Western Victoria Transmission Network Project

## Preliminary EES Information Sheet for Existing Conditions

# Bushfire

**Introduction**

This document provides a summary of the existing conditions identified for bushfire within the Western Victoria Transmission Network Project (WVTNP) area of interest (AOI). Identifying the existing bushfire conditions within the AOI is an important step towards understanding the potential impacts, interactions and considerations for the project.

The existing conditions have been identified by qualified, independent technical specialists and include bushfire prone land, fuels, landforms, climate, fire history and fire response approaches.

A review of Bushfire Management Overlays from the planning schemes, designated bushfire prone areas, climate change projections, historical climate records, fire history, landforms and vegetation mapping was undertaken. Relevant legislation, policy and guidelines have been considered, along with stakeholder and community input.

## Community and stakeholder feedback

The community have expressed their concerns about bushfire including:

- Concerns about bushfire ignition resulting from project infrastructure.
- Concerns about impact on bushfire management including planned burning to reduce fuel loads, ground-based and aerial fire response, and back-burning.
- Concerns about blocking egress from forest areas during a bushfire event.
- Worsening of fire weather conditions and fire danger with climate change.
- Concerns about impact on Coimadai Primary School, which is listed on the Bushfire at Risk Register.



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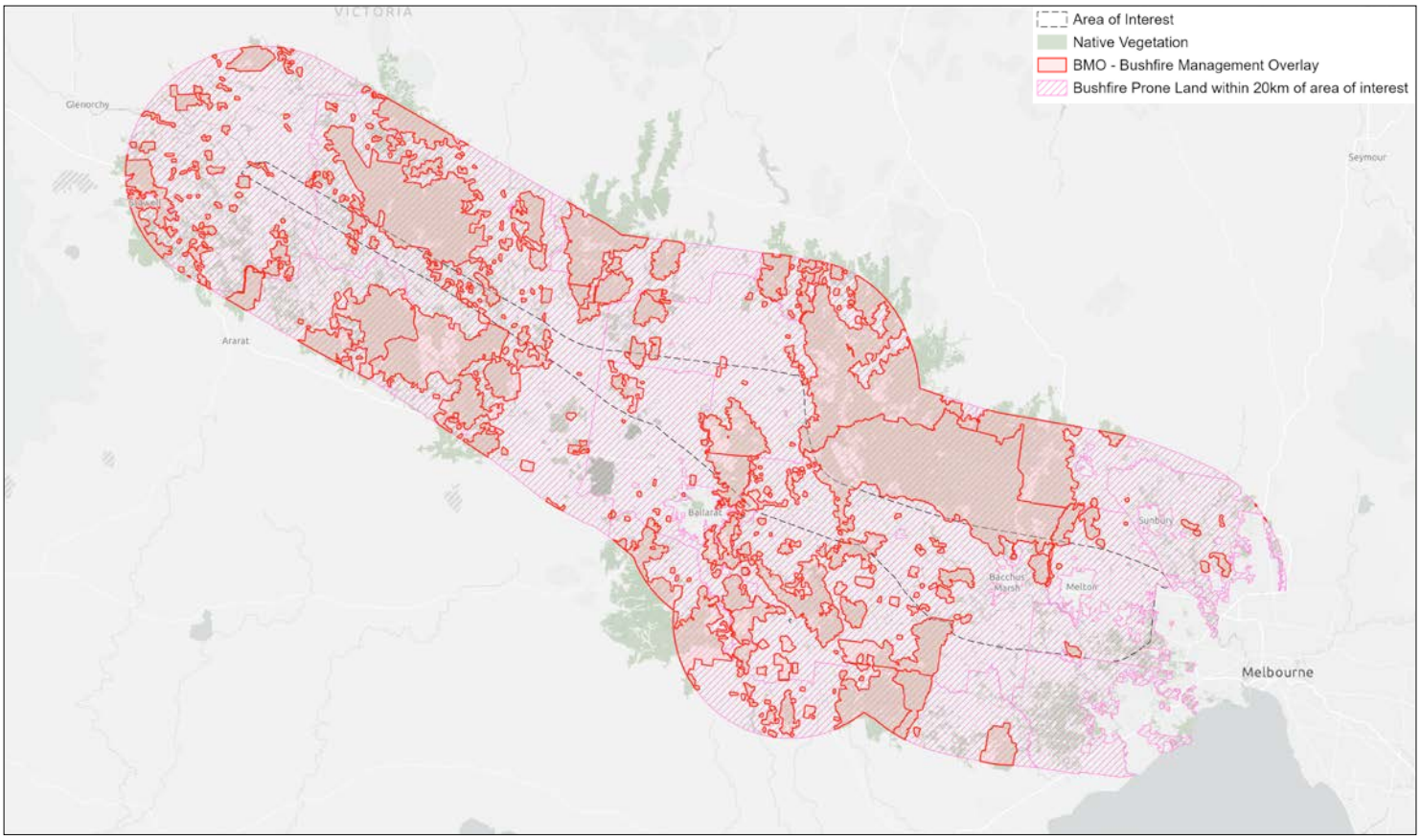



Bushfire Prone Land (Data source: VICMAP_PLANNING, 2021; NV2005_EVCBCS, 2021; BUSHFIRE_PRONE_AREA, 2021)

### Bushfire prone land

The majority of the AOI and the land surrounding it is classified by the Victorian Government as bushfire prone, except for the urban area of Ballarat and inner urban areas of Ballan, Bacchus Marsh and Melton. Higher risk bushfire prone areas are identified in planning scheme Bushfire Management Overlays.

### Vegetation and bushfire fuels

Patches of native eucalypt forest and blue gum and pine plantations are the main sources of bushfire fuel in and surrounding the AOI, including areas at Lexton, Waubra, Creswick, Wombat State Forest and Lerderderg Gorge. Grazed pastures, rainfed cropping areas, roadside vegetation and native grasslands distributed across the AOI also contribute fuel.

### Landform and topography

Topography and aspect influence soils, vegetation type, fuel moisture characteristics and hence fire behaviour. Fires burn more rapidly upslope than downslope. Fires burning in areas of significant differences in elevation may throw embers ahead of a main fire front (weather permitting) and rapidly increase the scale of a bushfire. There are hills, ridges, escarpments and eruption points distributed across the AOI, with topographic relief greatest in the area west of Waubra and east of Ballarat.

### Climate and weather

Fire danger ratings (FDR) provide the potential fire danger on any given day in a particular location and are based on the Fire Danger Index (forest or grass). The index is a measure of vegetation dryness with air temperature, wind speed and humidity. FDR values at Ballarat are typically in the high FDR range between December and March and in the low to moderate FDR range at other times of year. Long term rainfall and temperature records from meteorological stations indicate the area west of Ballarat typically has warm and relatively dry summers and cool, wet winters with higher annual average rainfall totals than in the east of the AOI. During summer, afternoon winds at Ararat are primarily from the south, south-west and west.

Fire weather conditions at Melbourne Airport (representing the east of the AOI) are similar to Ballarat, with slightly more days in the very high FDR range and above. In the east of the AOI, rainfall peaks in Autumn and late Spring, temperatures are warmer at the lower elevations, and afternoon winds are primarily from the south during the summer fire season. Daily maximum temperatures over 40°C are typically recorded a few times each year, with temperatures greater than 45°C recorded in the east of the AOI. A number of days with extreme fire danger rating occur most years within the AOI.

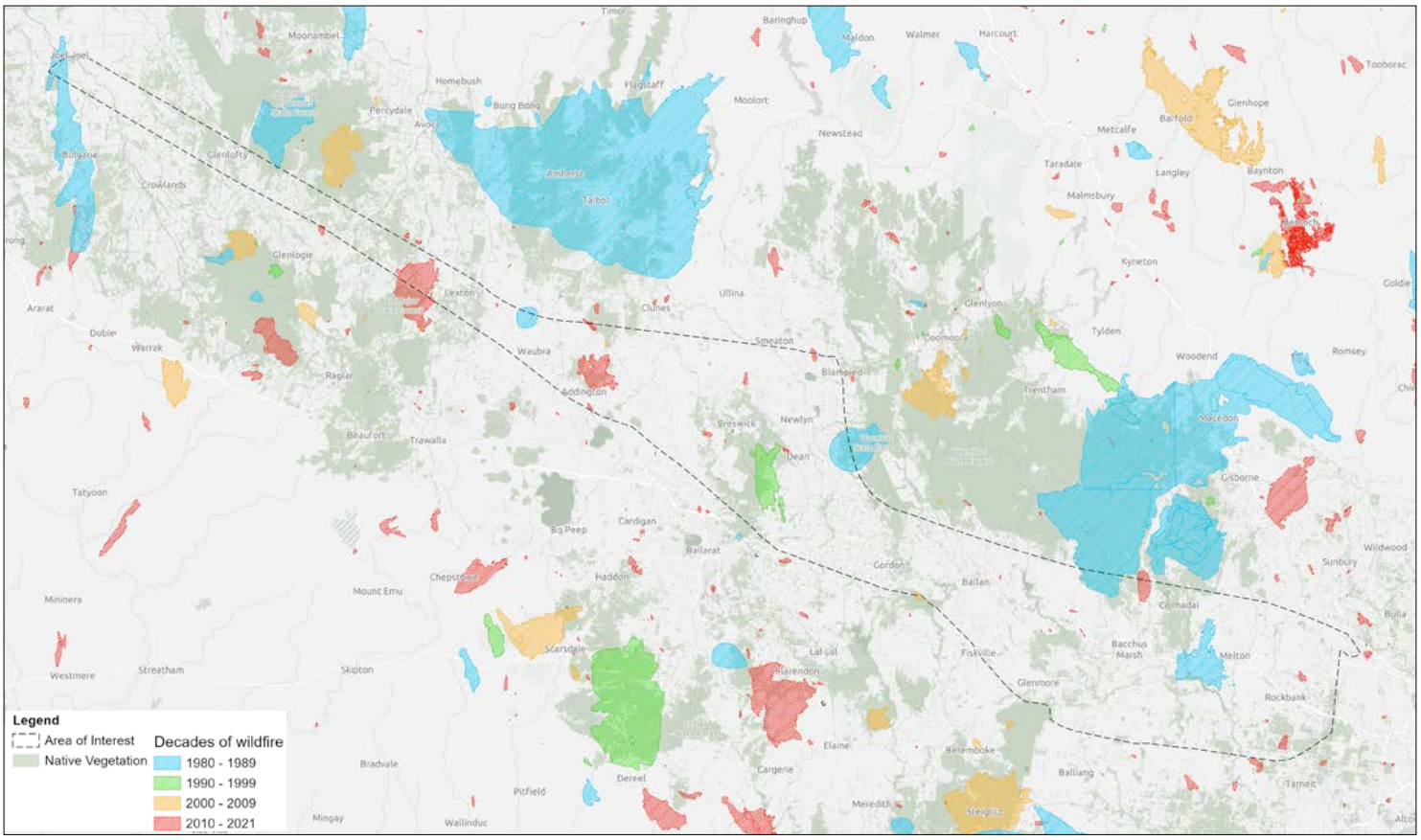
More information about FDR is available at: https://www.cfa.vic.gov.au/warnings-restrictions/total-fire-bans-and-ratings/about-fire-danger-ratings

Climate change is projected to exacerbate fire weather conditions across the AOI over the period to 2070. Rainfall is projected to decline, temperatures and frequency of days with elevated fire danger are projected to increase, and the period of high fire risk weather is projected to extend from October to March.

### Fire history

Bushfires occur frequently in the landscape around the AOI, particularly in large tracts of forested public land (i.e., in the Grampians National Park, Pyrenees State Forest, Wombat State Forest, Lerderderg State Park and Brisbane Ranges National Park). Of over 650 fires recorded within 50km of the AOI since 1980, 75 have directly impacted the AOI. While these fires are typically small, fires that become established during the dangerous fire weather conditions that periodically occur within the AOI may burn large areas.

In the AOI and more generally in Victoria, most major bushfires start (or escape containment) on severe or extreme fire danger days; characterised by high temperatures, low relative humidity and strong north to north-westerly winds. Under these conditions bushfires may spread rapidly towards the south or south-east. These days are often accompanied by a passage of cold fronts during the late afternoon or evening which shift winds towards the south-west and may further strengthen them. If the northern flank of a fire burning under elevated fire weather conditions has not been contained effectively before the wind change arrives, the change may create a wide fire front from the former flank and lead to a rapid escalation in fire size.




Bushfire history in the AOI and surrounding area (Data source: FIRE_HISTORY_LASTBURNT, 2021; NV2005_EVCBCS, 2021)

Planned burns are also conducted in forest and woodland on public land by Forest Fire Management Victoria and associated agencies. The Country Fire Authority and private landholders undertake planned burns on private land for fire protection or farm management purposes (e.g., stubble burns by cropping farmers).

There is no record of the Victorian transmission network (transmission lines, switchyards, terminal stations) being the cause of a bushfire. While there is no record of the Victorian transmission network starting a bushfire, the distribution network has been the cause of bushfires. The 2009 Victorian Bushfires Royal Commission identified a strong historical correlation in Victoria between catastrophic bushfires and the failure of electricity distribution assets (e.g., distribution lines clashing or falling to ground). Five of 11 major fires included in the commission's investigations and several earlier fire events (in 1969, 1977 and 1983) resulted from the failure of electricity distribution assets. More information about how AusNet Services manages bushfire risk is detailed in the *Managing fire risk* fact sheet on the **project website**.

### Fire risk management arrangements

Prevention of bushfire ignition from transmission powerlines is governed by the *Electricity Safety Act 1998, Electrical Safety (Electric Line Clearance) Regulations 2020* and *Electrical Safety (Bushfire Mitigation) Regulations 2013*. Schedule 1 to the *Electrical Safety (Electric Line Clearance) Regulations 2020* is the Code of Practice for Electric Line Clearance, which specifies minimum clearance requirements between transmission (and distribution) powerlines and nearby vegetation and trees that could fall into the transmission line corridor, as well as procedures for vegetation cutting and removal. Clearance requirements take account of the voltage of the transmission line, as well as sag and sway of the conductors (powerlines). Compliance with the Code of Practice is mandated for transmission network operators. The *Electrical Safety (Bushfire Mitigation) Regulations 2013* provide for the preparation of bushfire mitigation plans by electricity network operators and their authorisation under the *Electricity Safety Act 1998*. The plans provide management procedures and processes to ensure that the network is compliant with the regulations and risk of fire is minimised. The plans are submitted to Energy Safe Victoria every 5 years for approval.

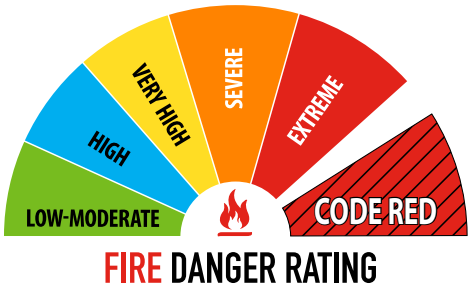
### Fire response

Bushfire emergency responses in Victoria operate under the auspices of Emergency Management Victoria (EMV) and the Emergency Services Commissioner. Two primary bushfire management agencies operate in the AOI and surrounding areas: Country Fire Authority (primary fire response agency for private land in Victoria) and Forest Fire Management Victoria (primary bushfire management agency for public land). Fire response aircraft are based at Stawell (fixed wing), Ballarat (rotary wing), Bacchus Marsh (rotary wing) and Avalon (fixed wing).

Ground-based operations use a variety of water sources, typically close to the fire grounds. These include creeks, farm dams, fire dams, water storages, lakes and town supplies. Fixed wing aircraft refill with water from mains supplies at airfields. Rotary wing aircraft may refill from a variety of field sources, including town supplies, depending on water availability and access.

Neighbourhood safer places, also known as a bushfire place of last resort, are designated by Councils and provide shelter for people from the immediate life-threatening effects of a bushfire. Those relevant to the communities in the AOI include:

- Toll Bar Recreation Reserve, Lexton.
- Waubra Recreation Reserve.
- Creswick Visitor Centre.
- Gordon Community Hall.
- Macpherson Park Oval No. 1, Toolern Vale.
- Landsborough Recreation Reserve (outside AOI).
- Egans Reserve, Greendale (outside AOI).




Source: www.cfa.vic.gov.au

## Considerations for the project

A range of considerations have been identified for further investigation and management which will be addressed in the bushfire impact assessment including:

- Potential for construction activities, equipment or vehicles to increase bushfire risk.
- Potential for fire ignition due to project infrastructure, e.g. contact with vegetation.
- Potential for project infrastructure to impact firefighting efforts, e.g., ground-based or aerial access to fire location, access to water supplies, or safety hazards.
- Potential for fallen or damaged infrastructure to block people from escaping a bushfire.
- Limitation of bushfire management, hazard reduction and ecological burning practices.
- Potential for bushfire to cause damage to project infrastructure.

Many regulatory and operational controls already exist to prevent or reduce the likelihood of fire risks occurring and/or to mitigate their impact.

## Next steps

- Undertake an assessment of the potential bushfire impacts of the project and identify appropriate management strategies.
- Further landholder, community and stakeholder consultation, including the Country Fire Authority, Forest Fire Management Victoria and fire emergency service organisations.
- Prepare a bushfire impact assessment including proposed management strategies to manage any potential impacts. The impact assessment will be published as part of the EES. The EES will be an important source of information about potential project impacts for the community, landholders, decision-makers and as part of the approvals process.

## WVTNP information

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