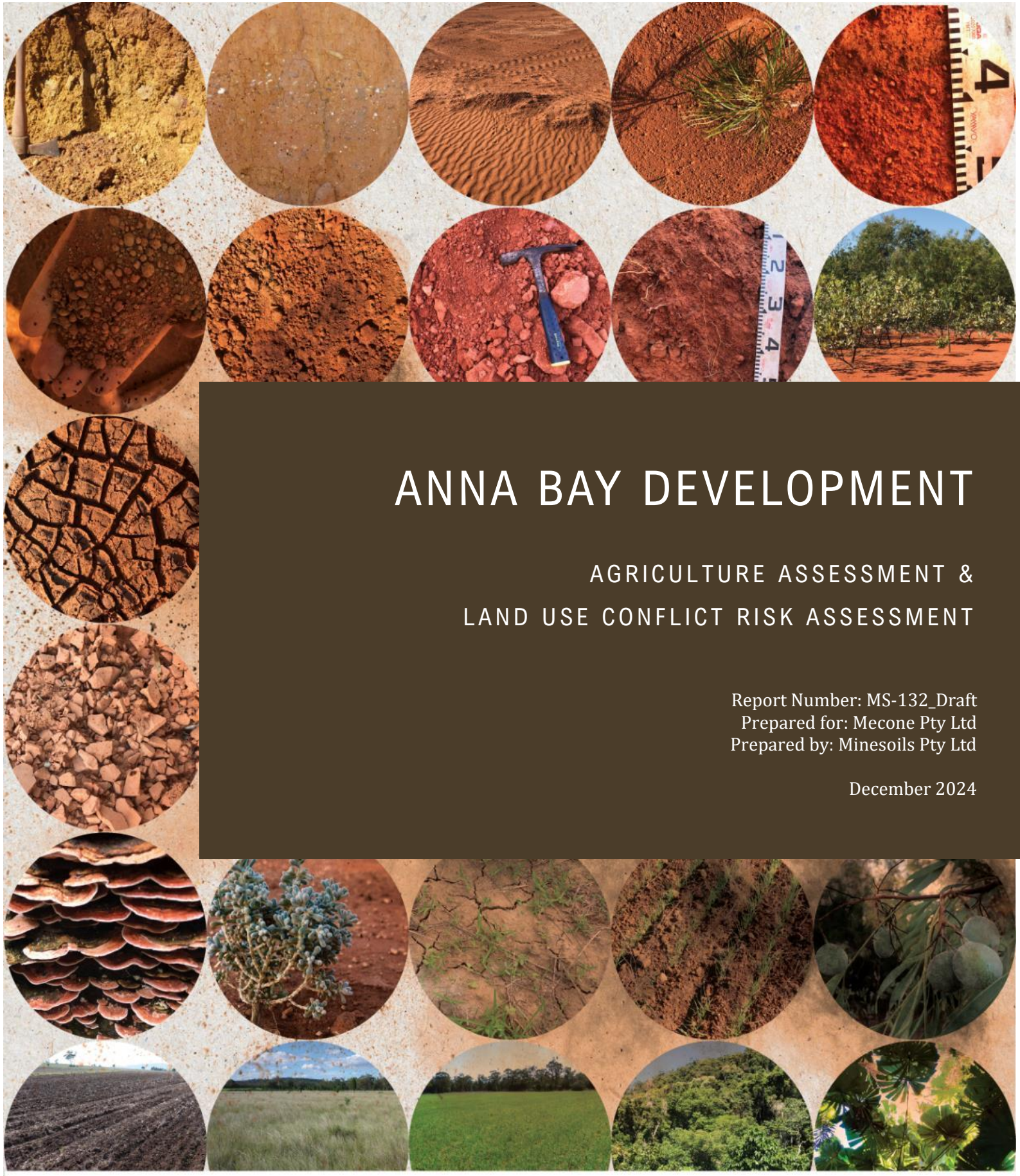

ANNA BAY DEVELOPMENT

AGRICULTURE ASSESSMENT &
LAND USE CONFLICT RISK ASSESSMENT

Report Number: MS-132_Draft
Prepared for: Mecone Pty Ltd
Prepared by: Minesoils Pty Ltd

December 2024

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DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
MS-132_ Draft 1	19th March 2024	Matt Hemingway	Clayton Richards
MS-132_ Final	11th December 2024	Matt Hemingway	Matt Hemingway

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1. INTRODUCTION

1.1 OVERVIEW

Minesoils Pty Ltd (Minesoils) was engaged by Mecone Pty Ltd (Mecone) to conduct an agricultural impact assessment and a land use conflict risk assessment (LUCRA) to inform a Planning Proposal for the Gan Gan Road, Anna Bay Development proposal (herein referred to as 'the Project'), located immediately north of Anna Bay, New South Wales.

1.2 PROJECT DESCRIPTION AND PROJECT AREA

The objective of the Planning Proposal is to rezone the area subject to the Project, covering approximately 120 ha and referred to as the Project Area (**Figure 1**), from RU2 Rural Landscape to a new land use zones of R2 residential. The Project Area consists of the following lots, as shown on **Figure 2**:

- Lot 1 DP503876
- Lot 902 DP634550
- Lot 21 DP590387
- Lot 1 DP536752
- Lot 963 DP731955

The Project Area currently has a range of land uses including rural living, residential, native vegetation and agriculture. The current land use zoning within the Project Area is predominantly RU2 Rural Landscape, with a more limited extent of C3 Environmental management, and R2 residential, consistent with the *Port Stephens Local Environment Plan* (LEP) (Port Stephens Council, 2013)(**Figure 3**).

The Project Area is generally characterised by a combination of native vegetation and lands cleared for livestock grazing, with some residential properties occurring in the south in association with Gan Gan Road (refer **Figure 2**).

The land surrounding the Project Area to the north and west consist of a mix of native vegetation and lands cleared for agricultural use, with lands to the east consisting of a mix of native vegetation and residential properties, and Gan Gan Road immediately south of the Project Area, which is flanked by residential properties.

No agricultural activity is currently undertaken within the Project Area. Previous agricultural activity within the Project Area consisted of livestock grazing with some limited cultivated, which is consistent with agricultural lands in the broader locality and LGA.

1.3 SCOPE OF WORK

The Minesoils scope of works consists of the following items:

1. An agricultural assessment that considers the agricultural productive value of the land, as well as anticipated impacts to agriculture as a result of the project.
2. A LUCRA in accordance with the NSW Department of Primary Industries (2011) *Land and Use Conflict Risk Assessment Guide* that considers any potential land use conflicts between proposed urban zones (i.e. residential, business) and adjoining rural zoned land.

1.4 ASSESSMENT APPROACH

An agricultural assessment and LUCRA must be to a level of assessment which is proportionate to the agricultural capability and activities of the land and the anticipated impacts of the Project. Minesoils approach includes the level of detail as described in **Table 1**, which Minesoils considers appropriate and justified based on the scale of the Project, the agricultural capability of the land, and the impacts anticipated. This approach informs the report structure.

Direct consultation to inform this assessment was undertaken with land managers regarding current and historical management of land and agricultural practices on the Project Area and its surrounds, and the potential effects on current enterprises, neighbouring properties, local industries and support services as a result to changes to agricultural land use in the Project Area.

Table 1: Assessment Approach

Assessment	Content and form	Section Addressed
Project description	Description of the project and purpose of report, and includes a map of the Project locality and Project Area.	**1**
Regional context	Description of the regional context, including climate and rainfall, regional land use including significant agricultural industries and/or infrastructure	**2**
Site characteristics and land use description	Description of the nature and location of agricultural land with the potential to be impacted by the development. Description of the current agricultural status and productivity of the proposed development area and surrounding locality including regional mapping of soil data.	**3**
LUCRA assessment	Conduct an assessment of potential land use conflicts, including completion of an assessment in accordance with the Department of Industries' *Land Use Conflict Risk Assessment Guide*	**4 (Appendix 1)**
Impacts on agricultural land	Identify and description of the nature, duration and consequence of potential impacts on agricultural land subject to Project at the level of the Project site and in the wider region	**5**


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PORT STEPHENS
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DIEMARS ROAD
RANDALL DRIVE
FORESHORE DRIVE
SOLDIERS POINT ROAD
FORESHORE DRIVE
CORLETTE
SPINNAKER WAY
BAGNALL BEACH ROAD
SERGEANT B
SALAMANDER BAY
SALAMANDER WAY
TAYLORS BEACH
TAYLORS BEACH ROAD
TILLIGERRY CREEK
WALLIS CREEK
RESEARCH DRIVE
BOBS FARM
FEMINGHAMS ISLAND CREEK
TILLIGERRY NATURE RESERVE
PORT STEPHENS DRIVE
NELSON BAY ROAD
NELSON BAY ROAD
NELSON BAY ROAD
ANNA BAY BORELINE
TOMAREE NATIONAL PARK
BIG ROCKY TRAIL
GAN GAN ROAD
FROST ROAD
FINGAL BAY
ONE MILE
ANNA BAY
WORIMI NATIONAL PARK
OLD MAIN ROAD
ESSINGTON WAY
MORNA POINT ROAD
WORIMI REGIONAL PARK
FISHERMANS BAY
BLANCH STREET
BOAT HARBOUR
KINGSLEY DRIVE
Dungog
A1
Site Location
Medowie
Newcastle
Legend
Project Area
Water Features
NPWS Reserves
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Project Locality
FIGURE 1
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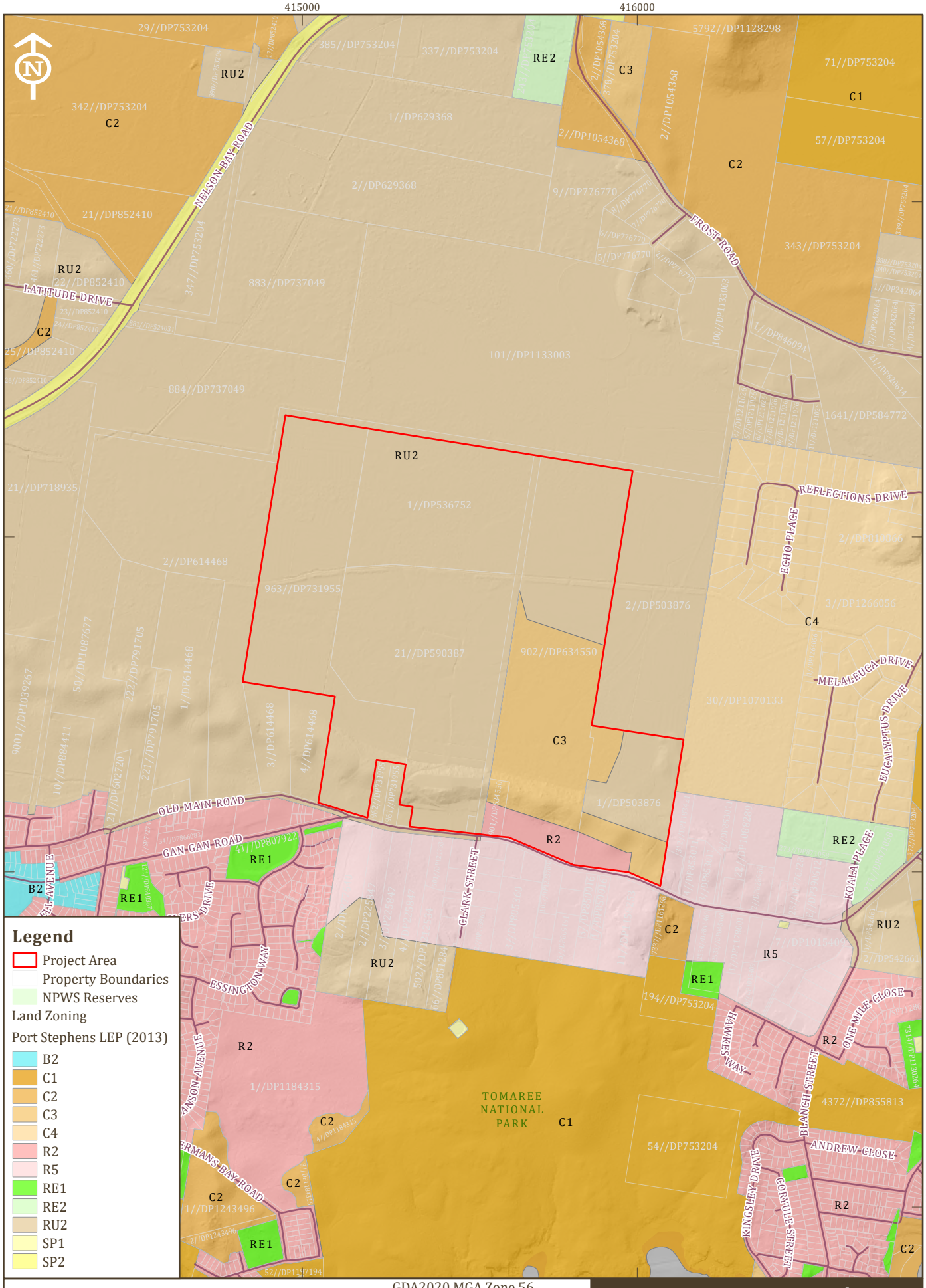

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Land Zoning

FIGURE 3

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2 REGIONAL CONTEXT

2.1 THE LOWER HUNTER REGION

The Project is located in the Lower Hunter region of NSW including the Cessnock, Lake Macquarie, Maitland, Newcastle, and Port Stephens Local Government Areas (LGAs).

Agriculture has played an important part in the Lower Hunter region's development from very early in European settlement (Hunter Council's Environment Division, 2013). Initially, sheep and cattle grazing were the dominant industries, along with wheat crops. However, it soon became apparent that the highly erodible soils in much of the region were not suitable for sheep, and rainfall was too high to sustain wheat cropping. Throughout the late 19th century and during the 20th century the region supported cattle (first as beef and then beef/dairy) and lucerne for hay. Additionally, important, highly fertile, alluvial lowlands occurring in the Lower Hunter have traditionally supported intensive farming practices (Hunter Council's Environment Division, 2013).

While the Lower Hunter region currently comprises a very small percentage (0.2%) of the area used for agriculture in NSW it nevertheless provides a significant contribution to NSW production of many agricultural commodities. The region has a well established reputation for wine growing and related tourism and supports a diverse range of agribusinesses including intensive poultry farming, livestock grazing, and protected, broadacre and cultivated cropping. Additionally, the region is increasingly diversifying into specialist or boutique industries that occupy smaller parcels of land and provide higher returns per hectare (Hunter Council's Environment Division, 2013).

The temperate climate, reliable rainfall and water sources and variety of soil types make it well suited to agriculture. Significant additional advantages also result from a combination of the Lower Hunter's other natural resources, infrastructure and access to markets (Hunter Council's Environment Division, 2013).

The most productive and highest value intensive cropping lands in the Lower Hunter are in the alluvial floodplains along the Hunter River and Maitland and Port Stephens LGAs. These naturally fertile lands are highly suitable for intensive cultivation. Lands suitable for grazing and less intensive agriculture typically occur on adjoining lands and the lower slopes with access to water (Hunter Council's Environment Division, 2013).

The key challenge for agriculture in the Lower Hunter is maintaining and improving agricultural productivity and diversification in response to changing climate and markets, and in the face of increasing development pressures, encroachment impacts and competition for lands.

2.2 PORT STEPHENS LGA

2.2.1 AGRICULTURAL LAND USE

Port Stephens LGA has a mixture of coastal and inland areas, and forms part of the Hunter region, Australia's largest regional economy. The LGA is predominantly rural, with expanding urban areas and some industrial and commercial land uses as well as a significant number of rural residential uses. There is a large military base which also shares some infrastructure with the rapidly expanding Newcastle Airport. The land area of the LGA is 850 square kilometres, with a significant proportion of the area being National Park, State Forest and nature reserves.

Port Stephens supports a diverse range of economic activities comprising agriculture and aquaculture, manufacturing, tourism, defence, construction and a mix of retail and small business.

Of this, the area of land mainly used for agricultural purposes in the Port Stephens LGA is 13,461 ha, as of the last agricultural census (ABS, 2022a). The agricultural land use types within this area is presented in **Table 2**, which shows grazing activities represent 92 per cent of the agricultural land use, followed by cropping at six per cent, and forestry and other land uses totalling two per cent.

Table 2: Port Stephens LGA Agricultural Land Use 2020 – 2021 (ABS, 2022a)

Agricultural Land Use	Area	
	ha	%
Livestock Grazing	12,445	92
Cropping	742	6
Forestry	170	1
Other	104	1
Total	13,461	100

2.2.2 AGRICULTURAL ENTERPRISES

Agriculture is an important sector of the Port Stephens economy, contributing $107 million of exports annually and providing around 400 jobs. Poultry and oyster farming are the dominant agricultural industries in the LGA and agriculture is significant to the local character and cultural heritage of villages in the rural west of Port Stephens and some coastal areas. Some types of agriculture support tourist economy.

Across much of the locality of the Project, soils are sandy with low fertility with water drainage limitations, with low areas experiencing water inundation, or sandy soil profiles on elevated areas having a low soil water holding capacity. As such, extensive lands within the LGA are generally best suited for agriculture enterprises such as poultry, piggeries (which don't rely on a fertile soil resource) and pastures for livestock grazing (as opposed to cropping activities).

Gross value is a measure of size or net wealth generated by the local economy and can be measured by industry and enterprise. The gross value of agriculture for the Port Stephens LGA for the last agricultural census year of 2020 – 2021 is estimated as $36 million (ABS, 2022b). **Table 3** highlights the dominance of livestock for slaughter as 73% of the total gross value for agriculture. Within this category, poultry represents 67% of the total value of livestock for slaughter, as shown in **Table 4**. Livestock products represent 23% of the total gross value for agriculture, within which milk and eggs generally represents the entirety of the total value (**Table 5**). Cropping represents 4% of the gross agricultural value of the LGA and is dominated by hay, nurseries, flowers, cultivated turf, and vegetables.

This data highlights the importance of non-grazing enterprises for the LGA, in terms of estimated gross value generated.

Table 3: Port Stephens LGA Agricultural Gross Value 2021 – 2022 by Enterprise (ABS, 2022b)

Agricultural Enterprise	Gross Value	
	$	%
Livestock slaughter	26,290,417	73
Livestock products	8,304,897	23
Cropping	1,594,474	4
Total	36,189,789	100

Table 4: Port Stephens LGA Agricultural Gross Value 2021 – 2022 by Livestock Slaughter (ABS, 2022b)

Agricultural Enterprise	Gross Value	
	$	%
Poultry	17,519,421	67
Pigs	16,555	0
Cattle and Calves	8,740,221	33
Other	8,126	<1
Sheep and Lambs	6,093	<1
Total	26,290,417	100

Table 5: Port Stephens LGA Agricultural Gross Value 2021 – 2022 by Livestock Products (ABS, 2022b)

Agricultural Enterprise	Gross Value	
	$	%
Milk	4,335,745	52
Eggs	3,964,824	48
Wool	4,329	<1
Total	8,304,897	100

2.3 REGIONAL AGRICULTURAL INFRASTRUCTURE

The key infrastructure item assisting agricultural market access and cost of production is the transport network servicing the central west region. Underlining the importance of this issue, total freight costs from farm to port can be as much as 30% of the value of a commodity being marketed depending on Australian and world commodity prices in a given season. The Project Area is located with access to Newcastle Airport, the Port of Newcastle, and key regional road and rail corridors connects Port Stephens to Greater Newcastle, the Hunter Valley, Australian capital cities and worldwide destinations.

The Port Stephens LGA is in proximity to major agricultural service centres, with local businesses providing agricultural equipment and supplies, including animal fencing, animal vaccinations, livestock ID, stock supplements, seed, fertiliser and crop protection.

Other infrastructure critical to agricultural production include energy needs (gas and electricity), telecommunications services, some small scale, private irrigation system infrastructure and urban water and wastewater services. General agricultural improvements such as stock fences, shedding, dams and access tracks as well as infrastructure for milking, feeding and housing dairy cows, irrigation infrastructure and large farm equipment are widespread throughout the LGA and wider Lower Hunter region, reflects the historical and current development of the local lands for agriculture.

3 SITE CHARACTERISTICS AND LAND USE

3.1 SITE CHARACTERISTICS

3.1.1 LANDSCAPE

A site inspection was undertaken by Minesoils in March 2024. The Project Area was determined to be an erosion ally stable landform with 100% surface cover in pasture and native vegetation. Approximately 50 ha, or 42% of the Project Area, has been highly disturbed in the past by land clearing for agriculture. In the absence of current agriculture activity, cleared areas are presently either slashed (refer **Plate 1**) or are vacant grassland (**Plate 2**). The remaining area is native swamp woodland vegetation (**Plate 3**).

The Project Area landscape is characterised by a single dune running east to west and transecting the southern portion of the Project Area, and otherwise a flat to very gently undulating landform containing multiple unnamed drainage lines (refer **Figure 4**). The largest drainage line to transect the site is the Anna Bay Main Drain 1 (**Plate 4**). The flat, low lying nature of the Project Area means extensive areas are prone to extended durations of waterlogging and surface water ponding.

Prominent built features within the Project Area include residences and farm shedding.

3.1.2 AGRICULTURAL LAND USE

The Project Area is not currently subject to agricultural use.

Based on satellite imagery, site observation, soil and land capability, and anecdotal evidence, it is determined that cleared areas of land within the Project Area have historically been used for livestock grazing on native and improved pastures, with very limited previous opportunistic cultivation. Previous agricultural land use has primarily consisted of livestock grazing of cattle. Cultivation over a limited area of approximately 5 ha was undertaken within the last ten years.

Agricultural improvements indicating previous livestock use are present, including stock fences and gates, which are now in disrepair (**Plate 5**).

At the time of inspection, properties in the locality were observed to be used primarily for hobby stock with some low intensity livestock enterprises. Agricultural improvements (e.g. cattle yards, stock fences, dams and existing access tracks) are widespread throughout the locality which reflects the historical development of the local lands for these land uses (**Plate 6**).

No sensitive agricultural activities such as intensive plant or livestock agriculture are being undertaken within the Project Area or immediately adjacent lands.

Plate 1: Lands cleared for agricultural within the Project Area, following slashing

Plate 2: Vacant lands within Project Area previously cleared for agriculture

Plate 3: Native vegetation within Project Area

Plate 4: Artificial drains occur within the Project Area

Plate 5: Agricultural improvements within the Project Area include livestock gates and fencing in disrepair.

Plate 6: Neighbouring properties include improvements for livestock include fencing and gates.

3.2 SOILS AND AGRICULTURAL STATUS

The following section presents the NSW state government regional mapping data for soil landscapes, soil types, inherent soil fertility and LSC as applied to the Project Area (NSW and Department of Planning, Industry and Environment, 2022).

3.2.1 SOIL LANDSCAPES

Soil landscape units provides an inventory of soil and landscape properties of an area and identifies major soil and landscape qualities and constraints. It integrates soil and topographic features into single units with relatively uniform land management requirements. Soils are described in terms of soil materials in addition to the Great Soil Group and Northcote classification systems.

The soil landscapes within the Project Area and locality are presented in the *Soil Landscapes of the Hunter Region 1:100,000 Sheet* (Office of Environment and Heritage, 2018), as shown on **Figure 5** and described below.

Bobs Farm Soil Landscape

Landscape— Level plain of broad, flat, drained, formerly swampy Holocene interbarrier estuarine flats in the central east of the Hunter Region. Slopes <1%, local relief <1 m, elevation 1 - 3 m. Mainly cleared swamp woodland.

Soils— Deep (100 - <150 cm), very poorly drained Grey Hydrosols (Humic Gleys) and Organosols / Aquic Podosol intergrades (Acid Peats / Humus Podzols).

Qualities and limitations— widespread foundation hazard, widespread recharge zone, localised discharge zone, widespread salinity hazard, widespread high run-on, widespread

Shoal Bay Variant A

Landscape— Rolling rises to steep rises comprised of Pleistocene dunes on the North Coast Barrier Dunefields along the eastern edge of the Hunter Region. Slopes 15 - 40 %, local relief 10 - 20 m, elevation 1 - 10 m. Extensively cleared tall open-forest and woodland with tall shrub understorey.

Soils— Giant (>500 cm), rapidly drained Aeric Podosols (Podzols).

Qualities and limitations— widespread poor moisture availability, widespread non-cohesive soils, widespread steep slopes, widespread foundation hazard, widespread wind erosion hazard.

3.2.2 SOIL TYPES

The NSW regional soil mapping indicates the dominant soil types within the Project Area are Hydrosols and Podosols, as per Australian Soil Classification (ASC) (Isbell, R. F.,2021) (refer **Figure 6**).

Hydrosols are soils in which the major part of the soil profile is saturated for at least 2-3 months in most years.

Podosols are soils which possess either a Bs horizon (visible dominance of iron compounds), a Bhs horizon (organic-aluminium and iron compounds), or a Bh horizon (organic-aluminium compounds). These horizons may occur singly in a profile or in combination (see Podosol diagnostic horizons).

3.2.3 INHERENT SOIL FERTILITY

NSW regional mapping provides an estimation of the inherent fertility of soils in NSW. It uses the best available soils and natural resource mapping developed for LSC dataset. The mapping describes soil fertility in NSW according to a five-class system: Low (1), Moderately low (2), Moderate (3), Moderately high (4), High (5).

Soils with 'Low' fertility, due to their poor physical and/or chemical status, only support limited plant growth. Soils with 'Moderately Low' fertility can generally only support plants suited to grazing; large inputs of fertiliser are required to make the soil suitable for arable purposes. Soils with 'Moderate' fertility usually require fertilisers

and/or have some physical restrictions for arable use. Soils with 'Moderately High' fertility have a high level of fertility in their virgin state which is significantly reduced after a few years of cultivation (Murphy *et al.*, 2007).

The Project Area is dominated by soils with Low (1) and Moderately Low (2) fertility (refer **Figure 7**).

3.2.4 LAND AND SOIL CAPABILITY

Land capability, as detailed in LSC Scheme, is the inherent physical capacity of the land to sustain a range of land uses and management practices in the long term without degradation to soil, land, air and water resources. Failure to manage land in accordance with its capability risks degradation of resources both on- and off-site, leading to a decline in natural ecosystem values, agricultural productivity, and infrastructure functionality.

The scheme uses the biophysical features of the land and soil to derive detailed rating tables for a range of land and soil hazards. The scheme consists of eight classes, which classify the land based on the severity of long-term limitations. The LSC classes are described in **Table 6** and their definition has been based on two considerations:

- The biophysical features of the land to derive the LSC classes associated with various hazards.
- The management of the hazards including the level of inputs, expertise and investment required to manage the land sustainably.

The biophysical features of the land that are associated with various hazards are broadly soil, climate and landform, specifically noted as slope, landform position, acidity, salinity, drainage, rockiness; and climate. The eight hazards associated with these biophysical features that are assessed by the LSC scheme are:

1. Water erosion
2. Wind erosion
3. Soil structure decline
4. Soil acidification
5. Salinity
6. Water logging
7. Shallow soils and rockiness
8. Mass movement

Each hazard is assessed against set criteria tables, as described in the LSC Guideline, with each hazard ranked from 1 through to 8 with the overall ranking of the land determined by its most significant limitation.

The NSW regional based maps of LSC indicate the Project Area consists of land capable of a variety of land uses and characterised by LSC class 6 land (low capability) and LSC class 8 land (extremely low capability)(refer **Figure 8**)

Table 6: Land and Soil Capability Classification

Class	Land and Soil Capability
Land capable of a wide variety of land uses (cropping, grazing, horticulture, forestry, nature conservation)	
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)	
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)	
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)	
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.

3.2.5 STRATEGIC REGIONAL LAND USE POLICY MAPPING

The 'NSW Government's Strategic Regional Land Use Policy' (the Policy) defines and identifies strategic agricultural land across NSW. Strategic agricultural land includes land with unique natural resource characteristics, known as biophysical strategic agricultural land (BSAL), and clusters of significant agricultural industries known as critical industry clusters (CICs). The Policy has been developed to achieve balanced land use outcomes, particularly between mining, coal seam gas and agriculture.

There are no BSAL or CICs mapped within the Project Area. The nearest BSAL is located approximately 25 km north, northwest of the Project Area on the alluvial flats associated with Karuah River and Limeburner's Creek.

3.2.6 STATE SIGNIFICANT AGRICULTURAL LAND

The NSW Department of Primary Industries is undertaking a mapping program to identify State Significant Agricultural Land (SSAL). A map of SSAL is an essential component of agricultural land use planning, enabling clearer local planning with informed prioritisation of future land uses. However, no assessment criteria or decision-making framework has been developed to accompany the SSAL mapping.

There is no SSAL mapped within the Project Area. The nearest mapped SSAL is 8 km to the west.

3.3 AGRICULTURAL PRODUCTIVITY

Agricultural productivity is subject to long term climate and rainfall variables, as well as changes in economic, social and policy frameworks, often at a scale well beyond the Project Area. There is no set agricultural productivity value for land under agricultural use.

Agricultural productivity in the context of an impact assessment must also consider the potential productivity of a property, as opposed to the actual productivity, which may be influenced by land management that does not fulfill the potential or capabilities of the land being assessed (i.e., no agricultural land use).

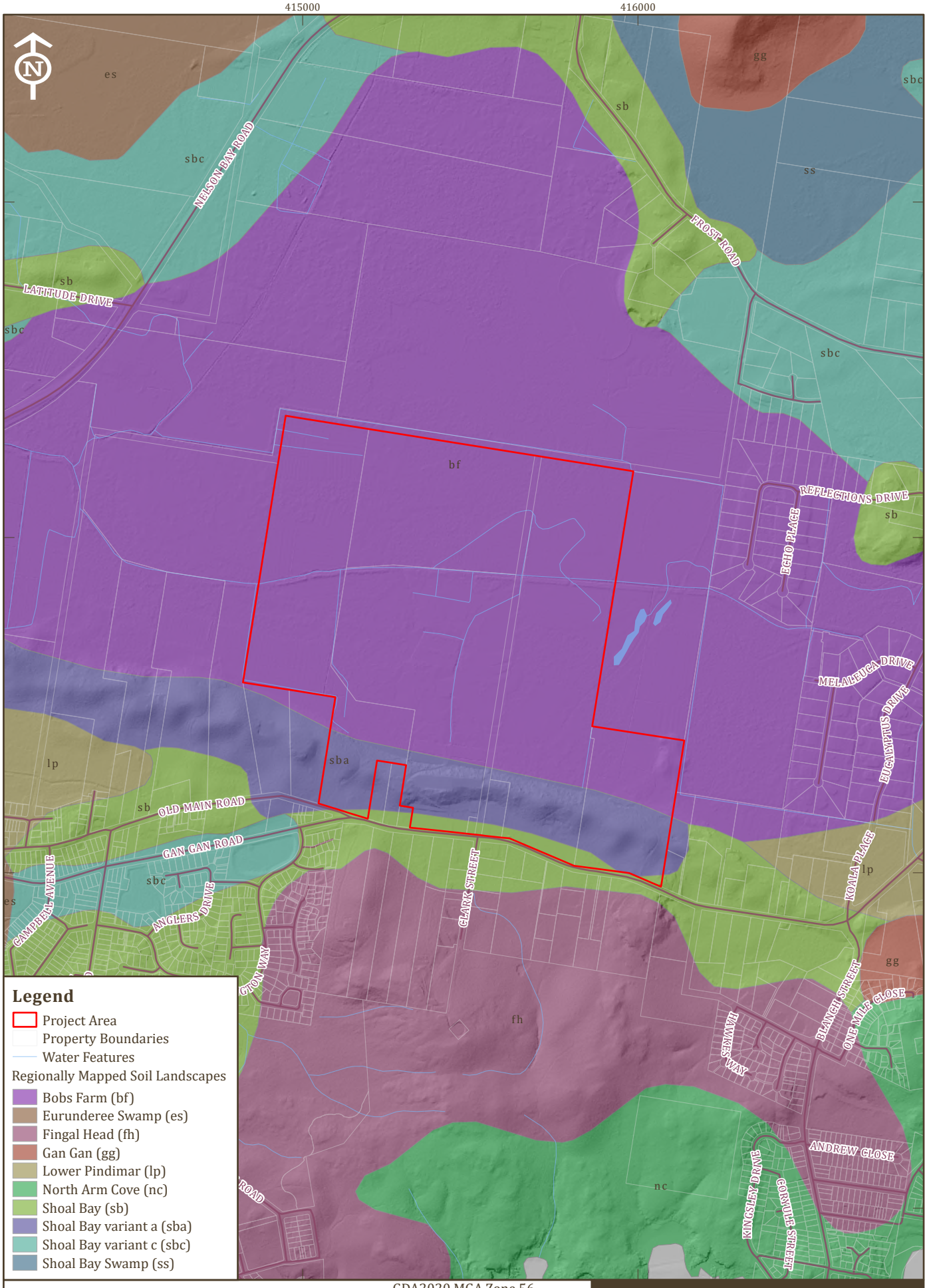
An estimate of the potential agricultural productivity has been informed by the agricultural resources within the Project Area as well as existing agricultural enterprises in the Project Area and its locality. Based on these considerations, and by analysing the information presented from the last agricultural census of 20220 – 2021 in Section 2.3 (ABS 2022a and 2022b), a conservative estimation of the gross annual value of livestock grazing enterprise on the 50 ha of cleared land within the Project Area has been modelled.

For the Port Stephens LGA, 12,445 ha of land was used for grazing, of which the gross commodity value of 53% of livestock products (milk and wool) and 34% of livestock for slaughter (cattle and calves, sheep and lamb), totalling $13,086,388, can be attributed to that area. This results in a $/ha ratio of $1,051/ ha.

As presented in **Table 7**, the estimated potential agricultural productivity is of the agricultural lands within the Project Area is $52,550 per year. This should be considered conservative based on the significant limitations of the land.

Table 7: Estimated Productivity of Project Area Under Dairy Operation

Estimated Gross Value in LGA ($/ha/year)	Agricultural Land (ha)	Project Area Potential Productivity ($/year)
1,051	50	52,550



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Regionally Mapped Soil Landscapes

FIGURE 5

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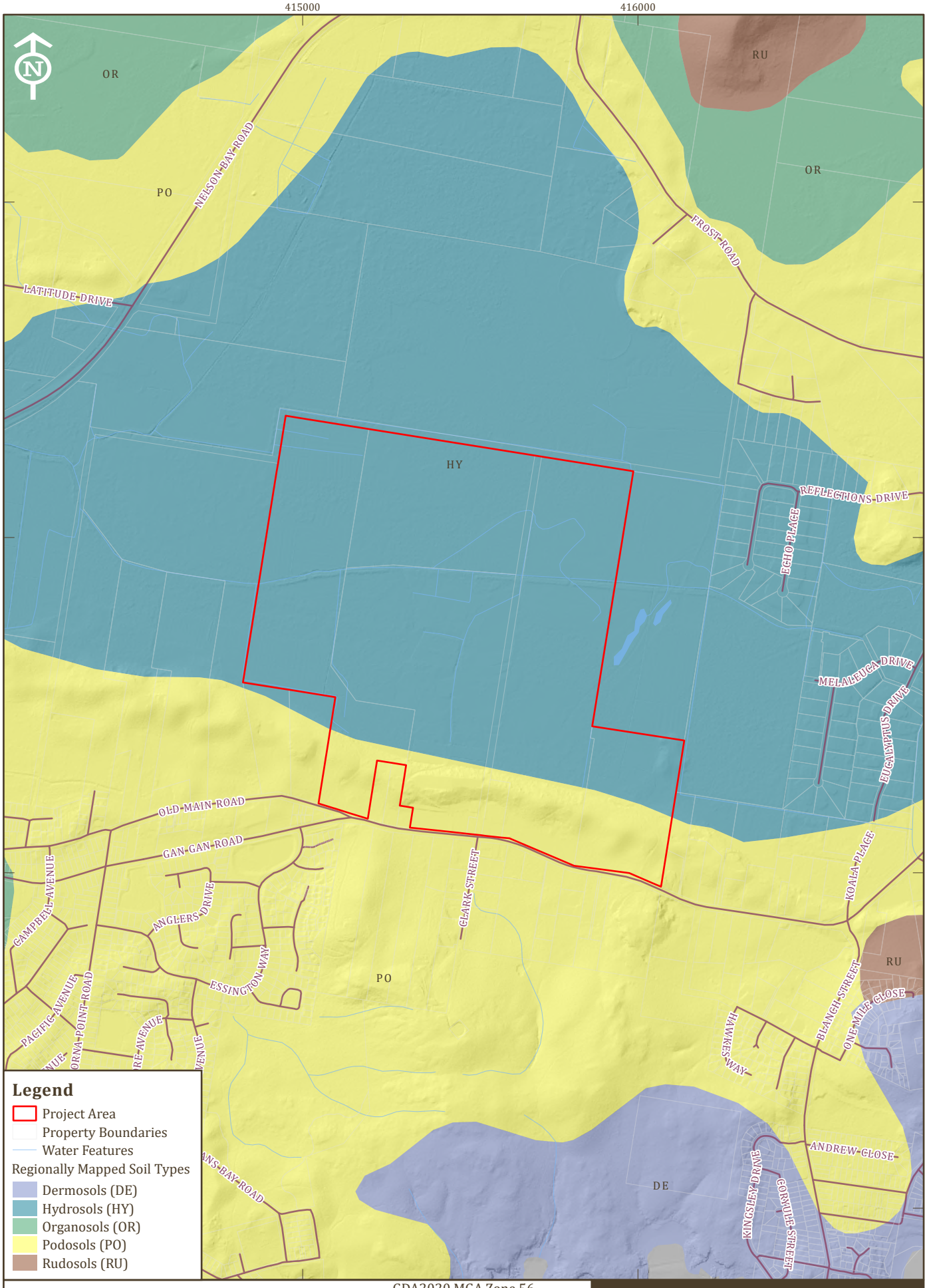

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Regionally Mapped Soil Types

FIGURE 6

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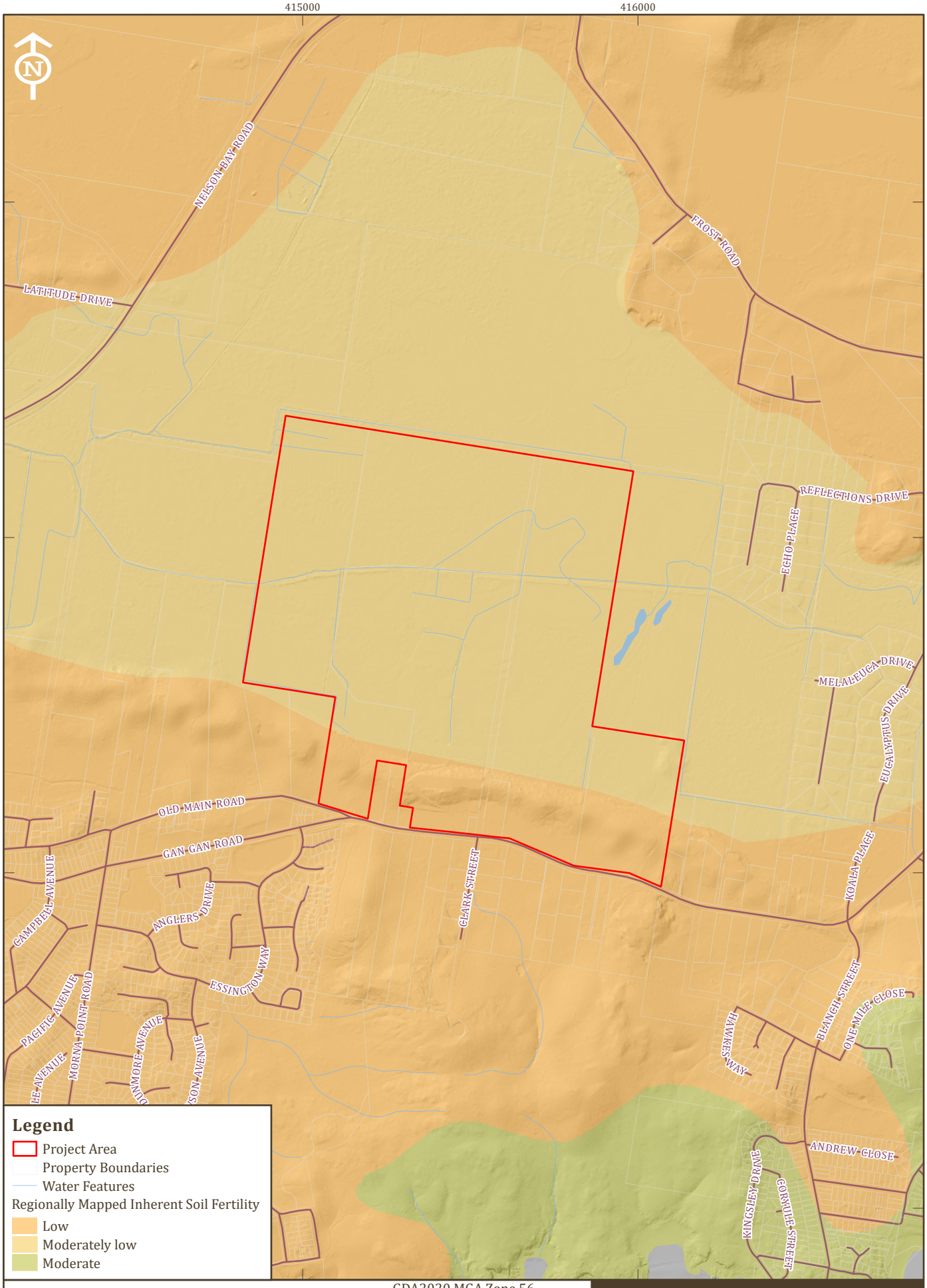

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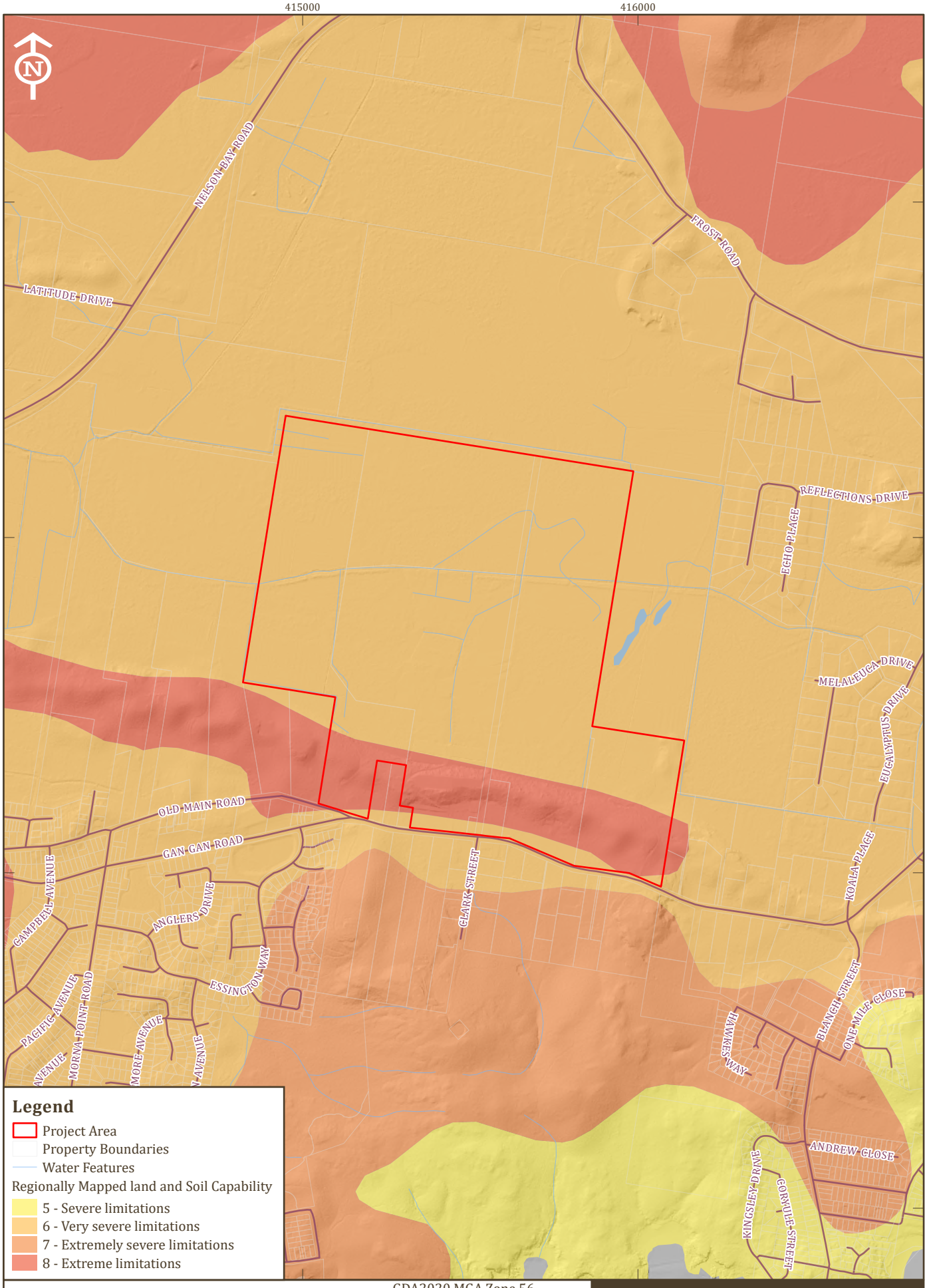

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Regionally Mapped Land and Soil Capability

FIGURE 8

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4 LAND USE CONFLICT RISK ASSESSMENT

4.1 OVERVIEW

The Land Use Conflict Risk Assessment (LUCRA) (NSW Department of Primary Industries, 2011) is a system to identify and assess the potential for land use conflict to occur between neighbouring land uses. It helps land managers and consent authorities assess the possibility for and potential level of future land use conflict. LUCRA aims to:

- Accurately identify and address potential land use conflict issues and risk of occurrence before a new land use proceeds or a dispute arises.
- Objectively assess the effect of a proposed land use on neighbouring land uses.
- Increase the understanding of potential land use conflict to inform and complement development control and buffer requirements.
- Highlight or recommend strategies to help minimise the potential for land use conflicts to occur and contribute to the negotiation, proposal, implementation and evaluation of separation strategies.

Land use conflicts occur when one land user is perceived to infringe upon the rights or impact the values or amenity of another. In rural areas land use conflicts commonly occur between agricultural and residential uses. However, land use conflicts can also occur between different agricultural enterprises and other primary industries.

Rural amenity issues are the most common land use conflict issues, followed by environmental protection issues. Rural amenity issues include impacts to air quality due to agricultural and rural industry (odour, pesticides, dust, smoke and particulates); use and enjoyment of neighbouring land e.g., noise from machinery; and visual amenity associated with rural industry e.g., the use of netting, planting of monocultures and impacts on views.

Environmental protection issues include soil erosion leading to land and water pollution, clearing of native vegetation, and stock access to waterways.

Direct impacts from neighbouring land uses on farming operations can also cause conflict, such as: harassment of livestock from straying domestic animals; trespass; changes to storm water flows or water availability; and poor management of pest animals and weeds.

4.2 APPROACH

The LUCRA as presented in **Appendix 1** compares and contrasts the Project against adjoining/surrounding land uses and activities for perceived or actual incompatibility and conflict issues based on the agricultural status of the locality, and the risks and impacts identified in Section 5. Each potential perceived or actual conflict between the proposed development and adjacent land has been assessed and given a risk ranking based on probability and consequence as outlined in **Appendix 1**.

4.3 FINDINGS

There are 30 risk items of potential perceived or actual impact that were considered as part of the LUCRA. The mitigation and measures and controls, where available, reduce the level of risk for the majority of considered potential risks. However, there are several high and moderate risk potential conflicts, which may require further consultation and management or will remain as a likely conflict as a result of the proposed development. These are summarised in **Table 8**. The LUCRA methodology including risk ranking matrix and full LUCRA assessment are included as **Appendix 1**.

Table 8: LUCRA High and Moderate Risk Items and Risk Controls Summary

Conflict Category	Risk Level	Description
Construction and Agriculture	**Moderate**	Land users in the locality may be concerned about weed, plant pest, plant disease or pest animal introduction during increased volume of vehicles and workers from out of area during construction and spread to agricultural land.
Construction and Agriculture	**Moderate**	Stakeholders may have concerns that the construction of the Project will alter and disturb existing soil properties, undermining the capability of the land for future agricultural production.
Construction and Environment	**Moderate**	Land users in the locality may be concerned about changes to surface water flows and flood levels that may affect the Project Area and surrounds, including artificial drains (ie, Anna Bay Drain 1), from surface disturbances during construction activities.
Construction and Environment	Moderate	Stakeholders may be concern about potential impacts to biodiversity, including koala habitat, and habitat connectivity, within the Project Area and locality.
Development and Agriculture	**High**	Stakeholders in the locality who wish to maintain views of the existing agricultural landscape may be concerned about the change in visual amenity resulting from the Project.
Development and Agriculture	**Moderate**	Land users in the locality may be concerned about the risk of fires occurring at the Project area and their potential to spread to surrounding land, residences, infrastructure or livestock.
Development and Residential	**Moderate**	Land users in the locality may be concerned about an increase in nuisance noise generated from proposed residential and recreational land use.
Development and Residential	**High**	Landowners in the locality may be concerned about potential devaluation of properties due to development.

5 IMPACTS ON AGRICULTURAL LAND

The impacts development activities can have on land resources and agricultural productivity range from short term temporary impacts to long term and permanent impacts. Temporary impacts can include the removal agriculture from service over a period of the life of a project. Permanent impacts may include changes to land and soil capability and agricultural resources of the Project Area. Permanent impacts are irreversible and compromise the reinstatement of agricultural lands and land productivity.

This section identifies and describes the nature, duration and consequence of the potential impacts on agricultural land as a result of the Project, for the Project Area and in the wider region, across five key risk areas:

- Changes in the amount of land used for agriculture.
- Changes to agricultural productivity and agricultural enterprises.
- Changes to agricultural resources.
- Other potential impacts to agriculture considered for the Project.
- Cumulative impacts of the potential for multiple developments within the region.

5.1 LAND USED FOR AGRICULTURE

The Project will be undertaken over an area of approximately 50 ha of land that is currently vacant, but which has been previously used and capable for use as agricultural land. For the purpose of this assessment it is assumed that no land within the Project Area will be retained for agriculture. Therefore, it is anticipated that the Project will permanently remove 50 ha of land capable of agricultural use.

This represents 0.4%% of land used for agriculture in the Port Stephens LGA (refer Section 2.4.1).

Land use immediate to the Project Area and in the broader Project locality will not change as a result of the Project, and there will be no fragmentation or displacement of existing agricultural enterprises or industries.

5.2 PRODUCTIVITY AND ENTERPRISES

5.2.1 PRIMARY PRODUCTIVITY

The Project will permanently remove 50 ha of agriculturally capable land, resulting in the permanent removal of an estimated $52,550 per year, as outlined in **Table 10.**

This represents 0.1% of the gross value of agriculture in the Port Stephens LGA (refer Section 2.4.2).

This value is for modelling purposes only, and should be considered conservative based on the significant limitations of the land.

5.2.2 PRODUCTIVITY OF LAND WITHIN LOCALITY

Agricultural productivity of land outside of the Project Area will not be affected by the Project as the associated agricultural resources and infrastructure will not be affected. Therefore, the Project will not negatively impact any existing agricultural enterprise outside of the Project Area.

5.2.3 AGRICULTURE SUPPORT SERVICES

The Project will have a negligible impact on local, regional and state agricultural services. Changes to the supply and viability of agricultural support services in the main service centres in Port Stephens are driven by social and market trends far exceeding the scale of the minor reduction in agricultural land use and productivity as a result of the Project.

5.2.4 CRITICAL MASS THRESHOLDS

Due to the limited reduction in agricultural activity as a result of the Project, and the scale of the livestock industries operating in the Port Stephens LGA and broader region, there will be no impact to critical mass thresholds of agricultural enterprises needed to attract and maintain investment in agricultural service industries and infrastructure.

5.3 AGRICULTURAL RESOURCES

5.3.1 SOILS

Over the area of the Project Area being permanently impacted, soils will be subject to significant, permanent impacts where earthworks and surface disturbance are necessary for construction.

There will be no direct or indirect impacts to the soil resources of the Project locality outside the Project Area.

5.3.2 AGRICULTURAL CAPABILITY

Land will be permanently removed from agricultural capability over the area of the Project Area being permanently impacted.

There will be no direct or indirect impacts to the agricultural capability of the Project locality outside the Project Area.

5.3.3 WATER

No impacts are anticipated on the availability of current water resources used by neighbouring landholders.

5.3.4 EROSION AND SEDIMENTATION

Erosion risks are primarily associated with the anticipated impacts to soils during construction. The Project will prepare an erosion and sediment control plan (ESCP) that addressed specific soil dispersion risks based on disturbance activity and phase of the Project.

5.3.5 AGRICULTURAL INFRASTRUCTURE

The Project will have a negligible impact on local and regional agricultural infrastructure. There will be negligible impacts on the road network that connects the agricultural industry to markets, services and suppliers (refer Section 5.4.4).

5.4 OTHER POTENTIAL IMPACTS ON AGRICULTURE

5.4.1 PEST SPECIES

Pest species could be inadvertently brought into the Project Area with imported materials, machinery, or allowed to invade naturally through removal or damage of current vegetation. The presence of weed species has the potential to be a major hinderance to agricultural endeavours on neighbouring properties.

Weeds in general must be managed across the site through specific control measures. In the event that weeds are not effectively managed, minor impacts to agriculture may be experienced in the locality.

5.4.2 BIOSECURITY

Biosecurity is defined in the 'Draft NSW Biosecurity Strategy' (DPI, 2021) as 'the protection of the economy, environment and community from pests, diseases and weeds. It includes measures to prevent new pests, diseases and weeds from entering our country and becoming established. At the local level, as per Section 5.4.1 above, appropriate weed management will reduce biosecurity risks. On a regional level, any import of equipment or machinery from overseas will follow the standard procurement safeguards and quarantine procedures as per

Australian requirements. Given the processes above, it is considered that the Project will not have any potential impact on the biosecurity of agricultural resources and enterprises within the region.

5.4.3 AIR QUALITY AND DUST

Construction has the potential to increase dust through movement of traffic on unsealed roads on dry days, vegetation removal, and localised dust emissions generated by land disturbance (such as excavation activities required for infrastructure). These impacts are unlikely to affect agriculture and standard dust suppression measures can be readily implemented where required.

5.4.4 TRAFFIC

Agricultural enterprises can be impacted by increased traffic movements through an increase in noise and dust, and also through the cumulative impact of road transport being utilised by Project activities, leaving fewer transport options for agricultural enterprises.

The roads in proximity to the Project Area are anticipated to experience an increase in traffic volumes as a result of the Project. However, the current road network has adequate capacity for additional traffic and free flow conditions would continue. Further, no increases in levels of noise and dust that could impact agriculture will result from increased traffic.

Therefore, the traffic impacts of the Project are not likely to have consequences on agricultural enterprises within the Project locality.

5.4.5 NOISE AND VIBRATION

Noise levels as a result of the Project are predicted to comply with noise criteria. It is expected that noise will be effectively managed and minimised through the adoption of standard management practices.

Generally, agriculture is only impacted by noise when constantly high noise levels or sudden loud noise leads to a decrease in animal production through increased livestock stress. Cattle may tolerate moderate levels of noise and may easily adapt to an intensity level of 60-90dB. Continuous exposure to noise above 90dB has been known to severely affect animals (Dairy Global, 2017).

Appropriate mitigation measures are recommended to minimise noise impacts. As a result, there must be no exceedances of noise greater than 90dBA where livestock will be located on a non-associated property adjacent to the Project Area. As such, livestock and other agricultural resources are unlikely to be impacted by traffic noise due to the Project.

5.5 CUMULATIVE IMPACTS

The Project has the potential to generate cumulative impacts with other existing, approved or proposed developments in the region.

Increased cumulative impacts including changes to land used for agricultural, localised productivity, secondary productivity and some agricultural support services are likely to be experienced where projects in the region conflict with agricultural land. However, given the nature and scale of the established agricultural industries within the wider Hunter region, significant impacts to critical mass thresholds and regional agricultural infrastructure are unlikely to occur in the foreseeable future.

6 SUMMARY

This agricultural impact assessment and a land use conflict risk assessment (LUCRA) has established the potential productivity of the Project Area, identified the key land use conflicts risks associated with the Project, and determined the key impacts to agriculture as a result of the Project. The following key findings are noted:

- The Project Area contains low quality agricultural resources and limited agricultural capability.
- The LUCRA undertaken identified eight high and medium risk potential perceived or actual conflicts.
- The impacts on agriculture as a result of the Project are determined to be permanent but limited to the Project Area only. These impacts can be summarised as the following:
  - Permanent removal of approximately 50 ha of land capable for agricultural use, representing 0.4% of land used for agriculture in Port Stephens LGA.
  - Permanent removal of potential agricultural primary productivity to the estimated value of up to $52,550 per year, representing 0.1% of gross commodities value of agriculture within the Port Stephens LGA.
  - Permanent impacts to soil resources and agricultural capability within the Project Area where surface disturbance occurs, noting existing low quality of soil resources and limited agricultural capability.

Based on the above findings, the conclusions of this assessment are as follows:

1. There are several potential moderate and high risk land use conflicts relating to the Project. However, these potential conflicts are determined to be consistent with existing potential residential development and agricultural land use conflicts in the Project locality.
2. Impacts to agriculture as a result of the Project should be considered negligible.

7 REFERENCES

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Appendix 1

Land Use Conflict Risk Assessment

Overview

LUCRA is a system to identify and assess the potential for land use conflict to occur between neighbouring land uses. It helps land managers and consent authorities assess the possibility for and potential level of future land use conflict.

The LUCRA compares and contrasts the Project against adjoining/surrounding land uses and activities for incompatibility and conflict issues based on the risks and impacts identified in Section 5, and the mitigation measures and controls of the Project design. Each potential conflict between the Project and adjacent land has been assessed and given a risk ranking based on probability and consequence as outlined in the following section.

Methodology

A risk ranking matrix (**Table A1**) provided by the DPI (2011) is used to rank the identified potential land use conflicts. The risk ranking matrix assesses the economic, social and environmental impacts according to the probability of occurrence and consequence of the impact.

Table A1: Risk Ranking Matrix

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

(Source: DPI, 2011)

The risk ranking matrix yields a risk ranking from 25 to 1. It covers each combination of five levels of 'probability' (a letter A to E as defined in **Table A2**) and 5 levels of 'consequence', (a number 1 to 5 as defined in **Table A3**) to identify the risk ranking of each impact. For example, an activity with a 'probability 'of D and a 'consequence' of 3 yields a risk rank of 9. A rank of 25 is the highest magnitude of risk; a highly likely, very serious event. A rank of 1 represents the lowest magnitude of risk; an almost impossible, very low consequence event. Low risk is a ranking score of 10 or below.

Table A2: Probability Definitions

Level	Descriptor	Description
A	Almost Certain	Common or repeating occurrence.
B	Likely	Known to occur or it has happened.
C	Possible	Could occur or 'I've heard of it happening.'
D	Unlikely	Could occur in some circumstances but not likely to occur.
E	Rare	Practically impossible or 'I've never heard of it happening.'

(Source: DPI, 2011)

Table A3: Consequence Definitions

	Description	Example of Implications
Level 1		
Severe	• Severe and/or permanent damage to the environment • Irreversible • Severe impact on the community • Neighbours are in prolonged dispute and legal action involved	• Harm or death to animals, fish, birds or plants • Long term damage to soil or water • Odours so offensive some people are evacuated or leave voluntarily • Many public complaints and serious damage to Council's reputation • Contravenes Protection of the Environment & Operations Act and the conditions of Council's licences and permits. Almost certain prosecution under the POEO Act
Level 2		
Major	• Serious and/or long-term impact to the environment • Long-term management implications • Serious impact on the community • Neighbours are in serious dispute	• Water, soil or air impacted, possibly in the long term • Harm to animals, fish or birds or plants • Public complaints. Neighbour disputes occur. Impacts pass quickly • Contravenes the conditions of Council's licences, permits and the POEO Act • Likely prosecution
Level 3		
Moderate	• Moderate and/or medium-term impact to the environment and community • Some ongoing management implications • Neighbour disputes occur	• Water or soil known to be affected, probably in the short to medium-term (e.g. 1-5 years) • Management could include significant change of management needed for agricultural enterprises to continue
Level 4		
Minor	• Minor and/or short-term impact to the environment and community • Can be effectively managed as part of normal operations • Infrequent disputes between neighbours	• Theoretically could affect the environment or people but no impacts noticed • No complaints to Council • Does not affect the legal compliance status of Council
Level 5		
Negligible	• Very minor impact to the environment and community • Can be effectively managed as part of normal operations • Neighbour disputes unlikely	• No measurable or identifiable impact on the environment • No measurable impact on the community or impact is generally acceptable

(Source: DPI, 2011)

Conflict	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Construction and Agriculture	Land users in the locality may be concerned construction activity disturbances may affect livestock behaviour and/or breeding.	D	3	9	The nature and low intensity of agricultural operations in proximity to the Project suggests a limited risk. Compliance with standard construction mitigation measures and criteria is anticipated to reduce this risk of conflict related to noise and dust impacts on livestock and agricultural land users. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	Any complaints from neighbours regarding effects to livestock can be managed within normal construction procedures.
Construction and Agriculture	Land users in the locality may be concerned that increased vehicles during construction or operation may result in an accident with livestock or farm machinery on roads.	D	1	19	Project design and mitigation measures are anticipated to reduce the risk of conflict related to construction traffic for surrounding land users. Ongoing consultation with stakeholders will identify and address concerns if they arise. Implement all measures specified in management plans and/or consent conditions (if approved).	E	3	6	Effectiveness of mitigation measures will be measured as part of a construction management plan.
Construction and Agriculture	Land users in the locality may be concerned about weed, plant pest, plant disease or pest animal introduction during increased volume of vehicles and workers from out of area during construction and spread to agricultural land.	B	2	21	The nature and low sensitivity of agricultural operations in close proximity to the Project suggests a low risk. Compliance with standard construction mitigation measures is anticipated to reduce the risk of conflict related to pest spread to agricultural land. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	3	10	Any complaints from neighbours regarding weed spread can be addressed within normal construction procedures.
Construction and Agriculture	Stakeholders may have concerns that the construction of the Project will alter and disturb existing soil properties, undermining the capability of the land for future agricultural production.	B	2	21	There will be a permanent impact on soil resources where significant disturbance occurs (such as earthworks), resulting in a sterilisation of agriculture land. The scale of this impact in the context of land used for agriculture within the region is determined to be low given the low quality of soil resource and negligible impact to agriculture. This is presented in the agricultural assessment for stakeholder consideration and is expected to limit conflict with stakeholders.	D	3	9	Nil.
Construction and Residential	Land users in the locality may be concerned that dust generated by construction activities may have adverse health implications for residential land users within the locality.	D	3	9	Compliance with standard construction mitigation measures and criteria is anticipated to reduce the risk of conflict related to dust impacts on neighbouring residents. Ongoing consultation with stakeholders will identify and address concerns if they arise.	E	4	3	Any complaints from neighbours regarding effects of construction dust can be managed within normal construction procedures.
Construction and Residential	Increased noise generated by construction activities and heavy vehicle movements may be perceived as nuisance to residential land users within the locality.	C	4	8	Compliance with standard construction mitigation measures and criteria is anticipated to reduce the risk of conflict related to dust impacts on neighbouring residents. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	Any complaints from neighbours regarding effects of construction dust can be managed within normal construction procedures.

Conflict	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Construction and Environment	Land users in the locality may be concerned about changes to surface water flows and flood levels that may affect the Project Area and surrounds, including artificial drains (ie, Anna Bay Drain 1), from surface disturbances during construction activities.	A	2	23	Design controls are anticipated to alleviate flood level conflict. Compliance with design controls and mitigation measures is anticipated to reduce the risk of conflict related to watercourse health and quality.	E	2	10	Effectiveness of design controls be measured as part of a construction management plan and project sign-off.
Construction and Environment	Land users in the locality may be concerned about changes to water quality may affect the Project Area and surrounds, including artificial drains (ie, Anna Bay Drain 1), from surface disturbances during construction activities.	C	3	13	Appropriate mitigation measures, including soil erosion and sedimentation controls, will be implemented to minimise impacts to watercourse health and quality. Compliance with design controls mitigation measures is anticipated to reduce the risk of conflict related to watercourse health and quality. Implement all measures specified in an erosion and sediment control plan developed for the construction phase of the Project. This will include groundcover being maintained where possible and practical, and identifying and repairing active erosion.	E	3	6	Effectiveness of mitigation measures will be measured as part of a construction management plan.
Construction and Environment	Stakeholders may be concerned about impacts to heritage items or values at the Project Area and locality.	B	4	12	An assessment of impacts to heritage will be undertaken. Compliance with mitigation measures is anticipated to reduce the risk of conflict related to environmental features, culturally sensitive land and heritage. Implement all measures specified in management plans and/or consent conditions (if approved).	D	4	5	Effectiveness of engagement will be measured as part of the construction management plan.
Construction and Environment	Stakeholders may be concern about potential impacts to biodiversity, including koala habitat, and habitat connectivity within the Project Area and locality.	B	3	17	The assessment of impacts to biodiversity has been undertaken. Appropriate design controls and mitigation measures are specified to minimise the risk for impacts on biodiversity within the Project area and locality. Implement all measures specified in management plans and/or consent conditions (if approved). Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	3	9	Effectiveness of design controls be measured as part of a construction management plan and project sign-off.
Construction and Roads	Use of surrounding roadways during construction may cause conflict by interacting with agricultural and/or local transport activities, and/or resulting in additional travel time for road users or potentially impacting / degrading the physical condition of local roads.	C	4	8	Compliance with mitigation measures is anticipated to reduce the risk of conflict related to traffic for surrounding land users. Liaison with relevant road authorities (ie. Port Stephens Council and Transport for NSW) regarding ongoing maintenance of road surface during construction. Damaged or degraded roads as a result of construction activities will be repaired. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	Effectiveness of mitigation measures will be measured as part of a construction management plan.
Development and Agriculture	Stakeholders in the locality may be concerned about the reduction of land used for agricultural purposes.	A	3	20	There will be a permanent removal of approximately 50 ha of land that is capable for agricultural land use. This impact is considered acceptable given the low capability of the land and in context of higher quality land being prioritised for agriculture elsewhere within the region. No mitigation measures or agricultural offsets are proposed or recommended. Findings as presented in the agricultural assessment are expected to limit conflict.	E	3	6	Nil.

Conflict	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Development and Agriculture	Stakeholders in the locality who wish to maintain views of the existing agricultural landscape may be concerned about the change in visual amenity resulting from the Project.	A	3	20	There will be a permanent impact to the existing visual amenity of agricultural land for neighbouring properties. Project design has included measures to mitigate the impacts.	C	3	13	Nil.
Development and Agriculture	Land users in the locality may be concerned about weed, plant pest, plant disease or pest animal introduction that may spread to agricultural land as a result of proposed land uses.	C	4	10	The potential weed and pest spread impacts are determined to be appropriate in the context of existing residential development in the locality. No mitigation measures are proposed. Project design has included measures to mitigate the impacts (buffer area).	D	4	5	No complaints from agricultural land users regarding pest or weed spread as a result of the development.
Development and Agriculture	Neighbouring property owners may be concerned about sprays from weed control adversely affecting adjacent land.	D	4	5	Impacts to agricultural operations as a result of residential and small scall pesticide use spray drift is anticipated to be minor. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	No complaints from agricultural land users regarding impacts from residential weed control activities.
Development and Agriculture	Land users in the locality may be concerned that waste generated by the development may increase the presence of pest animals and/or vermin which could impact agricultural productivity	D	4	5	The potential impacts as a result of increased waste generation are determined to be appropriate in the context of existing residential development in the locality and surrounding agricultural activities. No mitigation measures are proposed.	E	4	3	No complaints from land users in locality regarding increased waste or pest animals.
Development and Agriculture	Land users in the locality may be concerned about the risk of fires occurring at the Project area and their potential to spread to surrounding land, residences, infrastructure or livestock.	C	1	22	Design controls and mitigation measures in line with relevant guidelines will mitigation risk related to fire spread as a result of the Project. The long-term risks are determined to be appropriate in the context of existing residential development and surrounding land use activities.	E	2	10	No instances of fire starting as a result of the Project, which impact surrounding land, infrastructure or livestock.
Development and Agriculture	Land users in the locality may be concerned about impacts to agricultural support infrastructure in the Project locality and wider region.	D	4	5	The assessment of the impacts to agricultural support infrastructure in the Project locality and wider region has been undertaken within this agricultural assessment. Anticipated impacts are determined to be negligible and presented in this report for stakeholder consideration. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	5	2	No complaints from agriculture enterprises regarding impact to agricultural support infrastructure due to Project activities.
Development and Agriculture	Stakeholders may be concerned about impacts to agricultural industries and critical mass thresholds that determine viability.	D	4	5	The assessment of the impacts to agricultural industries has been undertaken within this agricultural assessment. Given the nature of agriculture being removed and in the context of the scale of the established agricultural industries within the region and wider state, impacts to critical mass thresholds and regional and state agricultural industries are unlikely to occur. Impacts are determined to be minor and presented in this report for stakeholder consideration.	D	5	2	No complaints from wider agriculture industries due to Project activities.

Conflict	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Development and Agriculture	Neighbouring landowners may be concerned about their livestock entering the Project Area and becoming injured or causing damage.	D	4	5	Fencing will be fit for purpose and maintained. The potential impacts are determined to be appropriate in the context of existing residential development and surrounding agricultural activities within the locality. Standard design in accordance with relevant guidelines will mitigation risk (fencing). Ongoing consultation with stakeholders will identify and address concerns if they arise.	E	4	3	No instances of livestock entering Project area and becoming injured or causing damage.
Development and Residential	Residents in the locality may be concerned that dust generated by increased vehicle movements, as well as increased pollution from increased vehicle movements, has the potential to impact air quality and may have adverse health implications for residential land users within the locality.	D	3	9	The potential dust and pollution impacts are determined to be negligible in the context of existing urban development within the locality and mitigated by development design. Ongoing consultation with stakeholders will identify and address concerns if they arise. Implement all measures specified in management plans and/or consent conditions (if approved).	E	5	1	No complaints from residents regarding air quality or dust.
Development and Residential	Land users in the locality may be concerned about an increase in nuisance noise generated from proposed residential and recreational land use.	D	3	9	The potential nuisance noise impacts may be experienced for properties in proximity to the development. These impacts are determined to be appropriate in the context of existing residential development within the locality and mitigated by development design. Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	3	9	No complaints from land users in locality regarding nuisance noise.
Development and Residential	Landowners in the locality may be concerned about potential devaluation of properties due to development.	B	3	17	Impacts to property values in the locality may be experienced for properties in proximity to development. Project design has included measures to mitigate the impacts. Ongoing consultation with stakeholders will identify concerns if they arise.	C	3	13	Nil.
Development and Residential	Land users in the locality may be concerned that the change in land use may attract people to the area who may not otherwise visit the area, including workers. This may be perceived to adversely affect a resident's security.	D	3	9	The potential impacts are determined to be appropriate in the context of existing residential development. Workforce behaviour will be managed through the implementation of the construction management plan, which will encourage positive workforce behaviour. Ongoing consultation with stakeholders will identify and address concerns if they arise.	E	4	3	Effectiveness of mitigation measures will be measured as part of a construction management plan.
Development and Roads	Land users in the locality may be concerned about an increase in traffic volume on local roads as a result of the proposed development, which may cause conflict by interacting with agriculture transport activities or increasing travel times.	D	4	5	Anticipated impacts are determined to be minor and presented in a traffic assessment for land user consideration. Liaison with relevant road authorities (ie. Council and Transport for NSW) regarding final design and road capacity will be undertaken. Ongoing consultation with stakeholders will identify and address concerns if they arise.	E	5	1	No complaints from land users in locality regarding impacts to agricultural transport activities or increased travel times.
Agriculture and Residential	Residents of the development may have concerns about nuisance noise from livestock and farm machinery.	D	3	9	The potential impacts are determined to be appropriate in the context of existing residential development adjacent to agricultural land use. Project design has included measures to mitigate the impacts.	E	3	6	Nil

Conflict	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Agriculture and Residential	Residents of the development may have concerns about odour from fertiliser and livestock.	D	3	9	The potential impacts are determined to be appropriate in the context of existing residential development adjacent to agricultural land use. Project design has included measures to mitigate the impacts.	E	3	6	Nil
Agriculture and Residential	Residents of the development may have concerns about increased presence of flies and vermin attracted by agricultural activities.	D	3	9	The potential impacts are determined to be appropriate in the context of existing residential development adjacent to agricultural land use. Project design has included measures to mitigate the impacts.	E	3	6	No complaints from residents regarding flies and vermin.
Agriculture and Residential	Residents may have concerns about spray drift of pesticides from pasture weed control.	D	2	14	Project design has included measures to mitigate the impacts (buffer area). Ongoing consultation between landholders are expected to address concerns if they arise.	E	3	6	No complaints from residents regarding pesticide spray drift.
Agriculture and Residential	Landowners in the locality may be concerned about domestic dogs entering agricultural properties and harassing livestock	C	4	8	Project design will include measures to mitigate the impacts (dog-proof fencing and buffer area). Ongoing consultation between landholders are expected to address concerns if they arise.	D	4	5	No complaints from agricultural land users regarding domestic dogs' presence.