



Appendix H:

Bushfire Risk Assessment

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Bushfire Risk Assessment Report

Cobden Battery Energy Storage System (BESS)

Cobden BESS Pty Ltd

Level 11, 88 Tribune Street, South Brisbane QLD 4101

Prepared by:

SLR Consulting Australia

SLR Project No.: 620.041534.00012

Revision: R12-v2.0

1 May 2026

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
R12-v2.0	1 May 2026	Dr Peter Georgiou	Dr Craig Simpson	Katie Yang
R12-v1.0	16 April 2025	Dr Peter Georgiou	Dr Craig Simpson	

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Cobden BESS Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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Executive Summary

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Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Cobden BESS Pty Ltd (Cobden BESS) to undertake a Bushfire Risk Assessment (BRA) for the proposed Cobden Battery Energy Storage System (BESS) located at 89 Cobden-Port Campbell Road, Cobden VIC 3266 (Lot 1 and Lot 2 of TP86359) (the Project).

The Project involves:

- A BESS with a capacity of 75 Megawatt (MW) / approximately 300 Megawatt-hour (MWh) at the point of connection, comprising battery units, inverters, transformers, substation and ancillary infrastructure.
- Connection to the 66 kilovolt (kV) Sub-Transmission line which runs from Cobden Zone Substation to Camperdown Zone Substation in a Line-In-Line-Out configuration. Powercor, as the network provider, will facilitate effective integration into the existing power grid; this application relates solely to activities occurring within the Subject Site.
- New driveway and crossover access from Cobden-Port Campbell Road.
- Associated ancillary infrastructure including Switch Room / Control Room, Operations & Maintenance building/storage warehouse, security fencing, CCTV security system, landscaping, access and internal road, water tanks, temporary parking.
- Decommissioning of the BESS facilities at end of life (EOL).

This study forms part of the Planning Permit application for the Project and has been prepared in accordance with the Victorian Planning Provisions 13.02-1S *Bushfire Planning* (March 2023).

Subject Site

The Subject Site lies just over 2 km to the southwest of the outskirts of Cobden and is bordered by Cobden-Port Campbell Road to the west and agricultural land in all other directions.

The Project footprint is located within agricultural land comprised predominantly of modified pasture species intended to support cattle grazing.

Bushfire Risk

A search on the VICPLAN website, using its mapping tool, shows that the Subject Site is identified as being within bushfire prone land – refer **Section 3.1**.

Accordingly, a comprehensive Bushfire Risk Assessment (BRA) has been undertaken for the Project.

The Subject Site however is not covered by a Bushfire Management Overlay (BMO).

Vegetation Characteristics at the Subject Site Relevant to Bushfire Risk

Data available on the VIC NATUREKIT website and the outcomes of the Ecology Assessment of the Subject Site were used to identify the surrounding vegetation types, relevant to the assessment of the Bushfire Attack Level of the Subject Site – refer **Section 3.2**.



Based on the above, SLR has conservatively assumed that the vegetation types immediately surrounding the BESS facility would be classed as Grassland. This applies in all directions.

BAL (Bushfire Attack Level)

In **Section 4** of this report, BAL calculations were made for the Subject Site.

The BAL-12.5 level was chosen for all critical equipment at the Subject Site. This also assists the safety of firefighters and other emergency workers found within the facility when under threat by a bushfire.

APZ (Asset Protection Zone) at the Subject Site

The resulting APZ distance for the Project (refer **Figure 11**) is:

- The target BAL-12.5 level is achieved at a distance of 19 m.

Bushfire Risk Mitigation

Section 5 of this report details the management and mitigation measures that address bushfire risk at the Subject Site – including the following:

- Asset Protection Zones (APZs) to minimise the impact of radiant heat and flame contact – refer **Section 5.1**.
- Construction Standards and Design to minimise building vulnerability to bushfire flames, radiation and embers – refer **Section 5.2**.
- Access and Egress for authorised personnel and for firefighters and their equipment – refer **Section 5.3**.
- Adequate Water Supply for fire suppression – refer **Section 5.4**.
- Landscape Management – refer **Section 5.5**.
- Emergency Response and Management – Preparedness and Planning.

Bushfire Management Plan (BMP)

Section 6 details the requirements of the BMP that will be developed during detailed design stage and the need to align the BMP with other key emergency response plans that would be developed during the detailed design phase of the Project.

Summary

Taking into account the above, SLR has concluded that:

- Bushfire risk issues at the Subject Site can be adequately mitigated; and
- The Project will be adequately protected from the threat of a bushfire event.

In terms of the usual “Risk Matrix” approach adopted for Hazard Studies, SLR considers the residual risk associated with Bushfire hazard to the proposed development to be **LOW/MINOR**, and hence adequately mitigated and managed.

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Appendices

Appendix A Vegetation Descriptions taken from AS3959:2018

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Acronyms and Abbreviations

APZ	Asset Protection Zone
ARES	Australian Renewable Energy Systems
BAL	Bushfire Attack Level
BESS	Battery Energy Storage System
BRA	Bushfire Risk Assessment
BMO	Bushfire Management Overlay
BMP	Bushfire Management Plan
BPA	Bushfire Prone Area
CFA	(VIC) Country Fire Authority
EMP	Environmental Management Plan
EOL	End of Life
FDI	Fire Danger Index
FRV	Fire & Rescue Victoria
FTE	Full-Time Equivalent
LGA	Local Government Area
SLR	SLR Consulting Australia Pty Ltd
TL	Transmission Line
VMP	Vegetation Management Plan

Units

kL	Kilolitre (1,000 litres)
km	Kilometre (1,000 metres)
kV	Kilovolt (1,000 volts)
kVA	Kilovolt Amps
kW	Kilowatt (1,000 watts)
m	Metre
MW	Megawatt (1 x 10 ⁶ watts)
MWh	Megawatt-Hour

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1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Cobden BESS Pty Ltd (Cobden BESS) to undertake a Bushfire Risk Assessment (BRA) for the proposed Cobden Battery Energy Storage System (BESS) with a capacity of 75 MW / approximately 300 MWh at the point of connection, and associated infrastructure, located at 89 Cobden-Port Campbell Road, Cobden, Victoria, formally known as Lot 1 TP863659 and Lot 2 TP863659 (the Project).

This study forms part of the Planning Permit application for the Project and has been prepared in accordance with the Victorian Planning Provisions 13.02-1S *Bushfire Planning* (March 2023).

1.1 Terminology

The areas of investigation and assessment discussed within this report are as follows:

- *Project* – the proposed Cobden BESS.
- *Subject Site* – consisting of Lot 1 of TP863659 and Lot 2 of TP863659;
- *Project Area* – the area as marked in **Figure 1** associated with the Project within the Subject Site, consisting of all compounds, buildings and equipment within the Project boundary fence, including:
 - *BESS Compound* – the area of the BESS battery containers.
 - *Substation Compound* – the area of the Project substation.
 - *Switch Room / Control Room*.
 - *O&M Buildings*.

1.2 Structure of Report

The remainder of this BRA report is structured as follows:

- Section 2 Description of the Project
- Section 3 Subject Site and Surrounds: Vegetation, Ground Slopes, Bushfire History, Prevailing Winds
- Section 4 Determination of the BAL (Bushfire Attack Level) and APZ (Asset Protection Zone) for the Project.
- Section 5 Bushfire Mitigation and Controls
- Section 6 Recommendations for the Project's Bushfire Management Plan
- Section 7 Conclusions

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2.0 Project Description

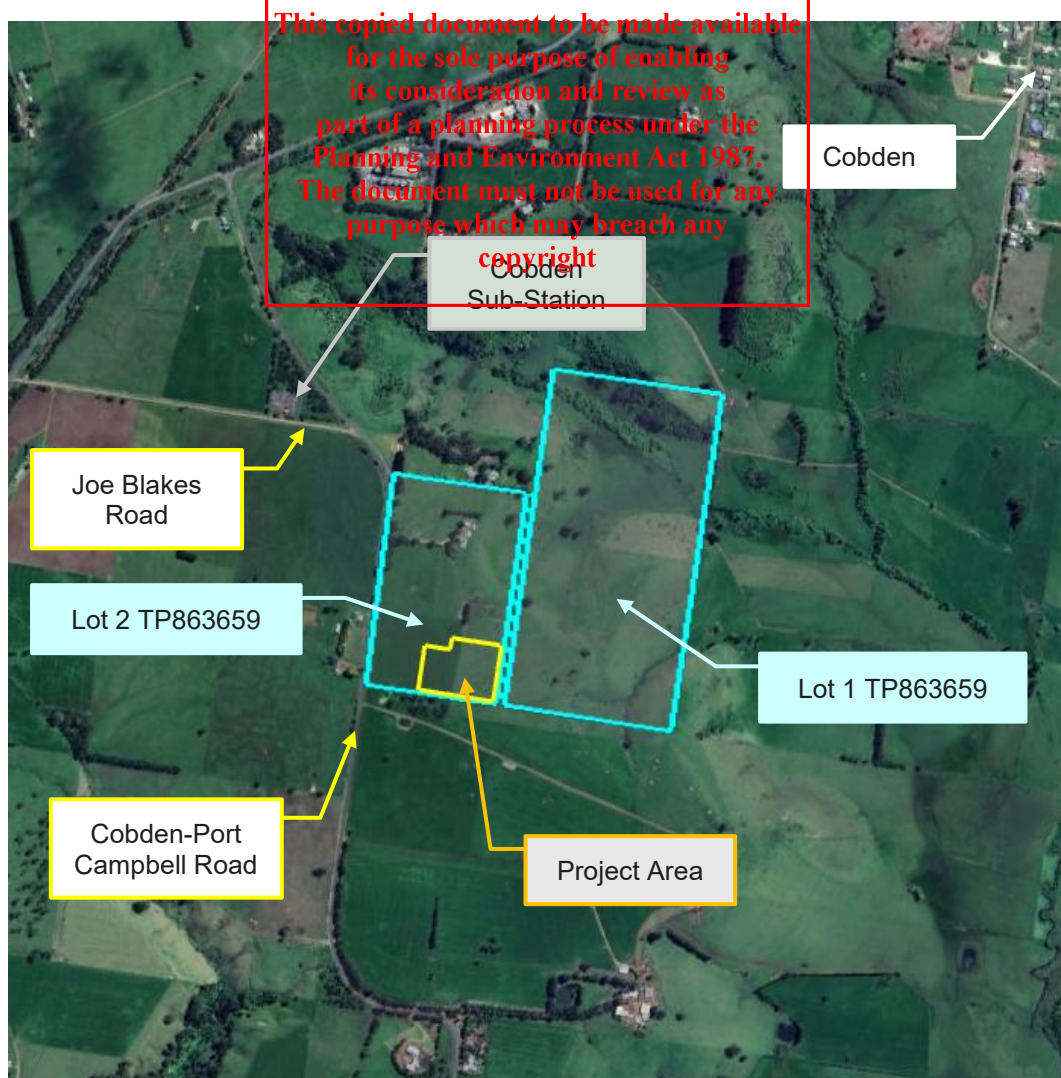
2.1 Subject Site Location

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The Cobden Battery Energy Storage System (BESS), herein “the Project”, will involve the development, construction, operation, and eventual decommissioning of a BESS with capacity of 75 MW and approximately 300 MWh at the point of connection - refer **Figure 1**.

- The Project is located at 89 Cobden-Port Campbell Road, Cobden, Victoria, formally known as Lot 1 TP863659 and Lot 2 TP863659.
- The 49.3 ha Subject Site is located within the Corangamite Shire Council Local Government Area (LGA) and lies just over 2 km to the southwest of the outskirts of Cobden.
- The footprint of the Project Area within the Subject Site is approximately 2.4 ha.
- The BESS will be connected into the 66 kilovolt (kV) Sub-Transmission line which runs from Cobden Zone Substation to Camperdown Zone Substation in a Line-In-Line-Out configuration. Powercor, as the network provider, will facilitate effective integration into the existing power grid.

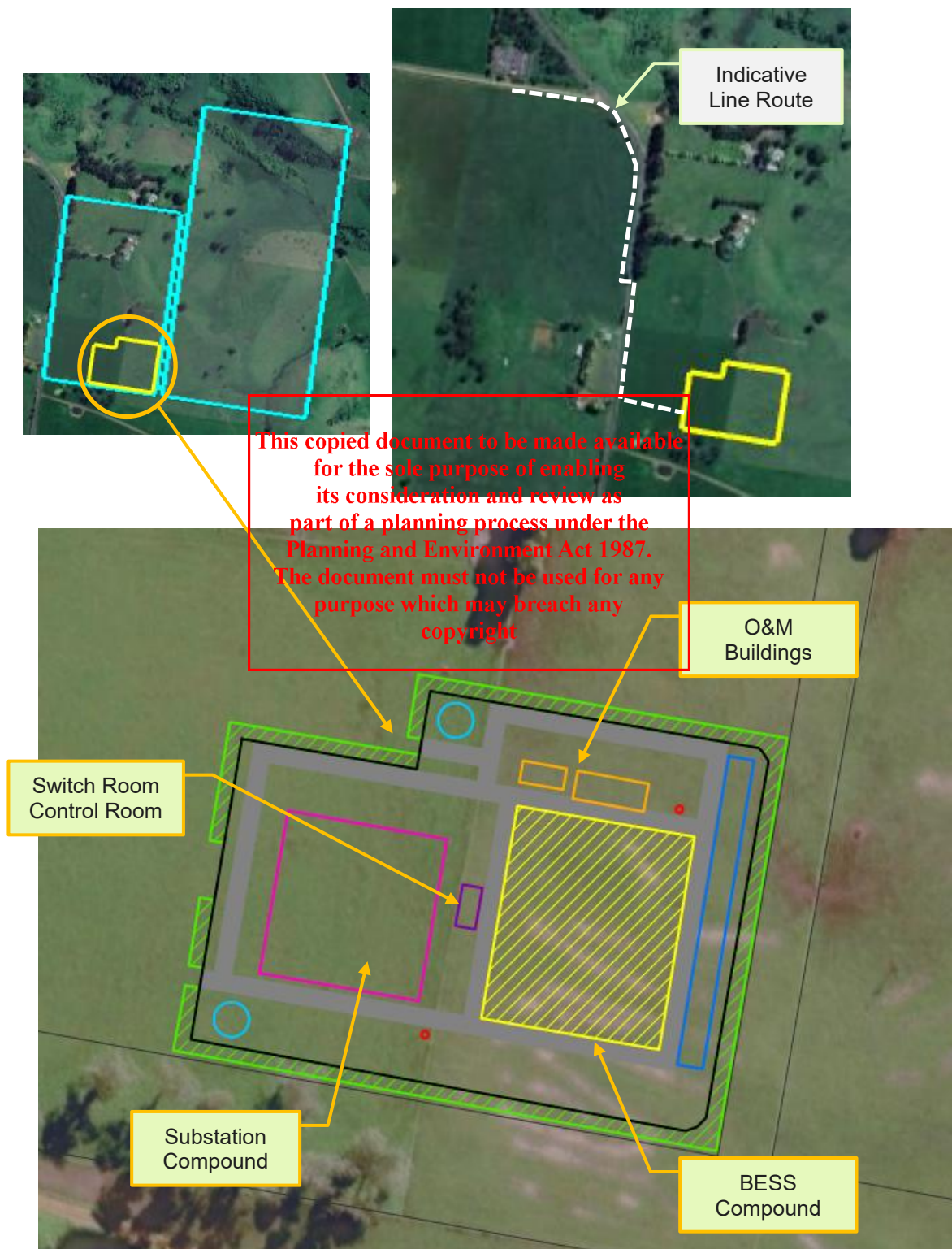
Figure 1 Project Location



2.2 Project Layout

The layout of the Project is shown in **Figure 2**, along with a concept diagram showing the position of the BESS Compound and Substation Compound.

Figure 2 Project Layout



2.3 Development Description

2.3.1 Construction

Construction of the Project would require heavy vehicles, plant, and equipment for the transportation of components and installation of the components on the Subject Site. Construction laydown areas and temporary buildings may also be established on the Subject Site outside the development area. Earth-moving machinery, cable-trenching equipment, forklifts, and cranes will be required, subject to detailed design, to install the BESS and undertake associated civil and ancillary works.

It is anticipated that the construction and commissioning phase will last approximately 24 months. Over that time, the main construction activities will include:

- Pre-construction activities including driveway apron.
- Project establishment works including vegetation clearing within the Project Area fencing boundary, bulk earthworks, and temporary construction compound.
- Construction of hardstand, gravel all weather access road and BESS internal roads and drainage;
- Installation of a substation including installation of earthing grid, benching works, transformer bunding, installation of 66/33 kV main transformers, outdoor switchgear, high voltage (HV) busbar and support structure, overhead gantry structures, harmonic filters, and reactive plant;
- Construction of an overhead power line from the substation, connecting west to the road reserve and then up towards the north, to cut into existing overhead lines located along Cobden-Port Campbell Road. These works will be undertaken by Powercor;
- Installation of underground 33 kV reticulated cabling, auxiliary transformers, battery containers, and the PCS;
- Construction of ancillary works including parking areas, water tank, storage structures, stormwater management infrastructure, water containment infrastructure, and security lighting and fencing, including vegetation screening;
- Construction of Operations & Maintenance building, and delivery and installation of Control Room and Switch Room;
- Transport of construction personnel, associated heavy and light vehicles, and materials to and from the Subject Site on a day-to-day basis, dependent on construction schedule;
- Cold and hot commissioning of BESS and substation equipment;
- Hold point testing and Final Acceptance; and
- Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.

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2.3.2 Operation

During operation, the Project is proposed to self-operate 24 hours a day 7 days a week and will only require periodic maintenance by authorised staff. The Project Area would otherwise be restricted to the public.

Minimal plant and equipment will be required for operation of the Project, primarily for staff access and maintenance vehicles.

The operation of the Project would involve, but not be limited, to the following general activities:

- Maintenance and management of equipment, site buildings, and landscaping.
- General administrative activities.
- Receipt of equipment or goods.
- Waste removal from maintenance and administration activities.

Emergency responses and maintenance activities may be required to be undertaken out of hours.

The operational life of the Project will be determined by the evolving nature of the technology. It is currently envisaged that the lifespan will be approximately 25-30 years.

Key Access Characteristics:

- Access to and from the Project Area would be provided by a dedicated road within the Subject Site (Lot 2 TP869659) from Cobden Port Campbell Road. Access would be enabled from both the north (Cobden) and south (Scott's Creek and Timboon).
- Internal roads are proposed to accommodate firefighting access during an emergency situation.

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2.3.3 Decommissioning

The Project is proposed to be decommissioned and the infrastructure removed following the End of Life (EOL) of the Project, with works required to return the Subject Site as close as possible to its original state and use.

All decommissioning and restoration activities would be in accordance with regulatory requirements at the time.

2.3.4 BESS Units

Essential specifications for the proposed BESS units are shown in **Table 1**, with an example of a BESS module installation shown in **Figure 3**.

Table 1 BESS Specifications¹

Specification	Details
No. of Battery Containers	Up to 66
No. of Battery Racks per Enclosure	4-6
Battery Container	20 ft Battery Energy Storage System

¹ Final BESS specifications will be subject to detailed design



Specification	Details
Storage Inverter	4600.0 kVA
Power Conversion system	4.6 MVA, 0.69/33.0kV
Dimensions	L: 6058mm x W: 2438mm x H: 2896mm (20 ft high cube shipping container)
Battery Chemistry	Lithium-iron-phosphate
Inverters	22
MV Transformers	22
Substation	1 x 66/33 kV Transformer, 2 x 66 kV lines out

Figure 3 Indicative Image of BESS Modules



2.3.5 Grid Connection

The BESS will be connected into the 66 kV sub-transmission line which runs from Cobden Zone Substation to Camperdown Zone Substation in a Line-In-Line-Out configuration. Electricity stored within the BESS will be converted from DC to AC by onsite inverters and transferred through underground 33 kV cables to the proposed onsite 66/33kV substation, where it will be increased to 66 kV for discharge into the electricity network.

The proposed overhead sub-transmission line will originate from the Project substation and connect west to the existing overhead lines located along Cobden-Port Campbell Road. Network provider Powercor will facilitate effective integration into the existing power grid. All approvals required outside the Subject Site are the responsibility of Powercor.

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2.3.6 Removal of Vegetation

The proposed BESS and Substation Compounds, external access and connecting sub-transmission line easement will require minimal clearing of Subject Site vegetation.

2.3.7 Water Usage

As noted above, water will be required during the construction phase for dust suppression, general construction, and maintenance activities. This water will be brought to the Subject Site in water tankers.

Construction water requirements for the Project are anticipated to be sourced from local bulk water supply.

Wastewater during construction will be captured and appropriately removed from the Subject Site and disposed of in accordance with the council/water authority requirements.

Potable water may be transported to the Project in bottles for use by the construction workforce.

If utilised, toilet facilities will involve waterless toilets (or equivalent) that are emptied off-site.

A 288 kL static water supply comprising two 144 kL tanks available for firefighting purposes will be constructed at an early stage of the Construction phase.

- These tanks will remain available for firefighting purposes during the Construction, Operation and De-commissioning phases of the project.

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3.0 Characteristics Relevant to Bushfire Risk of the Subject Site and Surrounds

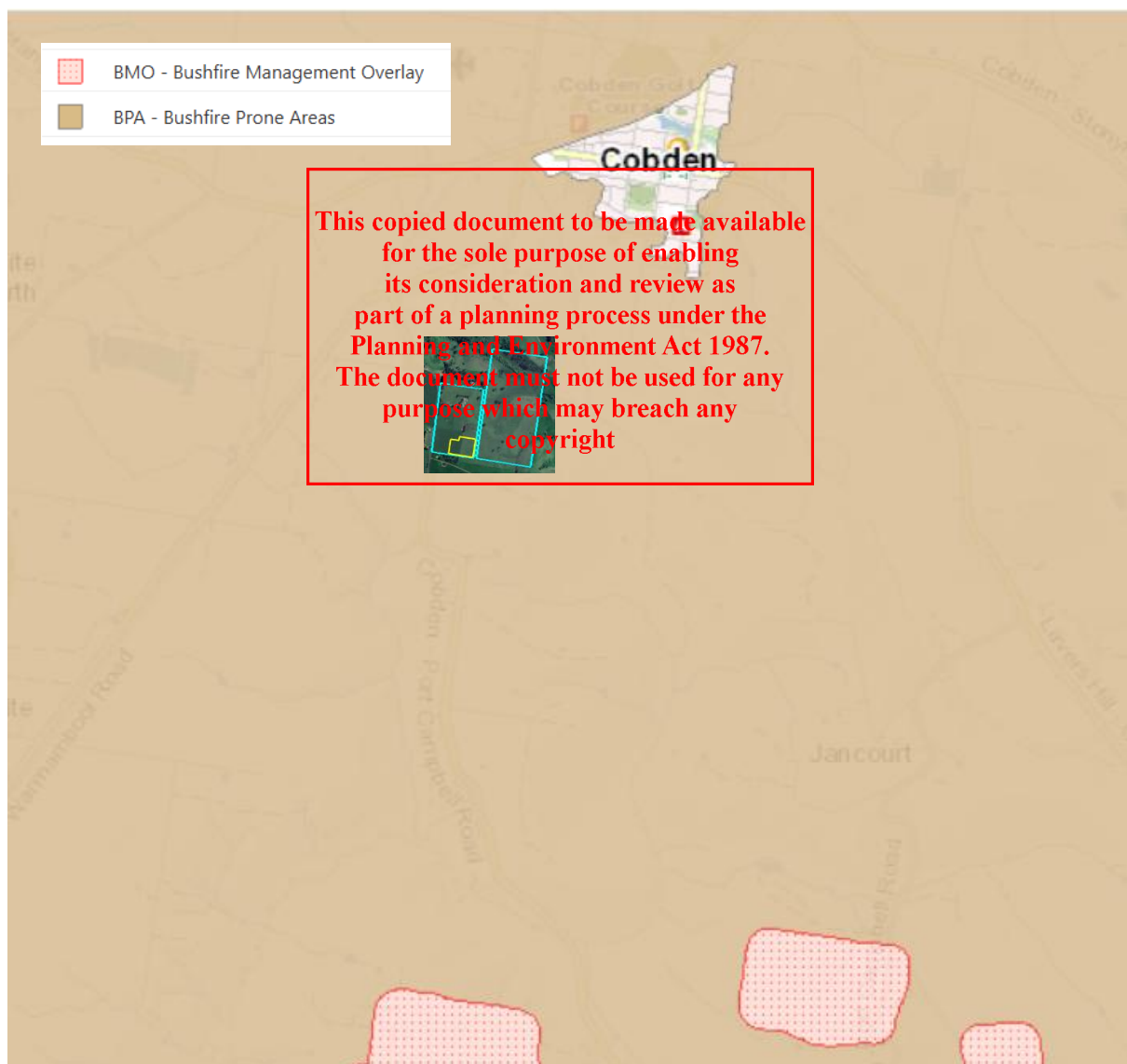
3.1 Bushfire Prone Land

Figure 4 has been sourced from Victorian Government's VICPLAN website resource:

refer: <https://mapshare.vic.gov.au/vicplan/>

- The Subject Site is identified as lying within a bushfire prone area (BPA).
- The Subject Site does not lie within a Bushfire Management Overlay (BMO). The nearest such BMO area lies more than 4 km to the west and south.

Figure 4 Cobden Region – Bushfire Prone Areas



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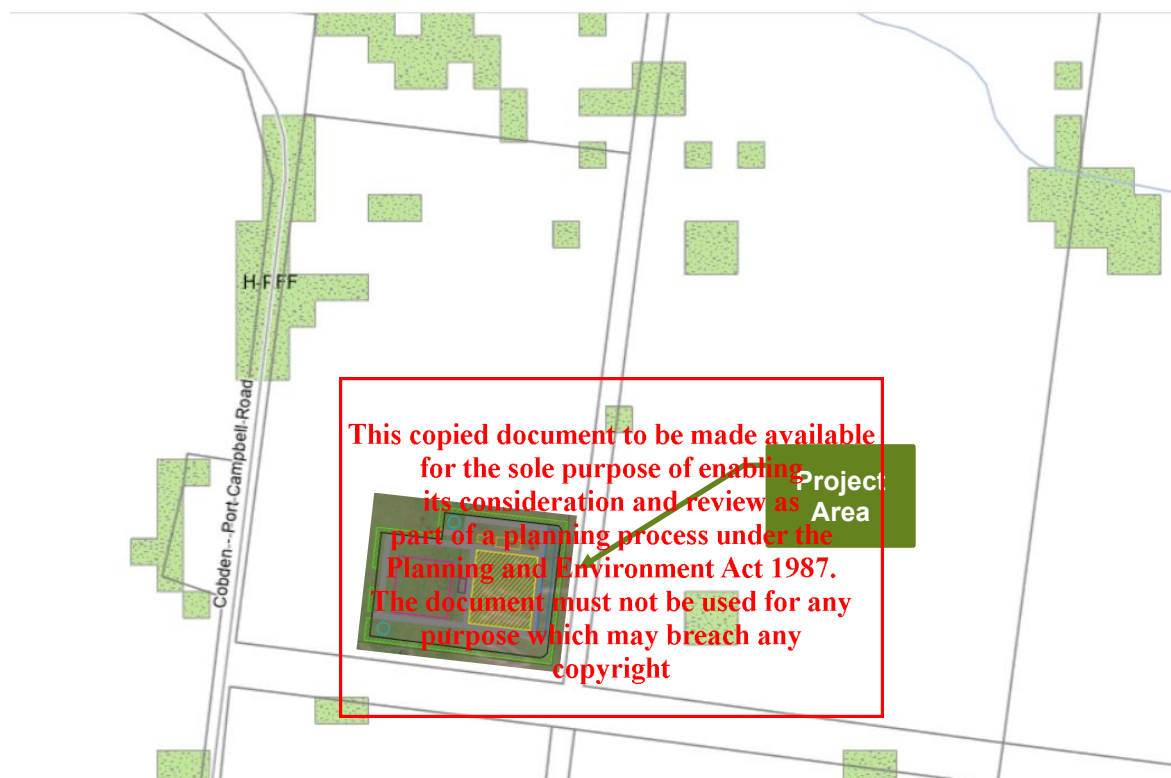


3.2 Vegetation Characteristics of Subject Site and Surrounds

The vegetation types surrounding the Project Area – refer **Figure 5** – have been sourced from:

<https://maps2.biodiversity.vic.gov.au/Html5viewer/index.html?viewer=NatureKit>

Figure 5 Regional Ecosystem Classification for Project Surrounds



The Subject Site is bordered by Cobden-Port Campbell Road to the west and agricultural land in all other directions. The Project footprint is located within agricultural land comprised predominantly of modified pasture species intended to support cattle grazing.

The Ecology Assessment for the Project found the following:

- No threatened flora or fauna species listed under the EPBC or FFG acts were identified within the study area. As such the proposed action is unlikely to result in a significant impact to any listed species.
- Furthermore, the native vegetation extent map indicates that this area is not typically characterised as supporting native vegetation. It does not meet the criteria to be classified as Location Category 2 or 3. The removal of less than 0.5 hectares of native vegetation in this area will therefore not require a Species Offset.

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Based on the above, SLR has conservatively assumed that the vegetation types immediately surrounding the Project Area relevant to an assessment of Bushfire Attack Level, and hence an Asset Protection Zone, would be classed as Grassland. This applies in all directions.

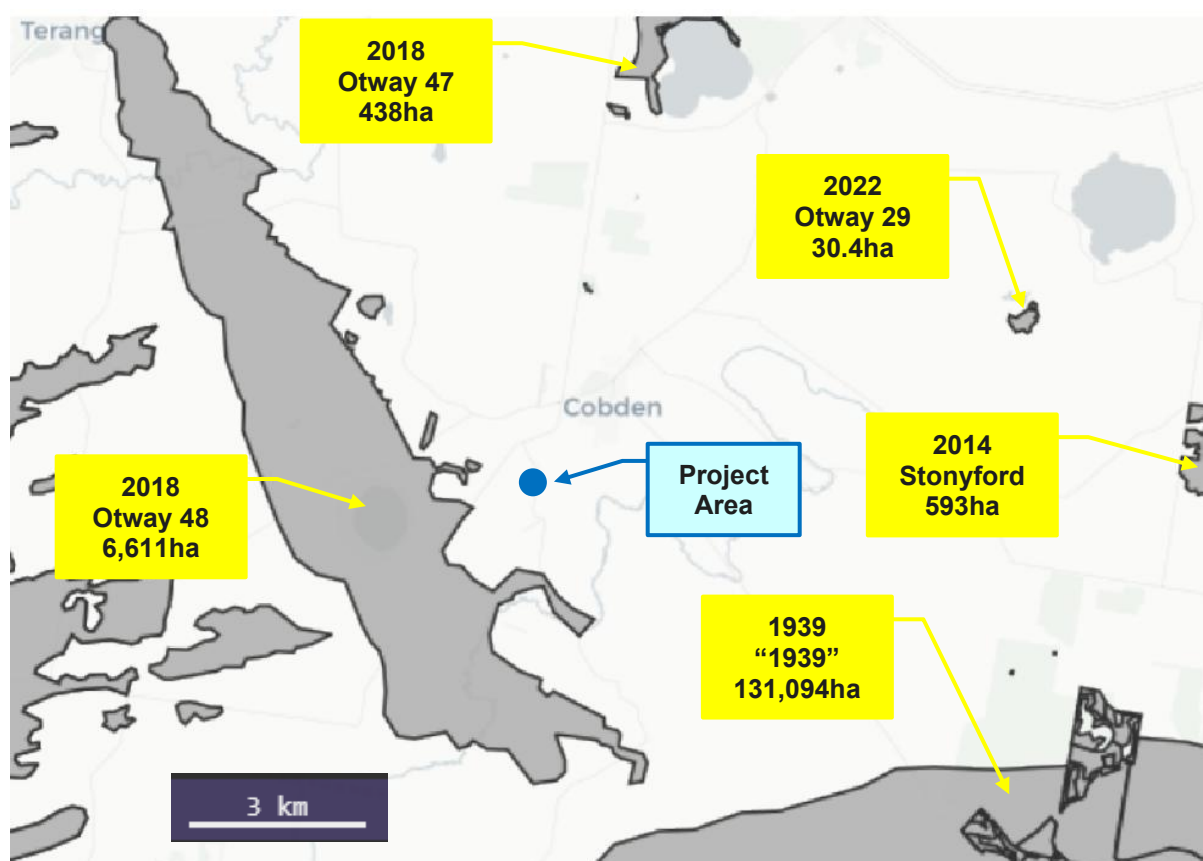
3.3 Bushfire History

The VIC government provides a fire history mapping tool which was used to show fires in the surrounds over past decades.

<https://discover.data.vic.gov.au/dataset/fire-history-overlay-of-most-recent-fires>

- There have been numerous bushfires surrounding the Subject Site as can be in **Figure 6**.

Figure 6 Regional Fire History Map



The above is in line with the low/medium bushfire risk profile of the Subject Site and surrounds as suggested in **Figure 4** and **Figure 5**.

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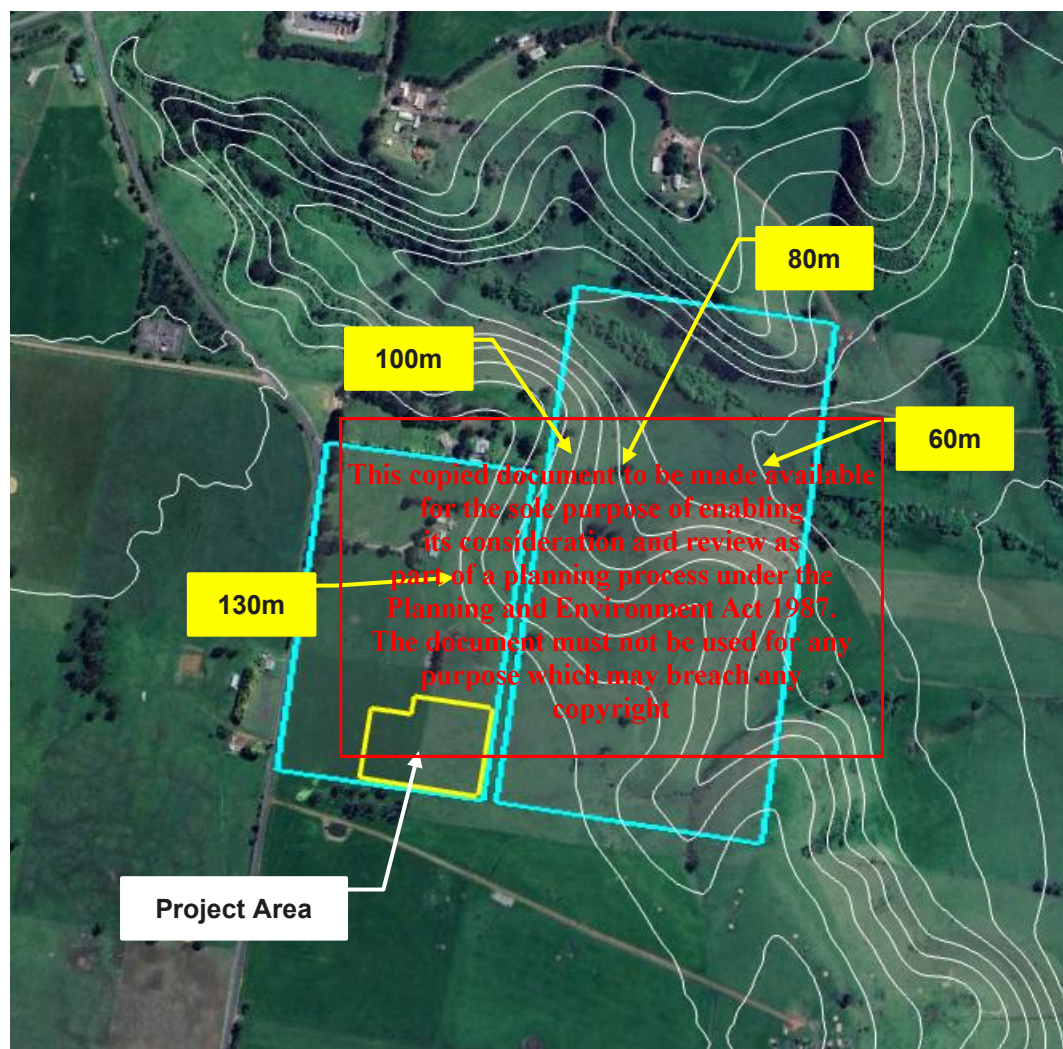


3.4 Topography of the Subject Site and Surrounds

Contour elevations of the Project surrounds are shown in **Figure 7**.

- The immediate Subject Site area is flat – elevations just above RL130m.
- The land drops away to the north and east.

Figure 7 Topography of Subject Site and Surrounds



In terms of bushfire risk:

- The immediate land surrounding the Project Area can be taken as **essentially flat** (<5° slope) from south clockwise around to the north.
- The land to the northeast drops off with a slope varying between 5° and 10°. A fire approaching the Subject Site from the northeast would therefore be travelling uphill, which represents a higher risk scenario.

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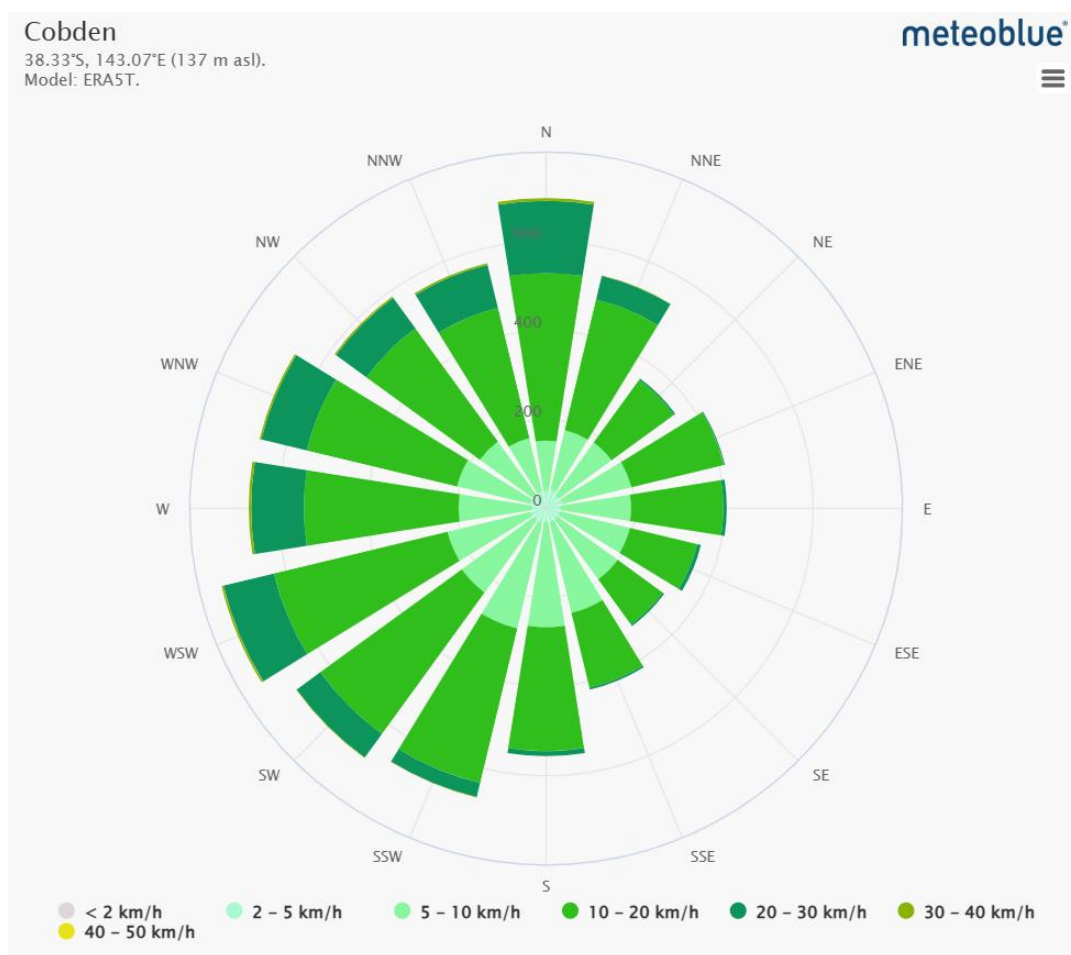
3.5 Prevailing Winds

Prevailing winds in the Cobden area are shown in **Figure 8**.

Refer: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/cobden_australia_2171184

It can be seen that prevailing winds are overwhelmingly from westerly quadrants, southwest around to northwest. This has implications in terms of access for firefighting vehicles responding to an active fire, i.e. where the safest route to approach the Subject Site would likely be.

Figure 8 Cobden Area Wind Rose



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4.0 Bushfire Risk

4.1 Bushfire Attack Level (BAL)

A key input in the assessment of bushfire risk is to determine the BAL (Bushfire Attack Level) of the Project Area of interest. The Cobden BESS BAL has been assessed according to:

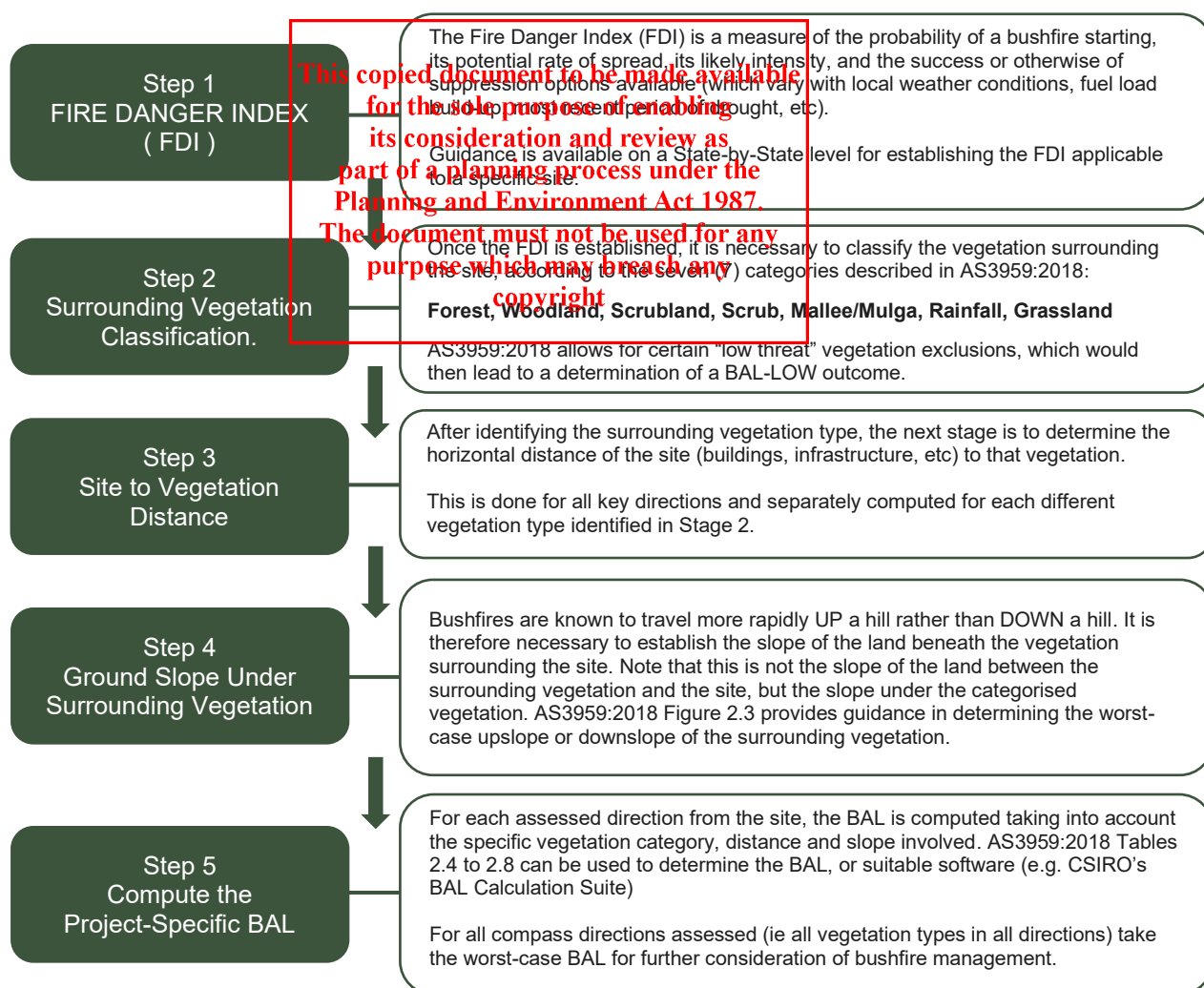
- Australian Standard AS3959:2018, “Construction of Buildings in Bushfire-Prone Areas”.

In AS3959:2018, BAL is defined as:

- A means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kW/m², and the basis for establishing the requirements of construction to improve protection of building elements from attack from bushfire.

The steps involved in assessing a site specific BAL are shown in **Figure 9**.

Figure 9 BAL Analysis Methodology



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Table 2 lists the six BALS defined in AS3959:2018.

Table 2 AS3959:2018 Bushfire Attack Levels (BALS)

Bushfire Attack Level (BAL)	Classified Vegetation within 100m of the site and heat flux exposure threshold	Description of Predicted Bushfire Attack and Levels of Exposure
BAL - LOW		There is insufficient risk to warrant specific construction requirements
BAL - 12.5	$\leq 12.5 \text{ kW/m}^2$	Ember Attack
BAL - 19	$> 12.5 \text{ kW/m}^2$ and $\leq 19 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux
BAL - 29	$> 19 \text{ kW/m}^2$ and $\leq 29 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux
BAL - 40	$> 29 \text{ kW/m}^2$ and $\leq 40 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames
BAL - FZ	$> 40 \text{ kW/m}^2$	Direct exposure to flames from fire front in addition to heat flux and ember attack

4.2 BAL Inputs

4.2.1 BAL Assessment Step 1: FDI

The FDI for the Project has been determined to be 100.

This was based on the Fire Danger Index values found at the CSIRO reference website below and coincides with the FDI values recommended by the Australasian Fire and Emergency Service Authorities Council.

<https://research.csiro.au/bushfire/assessing-bushfire-hazards/hazard-identification/fire-danger-index/>

4.2.2 BAL Assessment Step 2: Vegetation Classification

The vegetation types surrounding the Project were discussed in **Section 3.2**.

The vegetation categories defined in AS3959:2018 are listed in **Appendix A** along with descriptive summaries.

For the BAL calculation relevant to the Project, the following vegetation category has been assumed in all directions:

- Grassland

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4.2.3 BAL Assessment Steps 3 and 4: Distance to Vegetation and Slope Under Vegetation

As shown in **Section 3.4**, the topography surrounding the Subject Site is generally flat, with a slope designation as per AS3959:2018 of: “Flat – 0°”.

Table 3 lists the vegetation type and slope parameters used in the BAL calculations. The nearest vegetation location is taken from the Project Area boundary fence and the sub-transmission line axis for the remaining areas of interest.

Table 3 Vegetation Distance and Slope Parameters used for the BAL Calculations

Direction	Regional Ecosystem Classification	Slope Under Vegetation
Northeast Quadrant	Grassland	Upslope 10°-15°
Southeast, and all West Quadrants	Grassland	Flat 0°

AS3959:2018 allows for “Exclusions” to BAL calculations for “low threat” vegetation and non-vegetated areas.

Specifically, AS3959:2018 Clause 2.2.3.2(a) states that the following shall be excluded from a BAL assessment:

- Vegetation of ANY type that is more than 100 m from the Subject Site.

On the basis of the preceding discussions covering vegetation type and fire history, no areas surrounding the Subject Site are assumed to qualify for the above AS3959:2018 exclusion.

4.3 BAL Calculations

The BAL Calculation for the Subject Site has been carried out using:

- CSIRO’s BALA (Bushfire Attack Level Assessment) Tool

<https://best-practices-assessment-tool.herokuapp.com/calculator?slope=0&vegslope=0&FFDI=60&vegtype=Tussock>

Vegetation categories, and distances and slopes to the nearest vegetation have been based on **Table 3**.

The results are shown in **Figure 10**.

The BAL calculations apply to the BESS Compound, Substation Compound, Switch Room / Control Room and O&M Buildings within the Project Area.

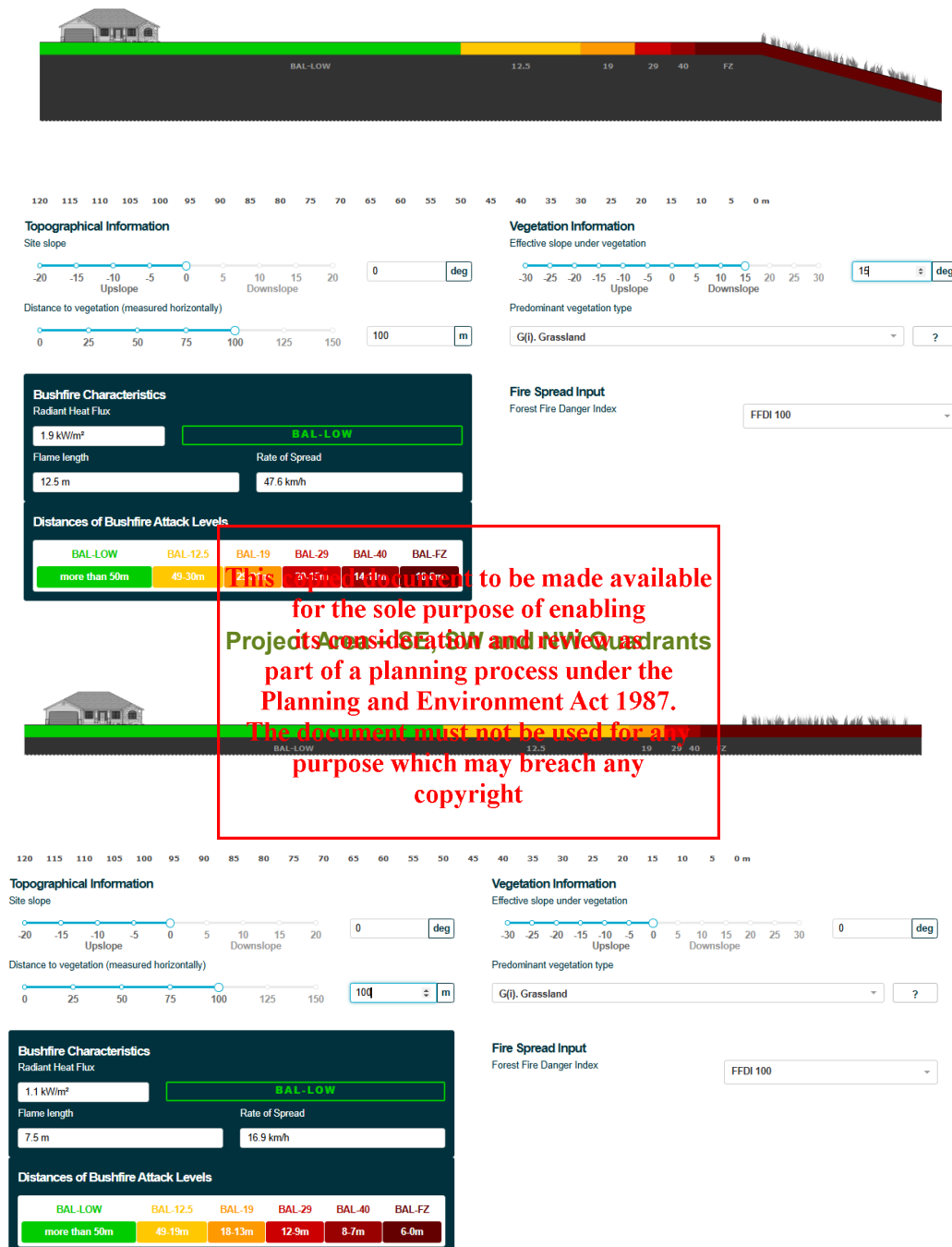
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Figure 10 BAL Calculation using the CSIRO BALA Tool

Project Area - Northeast



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4.4 BAL Summary

- The BAL-12.5 zone for the Project would be achieved at a distance of 19 m.

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5.0 Bushfire Risk Mitigation and Management

The Project Area requirements needed to address a potential bushfire attack fall into the following categories:

- Asset Protection Zones (APZs) to minimise the impact of radiant heat and flame contact;
- Construction Standards and Design to minimise building vulnerability to bushfire flames, radiation and embers;
- Access and Egress for authorised personnel and for firefighters and their equipment;
- Adequate Water Supply for fire suppression;
- Landscape Management; and
- Emergency Response and Management – Preparedness and Planning, including the development of a detailed Bushfire Management Plan.

5.1 Asset Protection Zone (APZ)

The recommended APZ was developed in accordance with guidance contained in:

- VIC CFA, *Defendable Space*, August 2022.
- Victorian Planning Provisions 13.02-1S *Bushfire Planning* (March 2023).
- AS 3959-2018 *Construction of Buildings in Bushfire-Prone Areas*
- *Building in bushfire-prone areas* - CSIRO & Standards Australia (SAA HB36-1993, 1993)

The recommended APZ for the Project Area has been adopted as shown in **Figure 11**.

It satisfies the following:

- The APZ is situated on cleared ground with minimal gradients.
- The APZ creates a total separation to the nearest vegetation at the Project Area boundary fence as follows:
 - Minimum 19 m from nearest BESS Compound equipment.
 - Minimum 19 m from nearest Substation Compound equipment.
 - Minimum 19 m from the Switch Room / Control Room and O&M Buildings.
- The APZ will be maintained as either completely cleared land or a mown area with a grass height of less than 100 mm.
- The APZ may overlap with the 10 m Fire Break required by the CFA's "*Design Guidelines and Model Requirements – Renewable Energy Facilities* v4, October 2023.

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Figure 11 Asset Protection Zone for the Project



Benefits of the APZ and Potential Radiant Heat Impact

The recommended APZ achieves the following:

- Equipment and buildings within the Project Area will experience a radiant heat flux level which is at the threshold for piloted ignition of dry timber and failure of plain glass, and more generally is a target maximum exposure at any point of a building wall or façade.
- This is also the threshold where firefighters and other emergency services can operate, for both firefighting and evacuating occupants from threatened buildings – refer Heus & Denhartog (2017) *Maximum Allowable Exposure to Different Heat Radiation Levels in Three Types of Heat Protective Clothing*.
- The Project's proposed APZ will achieve a performance-based outcome relevant to Victorian State and Local Government bushfire management guidelines.

Project Commitment

- The Proponent commits to establishing a management regime to ensure the ongoing integrity of the proposed APZ, including responsibility for ongoing maintenance, etc.

5.2 Construction Standards and Design

The National Construction Code (NCC) is a performance based code which comprises the Building Code of Australia (BCA) as Volumes 1 and 2 and the Plumbing Code of Australia as Volume 3.

- The NCC contains Performance Requirements and Deemed-to-Satisfy provisions relating to the construction of buildings in bush fire prone areas.

The construction requirements of AS3959:2018 and the National Association of Steel-framed Housing (NASH) Standard contain Deemed-to-Satisfy solutions in the NCC, (can be varied State-to-State), for buildings in designated bush fire prone areas.

The general requirements for the construction of buildings specified in AS3959:2018 are separated according to the relevant BAL at the site of interest.

For the Project, and hence for BAL-12.5, the relevant code sections are Sections 3 and 5.

Relevant Areas of AS3959:2018 Section 3

The guidance in AS3959:2018 pertains mainly to standard building construction, with a focus on external features prone to ember attack, covering items such as attached structures, garages, carports, external mouldings, bushfire shutters, glazing, etc. None of these is relevant to the BESS design.

Relevant Areas of AS3959:2018 Section 5 (Clauses 5.2 to 5.8)

The guidance in AS3959:2018 Section 5 pertains mainly to standard building construction for structures located in a BAL-12.5 zone, with a focus on external features prone to ember attack, covering items such as attached exposed floor supports, floor slabs, walls, external glazing, doors, roofs, verandas, etc.

This would apply to the Switch Room / Control Room for the Project.

Of relevance:

- Clause 5.8 states that any above-ground, water supply pipes **shall be metal**.
- Clause 5.8 also covers gas pipes and fittings – not relevant to the BESS design.

5.3 Access

Access requirements are crucial to the enabling of adequate firefighting capability and for emergency planning purposes (e.g. emergency evacuation).

Reference is made to:

- VIC Country Fire Authority (CFA), Design Guidelines and Model Requirements for Renewable Energy Facilities, v4.3 (January 2025), CFA Specialist Risk and Fire Safety Unit.

The following general principles and CFA-compliant design apply to ensure that firefighting vehicles are provided with safe, all-weather access to the Project Area.

- The Project's firefighting access roads should be two-wheel drive, all-weather roads and appropriately sign-posted.
- The road network must enable responding emergency services to access all areas of the Project, including fire service infrastructure, buildings, BESS units and related infrastructure, substations and grid connection areas.

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- Equipment compounds and buildings within the Project Area should be accessible by a minimum 4 m wide internal perimeter road.
- All Project roads must be capable of accommodating a vehicle of 15 t.
 - All roads need to have a minimum of 4 m in trafficable width with a 4 m vertical clearance for the width of all formed road surfaces.
 - There shall be no obstruction from any fencing along access routes needed by fire fighting vehicles.
 - The average grade shall be no more than 1 in 7 (14.4% or 8.1°) with a maximum of no more than 1 in 5 (20% or 11.3°) for no more than 50 m.
 - Dips in the road shall have no more than a 1 in 8 (12.5% or 7.1°) entry and exit angle.
 - Passing bays need to be provided at least every 600 m, with a minimum 20 m length and a minimum trafficable width of 6 m. At least one passing bay must be incorporated where roads are less than 600 m long.
- It is recommended that each part of the Project Area have at least two access points where practicable. The design of access points should be informed through a risk management process, in consultation with CFA
- Vehicle access to a hardstand should be designed to allow for a fire truck to leave the hardstand in a forward direction. This can be achieved with loop roads, perimeter roads and the like. Where this cannot be achieved, the maximum distance that a fire truck can be expected to reverse safely is 60 m.
- Where vehicle access to a hardstand is greater than 60 m, such as dead-end roads or a single access, a turning area complying with one of the following options should be provided. No parking is permitted in the turning area and appropriate 'NO PARKING' signage is to be provided.

CFA Vehicle Specifications and Access Requirements

Further information regarding access requirements for CFA vehicles can be found in:

- VIC CFA (BMO) *Access Requirements*, March 2023.

Given current trends in the latest firefighting appliances, it is recommended that road carrying capacity, turning circles, etc, into and within the site be designed for greater than the currently mandated 15 t – subject to consultation with CFA.

“Internal” Project Area Access – refer Figure 12A

In relation to the direct access points to the Project Area:

- Two access points are available, via entry from Cobden-Port Campbell Road straight to the BESS site.

External Project Area Access – refer Figure 12B

Where practical and feasible, “back-up” access roads to a facility are recommended for consideration.

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The off-site approach paths and access to the Subject Sites are also shown in **Figure 12**.

- Access is enabled from the NORTH along Cobden-Port Campbell Road from Cobden.
- Access is enabled from the SOUTHWEST along Cobden-Warrnambool Road and then Joe Blakes Road and from the SOUTH along Cobden-Port Campbell Road.

Accordingly, firefighting resources have multiple approach paths to access the Subject Site in the advent of an emergency situation.

Figure 12 Project Access Roads

A. "Internal" Access



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(Fig.12 cont'd)

B. "External" Access



5.4 Water Supply

A reticulated water supply is not available at the Subject Site.

In this instance, an appropriate static water supply must be provided to support effective emergency services response.

The water tank(s):

- Will be clearly identified by directional signage at all access points to the facility.
- Must be readily accessible by firefighting appliances.
- Should be located as close as possible to the facility's security perimeter.
- Shall have a volume in accordance with AS 2419-1 (2021).
- Shall be constructed of concrete or metal; all connecting above-ground water service pipes and taps being metal.

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- Will be located in an area such that medium rigid vehicles (e.g. a 15-tonne fire appliance) have clear access within 4 m of the tank and with sufficient parking adjacent for other emergency service vehicles.
- Is provided with IPA-rated rural fire brigade tank fittings including a 65 mm Storz outlet valve and relevant coupling.
 - Ball valves and pipes should be adequately sized for water flow and shall be constructed of metal. The supply pipes from the tank to the ball valve should have the same bore size to ensure flow volume.

Project Commitments:

Given the size of the development footprint, the Proponent has committed to the following:

- Ensure that the above water tank requirements are met.
- Provide a minimum 288 kL dedicated water supply for firefighting purposes for the Project, comprising two 144 kL water tanks close to the two access points to the Project Area – refer **Figure 13**.

Figure 13 Location of Proposed Dedicated Firefighting Water Tank



5.5 Vegetation Management

The critical areas for vegetation management at the facility are the proposed 19 m APZs around the BESS Compound, Substation Compound and Project buildings. The ecology studies for the Subject Site indicate that any clearing required (expected to be negligible) will be permissible.

- The Bushfire Management Plan (BMP) for the Project (refer **Section 6**) shall contain a provision pertaining to the management of all cleared areas within the Project Area.
- In relation to the Project Area, the BMP shall contain a provision preventing any vegetation from taking hold within the proposed 19 m APZ zone (refer **Figure 11**), thereby reducing the bushfire hazard risk and maintaining adequate access to firefighting personnel and equipment.

It is understood that landscape screening is being considered for the Project.

- Guidance as to suitable planting can be found in:
 - “*Landscaping for Bushfire: Garden Design and Plant Selection*”, Version 3, VIC CFA.
 - “*Online Plant Selection Key*”, VIC CFA.
- Its management should be included within the Bushfire Management Plan to be developed for the facility and should include the following elements:
 - Fire-wise plant species with fire resilience characteristics should be chosen. Low flammability species are characterised by high moisture content and low oil/resin content with smooth bark. These species shed bark and leaves infrequently.
 - The landscaping should be pruned regularly to remove dead branches, and the areas beneath cleared of fallen branches and other leaf litter.
 - Consider replacing organic mulch with inorganic or low flammability groundcover plants.

5.6 Management of Bushfire Risk Initiators

Potential “internal” bushfire risk initiators are summarised in **Table 4**, according to the stage of the Project.

Table 4 Potential Bushfire Initiators

Project Phase	Impact
Construction	Clearing activities (e.g. slashing, mowing and diesel-powered tool use), lightning strikes, storage of fuels/chemicals, hot welding activities, cigarette butts thrown from cars travelling within the site, traffic accidents, etc.
Operational	Ground cover/vegetation within site, ignition of electrical equipment, especially during repairs and maintenance activities, traffic accidents.
De-Commissioning	Decommissioning activities would have similar impacts to that for construction.

The Project BMP will include mitigation measures designed to address the risks detailed in **Table 4**.

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6.0 Bushfire Management Plan (BMP)

During the detailed design phase of the Project, and prior to construction commencing, a detailed Bushfire Management Plan (BMP) will be prepared for the Project.

Key elements within the BMP will be:

- APZ locations and management details;
- Schedule of BAL-related requirements and building footprints as well as any specific construction details;
- Access provisions such as locations, passing bays and alternate emergency access;
- Water supplies and bushfire suppression systems;
- Landscaping management requirements; and
- A Bushfire Emergency Management and Evacuation Sub-Plan within the overall BMP, aligned with the Project EMP (Emergency Management Plan).

6.1 Detailed Requirements of the BMP

The following is a more detailed listing of the BMP.

- The BMP will identify specific responsibilities for actions required within the BMP for the Proponent and Ultimate Operator, as well as Corangamite Shire Council.
- The BMP will contain a detailed Project layout plan identifying the locations of all Project infrastructure, APZs of a clearing and water supply details.
- The BMP will identify key bushfire risks associated with the Project Area and the strategies developed to mitigate them, including minimum APZ calculations, access requirements, firefighting water supply quantity and other design details aimed at facilitating an effective response to bushfire.
- The BMP will include site-specific factors relevant to the Project's protection from bushfire: the likely direction of bushfire attack if historic evidence indicates a bias in prevailing wind conditions during the fire season, location of evacuation routes and safety zones and identification of secondary risks, e.g. from nearby sites (if relevant).
- The BMP will include: a description of the activities to be conducted on the Project and in particular personnel movements covering both regular staff, maintenance staff and irregular visitors.
- The BMP will list the storage or handling of any hazardous chemicals in quantities that would be equivalent to or exceed the threshold quantities set out in the relevant standards.
- The BMP will show all transportation routes into and out of the Project Area covering personnel, delivery of materials, access routes for emergency services or disaster response, etc. Details will be provided covering road layout, accessways, passing bays, evacuation routes, easements on site, designated routes for fire-fighting appliances, etc. These will be detailed in an Emergency and Evacuation Sub-Plan.
- The BMP will clearly indicate the total extent of clearing, revegetation and landscaping proposed for the Project, which is to be indicated on a Project plan, including the APZ for the Project. The means by which the APZ will be maintained, including who responsible, will be clearly enunciated.



- The BMP will include information covering fire maintenance trails, if relevant.
- The BMP will provide warning and evacuation procedures, plans and routes including capacity of public roads especially perimeter roads and traffic management treatments, and responsibility for their maintenance.
- The BMP will detail all fire-fighting requirements including infrastructure and water supply, design standards for tanks, fittings and connection details, etc.

6.2 CFA Engagement

- The BMP should be developed in consultation with the CFA with final approved copies stored locally within an appropriate “emergency cabinet” securely located within the Project Area.

6.3 Community Engagement

- The BMP will include recommendations to be passed on to the ultimate Project Operator (if not the Proponent) covering surrounding resident/neighbour education and awareness.

6.4 Local Firefighting Resources

- The BMP will provide a listing of the nearest local firefighting resources, phone/email contacts, etc, namely
 - COBDEN Brigade – 16 Station Street, Cobden.

<https://www.cfa.vic.gov.au/about-us/your-cfa/where-we-are>

6.5 Bushfire Initiator Risk Management – refer Table 6

Project Stage – Construction

- Bushfire risks during construction will be managed through the implementation of a Construction Bushfire Management Sub-Plan (CBMP), to be prepared by the successful Project Contractor and signed off by all appropriate authorities.
- The CBMP will ensure adequate site access for CFA along with the resources needed to manage any fire within the Project Area.

Project Stage – Operational

- Bushfire risks once the facility is fully operational will be managed through the implementation of the BMP as described above, to be prepared by the successful Project Operator and signed off by all appropriate authorities.

Project Stage – De-Commissioning

- The BMP will detail De-Commissioning phase management strategies similar to those deployed for the Construction phase to address the similar risks expected during this last phase of the Project.

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6.6 Other Management and Mitigation Aspects

In addition to the above measures, the BMP will:

- Recommend a system for the continuous monitoring of the CFA website and other critical emergency service related web-based resources (Bureau of Meteorology, ABC Radio, etc) for bushfire alerts (especially during the bushfire season).
- Ensure that smoking is prohibited throughout the Project Area and that all employees receive training and instruction on the relevant fire procedures as part of their induction training.

6.7 Alignment of the BMP with Other “Plans”

Finally, it is important that the Project’s BMP is aligned with other related (detailed design stage) plans, including:

- Project Emergency Management Plan (EMP) – so there is no conflict between activities such as the risk control measures adopted for minimising electrical hazards for firefighters attending emergency situations on-site.
- A Fire Safety Study (FSS) for the Project which aligns the relevant firefighting elements (e.g. access routes, water supply etc) for both an (external) bushfire response and (internal) fire response.

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7.0 Conclusions

Section 2 of this report described essential elements of the Project.

Section 3 of this report described key characteristics of the Subject Site and surrounds in relation to bushfire risk.

Section 4 of this report assessed the bushfire risk, in terms of the Bushfire Attack Level of the Project.

Section 5 of this report described risk mitigation and management measures associated with the bushfire hazard.

Section 6 of this report described the key elements to be included in the detailed Bushfire Management Plan (BMP) to be developed for the Project during detailed design.

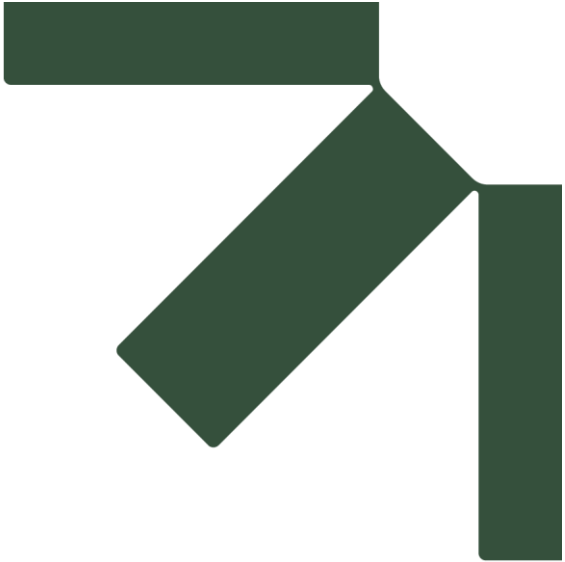
On the basis of the above, SLR has concluded that:

- Bushfire risk issues can be adequately mitigated; and
- The Project will be adequately protected from the threat of a bushfire event.

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Appendix A Vegetation Descriptions taken from AS3959:2018

Bushfire Risk Assessment Report

Cobden Battery Energy Storage System (BESS)

Cobden BESS Pty Ltd

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SLR Project No.: 620.041534.00012

Revision: R12-v1.4

1 May 2026

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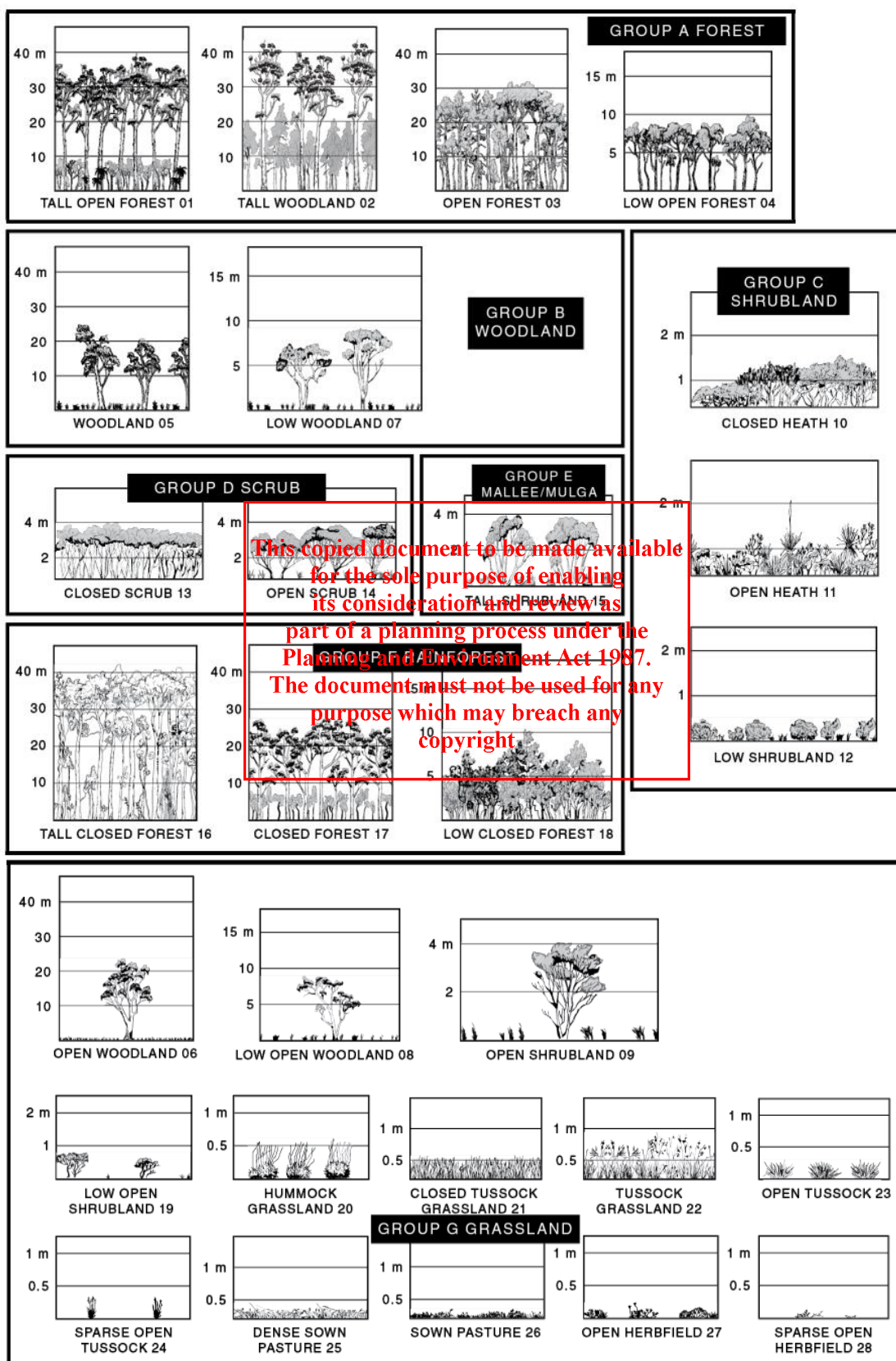
AS3959:2018 - Table 2.3 CLASSIFICATION OF VEGETATION

Vegetation classification	Vegetation type	Figure No. in Figures 2.4(A) to 2.4(H)	Typical characteristics
A Forest	Tall open forest	01	Trees over 30 m high; 30%–70% foliage cover (may include understorey ranging from rainforest species and tree ferns to low trees and tall shrubs). Found in areas of high reliable rainfall. Typically dominated by eucalypts with a sub-dominant tree layer.
	Tall woodland	02	
	Open forest	03	Trees up to 30 m high; 30%–70% foliage cover (may include understorey of sclerophyllous low trees or shrubs). Typically dominated by eucalypts, melaleuca or callistemon (may include riverine and wetland environments) and callitris. Includes eucalypt plantations.
	Low open forest	04	
	Pine plantation	Not shown	Trees 30 m in height at maturity, generally comprising Pinus species or other softwood species, planted as a single species for the production of timber.
B Woodland	Woodland	05	Trees up to 30 m high; 10%–30% foliage cover dominated by eucalypts and/or callitris with a prominent grassy understorey. May contain isolated shrubs.
	Low woodland	07	
C Shrubland	Closed (low) heath	10	Found in wet areas and/or areas affected by poor soil fertility or shallow soils. Shrubs 1 m–2 m high. Wet heaths occur in sands adjoining dunes of the littoral (shore) zone. Montane heaths occur on shallow or water-logged soils.
	Open heath	11	
	Low shrubland		Shrubs up to 2 m high; 30%–70% foliage cover. Understorey may contain grasses. Acacia and Casuarina often dominant in the arid and semi-arid zones.
D Scrub	Closed scrub	13	Trees in wet areas and/or areas affected by poor soil fertility or shallow soils; >30% foliage cover. Dry heaths occur in rocky or sandy areas. Shrubs >2 m high. Includes species from Banksia, Melaleuca or Leptospermum with heights of up to 6 metres.
	(Tall heaths)	13	
	Open scrub	14	Shrubs greater than 2 m high; 10%–30% foliage cover with a mixed species composition.
E Mallee/Mulga	Tall shrubland	15	Vegetation dominated by low trees or tall shrubs (especially eucalypts and acacias) some with a multi-stemmed habit (mallee); usually greater than 2 m in height; <30% foliage cover. Understorey of widespread dense low shrubs or sparse grasses and generally found in the arid and semi-arid zones, but not within the rangelands.
F Rainforest	Tall closed forest	16	Trees >90% foliage cover; understorey may contain a large number of species with a variety of heights. Not dominated by eucalypt species.
	Closed forest	17	
	Low closed forest	18	
G Grassland	Open woodland	06	All forms (except tussock moorlands), including situations with shrubs and trees, if the overstorey foliage cover is less than 10%. Includes pasture and cropland.
	Low open woodland	08	
	Open shrubland	09	
	Low open shrubland	19	
	Hummock grassland	20	
	Closed tussock grassland	21	NOTE: Grassland managed in a minimal fuel condition and non-curing cropland is regarded as low threat vegetation for the purposes of Clause 2.2.3.2.
	Tussock grassland	22	
	Open tussock	23	
	Sparse open tussock	24	
	Dense sown pasture	25	
	Sown pasture	26	
	Open herbfield	27	
	Sparse open herbfield	28	
H Tussock Moorland	Tussock Moorland	Not shown	All forms of vegetation where the overstorey is dominated by the species Buttongrass (<i>Gymnoschoenus sphaerocephalus</i>). Only occurs as a significant vegetation type in Tasmania.

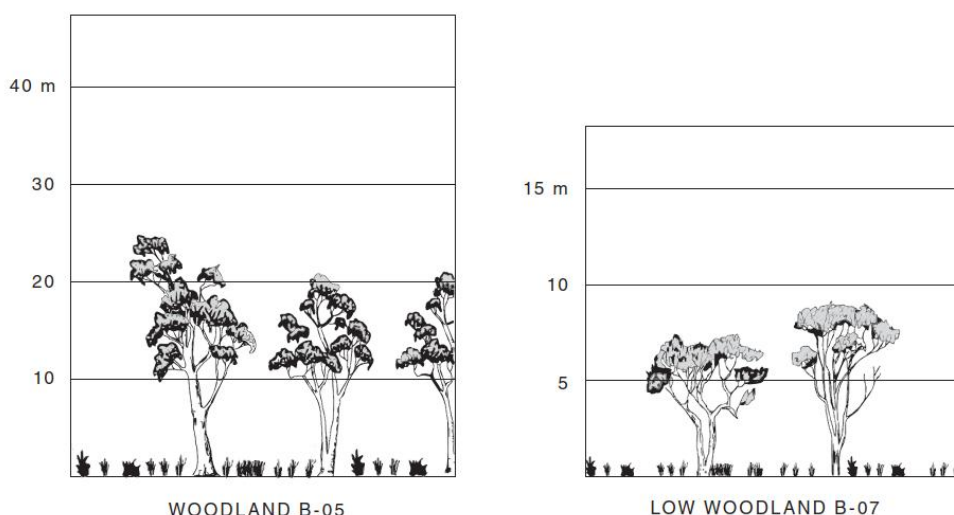
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AS3959:2018 – Figure 2.4(A) Classification of Vegetation - SUMMARY



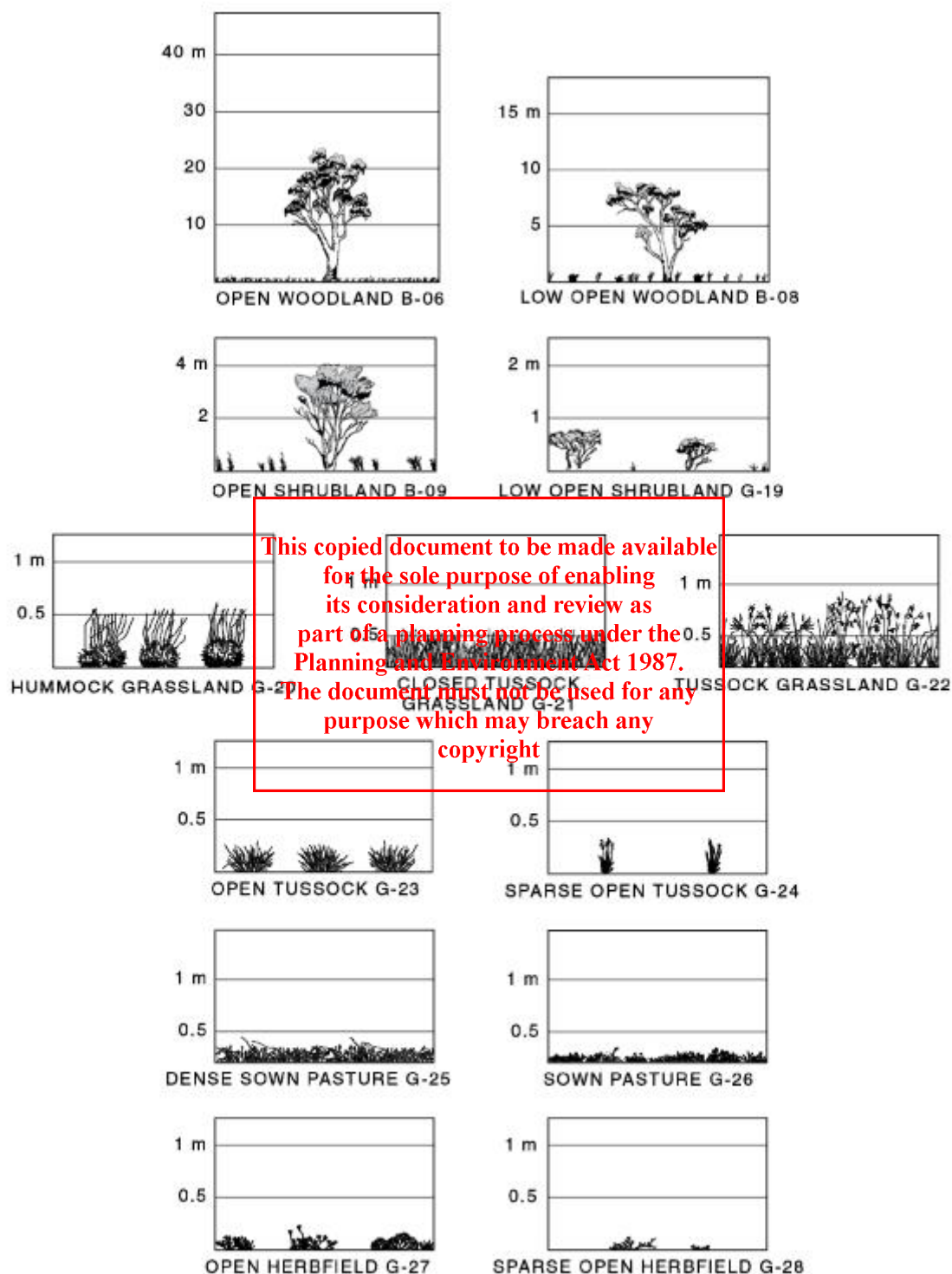
AS3959:2018 – Figure 2.4(C) Classification of Vegetation – WOODLAND (Group B)



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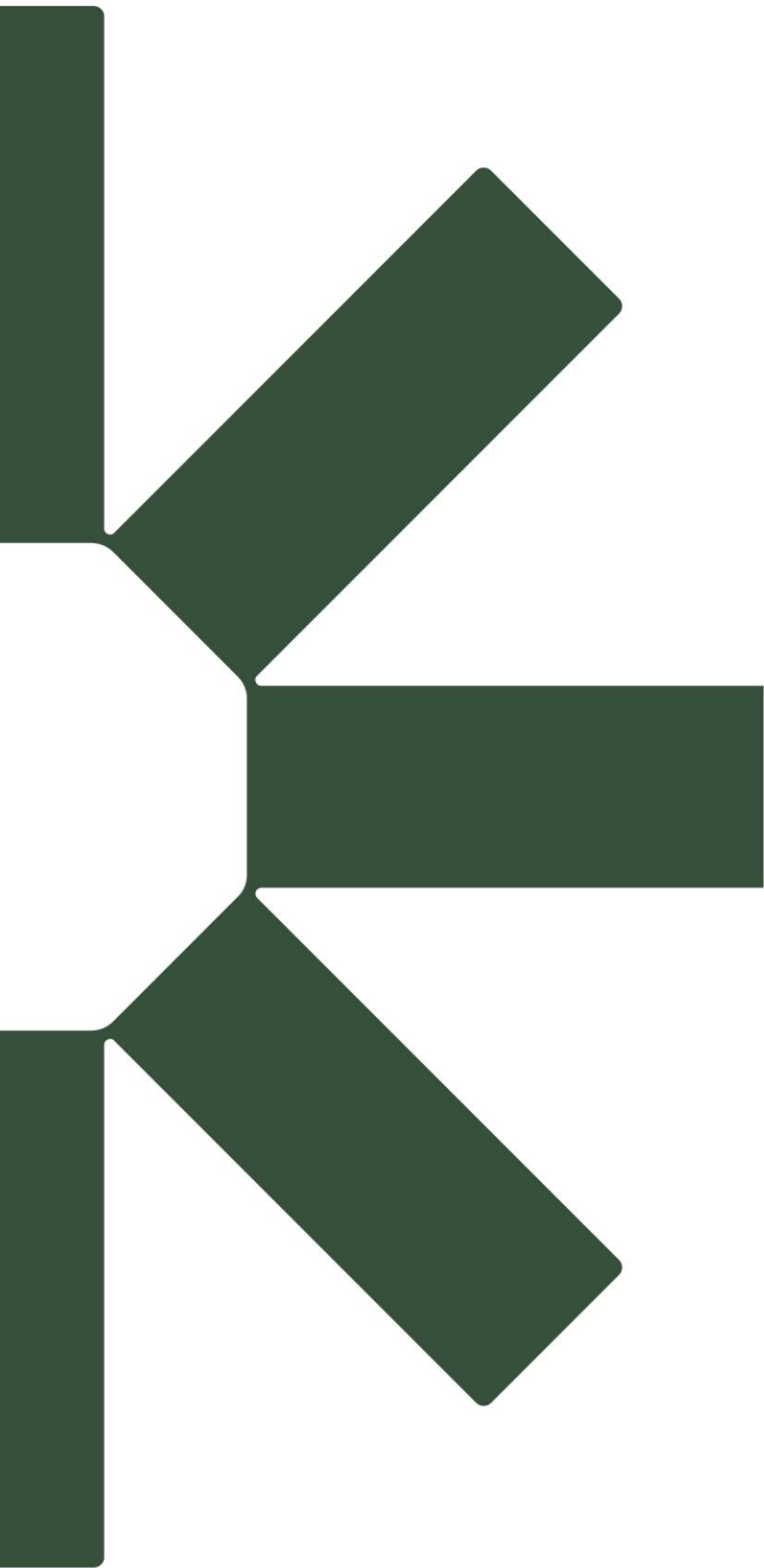
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AS3959:2018 – Figure 2.4(H) Classification of Vegetation – GRASSLANDS (Unmanaged)



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