

# **CAMBRAY CONSULTING**

TRAFFIC ENGINEERING + TRANSPORT PLANNING



# Tully BESS Project TRAFFIC IMPACT ASSESSMENT REPORT

Prepared for RWE Renewables Australia Pty Ltd C/- Attexo Group 19 September 2025



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# **Appendices**

#### Appendix A

Project Area Site Plan



#### 1.0 Introduction

Attexo has been engaged by RWE Renewables Australia Pty Ltd (**The Proponent**) to prepare the Development Application (DA) for a Battery Energy Storage System (BESS) to be known as the Tully BESS Project (**The Project**), located approximately 4km south-west of Tully, Queensland.

The **Project Area** is located at 37-71 Sandy Creek Road, Tully. The Project Area is formally described as Lot 1 on RP735276 and Lot 1 on RP852238.

Cambray Consulting Pty Ltd (Cambray) has been engaged to prepare a Traffic Impact Assessment (TIA) Report to support the DA for consideration by Cassowary Coast Regional Council (Council).

#### 1.1 Scope of Works

As part of the Development Application process, this TIA report has been prepared to consider the proposed vehicle access locations and potential traffic generation during the construction and operational phases to determine if upgrades may be triggered. This assessment includes the following tasks:

- Overview of the Route Assessment and Project Transport Route Options;
- Location and form of intersections between the State Controlled Road Network and the Local Road Network expected to be used by construction and operational traffic;
- Review of the proposed access to the BESS site from the Local Road Network;
- Summary of existing road features (turn treatments and road corridors);
- Overview of the background traffic at key locations;
- Anticipated traffic generation for the construction and operational phases;
- Qualitative assessment of the development generated traffic impacts; and
- A turn warrant assessment from State Controlled Road Network into Local Road Network.

## 1.2 Limits of Report

This report takes into account the particular instructions and requirements of our client. Cambray Consulting has taken care in the preparation of this report, however it neither accepts liability nor responsibility whatsoever in respect of:

- Any use of this report by any third party;
- Any third party whose interests may be affected by any decision made regarding the contents of this report; and/or
- Any conclusion drawn resulting from omission or lack of full disclosure by the client, or the clients' consultants.

#### 1.3 Safety in Design

Within our scope, we have identified safety in design issues and potential hazards, whenever reasonably practicable within our field of expertise. It is not considered reasonably practicable to identify all potential hazards which may occur throughout the life of a project, including during detailed design and construction activities. It is strongly recommended that safety in design issues be reviewed during all design and construction stages of the project.



#### 1.4 Qualifications

This report was prepared by:

- Andrew Douglas, Director BE Civil (Hons), MSc Env Man, FIEAust, CPEng, RPEQ 6691;
- Rhys Trotman, Senior Transport Engineer BE Civil (Hons); and
- Reece Ralston, Transport Engineer BE Civil.



#### 2.0 Context

#### 2.1 Project Area

The Project Area is located at 37-71 Sandy Creek Road, Tully. The Project Area is formally described as Lot 1 on RP35276 and Lot 1 on RP852238. The Project Area is approximately 28.7 hectares (ha) in size.

The Project Area is located within the Cassowary Coast Regional Council (Council) Local Government Area (LGA). The Project Area is identified as Rural Zoning by Council's Planning Scheme.

## 2.2 Surrounding Road Network

The road network adjacent to the Project Area is illustrated in **Figure 2.1** and the key characteristics these roads are summarised in **Table 2.1**.



Figure 2.1: Surrounding Road Network

**Table 2.1: Surrounding Road Network Characteristics** 

Road Authority		Hierarchy	Speed Limit		
Sandy Creek Road	Council	Rural Road	100km/h*		
Tully Gorge Road	Council	Arterial	60km/h / 70km/h		
Dean Road	Council	Arterial	80km/h		
Bruce Highway State		Highway	80km/h / 80km/h		

<sup>\*</sup>Unposted, Rural Default Speed



## 3.0 Project Review

#### 3.1 Project Overview

#### 3.1.1 Overview

The Project proposes to construct and operate a 200MW/800MWh BESS Facility. The Project site plan is illustrated in **Figure 3.1** and a high-resolution copy has been included in **Appendix A**.



Figure 3.1 Project Site Plan

The battery units will cover an area of approximately 2.5ha and will include up to 188 battery units, associated infrastructure, inverters, MV (Medium-Voltage) transformers, internal access roads, hardstand and security fencing.

Each battery unit is anticipated to weigh approximately 39 tonnes and be 8.6 m in length, 2.8 m in height and 2.1 m wide. Most battery units are approximately in the form of a 40-foot (12.2 m) shipping container.

The associated transformers / inverters (up to 47 units are estimated, subject to final equipment selection and design) would similarly be trucked to Site and arranged onto footings or screw piles via mobile crane.



#### 3.1.2 Construction Period

Construction of the Project is anticipated to begin in 2027 and is expected to take approximately 18 months. Construction will be undertaken from 6:30pm six (6) days per week.

As the construction period is anticipated to generate the highest traffic demands, this assessment will focus on the construction impacts of the development.

#### 3.1.3 Project Area Access

The Project Area will gain access to the local road network via two (2) accesses to Sandy Creek Road. Access arrangement will be discussed in further detail in **Section 5**.

It is understood that the project team has been advised that two (2) accesses are required to meet QFES expectations.

#### 3.1.4 Car Parking Arrangements

The Project is proposed to provide a dedicated parking area containing seven (7) parking spaces (see **Figure 3.2**).

We also note that there is sufficient space on-site to accommodate any overflow parking within the Project Area when demand beyond this carpark required.



Figure 3.2 Primary Parking Area

The proposed car parking areas should be designed generally in accordance with AS2890.1, noting the following minimum critical parking module dimensions:

- Standard parking bay dimensions of 2.6m x 5.4m;
- Person with Disability (PWD) parking bay dimensions of 2.4m x 5.4m with a shared space of 2.4m x 5.4m; and
- Parking aisle width of 6.2m.

We are of the view that the proposed parking areas can comply with these critical dimensions.



#### 3.2 Project Traffic Generation

#### 3.2.1 Construction Phase

The highest traffic impacts of the Project are anticipated during the Construction Phase, which includes:

- Delivery BESS components to the site via the State Controlled Road (SCR) Network;
- Delivery of HV (High-Voltage) and MV (Medium-Voltage) transformers to the site via the SCR Network:
- Transportation of materials and plant to and from Project area; and
- Movement of construction workers between population centres and the Project area.

Maximum traffic generation is expected to be 40 light vehicles and 30 heavy vehicles travelling to and from the Project Area each day, with an average of 30 light vehicle movements daily and 15 heavy vehicle movements daily. These movements are detailed in **Table 3.1** and **Table 3.2**.

Table 3.1 Maximum Traffic Generation During the Civil Works / Installation Phase

Movements	Light Vehicles	Heavy Vehicles	Total
Daily Vehicles	40	30	70
Two-way Movements 80		60	140

Table 3.2 Average Traffic Generation During the Civil Works / Installation Phase

Movements	Light Vehicles	Heavy Vehicles	Total
Daily Vehicles	30	15	45
Two-way Movements	60	30	90

The construction workforce is expected to commute using private vehicles as no existing active or public transport networks are accessible within the Project's vicinity.

#### 3.2.2 Operations Phase

The expected number of traffic movements during the operational phase is anticipated to be very low. Daily movements of light vehicles are expected to be around eight (8) vehicle trips. Service vehicles may visit the site one (1) to two (2) times a week, including occasional maintenance trucks, refuse collection vehicles and the like.

Therefore, we estimate that the Project may generate up to eight (8) trips per day and it is expected that the operational traffic will have a negligible effect on the local road network.



#### 3.3 Project Transport Route

During the construction period, there may be a need for a specialised trailer for delivery of the 132/33kV transformer. Low loaders, truck and dog tippers, 26m B-Double side tippers, and up to 26m B-Double flatbed trucks for the delivery of equipment and components. The delivery of construction machinery and BESS components will travel along the State Controlled Road (SCR) Network to the Project site.

While it is still to be determined where the components may be transported from, a high-level review of movements to the Project Area has been undertaken to determine the impact on the road network.

We have identified two (2) potential options for the Project Transport Route (PTR), being:

- PTR Option 1 Port of Townsville; and
- PRT Option 2 Port of Cairns.

It should be noted that both PTR options utilise the same local road route from the Bruce Highway to the Project Area.

#### 3.3.1 PTR Option 1 – Port of Townsville

PTR Option 1 has deliveries travelling to the Project Area via the Port of Townsville. The total distance of this route is approximately 210km. The roads travelled are summarised in **Table 3.3** and illustrated in **Figure 3.3**.

Table 3.3 Approximate Project Transport Route - Route Option 1

Project Transport Route (PTR)		Project Transport Route (PTR)	
Dutton Street*		Dean Road**	
Townsville Port Road (841)		Tully Gorge Road**	
North Townsville Road (832)		Sandy Creek Road**	
Bruce Highway (10M-N)		-	
	` ,	,	

<sup>\*</sup> Townsville City Council (TCC) Managed Roads

<sup>\*\*</sup> Cassowary Coast Regional Council (CCRC) Managed Roads

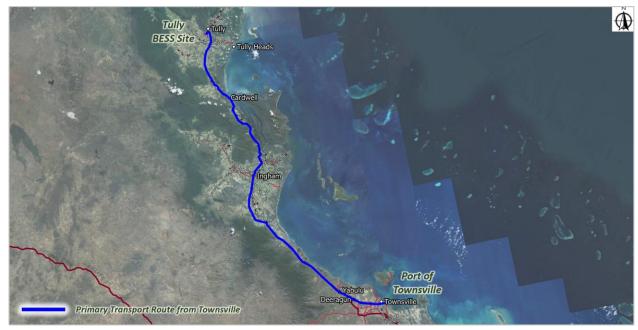


Figure 3.3 Project Transport Route from Port of Townsville



#### 3.3.2 PTR Option 2 – Port of Cairns

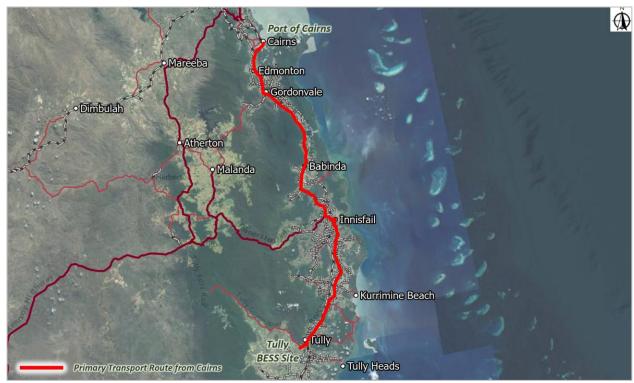
PTR Option 2 has deliveries travelling to the Project Area via the Port of Cairns. The total distance of this route is approximately 145km. The roads travelled are summarized in **Table 3.4** and illustrated in **Figure 3.4**.

Table 3.4 Approximate Project Transport Route – Route Option 2

Project Transport Route (PTR)	Project Transport Route (PTR)	
Centenary Drive*	Dean Road**	
Benwell Road*	Tully Gorge Road**	
Port Connection Road (810)	Sandy Creek Road**	
Bruce Highway (10N-P)	-	

<sup>\*</sup> Cairns Regional Council (CRC) Managed Roads

<sup>\*\*</sup>Cassowary Coast Regional Council (CCRC) Managed Roads



**Figure 3.4 Project Transport Route from Port of Cairns** 

## 3.4 State Controlled Road Network Heavy Vehicle Routes and Restrictions

A review of the SCR network for Heavy Vehicle Routes and Restrictions was conducted for the entire extent of the PTR options to identify any potential limitations and restrictions.

The SCR routes were assessed for the extent of pre-approved routes for the following heavy vehicle classes:

- 25/26m B-double and PBS 2A (B25/26) which include;
  - Vehicles configured to be up to 26 metres in length and 62.5 tonnes;
- Higher Mass limits (HML) which;
  - o Allows for an increase in mass limit for specific axle group configurations; and
- The Queensland Critical Roads Network, which are;
  - o The roads that the State seeks to direct Over Mass Over Height Vehicles to use.



Further, the SCR network appears to have the capacity to accommodate up to and including 26m B-double combinations 'as of right' as well as Over Sized Over Mass (OSOM) combinations of up to 36.0m in length and 4.5m in height on the Critical Road network during the day, provided they are accompanied by pilot and escort vehicles.

A summary of required pilot and escort vehicles for OSOM Movement is provided in **Table 3.5**.

Table 3.5 SPV Prime Mover and Trailer Combinations for OSOM Movements

Maximum Vehicle Length	Condition#	Critical Road Width	Other Roads Width	Pilot Required	Escort Required
26.0m*	5. Day	3.5m	3.5m	No	No
26.0111	6. Night	3.1m	3.1m	No	No
35.0m	7. Day	4.5m	5.5m	Yes	Yes

<sup>\*</sup>Maximum length on B-Double approved routes

#### 3.4.1 SCR Network - PTR Option 1

Extracts from the SCR Heavy Vehicle Routes and Restrictions mapping are illustrated for PTR Option 1 between **Figure 3.5** to **Figure 3.8**.



Figure 3.5 PTR Option 1 - 25/26m B-double Network

<sup>\*</sup>National Class 1 Load Carrying Vehicle Dimensions Exemption Notice 2024 (No. 1).



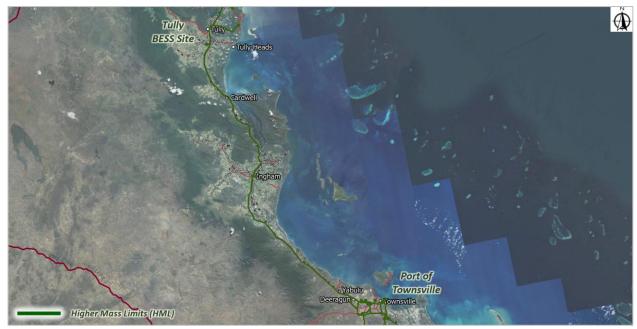


Figure 3.6 PTR Option 1 - Higher Mass Limits Network



Figure 3.7 PTR Option 1 - Critical Roads Network



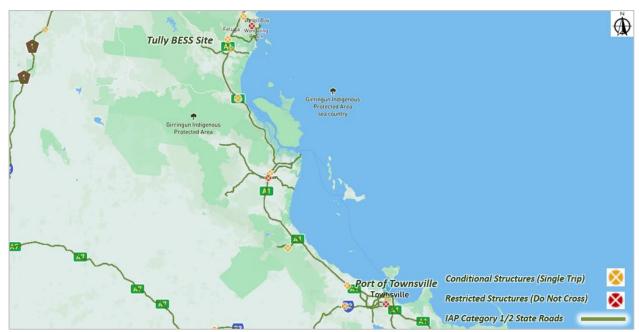


Figure 3.8 PTR Option 1 - IAP Category 1/2 State roads (QLD) (NHVR)

The roads shown in **Figure 3.5** to **Figure 3.8** demonstrate the existing approved capacity along the SCR network, as follows:

- B25/26 B-Double vehicle combinations approved between Port of Townsville and Sandy Creek Road, covering up to approximately 150m north of the Project Area;
- Higher Mass Limits (HML) vehicle combinations between the Port of Townsville and Dean Road, located approximately 3.0km east of the Project Area; and
- The route between the Port of Townsville and Dean Road is included in the SCR Critical Road Network.

The review indicates that the SCR can accommodate B-Doubles between the Port of Townsville and Sandy Creek Road. Access may be negotiated with relevant authorities, given the proximity of the Project Area to the end of the gazetted network for these vehicle combinations.

Single trip permits may be required for any OSOM vehicle movements along this route, specifically for the John Row Bridge and Meunga Creek bridge crossings along the Bruce Highway.

#### 3.4.2 SCR Network - PTR Option 2

Extracts from the SCR Heavy Vehicle Routes and Restrictions mapping are illustrated for PTR Option 2 between **Figure 3.9** to **Figure 3.12**.



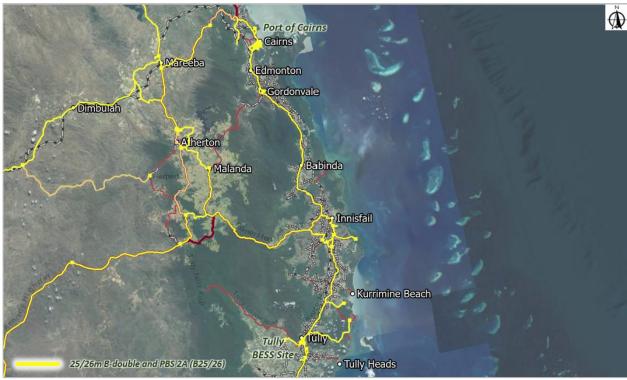


Figure 3.9 PTR Option 2 - 25/26m B-double Network



Figure 3.10 PTR Option 2 - Higher Mass Limits Network





Figure 3.11 PTR Option 2 - Critical Roads Network

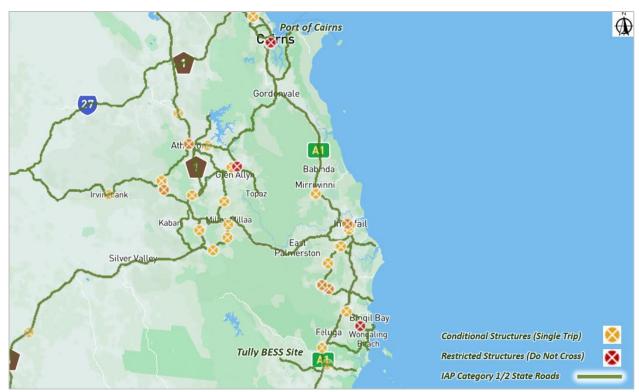


Figure 3.12 PTR Option 2 - IAP Category 1/2 State roads (QLD) (NHVR)



The roads shown in **Figure 3.9** to **Figure 3.12** demonstrate the existing approved capacity along the SCR network, as follows:

- B25/26 B-Double vehicle combinations approved between Port of Cairns and Sandy Creek Road, covering up to approximately 150m north of the Project Area;
- Higher Mass Limits (HML) vehicle combinations between the Port of Cairns and Dean Road, located approximately 3.0km east of the Project Area; and
- The route between the Port of Cairns and Dean Road is included in the SCR Critical Road Network.

The review indicates that the SCR can accommodate B-Doubles between the Port of Cairns and Sandy Creek Road. Access may be negotiated with relevant authorities, given the proximity of the Project Area to the end of the gazetted network for these vehicle combinations.

Single trip permits may be required for OSOM vehicle movements along this route, specifically for the Centenary Bridge, Sweeneys Creek Bridge and Bamboo Creek bridge crossings through Innisfail, and the Banyan Creek Bridge near Tully.

#### 3.5 Local Road Network Design Characteristics

A desktop review of the local road network has been undertaken against the following:

- Cassowary Coast Regional Council Planning Scheme 2015 (v.4) (Council PS);
- Cassowary Coast Regional Council Road Hierarchy Overlay Maps;
- Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual D1 Road Geometry;
- Australian Standards AS2890 set Parking Facilities; and
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (AGRD4a).

#### 3.5.1 Dean Road

Dean Road is a Council road that intersects with state-controlled Bruce Highway. A review was undertaken to determine the road characteristics which are summarised in **Table 3.6.** 

Table 3.6 Council Planning Scheme Road Characteristics – Dean Road

Parameter	Requirement	
Road Hierarchy	Arterial Road (No Median)	
Speed Limit 80km/h		
Design Traffic Generation >6000 vpd		
Design Vehicle	25/26m B-Double	
Carriage Way Width	6.6m min.	
Verge width	7.5m min. (each side)	
Surface/s	Sealed	
Direct Lot Access Function	Restricted	

An overview of the existing Dean Road configuration is illustrated in **Figure 3.13** and attributes are, as follows:

- Two-way with a centre seal pavement;
- Sealed pavement width of circa 8.5m;
- Sealed shoulders circa 1.2m on either side; and
- Basic side table drains.



The existing configuration of Dean Road is generally in accordance with Council's prescribed characteristics. This review has not identified any issues that would prevent the Project traffic from using Dean Road to access the Project Area.



Figure 3.13 Dean Road at Bruce Highway facing West

#### 3.5.2 Tully Gorge Road

Tully Gorge Road is a Council road that intersects with Dean Road. A review was undertaken to determine the road characteristics which are summarised in **Table 3.7.** 

Table 3.7 Council Planning Scheme Road Characteristics – Tully Gorge Road

Parameter	Requirement	
Road Hierarchy	Arterial Road (No Median)	
Speed Limit	70km/h*	
Design Traffic Generation	>6000 vpd	
Design Vehicle	25/26m B-Double	
Carriage Way Width 7m min.		
Verge width	4.5m min. (each side)	
Surface/s	Sealed	
Direct Lot Access Function	Restricted	

<sup>\*60</sup>km/h zone approximately 1.2km beyond Bryant Road intersection

An overview of the existing Tully Gorge Road configuration is illustrated in **Figure 3.14** and attributes are, as follows:

- Two-way with a centre seal pavement;
- Sealed pavement width of circa 7m;
- Unsealed shoulders; and
- Basic side table drains.

The existing configuration of Tully Gorge Road is generally in accordance with Council's prescribed characteristics. This review has not identified any issues that would prevent the Project traffic from using Tully Gorge Road to access the Project Area.





Figure 3.14 Tully Gorge Road at Dean Road facing West

#### 3.5.3 Sandy Creek Road

Sandy Creek Road is a Council road that intersects with Tully Gorge Road. A review was undertaken to determine the road characteristics which are summarised in **Table 3.8.** 

Table 3.8 Council Planning Scheme Road Characteristics – Sandy Creek Road

	·	
Parameter	Requirement	
Road Hierarchy	Rural Road	
Speed Limit	100km/h (Unsigned)	
Design Traffic Generation	<100 vpd	
Design Vehicle	19m Articulated Vehicle	
Carriage Way Width	3.5m / 5.5m min.	
Verge width	4.5m min. (each side)	
Surface/s	Sealed / Unsealed	
Direct Lot Access Function	Yes	

An overview of existing Sandy Creek Road is illustrated in **Figure 3.15** and Error! Reference source not found.. The key attributes are as follows:

- Two-way undivided;
- Sealed for circa 300m beyond the Tully Gorge Road intersection, otherwise unsealed;
- Sealed pavement width of circa 3.5m, unsealed width of circa 5.5m;
- Unsealed shoulders; and
- Basic side table drains.

The existing configuration of Sandy Creek Road is generally in accordance with Council's prescribed characteristics. This review has not identified any issues that would prevent the Project traffic from using Sandy Creek Road to access the Project Area.





Figure 3.15 Sandy Creek Road at Tully Gorge Road facing South



Figure 3.16 Sandy Creek Road at Project Area Frontage facing South

## 3.6 Project Transport Route Load Capacity

#### 3.6.1 Load Capacity - PTR Option 1

Heavy Vehicle Loading Capacity of the roads on the PTR Option 1 route from the Port of Townsville to the Project Area is summarised in **Table 3.9.** 

Table 3.9 PTR Heavy Vehicle Loading Capacity – PTR Option 1

Road	ID	25/26m B- double PBS 2A	HML	Critical Road	
Townsville Port Road	841				
North Townsville Road	832		Yes	Yes	
Bruce Highway	10	Yes			
Dean Road	-				
Tully Gorge Road	-		No	No	
Sandy Creek Road	-	No			

Based on the review provided in **Table 3.9**, the project route is accessible by 25/26m B-double and PBS 2A (B25/26) vehicles up to the intersection of Tully Gorge Road and Sandy Creek Road. The project route is additionally accessible by HML vehicles between the Port of Cairns and up to the intersection of Bruce Highway and Dean Road.



Sandy Creek Road may require approval for configurations larger than 19m Semi-Trailer. Further discussions with Council may be required.

#### 3.6.2 Load Capacity – PTR Option 2

Heavy Vehicle Loading Capacity of the roads on the PTR Option 2 route from the Port of Cairns to the Project Area is summarised in **Table 3.10.** 

Table 3.10 PTR Heavy Vehicle Loading Capacity - PTR Option 2

Road	ID	25/26m B-double PBS 2A	HML	Critical Road
Port Connection Road	810		Yes	Vos
Bruce Highway	10	Voc	res	Yes
Dean Road	-	Yes		
Tully Gorge Road	-		No	No
Sandy Creek Road	-	No		

Based on the review provided in **Table 3.10**, the project route is accessible by 25/26m B-double and PBS 2A (B25/26) vehicles up to the intersection of Tully Gorge Road and Sandy Creek Road. The project route is additionally accessible by HML vehicles between the Port of Townsville and up to the intersection of Bruce Highway and Dean Road.

Sandy Creek Road may require approval for configurations larger than 19m Semi-Trailer. Further discussions with Council may be required.

### 3.7 Road Crash History Review

A review of the road crash history in the vicinity of the site was undertaken using the available road crash data available from the Transport and Main Roads database. The reviewed areas included:

- Bruce Highway / Dean Road intersection; and
- Tully Gorge Road / Sandy Creek Road intersection.

The most recent 10 years of publicly available data (01 Jan 2014 – 30 December 2023) has been reviewed and documented, noting surface upgrades to Bruce Highway prior to this period.

Importantly, no casualty road crashes were recorded on Sandy Creek Road in the vicinity of the Project Area.



#### 3.7.1 Bruce Highway / Dean Road Intersection

A total of three (3) road crashes were observed within the vicinity of the Bruce Highway / Dean Road intersection, as illustrated in **Figure 3.17.** 



Figure 3.17 Recoded Road Crashes - Bruce Highway / Dean Road Intersection

A summary of the of the recorded crash data is provided for reference in Table 3.11.

Table 3.11 Summary of Roach Crashes - Bruce Highway / Dean Road Intersection

Crash Number Year		Crash Severity	Crash Severity Crash Type		Description	
Bruce Highway / Dean Road						
111736	2014	Medical Treatment	Multi-Vehicle	202	Vehs Opposite Approach: Through-Right	
355272	2014	Hospitalisation	Multi-Vehicle	302	Vehs Same Direction: Left Rear	
319936	2023	Hospitalisation	Single Vehicle	708	Off Path-Striaght: Mounts Traffic Island	

Key items to consider based on the publicly available data as summarised in **Table 3.11**, are as follows:

- A total of three (3) crashes have occurred within the last 10 years;
- A total of two (2) FSI (fatal or serious injury) crashes were reported in proximity to these intersections within the last 10 years; and
- There is no discernible crash pattern, with all three (3) crashes being of different crash types. This suggests that there is no specific road feature or design deficiency at this location which may be directly contributing to the recorded vehicle crashes.



#### 3.7.2 Tully Gorge Road / Sandy Creek Road Intersection

A total of two (2) road crashes were observed within the vicinity of the Tully Gorge Road / Sandy Creek Road intersection, as illustrated in **Figure 3.18.** 



Figure 3.18 Recoded Road Crashes - Tully Gorge Road / Sandy Creek Road Intersection

A summary of the of the recorded crash data is provided for reference in **Table 3.12**.

Table 3.12 Summary of Roach Crash History - Tully Gorge Road / Sandy Creek Road Intersection

Crash Number	Year	Crash Severity	Crash Type	DCA	Description
Tully Gorge Road / Sandy Creek Road					
214034	2022	Hospitalisation	Multi-Vehicle	301	Vehs Same Direction: Rear End
266314	2022	Hospitalisation	Single Vehicle	803	Off Path-Curve: Off Cway Rt Bend Hit Obj

Key items to consider based on the publicly available data as summarised in **Table 3.12**, are as follows:

- A total of two (2) crashes have occurred within the last 10 years, both of which are FSI (fatal or serious injury) crashes;
- Both crashes occurred on the western approach to the intersection, which is not expected to be used by project-generated traffic; and
- There is no discernible crash pattern, with both crashes being of different crash types. This suggests that there is no specific road feature or design deficiency at this location which may be directly contributing to the recorded vehicle crashes..

#### 3.7.3 Summary

Based on the limited number of crashes recorded in the last 10 years, it can be concluded that there is no specific road feature or design deficiency at this location which may be directly contributing to the recorded vehicle crashes.

Therefore, there are no safety-related mitigation works required to facilitate vehicle movements to the Project Area.



#### 4.0 Access Route Intersection Review

The following section discusses access from the state-controlled road network to the local road network, and a review of the relevant intersections has been undertaken against the following:

- Cassowary Coast Regional Council Planning Scheme 2015 (v.4) (Council PS);
- Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual *D1* Road Geometry;
- Australian Standards AS2890 set Parking Facilities; and
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (AGRD4a).

#### 4.1 Bruce Highway / Dean Road Intersection

The signalised intersection of Bruce Highway and Dean Road (as illustrated in Figure 4.1), consists of:

- Northbound approach A Full Length Auxiliary Left Turn Treatment (AUL) into Dean Road; and
- Southbound approach A Full Length Channelised Right Turn Treatment (CHR) into Dean Road.

Both the left and right turn lanes that could be used as part of the PTR represent the highest level of treatment. Therefore, an assessment of the turn lane warrants is not required. Additionally, no mitigation works are required to facilitate the project generated traffic at this intersection.

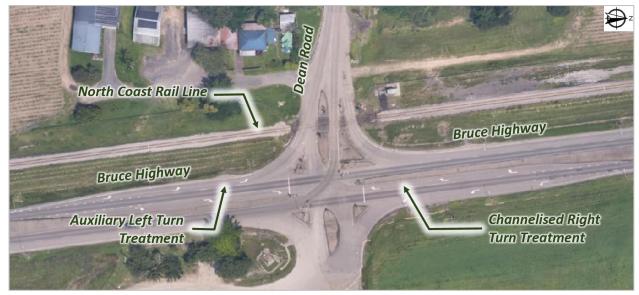


Figure 4.1 Existing Bruce Highway / Dean Road Turn Lane Arrangements

## 4.2 Tully Gorge Road / Sandy Creek Road

The intersection of Tully Gorge Road and Sandy Creek Road (as illustrated in Figure 4.2), consists of:

- Westbound approach A Simple Left Turn Treatment into Sandy Creek Road; and
- Eastbound approach A Simple Right Turn Treatment into Sandy Creek Road.



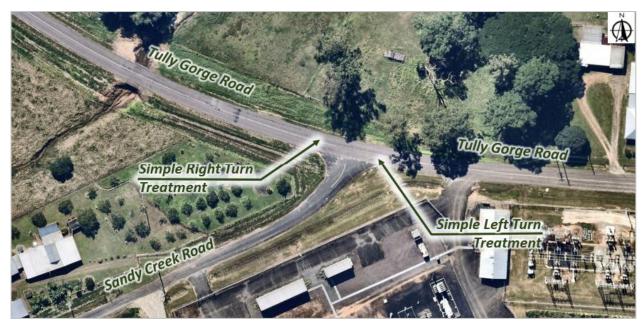


Figure 4.2 Existing Tully Gorge Road / Sandy Creek Road Turn Lane Arrangements

#### 4.2.1 Sight Distance

A desktop sight distance review was conducted for the intersection of Tully Gorge Road and Sandy Creek Road.

The recommended Safe Intersection Sight Distance (SISD) to / from this intersection is summarised in **Table 4.1** and are illustrated in **Figure 4.3**.

**Table 4.1 Sight Distance Parameters** 

Parameter	Requirement		
Posted Speed limit	70km/h		
Design Speed (Posted +10km/h)	80km/h		
Reaction Time	2.0 sec		
SISD AGRD4a	181m		

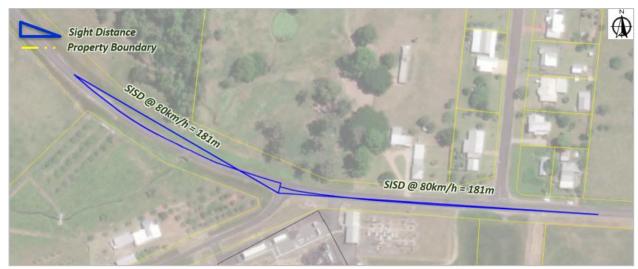


Figure 4.3 Safe Intersection Sight Distance at Tully Gorge Road and Sandy Creek Road



The sightlines to / from Sandy Creek Road are shown in Figure 4.4 and Figure 4.5.



Figure 4.4 From Sandy Creek Road facing East along Tully Gorge Road



Figure 4.5 From Sandy Creek Road facing West along Tully Gorge Road

Based on the design speed of 80km/h at a 2.0 second reaction time, the available sight distances and existing intersection configuration at the intersection of Tully Gorge Road and Sandy Creek Road is consistent with AGRD4a guidelines.



## 5.0 Project Area Access Review

#### 5.1 Location and Configuration

The Project Area will be accessed from Sandy Creek Road via two (2) crossovers, as illustrated in **Figure 5.1**.



Figure 5.1: Project Area Access Locations

It is recommended that the access crossovers are designed to be generally in accordance with the FNQROC Standard Drawing Rural Allotment Accesses (S1105). It is also recommended that the access width at the property boundary be 10m, to be sufficiently wide to accommodate the design heavy vehicles.

## 5.2 Sight Distance Assessment

The sight distance for the Project Area Access has been assessed in accordance with AS2890.1 and AS2890.2. The key parameters are summarised in **Table 5.1**.

Table 5.1 AS2890 Project Area Access Sight Distance Review

Parameter	Speed limit (Unsigned)	Sight Distance
Desirable 5s Gap	100km/h	139m

A desktop assessment has been undertaken to evaluate the available sight distance at the two (2) access points.

**Figure 5.2** and **Figure 5.3** illustrates the available sight distance at the Northern and Southern Access, respectively. The assessment suggests that the available sight distances would meet the requirements. We do note that some vegetation management may be required and it is recommended that this is confirmed onsite prior to the construction of the accesses.





Figure 5.2 Desktop Sight Distance Assessment at Northern Access



Figure 5.3 Desktop Sight Distance Assessment at Southern Access



It is also recommended that an in-person sight distance assessment is conducted prior to the construction of the accesses to confirm the vertical components of the available sight distances. We are of the view that an in-person sight distance assessment could be reasonably conditioned prior to the commencement of construction activities.



#### 6.0 Traffic Generation and Distribution

#### 6.1 Overview

We have conducted a review of the Project's traffic impacts on the existing transport network surrounding the site over the course of the six (6) day working week during the 18-month Construction Phase. The Construction Phase consists of the following stages:

Civil Works;

Commissioning; and

Installation;

Operation.

The Construction Phase traffic is generated by the following vehicle types and uses:

- Light vehicles associated with workforce accessing the Project site;
- Heavy Vehicles which include;
  - o Medium and Heavy Rigid Vehicles delivering materials and smaller plant equipment;
  - o Truck and Dog vehicles for earthworks and material movement;
  - o Class vehicles i.e. mobile cranes; and
  - Up to 26m B-double vehicles for the delivery of materials, components and the transportation of larger plant equipment to the development site; and
  - A limited number of OSOM movements required the movement of Sub-station,
     Transformers and associated infrastructure.

The inputs which form the basis of our review are outlined in the following sections.

#### 6.2 Project Traffic Volumes

High-level traffic generation estimates for the construction phase of the development have been estimated based on similar developments. These volumes include both the anticipated light and heavy vehicle movements.

Table 6.1 Maximum Daily Traffic Generation During the Civil Works / Installation Phase

Movements	Movements Light Vehicles		Total	
Daily Vehicles 40		30	70	
Two-way Movements	80	60	140	

Table 6.2 Average Daily Traffic Generation During the Civil Works / Installation Phase

Movements	Light Vehicles	Heavy Vehicles	Total	
Daily Vehicles	30	15	45	
Two-way Movements	60	30	90	

As summarised above, the maximum number of daily trips is in the order of 140 trips per day, and the average daily trips is 90 trips per day.

A traffic distribution split of Heavy and light Vehicle traffic arriving during the AM and PM peak periods is summarised in **Table 6.3.** 







**Table 6.3 Adopted Directional Traffic Distribution Splits** 

Tueffie Tune	AM Peak		PM Peak	
Traffic Type	In	Out	In	Out
Material and Equipment Deliveries	10%	10%	10%	10%
Light Vehicle (Workforce)	80%	0%	0%	80%

Based on Table 6.2 and Table 6.3, Table 6.4 provides a summary of the traffic generated during the AM and PM peak periods accessing and egressing the development during the Civil Works and Installation Phase.

Table 6.4 Civil Works / Installation Phase Peak Period Traffic Generation

Tueffie Tues	AM Peak		PM Peak	
Traffic Type	In	Out	In	Out
Material and Equipment Deliveries	3	3	3	3
Light Vehicle (Workforce)	32	0	0	32
Total	35	3	3	35

We are of the opinion that the net increase in traffic demands as a result of the proposed development will be very low, and as such, a detailed Traffic Impact Assessment (SIDRA) was not warranted in this instance.

This equates to less than one (1) trip per minute and is considered negligible in the context of the broader road network. On this basis, the proposed development is expected to have a negligible traffic impact on the surrounding road network and is acceptable from a traffic impact viewpoint.

Development traffic is anticipated to reduce significantly after completion of the Construction Phase. Continued operation will consist primarily of inspection and maintenance activities, with primary operation of the project to be undertaken from a remote operations control centre.



## 7.0 Summary and Recommendations.

#### 7.1 Summary

The Proponent seeks to develop a 200MW/800MWh Battery Energy Storage System (BESS) Facility in Tully, Queensland, located approximately 23km south-west of Mission Beach.

Key findings of the Traffic Impact Assessment are, as follows:

- PTR Option 1 runs between the Port of Townsville and the Project Area;
- PTR Option 2 runs between the Port of Cairns and the Project Area;
- The State Controlled Road (SCR) network running along both PTR routes between the Port and the end of the State Controlled network (intersection of Bruce Highway and Dean Road) has the capacity to carry up to 35.0m OSOM vehicles to deliver construction equipment and BESS components;
- The local road network has the capacity to carry up to 26m B-Double vehicles from the end of the SCR and the intersection of Tully Gorge Road / Sandy Creek Road;
- The existing Tully Gorge Road / Sandy Creek Road intersection configuration appears adequate in its current form to facilitate the expected construction traffic and operational traffic;
- Available sight distances at the proposed access locations appear to be reasonable based on an 100km/h speed limit in accordance with AS2890.1 and AS2890.2;
- The access configurations can be provided generally in accordance with the Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual;
- Internal access tracks are intended to be utilised for the project and improvements to the existing flat site may be undertaken for set down and car parking arrangements; and
- The Civil Works Phase is anticipated to increase traffic by a maximum of 38 vehicles during peak hours for 18-months. The impact of this traffic is negligible on the surrounding road network.

In light of the above, we recommend that the development be approved with reasonable and relevant conditions as set out above.

Please do not hesitate to contact Rhys Trotman or the undersigned on 07 3221 3503 if you have any queries regarding the above.

Yours faithfully,

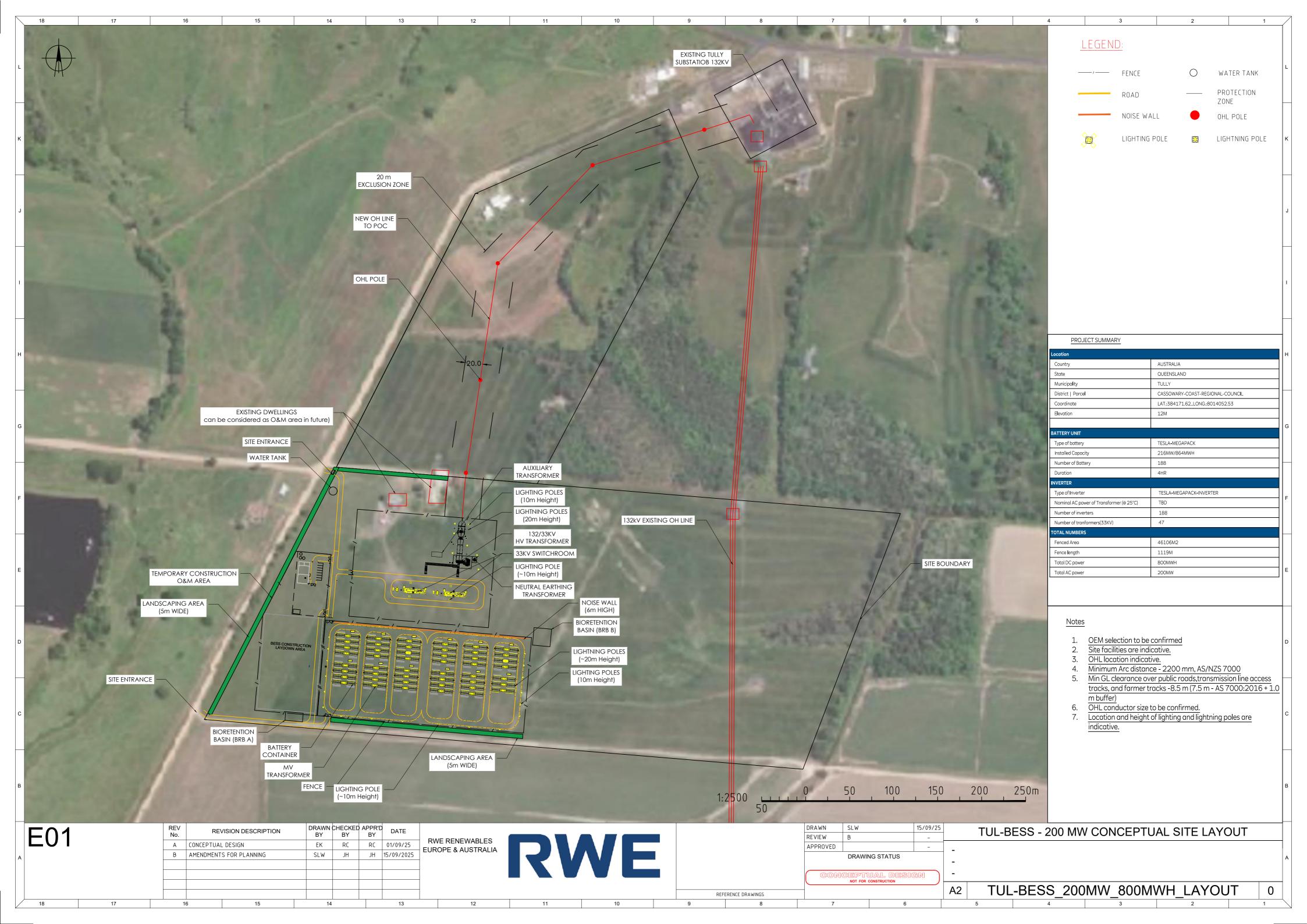


**Andrew Douglas**Director | Cambray Consulting Pty Ltd

BECivil (Hons) | MSc Env Man FIEAust | CPEng | RPEQ 6691

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## **CAMBRAY CONSULTING PTY LTD**

Suite 2601 | 21 Mary Street Brisbane QLD 4000 07 3221 3503 contact@cambray.com.au cambray.com.au