



Erosion Risk Assessment

Cattle Creek Wind Farm

PREPARED FOR

RWE

RWE Cattle Creek Onshore Wind
Pty Ltd

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Erosion Risk Assessment

Cattle Creek Wind Farm

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ACRONYMS AND ABBREVIATIONS

Acronyms	Description
AO	Acceptable Outcome
AHD	Australian Height Datum
BESS	Battery Energy Storage System
BPESC	Best Practice Erosion and Sediment Control
CEMP	Construction Environmental Management Plan
Disturbance Footprint	The area of direct disturbance associated with the construction, operation and decommissioning of the Project, which is 2,221.2 ha.
DSDIP	Queensland Government Department of State Development, Infrastructure and Planning
ERM	Environmental Resources Management Australia Pty Ltd
ESCPC	Erosion and Sediment Control Plan – Construction
IECA	International Erosion Control Association (Australasia)
PO	Performance Outcome
Project Area	The wind farm area covering twelve separate lots over 20,404.5 ha.
Proponent	RWE Cattle Creek Onshore Wind Pty Ltd
Project	Cattle Creek Wind Farm
RUSLE	Revised Universal Soil Loss Equation
SDAP	State Development Assessment Provisions (Version 3.6)
The/this Report	Cattle Creek Wind Farm Erosion Risk Assessment
TRC	Toowoomba Regional Council
WDRC	Western Downs Regional Council
WTG	Wind Turbine Generator

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by RWE Cattle Creek Onshore Wind Pty Ltd (RWE) (the Proponent) to undertake an Erosion Risk Assessment (this Report) for the proposed Cattle Creek Wind Farm (the Project). The Project Area is located within the Toowoomba Regional Council and Western Downs Regional Council Local Government Areas in South East Queensland, Australia (Figure 1-1).

The Project is located approximately 200km west of Brisbane.

1.2 PROPOSED PROJECT DESIGN

The Project consists of the construction, operation, maintenance, and decommissioning of up to 135 wind turbine generators (WTGs), Battery Energy Storage System (BESS) of up to 450 megawatts (MW) and ancillary infrastructure (supporting infrastructure) consisting of:

- WTG foundations, crane hardstands, crane boom laydown, blade laydown and rotor assembly area;
- Access tracks, including:
 - New and upgraded tracks within the Project Area, generally comprising of a nominal range of 5.5 m – 10 m wide permanent access track, and a maximum 50 - 95 m wide cleared corridor for Oversize Overmass (OSOM) vehicles.
- Low voltage (LV) and medium voltage (MV) underground cabling, as well as MV and high voltage (HV) overhead transmission lines;
- Internal collector substations;
- A switching station adjacent to the existing 330 kV Powerlink transmission line. This has been accounted for within the Disturbance Footprint, thereby allowing the clearing of the site to be assessed as part of the impacts associated with the Project (noting, however, that the switching station infrastructure will be constructed, owned and operated by Powerlink);
- Permanent meteorological masts;
- Construction compounds and laydown areas;
- Washdown areas;
- Operational and maintenance facilities; and
- A construction workers accommodation facility.

Further, there is the potential for the inclusion of the below infrastructure:

- Concrete batching plants;
- Borrow pits; and
- Communications tower.

The Project Area fully encompasses the properties as described in Table 1-1, covering an area of 20,404.5 hectares (ha). For the purposes of this assessment, impacts will be assessed against the Project's disturbance footprint across 2,221.2 ha. The Project Design is shown in Figure 1-2.

TABLE 1-1 PROJECT AREA DETAILS

Project Area Details			
Real Property Description	Lot and Plan	Tenure	Easement
	2DY452	Freehold	-
	27CP882781	Freehold	GSP112990
	2DY831	Freehold	HSP112991
	3RP174414	Freehold	JSP109190
	1RP174414	Freehold	-
	16SP201705	Freehold	-
	15SP201705	Freehold	-
	2RP174414	Freehold	-
	8DY247	Freehold	-
	9DY247	Freehold	-
	22DY800	Freehold	-
	21DY218	Freehold	-
	Unnamed road reserves	Road Reserve	-
	Cecil Plains Moonie Road	Road Reserve	-
	O'Connor Road	Road Reserve	-
Disturbance Footprint	2,221.2 hectares (ha)		
Project Area	20,404.5 ha		

1.3 LEGISLATIVE CONTEXT

The Planning and Impact Assessment Code outlined as part of the Queensland Government State Code 23: Wind farm, aims to protect communities and the environment from potential adverse impacts resulting from the construction, operation and decommissioning of wind farm developments. Contained within Table 23.1 of State Code 23, the Performance Outcomes (POs) for Material Change of Use ensure that developments align with strategic goals set around key planning schemes. This Report has been prepared to address PO7 of State Code 23 (v3.6) (DSDIP, 2026b), as detailed below:

PO7 *Development is designed to avoid areas of high erosion risk, where failure of erosion management devices would result in permanent and/or adverse impacts on receiving waterways or wetlands.*

The Department of State Development, Infrastructure and Planning's (DSDIP) planning guideline document for State Code 23 specifies that compliance with PO7 requires an erosion risk assessment be undertaken, including the use of the Revised Universal Soil Loss Equation (RUSLE), to inform the Project layout prior to the lodgement of a development application.

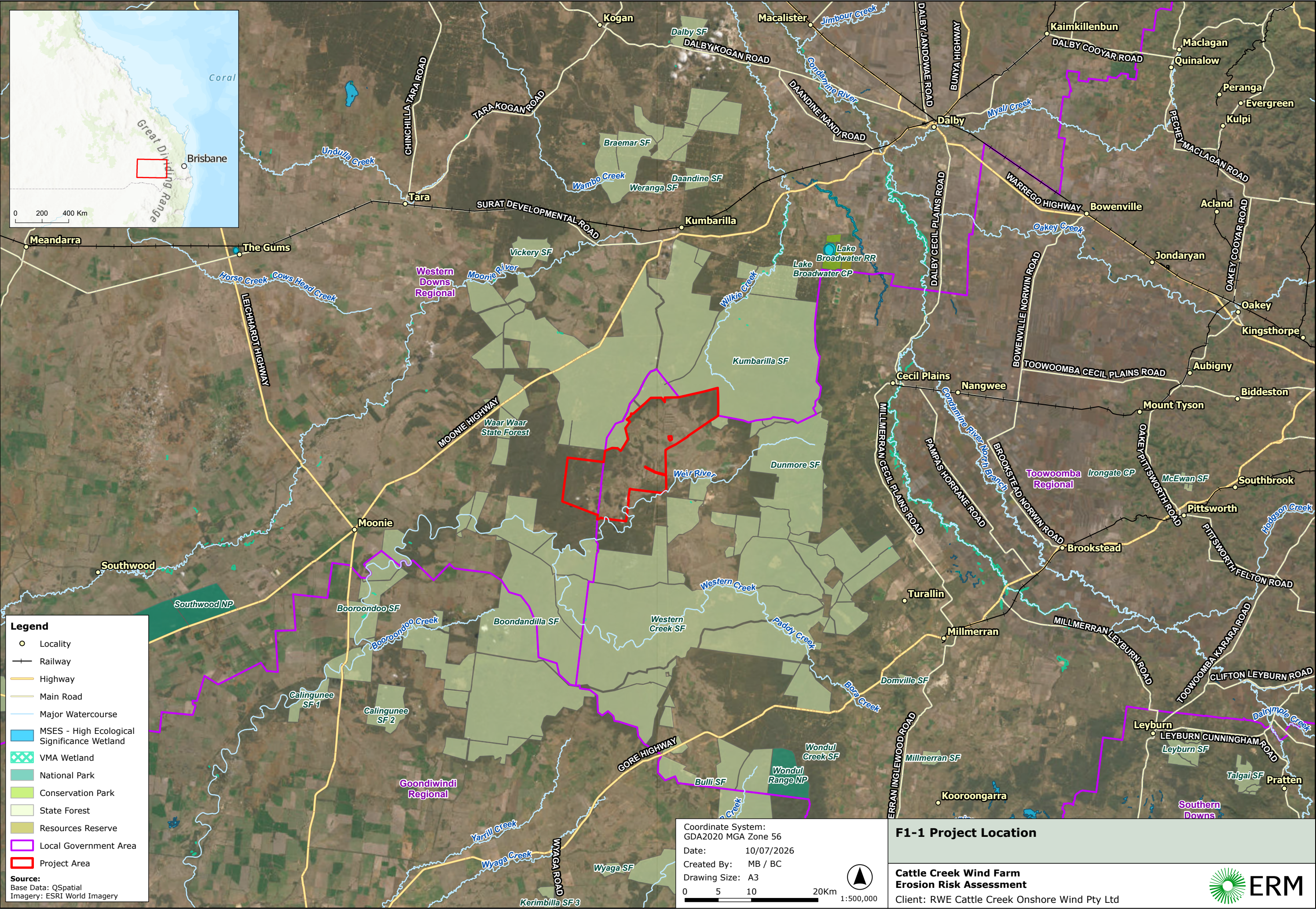
This Report has been prepared to meet the requirements for an erosion risk assessment outlined in State Code 23. The erosion risk assessment has been undertaken using the RUSLE methodology. The maps produced present erosion risk across the Project Area based on available information and are intended to inform the final layout of the Project.

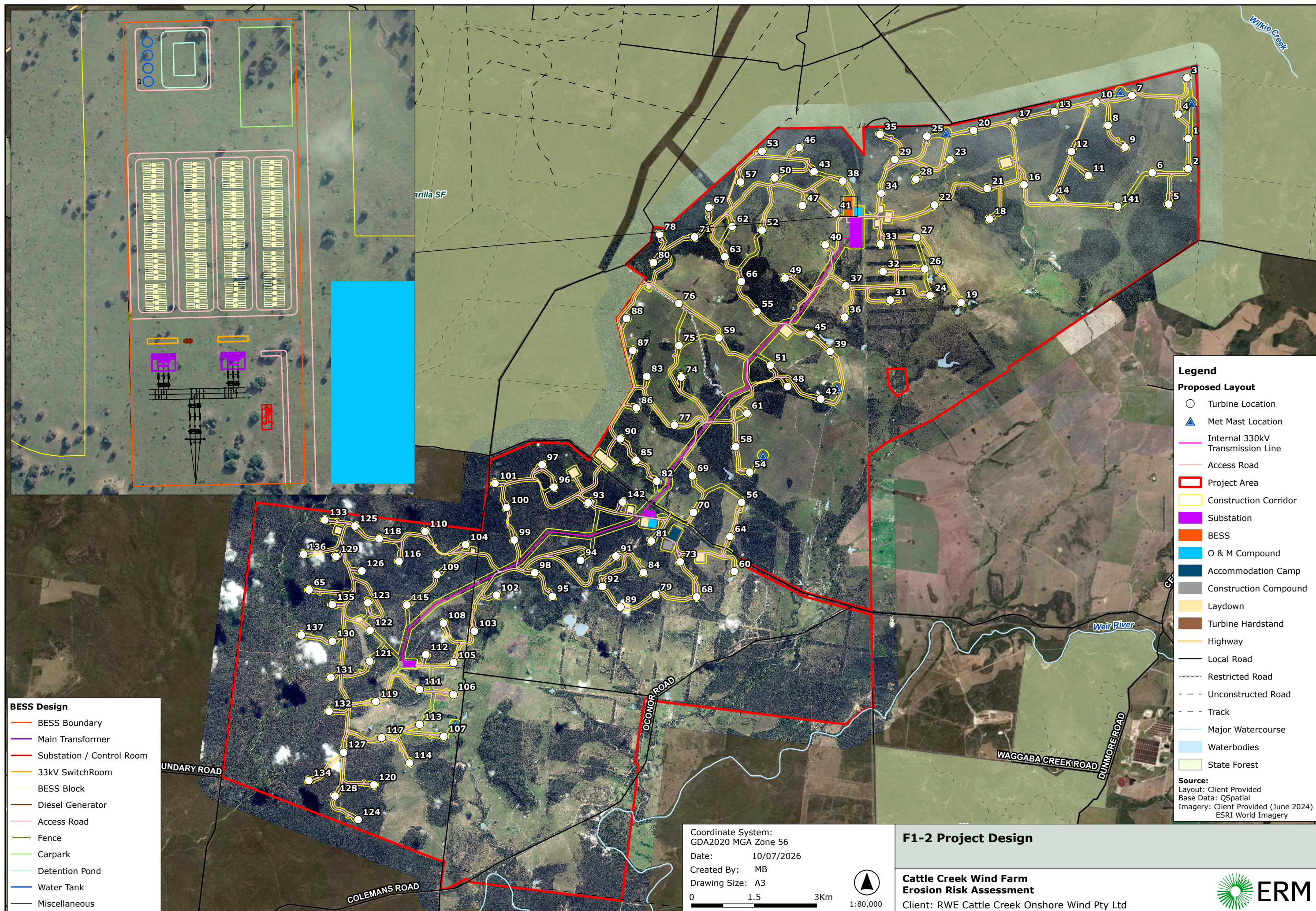
Furthermore, this Report has been prepared in support of the Project's assessment against State Code 27: Battery storage facility development (v3.6) (DSDIP, 2026c). Due to the inclusion of the BESS, the Project is subject to assessment against State Code 27. Whilst the broader stormwater related requirements of State Code 27 have been addressed in the Cattle Creek Wind Farm Stormwater Assessment (ERM, 2026), this assessment provides information in support of assessing compliance against PO16 of State Code 27, which states the following:

PO16 Development:

- *Minimises the disturbance of high risk soils; and*
- *Manages the releases of soil based contaminants*

State Code 27 defines high risk soils as areas with erosive, dispersive, sodic, saline and/or acid sulfate soils. This assessment seeks to assess the "erosive" aspect of the Project Area's soils. For a complete assessment of compliance against PO16, and other stormwater related POs of State Code 27, this Report should be read in conjunction with the Stormwater Assessment (ERM, 2026).





1.4 PROJECT SETTING

1.4.1 LAND USE

The Project Area has historically been used for agricultural purposes, predominantly cattle grazing, which continues to be the primary land use. Some cropping also occurs, primarily in order to produce cattle fodder. Cleared areas are dominated by pastured land, sparse shrubs, and juvenile regrowth, with scattered remnant and regrowth patches throughout.

The Project Area directly adjoins the Kumbarilla State Forest along the northern to north-western border of the Project Area, and is also within 15 km of several other State Forests, namely Waar Waar State Forest, Boondandilla State Forest, Dunmore State Forest, and Western Creek State Forest.

The broader region has historically been used for agricultural practices, including livestock farming or husbandry and cropping.

1.4.2 SOILS AND TOPOGRAPHY

The Atlas of Australian Soils (AAS) Queensland defines much of the Project Area as gently undulating plains, with smaller regions of low hills and dissected low ranges. Figure 1-3 depicts the topography across the Project Area and surrounding region, as well as the elevation of the Project Area, which generally falls from the hilly terrain in the northeast to the plains surrounding Waar Waar Creek and the Weir River in the southwest. The maximum elevation is approximately 410 m Australian Height Datum (AHD) in the northeast, with the minimum elevation recorded at approximately 310 m AHD in the southwest. There are several isolated peaks along this elevation gradient, with a notable peak of 370 m AHD in the southern region: a 30 m incline over approximately 250 m.

Australian Soil Classification (ASC) mapping for the region (Figure 1-4) indicates a strong presence of sodosol (dominant entities Braemar, Knoll, Leyburn, and Weranga) kandosol (dominant entities Flinton and Minnabilla), and vertosol (dominant entity Calingunee) soils. The BESS footprint is wholly located upon Calingunee soils (vertosol).

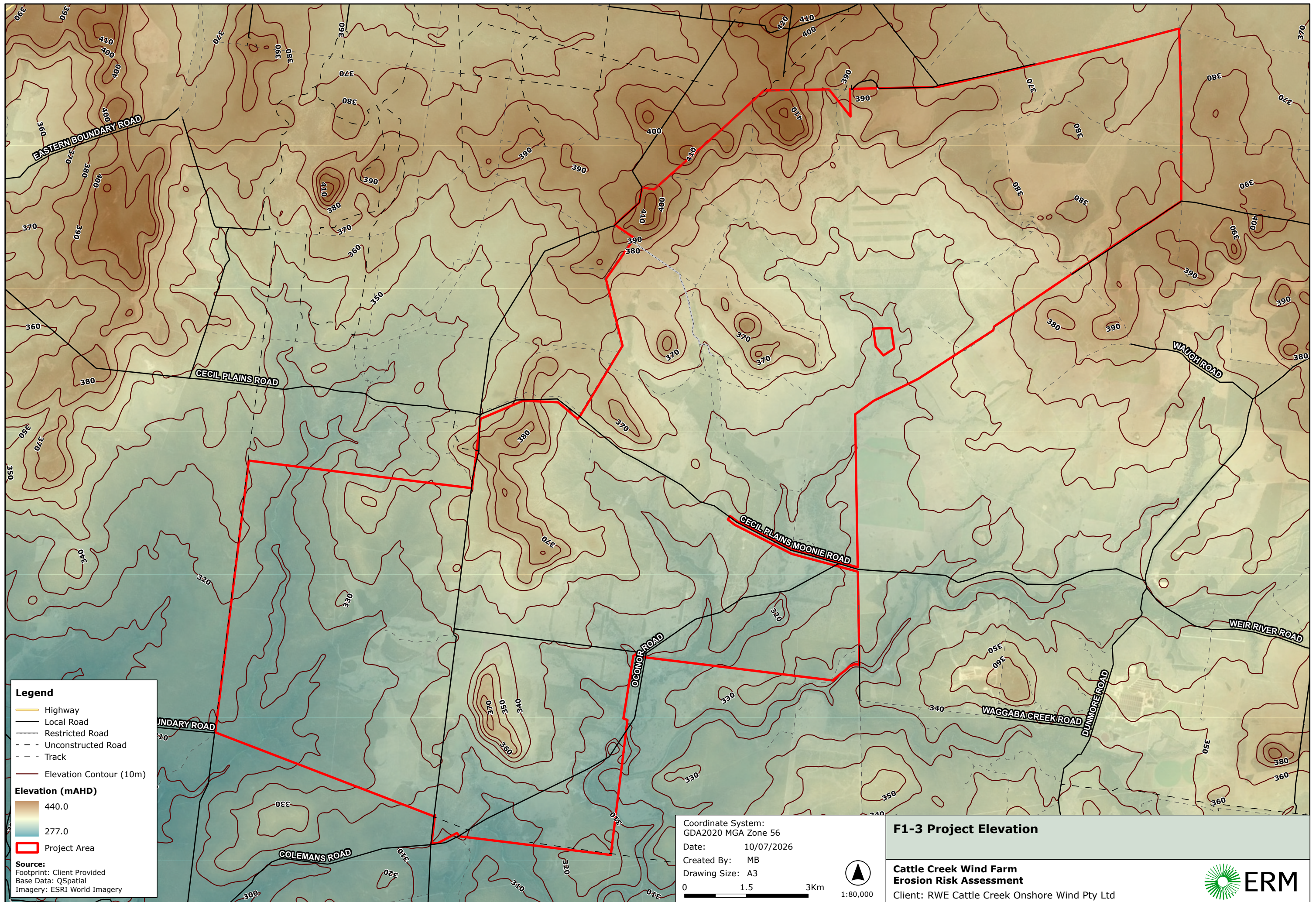
State Code 27 defines “high risk soils” as areas with erosive, dispersive, sodic, saline and/or acid sulfate soils. Whilst no site-specific soil sampling has been undertaken as part of this scope, the ASC mapping provides a high-level (survey scale 1:250,000) understanding of characteristics, and potential risks, associated with the Project Area’s soil landscape.

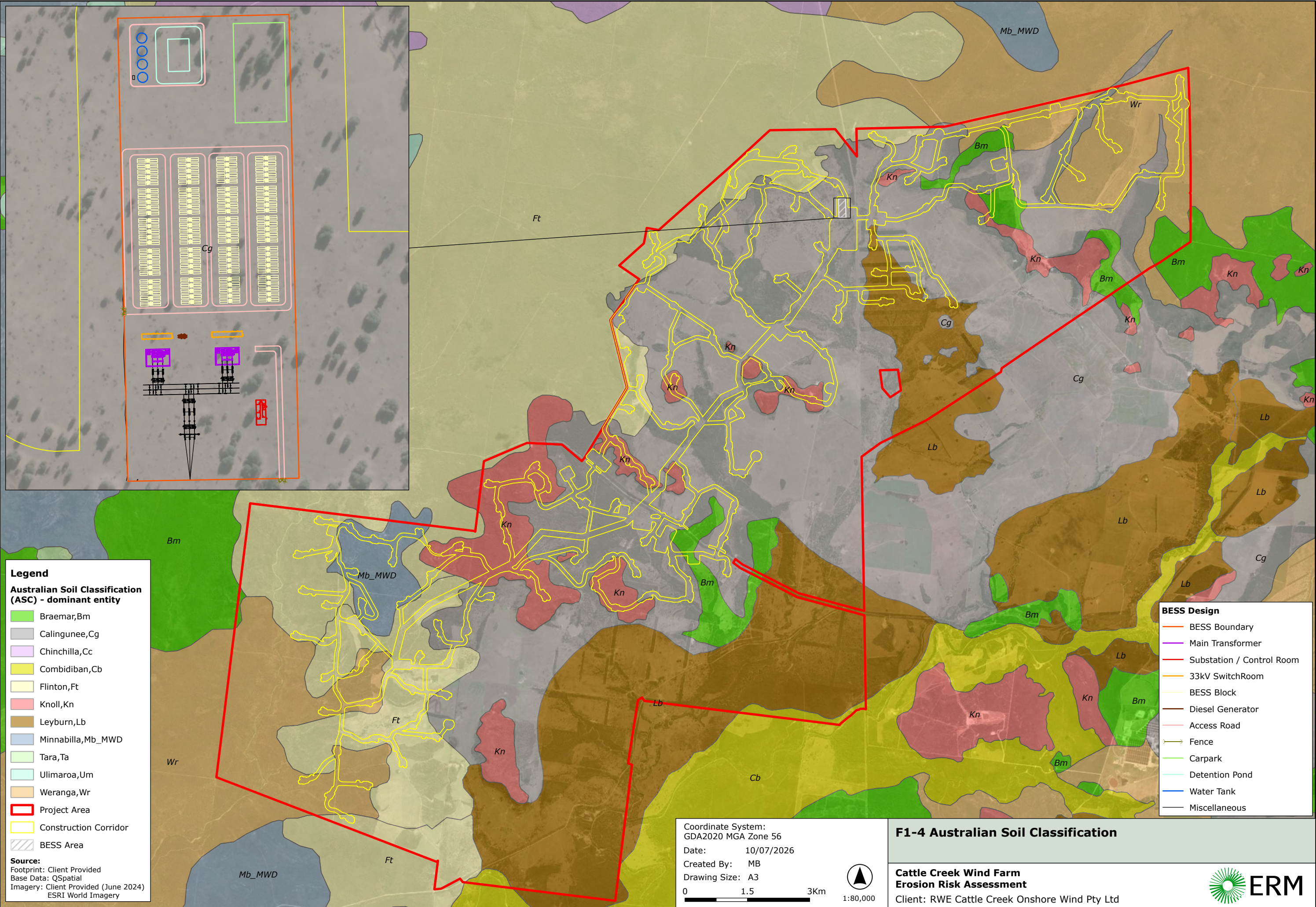
The Central Darling Downs Land Management Manual Field Manual (Harris et.al, 1999) provides brief descriptions of each of the Project Area’s soil types, as detailed in Table 1-2. The corresponding soil erodibility factor for each soil type is presented in Appendix A.

TABLE 1-2 BRIEF DESCRIPTION OF SOILS (HARRIS ET.AL, 1996)

Australian Soil Classification	Dominant Entity	Brief Description
Sodosol	Braemar	Texture contrast soil with a moderately thick (20-40 cm), bleached sandy surface, over mottled, yellow or grey clay subsoils on sandstone

Australian Soil Classification	Dominant Entity	Brief Description
	Knoll	Very shallow (30 cm), gravelly, grey or dark reddish brown sandy loams to loams over sandstone
	Leyburn	Deep (100-150 cm) texture contrast soil with a shallow, hardsetting, bleached loamy sand to clay loam surface, frequently gravelly (20 cm), over yellowish brown and brown clay subsoils on mixed sandstone / traprock alluvium
	Weranga	Texture contrast soil with a thin (<15 cm), bleached sandy loam to sandy clay loam surface, over mottled, grey or yellow sandy clay subsoil on sandstone
Kandosol	Flinton	Moderately deep to deep (50-105 cm) soils with red or brown loams over red or brown clay loam to clay subsoils on lateritised sandstone
	Minnabilla	Very shallow (<45cm), gravelly, red (may occasionally be black) soils; rock outcrop (Maher, 1996)
Vertosol	Calingunee	Moderately deep to deep (60-150 cm), dark brown or grey self-mulching cracking clays with moderate gilgai on fine grained sediments





1.4.3 DRAINAGE BASINS AND WATERCOURSES

The Project Area is situated across the Border Rivers basin, the Balonne-Condamine Basin, and the Moonie Basin (Figure 1-5). With the majority of the Project Area falling within the Border Rivers Basin, the northeastern corner is located within the Balonne-Condamine Basin. A very small portion in the north of the Project Area is in the Moonie Basin. All three basins are sub-catchments of the encompassing Murray-Darling Basin.

Table 1-3 presents the total Disturbance Footprint area within each drainage basin.

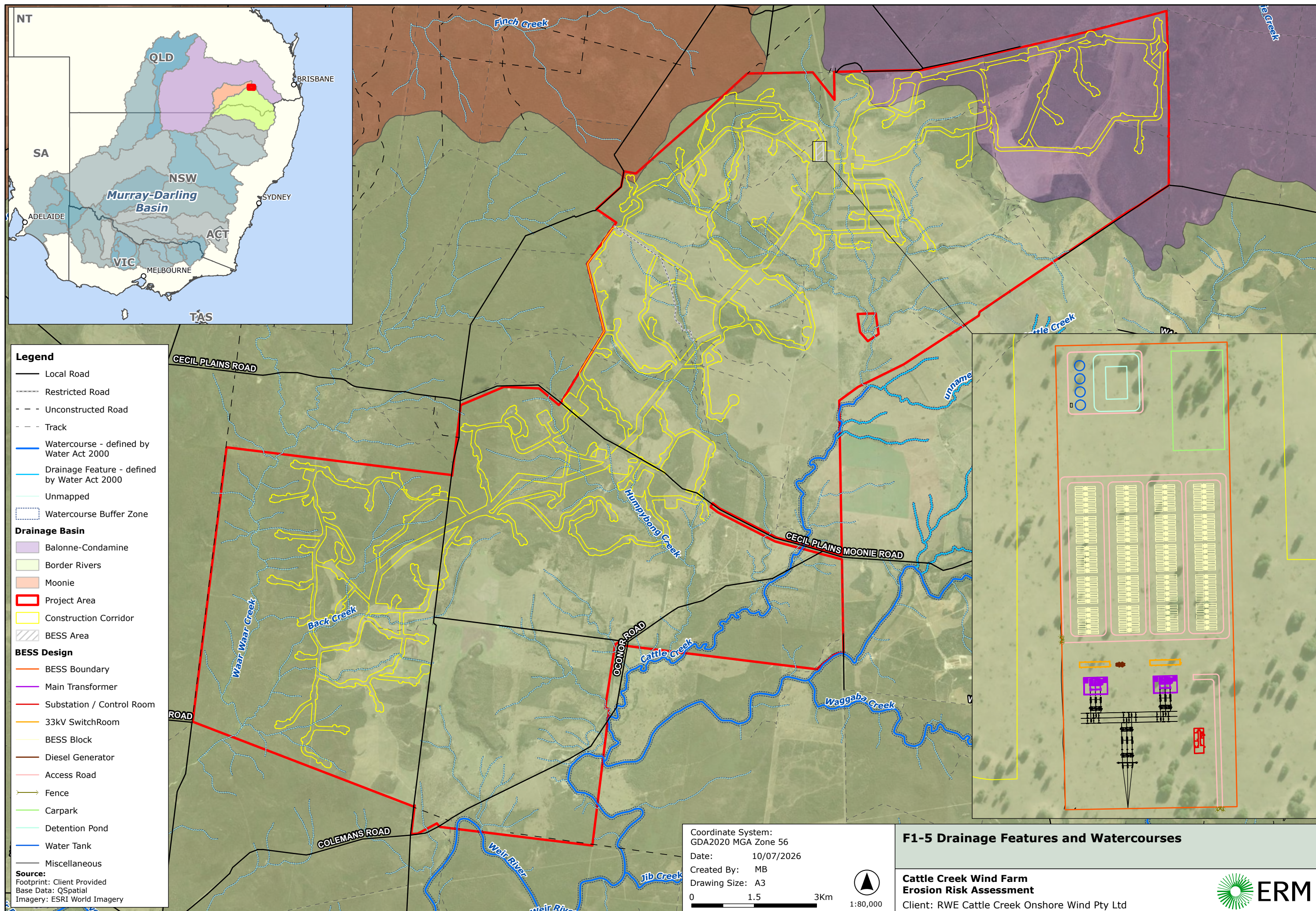
TABLE 1-3 DISTURBANCE FOOTPRINT BASIN IMPACT

Drainage Basin	Disturbance Footprint extent (ha)
Border Rivers	1,935.34
Balonne Condamine	272.34
Moonie	3.32
Total	2,220.87*

*Due to rounding errors, there is a 0.33 ha discrepancy from the defined Disturbance Footprint (2,221.2 ha)

The Queensland Government's Watercourse identification map was consulted to identify the types of surface water features that are present within (and surrounding) the Project Area and to understand the extent to which the Disturbance Footprint (i.e. the extent of clearing) may impact upon any mapped or unmapped waterways (as defined by the *Water Act 2000*).

The defining watercourse of the region is the Weir River (see Figure 1-5). The river flows east to west in close proximity to the southeastern boundary of the Project Area. The river intersects the Project Area at several points, notably flowing through the southern portion of the Project Area. All other waterways that flow through the Project Area are tributaries of the Weir River, the most notable of which being Waar Waar Creek in the west and Cattle Creek in the central region. There are several other ephemeral and perennial waterways within the Project Area that flow into these defined features.



1.4.4 CLIMATE AND RAINFALL

The climate of the region is characterised by a distinct wet season from October through to March. On average, the highest rainfall month is December, with an average of 97 mm. The dry season extends from April to September, with August the lowest rainfall month (25 mm on average). Mean annual rainfall for the region is approximately 620 mm.

Monthly rainfall data is presented in Figure 1-6, with data collected from November 2000 to August 2025 at the Bureau of Meteorology (BoM) Dunmore Exchange TM weather station (station no. 041545) which is located approximately 7 km east of the Project Area.

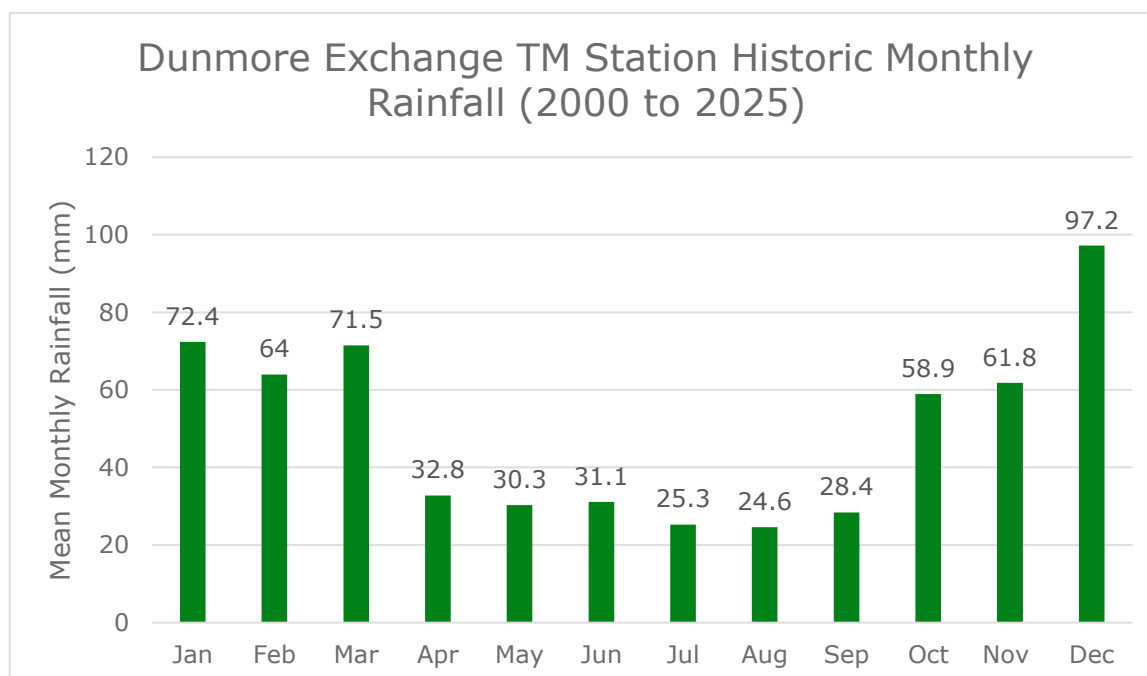


FIGURE 1-6 DUNMORE EXCHANGE TM STATION (NO. 041545) HISTORIC MONTHLY RAINFALL

2. METHODOLOGY

2.1 REVISED UNIVERSAL SOIL LOSS EQUATION

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:

$$A = R \times K \times LS \times C \times P$$

- **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 soil erodibility factor ($t\ h\ MJ^{-1}\ mm^{-1}$);
 - The **K** factor is defined as the susceptibility of 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.
- **L** is the slope length factor;
 - The landscape's topography has a significant influence on the extent of soil erosion. The **L** factor expresses the effect slope length has on slope erosion.
- **S** is the slope steepness factor;
 - The landscape's topography has a significant influence on the extent of soil erosion. The **S** factor expresses the effect gradient has on slope erosion.
- **C** is the cover management factor;
 - The **C** factor considers the effect of vegetation and plant canopy cover.
- **P** is the erosion practice factor;
 - The **P** factor measures the impact of control practices which reduce runoff or erosion potential.

The initial RUSLE assessment for the Cattle Creek Wind Farm was informed by publicly available information from sources such as Queensland Globe (information presented in Section 1.4) and the Queensland government's QSpatial catalogue (DETSI, 2020). The QSpatial catalogue includes K, R, S and L factors across Queensland based on existing understanding of soil properties, statewide topographic mapping, and climatic data.

Individual maps for the K, R, S and L factors for the Project Area are presented in Appendix A – RUSLE Input Factor Maps. C and P factors of 1.0 and 1.3 respectively were adopted for the purposes of developing a conservative "worst-case" assessment of erosion risk. A C factor of 1.0 represents the most conservative estimation available and assumes no existing cover and that the site is cleared. A P factor of 1.3 assumes a compacted a smooth surface, the worst case for runoff and erosion. These combined layers form an erosion risk map which presents the results of the RUSLE assessment visually.

It should be noted that no additional fieldwork or sampling was undertaken specifically for the assessment. Whilst the initial assessment utilises publicly available data, inputs to the RUSLE assessment can be further refined and calibrated by collecting site specific information including soil samples and geotechnical survey. Nonetheless, the RUSLE methodology provides a high-level assessment of potential sediment loss.

2.2 EROSION RISK CLASSIFICATION

As a means of classifying erosion risk from the RUSLE assessment, the International Erosion Control Association's Best Practice Erosion and Sediment Control (IECA BPESC) (IECA, 2008) Book 1 provides guidance surrounding erosion risk. The IECA recommend an adapted classification developed by Morse and Rosewell (1996) to classify annual soil loss rates (as erosion risk) on a scale ranging from very low to extremely high. The erosion risk classification, and their corresponding mean annual soil loss rates are presented in Table 2-1.

TABLE 2-1 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

3. RISK ASSESSMENT

The erosion risk mapping presented in Figure 3-1 shows the outputs of the RUSLE assessment and how the estimated annual soil loss varies across the Project Area. As shown in Table 3-1, approximately 97% of the Disturbance Footprint has been calculated as very low erosion risk (<150 t/ha/yr), with almost all of the (99.9%) of the Disturbance Footprint located within areas classified as very low to low – moderate erosion risk.

Areas classified by an erosion risk class of moderate or greater (i.e. >351 t/ha/yr) represent approximately 0.1% of the Disturbance Footprint, with no areas of the Disturbance Footprint represented by a very high or extremely high erosion risk (i.e. >751 t/ha/yr). The BESS area is proposed to only disturb areas of very low erosion risk.

The predominantly very low erosion risk can be attributed to low S-factor (slope gradient) and L-factor (slope length) values throughout the Disturbance Footprint.

TABLE 3-1 DISTURBANCE FOOTPRINT EROSION RISK

Erosion Risk	Mean Annual Soil Loss (t/ha/yr)	Disturbance Footprint Area (ha)*	Disturbance Footprint Percentage (%)
Very Low	<150	2,155.65	97.04
Low	151 - 225	44.56	2.01
Low - Moderate	226 - 250	18.39	0.83
Moderate	351 - 500	2.27	0.10
High	501-750	0.5	0.02
Very High	751 - 1500	0	0
Extremely High	>1500	0	0

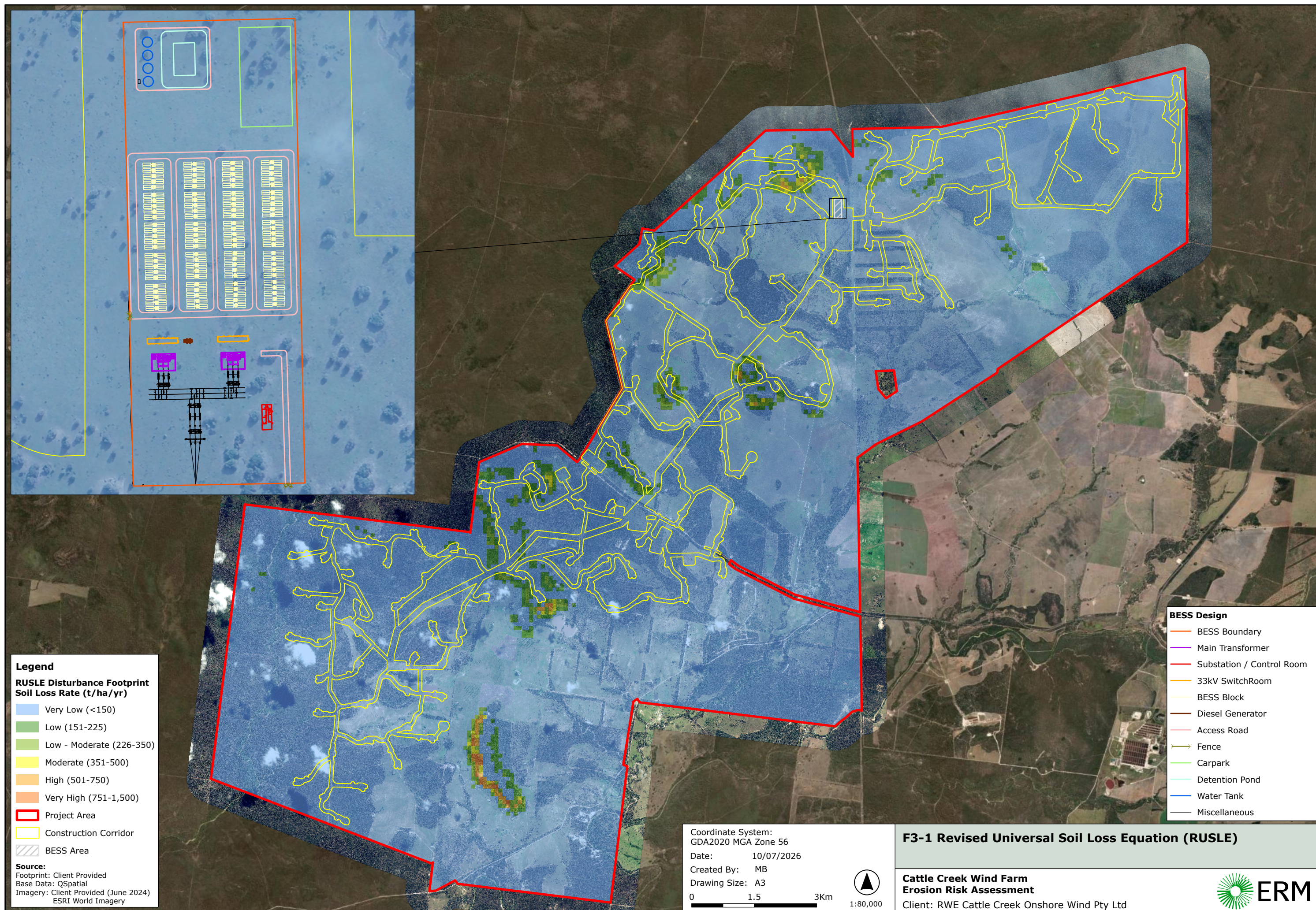
*Due to rounding errors, the total Disturbance Footprint Area (ha) presented in Table 3-1 equates to 2,221.37 ha, a 0.17 ha discrepancy from the defined 2,221.2 ha Disturbance Footprint.

The lack of features that typically promote sediment loss, such as long, steep slopes, or dispersive soils, is evident in the findings from the RUSLE assessment. Overall, the results of the RUSLE assessment indicate that erosion risk for the Project Area is manageable with routine control measures and should not constrain the final layout of the Project significantly.

Erosion risk factors of moderate to high have been observed in a small number of areas where steep elevation changes occur, notably along a peak in the southern region, and at various small peaks throughout the hilly terrain in the north. The IECA BPESC Book 1 states that disturbance in areas categorised as extremely high erosion risk should be avoided where possible. Whilst there are no areas categorised as extremely high erosion risk within the Project Area, the layout of the Disturbance Footprint has been sited to avoid areas with an elevated erosion risk. Almost all of the Disturbance Footprint occurs within areas defined by a very low erosion risk classification, with some small areas of low to moderate erosion risk encompassing the remaining areas of the Disturbance Footprint.

Ground disturbance activities throughout the construction phase are expected to generate the highest level of erosion risk. Notably, the construction of OSOM routes may generate an elevated risk of erosion, with expanded disturbance corridors and greater cut and fill depths required to support construction leading to greater rates of localised sediment loss. These impacts are expected to be amplified in areas defined by moderate and high erosion risk, such as regions of the Disturbance Footprint located upon sloped terrain.

While the RUSLE assessment indicates a very low erosion risk across a majority of the Disturbance Footprint, this does not negate the need for erosion and sediment control measures to be implemented during construction. Section 4 – Mitigation and Control Measures presents management measures to be implemented as part of future construction and development plans for the Project to ensure that negative outcomes associated with erosion and sedimentation are controlled.



4. MITIGATION AND CONTROL MEASURES

4.1 GENERAL

An Erosion and Sediment Control Plan – Construction (ESCPC) will be required to minimise potential impacts to the surrounding environment (including water quality) during construction.

As per the State Code 23 (v3.6) Planning Guidelines, the ESCPC will:

- Be prepared prior to commencing any on-site clearing;
- Need to be prepared by a suitably qualified professional;
- Be prepared in accordance with best practice guidelines and standards;
- Recommend measures to prevent/and or mitigate accelerated soil erosion;
- Include a monitoring and reporting program; and
- Include an emergency response protocol to minimise erosion and run off during extreme weather events experienced during the construction period.

It should be noted that the ESCPC is a requirement of State Code 23, and that State Code 27 does not require to the preparation of an ESCPC. However, it is recommended that best practice measures to protect against erosion related to the BESS facility to be included within the site ESCPC.

The responsibility for the development and implementation of the ESCPC will lie with the principal construction contractor for the Project, once appointed. Thus, the ESCPC will not be available until closer to the start of construction. The State Code 23 planning guideline (DSDIP, 2025a) states that the ESCPC must be prepared prior to commencing construction.

Specific details of the required ESCPC measures will vary based on the construction methodology. However, the plan is to be prepared in accordance with best practice guidelines and standards such as Appendix 2 of the State Planning Policy (SPP) (2017) – Stormwater management design objectives. The design objectives are to be provided for construction and post-construction phases, covering the following issues:

- Drainage control;
- Erosion control;
- Sediment control;
- Litter, hydrocarbons, and other contaminants; and
- Waterway stability and flood flow management.

The information in the following sections is provided to identify controls and procedures that could be adopted to mitigate erosion and sediment impacts. The measures implemented should be appropriate to the erosion risk classification, as per the RUSLE assessment (Figure 3-1).

The ESCPC should be provided to all stakeholders involved with the Project, including the construction, rehabilitation and compliance teams and sub-contractors, private certifiers, body corporates and regulators. These guidelines have been formed in accordance with the Healthy Waterways Fact Sheet 'Erosion and Sediment Control Management Plans' and the 'Best Practice Erosion and Sediment Control'.

4.2 PRE-CONSTRUCTION PHASE

The construction contractor is to prepare a detailed ESCPC suitable for the Project Area and the Disturbance Footprint prior to starting works. The ESCPC should detail the additional controls to be implemented to manage erosion risk in the areas identified as requiring additional controls within the Project Area.

The contractor is to establish a stabilised entry/exit point (rumble pad) with all-weather access to a sealed road. The stabilised entry and exit point(s) will include a vehicle cleaning area (i.e. a shakedown device or wash facility) to mitigate the transportation of dust and sediment. Sediment fences are to be placed along the low side of construction areas, particularly around footprints of the wind turbine generators. This work should form part of the ESCPC preparation and implementation by the contractor.

Measures should also be employed to minimise the extent of disturbed areas, and the interaction of clean water flows with disturbed areas. Measures to minimise flows across disturbed infrastructure areas include appropriately sized drains or diversions around the high side of each infrastructure area. Where possible, consider the location of compounds and large infrastructure areas and keep them within areas of very low or low erosion risk. Areas for plant and construction material storage are to be designated and where appropriate include diversion drains and holding ponds.

Project Area personnel are to be educated to the sediment and erosion control measures implemented for the Project.

4.3 CONSTRUCTION PHASE

Construction activities should be limited and confined to the necessary construction areas, with works involving the clearing and disturbance of soil scheduled (where practicable) during the low rainfall months (April to September).

Where appropriate, the ESCPC should include measures for progressive stabilisation of areas exposed by construction works. Further measures to minimise erosion and sediment loss during the construction phase include the provision of construction entry/exit points with a cleaning area to prevent the tracking of debris from tyres of vehicles onto public roads. Additionally, transport loads that are subject to loss through wind or spillage shall be covered or sealed.

Regular inspection and maintenance of sediment fences, sediment basins and other erosion control measures is to be undertaken by the contractor. The inspection of erosion control measures should also occur following rainfall events sufficient to produce runoff, with the removal of collected material also to be undertaken. Replacement of any damaged equipment should be performed immediately. Adequate inspection and maintenance of controls in high erosion risk areas by the contractor will ensure that the controls in these areas are operating effectively to manage the elevated risk of erosion that is present.

4.4 POST-CONSTRUCTION PHASE

The operator will be responsible for the maintenance of erosion and sediment control devices during the operational stage. A clear handover of responsibility should be outlined in the plans from the Construction Environmental Management Plan (CEMP) to the operational Environment Management Plan for the Project.

For disturbance works undertaken within high, very high, or extreme erosion risk areas (as detailed in (Figure 3-1), suitable stabilisation measures must be implemented. These areas should be identified within the operational Environment Management Plan, and identification of the stabilisation methods used during construction should be noted. High, very high, or extreme erosion risk areas that have been disturbed are to be inspected prior to anticipated rainfall in line with the recommendations from (IECA, 2025).

4.5 PROTECTION ON SLOPES

Areas of very high and extreme erosion risk are predominantly confined to small regions of the Project Area that consist of steep slopes. Whilst disturbance in these areas is expected to be minimal, this section highlights some practical measures that could be included in the ESCPC to manage erosion in extreme risk areas in particular, if this is considered.

Measures proposed have been adopted from the IECA BPESC guidelines and are to be employed to manage erosion with a focus on construction phase disturbance. These are detailed below:

- Avoid disturbance (where practicable) during erosive periods of the year. Rainfall data for the region indicates a wet season from October to March, with a dry period from April to September;
- Where possible, construction should be phased. This would allow for small disturbance footprints which are progressed quickly through completion, before the next area is disturbed. The goal being to minimise open excavations and areas of untreated works for long periods;
- Where possible, seek to establish vegetation or use mulch in sloped areas to encourage the stabilisation of soil in both the short and long term; and
- In areas where the slope exceeds 1 in 10, implement hydraulically applied blankets such as bonded fibre matrix (BFM) or compost blankets to promote the establishment of a vegetative cover. BFM can also assist in reducing the effect of raindrop impact erosion.

5. CONCLUSION

This Report presents an erosion risk assessment for the proposed Cattle Creek Wind Farm. The Report has been prepared to address Performance Outcome (PO) 7 from State Code 23: Wind Farm Development (v3.6) (DSDIP, 2026b), and PO16 from State Code 27: Battery storage facility development (v3.6) (DSDIP, 2026c). The assessment includes the use of the Revised Universal Soil Loss Equation (RUSLE) and has been prepared to inform the final layout of the Project. Table 5-1 demonstrates how the development complies with the performance outcomes outlined in State Code 23 and State Code 27.

TABLE 5-1 COMPLIANCE WITH STATE CODE 23 AND STATE CODE 27

Performance Outcomes		Project Compliance
State code 23 - Protecting water quality and erosion control		
P07	Development is designed to avoid areas of high erosion risk, where failure of erosion management devices would result in permanent and/or adverse impacts on receiving waterways or wetlands.	The result of the assessment shows a majority of the Disturbance Footprint is located within areas classified as having a very low erosion risk. The BESS area is wholly confined to areas defined by very low erosion risk. Erosion and sediment generated as a result of disturbance by the Project within these areas is considered to be manageable with typical erosion and sediment control measures prior to and during construction. Where the layout of the Disturbance Footprint shows disturbance within or near areas of identified high, very high or extreme erosion risk, additional controls should be implemented and outlined in the ESCPC and CEMP for the Project. Through the undertaking of an Erosion Risk Assessment using the RUSLE method, this Report demonstrates that the Project has been designed to avoid areas of mapped high erosion risk. This Report outlines the measures to be implemented via the ESCPC to ensure there are no permanent and/or adverse impacts on receiving waterways or wetlands. Project is compliant¹
State code 27 - Protecting water quality and stormwater management		
P017	Development maintains the water quality of receiving waters, waterways and wetlands by: avoiding locating in waterways and wetlands; - Minimising crossings of and interference with natural drainage lines, farm drainage and irrigation infrastructure; - Minimising erosion and sediment run off; - Managing drainage control; and - Preserving the bank stability of affected waterways and drainage lines avoiding non-essential	- The BESS development is located outside of any identified waterways and wetlands; - There are no waterway crossings proposed as part of the BESS; - Erosion and sediment runoff will be minimised through disturbance of very low erosion areas, and the implementation of IECA BPESC measures as specified in the ESCPC; - Potential impacts to stormwater flows will be managed through the construction of appropriate drainage controls in accordance with the QUDM manual; and

Performance Outcomes	Project Compliance
	hardening or unnatural modification of the waterway. • No non-essential hardening or unnatural modification of waterways is set to occur. Project is compliant²

¹Compliance is subject to the preparation of an appropriate ESCPC and CEMP for the Project

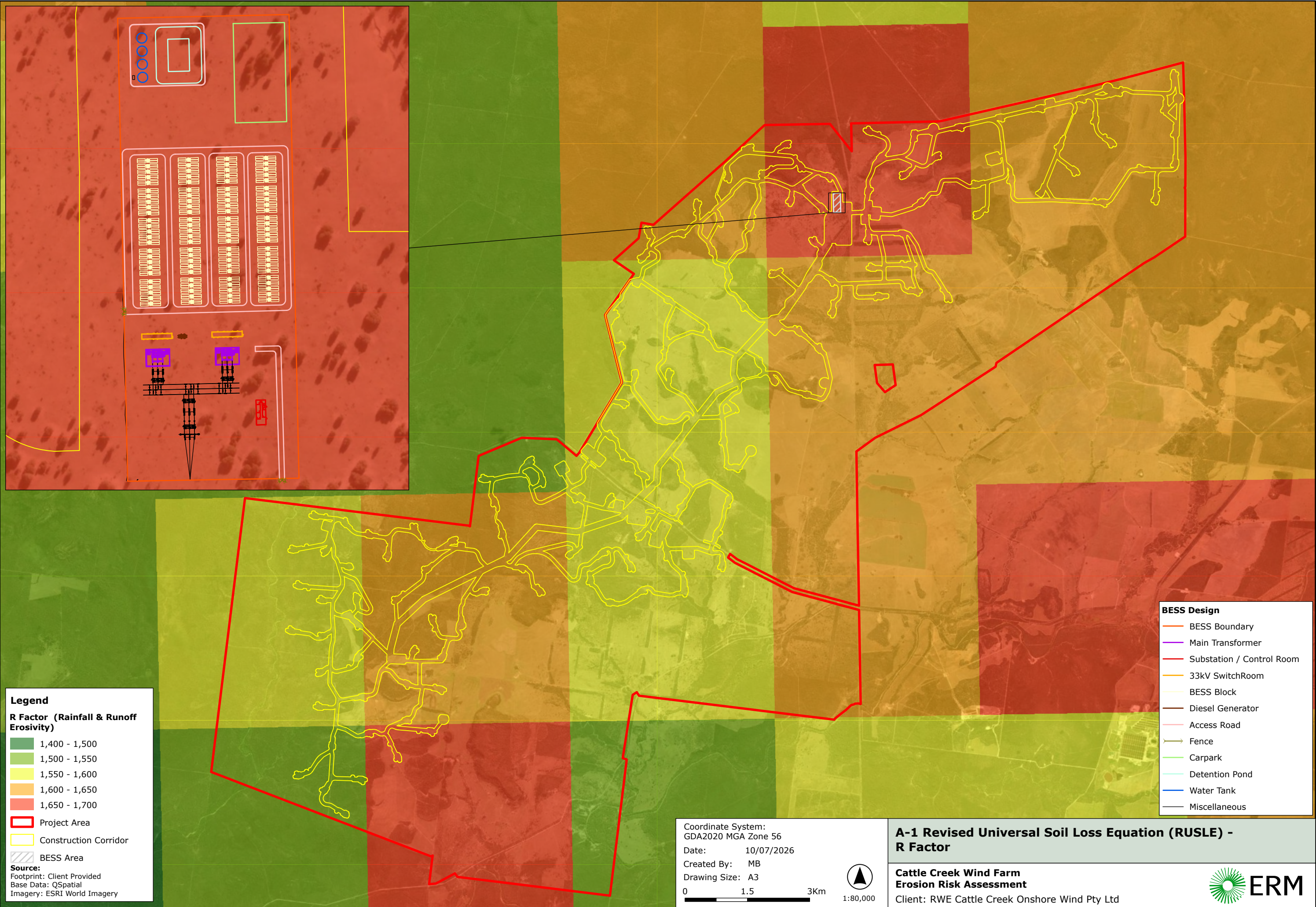
²If the project is approved it will require the preparation of a detailed Stormwater Management Plan and Rehabilitation Management Plan.

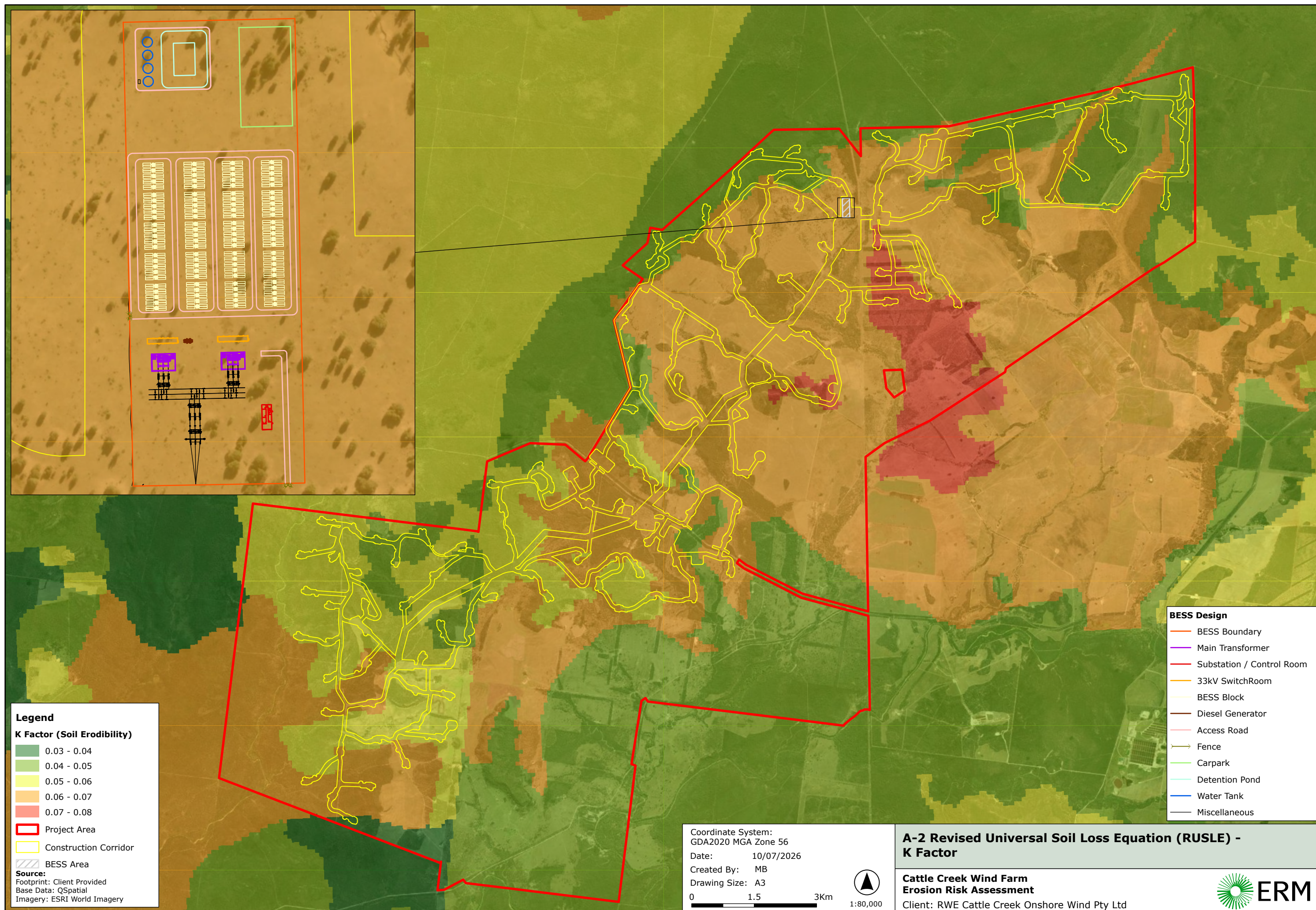
6. REFERENCES

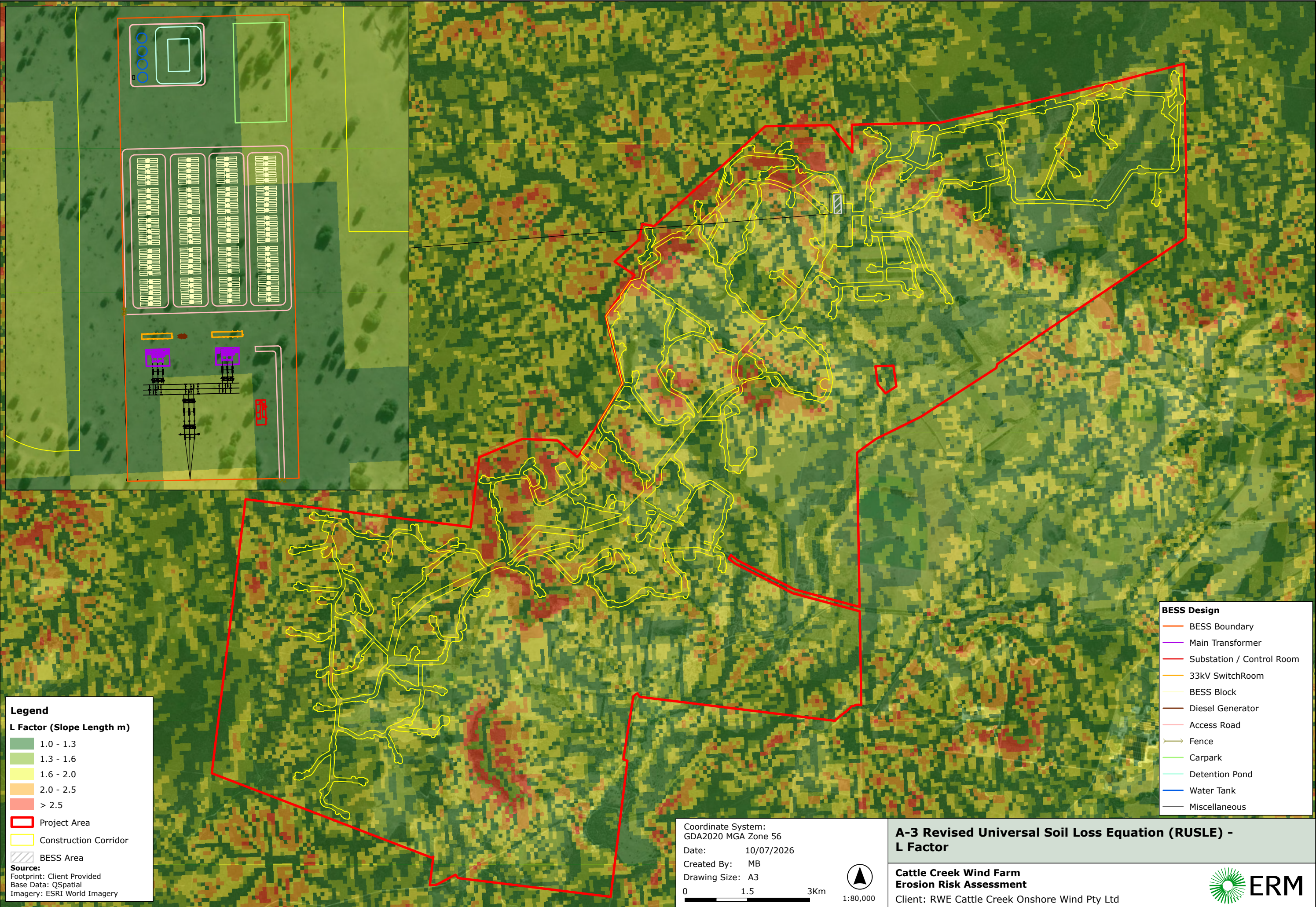
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APPENDIX A RUSLE INPUT FACTOR MAPS







Legend

L Factor (Slope Length m)

1.0 - 1.3

1.3 - 1.6

1.6 - 2.0

2.0 - 2.5

> 2.5

Project Area

Construction Corridor

BESS Area

Source:

Footprint: Client Provided

Base Data: QSpatial

Imagery: ESRI World Imagery

Coordinate System:
GDA2020 MGA Zone 56

Date: 10/07/2026

Created By: MB

Drawing Size: A3

01.53Km

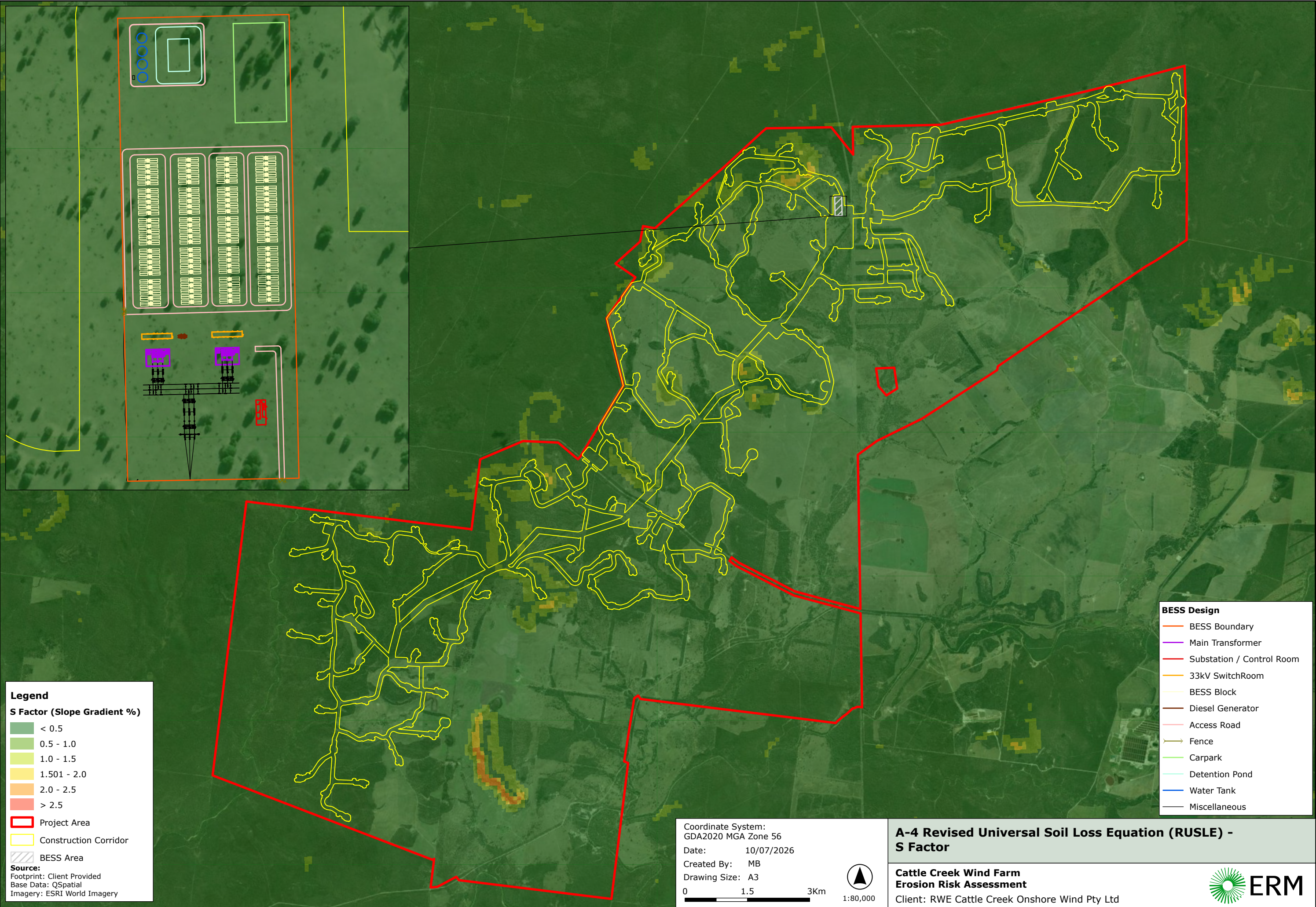
1:80,000

A-3 Revised Universal Soil Loss Equation (RUSLE) - L Factor

**Cattle Creek Wind Farm
Erosion Risk Assessment**

Client: RWE Cattle Creek Onshore Wind Pty Ltd







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