Appendix G

Bushfire Risk Assessment

ADVERTISED
PLAN

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Bushfire Risk Assessment

Berrybank Terminal Station

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

ADVERTISED
PLAN

AGILUS

www.agilus.com.au

Agilus Ref: 2026-0683

CONTENTS

Contents 2
1 Introduction 4
1.1 Assessment 4
1.2 Proposed development 7
1.3 Site description 7
2 Bushfire risk in Southeast Australia 10
3 Bushfire Hazard Landsape Assessment 12
3.1 Introduction 12
3.2 Existing bushfire risk 12
4 Terminal Station design 16
5 Clause 13.02 Assessment 17
5.1 Introduction 17
5.2 Strategy response 17
6 Bushfire safety considerations 25
7 Bushfire risk management measures 28
8 Conclusion 30

Version No.	Description of changes	Date	Author	Reviewed by
V1.0	Report prepared following provision of information from the Client.	03/07/2026	Mark Potter	Mark Potter
V1.1	Minor updates following client feedback	21/07/2026	Mitch Baade	Mark Potter
V2	Updated to include detailed assessment against Planning Scheme.	06/08/2026	Mark Potter	Mark Potter

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Report Disclaimer:

MTJA Pty Ltd, trading as Agilus has prepared this Report based on an agreed scope of work and acts in all professional matters as an advisor to the Client and exercises all reasonable skill and care in the provision of its professional services.

Reports are commissioned by and prepared for the exclusive use of the Client. They are subject to and issued in accordance with the agreement between the Client and Agilus. Agilus is not responsible and will not be liable to any other person or organisation for or in relation to any matter dealt within this Report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in this Report (including without limitation matters arising from any negligent act or omission of Agilus or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in this Report). Other parties should not rely upon the Report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

Reports prepared by Agilus cannot be copied or reproduced in whole or part for any purpose without the prior written agreement of Agilus.

Where site inspections, testing, engagement or fieldwork have taken place, the Report is based on the information made available by the Client or their nominees during the visit, visual observations and any subsequent discussions. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this Report, it is assumed that the information provided to Agilus is both complete and accurate.

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987
The document must not be used for any
purpose which may breach any
copyright

There is no suggestion in this Report that it provides any guarantee against loss where you have failed to obtain insurance. To protect your property and anyone else's property for that matter you will need to engage an insurance broker or insurer to determine if you can obtain or maintain appropriate and adequate insurance against loss due to fire, any bushfire, fire safety work, including but not limited to planned burning, back burning and/or fire suppression management or use of recommended Australian recommended fire suppression materials, on any property or building. The true measure of protection is to obtain and maintain an insurance policy.

IMPORTANT NOTICE: A failure to maintain the property and/or building to any recommended standard may compromise an insurance policy if currently covering any of your assets or those of any third party that may be consequentially affected due to such failure. If not insured, and if you are seeking insurance, this Report may not influence the decision of any insurer not to offer cover.

Contact:

Mark Potter
0439 289 234
mark@agilus.com.au

ADVERTISED
PLAN

1 INTRODUCTION

1.1 ASSESSMENT

This Bushfire Risk Assessment (BRA) has been prepared to support the regulatory approval process for the proposed extension to Berrybank Terminal Station (the Project). A stand-alone Bushfire Risk Assessment is not typically required for Terminal Station developments as bushfire resilience is generally addressed through engineering design standards and network operator requirements. However, a high-level assessment has been requested to ensure there are no bushfire risk issues that require additional consideration.

The design of the Project is guided by various standards both Australian and international and facility operator guidance. This will be implemented for this project and is based on the consideration of managing bushfire risk.

This BRA has considered the landscape and local bushfire risk and the potential for bushfire impact on the site along with an analysis of the typical vegetation that exists in the surrounding area.

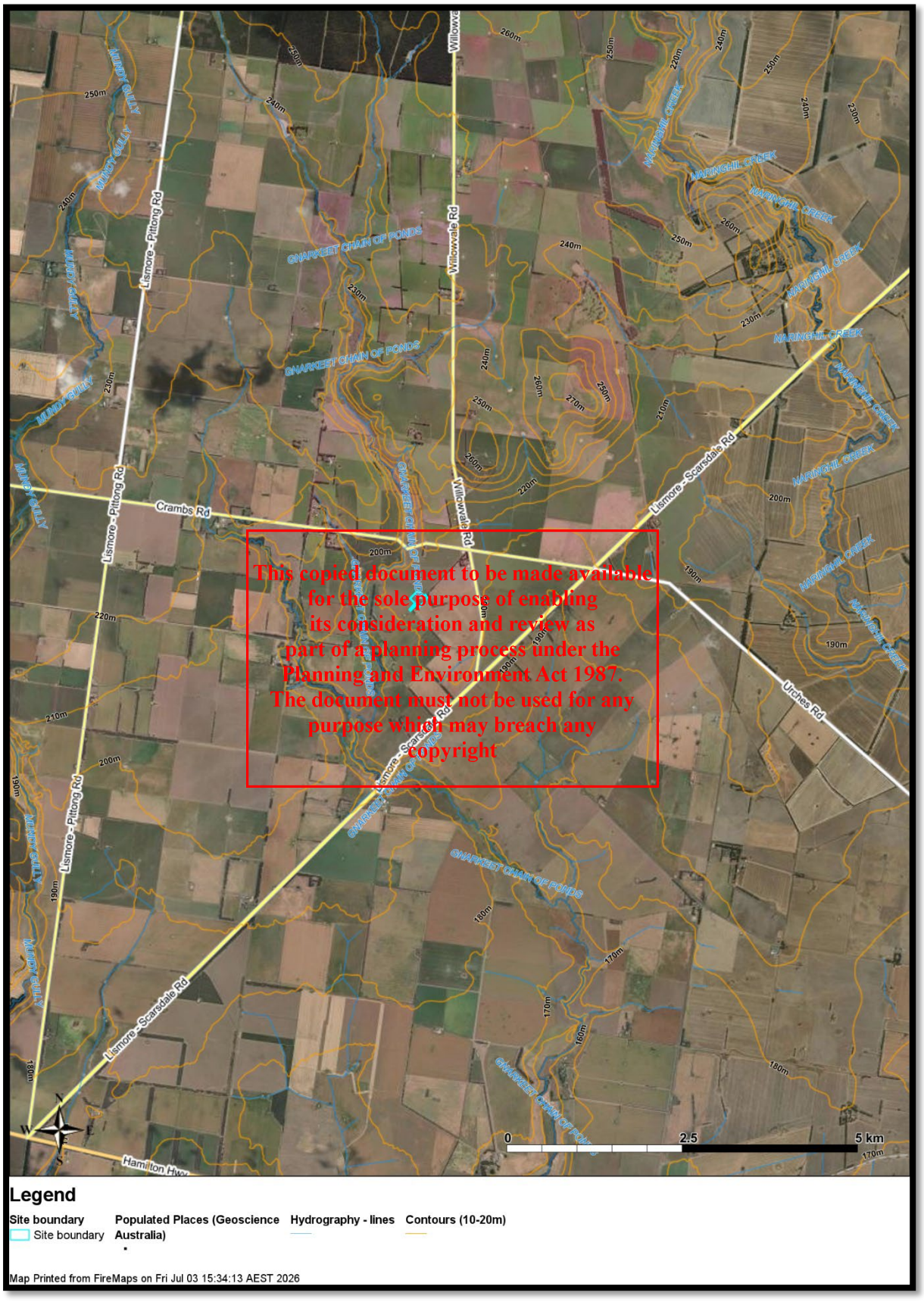
The site is located to the northeast of the Lismore township and is adjacent to the existing Berrybank Terminal Station. The surrounding landscape consists of land use for agricultural purposes including stock grazing and cropping. The Project is accessed from Lismore – Scarsdale Road via a dedicated driveway leading to the existing Terminal Station.

The site and surrounding landscape is shown in Figure 1 with the Project shown Figure 2.

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

ADVERTISED
PLAN

ADVERTISED PLAN



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Figure 1 – Site and surrounding landscape

ADVERTISED PLAN



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Figure 2 - Site details

ADVERTISED PLAN

1.2 PROPOSED DEVELOPMENT

The Berrybank Terminal Station (BBTS) is an existing 220 kV switchyard located on a 3.18 ha parcel of land within the Golden Plains Shire. The terminal station facilitates the connection of renewable energy generation to the national electricity network through the existing Ballarat-Terang 220 kV transmission line and is located within the South West Renewable Energy Zone. The site is owned by Lumea Pty Ltd and contains the existing switchyard, line bay equipment, control and amenities buildings, storage shed, diesel generator, security and perimeter fencing, lighting and lightning masts, water tank and fire services, gravel hardstand, gravel apron and access track.

The proposal involves constructing an additional 220 kV line bay to connect the Moreton Hill Wind Farm to the electricity network. The extension will include current and voltage measurement equipment, switches, gantries, busbars, circuit breakers and surge arrestors, together with extensions or modifications to associated fencing, lighting, fire services, gravel hardstand and access infrastructure. The works will increase the developed switchyard footprint from approximately 1.4 ha to 1.8 ha while remaining within the existing land parcel. Access and car parking will continue to use the established terminal station arrangements, and the existing gravel apron and asset protection area will be extended around the new works.

From a bushfire risk perspective, the site is generally flat and cleared and is surrounded predominantly by cropped agricultural land. The expanded switchyard will remain within the existing managed terminal station environment, where gravel hardstand, low-fuel surfaces and maintained separation from surrounding vegetation reduce the potential for direct flame contact and radiant heat exposure. The extension of the gravel apron and asset protection area will further separate the proposed electrical equipment from surrounding grass and crop fuels. The final design should retain suitable emergency access, extend the existing vegetation and fuel-management arrangements to the new infrastructure, and confirm that the existing water supply and fire-service provisions remain adequate for the enlarged terminal station footprint.

This report document is made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

1.3 SITE DESCRIPTION

Assessment consideration	Berrybank Terminal Station assessment
Existing use and siting of buildings and works on and near the land	The site contains the existing Berrybank Terminal Station, comprising a 220 kV switchyard and associated line-bay equipment, gantries, busbars, circuit breakers, control and amenities buildings, storage facilities, diesel generator, water tank and fire services, security fencing, gravel hardstand, gravel apron and access track. The proposed works involve an additional 220 kV line bay and associated infrastructure to facilitate the connection of the Moreton Hill Wind Farm. The works will increase the developed switchyard footprint from approximately 1.4 ha to 1.8 ha but will remain within the existing 3.18 ha terminal station property. The surrounding land is predominantly used for

ADVERTISED PLAN

	broadacre cropping and grazing, with isolated rural buildings and scattered trees.
Access to firefighting water supplies	The existing terminal station includes a dedicated water tank and associated fire-service infrastructure. The endorsed Bushfire Management Plan requires a non-combustible static water supply with an effective capacity of at least 22,500 litres, located between 10 m and 30 m from the substation and switchyard. It also requires a CFA-compatible hard-suction point positioned within 4 m of an all-weather hardstand capable of supporting a 15-tonne firefighting vehicle. The capacity, location, fittings and accessibility of the existing water supply should be verified against the proposed expanded footprint. If the existing arrangements do not provide suitable coverage or access for the extension, they should be upgraded as part of the works. Several agricultural dams are also present in the surrounding landscape; however, these should not be relied upon as the primary firefighting water supply unless access and availability are formally secured.
Access and egress arrangements	Access to the terminal station is provided from Lismore-Scarsdale Road by the existing dedicated access track. The proposal will continue to use the established access and car-parking arrangements, with the internal gravel hardstand and access infrastructure extended where required to service the additional line bay. In accordance with the endorsed Bushfire Management Plan, the accessway should provide a minimum trafficable width of 3.5 m, vertical clearance of at least 4 m, all-weather construction and a load capacity suitable for a 15-tonne emergency vehicle. Access gates and security arrangements should enable emergency-service entry, while internal access and hardstand areas should permit firefighting vehicles to approach, operate and leave without being obstructed by parked vehicles or new infrastructure. Emergency procedures should provide for early departure during elevated bushfire conditions and should not rely on personnel evacuating through an approaching fire front.
Topography on and in the surrounding area	The terminal station and immediately surrounding agricultural land are predominantly flat to gently undulating. There are no significant slopes immediately adjoining the proposed extension that are expected to materially increase flame length, rate of spread or radiant-heat exposure. The relatively subdued topography supports emergency access and vegetation management; however, rapid grassfire spread remains possible under strong winds and elevated fire-danger conditions.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Vegetation on and in the surrounding area	Vegetation within and surrounding the site is predominantly grassland when classified in accordance with AS 3959, comprising grazed pasture, cropped paddocks and seasonal grass or stubble fuels. Scattered trees and small groups of trees occur in the broader agricultural landscape and may contribute to localised ember production. The existing terminal station is largely surfaced with gravel and other low-fuel materials. The proposed gravel apron and asset protection area are to be extended around the new works. Grass within the site should continue to be maintained at a low height, with a minimum 10 m mineral firebreak around the switchyard infrastructure and an area extending at least 30 m from the switchyard kept free of scrub and planted trees, consistent with the endorsed Bushfire Management Plan.

ADVERTISED
PLAN

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

2 BUSHFIRE RISK IN SOUTHEAST AUSTRALIA

Southeast Australia, particularly regions of Victoria, New South Wales, and parts of South Australia and Tasmania, experiences significant bushfire risk, especially during the summer months. Several factors contribute to elevated fire dangers in this region:

Weather conditions

Elevated bushfire danger is often associated with specific weather conditions and wind patterns that can contribute to the rapid spread and intensification of fires. Some of the key weather conditions and wind directions that increase bushfire risk include:

Hot and Dry Weather: High temperatures combined with low humidity levels result in dry vegetation, which is more susceptible to ignition. During periods of hot and dry weather, fires can start more easily and spread rapidly.

Strong Winds: Strong winds can significantly increase the rate at which fires spread. Wind can carry embers long distances, causing spot fires ahead of the main fire front and making containment efforts more challenging. Wind-driven fires can quickly change direction and intensity, posing a greater threat to communities and firefighters.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Wind Direction: The direction from which the wind is blowing can have a significant impact on fire behaviour and spread. In some cases, certain wind directions can funnel fires into narrow corridors, increasing the speed and intensity of the bushfire.

Wind Changes: Sudden changes in wind direction or speed can create unpredictable fire behaviour and make firefighting efforts more difficult. Wind shifts can cause fires to change direction rapidly, threatening areas that were previously considered safe. This issue is more prevalent in bushfires in grassland areas where sudden wind changes can cause an immediate change in direction.

Drought Conditions: Prolonged periods of drought lead to drier vegetation and soil moisture levels, increasing the overall flammability of the landscape. During drought conditions, fires can ignite more easily and spread more rapidly, posing a greater risk to communities and ecosystems.

Vegetation

The predominant vegetation in southeast Australia includes eucalypt forests, scrublands, and grasslands. Eucalypt forests, in particular, contain highly flammable oils in their leaves, which can easily ignite and spread fires. Dry grasslands and scrublands also provide ample fuel for fires to propagate.

ADVERTISED PLAN

Slope

Steep slopes and rugged terrain are common in many parts of southeast Australia. Slopes increase the speed at which fires can spread, as flames can travel more quickly uphill due to preheating of fuel and the influence of wind. Additionally, fires burning downhill can create their own wind patterns, further accelerating their spread.

History of Fire (planned and unplanned) Activity

Many areas in southeast Australia have a history of recurrent bushfires and planned burning, which, if not carried out regularly, can lead to the accumulation of dry vegetation and debris. This accumulated fuel increases the intensity and severity of fires when they occur and makes firefighting efforts more challenging.

During periods of elevated fire danger, authorities often issue warnings and implement fire bans to mitigate the risk. Community preparedness, including fuel reduction efforts, maintaining defendable space around properties, and having a bushfire survival plan in place, are crucial for minimising the impact of bushfires in southeast Australia.

ADVERTISED
PLAN

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

ADVERTISED PLAN

3 BUSHFIRE HAZARD LANDSAPE ASSESSMENT

3.1 INTRODUCTION

The Bushfire Hazard Landscape Assessment (BHLA) is prepared to provide an overview of the bushfire hazard within 150 metres of the site. This assessment considers the relevant bushfire history, planned burning history, future fuel management programs proposed, types of vegetation, landscape features that may slow or stop bushfire spread and other factors.

The BHLA assessment has considered the hazards within one and 20 kilometres from the subject site.

3.2 EXISTING BUSHFIRE RISK

The bushfire risk in this location is dominated by the typical southeastern Australia weather patterns that includes the north westerly wind influence followed by the south westerly wind change. This weather pattern is typical of elevated fire danger conditions. Historical bushfire activity in southwestern Victoria normally involves this type of weather behaviour.

Historical bushfire activity in the surrounding landscape is considered limited according to Victorian State Government data. Major grassfires occurred in 1977 to the east and west of the Project site, with several smaller bushfires recorded in more recent years.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

The vegetation in the surrounding landscape when assessed against AS 3959 is dominated by the grassland classification. This will result in low intensity bushfires when compared to forested areas however it is acknowledged that under elevated wind conditions, bushfires in grass fuels will travel much quicker when compared to forested areas.

The Project site is located within a Bushfire Prone Area (BPA). The closest Bushfire Management Overlay (BMO) is located to the north of the site and is associated with a Plantation. This is approximately 2.5 kilometres away. The allocation of the BPA indicates that the landscape can be prone to bushfires, and the consideration of bushfire impact should be considered. It should be noted that the majority of Victoria apart from the developed areas of townships is within the BPA.

This location sits between two weather stations with Sheoaks to the east and Westmere to the west. The Westmere weather station is closer and is approximately 47 kilometres to the west of the Project. The historical data indicates that the peak fire danger period in this area occurs between the months of December and March with the peak fire danger period being the month of January into February[1]. This is shown in Figure 3.

As outlined previously, the likely wind direction on elevated fire danger days will be associated with the north westerly direction followed by the south westerly change. This will result in two bushfire scenarios. Either a bushfire approaching from the northwest or southwest aspects. Both directions will see bushfires burning through primarily grassland fuels with isolated patches of trees

[1] Data sourced from the Westmere BoM weather station – February 2006 – March 2026.

contributing to the generation of embers allowing the bushfire to spot ahead of the main fire front. These are shown in Figures 4 and 5.

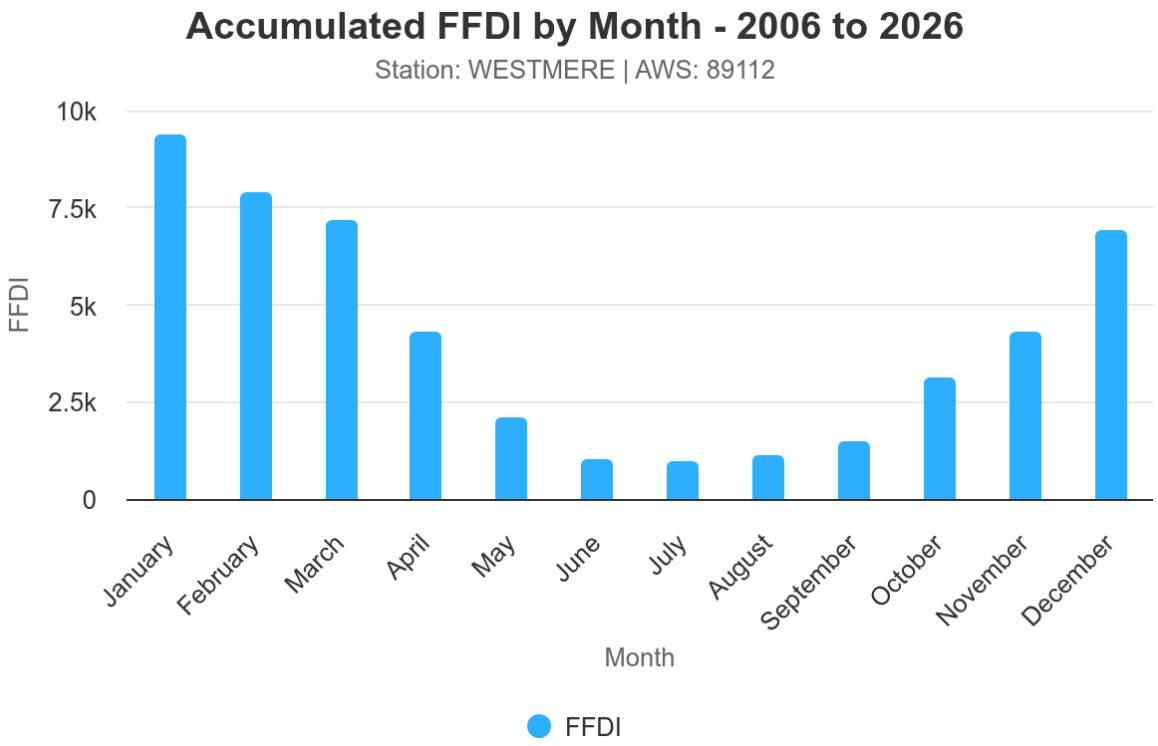


Figure 3 - Accumulated FFDI by month – Westmere

In accordance with the Technical Guide[2], the landscape has been determined to be Type 2. This indicates a landscape that can support bushfire activity, it does recognise that multiple egress options are available.

Determining the landscape type enables consideration of other treatments based on the level of risk. These treatments may include additional construction requirements, vegetation management or other solutions. Whilst the determination of a landscape risk level is part of this analysis, the determination of the need for additional treatments will be considered as part of further assessments within this Report.

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

[2] https://www.planning.vic.gov.au/__data/assets/pdf_file/0029/639506/Planning-Permit-Applications-in-a-BMO-or-BPA-Guidelines.pdf

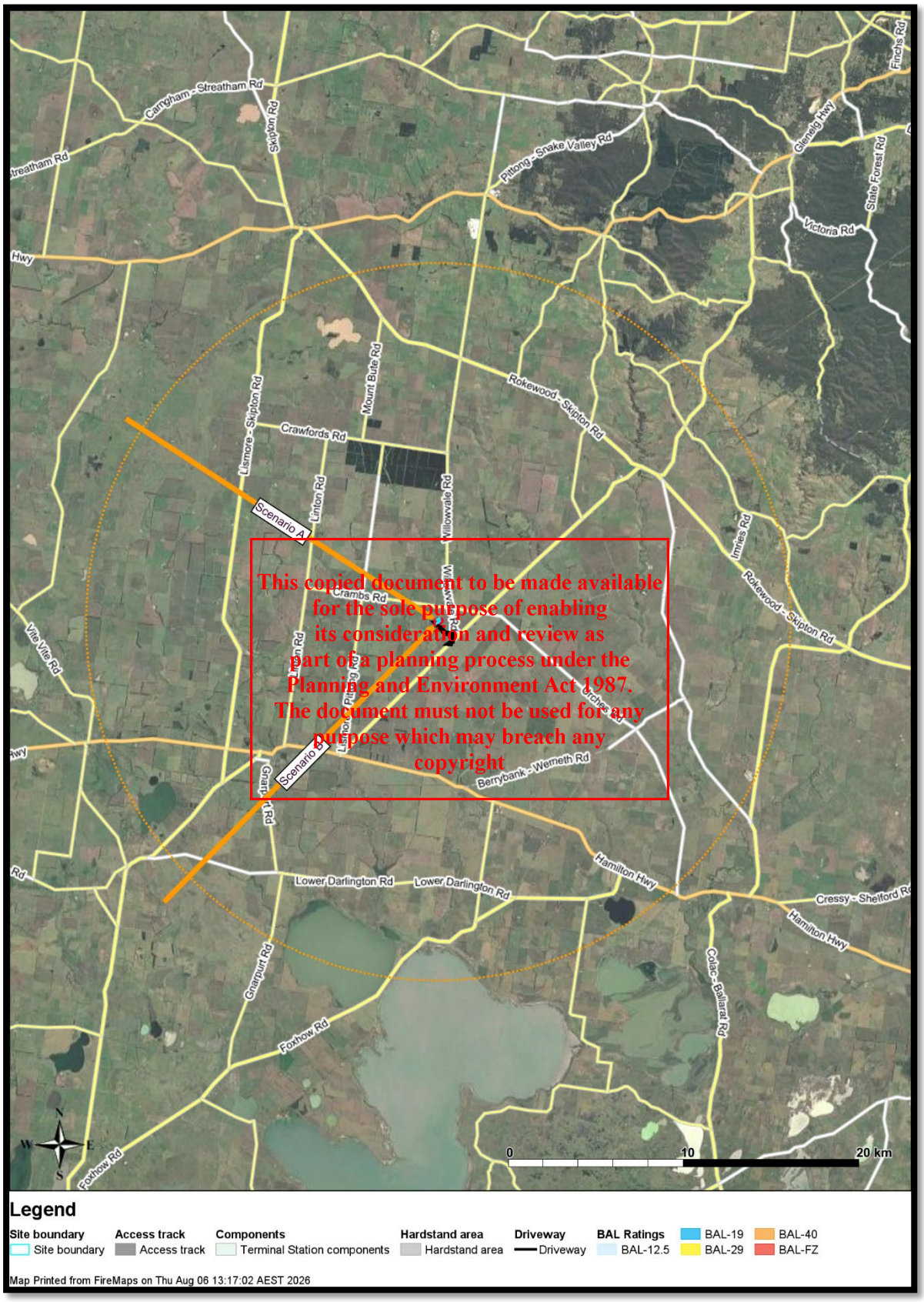
ADVERTISED PLAN



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Figure 4 - 1 kilometre landscape assessment

ADVERTISED PLAN



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Figure 5 - 20km landscape assessment

4 TERMINAL STATION DESIGN

Bushfire risk is considered from the earliest stages of site selection and layout, with preference given to locations that minimise exposure to significant vegetation where practicable. The arrangement of switchyards, control buildings and other critical assets is designed to reduce the potential for fire spread both within the terminal station and from the surrounding landscape. This is achieved through the provision of defendable space, vegetation management, appropriate separation distances, fire-resistant construction materials, emergency access for firefighting appliances, and the protection of critical equipment from radiant heat, flame contact and ember attack. These measures are supported by asset management practices that maintain vegetation clearances and minimise combustible fuel loads throughout the operational life of the facility.

In Australia, bushfire considerations for terminal stations are addressed through a combination of Australian Standards, electricity industry guidance and network service provider requirements. *AS 2067 Substations and High Voltage Installations Exceeding 1 kV AC* establishes the principal design framework for high voltage installations, while individual network service providers, supplement these requirements with detailed engineering standards and asset management specifications. Depending on the location and risk profile of the facility, additional measures may include fire separation walls, oil containment systems, dedicated fire detection and suppression systems, reliable firefighting water supplies, and emergency response planning developed in consultation with the relevant fire authority. Collectively, these measures ensure that terminal stations are designed to remain resilient during bushfire events, reduce the likelihood of infrastructure damage and prolonged electricity outages, and support safe emergency response where intervention is required.

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

ADVERTISED
PLAN

ADVERTISED PLAN

5 CLAUSE 13.02 ASSESSMENT

5.1 INTRODUCTION

Clause 13.02 of the Planning Scheme states:

This policy must be applied to all planning and decision-making under the Planning and Environment Act 1987 relating to land that is:

- *Within a designated bushfire prone area;*
- *Subject to a Bushfire Management Overlay; or*
- *Proposed to be used or developed in a way that may create a bushfire hazard.*

As the development is located within a designated bushfire-prone area, an assessment against Clause 13.02 is required to be completed.

5.2 STRATEGY RESPONSE

Table 1 - Clause 13.02 strategy assessment response

	Strategy	Response
	Give priority to the protection of human life by:	
1	Prioritising the protection of human life over all other policy considerations.	The assessment prioritises the protection of construction personnel, operational and maintenance personnel, emergency responders and people on adjoining land. The terminal station is understood to be normally unattended, with personnel present intermittently for construction, inspection and maintenance activities. The proposed extension will be subject to appropriate design standards, vegetation management, access, firefighting water supply and emergency management arrangements so that life safety is prioritised before the protection of infrastructure or continuity of electricity supply. Personnel should not remain at the terminal station to defend infrastructure where conditions are unsafe.
2	Directing population growth and development to low-risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.	The proposal does not involve population growth or a use that will introduce permanent or significant occupancy. It involves an extension to an established terminal station and must be located adjacent to the existing switchyard and transmission infrastructure. Within these operational constraints, the proposed works are located within an existing cleared and managed environment dominated by

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
		gravel hardstand and other low-fuel surfaces. Access will continue to be provided by the existing driveway from Lismore-Scarsdale Road. Operational and emergency procedures should provide for early departure during elevated bushfire conditions and should not rely on personnel evacuating through an approaching fire front.
3	Reducing the vulnerability of communities to bushfire by considering bushfire risk in decision-making at all stages of the planning process.	Bushfire risk has been considered during the planning and preliminary design of the extension. This assessment considers the surrounding landscape, grass and crop fuels, topography, fire weather, potential fire-approach directions, radiant-heat exposure, access, firefighting water supply and the potential for the development to cause a fire. The recommended protection measures are to be incorporated into the final design, construction controls, updated Bushfire Management Plan and ongoing operation and maintenance of the terminal station.
	Identify bushfire hazard and undertake appropriate risk assessment by:	
1	Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.	The bushfire hazard has been assessed using the methodology and vegetation classifications contained in AS 3959, together with current bushfire-prone and Bushfire Management Overlay mapping, available fire-history information and historical weather data from the Westmere weather station. The assessment has considered the predominantly grassland and crop fuels, generally flat to gently undulating topography, elevated fire-weather conditions and the characteristic north-westerly winds followed by a south-westerly wind change. Radiant-heat exposure has been modelled under FDI 100 conditions.
2	Considering the best available information about bushfire hazard, including the bushfire prone area map.	Current mapping identifies the terminal station as being within a designated Bushfire Prone Area. The site is not affected by the Bushfire Management Overlay, with the nearest mapped BMO land located approximately 2.5 kilometres north of the site and associated with plantation vegetation. This differs from the endorsed 2019 Bushfire Management Plan, which stated that the site was not within a Bushfire Prone Area. Current mapping has been relied

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
		upon for this assessment, and the mapping information in the endorsed BMP should be updated.
3	Applying the Bushfire Management Overlay to land where the extent of vegetation can create an extreme bushfire hazard.	The terminal station is not located within the Bushfire Management Overlay. The nearest BMO land is approximately 2.5 kilometres north of the site and is associated with plantation vegetation. Application or amendment of the BMO is not proposed as part of the terminal station extension. Notwithstanding this, the assessment considers the hazards associated with vegetation in the surrounding landscape, including grassland, crops, scattered trees and more distant plantation and forest vegetation.
4	Considering and assessing the bushfire hazard on the basis of: • Landscape conditions - meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of the site. • Local and neighbourhood conditions - meaning conditions in the area within approximately 5 kilometres of the site. • The site and conditions within 150 metres.	The assessment considers bushfire hazard at the broader landscape, local and site scales. The wider landscape is predominantly agricultural, comprising grazing land, cropping and scattered trees, with more substantial forest vegetation occurring further west around Skipton. Within the local area, the principal hazard is fast-moving grass or stubble fire under strong north-westerly winds or following a south-westerly wind change. Within and immediately adjoining the terminal station, vegetation is predominantly grassland and seasonal crop fuel across generally flat or gently undulating land. Existing gravel hardstand, the gravel apron and maintained low-fuel areas reduce direct flame and radiant-heat exposure to the switchyard.
5	Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.	The endorsed Bushfire Management Plan was prepared in consultation with the Country Fire Authority and the Corangamite Catchment Management Authority. It includes requirements relating to emergency access, static firefighting water supply, mineral firebreaks, vegetation management, construction fire controls, emergency-service familiarisation and operational preparedness. As the BMP predates the proposed extension and contains superseded mapping information, it should be updated in consultation with the responsible authority and CFA, as appropriate. The updated BMP should demonstrate that its protection

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
		measures extend to the proposed infrastructure and remain consistent with current requirements.
6	Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.	This assessment has been prepared to accompany the planning permit application and addresses Clause 13.02-1S and the life-safety priority established by Clause 71.02-3. The assessment identifies the applicable bushfire hazard and recommends protection measures including maintenance of low-fuel areas, a minimum 10-metre mineral firebreak, a 30-metre area free of scrub and planted trees, compliant emergency access, an accessible static firefighting water supply, construction ignition controls and updated emergency management arrangements. These measures should be shown on the approved plans and incorporated into the updated BMP.
7	Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have been addressed, performance measures have been satisfied, or bushfire protection measures can be adequately implemented.	The proposed extension is located within land controlled by the terminal station operator, allowing the identified protection measures to be implemented and maintained. Final design documentation should confirm the dimensions of the mineral firebreak and vegetation-clearance area, the standard and capacity of emergency access, and the capacity, location and fittings of the firefighting water supply. Subject to this confirmation and the update of the endorsed BMP, the bushfire protection measures can be adequately implemented for the life of the development.
	Plan to strengthen the resilience of settlements and communities through settlement growth, land use and development that prioritises the protection of human life by:	
1	Assessing the bushfire hazard at different spatial scales (landscape, local, neighbourhood, and site), the likely fire behaviour, bushfire risk, and the potential for local- and neighbourhood-scale destruction.	The bushfire hazard has been assessed at the broader landscape, local and site scales. The surrounding landscape is dominated by agricultural land, limiting the potential for a continuous forest fire run toward the terminal station but allowing rapid grass and stubble fire spread. Severe fire-weather conditions are commonly associated with north-westerly winds followed by a south-westerly change, creating credible fire-approach scenarios from the northwest and southwest. Scattered trees and more distant forest or plantation vegetation may contribute to ember attack. The limited occupancy of the terminal station and its

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
		extensive cleared and gravelled areas reduce the potential consequences for human life.
2	Directing population growth and development to low-risk locations, being those where: • The risk from large bushfires in the wider landscape can be managed including the risk associated with higher levels of ember attack. • On completion, development will not be exposed to high levels of radiant heat, which is no more than 12.5 kilowatts/square metre for locations subject to strategic planning or the preparation of a planning scheme amendment. • There is reliable access to areas of land where human life can be better protected from the effects of bushfire. • Bushfire protection measures can be provided to manage the ongoing risk from bushfire.	The proposal is an extension to an existing utility installation and does not involve population growth or permanent occupation. Within the functional requirement to adjoin the existing switchyard, the extension has been located in a cleared and managed area capable of supporting appropriate bushfire protection measures. Radiant-heat modelling indicates that the proposed infrastructure will generally be exposed to no more than 12.5 kW/m² under the adopted FDI 100 conditions. Reliable access is available via the existing driveway to Lismore-Scarsdale Road. The gravel apron, mineral firebreak, vegetation management, firefighting water supply, construction controls and emergency arrangements can be extended or upgraded to manage the ongoing risk from bushfire.
3	Alternative low-risk locations for settlement growth have been assessed on regional, municipal, settlement, local, and neighbourhood levels to ensure the proposed location for growth prioritises human life.	The proposal is not a settlement-growth project and will not establish a new residential, commercial or community population. The additional line bay must connect to the existing Berrybank Terminal Station and associated transmission infrastructure; consequently, an alternative regional or municipal location would not achieve the project's operational purpose. Within the existing site, the proposed extension occupies the established cleared terminal station environment and expands the switchyard into an area where low-fuel surfaces, separation from

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
		classified vegetation and emergency access can be maintained.
4	Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.	The proposal is not expected to increase bushfire risk to residents, adjoining properties or community infrastructure, provided the identified design and management measures are implemented. The extension will increase the developed switchyard footprint from approximately 1.4 ha to 1.8 ha, with the expanded area predominantly comprising non-combustible electrical equipment, gravel hardstand and managed low-fuel surfaces. Potential ignition sources associated with electrical equipment, hot work, vehicles and maintenance activities are to be controlled through design standards, operational procedures and restrictions during elevated fire-danger conditions.
4	Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reducing bushfire risk overall.	The proposed works will be contained within the existing 3.18 ha terminal station property and will extend the existing gravel apron and asset protection area. The maintenance of a minimum 10-metre mineral firebreak, a 30-metre area free of scrub and planted trees, low grass heights, emergency access and firefighting water supply will limit the likelihood of a fire entering or leaving the terminal station. Updating the existing BMP and extending its requirements to the new infrastructure will provide an opportunity to improve the consistency and ongoing verification of bushfire protection across the entire terminal station.
5	Not preparing, adopting or approving a plan that will result in the introduction or intensification of development in an area that has, or will have on completion, a radiant heat exposure of more than 12.5 kilowatts/square metre in the event of a bushfire. In this strategy, 'plan' means a strategic plan, policy	The proposal is a planning permit application for an extension to an existing utility installation and is not a strategic plan, policy statement or amendment to the planning scheme for the purposes of this strategy. Nevertheless, radiant-heat modelling indicates that the proposed terminal station infrastructure will generally be exposed to no more than 12.5 kW/m² under the adopted FDI 100 conditions. The final design should confirm that routinely occupied or accessed areas are not located within areas of higher modelled exposure.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

	Strategy	Response
	statement, and amendment to a planning scheme, including an amendment to the Planning Policy Framework, or a plan approved under a provision of the planning scheme.	
	Additional measures:	
1	Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are important areas of biodiversity.	The proposal is located within an existing utility installation and makes use of land that is already substantially cleared and managed. The extension of the switchyard, gravel hardstand, gravel apron and asset protection area should be designed to avoid or minimise impacts on native vegetation and any environmental values associated with the Environmental Significance Overlay affecting part of the property. Bushfire protection measures should be located within land controlled by the proponent and should, where practicable, rely on existing cleared or disturbed areas. Any vegetation removal required for bushfire protection must be identified in the planning documentation and addressed through the applicable environmental approval process.
2	When assessing a planning permit application for a use or development that will result in people congregating in large numbers: • consider the risk of bushfire to people, property and community infrastructure; • require the implementation of appropriate bushfire protection measures to address the identified bushfire risk; and • ensure development can implement bushfire protection measures	The proposal will not result in people congregating in large numbers. The terminal station is expected to be normally unattended, with personnel present intermittently for construction, inspection and maintenance. Construction activities may temporarily increase the number of people on the site and the potential for ignition from vehicles, machinery and hot work. These risks should be managed through the construction environmental and emergency management arrangements, including monitoring Fire Danger Ratings and warnings, restrictions on hot work and other ignition-producing activities, firefighting equipment, maintained emergency access and procedures for early suspension of work and departure from the site. These measures can be implemented primarily within existing cleared and disturbed land.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

	Strategy	Response
	without unacceptable biodiversity impacts.	

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

6 BUSHFIRE SAFETY CONSIDERATIONS

The Project is within an area that could be impacted by a bushfire or contribute to a bushfire ignition. Therefore, the consideration of bushfire safety through both an ignition prevention perspective and an asset protection perspective are critically important. As described in Section 3, the consideration of bushfire safety is contained within the design standards and operator policy and procedures.

In addition to the site-based design requirements, the management of the surrounding landscape can be assumed that it will continue in the same way. Agricultural activities through either stock grazing or cropping activities will generally see the bushfire risk maintained at a reduced level. It is unlikely for these areas to become overgrown and unmanaged.

Activities including hay and crop production will see the fuel levels increase until the start of summer when harvesting operations are normally activated. This results in a significant reduction in fuel loads throughout the surrounding landscape. These fuel levels generally don't increase again until rainfall is experienced, and this often does not occur until the start of Autumn. Agricultural land management is assumed to continue throughout the life of the Project and forms one of the assumptions of the assessment.

Assessment using the methodology contained within AS 3959 indicates the Project is exposed to a maximum of 12.5kW/m². Most of the development is exposed to less than 12.5 kW/m². The radiant heat impact on the project when exposed to FDI100 conditions is outlined in Figure 4. The results of this assessment is low due to the management of fuel within the site boundary an the grassland fuel classification in the surrounding area.

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

ADVERTISED
PLAN

ADVERTISED PLAN

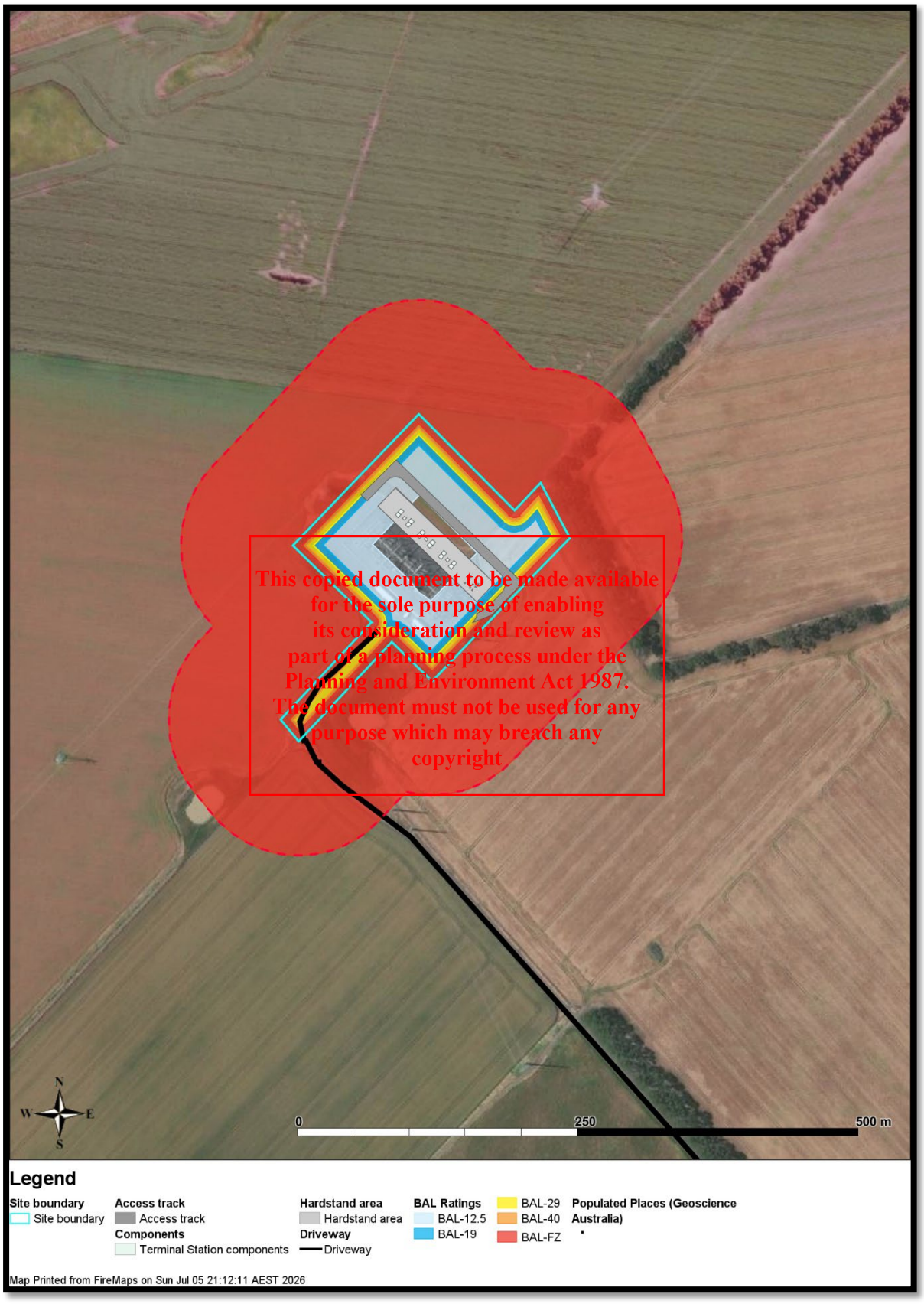


Figure 6 - BAL ratings when exposed to FDI100 weather conditions

ADVERTISED PLAN

To manage the risk of fires starting within the Project area, the following will be considered:

Table 2 - List of compliance documents (where applicable)

Document	Year	Applicability
AS 2067 – Substations and High Voltage Installations Exceeding 1 kV a.c.	2016	Primary design standard for terminal stations.
AS/NZS 3000 – Electrical Installations (Wiring Rules)	2018 (Amendment 2024 where adopted)	Low voltage electrical installations.
AS/NZS 3008.1.1 – Electrical Installations – Selection of Cables – Cables for Alternating Voltages up to and Including 0.6/1 kV	2017	Cable sizing and installation.
AS/NZS 3013 – Electrical Installations Classification of the Fire and Mechanical Performance of Wiring Systems	2005 (plus amendments)	Fire-rated cable systems.
AS 62271 Series – High Voltage Switchgear and Controlgear	Various	High voltage switchgear design and testing.
AS 2419.1 – Fire Hydrant Installations – System Design, Installation and Commissioning	2021	Fire hydrant systems.
AS 1670.1 – Fire Detection, Warning, Control and Intercom Systems – System Design, Installation and Commissioning	2018	Fire detection systems.
AS 2118 Series – Automatic Fire Sprinkler Systems	Various	Building sprinkler protection where required.
AS 2441 – Installation of Fire Hose Reels	2005	Fire hose reel systems.
AS 2444 – Portable Fire Extinguishers and Fire Blankets – Selection and Location	2001 (with amendments)	Portable extinguishers.
AS 1851 – Routine Service of Fire Protection Systems and Equipment	2012	Inspection, testing and maintenance.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

AS 4072.1 – Components for the Protection of Openings in Fire-Resistant Elements – Service Penetrations and Control Joints	2005	Fire stopping.
AS 1940 – The Storage and Handling of Flammable and Combustible Liquids	2017	Diesel fuel and other flammable liquids (where applicable).

In addition to the above the following legislation applies to the development and assists with the management of the bushfire risk:

ADVERTISED PLAN

- Electricity Safety Act 1998 (Vic)
- Electricity Safety (General) Regulations 2019
- ENA DOC 018 – Guideline for the Fire Protection of Electricity Substations
- Electricity Safety (Bushfire Mitigation) Regulations 2023
- Operator Design Guidelines and Standards.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

7 BUSHFIRE RISK MANAGEMENT MEASURES

The following bushfire risk management measures will ensure the ongoing management of bushfire risk for the Project.

No.	Title	Discussion
1	**Compliance with Design Standards**	The Berrybank Terminal Station extension should be designed, constructed and maintained in accordance with the applicable Australian Standards, Energy Safe Victoria requirements, electricity industry guidance, network operator standards and relevant statutory obligations. Particular emphasis should be placed on *AS 2067 – Substations and High Voltage Installations Exceeding 1 kV a.c.*, which provides the primary framework for the design of high voltage substations and includes requirements relating to fire safety, equipment separation, emergency access and asset resilience.
2	**Vegetation Management**	Vegetation within the terminal station and within the site boundary should be managed to minimise the accumulation of combustible fuels. Grass should be regularly slashed, grazed or otherwise maintained to ensure low fuel loads are achieved throughout the year and that vegetation does not compromise emergency access or the operation of the infrastructure.
3	**Asset Protection Zone**	The existing cleared and managed area surrounding the terminal station should be maintained throughout the operational life of the facility. Future landscaping, storage areas or other infrastructure should not increase the

		available fuel load adjacent to switchyards, control buildings or other critical assets.
4	**Emergency Access**	Internal access roads, perimeter roads and access gates should be maintained to provide safe and reliable access for operational personnel and emergency services. Access routes should remain trafficable during the Fire Danger Period and security arrangements should allow emergency service access where required.
5	**Fire Protection Systems**	Fire protection systems incorporated into the terminal station should be designed, installed, commissioned and maintained in accordance with the relevant Australian Standards and network operator requirements. This may include fire hydrants, fire detection systems, portable fire extinguishers, fire separation walls, oil containment systems and any specialist suppression systems adopted as part of the detailed design.
6	**Operational Bushfire Preparedness**	The terminal station operator should implement operational procedures for periods of elevated bushfire risk. These procedures should include monitoring of Fire Danger Ratings, management of maintenance activities during Total Fire Ban days, emergency response arrangements, post-bushfire asset inspections and communication protocols with emergency services where required.
7	**Ongoing Fuel Management Review**	The surrounding agricultural land currently provides a relatively low and actively managed fuel environment. Should the surrounding land use change significantly in the future, or should unmanaged vegetation become established within the surrounding landscape, the bushfire risk should be reviewed to confirm that the assumptions adopted within this assessment remain valid.
8	**Emergency Management Planning**	The completed terminal station should be incorporated into the operator's Emergency Management System. This should include pre-incident planning, emergency contact arrangements, asset isolation procedures, bushfire response procedures and post-fire inspection protocols to ensure the continued resilience of the facility during and following bushfire events.

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

8 CONCLUSION

This Bushfire Risk Assessment has considered the bushfire risk associated with the proposed extension of the Berrybank Terminal Station, including the construction of an additional 220 kV line bay and associated expansion of the switchyard, gravel hardstand, asset protection area, fencing and supporting infrastructure. The assessment has considered the bushfire hazard at the landscape, local and site scales, together with relevant fire weather, historical fire activity, vegetation, topography, access, firefighting water supply, potential ignition sources and the requirements of Clause 13.02-1S of the Golden Plains Planning Scheme.

The terminal station is located within a designated Bushfire Prone Area but is not affected by the Bushfire Management Overlay. The surrounding landscape is predominantly used for cropping and grazing, with grassland, crop and stubble fuels representing the principal bushfire hazard. Under elevated fire-danger conditions, fires in these fuels may spread rapidly, particularly under north-westerly winds and following a south-westerly wind change. Scattered trees and more distant plantation or forest vegetation may also contribute to ember attack; however, the broader landscape does not provide a continuous forest fire path to the terminal station. The generally flat to gently undulating topography is not expected to materially increase fire behaviour immediately adjoining the proposed works.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

The proposal does not involve population growth or permanent occupation. The terminal station is expected to remain normally unattended, with personnel present intermittently for construction, inspection and maintenance. The proposed extension must be located adjacent to the existing switchyard and transmission infrastructure; however, within this operational constraint, it is positioned in an established, cleared and managed environment containing extensive gravel and low-fuel surfaces. Radiant-heat modelling undertaken using the methodology contained in AS 3959 indicates that the proposed infrastructure will generally be exposed to no more than 12.5 kW/m² under the adopted FDI 100 conditions. This exposure can be further managed by extending the existing gravel apron and asset protection arrangements around the new infrastructure.

The assessment against Clause 13.02-1S demonstrates that the proposal can appropriately respond to the identified bushfire hazard and prioritise the protection of human life. This is subject to the final design confirming and incorporating the required bushfire protection measures, including the minimum 10 m mineral firebreak, the 30 m area free of scrub and planted trees, ongoing grass and fuel management, suitable all-weather emergency access, an accessible static firefighting water supply, construction ignition controls and operational procedures for periods of elevated bushfire risk. These measures must be capable of being implemented within land controlled by the terminal station operator and maintained for the operational life of the development.

The endorsed 2019 Bushfire Management Plan remains relevant to the terminal station but predates the proposed extension and contains information that is no longer current, including its statement that the site is not within a Bushfire Prone Area. The BMP should therefore be updated to incorporate the proposed infrastructure, current bushfire mapping, current ownership and operating arrangements, and the bushfire protection measures identified by this assessment. The updated BMP should also confirm the capacity and location of the existing firefighting water supply,

emergency vehicle access and hardstand arrangements, vegetation-management areas, construction controls and emergency-service familiarisation requirements. Any necessary consultation and endorsement should be completed through the applicable planning permit process.

Subject to the final design verification, implementation of the risk-management measures contained in this report, and update of the endorsed BMP, the proposed extension is not expected to result in an unacceptable increase in bushfire risk to personnel, emergency responders, adjoining land, property or community infrastructure. On this basis, the proposal is considered capable of achieving an appropriate response to Clause 13.02-1S and Clause 71.02-3 of the Golden Plains Planning Scheme, and no bushfire-related constraint has been identified that would preclude the development from proceeding.

ADVERTISED
PLAN

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright