Attexó
APEM Group

Appendix L

Agricultural Land Assessment

Agricultural Land Assessment

Tully Battery Energy Storage System

Prepared for: RWE Tully Battery Pty. Ltd.

Date: 4/06/2026

Document information

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			Name/position	Signature
0	15/09/2025	Final	Sue Walker, Principal Consultant	
1	26/03/2026	Final – updated to respond to State Code 27	Sue Walker, Principal Consultant	
2	14/05/2026	Final – client comments	Sue Walker, Principal Consultant	
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1. Introduction

1.1 Project background

RWE Tully Battery Pty. Ltd. (RWE) are seeking to develop the proposed Tully Battery Energy Storage System (BESS) (the Project) across a 28.7 hectare (ha) site (the Project Site), consisting of two freehold parcels, Lot 1 on RP735276 and Lot 1 on RP852238. Grid connection is proposed via the neighbouring Powerlink 132 kV Tully substation, located to the northeast on Lot 1 on RP716718.

The Project Site is located approximately 4 km south-west of the township of Tully in far north Queensland.

The Project will have a capacity of up to 200 MW / 800 MWh and is proposed to take electricity from the grid in periods of low demand, and feed back into the grid at periods of high demand.

Attexo Group Pty Ltd (Attexo) has been engaged by RWE to assess the potential impacts associated with the Project's development on agricultural values.

1.2 Purpose and scope

This purpose of this report is to address PO9 – PO12 in State Code 27 (v3.5) and demonstrate that there is no unacceptable loss of high-quality agricultural land as a result of the Project.

The scope of the report includes the following:

- An outline of the land evaluation framework in Queensland
- A description of the project and environmental context
- Site agricultural context including a description of high-quality agricultural land values (as defined in State Code 27)
- An agricultural land impact analysis based on the proposed BESS Facility including an economic evaluation is undertaken using regional land use and productivity data.

This agricultural land assessment focuses on the Project Site as defined in **Section 1.3.**

The State Code 27 decommissioning Performance Outcomes (POs) and where they are responded to in this report are included in **Table 1.1**.

Table 1.1: Compliance assessment table

State Code 27 Performance Outcome	Section addressed / response
PO9 Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.	Refer to **Section 5**, **Section 6** and **Section 8**.
PO10 Development does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation.	Refer to **Section 4.4, Section 6.1.3** and **Section 8**.
PO11 Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.	Refer to **Section 6.1.5**
PO12 Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function.	Refer to **Section 5.4** and **Section 6.1.4**.

1.3 Defined Terms

Where applicable, terms used within this report are consistent with definitions provided in State Code 27 (v3.5). A summary of the meaning of key terms used in this report are defined in **Table 1.2**.

Table 1.2: Key terms used within this report

Term	Definition	Area (ha)
Project Area	The Project Area includes the following three freehold land parcels that are part of the Development application: • 37 Sandy Creek Road (Lot 1 on RP735276) • 71 Sandy Creek Road (Lot 1 on RP852238) • 175 Tully George Road (Lot 1 on RP716718).	32.4
Project Site	The Project Site is the extent of the lot boundaries for Lot 1 on RP735276 and Lot 1 on RP852238 where the majority of Project infrastructure is located.	28.7
Grid Connection	Refers to the proposed OHTL that crosses the Project Site and ties-in to the existing Powerlink Tully substation within Lot 1 on RP716718.	N/A
Development Footprint	Comprises the maximum area to be disturbed by the Project for the construction of the BESS. There is expected to be only limited earthworks for the Overhead Transmission Line (OHTL) connecting the BESS to the substation northeast of the Project Site.	9
Decommission	The removal, rehabilitation and remediation of the battery storage facility in part, after finalisation of construction, then in entirety at cessation of operations. Decommissioning will be in accordance with strategies prepared by proponents and all decommissioning activities undertaken at full cost to proponents/operators.	N/A

2. Agricultural land in planning

2.1 Guidelines and standards

The guidelines and standards relevant for agricultural land assessment of the Project Site include the following key documents that have been used in the development of this assessment:

- *Guidelines for agricultural land evaluation in Queensland* (2nd edn) (DSITA & DNRM, 2015)
- *Regional Land Suitability Frameworks for Queensland* (DNRM & DSITA, 2013).

2.2 Agricultural land in planning frameworks

In Queensland agricultural land is addressed in the following planning frameworks described in **Table 2.1**.

Table 2.1: Relevant planning frameworks

Guideline	Relevance
State Planning Policy (SPP)	The state's interest in agriculture is that planning protects the resources on which agriculture depends and supports the long term viability and growth of the agriculture sector. This includes promoting and optimising agricultural development and increasing production in key areas.
Regional Plans	The role of these regional plans is to identify and interpret the state's interests in land use planning and development, as identified in the SPP, for a particular region.
Regional Planning Interest Act 2014 (the RPI Act)	The RPI Act identifies four areas of regional interest: a priority agricultural area (PAA); a priority living area (PLA); the strategic cropping area (SCA); and a strategic environmental area (SEA). A key purpose of the Act is to manage both the impact and coexistence of resource activities, and other specifically regulated activities, in these areas of regional interest.
State Code 27	Development is located and designed to ensure that there is no significant loss of high-quality agricultural land defined as SCL, and PAAs, or ALC Class A and Class B land identified on the SPP interactive mapping system, DAMs or local planning instruments.

2.2.1 Agricultural Land Classes (ALC)

Agricultural land classification (ALC) in Queensland allows the presentation of interpreted land evaluation data to indicate the location and extent of agricultural land that can be used sustainably for a wide range of land uses with minimal land degradation. ALC is land classification system for planning purposes that use the base land resource survey information and assessments of land suitability for the delineation of agricultural land.

Provision is also made to highlight areas that may be suitable for one specific crop considered important in a particular area (DSITI & DNRM 2015).

Three broad classes of agricultural land and one non-agricultural land class are identified:

- Class A – Crop land
  - has two subclasses:
    - A1 – land suitable for a wide range of broadacre crops, and
    - A2 – land suitable a wide range of horticultural crops only. This allows better discrimination of crop land at both local and state-wide levels.
- Class B – Limited crop land:
  - Land that is not suitable for a wide range of crops (broadacre and/or horticultural) but is suitable for a narrow range of crops or crops with specialised requirements e.g. tea, pineapples, forestry. Class B land may

be suitable for a wider range of crops with changes to knowledge, economics or technology. Also suitable for sown pastures and pasture phases may be an integral part of a cropping system on this type of land.

- Class C – Pasture land:
  - Land that is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment.
- Class D – Non-agricultural land:
  - Land not suitable for agricultural use.

2.2.2 Strategic cropping area

The strategic cropping area is an area of regional interest that consists of the areas shown on the SCL trigger map. The SCL trigger map was developed based on soil and land resource data, including agricultural land class and versatile cropping land, digital elevation models, land use and vegetation.

Strategic cropping land (SCL) is defined as:

- Land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features.

The process for verification of SCL is contained in RPI Act Statutory Guideline 08/14. For land to be verified as SCL there are eight (8) hierarchical criteria, with different threshold values within the relevant SCA zone.

2.2.3 Priority agricultural areas

A PAA is an area of regional interest shown on a map in a regional plan or prescribed under the Regional Planning Interests Regulation 2014 (RPI Regulation) as a PAA.

PAAs are strategic areas, identified on a regional scale, which contain significant clusters of the region's high value intensive agricultural land uses. Within a PAA, high value intensive agricultural land uses are recognised as the priority land use over other proposed land uses. These uses are termed Priority Agricultural Land Uses (PALUs) and will be given priority in the consideration of applications for resource activities and regulated activities to ensure the continuation of the existing PALUs is not threatened.

3. Project Description

The Project includes a proposed BESS with a capacity up to 200 MW / 800 MWh for a duration of 4 hours and associated infrastructure (e.g., transformer, OHTL, air insulated switchgear, access roads, laydown areas, foundations, hard stand, parking, switch rooms and storage). The BESS and associated infrastructure will comprise a total development footprint of approximately 9 ha within the 28.7 ha Project Site.

The primary components of the Project will consist of the following:

- **Battery Units:** Up to 188 battery units will cover a total area of up to 2.5 ha. The foundations for the proposed battery units will likely be screw piles, piers or concrete pad formations. The BESS will be connected to the adjacent switch rooms via underground cables.
- **Switching Station:** A switching station will be located to the north of the battery units and will include a 132/33 kV high-voltage transformer, associated switchgear, an auxiliary transformer, two 33 kV switch rooms, and, if required, harmonic filters.
- **Stormwater Management:** Stormwater infrastructure will be designed and constructed to ensure the safe collection, containment, and management of runoff across the site during both construction and operational phases. This will include any emergency containment storage for containment for fire water in an emergency event.
- **Site Access and Internal Circulation:** Access to the site will be via the existing road network, including the Bruce Highway and Tully Gorge Road, with upgrades proposed to the two access point from Sandy Creek Road. The BESS facility will be secured by perimeter fencing. Internal access tracks will be provided around the battery units to facilitate operations, maintenance, and emergency response.
- **Grid Connection Infrastructure:** The Project will connect to the adjacent Powerlink 132 kV Tully Substation via an overhead transmission line extending north from the BESS area. The line will be supported approximately five (5) single-circuit 132 kV poles, each approximately 27.5 m in height.
- **Asset Protection Zone (APZ**): An Asset Protection Zone will be established and maintained around the battery infrastructure to mitigate bushfire risk and provide access for firefighting activities.
- **Fire Safety Measures:** Fire protection infrastructure will include, subject to detailed design, approximately 472,000 litres (L) of on-site static water storage, together with a fire hydrant system designed in accordance with Australian Standard (AS) AS 2419.1.
- **Acoustic Treatment:** A 6 m high noise wall is currently incorporated along the northern boundary of the BESS area to mitigate potential noise impacts. The requirement for this wall will be confirmed during detailed design and may be refined or omitted subject to equipment specifications and acoustic performance.
- **Earthworks:** Earthworks will include site levelling, formation of batters, and clearing necessary to facilitate construction and access.
- **Lighting:** Lighting will be installed to support maintenance activities, when maintenance works are to be undertaken at night; these will be on 10 m high poles. Security lighting will be sensor-controlled. All lighting will be designed and operated in accordance with AS 4282:2023 Control of the obtrusive effects of outdoor lighting.
- **Lightning Protection:** Lightning arrestors, up to 20 metres in height, will be installed within the development footprint to protect critical infrastructure.
- **Laydown and Operations Areas:** Temporary construction laydown areas and a permanent operations and maintenance (O&M) building will be established adjacent to Sandy Creek Road. This will include an O&M building, yard, parking areas, office facilities, and storage sheds.
- **Landscaping and Screening:** Landscape buffer planting will be established along the frontage and partially along the side boundaries of Lot 1 on RP852238 to provide visual screening and enhance integration with the surrounding landscape.

Visual representation of the Project is provided with aerial view in **Plate 3.1**.

Plate 3.1: Photomontage of proposed BESS[1]

[1] For information purposes only. This image is an artist's conceptual rendering, based upon preliminary development plans, and is subject to change. It is not to scale and shown solely for illustrative purposes.

Project Layout
Figure 3.2

DWG No: RWE-002-032 [A]
DATE: 14/05/2026
DRAWN: KB,JM
REVIEWED EJ
SCALE (A4): 1:5,000

N

0 Meters 100

GDA2020

- Project Area
- Development Footprint
- Proposed Access Track Footprint
- Proposed Transmission Line Corridor
- Proposed Transmission Line
- 20m Exclusion Zone
- Substation Area
- BESS Area
- Bioretention Basin A
- Bioretention Basin B
- Construction Laydown Area
- Noise Wall
- Landscaping Area
- Existing 132kV Line
- Existing Dwellings
- Water Storage
- O&M Building
- O&M Area
- Emergency Containment Storage
- Fence
- Main Road
- Local Road
- Cadastral Parcels

4. Existing environment

Existing information on soils and soil environments for the Project Area was sourced from relevant project information and regional mapping published by government departments, including:

- 1:50,000 *Soils of the Cardwell-Tully Area, north Queensland* by Cannon *et al*. (1992)
- Detailed aerial imagery
- Topographical data (1 m contours).

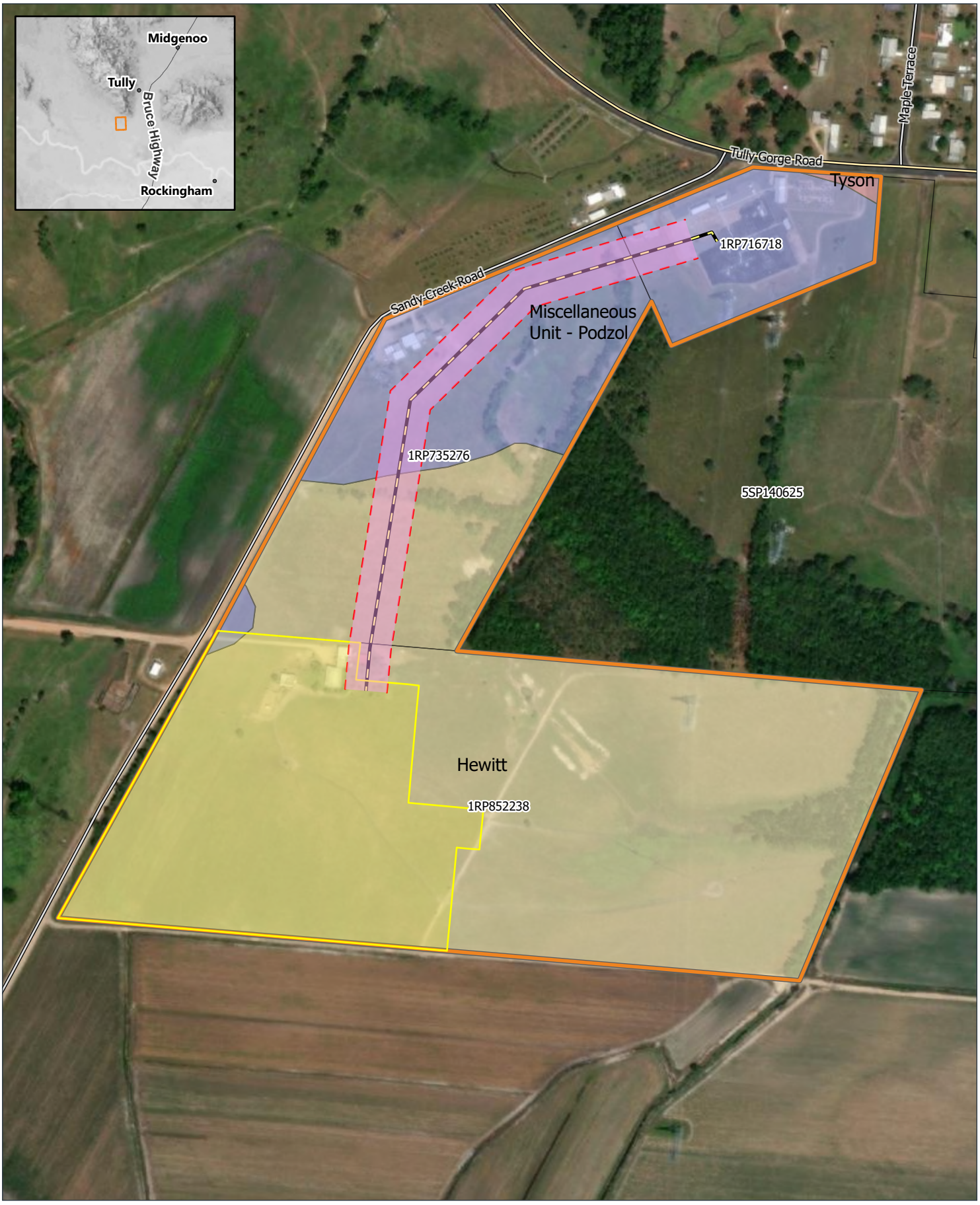
4.1 Soils

The soils in the Project Area have been mapped in the 1:50,000 *Soils of the Cardwell-Tully Area, North Queensland* by Cannon *et al*. (1992). The Cannon *et al.* (1992) mapping identifies the three mapped soil units (Hewitt, MSC and Tyson) over the Project Area as shown in **Figure 4.1** and detailed in **Table 4.1**.

The Hewitt series are mapped as poorly drained soils formed on alluvium and form a continuum, becoming progressively poorer drained with distance from higher, better drained levees. The Hewitt representative profile description and morphological range is presented in **Figure 4.2**.

Table 4.1: Soils (Cannon et al, 1992) mapped within the Project Area

Soil	Landform	Major distinguishing features	Australian Soil Classification
Hewitt	Floodplain and swamps	Sapric loamy A horizon, grey whole coloured or mottled, silty clay B horizons	Hydrosols
MSC	-	Miscellaneous type of mapping unit, used to identify areas not typically assessed in detail.	Podosols
Tyson	Upper slope of fans	A gradational or uniform textured soil with a red massive B horizon. On granite fans with rainforest vegetation	Kandosols



Soils of the Cardwell-Tully Area, North Queensland

Figure 4.1

DWG No: RWE-002-033 [A]
DATE: 14/05/2026
DRAWN: KB,JC
REVIEWED EJ
SCALE (A4): 1:5,000

N

0 Meters 100

GDA2020

- Project Area
- Development Footprint
- Proposed Transmission Line Corridor
- Proposed transmission line
- 20m exclusion zone

Soil Types

- Hewitt
- Miscellaneous Unit - Podzol
- Tyson

- Main Road
- Local Road
- Cadastral Parcels

Figure 4.2: Hewitt Series representative profile description and morphological range (Cannon et al 1992)

HEWITT SERIES (He)

CONCEPT

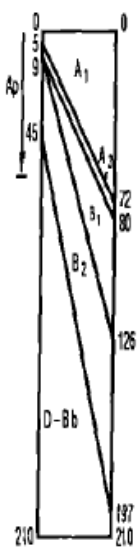
Humic to organic A horizon over whole coloured or mottled grey clayey B horizon.

REPRESENTATIVE PROFILE

	G.S.G.	P.P.F.	S.T.
CLASSIFICATION	Humic Gley	Dy5.11	Paleaquult
LANDFORM	Swamp	RAINFALL	3100 mm
REFERENCE SITE	Kirrama 1:100 000	858077	

Horizon	Depth	
A1	0 to .40 m	Black (10YR2/1), (10YR2/1 d); sapric silty loam; weak 5-10mm cast parting to weak 2-5mm granular; moist, very weak; <1, 0.075-1mm macro - pores per 100mm^2 ; common 1-2mm roots; diffuse, irregular change to
A3	.40 to .66 m	Very dark grey (10YR3/1), (10YR4/1 d); sapric silty loam; weak 10-20mm prismatic parting to moderate 5-10mm subangular blocky; moist, moderately weak; <1, 0.075-1mm macropores per 100mm^2 ; common 1-2mm roots; diffuse, irregular change to
B1	.66 to 1.26 m	Very dark greyish brown (10YR3/2); 2-10% 5-15mm distinct, light brownish grey (10YR6/2) mottles; silty clay loam; moderate 10-20mm prismatic parting to moderate 5-10mm angular blocky; moist, moderately firm; <1, 0.075-1mm macropores per 100mm^2 ; few 1-2mm roots; abrupt, irregular change to
B22	1.46 to 1.76 m	Light brownish grey (2.5Y6/2); 2-10% 5-15mm distinct reddish yellow (7.5YR6/8) primary and brownish yellow (10YR6/8), secondary mottles; silty medium clay; moderate 10-20mm prismatic parting to moderate 5-10mm angular blocky; moist moderately firm; <1, 0.075-1mm macropores per 100mm^2 ; few <1mm roots;
B23	1.76 to 1.97 m	Greyish brown (2.5Y5/2); 2-10% 5-15mm distinct, reddish yellow (7.5YR6/8) primary and brownish yellow (10YR6/8) secondary mottles; silty medium clay; moderate 10-20mm prismatic parting to moderate 5-10mm angular blocky; moist moderately firm; 10-20% 6-20mm organic (humified) soft segregations; <1, 0.075-1mm macropores per 100mm^2 ; few <1mm roots.

MORPHOLOGICAL RANGE



Depth range (cm)	Horizon	x̄:σ	n = 25	Description
	Ap	37:9		Black (7.5YR - 10YR2/0-1) to very dark greyish brown (10YR3/2); sapricloam to clay loam; massive to weak cast;
	A1	27:18		Black (7.5YR2/0-1) to very dark greyish brown (10YR3/2); sapric or fibricloam to silty clay loam; massive to moderate cast or subangular blocky
	A3			Very dark grey (10YR3/1) to pale brown (10YR6/3); sapric loam to clay loam; massive to moderate subangular blocky and prismatic.
	B1			Grey (2.5Y4/1) to light yellowish brown (10YR 6/4), faint to distinct brownish yellow (10YR 5/6-8) mottles; clay loam to medium clay; massive to moderate subangular or angular blocky and prismatic.
	B2	46:31		Dark grey (10YR4/1) to light grey (10YR7/1) whole coloured with or without yellow (10YR - 2.5YR7-8/6-8) and light olive brown (2.5Y5/6) mottles; clay loam to medium heavy clay; strong prismatic parting to moderate to strong subangular or angular blocky; clear to
	D-Bb			Grey (7.5YR6/1) to white (2.5YR8/2), prominent brownish yellow (10YR5/8) and yellowish brown (10YR6/8) mottles; sand to medium clay; single grain to moderate subangular blocky.

4.2 Grazing land suitability

The FORAGE online system (Zhang & Carter, 2018) was developed by the Queensland Government to facilitate best management practices for grazing land. Site specific property information is available through the FORAGE system based on climate data, satellite imagery and modelling (such as pasture growth and land conditions).

The *QLD grazing land management (GLM) land type mapping* (DAF, 2022) can be used to provide an estimation of the productivity of the land for grazing within the development footprint and a map the land types is shown in **Figure 4.3** and the area and long-term carrying capacity (LTCC[2]) is provided in **Table 4.2**.

Table 4.2: Site land types and long-term carrying capacity

Land type	Area (ha)	LTCC[1] (Ha/AE)
WT07 White sandy soil	21	5.1
AL10 Wetland	5	Not suitable for grazing
WT01 Alluvial	4	2.2

1. Based on Land condition A.

[2] LTCC is measured as the total adult equivalents (AEs; 450 kg cattle consuming 8kg DM/day) that can be safely carried for a paddock or property and is also shown as hectares required per AE unit. The calculation of the LTCC is based on a number of factors, including: the long-term median annual pasture growth; the safe utilisation rate of the pastures; the distance to watering points; topography and tree density. Pasture growth is calculated from the GRASP model using parameters for grazing land management (GLM) land types, the tree density on the property and the historical climate data for the property of interest.

Grazing land types based on the FORAGE reports

Figure 4.3

DWG No: RWE-002-034 [A]
DATE: 14/05/2026
DRAWN: KB,JC
REVIEWED EJ
SCALE (A4): 1:5,000

N

0 Meters 100

GDA2020

- Project Area
- Development Footprint
- Proposed Transmission Line Corridor
- Proposed transmission line
- 20m exclusion zone

Land types

- Wetland
- Alluvial
- Range soils [WT]
- White sandy soil

- Main Road
- Local Road
- Cadastral Parcels

4.3 Watercourses and wetlands

A wetland of high environmental significance is mapped within the Project Area on both the CRCC Planning Scheme Environmental Significance Overlay and the Waterway Corridors and Wetlands Overlay.

4.4 Land use

The Project Site consists of two lots (Lot 1 on RP735276 and Lot 1 on RP852238) that are both zoned as Rural under the Cassowary Coast Regional Council's planning scheme (2015).

Both lots are currently used as rural residential properties and are largely undeveloped. Lot 1 on RP735276 is primarily used as a residence has a number of agisted cattle from the neighbouring landholder and Lot 1 on RP852238 has a residence and runs a livestock grazing operation. Lot 1 on RP852238 contains the Powerlink OHTL and infrastructure designation.

The existing Powerlink 132 kV substation and 275 kV substation are located in adjacent lots to the north-east of the Project Site. Land in proximity to the Project Site are rural areas and often used for sugar cane farming, where suitable, apart from areas north of the Project Site. Across both lots approximately 11.5 ha appears to be suitable for sugarcane, although it does not appear to have been cropped in recent years (refer to **Section 4.4.2**).

4.4.1 Regional land use

Data on land use was collected based on the *Catchment scale land use of Australia* (ABARES 2021), a national compilation of catchment scale land use data for Australia (CLUM) compiled at a resolution of 50 m by 50 m.

The Cassowary Coast LGA has agricultural land use dominated by cropping and irrigated cropping (12.41% of LGA land use) of which almost all of this area is sugarcane (ABARES 2021a). Livestock grazing (7.95%) and horticulture (2.35%) are the next most dominant land uses in the LGA by area. The largest single land use however is nature conservation at 60.9% of the total LGA. The land use of the LGA utilised for agriculture is shown in **Table 4.3**.

Table 4.3: Agricultural land use

Land use	Cassowary Coast LGA[3]	
	Area (ha)	Area of LGA (%)
Grazing native vegetation	18,139	3.81%
Grazing modified pastures	19,717	4.14%
Grazing irrigated modified pastures	6	0.00%
Intensive animal production	743	0.16%
Cropping	55,997	11.76%
Irrigated cropping	3,091	0.65%
Perennial horticulture	340	0.07%
Irrigated perennial horticulture	10,754	2.26%
Irrigated seasonal horticulture	51	0.01%
Intensive horticulture	40	0.01%
Agriculture - total	**108,877**	**22.87%**
Production native forests	3,469	0.73%
Plantation forests	6,793	1.43%

[3] ABARES 2021a, Catchment scale land use profile dashboard – Local government areas

Nature conservation	289,717	60.86%
Managed resource protection	4,023	0.85%
Other minimal use	39,305	8.26%
Total LGA	**476,036**	

4.4.2 Local land use

Land use at the project level was based on historical and current land uses. Previous cropping in the southeast corner of Lot 1 on RP852238 was identified following a review of historical aerial imagery (**Section 4.4.2.1**).

Of the total Project Site, 6 ha is unavailable for agriculture due to the presence of wetland areas (**Section 4.3**) and an additional hectare or more is subject to current residential and farm infrastructure. Of the remaining area, approximately 11.5 ha is suitable for sugarcane (some of this area has previously been cultivated) and 11.2 ha is considered suitable for livestock grazing rather than cropping due to the topography of the land.

Based on a review of the FORAGE crop frequency (**Section 4.4.2.2**) no cropping has been undertaken on the Project Site in the last 10 years.

4.4.2.1 Historical land use from aerial imagery

A review of historical aerial imagery (via QImagery) has been undertaken to assess the changes in vegetation within the Project Area and surrounding landscape over time to assist in understanding:

- The disturbance history of the Project Site
- Historical vegetation patterns and habitat values
- Changes to the extent of those habitat values which may impact the continued use of the Project Site by fauna species and the presence of threatened flora species.

The Project Area is indicated by the orange outline in **Plate 4.1, Plate 4.2, Plate 4.3, Plate 4.4, Plate 4.5** and **Plate 4.6**.

The historical imagery indicates that much of the Project Site (and much of the area surrounding of the Project Site) maintained vegetation cover up until sometime between 1964 and 1974, however the initial transmission line corridor through the Project Site was cleared earlier than this. By 1974 heavy vegetation clearing had been completed in the surrounding areas, with significant cropping already established and clearing had commenced within the Project Site. Most of the remainder of the Project Site had been heavily disturbed, if not completely cleared, by 1977. By 1992 a small area of cropping appears in the south-west of the Project Site, with the remaining cleared areas representative of improved pasture for grazing.

The wetland areas in the Project Site appear to have been much less vegetated with more pronounced wetland values in the earlier imagery from the 50s, 60s and 70s (see **Plate 4.1, Plate 4.2, Plate 4.3**). Following the widespread conversion of the surrounding landscape to sugarcane farms, the wetland areas appear to have changed, with vegetation coverage increasing up to the present-day forested state. This may have been due to significant changes to regional surface and groundwater conditions following the introduction of sugarcane farming to the area.

Based on the review of historical aerial imagery, fauna habitat values within the Project Site have been severely limited since at least 1974 when most of the Project Site was cleared and all regrowth in the Project Site actively managed/cleared. The remaining vegetation in the area has also been isolated since for the same time period due to landscape scale clearing for agricultural use.

Plate 4.1 Historical aerial imagery - June 1951

Plate 4.2 Historical aerial imagery - January 1964

Plate 4.3 Historical aerial imagery - January 1974

Plate 4.4 Historical aerial imagery - January 1977

Plate 4.5 Historical aerial imagery - July 1992

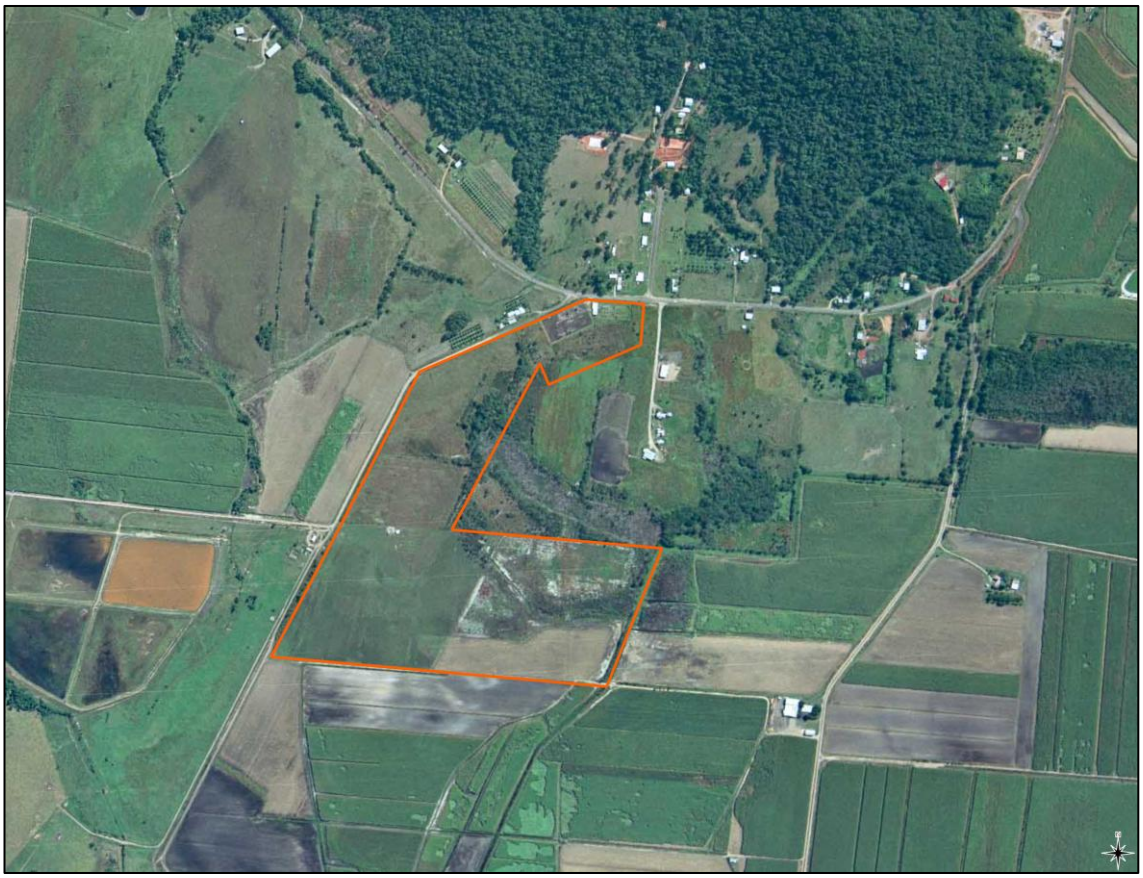
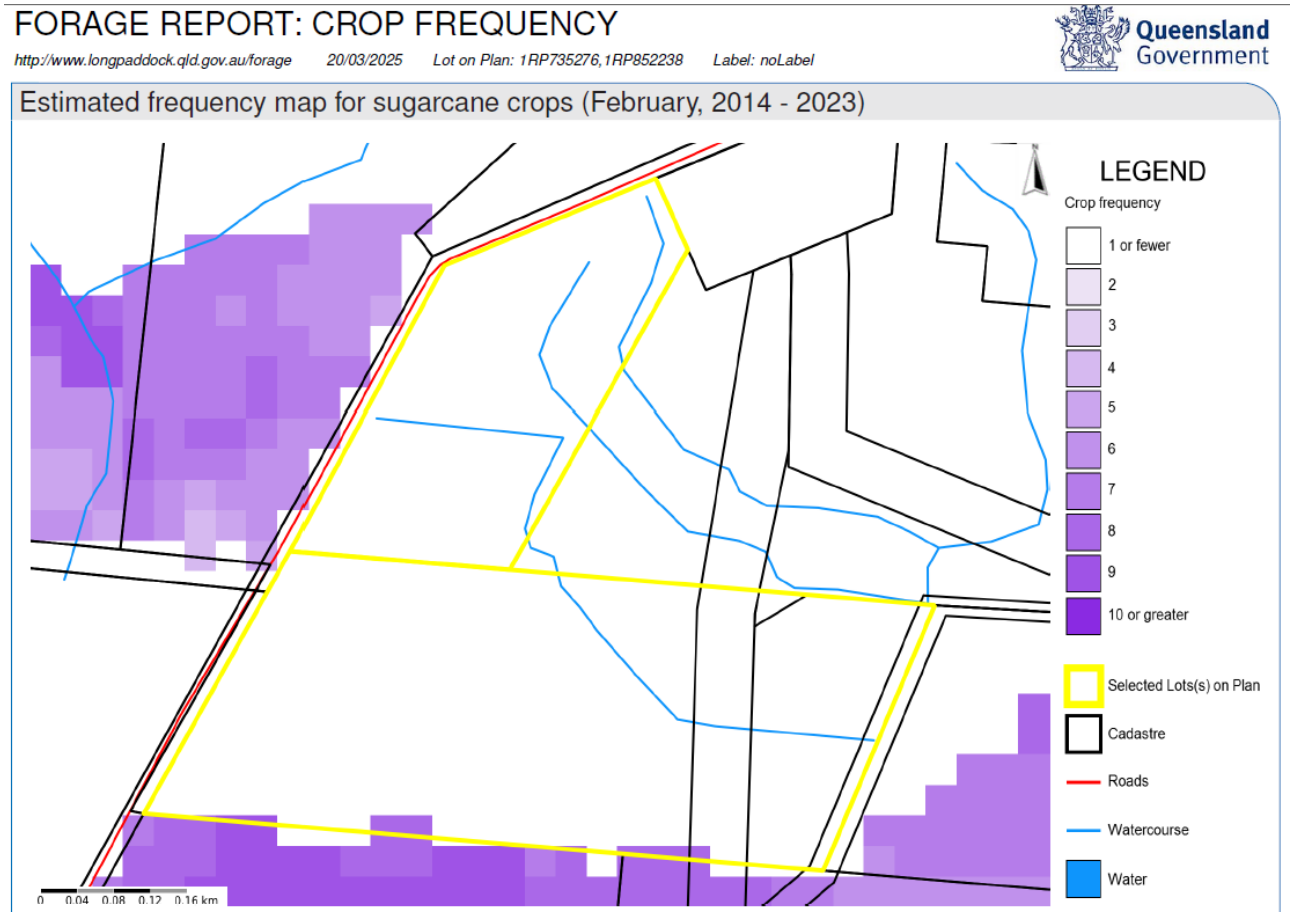


Plate 4.6 Historical aerial imagery - August 2000

4.4.2.2 FORAGE crop frequency

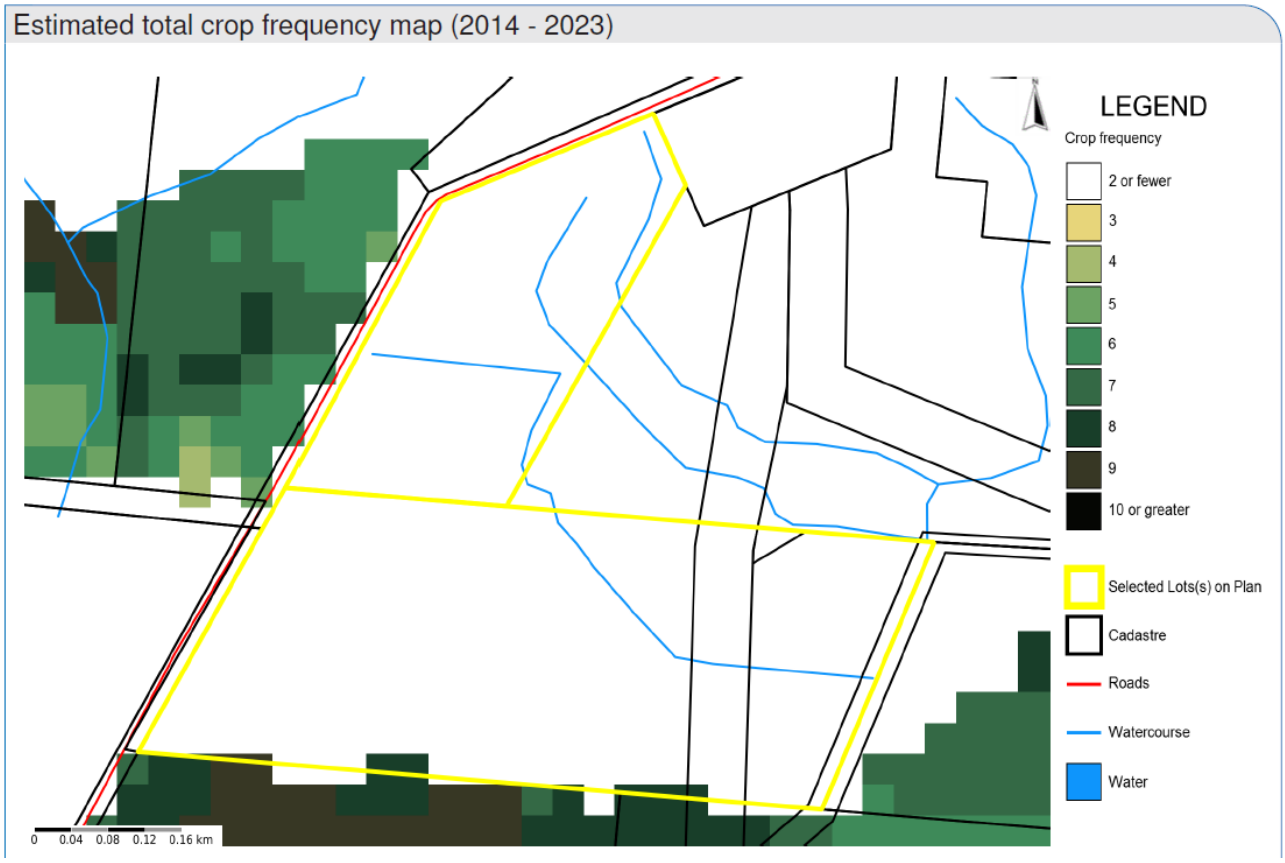
The FORAGE[4] crop frequency report (Zhang & Carter, 2018) uses remote sensing information over a 10-year period to identify areas of land that have a spectral signature indicating that they were cropped in either winter or summer. **Figure 4.4** and **Figure 4.5** show the frequency of any crops and sugarcane crop areas (respectively) across the Project Site from 2014-2023. Crop-frequency mapping uses coloured areas to indicate locations where actively growing crops have been detected three or more times, for the period specified.

Figure 4.4: FORAGE summer crop frequency (February, 2015-2024)



[4] The FORAGE system (developed by the Queensland Government) has been developed to assist grazing enterprises with property-scale information and provides this information through a series of reports.

Figure 4.5: FORAGE sugarcane crop frequency (February, 2015-2024)



5. Regional agricultural land mapping

A review of the SPP interactive mapping system, DAMs and local planning instruments has been undertaken to identify high-quality agricultural land as per State Code 27. Identified high-quality agricultural land is shown in **Figure 5.1**.

5.1 Strategic cropping land

A small slither of SCL is mapped within the Project Site (0.016 ha) on Lot 1 on RP852238. This slither appears to be an artifact of the mapping scale and includes the driveway access to the current dwelling (**Figure 5.1**).

SCL is mapped on adjacent land to the west and southeast.

5.2 Mapped agricultural land classification

5.2.1 Agricultural land suitability

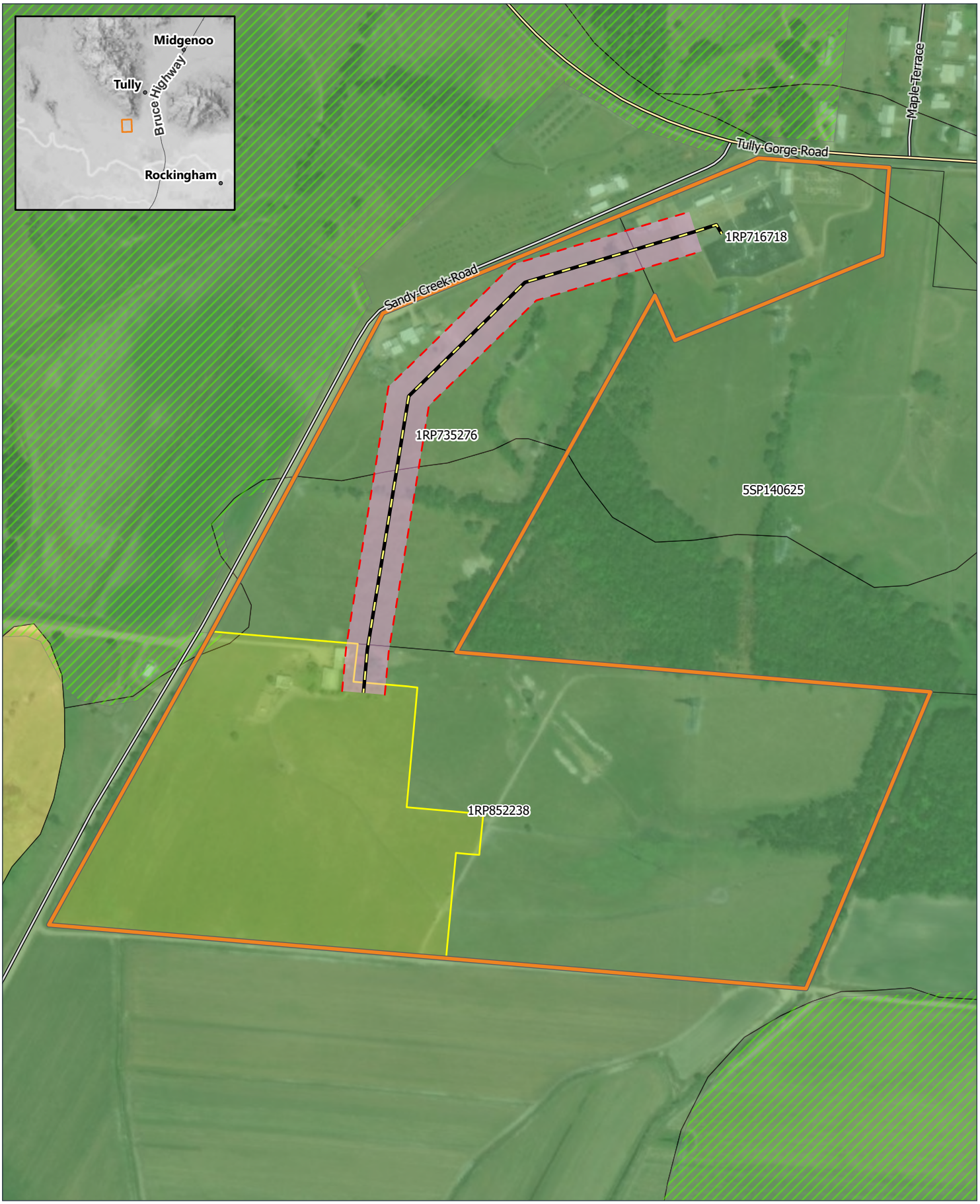
An agricultural land suitability of the Project Site has been undertaken by Cannon et al. (1992) as part of the *Soils of the Cardwell-Tully Area, north Queensland* study. The Project Site is mapped as:

- A1 – Suitable for sugarcane, banana, papaws and improved pastures (Individual UMA's may be suitable for up to 17 additional arable and tree crops).

Notes:

  - A1 – Arable land under 15% slope
  - Suitability for uses such as bananas, papaws and other horticultural tree crops depend on the availability of adequate irrigation water.

Under the modern ALC system used in Queensland this agricultural land suitability would be equivalent to ALC Class A land.



High quality agricultural land mapping (SCL and ALC A/B)

Figure 5.1

DWG No: RWE-002-035 [A]
DATE: 14/05/2026
DRAWN: KB,JC
REVIEWED EJ
SCALE (A4): 1:4,899

N

0 Meters 100

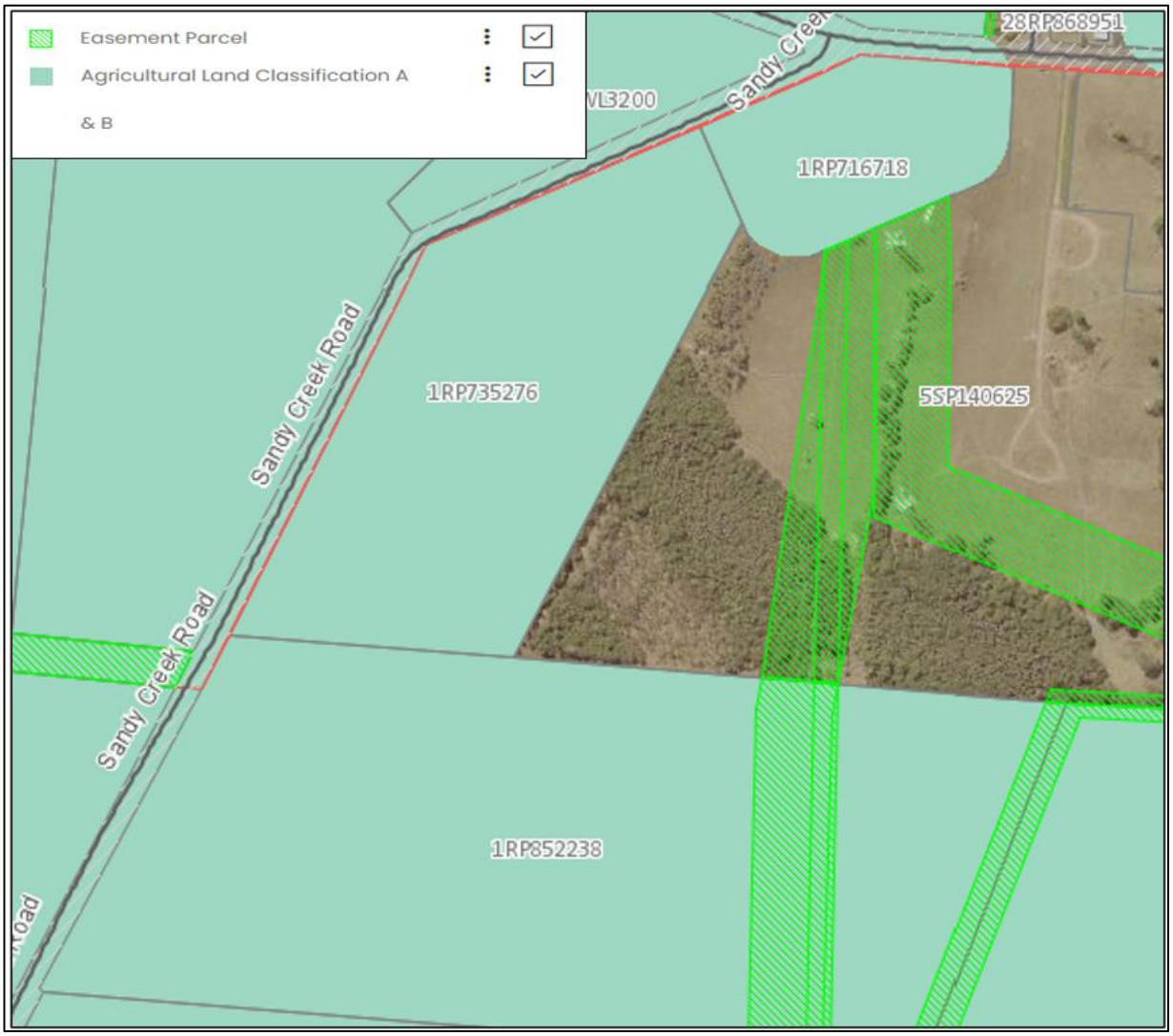
GDA2020

- Project Area
- Development Footprint
- Proposed Transmission Line Corridor
- SCL
- ALC Class A
- ALC Class B
- Cadastral Parcels
- Main Road
- Local Road

5.2.2 Cassowary Coast Regional Council's planning scheme

In the Cassowary Coast Regional Council's planning scheme the Project Site is mapped as Agricultural Land Classification A & B as shown in **Figure 5.2**.

Figure 5.2: Council's planning scheme overlay - Agricultural Land (2020)



5.3 Priority agricultural areas

No part of the Project Site is identified as a PAA.

5.4 Stock Routes

There are no stock routes, stock route reserves or travelling stock facilities in proximity to the Project Site.

6. Assessment of impact on high-quality agricultural land values

Assessment of the Project's potential impacts on high-quality agricultural land values has been undertaken based on the Project's layout described in **Section 3**. Consideration of the impacts based on regional mapping of high-quality agricultural land values (defined in State Code 27) is discussed in **Section 6.1**, including the high-quality cropping soil types in the Project Site.

The Project has been located and designed to minimise loss of high-quality agricultural land and does not cause any fragmentation or alienation of high-quality agricultural land. The BESS Facility development footprint includes existing house and associated sheds, cattle yards and gardens of approximately 0.8 ha.

6.1 Project and regional agricultural land data

6.1.1 Impact extent of regionally mapped high-quality agricultural land

The extent of the Project's impact on regionally mapped agricultural land including SCL, PAA, ALC A and B is presented in **Table 6.1**. Based on the proposed Project Site there is a very small impact to mapped SCL , no impact to PAA and only a relatively small area of mapped ALC Class A land will be impacted.

Table 6.1: Mapped high-quality agricultural land impacted by the Project

Agricultural value	Project Site (ha)	Project Site (%)	Project disturbance area (ha)
SCL	<0.1	0.06	<0.1
PAA	0	0	0
ALC A	28.7	100	9
ALC B	0	0	0
High-quality agricultural land[5]	28.7	100	9

6.1.2 High-quality cropping soil types in the Project Site boundary

As discussed in **Sections 4.1** and **6.1.1**, the scale of the base land resources data used for the development of the mapped high-quality agricultural land is at a scale of 1:50,000 and includes a miscellaneous map unit that has not been assessed in detail.

A review of the soils mapping in the Project Site (**Section 4.1**) has enabled the identification of locally relevant soil types that have the potential to be cropped.

The cropping soils would generally be part of the Hewitt series which form a continuum, becoming progressively poorer drained with distance from higher, better drained levees. They are mapped as poorly drained soils formed on alluvium and are likely to range from Hydrosols to Dermosols in better drained positions. Site drainage and slope across the Project Site are major factors influencing the suitability to support different crop types

6.1.3 Fragmentation of high quality agricultural land

The Project will not cause any fragmentation or isolation of high quality agricultural land with small lot plans and/or wetlands to the north and east of the Project Site. The operational footprint of the BESS is at the northern extent of cane land before these wetland areas.

[5] Total extent of SCL & ALC Class A/B, including overlapping areas.

6.1.4 Stock routes

There will be no impact to the State stock route network.

6.1.5 Mitigation through soil management

The BESS facility is located on high-quality agricultural land.

To enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value (State Code 27 PO11) the BESS facility will be constructed to maintain the fertility and soil attributes of high-quality agricultural land with regard to the following soil management objectives and measures.

These objectives and measures are to be incorporated into relevant construction management plans (e.g. ESCP, CEMP, RMP) and civil design of the Project. Attention will be given to the identification and protection of topsoil resources to enable the reinstatement of the site to maintain the fertility and soil attributes of the land.

Topsoil stripping is one of the most important soil management measure to enable effective rehabilitation. In general the aim is to recover as much topsoil as possible due to its importance in overall soil fertility, whilst minimising introduction of any potentially constrained subsoil materials. The depth of stripping is therefore critically important to be able to maintain the soils fertility at reinstatement.

The objectives of soil management can be summarised as:

- Topsoil management
  - preserve as much of the topsoil as possible
  - ensure topsoil is not degraded during construction and following reinstatement
  - ensure topsoil is not contaminated with other soil and spoil materials
- Subsoil management
  - prevent contamination of topsoil
  - prevent degradation of the subsoil structure
  - avoid or ameliorate subsoil constraints immediately below topsoils
  - ensure reinstatement of soil horizons in the correct order and depths.
- Soil amelioration
  - used to correct a chemical constraint and is often used as a mitigation measure and / or to improve rehabilitation outcomes. The most common ameliorants are the use of gypsum to address sodicity and agricultural lime to neutralise acidic soils.
  - soil sampling may be required to understand the amelioration requirements for specific soils. The P-ESCP outlines soil sampling requirements for the Project.
- Long-term stockpiling
  - should be revegetated to protect from erosion and to maintain fertility (i.e. soil organic matter and biological activity). Long-term stockpiles need to be stable and be integrated into the site stormwater management where appropriate.
- Soil reinstatement
  - at reinstatement, whether that is at the end of construction or at the end of the Project, the site will be reprofiled to be consistent with the landform. Ripping or cultivation of the reinstated/reprofiled subsoil may be required to overcome any compaction that occurs during stockpiling and the reinstatement procedure.
  - upper subsoils may benefit from amelioration with gypsum to minimise the impact of sodicity. Subsoil should be covered with at least 0.1 m of topsoil. Where stripping and stockpiling of topsoils will potentially increase the sodicity and potential surface condition issues gypsum should be applied prior to stripping.
  - topsoil from long term stockpiles would benefit from the addition of fertilisers and organic material such as composts to boost fertility, improve structure and biological activity, particularly where stockpiles have been higher than about 0.3 m.

7. Agricultural economic evaluation

Assessment of agricultural economics has been undertaken utilising available regional and local land use (**Section 4.4**) and productivity data. Agricultural productivity fluctuates based on a range of factors and scales, from seasonal and climatic variability to local soil, farm management and economic considerations. Accordingly, determination of agricultural productivity, viability and economics can only be considered a snapshot of the conditions at the time of the assessment.

7.1 Agricultural productivity

7.1.1 Regional productivity

Agricultural productivity for selected commodities for the Cassowary Coast LGA is presented in **Table 7.1** from the Australian Bureau of Statistics (ABS) *2020-21 Value of Agricultural Commodities Produced (VACP)* collection which measures agriculture's contribution to the Australian economy (ABS 2022). This is the latest available data that allows for the assessment of agricultural productivity at a sub-state level given the discontinuation of the VACP.

Table 7.1: Value of agricultural commodities – 2020-2021

Agricultural commodity	Cassowary Coast LGA[6]			
	Gross value ($m)[7]	Local value ($m)[8]	Gross value (%)	Local value (%)
Hay and broadacre crops				
Broadacre crops - Cereal crops - Sorghum for grain	1,956	1,767	0.00%	0.00%
Broadacre crops - Cereal crops - Rice for grain	22,856	19,601	0.00%	0.00%
Broadacre crops - Non-cereal crops - Pulses and legumes - Chickpeas	891	843	0.00%	0.00%
Broadacre crops - Non-cereal crops - Pulses and legumes - Other pulses (b)	26,168	25,360	0.00%	0.00%
Broadacre crops - Non-cereal crops - Sugar cane - Cut for crushing	176,112,469	165,104,778	27.55%	28.57%
Broadacre crops - All other crops n.e.c.	28,895	26,005	0.00%	0.00%
Broadacre crops - Total	**176,193,235**	**165,178,355**	**27.57%**	**28.59%**
Hay - Total	**98,571**	**98,571**	**0.02%**	**0.02%**
Nurseries, cut flowers or cultivated turf				
Nurseries, cut flowers or cultivated turf - Nurseries - Undercover	5,037,585	4,540,197	0.79%	0.79%
Nurseries, cut flowers or cultivated turf - Nurseries - Outdoor	4,171,302	3,754,171	0.65%	0.65%
Nurseries, cut flowers or cultivated turf - Nurseries - Total	9,208,887	8,294,369	1.44%	1.44%

[6] ABS 2022, Value of Agricultural Commodities Produced by Local Government Area - 2020-21
[7] Gross values are those realised at the point(s) of valuation where ownership of the commodity is relinquished by the agricultural industry.
[8] Local values are derived using survey and administrative sources to remove marketing and transport costs. They are the value placed on recorded production at the place of production, including indirect taxes.

Agricultural commodity	Cassowary Coast LGA[6]			
	Gross value ($m)[7]	Local value ($m)[8]	Gross value (%)	Local value (%)
Nurseries, cut flowers or cultivated turf - Cut flowers - Undercover	17,588	15,830	0.00%	0.00%
Nurseries, cut flowers or cultivated turf - Cut flowers - Outdoor	375,916	338,325	0.06%	0.06%
Nurseries, cut flowers or cultivated turf - Cut flowers - Total	**393,504**	**354,154**	**0.06%**	**0.06%**
Nurseries, cut flowers or cultivated turf - Total	**9,602,391**	**8,648,523**	**1.50%**	**1.50%**
Fruit and nuts (excluding grapes)				
Fruit and nuts - Citrus fruit - All other citrus fruit n.e.c.	241,710	223,592	0.04%	0.04%
Fruit and nuts - Orchard fruit - Avocados	74,957	62,536	0.01%	0.01%
Fruit and nuts - Orchard fruit - Pears (including Nashi)	947	815	0.00%	0.00%
Fruit and nuts - Orchard fruit - All other orchard fruit n.e.c.	2,561,445	2,525,552	0.40%	0.44%
Fruit and nuts - Plantation fruit - Bananas	416,987,957	371,104,241	65.24%	64.23%
Fruit and nuts - Plantation fruit - Pineapples	290,916	222,861	0.05%	0.04%
Fruit and nuts - Other fruit - All other fruit n.e.c.	11,866,532	10,435,895	1.86%	1.81%
Fruit and nuts (excluding grapes) - Total	**432,024,463**	**384,575,493**	**67.59%**	**66.56%**
Vegetables				
Vegetables - Herbs (including basil, coriander and parsley)	49,020	42,969	0.01%	0.01%
Vegetables - Melons (including bitter melon, rock melon and watermelon)	2,634,184	2,356,932	0.41%	0.41%
Vegetables - Pumpkins (including butternut)	92,024	61,258	0.01%	0.01%
Vegetables - All other vegetables n.e.c.	1,601,709	1,361,453	0.25%	0.24%
Vegetables - Total	**4,376,938**	**3,822,612**	**0.68%**	**0.66%**
Livestock products				
Livestock products - Wool	2,418	2,297	0.00%	0.00%
Livestock products - Milk	23,413	23,413	0.00%	0.00%
Livestock products - Eggs	1,826,835	1,648,743	0.29%	0.29%
Livestock products - Total	**1,852,665**	**1,674,453**	**0.29%**	**0.29%**
Livestock slaughtered and other disposals				
Livestock slaughtered and other disposals - Sheep and lambs	1,189	1,077	0.00%	0.00%

Agricultural commodity	Cassowary Coast LGA[6]			
	Gross value ($m)[7]	Local value ($m)[8]	Gross value (%)	Local value (%)
Livestock slaughtered and other disposals - Cattle and calves	13,662,417	12,477,047	2.14%	2.16%
Livestock slaughtered and other disposals - Pigs	1,262	1,149	0.00%	0.00%
Livestock slaughtered and other disposals - Poultry	540,547	533,430	0.08%	0.09%
Livestock slaughtered and other disposals - Other n.e.c.	827,170	785,613	0.13%	0.14%
Livestock slaughtered and other disposals - Total	15,032,585	13,798,316	2.35%	2.39%
Summary - Totals				
Total value of crops	622,295,598	562,323,553	97.36%	97.32%
Total value of livestock	16,885,250	15,472,770	2.64%	2.68%
Total agriculture – all commodities	**639,180,848**	**577,796,323**	**100%**	**100%**

NR. no statistic recorded in census dataset.

n.e.c not elsewhere classified

The primary agricultural productivity of the Cassowary Coast LGA is bananas (65.24% of gross agricultural productivity (GAP)). Sugarcane is the second most significant agricultural commodity of the LGA and 27.57% of GAP. Other minor contributors are livestock -cattle and calves (2.14% of GAP), all other fruit n.e.c. (1.86% of GAP) and nurseries (1.5% of GAP).

7.2 Productivity values

7.2.1 Regional productivity values

Indicative dollar per hectare ($/ha) values for selected commodities are given in **Table 7.2** based on the available land use and productivity data described in **Section 4.4** and **Section 7.1**. These provide a broad indication of land productivity for agricultural land use categories and the relative impacts on agricultural productivity associated with the project.

These figures are limited by the inability to derive the specific land uses to suitable levels to associate to specific commodity production. This limiting factor results in a grouping of land use and commodity into general livestock, cropping and horticultural categories. Given the land use within the Project Site (i.e. cattle grazing), calculations have only been completed for livestock based on:

- productivity values (**Table 7.1**) – livestock including slaughtered, disposals and products (cattle and calves)
- land use (**Table 4.3**) – all livestock land use of grazing modified pastures, irrigated modified pastures and native vegetation.

Table 7.2: Indicative annual commodity values per hectare

Area	Commodity sector	Land use (ha)[1]	Production value ($m)		Value ($/ha)	
			Gross	Local	Gross	Local
Cassowary Coast LGA	Sugarcane	58,830	176,112,469	165,104,778	2,994	2,806
Cassowary Coast LGA	Livestock	37,862	13,662,417	12,477,047	361	330

1. Land use is based on *Catchment scale land use of Australia* (ABARES 2021) described in **Section 4.4.1**.

It is assumed that of the Project Site (28.7 ha) up to ~11.5 ha could be used for sugarcane and the balance could be used as grazing land ~11.2 ha (apart from the wetland area and buffer zone). Based on the indicative annual commodity values per hectare (**Table 7.2**) the Project Site would be valued between $35,404 to $37,861 in gross annual productivity based on an extrapolation from the indicative annual commodity values (**Table 7.3**).

Table 7.3: Estimated study area productivity land value based on regional productivity data

Area	Commodity sector	Estimated land value ($/ha)		Area (ha)	Project land value ($)	
		Gross	Local		Gross	Local
Cassowary Coast LGA	Sugarcane	2,994	2,806	11.5	34,431	32,269
Cassowary Coast LGA	Livestock	361	330	11.2	4,043	3,696
Cassowary Coast LGA	Wetland & infrastructure	0	0	6	0	0
Total				**28.7**	**38,474**	**35,965**

Based on the 2024 Tully sugar district productivity plan (Sugar Research Australia 2024) the average cane yield was 83.4 tonnes per ha (over the last 5 years) and at a gross value of $70 per tonne (sugar and molasses) the 11.5 ha of potential sugarcane land has an estimated productivity value of $67,459. Based on the indicative annual local commodity values per hectare (**Table 7.2**) for livestock and using data from the Tully sugar district productivity plan the Project Site would be valued at approximately $37,861 in gross annual productivity based on an extrapolation from the indicative annual commodity values (**Table 7.4**).

It should be noted that the gross value of $70 per tonne from the 2024 Tully sugar district productivity plan is significantly higher than $57.40 per tonne the Sugar Cane Growers Council announced as the 2026 Forecast Cane Price (Sugar Cane Growers Council – Facebook post on 1 June 2026).

Table 7.4: Estimated study area productivity land value based on Tully sugar district and regional productivity data

Area	Commodity sector	Estimated land value ($/ha)	Area (ha)	Project land value ($)
		Local		Local
2024 Tully sugar district productivity plan	Sugarcane	5,866	11.5	67,459
Cassowary Coast LGA	Livestock	330	11.2	3,696
Cassowary Coast LGA	Wetland & infrastructure	0	6	0
Total			**28.7**	**71,155**

8. State Code 27 compliance summary

The Project Site is high value agricultural land and is mapped as ALC Class A based on CCRC Agricultural Land Overlay map and State ALC mapping. The Project Site only contains a slither of mapped SCL (0.016 ha), is not in proximity to the stock route network and is not in a PPA.

The BESS and associated infrastructure will comprise a total development footprint of approximately 9 ha within the 28.7 ha Project Site and includes an existing house and farm infrastructure such as sheds and cattle yards. The location of the Facility is co-located with existing infrastructure and is located where it will not fragment or alienate use of high quality agricultural land.

The Project Site has not been cropped for at the least the last 10 years and a review historical aerial photography shows evidence of cropping of small area in the southeast of Lot 1 on RP852238 from about 1992.

Although the Project Site is zoned as Rural in Council's Planning Scheme the size of the lots is more suited to rural residential and are not considered to be of a sufficient size that has the potential to support an agricultural production enterprise system.

At a biophysical level the Project Site most likely and valuable agricultural uses is considered to consist of:

- 11.5 ha of potential sugarcane land
- 11.2 ha of potential grazing land,
- 6 ha of wetland that are not suitable for agricultural use (2.5 ha of which mapped as a wetland of high environmental significance) and 1 ha of residential and farm infrastructure.

RWE are looking to continue grazing cattle on the Project Site following construction, however assuming there is no further agricultural production on the entirety of the Project Site the Project will result in the loss of approximately 11.5 ha of cropping land that would potentially be used for sugarcane production and 11.2 ha of grazing land.

Using data from the 2024 Tully sugar district productivity plan (sugarcane production data and cane gross value) and regional productivity data from the ABS for livestock grazing the estimated impact to agricultural productivity is a gross annual productivity loss of $71,155.

The Project impact is insignificant to the sugarcane industry based on the Project removing sugarcane land from future production out of approximately 56,000 ha in the LGA (0.02%). On a productivity basis this loss of potential sugarcane production is insignificant and as a percentage of the land use in the LGA is 0.02%.

The Project is considered to not have an unacceptable loss of high-quality agricultural land based on the small size of the lots that would be unlikely to be able to support an agricultural production enterprise system in the future and the insignificant impact that the loss of potential sugarcane land compared to the size of the industry in the CCRC area.

9. References

ABARES 2024, Catchment scale land use of Australia – Update December 2023, Australian Bureau of Agricultural and Resource Economics and Sciences.

ABARES 2024a, Catchment scale land use profile dashboard – Cassowary Coast Regional local government area, Australian Bureau of Agricultural and Resource Economics and Sciences. Accessed 13th March 2025. Available: https://www.agriculture.gov.au/abares/aclump/land-use/catchment-scale-land-use-profile-lga

ABS 2022, Value of Agricultural Commodities Produced by Local Government Area - 2020-21, Australian Bureau of Statistics, Canberra, Commonwealth of Australia. Accessed 13th March 2025. Available: https://www.abs.gov.au/statistics/industry/agriculture/value-agricultural-commodities-produced-australia/latest-release#data-download

Cannon MG, Smith CD and Murtha GG (1992) *Soils of the Cardwell-Tully Area, north Queensland*. CSIRO Division of Soils. IV. Title. (Series : Division of Soils divisional report; no 115). ISBN 0 643 05081 7.

DSITI & DNRM (2015) *Guidelines for agricultural land evaluation in Queensland* (2nd edn). Queensland Government (Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines), Brisbane, Queensland.

Sugar Research Australia (2024). *Sugar Research Australia: District Productivity Plan – Tully 2024*. Version control: January 2024. sugarresearch.com.au

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