plant nurseries which are permitted with consent under the Richmond Valley LEP (refer to Section 2.2) or developments of a non-agricultural status, for example if the UGA was expanded under the suite of RJP investigation studies.

Table 3.1 Land use conflict risk ranking matrix

		Probability				
		A	B	C	D	E
Consequence		Almost Certain	Likely	Possible	Unlikely	Rare
	1. Severe	25	24	22	19	15
	2. Major	23	21	18	14	10
	3. Moderate	20	17	13	9	6
	4. Minor	16	12	8	5	3
	5. Negligible	11	7	4	2	1

The LUCRA is presented in Table 3.2 below and presents potential conflicts arising from alternative land uses on Area 3c (agriculture) and suggests mitigation measures to address these risks. The framework presents the probability (P), consequence (C) and risk ranking (RR) of each risk activity, and the controlled risk ranking (RR) after mitigation factors are applied. A risk ranking of 25-11 (shaded in blue above) is deemed to be an unacceptable risk. A risk ranking of 10-1 is deemed to be an acceptable risk. The objective is to identify and define controls that lower the risk ranking score to 10 or below.

For all risk activities listed, the risk ranking of potential conflict ranges from 8 to 21. With mitigation, the risk ranking is reduced to between 5 and 11.

Table 3.2 Land use conflict risk assessment

Risk Activity	Identified potential conflict	Risk Ranking			Mitigating factors (method of control)	Controlled Ranking		
		P	C	RR		P	C	RR
Dust	During construction, there is the potential for impacts as a result of airborne particulate matter and dust deposition to settle on crops and pastures, however dust suppression protocols would reduce the occurrence and the impacts on production are likely to be minimal. Air quality within and surrounding the proposal is expected to be consistent with a typical rural environment dominated by cropping and grazing activities.	B	3	17	Where sensitive receivers are located within the separation distances determined for each key activity, or visible dust is generated from vehicles using unsealed access roads, road watering and/or other stabilising approaches would be implemented.	C	4	8
Fencing	Construction activities may result in fences temporarily cut and/or permanently realigned to improve access efficiency. Unless repaired or appropriately planned, cut fences could result in unintended livestock mixing which in turn could disrupt planned breeding programs, require added costs to muster and draft livestock. Fences with adjoining agricultural land would need to be maintained in a condition to minimise the possibility of livestock straying onto adjoining properties or non-agricultural land. The maintenance of shared boundary fencing between property owners to be confirmed.	C	3	13	Prior to construction, boundary fencing would need to be undertaken to a stock proof standard (at a minimum). Shared boundary fencing is the responsibility of both property owners.	D	4	5

Risk Activity	Identified potential conflict	Risk Ranking			Mitigating factors (method of control)	Controlled Ranking		
		P	C	RR		P	C	RR
Flooding	<p>The site is currently mapped as flood prone land. Flood inundation during regional flood events mainly enters Area 3 from the west and south. The FIA found that "on its western side Area 3 is crossed by a gully. During large flood events, breakout flow occurs from the Richmond River and passes through Casino, before connecting with Barlings Creek through this gully. The gully is significantly obstructed by the sewage treatment plant and associated treatment ponds, which limit the passage of flow towards Barlings Creek. This then redirects flow through the existing industrial area after which it spreads across the relatively flat land within the eastern portion of Area 3."</p> <p>At the time of the site inspection, the majority of the site was inundated to depths ranging from 200 mm to above 500 mm, and only small areas were not covered in water. Adjacent land parcels (not used for agricultural purposes) have been raised and were not affected by storm/flood water.</p> <p>Any alternative land use that is proposed for the site which involves landfill, will need to ensure the mitigation strategies proposed in the Regional Jobs Precinct Flood Impact Assessment (BMT 2023) will need to be followed to ensure impacts on surrounding agricultural land can be satisfactorily mitigated.</p>	B	2	21	<p>A FIA has been prepared for RVC and the study found that the inundation of Area 3 during regional flood events is due to water entering the site from the west and south. Any proposed filling of Site 3 would obstruct overland flow paths and would likely produce unacceptable flood impacts. These flood impacts can potentially be mitigated by reinstating original flow paths in the vicinity of the sewage treatment plant.</p> <p>The flood assessment was informed through discussions with project stakeholders and taking into account existing guidance, the following acceptable flood impact criteria for the development of Area 3 have been applied for this assessment:</p> <ul style="list-style-type: none"> – Increase in flood level no greater than 10 mm in residential areas. – Increase in flood level no greater than 20 mm in commercial and industrial areas. – Increase in flood level no greater than 200 mm in agricultural areas. – Increase in flood level no greater than 400 mm in general rural open space. – Acceptable flood impacts to be assessed for the 2% and 1% AEP events. Sensitivity tests on flood impacts to be carried out for the 1% AEP + climate change flood event. 	C	3	13
Fire	Risk of fire escaping and entering agricultural properties during construction activities.	C	4	8	<p>Future development would be located and designed in accordance with relevant government guidelines, and it is likely that non-agricultural land based activities might also act as fire protection asset zone between urban and agricultural areas. Refer to ERM (2022) for recommendations from the Richmond Valley Regional Job Precinct – Bushfire Analysis Report.</p>	D	4	5

Risk Activity	Identified potential conflict	Risk Ranking			Mitigating factors (method of control)	Controlled Ranking		
		P	C	RR		P	C	RR
Land forming	<p>The site is also extensively covered by gilgai formations. The extent and depth of the gilgai formation was unable to be measured during the site inspection because of the inundation and tall pasture growth, however a recent Google Earth photo of the eastern section of the site clearly shows the high density of “melon holes” on the site.</p> <p>Any alternative land use that is proposed for the site which involves landfill, will need to ensure the mitigation strategies proposed in the FIA will need to be followed to ensure impacts on surrounding agricultural land can be satisfactorily mitigated.</p>	B	2	21	<p>A FIA has been prepared for RVC. Two mitigation measures were shown to be viable when mitigating peak flood level impacts on Area 3c. These include:</p> <ul style="list-style-type: none"> – Reinstating a flow path through the land currently occupied by the sewage treatment plant; and – Creating a flow path in Crown Land north of Spring Grove Road. Extents of filling were then optimised to minimise any residual flood impacts remaining after the mitigation. 	D	4	5
Lights	<p>Construction of the proposal might result in lights impacting on adjoining rural properties.</p> <p>During operation, it is expected that the main potential contributors to lighting impacts would be from external lighting for security and internal lighting for operational purposes (e.g., glasshouses/office area).</p>	A	3	20	<p>Area 3c (agriculture) is already located within close proximity to existing industrial and residential areas. NSW DPI (Living and Working in Rural Areas 2007) recommends a 50 metre buffer to grazing land and it is expected that the low intensity of lighting would have minimal impact on surrounding agricultural production.</p> <p>See noise below for vegetative buffer to be established around perimeter of site.</p> <p>The NSW Right to Farm Policy (2015) was formed to ensure farmers could undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users.</p>	A	5	11
Noise	<p>Construction of the proposal might result in noise impacting on sensitive receivers.</p> <p>Construction activities would need to be implemented and limited to standard working hours.</p> <p>Noise as a result of operation is expected to be similar to existing adjoining industrial land uses.</p>	B	3	17	<p>Vegetative buffers and screening have been established on adjacent land to provide buffers to adjacent agricultural properties from agricultural machinery (noise and lights). As part of the DCP site planning controls to be established, a 10 m wide landscape buffer will be created along roadsides and RJP boundaries and a 20 m wide buffer will be provided on the northern side of Bruxner Highway consistent with existing industrial area.</p> <p>Refer to other studies on Noise being undertaken as part of the Richmond Valley RJP investigation.</p>	C	4	8
Pesticides	<p>Pesticides may be used to control weeds during construction and operation.</p>	C	4	8	<p>Apply pesticides in accordance with the <i>Pesticides Act 1999</i>, such that only registered pesticides are used based on label instructions and are designed to minimise impact on adjoining land.</p>	C	4	8

Risk Activity	Identified potential conflict	Risk Ranking			Mitigating factors (method of control)	Controlled Ranking		
		P	C	RR		P	C	RR
Roads	Increased traffic and disruption in the area as a result of construction traffic however this will have nil to minimal impact on surrounding agricultural land use as access will be via either existing roads or new roads. Access would likely be from adjacent industrial lands (via Bruxner Highway).	C	4	8	Vehicle movements during construction would be considered as part of a Traffic Management Plan. Impacts are considered temporary and manageable. Refer to complementary studies being undertaken as part of the Richmond Valley RJP investigation.	D	4	5
Straying livestock	See fencing for potential conflict of straying livestock.	B	2	21	As per fencing above.	D	4	5
Theft/vandalism	Interference with crops, livestock, fodder, machinery, and equipment due to increased people in close proximity and adjacent to agricultural land. See fencing - boundary fencing is expected to reduce the risk posed by theft/vandalism between the site and adjoining agricultural enterprises.	C	4	8	As per fencing above.	D	4	5
Weeds and pests (Biosecurity)	Planning, construction and operation activities may create the possibility of introducing or spreading weeds, pests and diseases onto a property. In addition, soil disturbance could reduce competition against current weeds and necessitate increased control costs. Weed incursions or proliferation would reduce crop and livestock production unless properly controlled.	C	3	13	Under the <i>Biosecurity Act 2015</i> landholders have a legal obligation to manage identified priority weeds on land that they own or occupy and to fulfil their obligations in accordance with the General Biosecurity Duty. The Construction Environmental Management Plan (CEMP) for Area 3c should also detail measures to minimise the potential for biosecurity risks during construction in accordance with the <i>Biosecurity Act 2015</i> . Weed and pest control, including for noxious weed and pests, would be subject to ongoing routine monitoring and management and consultation with relevant regulatory bodies as required.	D	4	5

Risk Activity	Identified potential conflict	Risk Ranking			Mitigating factors (method of control)	Controlled Ranking		
		P	C	RR		P	C	RR
Visual/amenity	Visual impact to sensitive receivers nearby and loss of scenic agricultural views. Alternative uses of this parcel of land for other forms of agricultural production, or removal from agriculture if under extension of UGA could result in changes to the visual amenity of the site. The potential impacts on visual amenity of these changes would depend on the nature and intensity of the development.	B	3	17	<p>The proposed development is located on relatively flat land and adjacent to existing industrial and STP land and assuming any development is likely to be similar in height to existing developments and therefore it is not expected to result in a change in the character of properties that are directly impacted by the proposal.</p> <p>The site has recently been cleared of all mature trees and therefore vegetation screening would be required in strategic locations to visually mitigate impacts on adjoining agricultural land uses. It would also be appropriate to ensure that appropriate species are planted that respond to the existing landscape character setting and environmental conditions. Refer to visual amenity inspections being undertaken as part of the Richmond Valley RJP investigation.</p>	D	4	5

3.1 Potential for land use conflict on Area 3c from adjacent agricultural land

The NSW Government has developed a comprehensive, State-wide approach to deal with the issue of 'right to farm'.

The concept of 'right to farm' has multiple facets, but the common interpretation – and the one used in this policy – relates to a desire by farmers to undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users (NSW Right to Farm Policy).

The NSW Right to Farm Policy (NSW DPI 2015) outlines the productive nature of agricultural land and how normal farming practices can have impacts on adjoining non-agricultural land uses. Land use conflict can arise from rural landholders undertaking legal practices on their land and the resulting effect of the pollution laws is that a neighbour can complain about any pollution emanating from a farm such as noise, dust, odour and spray drift.

Potential causes of land use conflict which could emanate from adjoining agricultural land uses and impact upon alternative land uses proposed on Area 3c include issues arising from odour, noise, dust, lights, visual amenity, effluent management, chemical use and spray drift and weed management.

4 Analysis

The following analysis considers the above descriptions of the site and its potential future use given its Regionally Significant Farmland status. Under current RU1 zoning, its current permitted use without consent is for extensive agriculture; forestry; home occupations; horticulture; and viticulture.

However, for alternative uses requiring consent within the zone or for uses that seek to rezone the land, a number of criteria will need to be satisfied before approval could be given for such alternative land uses. It should be noted that rezoning the site, for example from RU1 to E4 General Industrial, will not necessarily exclude agricultural production, for example Intensive Plant Agriculture.

As described in section 1.1.1, currently there is a review of the Richmond Valley Growth Management Strategy (GMS) and other studies are being completed as part of the Richmond Valley Regional Job Precinct (RJP) project. The Richmond Valley RJP Draft Structure Plan (December 2022) supports the delivery of a proposed industry catalyst hub on Area 3c (agriculture) (Lot 30 DP 755727) and recommends short term expansion of the Urban Growth Area boundary and rezoning to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.

The outcomes of these studies could recommend a variation to the Urban Growth Area (UGA) boundary within the North Coast Regional Plan with potential changes to land use (e.g., for additional employment land) for future economic development. A variation to the UGA could encompass using Area 3c (Agriculture) for a land use other than its current permitted use.

If the land use strategies propose such alternative land use(s) on the site which is mapped as Regionally Significant Farmland, the change would need to be justified according to criteria outlined in section 1.1.1. Following is a series of tables that outline various criteria for consideration.

4.1 Section 9.1 Ministerial Directions

Section 117 of the *NSW Environmental Planning and Assessment Act 1979* (Environmental Planning and Assessment Amendment Bill 2017) has the objective of protecting the agricultural production value of rural land. The objectives included in Subsection 1.5 Rural Lands and Subsection 5.3 Farmland of State & Regional Significance of Section 117 need to be addressed with respect to Area 3c (Agriculture).

Table 4.1 provides commentary in relation to the objectives of Subsection 1.5 Rural Lands.

Table 4.1 Subsection 1.5 Rural Lands objectives

Objective	GHD analysis for Area 3c (agriculture)
Protect the agricultural production value of rural land;	<p>The current suitable agricultural production on Area 3c (agriculture) is extensive cattle production grazing on modified pastures, and this form of land use comprises 14% of total land use in the LGA (see Table 2.2). The gross margin of such a cattle grazing enterprise is approximately \$200 per hectare (a total of about \$5,500 per year from the 27.24 hectare site) (refer to Appendix D). This value of agricultural production is a small percentage of the approximately \$71 million yearly total of agricultural production in the LGA (see Table 2.6).</p> <p>The value of agricultural production from the site could be increased through intensification of land use, but such intensification is limited by several constraints. The constraints were outlined in section 2.1 and include it being flood prone; has extensive gilgai formation; and has infrastructure that is in poor condition (e.g., poor road access, uncertain livestock drinking water supply and poor subdivision fencing). These constraints can be mitigated via investments in infrastructure, soil amelioration, land forming, and soil infilling so long as impacts on adjoining lands are considered.</p>

Objective	GHD analysis for Area 3c (agriculture)
	<p>Consultation was carried out with adjacent landholders to understand the agricultural production value of the land. It was noted that adjacent agricultural land was similar to Area 3c (agriculture) initially, but land that is now cropped has been deep ripped and laser levelled to assist with drainage. They all consider the soil is of good quality but in need of soil and landform amelioration to maximise production. The small area of the site means it is unlikely to be commercially viable in its own right for a soil-based agricultural activity (gross margin of \$5,500 per year). Viability of a soil-based grazing enterprise would be possible if it was part of a larger agricultural holding.</p> <p>The site is surrounded on the north, east and south by other regionally significant farmland, with these adjoining blocks having similar land uses (extensive cattle grazing) on relatively constrained land (flood prone, gilgai) – see section 2.1.6. Land to the south is already within the UGA.</p> <p>Expansion of the site with adjoining land to improve agricultural viability is also constrained by the fact that the land to the north is Crown Land and Native Title has been recognised over the subject Crown Land.</p> <p>Consideration of the potential to modify the land for intensive plant agriculture, plant nurseries or an extension of the urban growth area would likely increase the overall production value of the land in the LGA.</p>
Facilitate the orderly and economic use and development of rural lands for rural and related purposes;	<p>Current extensive livestock production use means that the site is constrained as a standalone viable agricultural business enterprise (see above gross margin calculation) and is further constrained by its lack of potential expansion to adjoining land to the north which is Crown Land with Native Title determination.</p> <p>However, alternative more viable intensive agricultural land uses requiring consent within the RU1 zone could be pursued as long as land use conflict with adjoining land uses were considered (see section 3 above). Additionally, rezoning from RU1 to E4 General Industrial is also likely to permit Intensive Plant Agriculture that will benefit the orderly and economic use and development of the site.</p>
Assist in the proper management, development and protection of rural lands to promote the social, economic and environmental welfare of the State;	<p>Under its current most suitable extensive cattle grazing land use, Area 3c (agriculture) contributes minimal social, economic and environmental welfare to the State as shown by its modest likely gross margin income. Also, the site accounts for only 0.049% of the Regionally Significant Farmland mapped area in the Richmond Valley LGA (see Section 2.5).</p> <p>Alternative more intensive use of the site could result in the creation of new jobs and economic output in the agriculture, manufacturing, and renewable energy sectors in the LGA. Section 2.9 outlines a number of recent economic development studies undertaken and outlines the importance of the Agribusiness and Food Processing sectors to the local, regional, and state economy.</p>
Minimise the potential for land fragmentation and land use conflict in rural areas, particularly between residential and other rural land uses;	<p>A LUCRA has been completed to assess the impacts of more intensive land uses on surrounding land and mitigation activities required to minimise land use conflict.</p> <p>More intensive land uses could include Intensive Plant Agriculture or plant nurseries which are permitted with consent under the Richmond Valley LEP (refer to Section 2.2) or developments of a non-agricultural nature, for example if the UGA was expanded under the suite of RJP investigation studies. The alternative land use would create a wedge between the north and east adjoining blocks, however there would be minimal land use conflict (see Section 3) assuming mitigation activities are undertaken.</p>
Encourage sustainable land use practices and ensure the ongoing viability of agriculture on rural land; and	<p>RJP investigations are considering opportunities to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.</p> <p>In addition, the draft Master Plan Diagrams for Area 3 include an assumption that if the land was proposed to be rezoned from RU1 to E4 General Industrial, the new zoning would include the permissibility with consent of Intensive Plant Agriculture in the proposed E4 zone.</p>
Support the delivery of the actions outlined in the New South Wales Right to Farm Policy.	<p>The concept of ‘right to farm’ has multiple facets but the common interpretation – and the one used in this policy - relates to a desire by farmers to undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users.</p>

Objective	GHD analysis for Area 3c (agriculture)
	As such, any changes to existing land use on Area 3c (agriculture) will need to satisfy the “right to farm” principles on adjoining farmland. The LUCRA in section 3 has identified a range of mitigation activities required to ensure the right to farm on adjoining holdings. It is expected that a DCP will establish suitable planning controls such as a 10 m wide landscape buffer to be created along roadsides and RJP boundaries and a 20 m wide buffer on the northern side of Bruxner Highway consistent with existing industrial area provisions.

Table 4.2 provides commentary in relation to the objectives of Subsection 5.3 Farmland of State & Regional Significance. Note that more comprehensive assessment of the site with respect to its status as Regionally Significant Farmland is included in section 4.2.

Table 4.2 Subsection 5.3 Farmland of State & Regional Significance on the NSW Far North Coast

Objective	GHD analysis for Area 3c (agriculture)
To ensure that the best agricultural land will be available for current and future generations to grow food and fibre.	<p>Area 3c (Agriculture) is mapped as Regionally Significant Farmland (Table 2.5). The most suitable land use at the site, and its most recent use, is extensive cattle grazing on modified pastures. Extensive cattle grazing has a relatively low gross margin income as described in Table 4.1 above.</p> <p>The site includes a range of constraints that limits the intensification of agricultural production other than extensive cattle grazing (see constraints discussion in Section 2.1). These constraints can be addressed via investment in a range of infrastructure and soil improvement strategies, although these strategies could potentially have negative impacts on adjoining land uses unless mitigated (mitigating factors are described in the LUCRA summarised in Table 3.2).</p> <p>If the land is developed to enable more intensive agricultural production (assuming the ‘right to farm’ for adjoining agricultural landholders landholders), the site will be available for current and future generations to grow food and fibre. The ability to grow food and fibre will also be available if the land is rezoned from RU1 to E4 General Industrial so long as Intensive Plant Agriculture is permitted with consent within the E4 zone.</p>
To provide more certainty on the status of the best agricultural land, thereby assisting councils with their local strategic settlement planning.	<p>While Area 3c (Agriculture) is mapped as Regionally Significant Farmland, the land is encumbered with a range of biophysical constraints that limits its land use to a relatively low gross margin income from extensive cattle grazing. As such, the land is unlikely to be considered as “best agricultural land” unless it is developed to enable more intensive land use, such as Intensive Plant Agriculture.</p> <p>As described in Section 1.1.1, the assessment of Area 3c (Agriculture) will be used to guide the NSW Department of Planning and Environment’s assessment of any proposed alternative agricultural land use or rezoning in conjunction with an Urban Growth Area (UGA) variation being considered in the current review of the Richmond Valley Growth Management Strategy (GMS) and other studies being completed as part of the Richmond Valley RJP project. These strategies and plans will provide the strategic case for potential changes to land use (e.g., for additional employment land) for future economic development.</p> <p>The assessment of Area 3c (Agriculture) in this report with respect to its current most suitable agricultural land use and its potential for improved agricultural production given its various biophysical constraints will enable RVC to consider the best alternative land use within its strategic settlement planning process.</p>
To reduce land use conflict arising between agricultural use and non-agricultural use of farmland as caused by urban encroachment into farming areas.	A comprehensive LUCRA has been prepared (see Section 3) which describes each identified potential conflict as a result of any land use change and the mitigating factors required to control and negate impacts on surrounding farming and other land.

4.2 Northern Rivers Farmland Protection Project

If a variation to the UGA is recommended and the variation encompasses Area 3c (agriculture), the issues to be satisfied under the Northern Rivers Farmland Protection Project are outlined in Table 4.3 below.

Table 4.3 *Issues to be satisfied if regionally significant farmland can be considered for future urban use*

Issues	GHD analysis for Area 3c (agriculture)
<p>The proposed new urban area or use would form part of the urban areas of Lismore, Murwillumbah, Kyogle, Casino or Ballina and no viable alternative land is available in proximity to those towns, or it would form a minor 'rounding-off' on the edge of an urban centre which would make good planning sense given the nature of the locality.</p>	<p>The Richmond Valley Growth Management Strategy (GMS) and Richmond Valley RJP project would need to recommend a variation to the Urban Growth Area (UGA) boundary within the North Coast Regional Plan for Casino encompassing Area 3c (agriculture). The Richmond Valley RJP Draft Structure Plan recommends short-term expansion of the Urban Growth Area boundary and rezoning to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.</p> <p>The site is adjacent to the current urban centre, and it is assumed that the above strategies will have selected the site for alternative land use on the basis of it making good planning sense, and that no viable alternative land is available.</p>
<p>It would be adjacent or close to an existing zoned urban area.</p>	<p>The site is adjacent to an existing zoned urban area in Casino – see Figure 1.3.</p>
<p>It would not significantly undermine the integrity of a regionally significant farmland area by creating wedges or spikes of urban development.</p>	<p>The site is surrounded on the north, east and south by other regionally significant farmland, with these adjoining blocks having similar land uses (extensive cattle grazing) on relatively constrained land (flood prone, gilgai) – see section 2.1.6. Land to the south is already within the UGA.</p> <p>The alternative land use would create a wedge between the north and east adjoining blocks, however there would be minimal land use conflict (see section 3) assuming mitigation activities are undertaken, and it would not significantly undermine the integrity of the regionally significant farmland area.</p> <p>Area 3c (agriculture) accounts for 0.049% of the Regionally Significant Farmland mapped area in the Richmond Valley LGA (see section 2.5).</p>
<p>It would not compromise local or regional agricultural potential by alienating agricultural infrastructure or agricultural transport routes, or decreasing 'critical mass' for any existing agricultural industry.</p>	<p>Apart from extensive beef production, the site is not critical to other agricultural industries in Casino such as the Casino Food Co-op, Richmond Dairies, Northern Rivers Livestock Exchange, Sunshine Sugar or the tea tree industry and its potentially alternative land use would not decrease the critical mass of those industries.</p> <p>In addition, it is not associated with agricultural transport routes or agricultural infrastructure, apart from an irrigation water pipeline from the STP to Blue Dog tea tree plantation (see section 2.1 site description for further details). The retention of the pipeline would be subject to any future planning approval.</p>
<p>It would not create impacts which would compromise the agricultural use of nearby regionally significant land; and</p>	<p>The site is surrounded on the north, east and south by other regionally significant farmland, with these adjoining blocks having similar land uses (extensive cattle grazing) on relatively constrained land (flood prone, gilgai) – see section 2.1.5. Land to the south is already within the UGA.</p> <p>The LUCRA indicates that alternative land uses at the site would have little impact on the continuing livestock and agricultural production on nearby land, assuming appropriate mitigation of potential conflicts is completed (see section 3).</p>
<p>It would not be located in an area where there was an identified risk of land use conflict near an existing agricultural enterprise; and</p>	<p>See preceding comments and also the completed LUCRA at section 3.</p>

Issues	GHD analysis for Area 3c (agriculture)
<p>It would not involve filling part of a floodplain unless consistent with a floodplain management plan prepared in accordance with the Floodplain Management Manual.</p>	<p>The site is currently mapped as flood prone land, but the extent and nature of the flooding has recently been assessed in a separate flood study for RVC.</p> <p>A FIA has been prepared for RVC,. Two mitigation measures were shown to be viable when mitigating peak flood level impacts on Area 3c. These include:</p> <ul style="list-style-type: none"> – Reinstating a flow path through the land currently occupied by the sewage treatment plant. – Creating a flow path in Crown Land north of Spring Grove Road. An optimised filling extent has been developed in combination with flood mitigation works which limits offsite flood impacts to within acceptable levels and provides an overall benefit to existing residential areas in Casino and to the Cassino Drive Industrial Estate. – The flood mitigation works promote increased flow through or around the STP and reinstate a situation which was similar prior to the construction of the STP.
<p>No viable alternative land is available which is suitable for the proposed industrial use.</p>	<p>It is assumed that the Richmond Valley Growth Management Strategy (GMS), Richmond Valley Regional Job Precincts (RJP) project and ensuing recommendation to vary the Urban Growth Area (UGA) boundary within the North Coast Regional Plan for Casino to encompass Area 3c (agriculture) will have been on the basis that no viable alternative land is available for the proposed strategy.</p> <p>As part of the Draft Structure Plan (Gyde 2022), a market demand analysis was undertaken to assess if there was any alternative land suitable for proposed industrial use within the LGA.</p> <p>Based on a combination of the land use audit and RJP boundary, there was 51.9 hectares of vacant land zoned for employment in the RJP. Furthermore, when constraints as well as land designated for future uses were removed, there is only an estimated 15.3 hectares of vacant employment land in Casino. Of this 15.3 hectares, the majority (13.5 hectares) is earmarked for industrial subdivision in Reynolds Road at the south of the Nammoona precinct.</p> <p>The diverse economic activity, demand for employment lands and business composition support a case for demand for employment lands in Casino.</p> <p>In addition to the land earmarked for industrial subdivision in Reynolds Road area, land adjoining the Casino Aerodrome was also assessed by Richmond Valley Council, however there are several different factors which prohibit future industrial development.</p> <p>Area directly to the west of the aerodrome: this area has current approval and use is well established as a manufactured home estate. It is highly unlikely this land will ever be repurposed for industrial.</p> <p>Area directly to the south-west of the aerodrome: this area is marsh with standing water for periods of the year. It is unlikely that this land has any development potential due to existing habitat and vegetation.</p> <p>Area directly to the south of the aerodrome: this area when financially viable would be expected to be developed to meet aeronautical demand that is currently unmet.</p> <p>Area directly to the north of the aerodrome: this area has potential for industrial use. It is above flood planning level. There is a current development approval for this land that allows for industry ancillary to the manufactured home estate to be established.</p> <p>Area directly to the north of the aerodrome adjoining Casino-Coraki Road: this land is in a High Depth Hazard under Council’s existing flood modelling and updated flood modelling is expected to confirm this.</p> <p>The Richmond Valley RJP Draft Structure Plan recommends short-term expansion of the Urban Growth Area boundary and rezoning to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.</p>

If the Richmond Valley Growth Management Strategy (GMS) and Richmond Valley Regional Job Precincts (RJP) studies recommend a variation to the Urban Growth Area (UGA) boundary within the North Coast Regional Plan to accommodate additional employment lands near Casino, and this includes Area 3c (agriculture), the principles included in the “North Coast Regional Plan Appendix A: Urban Growth Area Variation Principles¹” will need to be satisfied. The analysis of those principles is provided in Table 4.4 below.

¹ Appendix A has been referenced from the North Coast Regional Plan 2036, which was available at the time of writing the report.

Table 4.4 North Coast Regional Plan Appendix A: Urban Growth Area Variation Principles

Principles	Description	GHD analysis for Area 3 (agriculture)
Policy	The variation needs to be consistent with the objectives and outcomes in the North Coast Regional Plan and any relevant Section 9.1 Directions (previously Section 117 Directions) and State Environmental Planning Policies and should consider the intent of any applicable local growth management strategy.	It is assumed that the Richmond Valley GMS, Richmond Valley RJP project and any ensuing recommendation to vary the UGA boundary within the North Coast Regional Plan for Casino to encompass Area 3 (agriculture) will have been on the basis that the site is required for use as part of the local growth management strategy at Casino.
Infrastructure	The variation needs to consider the use of committed and planned major transport, water and sewerage infrastructure, and have no cost to government. The variation should only be permitted if adequate and cost-effective infrastructure can be provided to match the expected population.	It is assumed that any variation that includes Area 3 (agriculture) within the UGA will have also considered the role of the site with respect to committed and planned major transport, water and sewerage infrastructure. The cost of including Area 3 (agriculture) within the UGA and implications for government spending will need to be considered via a separate study. The Richmond Valley RJP Draft Structure Plan outlines the substantial investments which have recently been delivered to enable land in this area to cater for high energy uses. Land east of the STP will be planned as an intensive agricultural Catalyst hub to ensure this investment is put to best use. Preference will be given to uses associated with agribusiness, such as intensive plant agricultural production, research & development, or other value-add processes.
Environmental and farmland protection	The variation should avoid areas: <ul style="list-style-type: none"> – Of high environmental or heritage value. – Mapped as important farmland, unless consistent with the interim variation criteria prior to finalising the farmland mapping review. 	Area 3 (agriculture) does not appear to be of high environmental or heritage value but it is assumed separate environmental and heritage studies will be required to confirm this. The site is mapped as regionally significant farmland – see the analysis against the interim variation criteria in Table 4.5 below.
Land use conflict	The variation must be appropriately separated from incompatible land uses, including agricultural activities, sewage treatment plants, waste facilities and productive resource lands.	The LUCRA indicated that a variation will have minimal land use conflict risk assuming the recommended mitigation activities are completed (see section 3).
Avoiding risk	The variation must avoid physically constrained land identified as: <ul style="list-style-type: none"> – Flood prone. – Bushfire-prone. – Highly erodible. – Having a severe slope. – Having acid sulfate soils. 	Area 3 (agriculture) is mapped as flood prone land, but the extent and severity of flooding is being assessed in a separate flood study for RVC. The remaining listed physical constraints do not occur on the site.
Heritage	The variation must protect and manage Aboriginal and non-Aboriginal heritage.	Heritage issues are the subject of a separate study.
Coastal area	Only minor and contiguous variations to urban growth areas in the coastal area will be considered due to its environmental sensitivity and the range of land uses competing for this limited area.	Not applicable at Casino which is not in a coastal area.

If the Richmond Valley GMS and Richmond Valley RJP studies recommend a variation to the UGA boundary within the North Coast Regional Plan to accommodate additional employment lands near Casino, and this includes Area 3 (agriculture) which is mapped as Regionally Significant Farmland, the criteria listed in the “North Coast Regional Plan Appendix B: Important Farmland Interim Variation Criteria²” will need to be satisfied. The analysis of those criteria is provided in Table 4.5 below.

² Appendix B has been referenced from the North Coast Regional Plan 2036, which was available at the time of writing the report.

Appendix B states that Regionally Significant Farmland may be suitable for uses other than farmland if the criteria in the table are satisfied.

Table 4.5 North Coast Regional Plan Appendix B Important Farmland Interim Variation Criteria

Criteria	Description	GHD analysis for Area 3 (agriculture)
Agricultural capability	The land is isolated from other important farmland and is not capable of supporting sustainable agricultural production	<p>The land is adjacent to other land mapped as Regionally Significant Farmland, but the subject land and surrounding agricultural land have a range of constraints (see section 2.1) that limit potential agricultural production so that the likely best use of the land in its current state of development is extensive cattle production.</p> <p>Current extensive livestock production use means that the site is constrained as a standalone viable agricultural business enterprise. It is further constrained by its lack of connectivity to adjoining land to the north which is Crown Land including Native Title determination.</p> <p>The constraints at the site and surrounding land are described in section 2.1.6 and include it being: flood prone; having extensive gilgai microrelief; poor condition of infrastructure, including road access, livestock drinking water supply and subdivision fencing are in poor condition; inundation risks which may require landfill to raise structures above inundation levels and would create water flow issues on surrounding properties unless mitigated (refer to Hydrogeology, Water Quality and Demand Analysis Report, GHD 2022).</p> <p>More intensive soil-based agriculture (annual and perennial crops, horticulture) would require soil and landform amelioration to achieve suitable levels of production.</p> <p>Non soil-based agricultural enterprises (e.g., glasshouse) could be supported with appropriate land forming and infill so that infrastructure is protected from inundation, and all-weather access is available.</p>
Land use conflict	The land use does not increase the likelihood of conflict and does not impact on current or future agricultural activities in the locality	The LUCRA shows that a variation would have minimal if any impact on current or future agricultural activities in the locality (see section 3), assuming mitigation activities are completed.
Infrastructure	The delivery of infrastructure (utilities, transport, open space, communications and stormwater) required to service the land is physically and economically feasible at no cost to State and Local Government	<p>It is assumed that any variation that includes Area 3 (agriculture) within the UGA will have also considered the infrastructure requirements in relevant additional reports. The Richmond Valley RJP Draft Structure Plan outlines the substantial investments which have recently been delivered to facilitate intensive agriculture and industry, with the potential to provide access to high voltage electricity and a reliable source of treated wastewater.</p> <p>The cost implications for government spending will need to be considered via a separate study.</p>
Environment and heritage	The proposed land uses do not have an adverse impact on areas of high environmental value, and Aboriginal or historic heritage significance	Separate studies will be required to assess the impacts on environmental value, and Aboriginal or historic heritage significance.

Criteria	Description	GHD analysis for Area 3 (agriculture)
Avoiding risk	<p>Risks associated with physically constrained land are identified and avoided, including:</p> <ul style="list-style-type: none"> – Flood prone. – Bushfire-prone. – Highly erodible. – Severe slope. – Acid sulfate soils. 	<p>Area 3c (agriculture) is mapped as flood prone land, but the extent and severity of flooding has been assessed in a separate FIA for RVC.</p> <p>The remaining listed physical constraints do not occur on the site.</p>

4.3 Summary of analysis

The above analysis considers the current status of the site given its Regionally Significant Farmland classification and provides reasoning for any change in zoning against the recognised criteria. The justification for rezoning is highly dependent on the availability of land for industrial purposes including Intensive Plant Agriculture as a permissible activity.

5 References

- Australian Bureau of Statistics (ABS) (2022), 2021 Census Working Population Profile Richmond Valley LGA
- Australian Bureau of Statistics (ABS) (2022a), Agricultural Commodities, Australia–2020-21 - Agricultural commodity estimates by 2021 Local Government Areas (LGA)
- Australian Bureau of Statistics (ABS) (2022b), Value of Agricultural Commodities Produced, Australia, 2020-21 - Gross and local value estimates by 2021 Local Government Areas (LGA)
- BMT (2023), Regional Jobs Precinct Flood Impact Assessment Stage 4 Final Report
- Gyde (2022) – Draft Structure Plan – Richmond Valley Regional Jobs Precinct
- MLA (2022) Saleyard Survey – Results for the 202/21 saleyard survey. January 2022
- NSW Department of Regional NSW (2021) Invest Regional NSW – Richmond Valley Regional Job Precinct, Investment Attraction – opportunities analysis
- NSW Department of Primary Industries, (2011), Land Use Conflict Risk Assessment Guide
- NSW Department of Primary Industries (NSW DPI) (2020), Managing biosecurity risks in land use planning and development guide
- Queensland Wetlands Program (2013), Gilgai wetlands [Online] Available here
- Richmond Valley Council (2019), A Guide to Economic Development in the Richmond Valley, 2019

Appendices

Appendix A

Review of policies, guidelines, reports and regional analysis

Northern Rivers Farmland Protection Project – Final Recommendations (2005)

The Farmland Protection Project seeks to protect important farmland from urban and rural residential development by mapping farmland and developing planning principles to assist that protection. Relevant mapped land was identified by the Project using soil landscape mapping based on soils data, landforms and geology with descriptions of vegetation, land use, land degradation and rural and urban capability included in each soil landscape description.

The derived maps show three farmland categories: state significant, regionally significant, and significant non-contiguous farmland. Areas excluded from the maps include:

- Areas identified as having committed urban uses
- Land zoned urban and rural residential
- Rural land isolated within urban areas
- Open space which is zoned open space or identified as open space in council strategies or plans
- Roads and drains in urban areas
- Environmental protection areas within urban areas
- Land zoned private open space which allows urban uses
- Land identified for urban (including industrial) purposes in a development control plan
- Land zoned rural but used for urban purposes (e.g. Airport, waste facility, industry)

The broad mapping scale used by the Farmland Protection Project means that **inevitably there will be inliers of land of lower quality that are included within the mapped significant areas**. However, the project supported a planning approach that was flexible enough to respond to local issues while maintaining an overall strategic approach based on the protection of significant agricultural land.

The Farmland Protection Project's emphasis is on long-term protection of the agricultural land resource, but it does not take into account factors which are relevant in the short-term such as availability of labour, availability and cost of land locally and elsewhere, local farming and marketing structures or the presence of local supporting infrastructure. As such, Councils will not be required to base their agricultural protection zones on the farmland maps.

The following regional farmland objectives are recommended to guide decision-making on development in farmland areas:

1. To establish the priority of legitimate rural uses (farming, conservation, extractive industry, forestry, rural industry) over non-rural uses, without one rural use necessarily having preference over another rural use.
2. To recognise and conserve the best agricultural land in the region for current and future rural uses.
3. To prevent fragmentation, alienation and encroachment of the most important agricultural areas by land uses unrelated to agriculture and rural uses.
4. To keep options open for future generations to produce a range of agricultural goods throughout the region on allotment sizes which optimise production potential.
5. To allow for a range of activities that support agriculture, including farm diversification and value-adding, without compromising long-term agricultural production potential.
6. To protect agricultural land from development that may result in environmental degradation.

Councils would be able to consider regionally significant farmland for stand-alone future industrial use if **all** of the following apply:

1. It would not significantly undermine the integrity of a regionally significant farmland area.
2. It would not compromise local or regional agricultural potential by alienating agricultural infrastructure or agricultural transport routes, or decreasing 'critical mass' for any existing agricultural industry.
3. It would not create impacts which would compromise the agricultural use of nearby regionally significant land.

4. It would not be located in an area where there was an identified risk of land use conflict near an existing agricultural enterprise.
5. It would not involve filling part of a floodplain unless consistent with a floodplain management plan prepared in accordance with the Floodplain Management Manual.
6. No viable alternative land is available which is suitable for the proposed industrial use.

Improving the Prospects for Agriculture and Regional Australia in the NSW Planning System (July 2021) Agriculture Commissioner

The 2021 report by the NSW Agriculture Commissioner identified that strong underlying population growth and its urban footprint, and the demand for rural residential developments is giving rise to significant conflict over land uses. However, the NSW planning system (which is comprised of a logical cascade of State, regional and local plans, and Ministerial Directions reflecting State priorities, and regional/district and local strategic plans reflecting priorities at those levels) has the capacity to support a growth agenda for agriculture and regional NSW, and there are policy measures which can reduce the potential for land use conflict, with significant resulting social and economic benefits.

While biophysical characteristics of land will always matter, future development will depend more on access to infrastructure and services, labour, processing capacity, connectivity, etc. and over time these considerations will need to feature more prominently in local planning and decision-making.

State Environmental Planning Policy (Primary Production and Rural Development) 2019 (PPRD SEPP)

In 2019, the NSW Government introduced a new planning framework for primary production and rural development and consolidated five former agriculture-themed State Environmental Planning Policy (SEPP) into a new Primary Production and Rural Development SEPP. The State Environmental Planning Policy (Primary Production and Rural Development) 2019 includes the following aims:

- a. To facilitate the orderly economic use and development of lands for primary production.
- b. To reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources.
- c. To identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations.
- d. To simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts.
- e. To encourage sustainable agriculture, including sustainable aquaculture.
- f. To require consideration of the effects of all proposed development in the State on oyster aquaculture.
- g. To identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors.

Managing biosecurity risks in land use planning and development guide (DPI 2020)

The guide outlines steps to be considered to ensure biosecurity is appropriately addressed during the planning and assessment of development proposals, including for proposals that may impact on agricultural enterprises or industries. In certain circumstances, this could also include ensuring biosecurity risks are appropriately considered and addressed during the construction and operational phase of a development.

Biosecurity is important because it protects the economy, environment and community from: pest animals and weeds, diseases and things that may spread diseases, risks arising from inappropriate stock foods or fertilisers, contaminants that may cause animals or plants to become chemically affected, risks caused by bees and non-indigenous animals. A suspected risk must be prevented or eliminated if reasonably practicable, otherwise it must be minimised so far as is reasonably practicable.

The following matters should be considered when deciding if the proposed development will likely cause a biosecurity impact:

- Will the proposed development directly deal with biosecurity matter? For example: a plant, animal, stock food, fertiliser or contaminant.
- Will the proposed development deal with something that may be a carrier of biosecurity matter? For example: equipment, clothing, soil, vehicles, animal-sourced products, waste containing plant and animal-sourced products.
- Does the proposed development have the potential to introduce, harbour, spread or increase the risk of biosecurity matter that may have an impact on the economy, environment or community? For example: create a habitat for a pest animal.

There are a number of conditions of the development approval which a planning authority may impose to limit the likely environmental, economic and social impacts from a development which could also assist in mitigating potential biosecurity risk. Some of the key approval conditions include, but are not limited to:

- Buffer zones (separation buffers, biological and vegetated buffers, landscape and ecological buffers, property management buffers, others)
- Wash down facilities
- Designated parking areas
- Location in relation to major potable water supply storages and watercourses (especially for poultry production)
- Dumping and burying rubbish on site

During development it is necessary to ensure a Biosecurity Management Plan is in place. Templates for biosecurity management plans are available from the Farm Biosecurity website, a joint initiative of Animal Health Australia and Plant Health Australia.

North Coast Regional Plan 2036

This Plan envisages a thriving, interconnected economy where hinterland communities will benefit from new opportunities in agriculture and agribusiness, food production, and with agribusiness recognised as a Centre of Employment.

The Plan seeks to protect and enhance productive agricultural lands, although this approach needs to consider the outcomes of a review of the consistency, methodology and application of the *Northern Rivers Farmland Protection Project* (2005) (discussed in Section 4.2 above) and *Mid North Coast Farmland Mapping Project* (2008) which will establish consistent standards and application of important farmland across the North Coast.

It is recognised that agricultural production may not be suitable on some small pockets of mapped important farmland due to non-biophysical factors that make the land more suited to other uses. The Plan recognises “Important Farmland Interim Variation Criteria” in which land may be considered for uses other than farmland based on the following:

- Agricultural capability – the land is isolated from other important farmland and is not capable of supporting sustainable agricultural production.
- Land use conflict – the land use does not increase the likelihood of conflict and does not impact on current or future agricultural activities in the locality.
- Infrastructure – the delivery of infrastructure (utilities, transport, open space, communications and stormwater) required to service the land is physically and economically feasible at no cost to the State and Local Government.

- Environment and heritage – the proposed land uses do not have an adverse impact on areas of high environmental value, and Aboriginal or historic heritage significance.
- Avoiding risk – risks associated with physically constrained land are identified and avoided, including flood prone, bushfire prone, highly erodible, severe slope, and acid sulfate soils.

A guide to economic development in the Richmond Valley, Richmond Valley Council 2019

This Guide outlines how Richmond Valley Council is drawing on broad industry knowledge and connections to develop projects in solar, bio-energy and energy from waste. Council is working together with the NSW Government to create an environment which will attract significant businesses to the region.

For example, Sana Nutraceuticals has lodged an application with the Office of Drug Control (Federal Government) to construct a 10 hectare greenhouse for the cultivation, production and manufacture of medical cannabis and associated products in the Richmond Valley. At full scale it will have the capacity to support annual production of 100,000 kilograms of high-quality cannabis, which equates to an associated annual revenue generation potential of between \$800 million and \$1.1 billion, based on current pricing metrics in the Australian cannabis marketplace. It is expected to create around 300 direct new jobs, and 100 indirect jobs.

Other industries include the Northern Cooperative Meat Company (NCMC) which contributes significantly to the \$374.6M of economic activity generated by the meat industry, Richmond Dairies which exports to numerous countries, and the Council-owned Northern Rivers Livestock Exchange which had a turnover in excess of \$113M in 2016/17. Australia's largest beef jerky producer, New World Foods, is located in Casino. The region has sugar cane growers supporting the Broadwater Sugar Mill (Sunshine Sugar operates as a partnership between the grower-owned NSW Sugar Milling Co-operative Limited and the Australian family-owned agribusiness Manildra Group) and emerging industries such as Blue Dog tea tree, Mara Foods and OzRice.

Local Strategic Planning Statement: Beyond 20-20 Vision. Richmond Valley Council 2019, May 2020

The standout contributor to Richmond Valley Council's economy is manufacturing which produced \$711.7m of output, or 40.7% of the LGA's total output. The agriculture/forestry/fishing sector contributed \$124.2m to annual output.

The Manufacturing sector is heavily weighted towards food production, with major contributors being Northern Cooperative Meat Company, Casino; Richmond Dairies, Casino; Sunshine Sugar, Broadwater; New World Foods. There is leather production mainly attributable to Casino Hide Tannery, wood products from various timber mills in the area, and chemical products mainly attributable to Tea Tree Oil Distillation facilities throughout the LGA.

The agriculture, forestry fishing sector's economy is comprised of livestock slaughterings at \$64.6m, including Poultry (\$33.1m), Cattle (\$26.6m), Pigs (\$4.9m); broad acre crops, including Sugar cane (\$9.9m), oilseeds (primarily Soy Bean \$3.8m); Milk \$10.0m; Forestry and logging \$11.9m; Agriculture, forestry and fishing support services \$19.7. (Additional information on the value of the industries is provided in Section 2.7).

Council supports the protection of important farmland due to its importance to the economy but encourages a level of common sense and flexibility when considering areas mapped as Regionally Significant Farmland, with importance placed on the following:

- Ensure Council's planning provisions accommodate the changing needs for agriculture, manufacturing and emerging agribusiness and agritourism opportunities.
- Work with DPIE-Agriculture to map and protect significant agricultural farmland from inappropriate and conflicting land uses, and fragmentation.
- Avoid creating land use conflict which could impact upon the future viability of productive rural lands, including significant farmland, and significant mineral and extractive resources.
- Partner with the State government to support the local agricultural sector and associated value-adding food processing/production industries.

Regional Jobs and Investment Packages: North Coast Region of New South Wales Local Investment Plan, May 2017

The North Coast Region Regional Jobs and Investment Packages (RJIP) Committee considered those industries with potential for investment across the region, and identified a number of critical industry areas such as Agribusiness and Food Processing, Manufacturing, the Digital Economy, Health and Aged Care, the Visitor Economy, and Education and Local Government. For Food & Agribusiness, strategic priorities were:

- Value-Add: Ready Made Meals for export
- Applied Technology: Agri-tech & Robotics
- Digital Connectivity: Paddock to Plate Monitoring
- Freight/Supply Chain & Tourism Infrastructure: Cool/Cold Stores, Food Trails, Regional Accommodation
- Skilled Workforce: Applied Technology

The Food and Agribusiness industry encompasses farmers, growers, raw material producers and manufacturers to packaging, sales, marketing and retail providers, through to final users or consumers of the sector outputs.

Living and Working in Rural Areas – A handbook for managing land use conflict issues on the NSW North Coast, 2007. NSW Department of Primary Industries & Northern Rivers Catchment Management Authority

Living and Working in Rural Areas (LWRA) is a publication recognised by the NSW Government and NSW North Coast Councils to reduce the likelihood of land use conflict through the planning process and specifically written for the North Coast community, although easily adapted for use in other areas. This handbook is a practical reference containing tools, resources and checklists aimed at reducing and avoiding rural land use conflict and pressures on key natural resource assets on the NSW North Coast. The handbook is broken down into seven sections and reflects the range of strategies used to manage land use conflict issues and the wide cross section of people with an interest in these issues including rural residents, farmers, rural industries, local and state agencies, consultants, real estate agents, environmental groups and organisations involved in natural resource management.

NSW Right to Farm Policy

The NSW Government has developed a comprehensive, State-wide approach to deal with the issue of 'right to farm'.

The concept of 'right to farm' has multiple facets but the common interpretation – and the one used in this policy - relates to a desire by farmers to undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users.

This policy brings together a suite of responses including:

- Reinforcing rights and responsibilities.
- Establishing a baseline and ongoing monitoring and evaluation of land use conflicts.
- Strengthening land use planning, ensuring ongoing reviews of relevant environmental planning instruments include consideration of options to ensure best land use outcomes and to minimise conflicts.
- Improving education and awareness on management of land use conflicts, considering potential future legislative options, should additional Government intervention be required.

Land use conflict risk assessment guide

Land use conflicts occur when one land use is perceived to infringe upon a neighbouring land use. In rural areas land use conflicts commonly occur between agricultural and residential uses. As the proposal would result in an activity that differs from the agricultural activities across the regional study area, a land use conflict risk assessment (LUCRA) will be prepared as part of the Agricultural Land Assessment to assess the potential of any negative impacts on surrounding land use and provide options for mitigation of potential impacts. The LUCRA has been developed based on the *Land Use Conflict Risk Assessment Guide* (DPI, 2011).

There are four key steps in undertaking a LUCRA. These are:

- Gather information about proposed land use change and associated activities
- Evaluate the risk level of each activity
- Identify risk reduction management strategies
- Record LUCRA results

NSW Environmental Planning and Assessment Act 1979

Various sections within the *NSW Environmental Planning and Assessment Act 1979* will impact on the assessment process. For this assessment, GHD will assess the impact of any proposed agricultural development at the site against the following criteria:

- Land and soil capability: will the current land and soil capability support intensive agricultural production (e.g. cropping v grazing).
- Topography: will the topography of the land restrict cultivation or building construction (e.g. flat land is required for glasshouses).
- Land use conflict: will the activity potentially result in land use conflict with adjoining land uses.
- Fragmentation: will the RJP investigation area have any impact on long term sustainable agricultural production in the region.
- Size and scale: what is the minimum area required for a range of viable agricultural enterprises that are representative of the study area and what are the potential economic returns.
- Irrigation: will the enterprise require irrigation and is there sufficient water available.
- Flood prone land: is the site prone to flooding and how does this affect the enterprise selection.
- Investment capital: is establishment of the enterprise likely to require significant capital investment (e.g. re-investment in dairy infrastructure, poultry sheds or glasshouses) and does the regional area have sufficient agricultural infrastructure or transport routes and the 'critical mass' of existing or potential agricultural industry.
- Human capital and ancillary industries: will the enterprise be able to attract the required human capital and are the markets and ancillary industries within close proximity to ensure that agricultural enterprises remain viable into the future.

For non-agricultural developments, it is expected that re-zoning of the site would be required and thus subject to local planning directions under Section 117 of the *NSW Environmental Planning and Assessment Act 1979* (Environmental Planning and Assessment Amendment Bill 2017). Section 117 has the objective of protecting the agricultural production value of rural land with respect to two components:

1. Subsection 1.5 Rural Lands objectives which are to:
 - a. Protect the agricultural production value of rural land;
 - b. Facilitate the orderly and economic use and development of rural lands for rural and related purposes;
 - c. Assist in the proper management, development and protection of rural lands to promote the social, economic and environmental welfare of the State;
 - d. Minimise the potential for land fragmentation and land use conflict in rural areas, particularly between residential and other rural land uses;

- e. Encourage sustainable land use practices and ensure the ongoing viability of agriculture on rural land; and
- f. Support the delivery of the actions outlined in the New South Wales Right to Farm Policy.

The direction requires that a planning proposal must not rezone land except where the relevant planning authority (Richmond Valley LGA) can satisfy the Director-General of the Department of Planning and Environment that the proposal is:

- a) Justified by a strategy which:
 - i. Gives consideration to the objective of this direction;
 - ii. Identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and
 - iii. Is approved by Secretary of the Department of Planning and Environment and is in force, or
 - b) Is of minor significance.
2. Subsection 5.3 Farmland of State & Regional Significance. The objectives of this direction are:
- a. To ensure that the best agricultural land will be available for current and future generations to grow food and fibre,
 - b. To provide more certainty on the status of the best agricultural land, thereby assisting councils with their local strategic settlement planning, and
 - c. To reduce land use conflict arising between agricultural use and non-agricultural use of farmland as caused by urban encroachment into farming areas.

A planning proposal may be inconsistent with the terms of this direction only if council can satisfy the Secretary of the Department of Planning and Environment (or an officer of the Department nominated by the Secretary) that the planning proposal is consistent with:

- a. The North Coast Regional Plan 2036, or
- b. Section 4 of the report titled Northern Rivers Farmland Protection Project - Final Recommendations, February 2005, held by the Department of Planning and Environment.

Mapping of a parcel of land as Regionally Significant Farmland is not an absolute constraint to future industrial use of the land so long as any proposed alternative land uses can be justified based on reference to the above policies.

Land use zoning

Local governments are the consent authorities for delivering many of the planning features of the EP&A Act through Local Environmental Plans (LEPs). LEPs guide planning decisions for LGAs through zoning and development controls. In the broadest terms, these responsibilities under the *Standard Instrument—Principal Local Environmental Plan 2006* include:

- Zoning of land - the Standard Instrument LEP Program aims to have one LEP for each local government area, using a standard suite of 35 land use zones which include a number of rural zones.
- For each zone, the LEP will identify its objectives, activities that are permissible without development consent and those permissible only with development consent, and those activities that are prohibited.
- Each zone will generally have at least one minimum lot size for the subdivision of land.
- For some zones, there will be additional Development Control Plans on the nature of developments including possible buffer distances from adjacent land uses.

Appendix B

Site Photos



Photo 1: Looking to the north across Area 3c (agriculture) from the southern boundary.



Photo 2: Typical gilgai landscape - flooding was evident over the full extent of the site on 8 December 2021.



Photo 3: The eastern boundary of the site looking south. The site has recently been cleared of all the standing timber on the site which would have been similar to the trees adjacent to the eastern boundary. Some of the fallen trees were still evident on the site at the time of the inspection.



Photo 4: Looking north along internal boundary fence which divides the site from north to south. Internal fences would need to be upgraded to bring them up to livestock standards. This photo also shows a redundant stock water trough. There are no further stock watering points located on the site.



Photo 5: Adjoining land use to the south showing flooding on 8 December 2021, with volunteer grass growth on “rowed-up” cropping land. The paddock was subsequently sprayed with herbicide and planted with a soybean crop.



Photo 6: Adjoining land use to the south showing mowed pasture on higher, non-flood prone land and industrial developments.

Appendix C

Soils Analysis

AGRICULTURAL SOIL ANALYSIS REPORT

1 sample supplied by Norco Rural Store Casino on 10/12/2021. Lab Job No.M4362
 Analysis requested by Sam Carlton. Your Job: PO: 21050667
 107 Wilson Street SOUTH LISMORE NSW 2480

		Sample ID:	Sample 1	Heavy Soil	Medium Soil	Light Soil	Sandy Soil
		Crop:	Casino 0-10 08/12/21 Pasture				
		Client:	Paul Dellow	Clay	Clay Loam	Loam	Loamy Sand
Parameter	Method reference	M4362/1	Indicative guidelines - refer to Notes 6 and 8				
Soluble Calcium (mg/kg)		853	1150	750	375	175	
Soluble Magnesium (mg/kg)	**Inhouse S10 - Morgan 1	444	160	105	60	25	
Soluble Potassium (mg/kg)		47	113	75	60	50	
Soluble Phosphorus (mg/kg)		3.8	15	12	10	5.0	
Phosphorus (mg/kg P)	**Rayment & Lyons 2011 - 9E2 (Bray 1)	2.3	45 ^{note 8}	30 ^{note 8}	24 ^{note 8}	20 ^{note 8}	
	**Rayment & Lyons 2011 - 9B2 (Colwell)	17	80	50	45	35	
	**Inhouse S3A (Bray 2)	3.5	90 ^{note 8}	60 ^{note 8}	48 ^{note 8}	40 ^{note 8}	
Nitrate Nitrogen (mg/kg N)		0.65	15	13	10	10	
Ammonium Nitrogen (mg/kg N)	**Inhouse S37 (KCl)	3.5	20	18	15	12	
Sulfur (mg/kg S)		7.2	10.0	8.0	8.0	7.0	
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	5.87	6.5	6.5	6.3	6.3	
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.035	0.200	0.150	0.120	0.100	
Estimated Organic Matter (% OM)	**Calculation: Total Carbon x 1.75	5.7	> 5.5	>4.5	> 3.5	> 2.5	
Exchangeable Calcium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	9.1	15.6	10.8	5.0	1.9	
		4,078	7000	4816	2240	840	
		1,821	3125	2150	1000	375	
Exchangeable Magnesium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	7.7	2.4	1.7	1.2	0.60	
		2,093	650	448	325	168	
		934	290	200	145	75	
Exchangeable Potassium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	0.37	0.60	0.50	0.40	0.30	
		326	526	426	336	224	
		146	235	190	150	100	
Exchangeable Sodium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	0.35	0.3	0.26	0.22	0.11	
		179	155	134	113	57	
		80	69	60	51	25	
Exchangeable Aluminium (cmol./kg) (kg/ha) (mg/kg)	**Inhouse S37 (KCl)	0.21	0.6	0.5	0.4	0.2	
		43	121	101	73	30	
		19	54	45	32	14	
Exchangeable Hydrogen (cmol./kg) (kg/ha) (mg/kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.25	0.6	0.5	0.4	0.2	
		5.5	13	11	8	3	
		2.5	6	5	4	2	
Effective Cation Exchange Capacity (CEC) (cmol./kg)	**Calculation: Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	18	20.1	14.3	7.8	3.3	
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	51	77.6	75.7	65.6	57.4	
Magnesium (%)		43	11.9	11.9	15.7	18.1	
Potassium (%)		2.1	3.0	3.5	5.2	9.1	
Sodium - ESP (%)		1.9	1.5	1.8	2.9	3.3	
Aluminium (%)		1.2	6.0	7.1	10.5	12.1	
Hydrogen (%)		1.4					
Calcium/Magnesium Ratio	**Calculation: Calcium / Magnesium (cmol./kg)	1.2	6.5	6.4	4.2	3.2	

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		Sample ID:	Sample 1 Casino 0-10 08/12/21	Heavy Soil	Medium Soil	Light Soil	Sandy Soil
		Crop:	Pasture				
		Client:	Paul Dellow	Clay	Clay Loam	Loam	Loamy Sand
Parameter	Method reference	M4362/1	Indicative guidelines - refer to Notes 6 and 8				
Zinc (mg/kg)	Rayment & Lyons 2011 - 12A1 (DTPA)	2.1	6.0	5.0	4.0	3.0	
Manganese (mg/kg)		69	25	22	18	15	
Iron (mg/kg)		135	25	22	18	15	
Copper (mg/kg)		2.4	2.4	2.0	1.6	1.2	
Boron (mg/kg)	**Rayment & Lyons 2011 - 12C2 (Hot CaCl ₂)	0.57	2.0	1.7	1.4	1.0	
Silicon (mg/kg Si)	**Inhouse S11 (Hot CaCl ₂)	35	50	45	40	35	
Total Carbon (%)	Inhouse S4a (LECO Trumac Analyser)	3.2	> 3.1	> 2.6	> 2.0	> 1.4	
Total Nitrogen (%)		0.27	> 0.30	> 0.25	> 0.20	> 0.15	
Carbon/Nitrogen Ratio	**Calculation: Total Carbon/Total Nitrogen	12	10-12	10-12	10-12	10-12	
Basic Texture	**Inhouse S65	Clay Loam	..	..	..	..
Basic Colour		Brownish	..	..	..	..
Chloride Estimate (equiv. mg/kg)	**Calculation: Electrical Conductivity x 640	22	..	..	..	..

Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing: Collingwood.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and LaMotte Soil Handbook.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- National Environmental Protection (Assessment of Site Contamination) Measure 2013, Schedule B(1) - Guideline on Investigation Levels for Soil and Groundwater. Table 5-A Background Ranges.
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agricultural soil results'.
- Conversions for 1 cmol_c/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full. Results only relate to the item tested.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer SCU.edu.au/eal/t&cs).
- This report was issued on 20/12/2021.

Quality Checked: Kris Saville
 Agricultural Co-Ordinator




Appendix D

Livestock Gross Margin Analysis



Summary of gross margins for NSW beef enterprises, April 2019

Enterprise	No. of hectares		GM/ha	GM/DSE
	imp	nat		
Inland Weaners		372	129.78	32.45
Coastal weaners- unimproved pasture		254	67.20	16.83
Coastal weaners- improved pasture	173		205.14	25.68
Butcher vealers	209		239.26	29.98
MSA at 20 mths	80	306	194.12	40.24
Feeder steers		424	173.81	43.50
Grow out early weaned calves 160-340kg	80		416.47	52.30
Growing out steers 240-460kg	108		412.04	51.57

Gross Margins quoted include pasture costs.

Individual budgets also report gross margins without pasture costs.

NSW Department of Primary Industries Farm Enterprise Budget Series



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