# Conceptual Stormwater Assessment

Capricorn Battery Energy Storage System (BESS)

PREPARED FOR

Enel Green Power

DATE
30 August 2024

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SIGNATURE PAGE

# Conceptual Stormwater Assessment

## Capricorn Battery Energy Storage System (BESS)

0729714


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# CONTENTS

## LIST OF TABLES



## LIST OF FIGURES



## ACRONYMS AND ABBREVIATIONS

| Acronyms | Description |
|---|---|
| ERM | Environmental Resource Management |
| EGPA | Enel Green Power Australia |
| BESS | Battery Energy Storage System |
| LGA | Local Government Area |
| MV/HV | Medium Voltage/High Voltage |
| PCU | Power Conversion Unit |
| BoM | Bureau of Meteorology |
| PO | Performance Outcomes |
| AO | Acceptable Outcomes |
| CMDG | Capricorn Municipal Development Guidelines |
| QUDM | Queensland Urban Drainage Manual |
| AHD | Australian Height Datum |
| GBR | Great Barrier Reef |
| RUSLE | Revised Universal Soil Loss Equation |
| AEP | Annual Exceedance Probability |
| ARR | Australian Rainfall Runoff |
| CESCP | Construction Erosion Sediment Control Plan |
| CEMP | Construction Environmental Management Plan |
| SPP | State Planning Policy |
| EMP | Environment Management Plan |
| EPP | Environment Protection Policies |
| IECA | International Erosion Control Association |
| ESC | Erosion Sediment Control |

# 1. INTRODUCTION

Environmental Resources Management Pty Ltd (ERM) has been engaged by Enel Green Power Australia Pty Ltd (Enel) to prepare a Conceptual Stormwater Assessment for the proposed development of the Capricorn Battery Energy Storage System (BESS) (the Project). The Project Area is located within the Rockhampton Regional Council local government area and is approximately 2.5 km north of Bouldercombe, Queensland.

The Project involves the construction of a battery energy storage system within Lot 2 on RP613051 in Queensland. The proposed BESS is to be connected to the Bouldercombe Substation (owned and operated by Powerlink).

This report contains the assessment methodology and findings of the conceptual stormwater assessment, for the proposed Project infrastructure associated with the BESS.

## 1.1 OBJECTIVES

The objectives of this Stormwater Assessment relates to the extent to which works and activities associated with the project will impact:

- stormwater quantity during each phase of the project;
- stormwater quality during each phase of the project;

## 1.2 SCOPE OF WORK

The following scope of work was undertaken to address the objectives:

- Desktop-based investigation to establish the existing conditions;
- Review of potential stormwater related risks (including flooding);
- Consideration of runoff flow paths that may be changed by the project;
- Review of erosion risk;
- Impact assessment for stormwater; and
- Development of a summary report for the stormwater impact assessment (this report).


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## 1-1 Project Area Context Map

**Capricorn BESS Stormwater Assessment**

Client: Enel Green Power

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## 1.3 PROPOSED PROJECT DESIGN

The proposed footprint is presented in **Figure 1-2.** The layout is subject to change based on the final agreed and approved project layout. The proposed development includes a BESS, which would be a 300MW / 1200MWh system consisting of the following:

- 525 BESS containers;
- 105 SMA Inverters and Medium Voltage Transformer (Power Station);
- Operation and Maintenance facilities;
- Electrical equipment including high voltage substation, primary transformer, auxiliary transformers, harmonic filters and control rooms;
- Laydown area;
- Onsite road;
- Fire Tanks x2; and
- Water Impoundment.

The BESS containers will be connected to inverters, which converts direct current to grid compliant alternating current, then through MV power stations into the BESS substation using buried cables The BESS substation will be connected to the Bouldercombe (Powerlink) sub-station via underground or overhead cables.


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**F1-2 Project Footprint**

**Capricorn BESS Stormwater Assessment**

Enel Green Power Australia Pty Ltd

ERM

Capricorn BESS.mxd

# 2. METHODOLOGY

The Conceptual Stormwater Assessment includes a desktop-based investigation of the site's characteristics including topography, hydrology, water quality, soil, and potential for erosion at the Project site. The methodology outlined below has been adopted.

## 2.1 Desktop-based Investigation

The desktop-based investigation was completed using the following methodology:

- Review of topographical maps and local ground elevation maps for the Project area;
- Review of publicly available hydrology and watercourse maps for the Project sites;
- Review of publicly available climate and water flow data from the Bureau of Meteorology (BoM);
- Review of information obtained from Queensland Globe (QLD Government, 2023a) and QSpatial (QLD Government, 2023b);
- Review of lidar data provided by the client;
- the International Erosion Control Association (2012) *Best Practice Erosion and Sediment Control – Book 1*; and
- Review of the proposed Project construction and operation plans.

## 2.2 IMPACT ASSESSMENT

The assessment of impacts consisted of the following:

- Identification of the location of surface water features in the vicinity of the site, with respect to the planned Project activities (specifically excavations and soil disturbances) and recommendations of areas to avoid for the Project;
- Assessment of the potential impacts of the Project on surface water quality,
- Assessment of potential for risk of erosion utilising the Revised Universal Soil Loss Equation methodology;
- Identification of risks to the Project from surface water including potential flooding (if already present in the Project area); and
- Identification of control and mitigation measures for the Project to avoid, minimise and mitigate impact to surface water.

# 3. REGULATORY FRAMEWORK

Relevant guidance and legislation considered included the Fitzroy Basin Water Plan (2011) and Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

The conceptual stormwater assessment has been compiled to support a development application for the project. The information contained within the report provides an overview of stormwater management for the project.

It is noted that additional development guidelines exist for the project including the Capricorn Municipal Development Guidelines for Stormwater Design (CDMG-D5) and Performance Outcomes 6 and 7 stipulated within Rockhampton Regional Council's Version 4.4 Current Planning Scheme (2015). Some of the specific requirements outlined in these guidelines are not considered at the preliminary stage but will be provided as the project progresses to detailed design, and both the project layout and construction methods are confirmed. A site-based Stormwater Management Plan is to be prepared for the project at the detailed design stage which will comply with the requirements of CDMG-D5 and the Rockhampton Regional Council's Current Planning Scheme.

# 4. ENVIRONMENTAL SETTING

The proposed development involves the construction of a BESS over Lot 2 on RP613051 adjacent to the Bouldercombe Substation (Powerlink) and Bouldercombe BESS (Genex). The Project area is located approximately 16km south of Rockhampton, Queensland and 2.5km north of Bouldercombe with the total area of the proposed site extending to approximately 17 hectares (ha) and situated on freehold land.

This section provides information regarding the environmental setting of the proposed project; all the information has guided the potential impacts and proposed mitigation measures discussed in Sections 5 and 6.

## 4.1 LOCATION AND LAND USE

The Project is located approximately 16km south of Rockhampton, Queensland and 2.5km north of Bouldercombe, accessible via the Burnett Highway. Existing land uses within the area consist largely of cleared grazing land and residential dwellings to the south and southeast. There is also an existing BESS and substation to the south of the proposed project.

Notable roads within the vicinity of the proposed BESS include Burnett Highway which borders the Project Area to the east. The Burnett Highway connects the site to Bouldercombe to the south and Rockhampton to the north via Bruce Highway. A number of small tracks are noted to the west of the Project Area named Bouldercombe Kabra. These tracks lead to the Four Mile Road to the west and Cherryfield Road to the north-west

## 4.2 CLIMATE

The Project area is situated within a sub-tropical climate with peak periods of rainfall occurring between the months of (November to March) as the typical 'wet season'. The middle of the year is typically dry between (April to October) with occasional bouts of rainfall experienced. The minimum mean monthly rainfall for the region is 22.3mm in August, with a maximum mean monthly rainfall of 133mm in February.

Rainfall data was sourced from Bureau of Meteorology (BOM) Moonmera weather station (station no. 039067) which is located 6.6km southwest of the Project area and is presented in **Figure 4-1**. The dataset from Moonmera Station represents monthly rainfall data collected from January 1901 to August 2024.

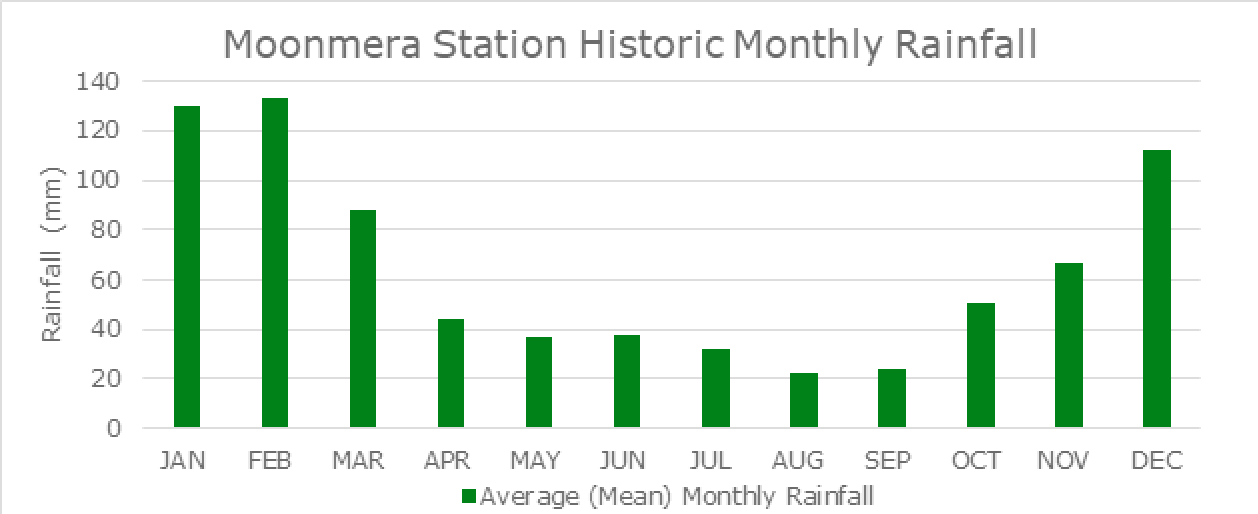
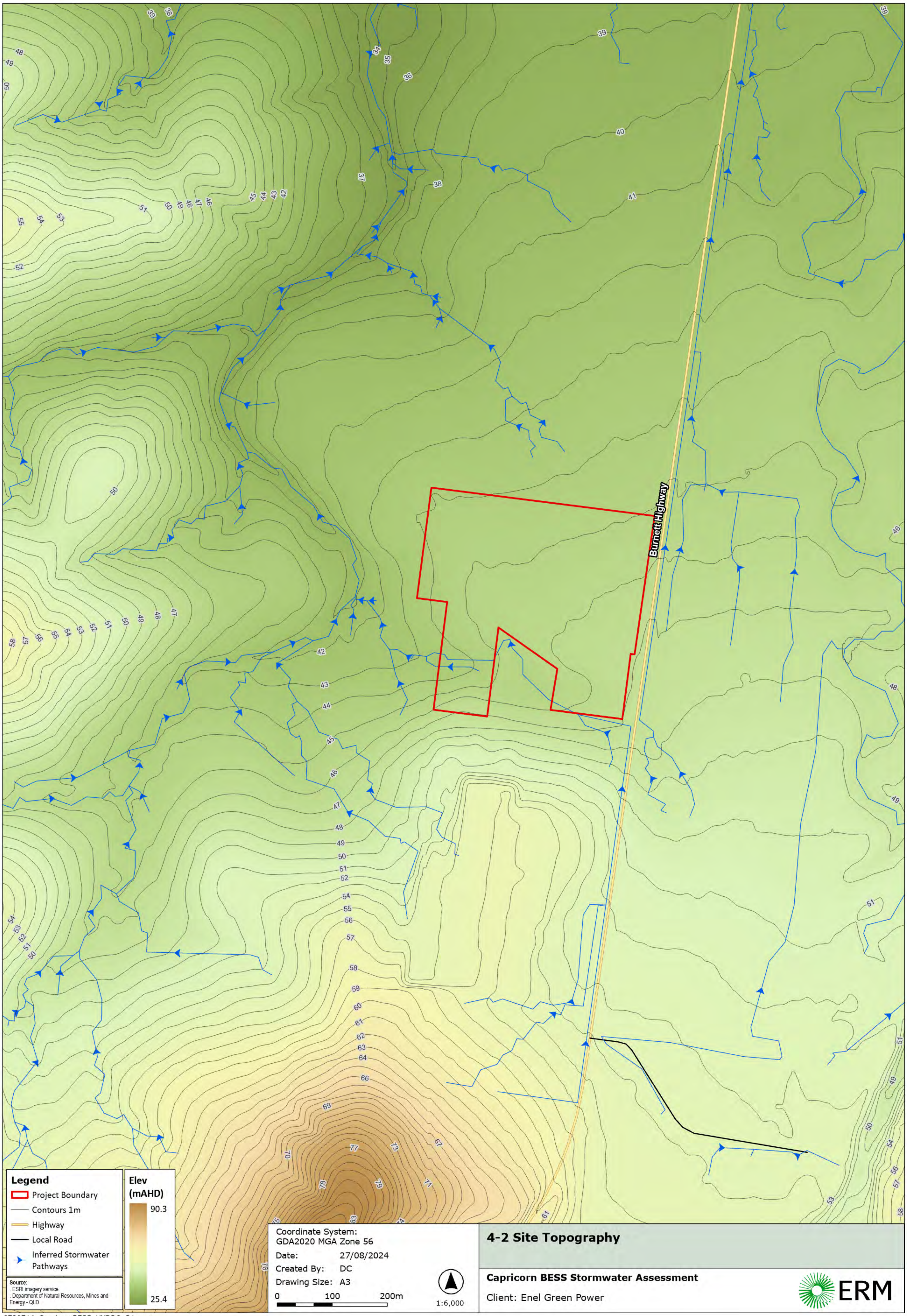



FIGURE 4-1 MOONMERA STATION (039067) HISTORIC MONTHLY RAINFALL

## 4.3 TOPOGRAPHY

The topography of the site is shown in **Figure 4-2.** A review of the regional topography and the Lidar data provided by the client indicates the Project site is located in an area that is predominantly low-lying and relatively flat. The ground level is highest towards the southern boundary of the site and gradually falls away to the west and north. There is a small farm dam near the southern boundary of the site which currently captures surface runoff from the site and from the adjacent substation to the south.

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## 4-2 Site Topography

**Capricorn BESS Stormwater Assessment**

Client: Enel Green Power

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## 4.4 HYDROLOGY AND WATERCOURSES

The Project is located within the Fitzroy River drainage sub-basin, which forms part of the wider Fitzroy Basin catchment. On a larger scale, the Fitzroy Basin is located within the Fitzroy region, one of six natural resource management regions that drains into the Great Barrier Reef (GBR). At 156,000 square kilometers, the Fitzroy region is the largest draining region into the GBR.

Four Mile Creek is located to the west of the proposed BESS site, an unnamed tributary of the Four Mile Creek lies immediately west of the site. Surface runoff from the site reports to the unnamed tributary to the west. This tributary flows north where it converges with the Four Mile Creek before discharging into Gavial Creek. Gavial Creek flows into the Fitzroy River downstream of Rockhampton City Centre prior to discharging into the Great Barrier Reef.

There appears to be a small farm dam (or similar) located near the southern boundary of the site. The dam appears to collect surface flows from most of the site, as well as surface runoff from the adjacent substation (south). The dam is not located within the development footprint for the BESS.

The watercourses within the Project Area and surrounds is presented in **Figure 4-3**. An unnamed tributary to the west of the site is Classified as Stream Order 1 under the Strahler system of stream order. This tributary joins a Stream Order Class 2 unnamed tributary to the north of Hunt Road before joining the Four Mile Creek classified as Stream Order 4 approximately 400m west of Burnett Highway. **Figure 4-2** shows minor watercourses within close proximity to the Project Area, it identifies an unnamed watercourse flowing through the southern boundary of the site in an east to west direction before discharging into a tributary of the Four Mile Creek.

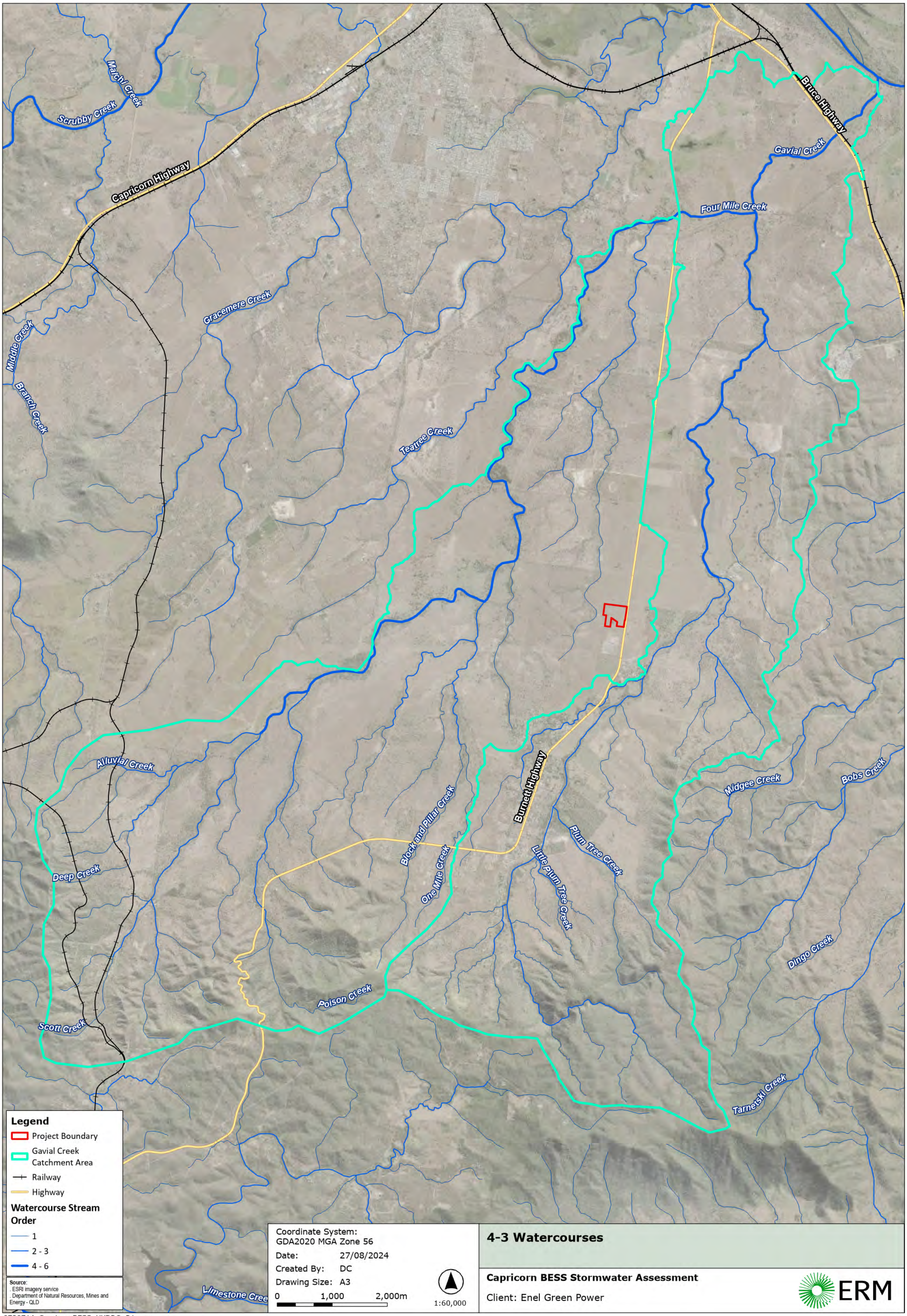
The road to the east  of the Project Area appears to be acting as a small hydrological boundary, and has been slightly built up from the surrounding environment, therefore all watercourses to the east of this road tend not to flow towards the project area.

## 4.5 FLOODING

The 1% annual exceedance probability (AEP) flood extent for the project area has been obtained from Queensland Globe and QSpatial and shown in **Figure 4-4.**  While the level of detail presented by this mapping is regional in nature, it provides an indicative understanding of the 1% AEP flood extent.

Based on a review of the mapping, a small portion of the project footprint is located within areas considered likely to be affected by a 1% AEP flood event. The northern boundary of the site and north east corner are likely to be affected by flooding from the unnamed tributary west of the site.

Assessment of flood hazard in **Figure 4-5** indicated that the site is not within an area considered to be a floodplain.

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**4-3 Watercourses**

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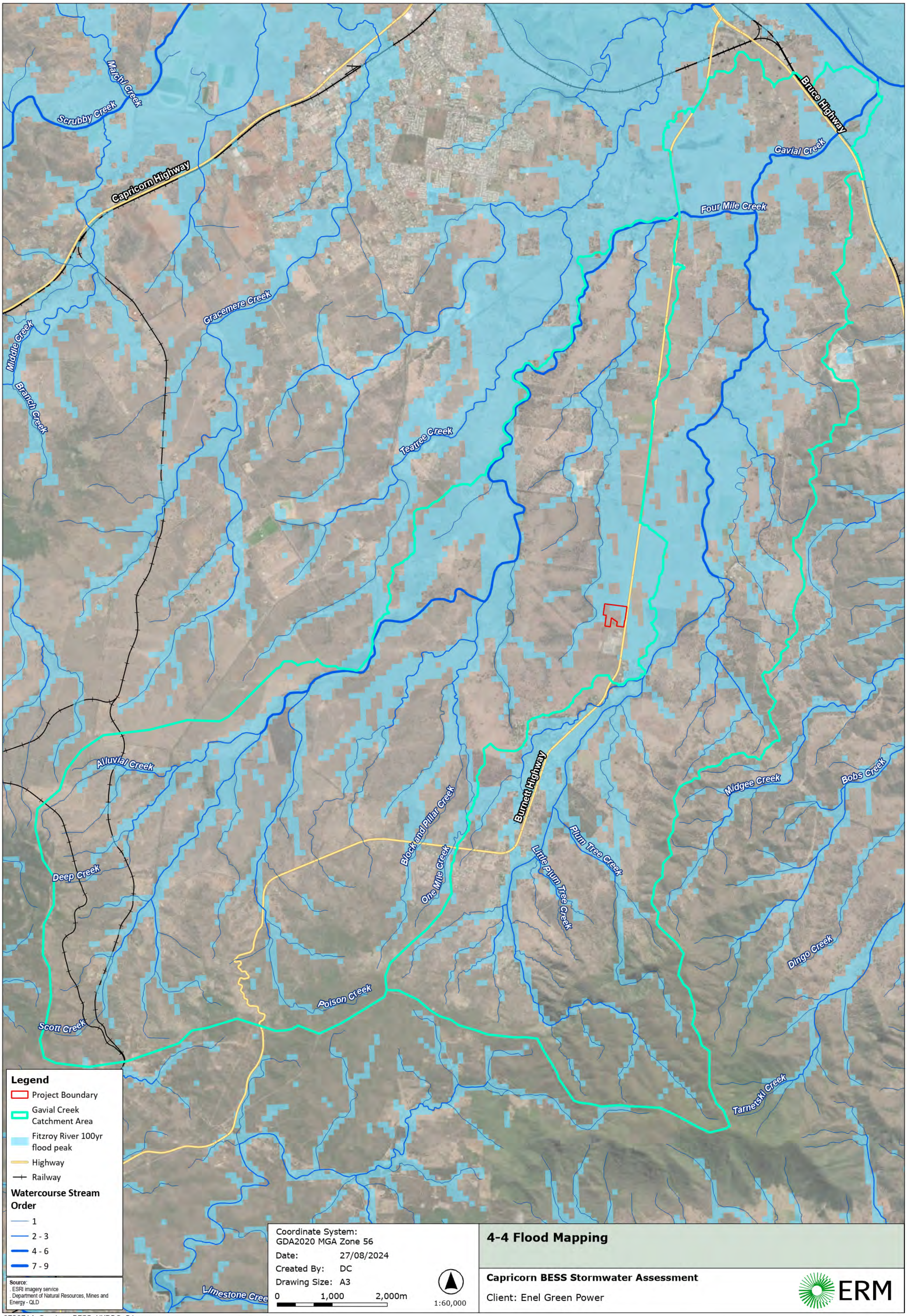


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**4-4 Flood Mapping**

**Capricorn BESS Stormwater Assessment**

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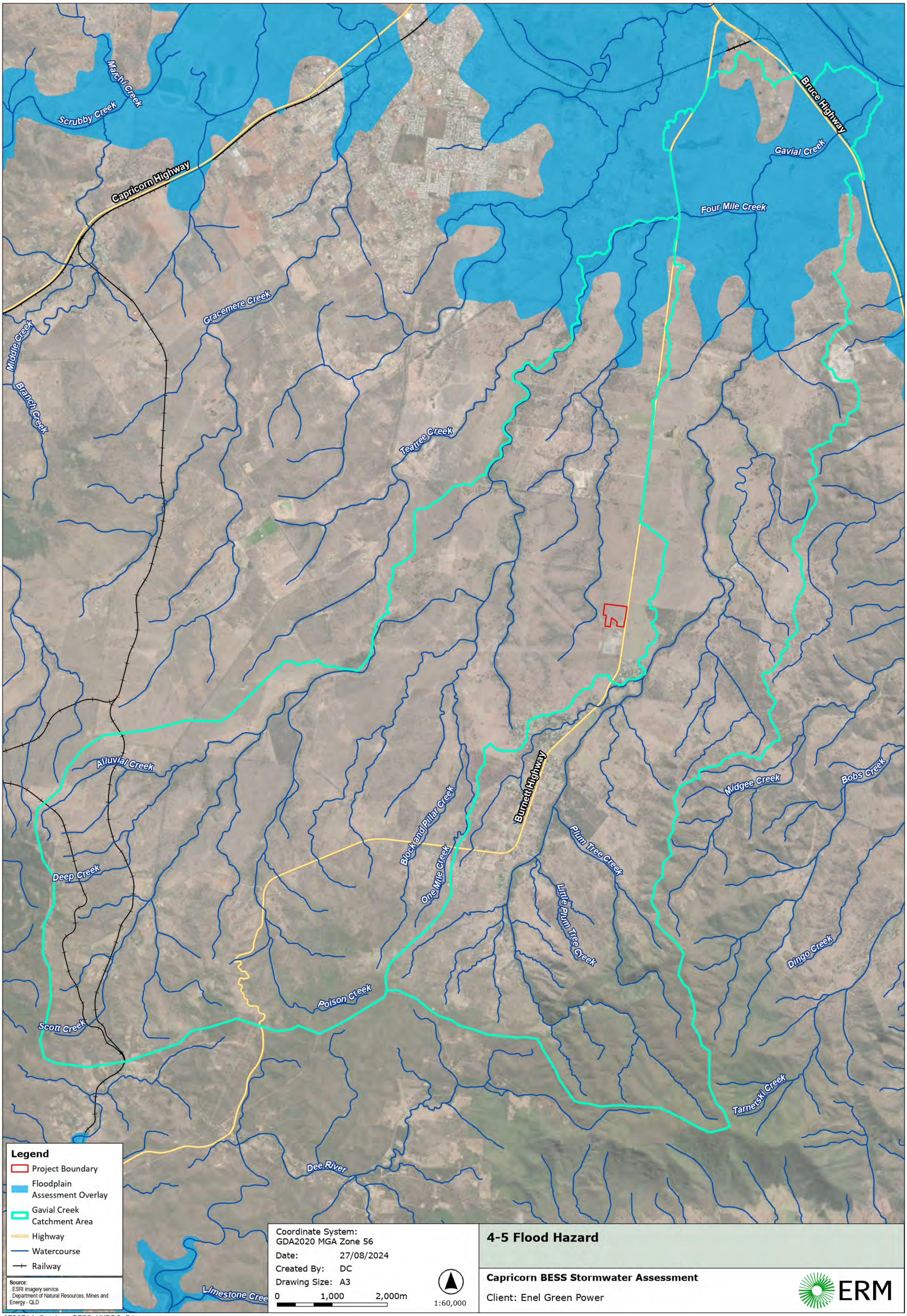


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**4-5 Flood Hazard**

**Capricorn BESS Stormwater Assessment**

Client: Enel Green Power

ERM

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## 4.6 EROSION

Soil erosion is caused by wind, water or physical action displacing soil particles and resulting in movement from their previous location. Erosion is a multifaceted phenomenon combining soil properties, climate, setting, cover and protection. An assessment of potential erosion risk at the site using the Revised Universal Soil Loss Equation (RUSLE) is included in **Appendix A**.

The RUSLE assessment classifies erosion risk into seven groups based on the properties of the land in that area. **Figure 4-6** below shows the erosion risk across the project area. The findings of this assessment indicate the vast majority of the site is located within areas classified as very low erosion risk. A small portion of the site is classified as low to low-moderate risk of erosion.

The percentage of the disturbance footprint area within each erosion risk was and shown in **Table 1-2** below.

### TABLE 1-1 EROSION RISK DISTURBANCE FOOTPRINT PERCENTAGE

| Erosion Risk | Mean Annual Soil Loss (t/ha/yr) | Disturbance Footprint Percentage (%) |
|---|---|---|
| Very Low | < 150 | 89.33 |
| Low | 151 - 225 | 7.14 |
| Moderate | 351 to 500 | 3.53 |
| High | 501-750 | 0 |
| Very High | 751 to 1500 | 0 |
| Extreme | >1500 | 0 |

Erosion and sedimentation in areas of low to moderate risk areas will typically be manageable with basic or industry standard controls.


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# F4-6 Revised Universal Soil Loss Equation (RUSLE)

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Capricorn BESS.mxd

# 5. POTENTIAL IMPACTS

## 5.1 PROJECT CONSTRUCTION AND OPERATION

There are currently no definitive Project construction and operation plans available for review. Therefore, assessment of potential impacts on and from the Project to stormwater are presented at a high level only. The following Proposed project components require further consideration as they may cause ground disturbance:

- Site development – Site development works are likely to include vegetation clearance, and levelling of the surface prior to construction of the foundations of the BESS.
- Battery Energy Storage System (BESS); The development of the BESS, operation and maintenance facilities are all likely to result in disturbance of the surface and possibly shallow soils. Footings and foundations are likely to include use of concrete.
- Temporary facilities – during construction, laydown areas have the potential to disturb surface and shallow soils.

## 5.2 STORMWATER QUANTITY

A change in surface water quantity would typically be associated with a change in the imperviousness of the catchment. This could occur during the construction, and operation phases of the project.

The proposed development will include clearing of land for laydown areas, construction of the BESS compound and associated maintenance facilities. The BESS compound is unlikely to be entirely sealed but is likely to result in an overall increase in imperviousness compared to the current site layout.

The hydrology of the post development catchment is likely to remain largely unchanged. The proposed development area is ~16ha. As described above, the natural contributing catchment for the site is ~7,142 ha. The resultant change is an additional 2% of imperviousness.

## 5.3 FLOODING

Surface water flows within the Site will likely require the diversion of the overland flows around the site area. Diverting the surface flows around the project area would follow a relatively natural flow path from east to west. Based on a high-level review, and the project description provided. The proposed development is not considered likely to be significantly affected by flooding as a result of a 1% AEP design storm event. However, Further impacts to site may be present during rarer design rainfall events (i.e. 0.5% AEP and 0.2% AEP).

It should be noted that minor flood impacts such as ponding of water and localised flooding may be possible during a 1%AEP flood event and there are likely to be some indirect effects on site operations including disruption to the local roads, affecting access to the site.

The construction of the BESS is likely to include a diversion and infilling and flattening of the project area. This has the potential to change the local hydrological response. Given the site of the site, it is unlikely that the changes would increase the likelihood of flooding, but the potential for flooding in the north of the site may require further assessment. Once the intended levels of the site are known, and details of any stormwater infrastructure around the site are understood, further flood modelling will be undertaken to understand risks posed by extreme flood events (0.5% and 0.2% AEP) as well as the suitability of stormwater management structures for the BESS after detailed design.

## 5.4 STORMWATER QUALITY

Unmitigated discharges of stormwater from disturbed or cleared areas could result in adverse effects or the delivery of pollutants downstream. During the construction and operation of the project, activities may be undertaken which could result in an impact to water quality. Activities with the potential to impact surface water quality during each phase of the Project are discussed below.

### 5.4.1 CONSTRUCTION PHASE

Potential impacts to stormwater quality during the construction phase include:

- Water for dust suppression could affect surface water quality if the water used is of a poorer quality compared with the background surface water quality. There is also potential for increased mobilisation and flushing of salts stored in soils, depending on the salt content of soil at site.
- Fuel stores and refueling construction vehicles presents a potential for hydrocarbon spills which can contaminate surface water and result in off-site migration if not captured and managed.
- General earthworks associated with construction can also affect stormwater, including:
  - vegetation clearance and site levelling;
  - operation and maintenance facility and laydown area construction; and
  - drainage works.

### 5.4.2 OPERATIONAL PHASE

Potential impacts to stormwater quality during the operational phase include:

- Stormwater runoff from impervious surfaces such as laydown areas and access roads.
- Chemical leaks from lithium-ion batteries and infrastructure, such as accidental damage have the potential to migrate off site if not captured and managed.
- On-site use and storage of chemicals needed for maintenance of infrastructure.

### 5.4.3 DECOMISSIONING PHASE

Potential impacts to stormwater quality during the decommissioning phase include:

- Fuel stores and refueling construction vehicles presents a potential for hydrocarbon spills which can contaminate surface water and result in off-site migration if not captured and managed.
- Spills and leaks of chemicals from storage areas and infrastructure which may be damaged during decommissioning.
- General earthworks associated with construction can also affect stormwater, including:
  - vegetation clearance and site levelling;
  - operation and maintenance facility and laydown area construction; and
  - drainage works.

# 6. PROPOSED MITIGATION AND CONTROL MEASURES

The following section outlines proposed controls and mitigation measures to be considered to manage project related stormwater risks.

## 6.1 STORMWATER QUANTITY

The change in imperviousness is relatively minor across a catchment scale. This indicates the project is not likely to affect the volume of stormwater runoff at a catchment level. Localised issues may persist, however, a stormwater management system for the site is to be developed during the detailed design phase. The stormwater design should incorporate methodologies outlined in the Queensland Urban Drainage Manual (QUDM) and comply with the requirements of the CDMG-D5 and the Rockhampton Regional Council's Current Planning Scheme.

It is recommended that the BESS site be designed to ensure free draining where possible. Diversions should be included around the BESS compound to allow surface flows to bypass the site and avoid concentrating flows.

## 6.2 STORMWATER QUALITY

The potential impacts to stormwater quality described in Section 5 can be broadly categorised as contamination from leaks and spills associated with equipment, and impacts from erosion and sedimentation.

### 6.2.1 SPILLS AND LEAKS

The construction and operation of the proposed BESS should be governed by an Environmental Management Plan that includes a detailed spill response procedure. Development plans should also consider the potential for a spill or leak of chemicals from BESS units, and storage compounds and should include design solutions to ensure leaks and spills can be identified, captured and cleaned up.

### 6.2.2 EROSION AND SEDIMENTATION

A Construction Environmental Management Plan (CEMP) is to be developed prior to construction to minimise impacts to nearby environmental values, including surface water. The CEMP should include reference to land clearance, erosion and sediment control, and stormwater risks discussed in this report. Despite the low to moderate erosion risk outlined in this report, the CEMP should still include erosion and sediment control measures to ensure water quality is preserved.

Erosion and sediment controls outlined in the CEMP should follow the International Erosion Control Association Erosion and Sediment Control Design Manual (IECA, 2008). Some of the key principles outlined in the IECA for effective control include:

- Ensure ESC measures are designed and constructed effectively.
- Promptly stabilize disturbed areas.
- Control water movement through the site.
- Utilise existing topography and adopt construction practices that stabilize soil erosion and sediment discharge from disturbed areas
- Ensure ESC measures are maintained.

## 6.3 FLOODING

As shown in section 4.5, the flood risk posed at the site, based on 1% AEP flood modelling, are confined to the northern reaches of the project area. There are likely to be some indirect effects of flooding including disruption to the local roads, and possible localised ponding.

During the detailed design phase pf the project, stormwater management design will be undertaken in line with relevant guidelines. The project area is likely to be infilled and flattened prior to construction. The BESS area will likely need to be built up in the northern reaches to alleviate any potential flood risks. The southern and eastern boundaries of the site are likely to have some form of diversion for overland flow. The water holding structure on the western part of the site will likely have an outlet point near the western boundary.

Detailed flood modelling will be undertaken during the detailed design phase of the project to understand the effectiveness of the designed stormwater protections against potential flooding including the level the site is to be built on to prevent inundation. Flood modelling is to consider the pre and post development landscape under a range of design storm events including 0.5%AEP and 0.2%AEP scenarios.

# 7. CONCLUSION

The preliminary stormwater assessment for the project considers the potential risks to the project and likely impact on stormwater and overland flows. The preliminary assessment shows that the proposed development would result in a small increase in imperviousness within the contributing catchment. The footprint of the proposed development is ~16ha, which represents ~2% of the contributing catchment. As the fraction of imperviousness of the catchment does not change significantly as a result of the project, it is considered unlikely that the project will result in any significant changes to the overland flow characteristics of the catchment.

The proposed BESS infrastructure is located within an area of minor flooding within the 1% AEP flood event. Flood modelling is to be undertaken during the detailed design phase to ensure sufficient controls are in place to avoid flood impacts.

In order to protect water quality downstream of the project, an CEMP for the construction phase of the project is required. The development CEMP should include:

- Site setting;
- Environmental targets;
- Resources roles and responsibilities;
- Competence, training and awareness;
- Incident and emergency plans;
- Inspections and monitoring plans; and
- Management of environmental issues.

Erosion and Sediment Control measures to be implemented will also be required as part of the CEMP. The methodology for the erosion and sediment control elements is to follow the Best Practice Erosion and Sediment Control (BPESC) Book 1.

# 8. REFERENCES

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# APPENDIX A: EROSION RISK ASSESSMENT

## 8.1 EROSION RISK ASSESSMENT

This report has been prepared to meet the requirements for an erosion risk assessment. The following erosion risk assessment has been undertaken using the RUSLE. The outputs of which are visualised in erosion risk mapping have been prepared to inform the site layout.

### 8.1.1 REVISED UNIVERSAL SOIL LOSS EQUATION

The RUSLE is a method of predicting soil loss based on key data inputs (rainfall data, soil properties, digital elevation, and land use). The RUSLE quantifies average annual soil loss (A) using five factors; rainfall erosivity (R), soil erodibility (K), slope length and slope steepness (LS), cover management (C), and support practice (P). The RUSLE can be presented as follows:

$$\mathbf{A = R \times K \times LS \times C \times P}$$

- A is the mean annual soil loss (t $ha^{-1}yr^{-1}$)
- R is the rainfall erosivity
  - The R factor is an expression of energy and maximum intensity of rainfall averaged over long periods of time (more than 20 years) so as to accommodate discernible recurring rainfall patterns.
- K is the soil erodibility factor
  - The K factor is defined as the susceptibility of a soil to soil erosion. The K factor accounts for particle size, permeability, organic matter, and structure of the soil as the critical physiochemical properties which affect erodibility.
- LS is the slope length and slope steepness factor
  - The landscape's topography has a significant influence on the extent of soil erosion. The LS factor expresses the effect slope length and gradient have on soil erosion.
- C is the cover management factor
  - The C factor considers the effect of vegetation and plant canopy cover.
- P is the support practice factor
  - P factor measures the combined effect of support and work practices. These values are typically derived from images, previous studies, or expert knowledge.

The RUSLE erosion risk assessment for the proposed development at was completed using a range of inputs including the Digital Atlas of Australian Soil in Queensland Globe, and spatial data available in the QSpatial catalogue. This initial assessment uses publicly available data. There has been no effort to calibrate the findings with site-based observations or measurements in the field.

### 8.1.2 SITE TOPOGRAPHY

As evident within the slope gradient mapping in **Figure A1** majority of the Project area is located on little slope with values ranging from 0.7% - 0.8%.

**Figure A2** illustrates the length of these slopes with all noted as short in length. The majority of the site has slope lengths of under 2 meters with a small area of 2-2.5 within the south of the proposed development.

### 8.1.3 SOIL PROPERTIES

The site is underlain by sodsols (texture-contrast soils with impermeable subsoils). Land uses around the Project area consist largely of cleared grazing land and residential dwellings to the south and southeast.

### 8.1.4 EROSION RISK CLASSIFICATION

The IECA BPESC Book 1 provides guidance surrounding erosion risk classes, adopting classification developed by Morse and Rosewell (1996) to categorise annual soil loss rates into very low, to extreme erosion risk. The risk categories and their corresponding soil loss rates are presented in **Table 1-3**.

TABLE 1-2 EROSION RISK CLASSES

| Soil Loss Class | Mean Annual Soil Loss (t/ha/yr) | Erosion Risk |
|---|---|---|
| 1 | <150 | Very Low |
| 2 | 151 to 225 | Low |
| 3 | 226 to 350 | Low - Moderate |
| 4 | 351 to 500 | Moderate |
| 5 | 501 to 750 | High |
| 6 | 751 to 1500 | Very High |
| 7 | >1500 | Extremely High |

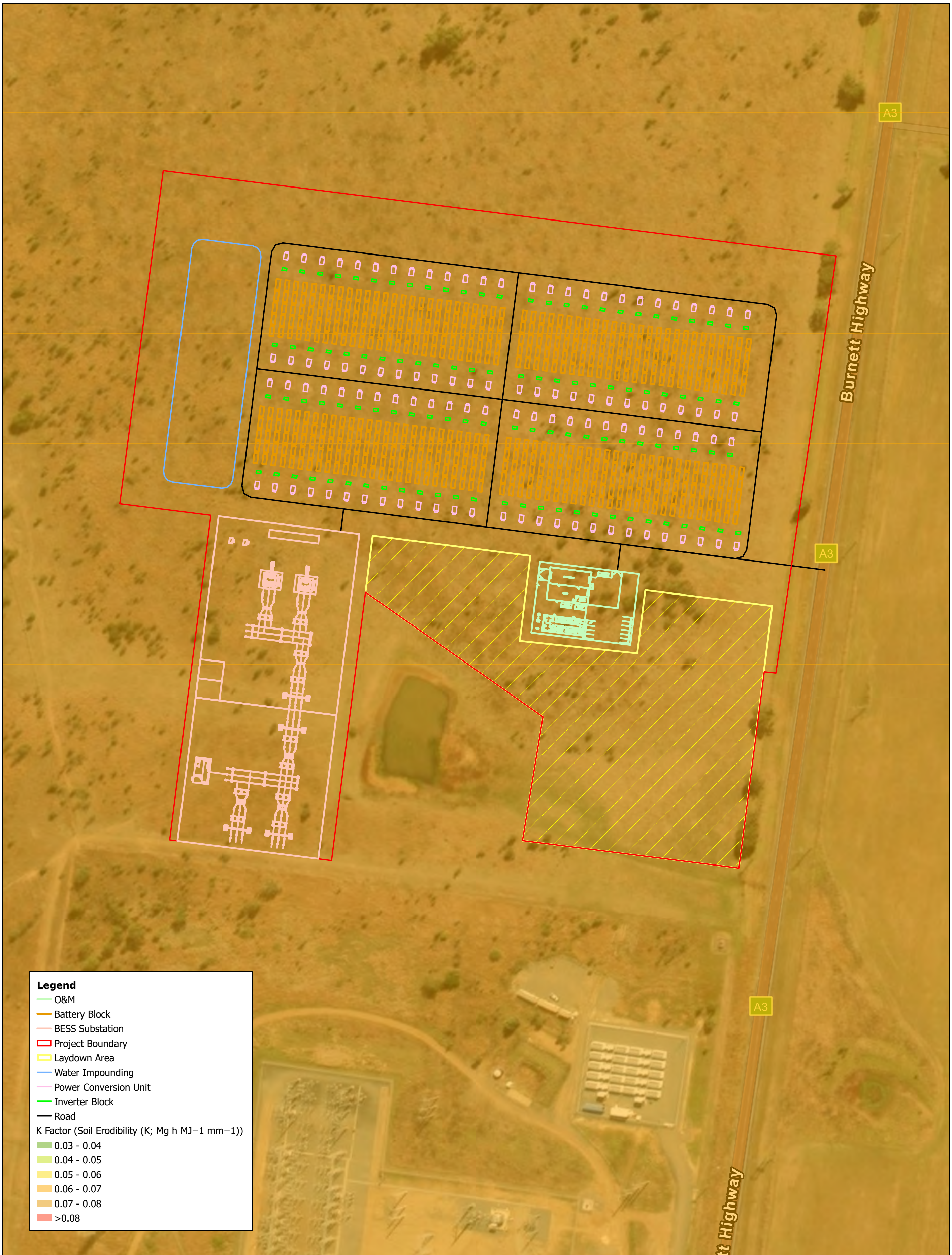
Where possible, disturbance of land within extreme erosion risk area should be avoided. Further guidance on how the erosion risk (soil loss) is calculated is detailed in the following section.

### 8.1.5 RUSLE ASSESSMENT RESULTS

The QSpatial catalogue provides proposed K, R, S and L factors across Queensland based on existing understanding of soil properties, statewide topographic mapping, and climatic data. The Project Area is categorised as low to moderately hilly with small alluvial plains to steep mountainous country.

Using a geographic information system, the various QSpatial inputs for the K, R, S, and L factors were overlayed. The C and P factors were determined based on project descriptions. These combined layers form a series of maps which present the results of the RUSLE assessment visually.

The results of the RUSLE erosion risk assessment are visually presented Figure 7, with the intended location of BESS shown within the project area.




Coordinate System: GDA2020 MGA Zone 56

Date: 27/08/2024

Created By: FB

Drawing Size: A4

0 15 30 60 90 m

1:3,062

# A1 Revised Universal Soil Loss Equation (RUSLE) - K Factor

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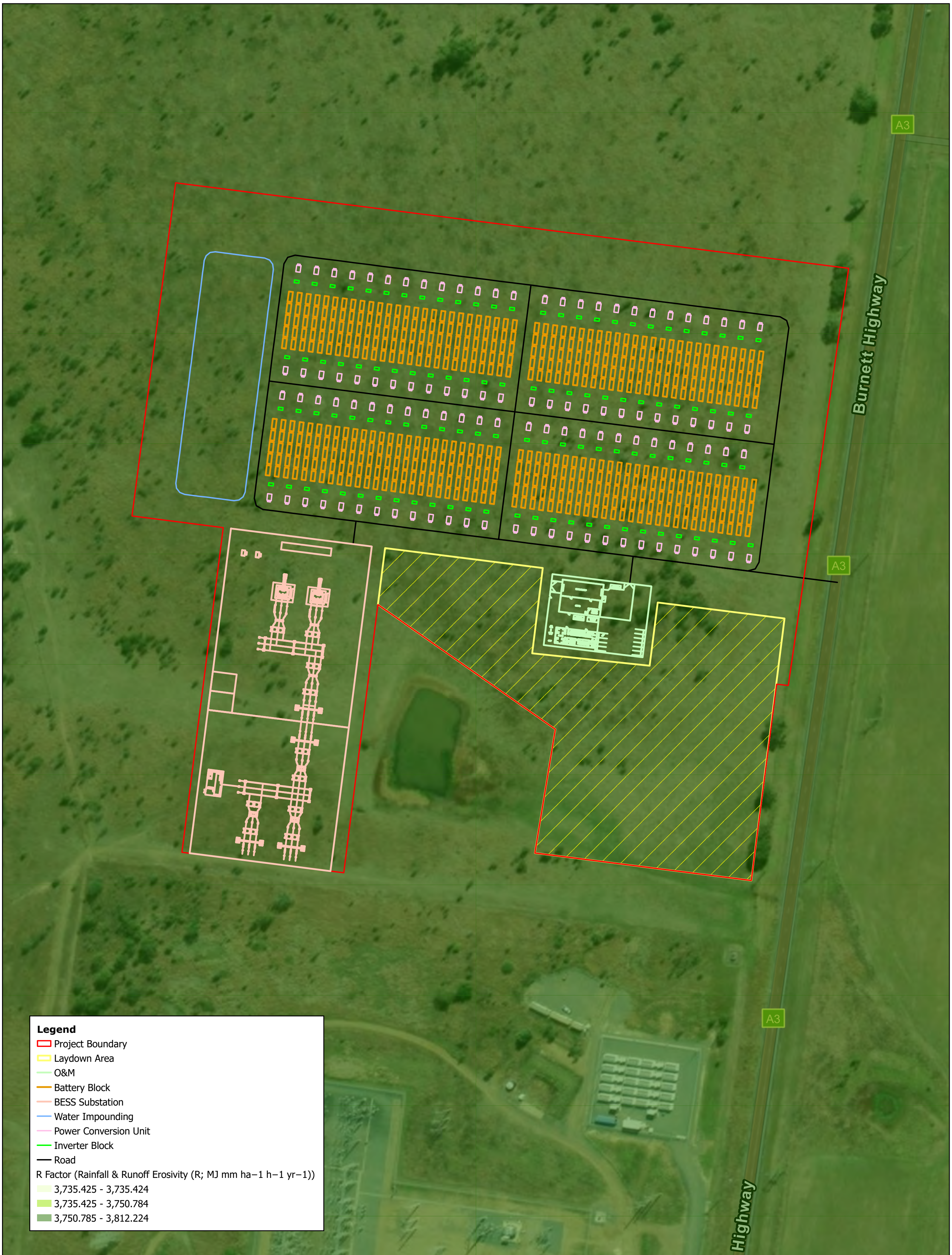


Coordinate System:
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Date: 27/08/2024

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Drawing Size: A4

0 15 30 60 90 m

1:3,062

# A2 Revised Universal Soil Loss Equation (RUSLE) - R Factor

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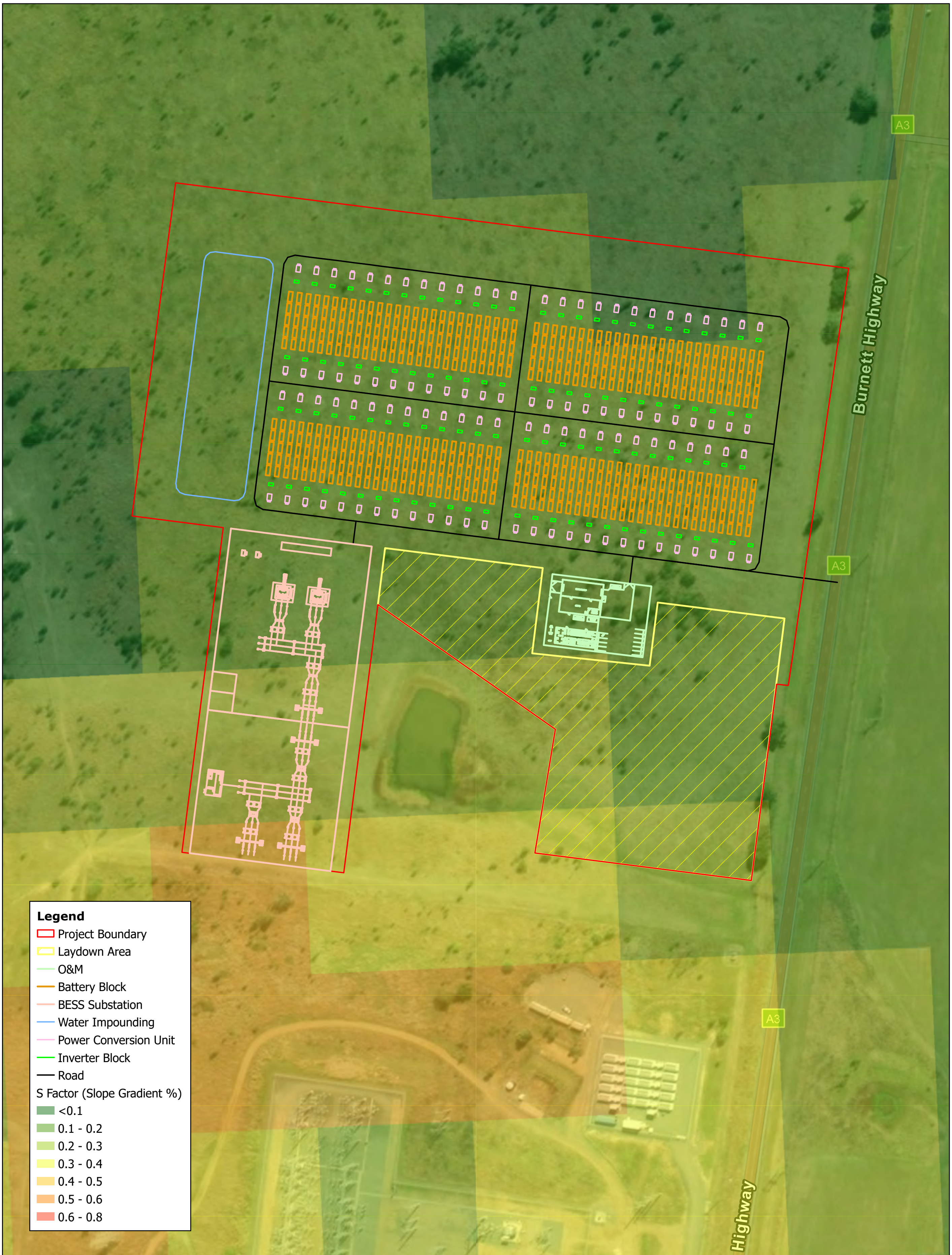


Coordinate System:
GDA2020 MGA Zone 56

Date: 27/08/2024
Created By: FB
Drawing Size: A4

0 15 30 60 90 m

1:3,062

# A3 Revised Universal Soil Loss Equation (RUSLE) - L Factor

**Capricorn BESS Stormwater Assessment**

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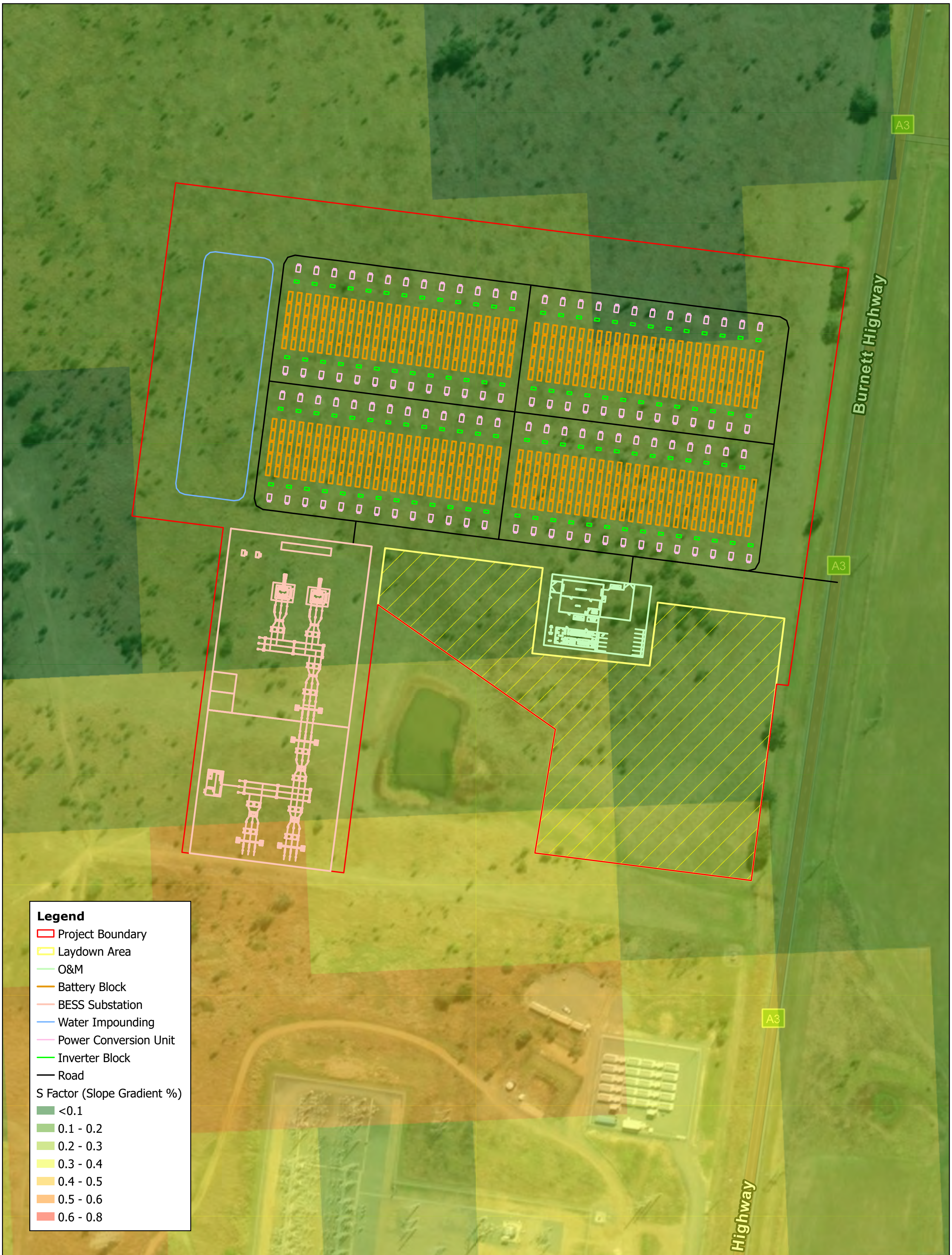
Capricorn BESS.mxd




Coordinate System: GDA2020 MGA Zone 56

Date: 27/08/2024

Created By: FB

Drawing Size: A4

0 15 30 60 90 m

1:3,062

**A4 Revised Universal Soil Loss Equation (RUSLE) - S Factor**

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