

Appendix N
Revised Bush Fire
Risk Assessment Report
(Aurecon, 2025f)



Yanco Delta Wind Farm Modification 2

Revised Bush Fire Risk Assessment Report

Yanco Delta WF Project Pty Ltd,
subsidiary of Origin Energy Power Limited

Reference: P528124

Revision: 0

2026-01-30



Executive summary

This Revised Bushfire Risk Assessment Report evaluates the potential bush fire risk associated with the modifications to the Yanco Delta Wind Farm (the Project). The modified project aims to enhance bush fire safety and compliance following planning approval received on 21 December 2023.

The assessment confirms that all assessed structures of the modified project are within Bush Fire Prone Land (BFPL), necessitating bush fire protection measures under the New South Wales (NSW) legislative framework for bush fire planning. The incorporation of an onsite temporary workers accommodation (TWA) and changes to access tracks and substations has resulted in the re-evaluation of Asset Protection Zones (APZ) and the associated bush fire protection measures and building standards to mitigate bush fire risk.

With the inclusion of a TWA, APZ have been applied to ensure a radiant heat impact of less than 10 kilowatt per square metre (kW/m²) (1200 Kelvin (K)), aligning with the classification of this facility as a Special Fire Protection Purpose (SFPP) development. Further, a limit of construction has been applied to the modified and additional construction compounds to ensure building siting during detailed design and construction will comply with the requirements under Australian Standard (AS) 3858:2018 *Construction of Buildings in Bush fire Prone Areas*, and the objectives of *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers* (PBP) (NSW Rural Fire Service (NSW RFS), 2019).

Further mitigation measures have been applied to each of the construction compounds. These include, but are not limited to, a static water tank with a capacity of 20,000 litres for firefighting purposes, development of secondary and primary access routes to support firefighting activities, egress and evacuation, and design and construction in accordance with PBP (NSW RFS, 2019), AS3858:2018 *Construction of Buildings in Bush fire Prone Areas* and the National Construction Code (NCC) (Australian Building Codes Board, 2022).

The modifications outlined in this report demonstrate a commitment to maintaining and enhancing fire safety measures in response to identified risks. By integrating these updates into the approved project, the Project aims to effectively manage bush fire hazards, providing compliance with environmental regulations and prioritising the safety of both infrastructure and personnel.

Contents

1	Introduction.....	1
1.1	Overview.....	1
1.2	Purpose of this report.....	1
1.3	Modification description.....	1
1.4	Secretary's Environmental Assessment Requirements.....	2
1.5	Legislative and policy context.....	4
2	Methodology.....	5
2.1	Bush fire risk assessment approach.....	5
2.2	Overview of the proposed modifications.....	5
2.3	Bushfire Attack Levels.....	15
2.4	Limitations and key assumptions.....	16
3	Existing environment.....	17
3.1	Regional fire weather and climate risk.....	17
3.2	Bush Fire Prone Land mapping.....	17
4	Bush fire risk assessment.....	23
4.1	Vegetation and slope assessment.....	23
4.2	Spark-BAL assessment.....	34
5	Bush fire protection measures.....	36
5.1	Construction standards and building requirements for assessed structures.....	36
5.2	Asset Protection Zones.....	37
5.2.1	Asset Protection Zone requirements.....	37
5.3	Access.....	38
5.3.1	Access from compounds.....	39
5.4	Water supply and services.....	42
5.5	Updated environmental management measures.....	54
6	Conclusion.....	56
7	References.....	57

Appendices

Appendix A

Site photos

Figures

- Figure 1-1 Key components of the modified project
- Figure 2-1 Bush fire assessment area for the modified project Collector Substation (WFS01)
- Figure 2-2 Bush fire assessment area for the modified project Collector Substation (WFC01)
- Figure 2-3 Bush fire assessment area for the modified project Collector Substation (WFN02/BESS)
- Figure 2-4 Bush fire assessment area for the modified project Central Primary Substation (SSN01)
- Figure 2-5 Bush fire assessment area for the modified project Collector Substation (WFC01)
- Figure 2-6 Bush fire assessment area for the modified project Construction Compound (CC)
- Figure 2-7 Bush fire assessment area for the modified project Dinawan Substation (DNW)
- Figure 2-8 Bush fire assessment area for the modified project temporary workers accommodation (TWA)
- Figure 3-1 Bush Fire Prone Land mapping Collector Substation (WFC01)

Figure 3-2	Bush Fire Prone Land mapping Collector Substation (WFN02/BESS)
Figure 3-3	Bush Fire Prone Land mapping Central Primary Substation (SSN01)
Figure 3-4	Bush Fire Prone Land mapping Collector Substation (WFN01)
Figure 4-1	Vegetation formations Collector Substation (WFS01)
Figure 4-2	Vegetation formations Collector Substation (WFC01)
Figure 4-3	Vegetation formations Collector Substation (WFN02/BESS)
Figure 4-4	Vegetation formations Central Primary Substation (SSN01)
Figure 4-5	Vegetation formations Collector Substation (WFN01)
Figure 4-6	Vegetation formations Construction Compound (CC)
Figure 4-7	Vegetation formations Dinawan Substation (DNW)
Figure 4-8	Vegetation formations temporary workers accommodation (TWA)
Figure 4-9	Spark-BAL assessment for temporary workers accommodation (TWA)
Figure 5-1	Bush fire mitigation measures for the modified project Collector Substation (WFS01)
Figure 5-2	Bush fire mitigation measures for the modified project Collector Substation (WFC01)
Figure 5-3	Bush fire mitigation measures for the modified project Collector Substation (WFN02/BESS)
Figure 5-4	Bush fire mitigation measures for the modified project Central Primary Substation (SSN01)
Figure 5-5	Bush fire mitigation measures for the modified project Collector Substation (WFN01)
Figure 5-6	Bush fire mitigation measures for the modified project Construction Compound (CC)
Figure 5-7	Bush fire mitigation measures for the modified project Dinawan Substation (DNW)
Figure 5-8	Bush fire mitigation measures for the modified project temporary workers accommodation (TWA)

Tables

Table 1-1	SEARs for bush fire risk assessment
Table 2-1	Bush fire risk assessment for the modified project
Table 2-2	Building classification, FFDI, and BAL for the structures being assessed as part of the modified project
Table 3-1	BFPL category relevant to the bush fire assessment areas (NSW RFS, 2022)
Table 4-1	Bush fire hazard analysis and APZ requirements for Central Primary Substation (Compound ID SSN01)
Table 4-2	Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFN02/BESS)
Table 4-3	Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFN01)
Table 4-4	Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFC01)
Table 4-5	Bush fire hazard analysis and APZ requirements for Construction Compound (Compound ID CC)
Table 4-6	Bush fire hazard analysis and APZ requirements for temporary workers accommodation (Compound ID TWA)
Table 4-7	Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFS01)
Table 4-8	Bush fire hazard analysis and APZ requirements for Dinawan Substation (Compound ID DNW)
Table 5-1	Performance criteria and acceptable solutions for APZs and landscaping for SFPP developments
Table 5-2	Access routes for assessed compounds
Table 5-3	Performance criteria and acceptable solutions for access for SFPP development
Table 5-4	Performance criteria and acceptable solutions for water, electricity, and gas
Table 5-5	Updated environmental management measures for the modified project related to bush fire risk assessment

Abbreviations

Abbreviation	Description
ABCB	Australian Building Codes Board
APZ	Asset Protection Zone
AS	Australian Standard
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BESS	Battery Energy Storage System
BFEMEP	Bush Fire Emergency Management and Evacuation Plan
BFPL	Bush Fire Prone Land
EIS	Environmental Impact Statement
EMM	Environmental Management Measures
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
FFDI	Forest Fire Danger Index
K	Kelvin
kW/m ²	kilowatt per square metre
LGA	Local Government Area
MMZ BFMC	Mid Murray Zone Bush Fire Management Committee
NCC	National Construction Code
NSW	New South Wales
NSW RFS	NSW Rural Fire Service
O&M	Operation and Maintenance facility
Origin	Origin Energy Power Limited
OSOM	Oversize/overmass
PBP	<i>Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers</i> (NSW RFS, 2019)
SEARs	Planning Secretary's Environmental Assessment Requirements
SFPP	Special Fire Protection Purpose development as defined under the <i>Rural Fires Act 1997</i>
SSD	State Significant Development
TWA	Temporary workers accommodation
WTG	Wind turbine generator

Glossary of terms

Term	Description
approved project	Yanco Delta Wind Farm project and associated ancillary infrastructure approved under the original Environmental Impact Statement (Jacobs, 2022a)
Asset Protection Zone (APZ)	A bush fire protection measure, providing a buffer around assets. APZs are designed and maintained to reduce fuel near assets, and to reduce the potential for damage from direct flame contact, smoke, radiant heat, and ember attack. The dimensions for APZs are designed in line with <i>Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers</i> (NSW RFS, 2019), and are determined by surrounding vegetation type, slope, and the type of asset/development
Bushfire Attack Level (BAL)	A way of measuring the severity of potential ember attack, radiant heat, and direct flame contact, to a building. The BAL is used to specify the construction requirements necessary to protect buildings from bush fire in accordance with AS3959:2018 Construction of Buildings in Bush fire Prone Areas and the National Construction Code (Australian Building Codes Board 2019)
compound	A distinct location identified for specific infrastructure associated with the modified project. The compound is the entire area allocated for the infrastructure noting that specific placement and design of the structures within each compound are to be determined during detailed design. The bush fire risk assessment has assessed the entire compound area
Effective slope	The effective slope is the slope of the land, under the vegetation hazard (as opposed to the slope of the land between the hazard and the asset) (NSW RFS, 2019) and is assessed when hazards are present on slopes less than 20 degrees
EIS	Original Yanco Delta Wind Farm Environmental Impact Statement, prepared by Jacobs 6 November 2022, on behalf of Virya Energy
Modification	A change to the design of the approved project or the conditions of the development consent
Modification Report (Modification 2)	Second modification report for the approved project and contains the modifications that are assessed within this bush fire risk assessment
Modification Report (Modification 1)	First modification report for the approved project
modified project	The Project (Yanco Delta Wind Farm) as modified
State Significant Development (SSD)	State Significant Development projects are high priority infrastructure projects that are essential to the State for economic, social or environmental reasons
Structure	The physical buildings to be designed and developed within each of the assessed compounds
The Project	Yanco Delta Wind Farm and associated ancillary infrastructure

1 Introduction

1.1 Overview

Yanco Delta WF Pty Ltd, a subsidiary of Origin Energy Power Limited (Origin), has acquired the Yanco Delta Wind Farm (the Project). Virya Energy received planning approval for the Project, within the South-West Renewable Energy Zone in New South Wales (NSW), on 21 December 2023 (approved project). This report supports an application for modification of the approved project under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Project will have a generation capacity of up to 1.5 gigawatts and includes a battery energy storage system (BESS) with capacity up to 800 megawatts/800 megawatt hours when fully operational. The Project is located about 10 kilometres north-west of the town of Jerilderie, within the Murrumbidgee Council and Edward River Council local government areas (LGAs).

1.2 Purpose of this report

This Revised Bushfire Risk Assessment Report has been prepared to address the modification of the approved project as described in the Environmental Impact Statement (EIS) (November 2022), Amendment Report (December 2023) and Modification Report (Modification 1) (March 2024). The main purpose of this report is to assess the potential bush fire risks from construction and operation of the Project (as modified) to support the environmental assessment of the Project in accordance with Section 4.55(2) of the EP&A Act.

1.3 Modification description

The approved project involves the construction, operation and maintenance of a wind farm with up to 208 wind turbine generators (WTGs), a BESS and associated electrical infrastructure.

Several proposed modifications to the approved project as described in the EIS (November 2022), Amendment Report (December 2023) and Modification Report (Modification 1) (March 2024) have been identified. These proposed modifications reflect changes to the design and construction methodology of the approved project, and have been made in response to:

- changes/constraints due to transmission projects to be delivered by others (i.e. Victoria to New South Wales Interconnector West) (SSI-72887208) and Project EnergyConnect (SSI-9172452)) and existing transmission infrastructure
- ongoing design and construction methodology development by the construction contractors
- original equipment manufacturer specifications to facilitate construction
- outcomes of ongoing consultation from landowners and key stakeholders
- avoidance of areas of biodiversity and cultural heritage significance.

The *State significant development guidelines – preparing a modification report* (NSW Department of Planning and Environment, 2022) defines a modification as a change to the design of the approved project or the conditions of the development consent. Project modifications require changes to the project description as outlined within the EIS and Amendment Report. A consolidated, detailed description of the approved project, as modified by the proposed modifications (modified project) is provided in *Appendix A – Updated project description*.

The proposed modifications to the approved project, including an increased project disturbance footprint for construction and operation, include:

Construction stage

- construction and use of onsite temporary workers accommodation (TWA) and ancillary facilities
- associated light vehicle route to access the site along Wilson Road

- increase in workforce required to construct the project
- an additional oversize/ overmass (OSOM) route from Adelaide and associated road upgrades for both OSOM routes (Port of Adelaide and Port of Geelong)
- revised scope of local road upgrades and site access routes
- relocation and increased width of access tracks and cable trenching
- changes to construction compounds and concrete batching plants
- changes to project staging including increased construction duration and additional enabling works.

Operational stage

- turbine location changes
- re-orientation of hardstands and changes to the disturbance footprint
- relocation of existing utility infrastructure
- changes to central primary substation
- changes to project internal transmission
- consolidation of internal collector substations
- changes to transmission line, connection to and expansion of the approved Dinawan 330 kilovolt substation
- relocation and increased width of operational access tracks
- changes to operations and maintenance facilities.

An overview of the key components of the proposed modified project are shown in Figure 1-1.

1.4 Secretary's Environmental Assessment Requirements

This report has been prepared in accordance with the Planning Secretary's Environmental Assessment Requirements (SEARs), issued for SSD-41743746, as well as relevant government assessment requirements, guidelines and policies. The requirements specific to this assessment and where these aspects are addressed in this technical report are outlined in Table 1-1.

Table 1-1 SEARs for bush fire risk assessment

Key issues	SEARs to be addressed by the study	Where addressed in this report
Hazards and Risks – Bush fire	■ Identify potential hazards and risks associated with bush fires/use of bush fire prone land.	■ Potential hazards and risks associated with bush fires are identified in the EIS and remain unchanged for the modified project. Use of Bush Fire Prone Land (BFPL) associated with the proposed modifications is addressed in Sections 3.2 and 4 of this report.⁴
	■ Risks that a wind farm would cause bush fire.	■ Not relevant to the impacts of the modifications. Addressed in the approved project
	■ Any potential impacts on the aerial fighting of bush fires.	■ Not relevant to the impacts of the modifications. Addressed in the approved project
	■ Demonstrate compliance with <i>Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers</i> (PBP) (NSW RFS, 2019) as it relates to the Project modifications.	■ Section 5 (specifically refer to Table 5-1, Table 5-3 and Table 5-4).

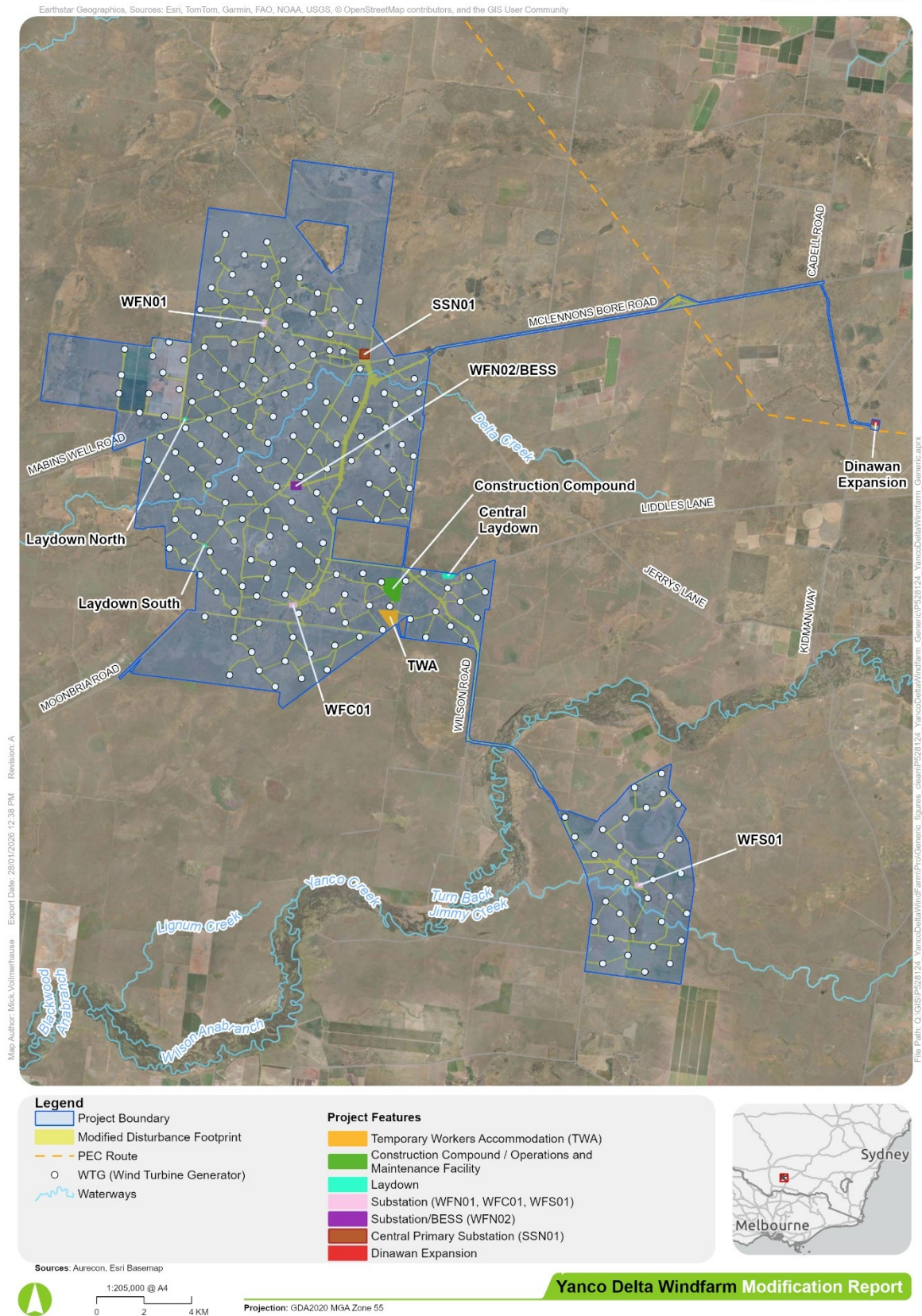


Figure 1-1 Key components of the modified project

1.5 Legislative and policy context

Since the EIS for the approved project was submitted on 6 November 2022, the *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers* (PBP) (NSW RFS, 2019) has been updated twice via the mechanism of an addendum. These addendums included technical provisions for National Construction Code (NCC) (Australian Building Codes Board (ABCB), 2022) Class 9 and 9B buildings (NSW RFS, 2025). As the modified project does not include NCC Class 9 or Class 9B buildings, these legislative updates are not relevant to the modified project (refer to Table 2-2 for building classifications).

There have been no other changes to the legislative and policy context presented in the EIS (Jacobs, 2022a) or *Technical Report – Bush fire risk* (Jacobs, 2022b).

2 Methodology

2.1 Bush fire risk assessment approach

The methodology applied for this report is consistent with the approach undertaken for the *Technical Report – Bush fire risk* (Jacobs, 2022b). Further assessment of the proposed modification includes:

- Desktop review of available information including the EIS, Submissions Report, *Technical Report – Bush fire risk* (Jacobs, 2022b) and Agency Advice for the approved project.
- Review of Jacobs (2025) field data from biodiversity assessment, including field verified vegetation layers within the modified disturbance footprint.
- Review of available access and design information collected by Aurecon design team during site assessments, particularly considering PBP requirements.
- Mapping of one Spark- Bushfire Attack Level (BAL) assessment for the proposed TWA location.
- Assessment against PBP (NSW RFS, 2019) performance criteria and acceptable solutions.

This report has assessed the compounds presented in Figure 2-1 to Figure 2-8 and summarised in Table 2-1, as the bush fire assessment area for the modified project. The assessment takes a conservative approach by assessing the entire compound footprints; however, the compound footprints and specific infrastructure placement are anticipated to be refined during the detailed design stage.

2.2 Overview of the proposed modifications

Since the approved project, there have been various updates to the compound locations and design for the Project, including changes to the construction compound, operations and maintenance (O&M) facility, central primary substation, collector substations and laydown areas in terms of location, disturbance footprint and quantity, as well as the addition of an onsite TWA. The maximum disturbance footprint for the TWA has been calculated using a conservative footprint of 28 hectares and likely presents an overestimate of potential impact, as not all the land will be used for construction. Approximately 14.8 hectares of the footprint will be used for the temporary workers accommodation and facilities, water storage, parking facilities and construction requirements and approximately 5.7 hectares will be used as a treated effluent irrigation field.

Table 2-1 provides a summary of the changes between the approved project and the modified project regarding the compounds requiring assessment for bush fire risk.

Bush fire provisions in the *Technical Report – Bush fire risk* (Jacobs, 2022b) relating to Asset Protection Zones (APZ) for WTGs, vegetation management and requirements for construction and operation of overhead power lines are to be maintained. The APZ standards, detailed in Section 6.1.1 of the *Technical Report – Bush fire risk* (Jacobs, 2022b), are to be applied to the APZs suggested in this report in Sections 4 and 5.2, and as per PBP (NSW RFS, 2019). All construction and operational bush fire risks detailed in Jacobs (2022b) are still current for the modified project and must be addressed adequately in emergency planning and management.

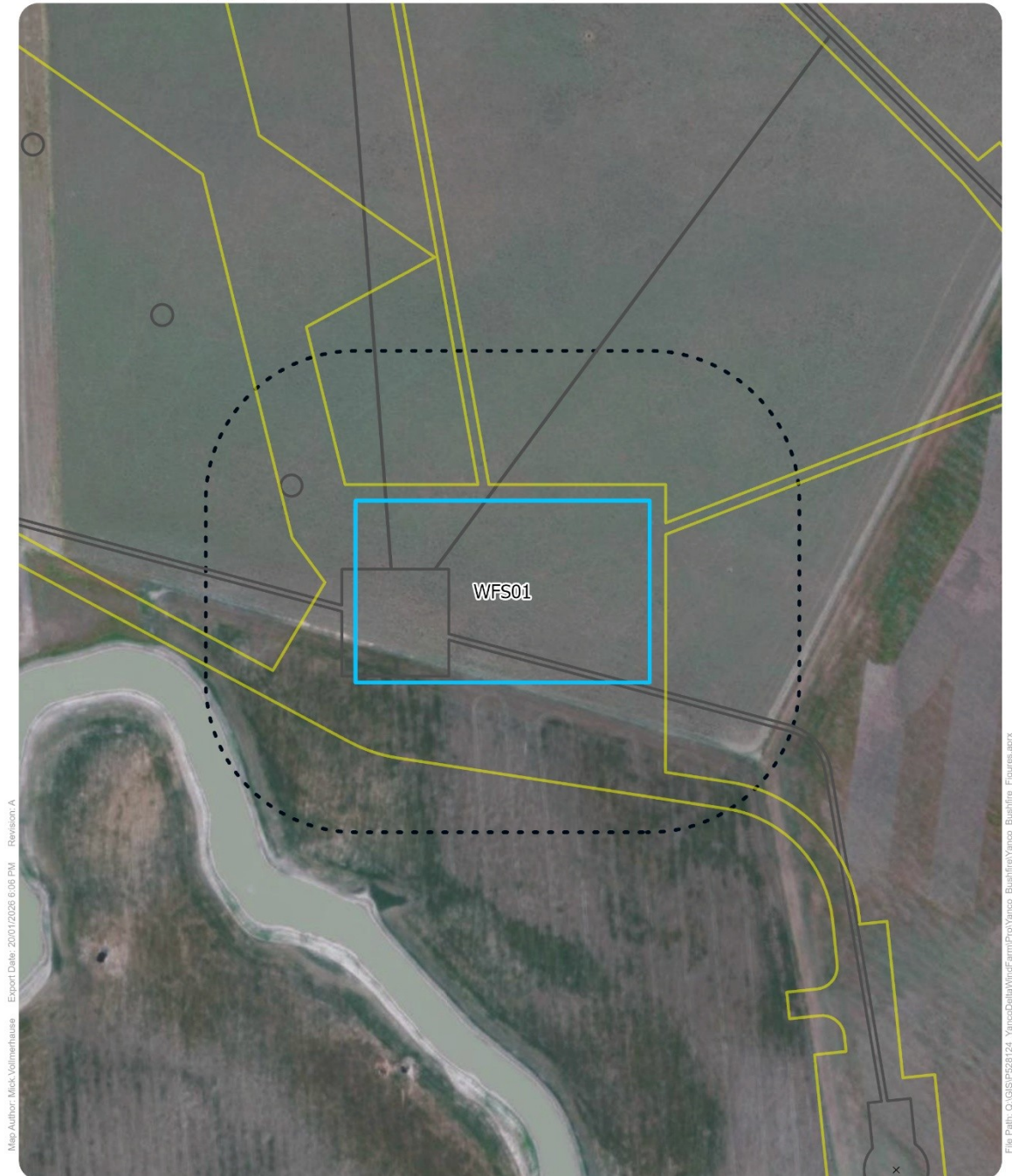
The designated laydown areas (LD, LD North and LD South) are not subject to specific bush fire mitigation requirements under PBP and, on this basis, have not been further assessed within this report. This conclusion is contingent on the laydown areas being used in accordance with the assumptions outlined in the MOD. Any change to the use, configuration or operational characteristics of these areas may require reassessment against PBP. Notwithstanding this, laydown area use will be addressed within the Bush Fire Emergency Management and Evacuation Plan (BFEMEP), with emergency planning requirements and construction-related bush fire mitigation measures (i.e. controls for hot works) remaining applicable.

It is also noted that the previously assessed and currently surplus collector substations, approved as part of the EIS, would be repurposed for potential use during construction for benching, cabling, component laydown etc., and would also not be captured under PBP (NSW RFS, 2019). However, if combustible or flammable/hazardous storage and materials are to be located or stored within the laydown areas or repurposed collector substation locations, an APZ and other bush fire protection measures would be required to meet the objectives of PBP and applicable Australian Standards. Typically, this would take the form of a fuel free buffer of at least 10 metres around the laydown area and/or a non-combustible structure, such as a metal fence or concrete barrier, to contain stored materials and provide a heat barrier, and provision of fire suppression equipment.

Table 2-1 Bush fire risk assessment for the modified project

Compound ID	Compound name	Modification since approved project	Assessment required for the modified project
SSN01	Central Primary Substation	Increase in disturbance footprint to 23 hectares and optional smaller O&M facility	Yes
WFN02/BESS	Collector Substation/BESS location	Increase in disturbance footprint typically up to 4.7 hectares	Yes
WFN01	Collector Substation	Increase in disturbance footprint typically up to 4.7 hectares	Yes
WFC01	Collector Substation	Increase in disturbance footprint typically up to 4.7 hectares	Yes
CC	Construction Compound	Increase in disturbance footprint from one to 50 hectares (maximum disturbance footprint) and includes option for O&M facility	Yes
LD LD North LD South	Laydowns (central laydown, laydown north, laydown south)	New facilities	No – Not required to be assessed under PBP (NSW RFS, 2019)
TWA	Temporary workers accommodation	New facility	Yes
WFS01	Collector Substation	Increase in disturbance footprint typically up to 4.7 hectares	Yes
DNW	Dinawan Substation	Expansion of existing substation	Yes

Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



Map Author: Mick Volmerhausen Export Date: 20/01/2026 6:06 PM Revision: A

File Path: C:\GIS\P528124_YancoDeltaWindFarm\Pro\Yanco_Bushfire_Figures.aprx

- Legend**
- Project Boundary
 - Bush fire assessment survey area
 - Modified Disturbance Footprint
 - Approved Disturbance Footprint
 - Project compound
 - x Turbine Layout

Sources: Aurecon, Esri Basemap



1:5,000 @ A4

0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

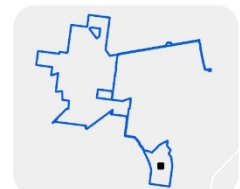


Figure 2-1 Bush fire assessment area for the modified project Collector Substation (WFS01)

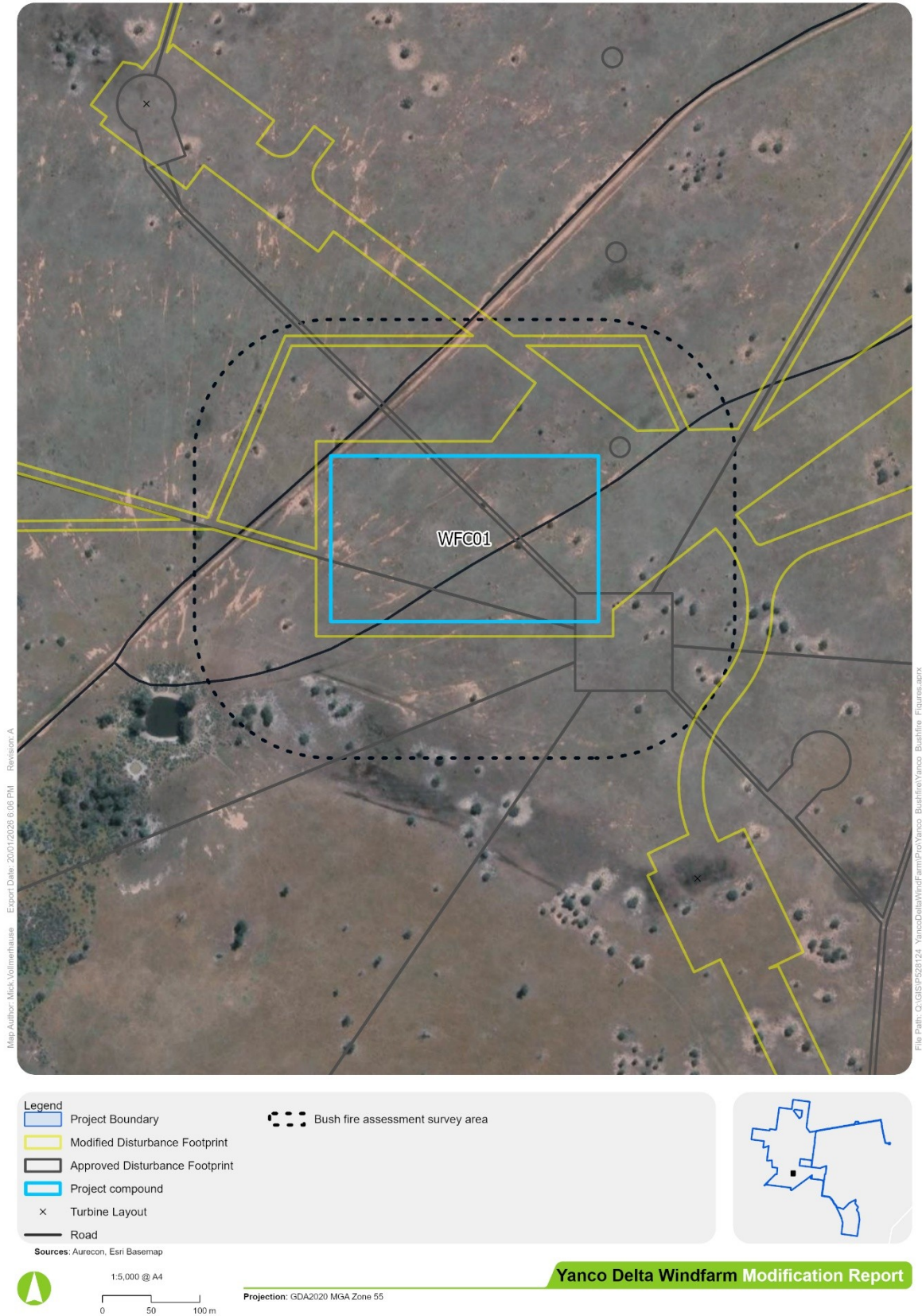


Figure 2-2 Bush fire assessment area for the modified project Collector Substation (WFC01)

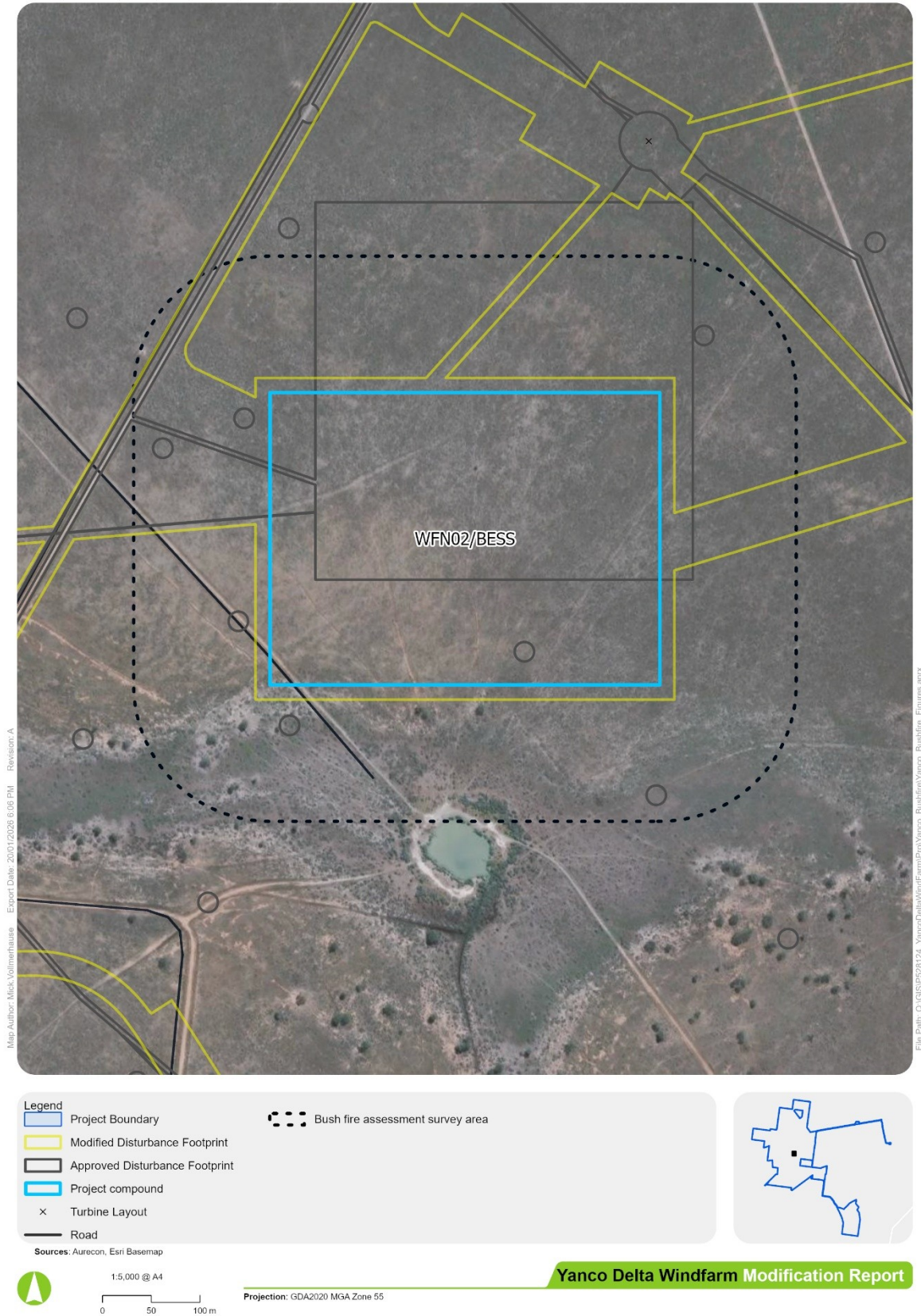


Figure 2-3 Bush fire assessment area for the modified project Collector Substation (WFN02/BESS)



Map Author: Mick Volmerhausen Export Date: 20/01/2026 5:05 PM Revision: A

File Path: C:\GIS\P528124_YancoDeltaWindFarm\Pro\Yanco_Bushfire\Yanco_Bushfire_Figure.aprx



Sources: Aurecon, Esri Basemap



1:5,000 @ A4

0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

Figure 2-4 Bush fire assessment area for the modified project Central Primary Substation (SSN01)



Figure 2-5 Bush fire assessment area for the modified project Collector Substation (WFN01)



Figure 2-6 Bush fire assessment area for the modified project Construction Compound (CC)



Figure 2-7 Bush fire assessment area for the modified project Dinawan Substation (DNW)



Figure 2-8 Bush fire assessment area for the modified project temporary workers accommodation (TWA)

2.3 Bushfire Attack Levels

All proposed buildings will be designed and constructed in accordance with the associated BAL under Australian Standard (AS) AS3959:2018 *Construction of Buildings in Bushfire-Prone Areas*. BAL is the predicted severity of potential ember attack, radiant heat, and direct flame contact impacting a building. The site-assessed BAL is used to specify the bush fire construction standard in accordance with AS3959:2018 and the NCC (ABCB, 2022) for each structure.

A suitable BAL for each structure is determined as per PBP (NSW RFS, 2019). The BAL assessment for structures assessed within the approved project were BAL-29 for the WTGs, and BAL-12.5 for the operations and maintenance building, the substations and BESS (Jacobs, 2022b). BAL-29 has been adopted for all other compounds assessed as part of the modified project (i.e. SSN01, WFN02/BESS, WFN01, WFC01, WFS01, DNW).

SSN01 has been divided into two subsections to differentiate between the different building classes of the proposed structures to be located within the same compound boundary (refer to Table 2-2). Best practice assumes a bush fire hazard assessment based on the highest risk building class within the compound (i.e. Class 5). It is noted that SSN01 includes a potential additional O&M facility; however, as this compound is not designated as a refuge of last resort, BAL-29 is considered sufficient.

The Construction Compound (CC) has also been divided into subsections to differentiate between building classes and BAL requirements (refer to Table 3-2). As the TWA is classified as an Special Fire Protection Purpose (SFPP) development (refer to Table 2-2), and the CC was nominated in Section 6.1.6 of the *Technical Report – Bush fire risk* (Jacobs, 2022b) as the refuge of last resort for the Project, these structures have been assigned BAL-12.5.

The Forest Fire Danger Index (FFDI) measures fire risk in native vegetation areas by considering factors like soil dryness, fuel moisture, temperature, wind speed, and humidity. It helps predict fire spread, intensity, and control challenges. The FFDI used to predict bush fire risk in the Southern Riverina Fire Area is FFDI 80 (NSW RFS, 2017), and as such, this has been used for this assessment in accordance with PBP (NSW RFS, 2019).

A summary of the proposed structures within each compound for the modified project, building class (as per NCC), FFDI, and recommended BAL is provided in Table 2-2.

Table 2-2 Building classification, FFDI, and BAL for the structures being assessed as part of the modified project

Compound ID	Structures	Building Class (as per NCC)	FFDI	BAL
SSN01	Central Primary Substation	Class 8	80	BAL-29
	Option for O&M facility (if required), including offices and car park located external to the Central Primary Substation but within the same compound	Class 5	80	BAL-29
WFN02/BESS	Collector Substation: BESS location	Class 8	80	BAL-29
WFN01	Collector Substation	Class 8	80	BAL-29
WFC01	Collector Substation	Class 8	80	BAL-29
CC	Construction Compound: Option for O&M facility including site offices Refuge of last resort (Jacobs, 2022b)	Class 5	80	BAL-12.5
	Parking, water storage (turkeys nests), water treatment plant for potable water, laydown area, batching plant, diesel storage tank for fuelling construction vehicles and equipment and other construction compound requirements	Class 8	80	BAL-29
TWA	Temporary workers accommodation including diesel storage tank for fuelling construction vehicles and generators	Class 3 (SFPP)	80	BAL-12.5

Compound ID	Structures	Building Class (as per NCC)	FFDI	BAL
WFS01	Collector Substation	Class 8	80	BAL-29
DNW	Dinawan Substation: expansion of two additional bays to the existing substation	Class 8	80	BAL-29

2.4 Limitations and key assumptions

The following section describes the limitations and key assumptions made as part of the methodology for this bush fire risk assessment of the proposed modifications:

- All field verification of bush fire risk has been based on field assessments undertaken by Jacobs (2025). Where the assessment area extends outside of the proposed disturbance footprint assessed by Jacobs, assessment of the bush fire risk was derived using high resolution aerial imagery (5 centimetre) captured by Woolpert in November 2024, and photos captured by other discipline site visits. A conservative worst-case scenario was adopted for areas where vegetation formation was ambiguous based on the information available.
- The maximum disturbance footprint has been used for each assessed compound and likely presents an overestimate of potential impact. The footprint is anticipated to be refined during the detailed design stage.
- Survivability of structures are not considered as part of this report. The measures identified in this assessment cannot guarantee that a building or structure would survive a bush fire event on every occasion. This is largely due to the degree of vegetation management within the site and adjoining lands, the unpredictable nature and behaviour of fire, and extreme weather conditions. The survivability of a building or structure is also dependent on a combination of measures such as landscaping, water supplies, access, building design and condition, and ongoing building maintenance.
- The NCC building classification within this report have not come from a Building Code of Australia (BCA) assessment. Building classifications should be undertaken by a building certifier prior to construction.
- This report is not a BFEMEP. The development of a BFEMEP is addressed as a separate issue and is a condition of consent for the approved project.
- As detailed design has not yet been formalised for the structures within the assessed compounds, this assessment has used a “will comply” approach for some of the performance criteria and acceptable solution benchmarks. This anticipates that the performance criteria and acceptable solutions for bush fire risk will be incorporated into the detailed design stage of the Project.
- Assessment and protection measures will be reviewed by the NSW Rural Fire Service (NSW RFS).
- This report does not assess controlled blasting, nor the impacts of these activities.
- This assessment report is limited to the known modifications of the approved project. There is no assessment of other infrastructure that may be considered as cumulative as part of the Project.

3 Existing environment

The modified project remains within the Southern Riverina Fire Area for the purposes of fire danger ratings, with the region covered by the Mid Murray Zone Bush Fire Management Committee (MMZ BFMC) and under the *MMZ BFMC Bush Fire Risk Management Plan* (MMZ BFMC, 2023), which is consistent with Jacobs (2022b).

3.1 Regional fire weather and climate risk

The regional fire weather and climate risk data from the Bureau of Meteorology for stations 074129 Deniliquin (data for 1970-1997) and 074258 Deniliquin Airport (data for 1997-2024) were reviewed for this assessment.

Data for mean temperature and winds are available up to 2003, therefore the data summarised in Jacobs (2022b) remains relevant. A review of the rainfall data indicates that there have been no major changes to rainfall patterns since 2022, and the climate conditions within the Project area show a moderate level of seasonality with typically low levels of rainfall, characterised as an area of hot dry summers and cold winters and within a seasonal rainfall zone of uniform rainfall (Bureau of Meteorology, 2025).

3.2 Bush Fire Prone Land mapping

Bush Fire Prone Land (BFPL) are areas that have been certified by the Commissioner of the NSW RFS as able to support a bush fire, and are categorised as follows:

- Vegetation Category 1 comprises areas of forests, woodlands, heaths (tall and short), forested wetlands, and timber plantations. These areas generally support the highest intensity bush fires and are considered the highest risk vegetation.
- Vegetation Category 2 comprises lower risk vegetation including rainforest, remnant vegetation, and vegetation separated from other larger tracts of vegetation.
- Vegetation Category 3 comprises grasslands, freshwater wetlands, semi-arid woodlands, alpine complex, and arid shrublands. This category includes grazed grasslands and woodlands. These areas can support faster moving bush fires than other categories in high winds.
- Buffer areas are either 30 metres from Vegetation Category 2 and 3, or 100 metres from Vegetation Category 1.

The BFPL category mapped around each assessed compound, according to a desktop assessment, is outlined in Table 3-1 and presented in Figure 3-1 to Figure 3-4. It is noted that the BFPL desktop mapping has considerable errors associated with the location of BFPL throughout the assessment area. As described in the field verification of BFPL surrounding each assessed compound in Section 4, all compounds are located in BFPL (refer to Table 4-1 to Table 4-8).

Table 3-1 BFPL category relevant to the bush fire assessment areas (NSW RFS, 2022)

Compound ID	Compound	LGA and Bush fire Risk Management Plan	BFPL Category (desktop)
SSN01	Central Primary Substation	- Edward River LGA - MMZ BFMC (2023)	Vegetation Category 3
WFN02/BESS	Collector Substation: BESS location	- Edward River Council LGA - MMZ BFMC (2023)	Vegetation Category 3
WFN01	Collector Substation	- Edward River Council LGA - MMZ BFMC (2023)	Vegetation Category 3
WFC01	Collector Substation	- Edward River Council LGA - MMZ BFMC (2023)	Vegetation Category 3
CC	Construction Compound	- Murrumbidgee Council LGA - MMZ BFMC (2023)	Not in BFPL
TWA	Temporary workers accommodation	- Murrumbidgee Council LGA - MMZ BFMC (2023)	Not in BFPL
WFS01	Collector Substation	- Murrumbidgee Council LGA - MMZ BFMC (2023)	Not in BFPL
DNW	Dinawan Substation	- Murrumbidgee Council LGA - MMZ BFMC (2023)	Not in BFPL

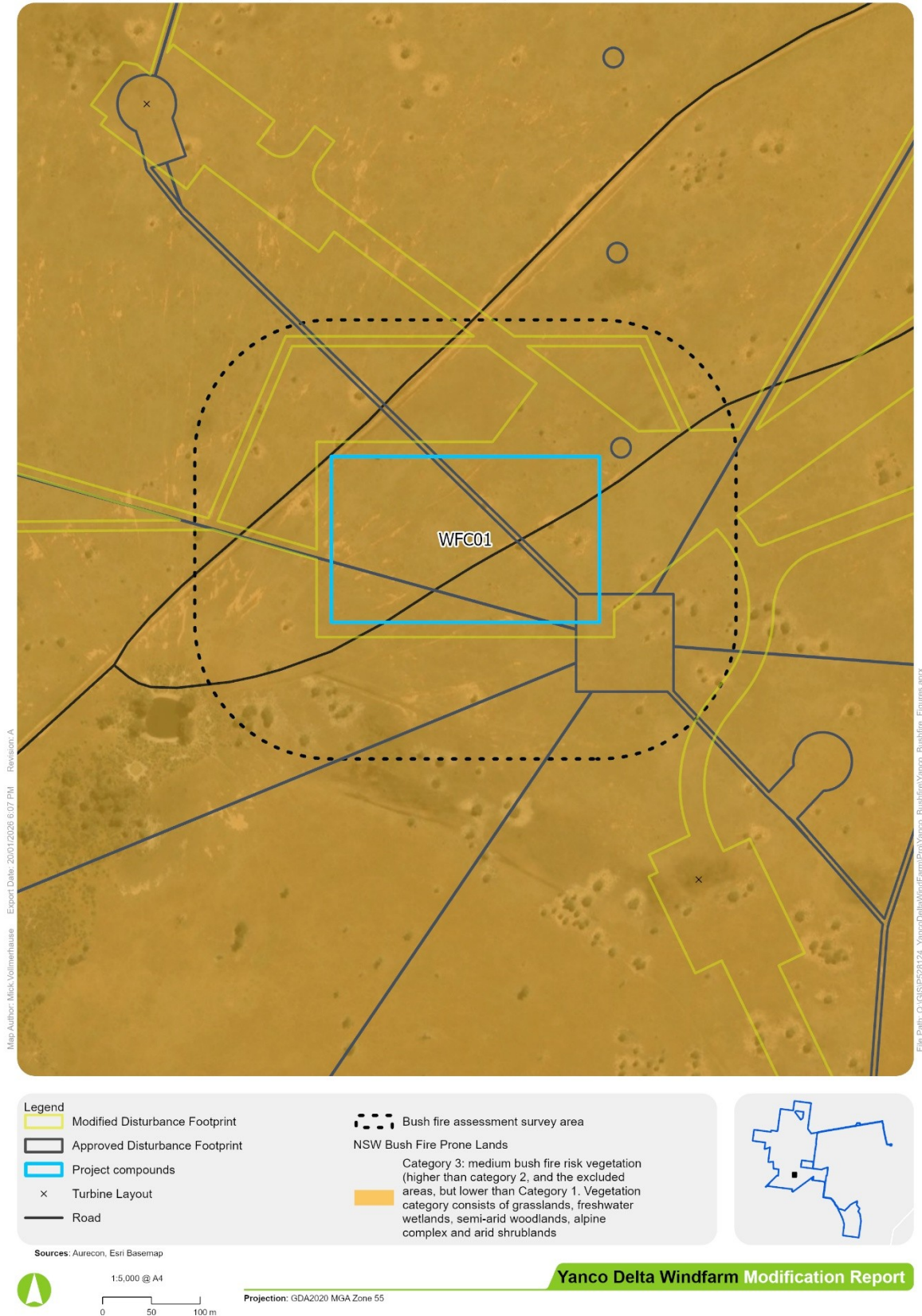


Figure 3-1 Bush Fire Prone Land mapping Collector Substation (WFC01)

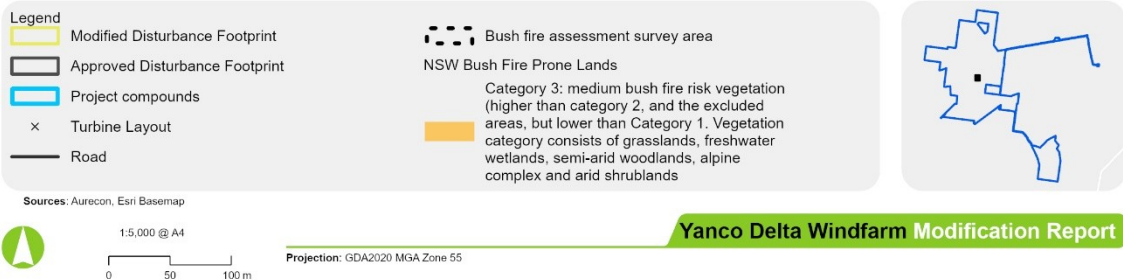
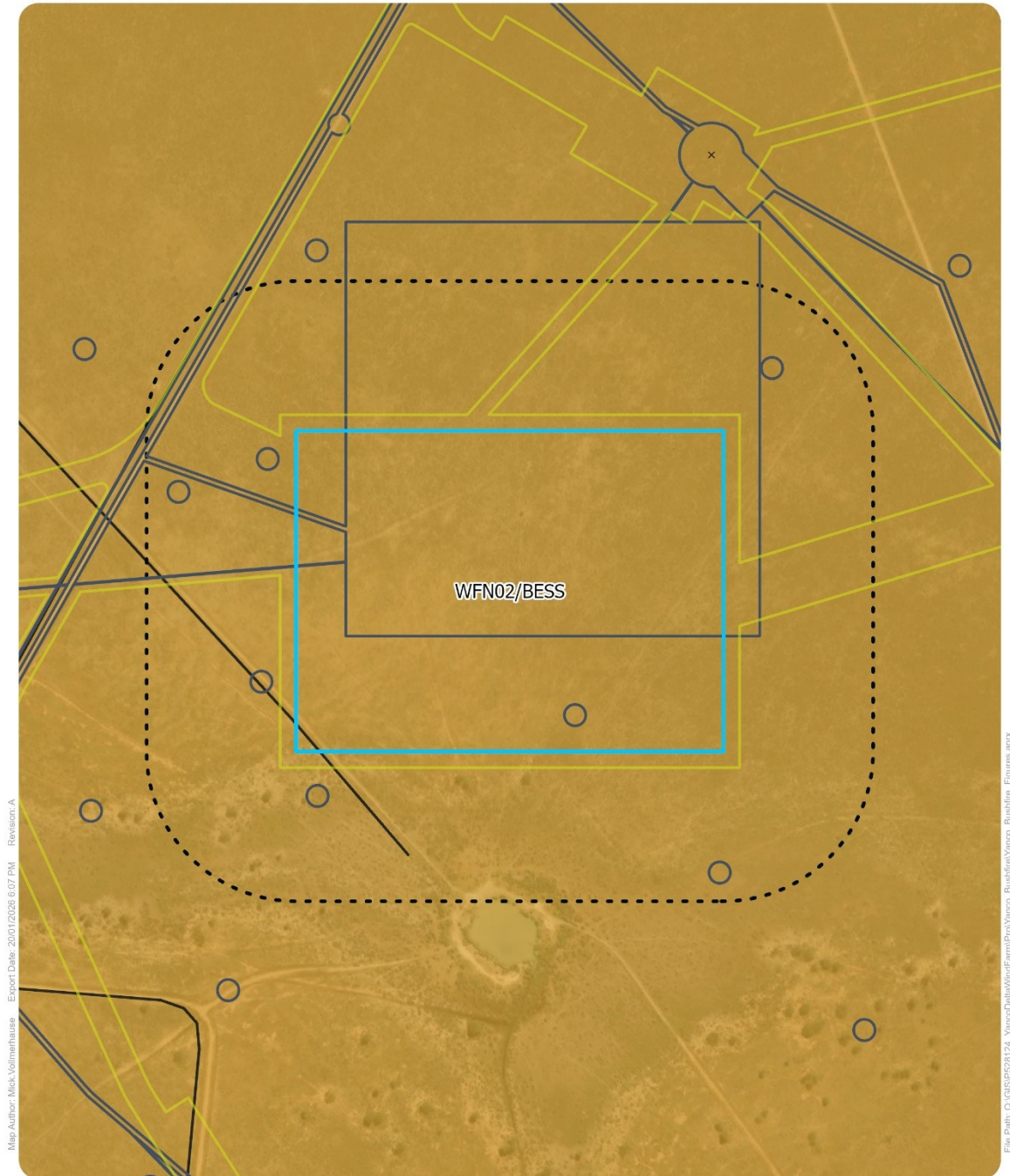


Figure 3-2 Bush Fire Prone Land mapping Collector Substation (WFN02/BESS)



Figure 3-3 Bush Fire Prone Land mapping Central Primary Substation (SSN01)

Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

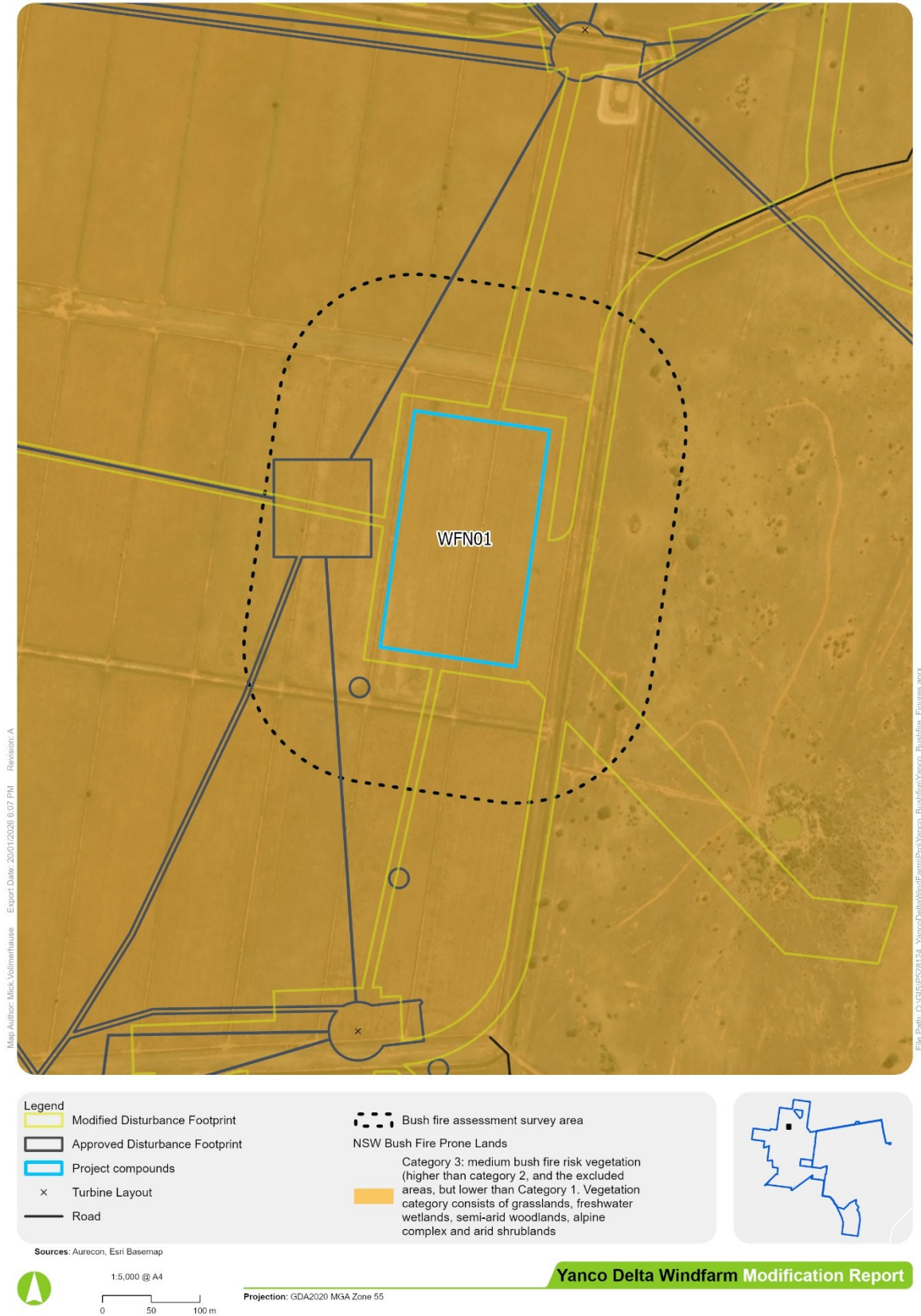


Figure 3-4 Bush Fire Prone Land mapping Collector Substation (WFN01)

4 Bush fire risk assessment

4.1 Vegetation and slope assessment

In accordance with PBP requirements, vegetation formations (as per Keith, 2004) were assessed within 140 metres of each compound boundary and constitute the bush fire assessment areas. Representative vegetation formations have been assumed using consolidation of the available information (i.e. ground-truthed Plant Community Type mapping from field information provided by Jacobs in 2025). Where vegetation classifications were unclear or ambiguous, fuel loads with the greatest bush fire risk were assumed based on the use of Section A1.9 of PBP (specifically Table A1.9). Also, as exotic species display similar fire behaviour characteristics to some of the native vegetation classifications with lower fuel loads, where the vegetation formations were determined by Jacobs to be predominantly exotic, the vegetation fuel loads which have the most influence on fire behaviour will apply.

Appendix A provides representative photos for the vegetation formations for the Project based on site photos. Figure 4-1 to Figure 4-8 present the vegetation formations surrounding all compounds within the bush fire assessment area.

Based on ground-truthed data from Jacobs field assessments (2025), the BFPL category of the vegetation surrounding each compound is provided in Table 4-1 to Table 4-8. All compounds have been determined to be within BFPL, based on field verification.

Slope is also an important risk factor that influences fire behaviour. Fires burning upslope are faster and more intense than those burning on even ground or downslope (NSW RFS, 2019) and are of greatest intensity in forest and woodland areas. Slope was assessed within 100 metres of each compound boundary included in the bush fire risk assessment (refer to Table 2-1) to determine the effective slope, which addresses the aims and objectives outlined in PBP (NSW RFS, 2019). The effective slope is the slope of the land under the vegetation hazard (as opposed to the slope of the land between the hazard and the asset) (NSW RFS, 2019) and is assessed when hazards are present on slopes less than 20 degrees.

Slope classes represent the effective slope under vegetation within 100 metres of the perimeter of the assessed compounds and were assessed using a 5 metre Digital Elevation Model. Vegetation formations and effective slope surrounding each assessed compound as part of the bush fire risk assessment for the modified project are provided in Table 4-1 to Table 4-8.

APZs were calculated for each compound, in accordance with the site assessment methodology of PBP (Appendix 1; NSW RFS 2019). The inputs used to determine the APZ are detailed in Table 4-1 to Table 4-8. Where vegetation and slope differ around assets, the APZ distance has been determined by considering the specific vegetation hazard in each direction, to enable the most efficient use of the sites for the proposed buildings and uses. APZ distances were derived from Table A1.12.1 for SFPP developments, and Table A1.12.6 for APZ requirements for BAL-12.5 and BAL-29 structures from PBP (NSW RFS 2019).

Table 4-1 Bush fire hazard analysis and APZ requirements for Central Primary Substation (Compound ID SSN01)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	0 (Flat)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m
South	1 (Downslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	13 m
East	1 (Upslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019)), and Grassland	Category 1 and 3	11 m
West	1 (Downslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	13 m

Table 4-2 Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFN02/BESS)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	0 (Flat)	Grassland	Category 3	10 m
South	1 (Downslope)	Grassland	Category 3	11 m
East	0 (Flat)	Grassland	Category 3	10 m
West	0 (Flat)	Grassland	Category 3	10 m

Table 4-3 Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFN01)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	1 (Upslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m
South	1 (Downslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	13 m
East	1 (Downslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019)), and Grassland	Category 1 and 3	13 m
West	1 (Downslope)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	13 m

Table 4-4 Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFC01)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	0 (Flat)	Grassland	Category 3	10 m
South	0 (Flat)	Grassland	Category 3	10 m
East	0 (Flat)	Grassland	Category 3	10 m
West	0 (Flat)	Grassland	Category 3	10 m
South-west / South-east	0 (Flat)	Woodland	Category 1	11 m

Table 4-5 Bush fire hazard analysis and APZ requirements for Construction Compound (Compound ID CC)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-12.5) (Refuge of last resort)	APZ requirement (BAL-29)*
North/North-east	1 (Upslope)	Grassland	Category 3	20 m	10 m
South	0 (Flat)	Grassland	Category 3	20 m	10 m
East	1 (Upslope)	Woodland	Category 1	22 m	11 m
West	1 (Downslope)	Grassland	Category 3	23 m	11 m

Note:

* A conservative use of APZs for CC would apply the requirements for BAL-12.5 to the entire compound; however, BAL-29 APZs may be applied to specific structures as described in Table 2-2.

Table 4-6 Bush fire hazard analysis and APZ requirements for temporary workers accommodation (Compound ID TWA)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (SFPP BAL-12.5)
North	0 (Flat)	Grassland	Category 3	36 m
South/South-east	3 (Downslope)	Woodland	Category 1	50 m
East	0 (Flat)	Woodland	Category 1	50 m
West	0 (Flat)	Grassland	Category 3	36 m

Table 4-7 Bush fire hazard analysis and APZ requirements for Collector Substation (Compound ID WFS01)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	0 (Flat)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m
South	0 (Flat)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m
East	0 (Flat)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m
West	0 (Flat)	Exotic vegetation (Woodland as per Section A1.9 in PBP (NSW RFS 2019))	Category 1	11 m

Table 4-8 Bush fire hazard analysis and APZ requirements for Dinawan Substation (Compound ID DNW)

Direction from compound boundary	Max effective slope (degrees) and direction	Vegetation formation (Keith 2004)	Field verified BFPL Category	APZ requirement (BAL-29)
North	0 (Flat)	Grassland	Category 3	10 m
South	0 (Flat)	Grassland	Category 3	10 m
East	0 (Flat)	Grassland	Category 3	10 m
West	0 (Flat)	Grassland	Category 3	10 m

Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



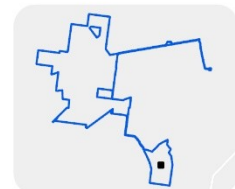
Map Author: Mick Volmerhausen Export Date: 20/01/2026 6:07 PM Revision: A

File Path: C:\GIS\P528124_YancoDeltaWindFarm\Pro\Yanco_Bushfire\Yanco_Bushfire_Figure.aprx

Legend

- Project Boundary
- Modified Disturbance Footprint
- Approved Disturbance Footprint
- Project compounds
- x Turbine Layout

- Bush fire assessment survey area
- Vegetation formation (as per Keith, 2004)
- Exotic (Woodland)



Sources: Aurecon, Esri Basemap



1:5,000 @ A4

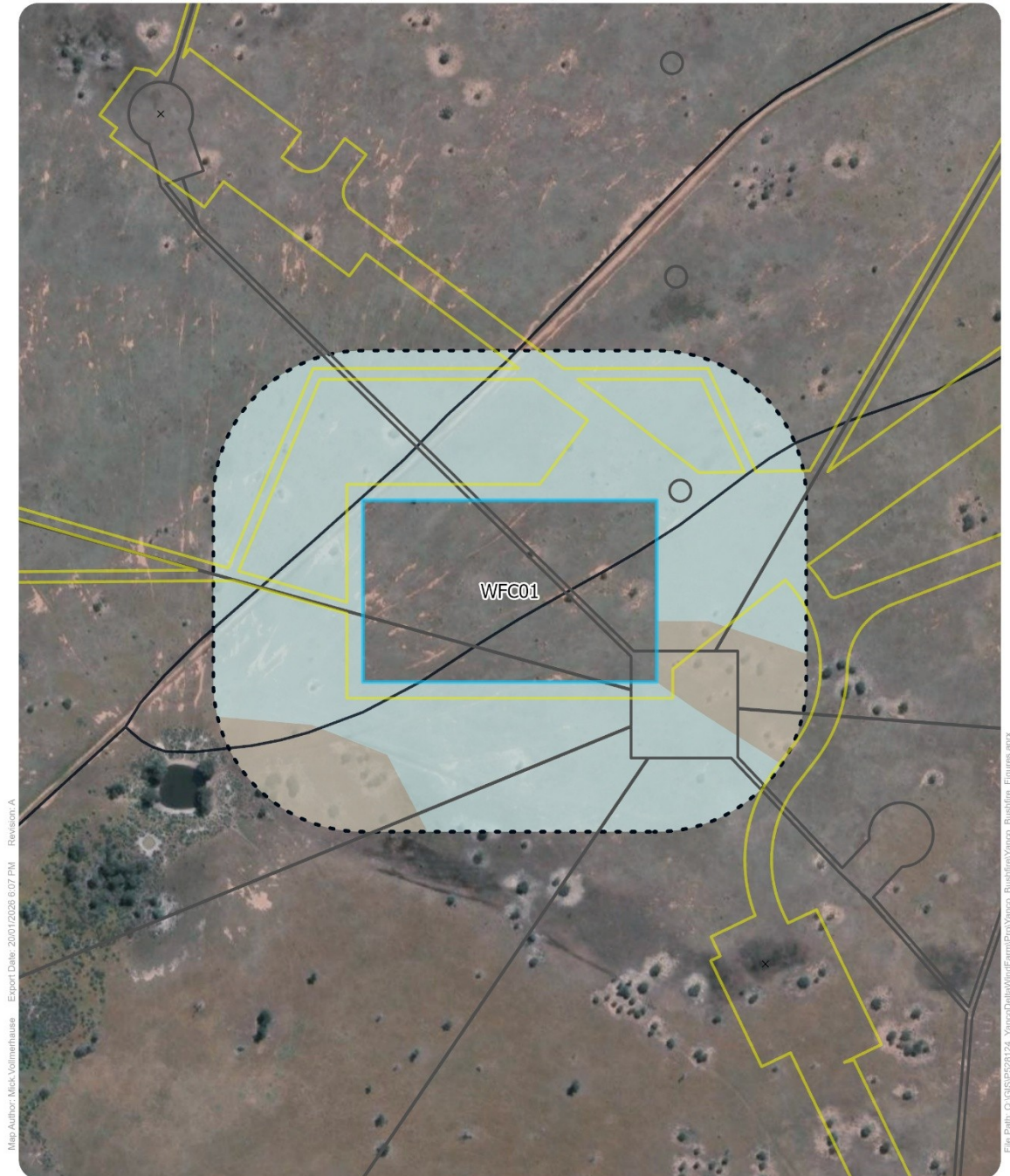
0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

Figure 4-1 Vegetation formations Collector Substation (WFS01)

Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



Map Author: Mick Volmerhausen Export Date: 2001/2026 6:07 PM Revision: A

File Path: C:\GIS\P528124_YancoDeltaWindFarm\Pro\Yanco_Bushfire\Yanco_Bushfire_Figure.aprx

- Legend**
- Project Boundary
 - Modified Disturbance Footprint
 - Approved Disturbance Footprint
 - Project compounds
 - x Turbine Layout
 - Road

- Bush fire assessment survey area
- Vegetation formation (as per Keith, 2004)
- Grassland
- Woodland

Sources: Aurecon, Esri Basemap



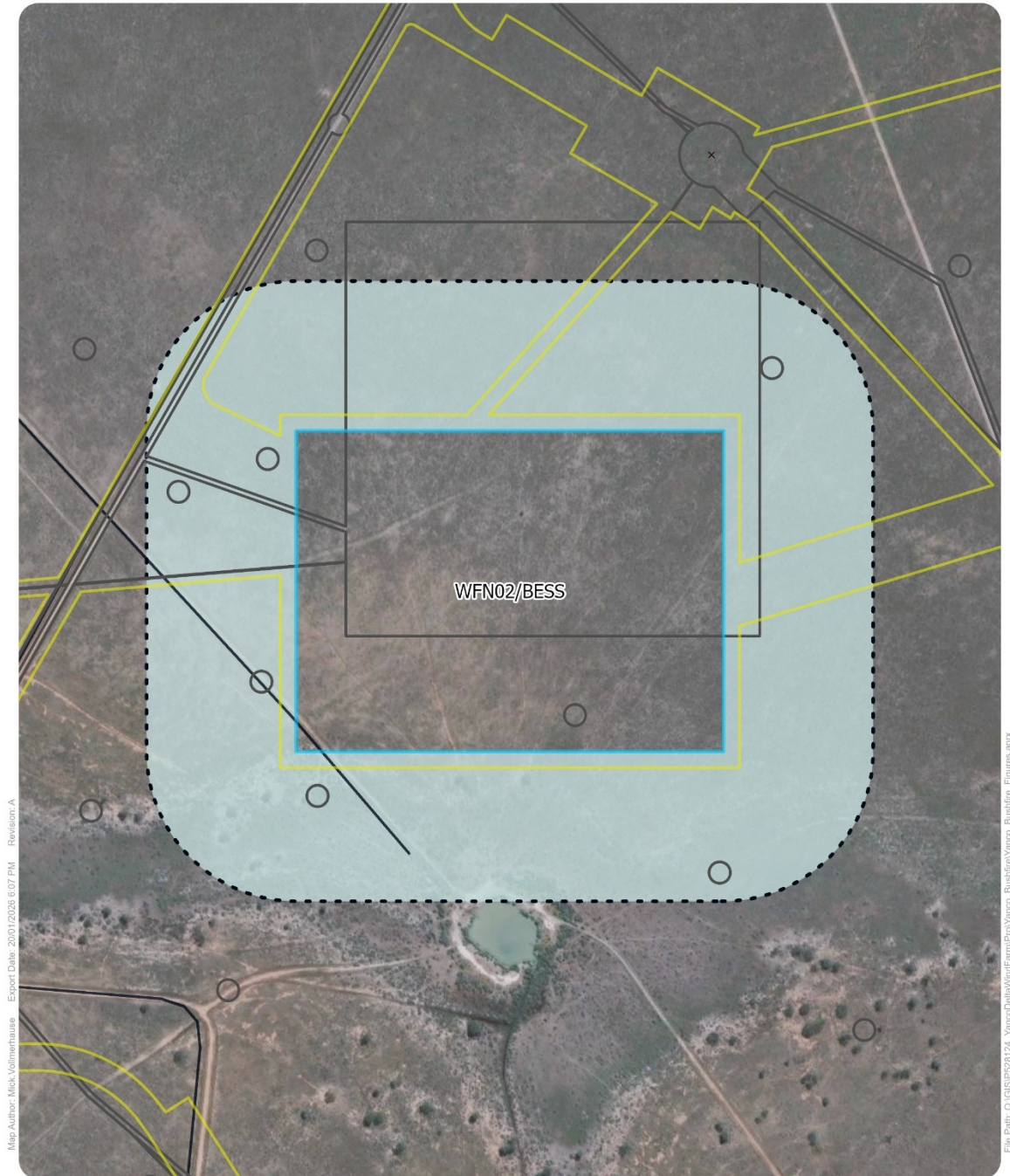
1:5,000 @ A4

0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

Figure 4-2 Vegetation formations Collector Substation (WFC01)



- Legend**
- Project Boundary
 - Modified Disturbance Footprint
 - Approved Disturbance Footprint
 - Project compounds
 - x Turbine Layout
 - Road
 - Bush fire assessment survey area
 - Vegetation formation (as per Keith, 2004)
 - Grassland

Sources: Aurecon, Esri Basemap



1:5,000 @ A4

0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

Figure 4-3 Vegetation formations Collector Substation (WFN02/BESS)



- Legend**
- Project Boundary
 - Modified Disturbance Footprint
 - Approved Disturbance Footprint
 - Project compounds
 - Road

- Bush fire assessment survey area
- Vegetation formation (as per Keith, 2004)
- Exotic (Woodland)
- Grassland

Sources: Aurecon, Esri Basemap



1:5,000 @ A4

0 50 100 m

Projection: GDA2020 MGA Zone 55

Yanco Delta Windfarm Modification Report

Figure 4-4 Vegetation formations Central Primary Substation (SSN01)

Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



Figure 4-5 Vegetation formations Collector Substation (WFN01)



Figure 4-6 Vegetation formations Construction Compound (CC)



Figure 4-7 Vegetation formations Dinawan Substation (DNW)



Figure 4-8 Vegetation formations temporary workers accommodation (TWA)

4.2 Spark-BAL assessment

Due to the vulnerable use of SFPP developments (i.e. the TWA), CSIRO Spark-BAL software application was used to display the BAL requirements for the TWA, in accordance with Method 2 of *AS3959:2018 Construction of Buildings in Bushfire-Prone Areas*.

The Spark application calculates heat flux using all required fields in the Australian Standard from two input layers: vegetation classification and slope, providing a spatial output of the BAL level. Due to the higher flame temperature for SFPP developments (1200 Kelvin (K)), this was included in the modelled BAL from Spark.

The BAL contour map can be seen in Figure 4-9 for the TWA. The BAL contours showcase where $<10 \text{ kW/m}^2$ radiant heat levels calculated at 1200 K, and can be achieved for building siting within the proposed TWA compound.



Figure 4-9 Spark-BAL assessment for temporary workers accommodation (TWA)

5 Bush fire protection measures

5.1 Construction standards and building requirements for assessed structures

Construction standards and building requirements are measures to prevent loss of life and loss of structures, through adequately accounting for environmental conditions. Construction standards in accordance with *AS3959:2018 Construction of Buildings in Bushfire-Prone Areas* are necessary to protect buildings from fire.

Construction standards for this bush fire risk assessment are based on the following:

- NCC performance requirements for the construction of buildings in bush fire prone areas apply to buildings classified as SFPP. The TWA is classified as a Class 3 building under the BCA (ABCB, 2022) and SFPP development under the *Rural Fires Act 1997*, consistent with the use for workforce accommodation on a short-stay basis. The SFPP classification is warranted under the assumption that workforces may be unfamiliar with the area and the local bush fire risk, and will be sleeping in the accommodation facility. SFPP developments are subject to special bush fire protection requirements including an APZ to provide <10 kW/m² radiant heat impact to buildings and construction to a minimum BAL-12.5 standard as set out in AS3959 (BALs are discussed in Section 2.3).
- There are no specific bush fire protection requirements for NCC Class 5 to 8 buildings under the BCA (i.e. SSN01, WFN02/BESS, WFN01, WFC01, WFS01, DNW) however in NSW these must still satisfy the aims and objectives of PBP and specific measures outlined in PBP Chapter 8 'Other Development' (NSW RFS 2019). For Class 5 to 8 buildings such as offices, storage and other industrial buildings, the general fire safety provisions of the NCC are taken as acceptable solutions for construction, in addition to an APZ to provide <29 kW/m² radiant heat impact to buildings and construction to a minimum BAL-29 standard, as set out in AS3959 (BALs are discussed in Section 2.3).
- A refuge of last resort was selected by Jacobs (2022b) to be located at the CC, to support shelter for any person on the site, should evacuation not be possible. This site will meet the updated required BAL-12.5 APZ (as per Section 4) and be constructed to BAL-12.5 standard, as per AS3959:2018. It is noted, with the inclusion of the TWA as a SFPP development, both compounds may provide a suitable refuge of last resort, and further direction on evacuation procedures will be further described in a BFEMEP. Should there be changes in location of the refuge of last resort (CC), the relevant mitigation measures will be applied to the new location.
- For buildings in designated BFPL areas, the NCC references the *AS3959:2018 Construction of Buildings in Bushfire-Prone Areas* which applies to all building types and the *NASH Standard: Steel Framed Construction in Bush fire Areas 2014*. This standard provides guidance for steel framed buildings constructed in BFPL and should be incorporated during detailed design.
- All fuel storage locations must be in accordance with *AS1940:2017 The storage and handling of flammable and combustible liquids*, and adequate separation from hazardous vegetation should be applied.
- As per the *Technical Report – Bush fire risk* (Jacobs, 2022b), design and construction of transmission lines would be in accordance with the *ISSC3 Guide for the management of vegetation in the vicinity of electricity assets* (Industry Safety Steering Committee, 2016), *AS/NZS7000:2016 Overhead Line Design* and where relevant, in accordance with the network operators design standards (i.e. Transgrid or Lumea). Where the Project differs from these standards, a Bush Fire Risk Assessment has been completed to capture residual risk to the Project (Brennan Consultants, 2024).
- It is noted that there has been an update to the locations of WTGs, however, design and construction (including bush fire mitigation measure) for these structures has not differed from the approved project.
- Although there are no provisions for landscaping in the modified project, and Section 6.1.3 of the *Technical Report – Bush fire risk* (Jacobs, 2022b) for the approved project details that “*Consistent with industry practice, the areas within the substations and BESS would be maintained free of all forms of vegetation*”. If landscaping is to be included in detailed design, it will be in accordance with PBP (NSW RFS, 2019).

5.2 Asset Protection Zones

5.2.1 Asset Protection Zone requirements

An APZ is a buffer zone between a bush fire hazard and buildings. The APZ is managed to minimise fuel loads and reduce potential radiant heat levels, flame, localised smoke and ember attack. The appropriate APZ distance is based on vegetation type, slope and the nature of the development (NSW RFS, 2019; refer to Section 4 for APZ distances). As addressed in Section 2.2 and Table 2-1, the modifications to the approved project require all new and modified structures to be reassessed, which supersedes the bush fire assessment conducted in the *Technical Report – Bush fire risk* (Jacobs, 2022b). However, APZ management will remain in accordance with Section 6.1.1 of the *Technical Report – Bush fire risk* (Jacobs, 2022b) and as per the requirements of PBP.

As a conservative measure, this bush fire assessment assumes that the entire disturbance footprint of each compound area will be used for construction, and APZ distances (refer to Table 4-1 to Table 4-8) have been applied to the full extent of the boundary and delineate the areas within which construction should be avoided. As such, a limit of construction has been developed at each compound to guide structure placement during detailed design (refer to Figure 5-1 to Figure 5-8).

SFPP developments (i.e. the TWA) are to be provided with a $<10 \text{ kW/m}^2$ APZ (based on a flame temperature of 1,200 K) and constructed to a minimum BAL-12.5 construction standard. For other non-SFPP compounds being constructed to BAL-12.5 (i.e. the CC), an APZ will be included to ensure radiant heat levels associated with the buildings will be $<12.5 \text{ kW/m}^2$ (1,090 K) due to a place of refuge being incorporated into the facility. However, $<29 \text{ kW/m}^2$ (1,090 K) APZs may be applied to specific structures for CC, as described in Table 2-2, as some structures have different building class classifications under NCC. For all other compounds, an APZ will be included to ensure radiant heat level will not exceed 29 kW/m^2 (1,090 K). These APZ distances will meet the objectives of the associated construction level BAL, described in Section 5.1.

Section 8.3.5 of PBP (NSW RFS, 2019) also specifies that a minimum 10 metre APZ applies for the structures and associated buildings/infrastructure of wind farms and should be maintained to the standard of an Inner Protection Area for the life of the development. This is consistent with the approach taken in the *Technical Report – Bush fire risk* (Jacobs, 2022b) and will be maintained for the modified project.

The performance criteria and acceptable solutions for APZs and landscaping for SFPP developments are addressed in Table 5-1.

Table 5-1 Performance criteria and acceptable solutions for APZs and landscaping for SFPP developments

Performance criteria	Acceptable solution	Notes	Complies / Will comply
Asset Protection Zone			
Radiant heat levels of greater than 10 kW/m^2 (calculated at 1200 K) will not be experienced on any part of the building	The building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1 of PBP	SFPP developments (i.e. the TWA) will not be exposed to greater than 10 kW/m^2 (at 1200 K) of radiant heat with the inclusion of the proposed APZ. Construction of SFPP compounds will be to a minimum BAL-12.5. A limit of construction has been developed for this assessment to guide structure placement within each compound during detailed design (refer to Figure 5-1 to Figure 5-8). The limit of construction applies to all structural components proposed as part of each compound.	Will comply
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are located on lands with a slope less than 18 degrees	All lands within the APZ have a slope of less than 18 degrees (refer to Section 4).	Complies

Performance criteria	Acceptable solution	Notes	Complies / Will comply
APZs are managed and maintained to prevent the spread of fire to the building The APZ is provided in perpetuity	- The APZ is managed in accordance with the requirements of Appendix 4 PBP, and is wholly within the boundaries of the development site; - Other structures located within the APZ need to be located further than 6m from the refuge building.	APZ management is to be in accordance with Section 6.1.1 of the <i>Technical Report – Bush fire risk</i> (Jacobs, 2022b) and as per PBP. Further documentation of management of APZ will be detailed in the BFEMEP. The limit of construction approach within this assessment provides that the APZ is wholly within the boundaries of the development site (compound) and disturbance footprint, and structure placement is to avoid the determined APZs for the TWA compound (refer to Figure 5-8).	Will comply
Landscaping SFPP			
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	- Landscaping is in accordance with Appendix 4 of PBP; and - Fencing is constructed in accordance with Section 7.6 of PBP.	No landscaping has been proposed as part of the modified project. If landscaping is included in detailed design, landscaping will be in accordance with PBP.	Will comply

Source: NSW RFS (2019)

Note:

As detailed design has not yet been formalised for the structures within the assessed compounds, this assessment has used a “will comply” approach for some of the performance criteria and acceptable solution benchmarks. This anticipates that the performance criteria and acceptable solutions for bush fire risk will be incorporated into the detailed design stage of the Project.

5.3 Access

Road access is required for the construction and operation of the modified project, including construction equipment and workforce vehicle access, emergency services access, and safe evacuation routes. Access to the Project would be via a designated and upgraded access track from Liddles Lane, 4 kilometres east of Wilson Road for OSOM and heavy vehicles, with light vehicles accessing the site from an alternate route along Wilson Road.

The approved project also included the development of internal access roads for emergency services that supported heavy vehicle access. The width of access track disturbance corridors has been increased from 5 metres to up to 25 metres wide. Further road standard requirements for bush fire considerations, including vehicle tonnages and turnarounds, are provided in the *NSW RFS Fire Trail Standards* (NSW RFS, 2023) and PBP (Appendix 3, NSW RFS, 2019) and will need to be included in detailed design so that the Project complies with the performance criteria for bush fire risk.

The agency response from NSW RFS for the EIS also advised that design parameters for internal roads should cater for:

- emergency vehicles including vehicle turning head requirements at all assets and/or stored water access points, at least 16 metres deep from the access road centreline to allow turning capability for heavy rigid bulk water vehicles
- road surface and crossing structures on internal roads capable of carrying vehicles with a gross vehicle mass of 27 tonnes and an axle set load of 17 tonnes.

These parameters were included in the environmental management measures (EMMs) for the approved project and would be maintained for the modified project.

5.3.1 Access from compounds

Under the building classification system within the NCC, PBP for Class 5 to 8 buildings does not provide any bush fire specific performance requirements for these particular classes of buildings, however Section 8.3.1 (NSW RFS, 2019) requires that the following objectives will be applied in relation to access and emergency and evacuation planning:

- provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation
- provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development.

Initial evacuations should be to local towns of Coleambally, located approximately 50 kilometres north-east of the Project area and primarily accessed by travelling east on McLennons Bore Road then north on Kidman Way, or Jerilderie, located approximately 50 kilometres south of the Project area and primarily accessed travelling east on McLennons Bore Road, then south on Kidman Way and south on the Newell Highway once intersected.

The most appropriate evacuation point would be dependent on the location of the fire and the location of the evacuating occupants and is to be detailed in the BFEMEP. Table 5-2 outlines the primary and secondary access routes for each assessed compound which are to be maintained throughout the life of the Project, as they need to be capable of supporting Category 1 fire appliance access (refer to NSW RFS Fire Trail Standards 2019).

The performance criteria and acceptable solutions for access routes for SFPP developments are addressed in Table 5-3, and the direction of primary access routes are displayed in Figure 5-1 to Figure 5-8.

Table 5-2 Access routes for assessed compounds

Compound ID	Compound name	Primary access route	Secondary access route
SSN01	Central Primary Substation	South via internal access road to Mabins Well Road	North via internal access road to Wilson Road
WFN02/BESS	Collector Substation: BESS location	North-east via internal access road to Mabins Well Road	South-east and then east via internal access roads to Wilson Road
WFN01	Collector Substation	North-east via internal access road to Wilson Road	South via internal access road to Mabins Well Road
WFC01	Collector Substation	South via internal access road, and then east via Moonbria Road	South via internal access road, and then west via Moonbria Road
CC	Construction Compound (refuge of last resort)	North via Wilson Road, and then continue north, or east via Liddle Lane	South via Wilson Road
TWA	Temporary workers accommodation	North via Wilson Road then east via McLennons Bore Road	South via Wilson Road
WFS01	Collector Substation	West via internal access road then south via Wilson Road	West via internal access road then north via Wilson Road
DNW	Dinawan Substation	North via Kidman Way	South via Kidman Way

Table 5-3 Performance criteria and acceptable solutions for access for SFPP development

Performance criteria (NSW RFS 2019)	Acceptable solutions (NSW RFS 2019)	Access notes	Complies / Will comply
Access			
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	■ SFPP access roads are two-wheel drive, all-weather roads ■ Access is provided to all structures ■ Traffic management devices are constructed to not prohibit access by emergency services vehicles ■ Access roads must provide suitable turning areas in accordance with Appendix 3 of PBP; and ■ One way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	Primary and secondary access for TWA is via Wilson Road. Primary and secondary roads will be upgraded and constructed in accordance with PBP and will meet performance criteria.	Will comply
The capacity of access roads is adequate for firefighting vehicles	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating.	EMMs will meet the objectives of this performance outcome as it specifies that the road surface and crossing structures on internal roads shall be capable of carrying vehicles with a gross vehicle mass of 27 tonnes and an axle set load of 17 tonnes. Capacity will be sufficient to carry full loaded firefighting vehicles as per acceptable solutions.	Will comply
There is appropriate access to water supply	■ Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression ■ Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and ■ There is suitable access for a Category 1 fire appliances to within 4 metres of the static water supply where no reticulated supply is available.	Hydrants are not applicable for this Project due to no reticulated water supply being available. Suitable access for a Category 1 fire appliances to within 4 metres of the static water supply will be provided at the TWA.	Will comply

Performance criteria (NSW RFS 2019)	Acceptable solutions (NSW RFS 2019)	Access notes	Complies / Will comply
Perimeter roads			
Perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface	- There are two-way sealed roads - Minimum 8 metre carriageway width kerb to kerb - Parking is provided outside of the carriageway width - Hydrants are to be located clear of parking areas - There are through roads, and these are linked to the internal road system at an interval of no greater than 500 metres - Curves of roads have a minimum inner radius of 6 metres - The maximum grade road is 15 degrees and average grade of not more than 10 degrees - The road crossfall does not exceed 3 degrees; and - A minimum vertical clearance of 4 metres to any overhanging obstructions, including tree branches, is provided.	Detailed design will include perimeter road or perimeter fire trail around the SFPP compound (i.e. the TWA) as per the requirements of PBP. However, it is noted that perimeter roads at the SFPP compound will be an all-weather access, rather than sealed, due to the temporary nature of the structures. All-weather access is preferred to minimise environmental impacts during decommission. For all other compounds, a fire trail will be established around the perimeter, consisting of a graded grass path designed to support access by emergency service personnel during firefighting and emergency response, in accordance with the NSW Fire Trail Standards (NSW RFS, 2023).	Will comply
Non-perimeter roads			
Non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating	- Minimum 5.5 metre carriageway width kerb to kerb - Parking is provided outside of the carriageway width - Hydrants are located clear of parking areas - There are through roads, and these are linked to the internal road system at an interval of no greater than 500 metres; - Curves of roads have a minimum inner radius of 6 metres - The maximum grade road is 15 degrees and average grade of not more than 10 degrees - The road crossfall does not exceed 3 degrees; and - A minimum vertical clearance of 4 metres to any overhanging obstructions, including tree branches, is provided.	Detailed design will include non-perimeter access roads as per the requirements of PBP. Non-perimeter access roads will be designed to allow the safe access and egress to all compounds as part of the modified project.	Will comply

Note:

It is noted that detailed design has not yet been formalised for the structures within the assessed compounds, this assessment has used a “will comply” approach for some of the performance criteria and acceptable solution benchmarks. This anticipates that the performance criteria and acceptable solutions for bush fire risk will be incorporated into the detailed design stage of the Project.

5.4 Water supply and services

Adequate water supply is essential to put out unwanted spot ignitions and to provide potential water sources for firefighting agencies within the Project area and is to be maintained in accordance with PBP requirements (NSW RFS, 2019) throughout construction and operation of the modified project. Appropriate water supply for firefighting and appropriate location of utilities are important mitigation measures of bush fire risk during construction.

Under the building classification system within the NCC, PBP for Class 5 to 8 buildings does not provide any bush fire specific performance requirements, however Section 8.3.1 (NSW RFS, 2019) requires that the following objectives will be applied in relation to utilities and services:

- Provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

Performance criteria and acceptable solutions for utilities for the assessed structures are extracted from PBP (NSW RFS, 2019) and addressed in Table 5-4.

Options for water sourcing are included in the proposed modifications and include use of onsite (bores), offsite water sourcing, or a combination of both, noting that the anticipated water demand has increased since the approved project. However, all water sourcing and adequate water supply will meet the objectives of PBP during detailed design (Aurecon 2025).

The Conditions of Consent for the approved project requires a 20,000 litres static water tank for firefighting activities, as no reticulated water will be supplied to the Project compounds. Indicative locations of static water tanks for each compound are provided in Figure 5-1 to Figure 5-8, however these locations may be updated in a BFEMEP.

Temporary water supplies for firefighting may also be required during construction, including spray packs or vehicle mounted tanks. These requirements and further details on water supply and services will be captured in the Contactor's Construction and Environmental Management Plan and the BFEMEP.

Table 5-4 Performance criteria and acceptable solutions for water, electricity, and gas

Performance criteria	Acceptable solutions	Comments	Complies / Will comply
Water supply			
An adequate water supply for firefighting purposes is installed and maintained	■ Reticulated water is to be provided to the development, where available; or ■ A 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	Reticulated water is not available for this Project. Conditions of Consent for the approved project require provision of a 20,000 litres water supply tank for the development. This condition meets the performance criteria for the reassessed structures. Indicative water supply tank locations are provided in Figure 5-1 to Figure 5-1 and will be finalised in a BFEMEP for the Project at detailed design stage.	Will comply
■ Water supplies are located at regular intervals ■ The water supply is accessible and reliable for firefighting operations	■ Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005 ■ Hydrants are not located within any road carriageway; and ■ Reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads.	N/A	N/A
Flows and pressure are appropriate	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	N/A	N/A
The integrity of the water supply is maintained	All above-ground water service pipes external to the building are metal, including and up to any taps.	Details for above-ground water service pipes are not known at this stage of the Project. During detailed design, all above ground water service pipes will be in accordance with PBP.	Will comply

Performance criteria	Acceptable solutions	Comments	Complies / Will comply
Water supplies are adequate in areas where reticulated water is not available	- A connection for firefighting purposes is located within the Inner Protection Area or non-hazard side and away from the structure; a 65 mm Storz outlet with a ball valve is fitted to the outlet - Ball valve and pipes are adequate for water flow and are metal - Supply pipes from tank to ball valve have the same bore size to ensure flow volume - Underground tanks have an access hole of 200 millimetre to allow tankers to refill direct from the tank - A hardened ground surface for truck access is supplied within 4 metres of the access hole - Above-ground tanks are manufactured from concrete or metal - Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (refer to Appendix F AS 3959) - Unobstructed access is provided at all times - Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and - Underground tanks are clearly marked - All exposed water pipes external to the building are metal, including any fittings - Where pumps are provided, they are a minimum 5 hp or 3 kW petrol or diesel-powered pump, and are shielded against bush fire attack; Any hose and reel for firefighting connected to the pump shall be 19 mm internal diameter; and - Fire hose reels are constructed in accordance with <i>AS/NZS1221:1997 Fire hose reels</i>, and installed in accordance with the relevant clauses of <i>AS2441:2005 Installation of fire hose reels</i>.	Conditions of Consent require water supply tank fitted with a 65 millimetre Storz fitting and static water tanks of 20,000 litres at each compound. Additional criteria for static water supply will be included during detailed design, and will be detailed in the BFEMEP.	Will comply
Electricity services			
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	- Where practicable, electrical transmission lines are underground; and - Where overhead, electrical transmission lines are proposed as follows: - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in <i>ISSC3 Guideline for Managing Vegetation Near Power Lines</i> (Industry Safety Steering Committee, 2016).	A combination of above and below ground transmission lines are being developed for the Project. The details determined in the detailed design stage are to be in accordance with PBP.	Will comply

Performance criteria	Acceptable solutions	Comments	Complies / Will comply
Gas services			
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	■ Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used ■ All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side ■ Connections to and from gas cylinders are metal ■ Polymer-sheathed flexible gas supply lines are not used; and ■ Above-ground gas service pipes are metal, including and up to any outlets.	Gas bottles are proposed as part of the SFPP compound and will be managed in accordance with PBP and AS/NZS1596:2014.	Will comply

Source: NSW RFS (2019)

Note:

It is noted that detailed design has not yet been formalised for the structures within the assessed compounds, this assessment has used a “will comply” approach for some of the performance criteria and acceptable solution benchmarks. This anticipates that the performance criteria and acceptable solutions for bush fire risk will be incorporated into the detailed design stage of the Project.

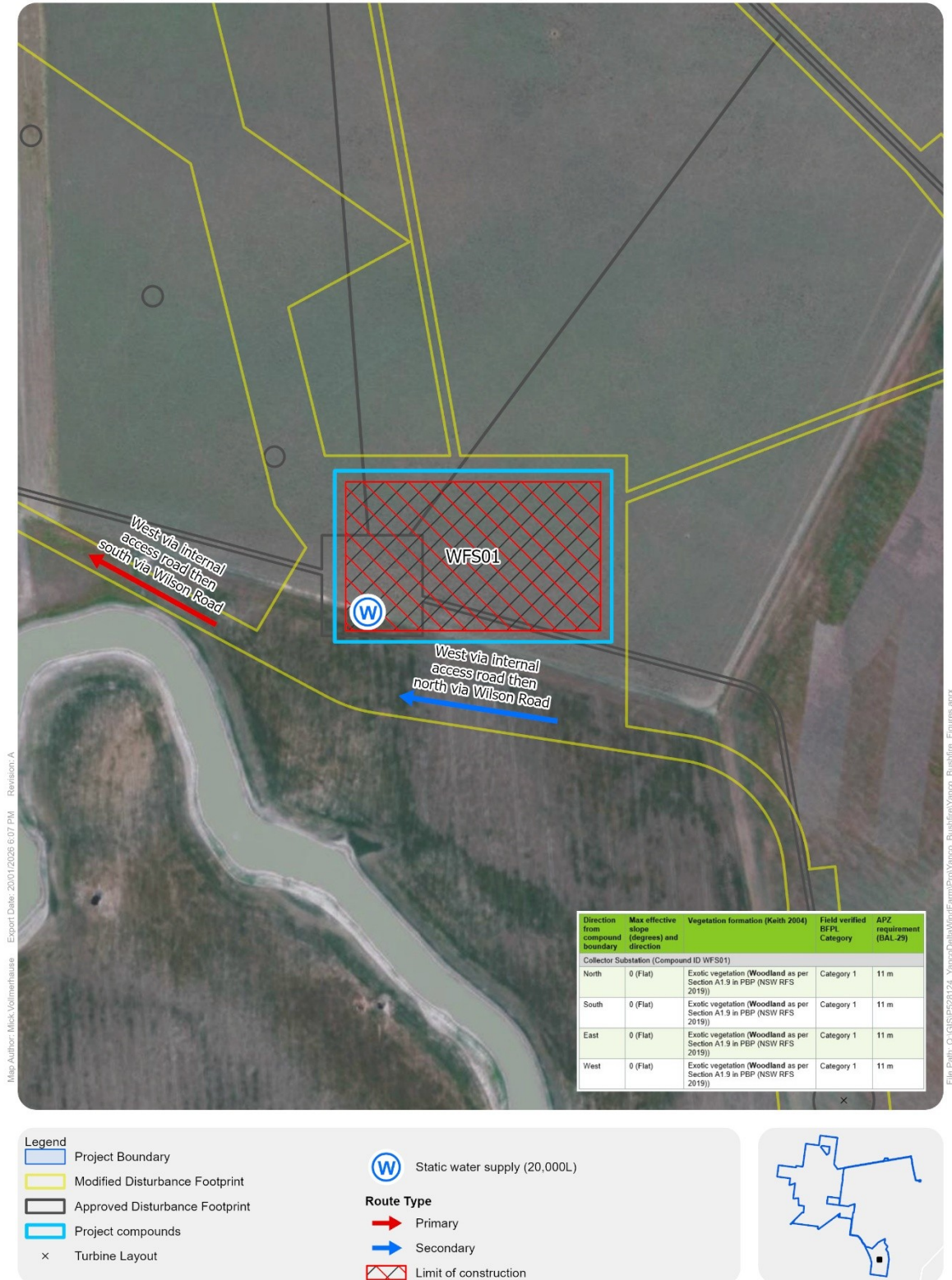


Figure 5-1 Bush fire mitigation measures for the modified project Collector Substation (WFS01)

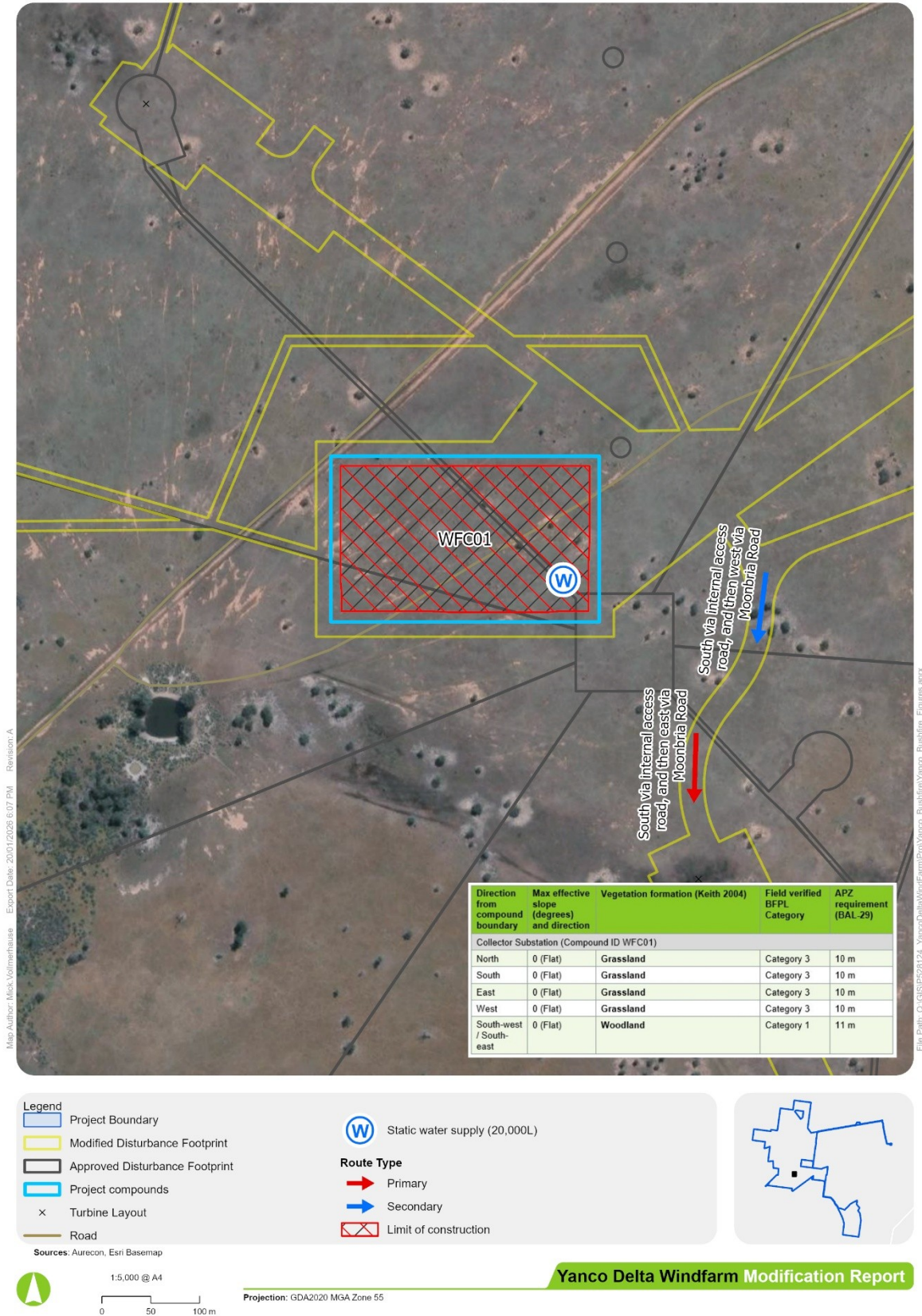


Figure 5-2 Bush fire mitigation measures for the modified project Collector Substation (WFC01)

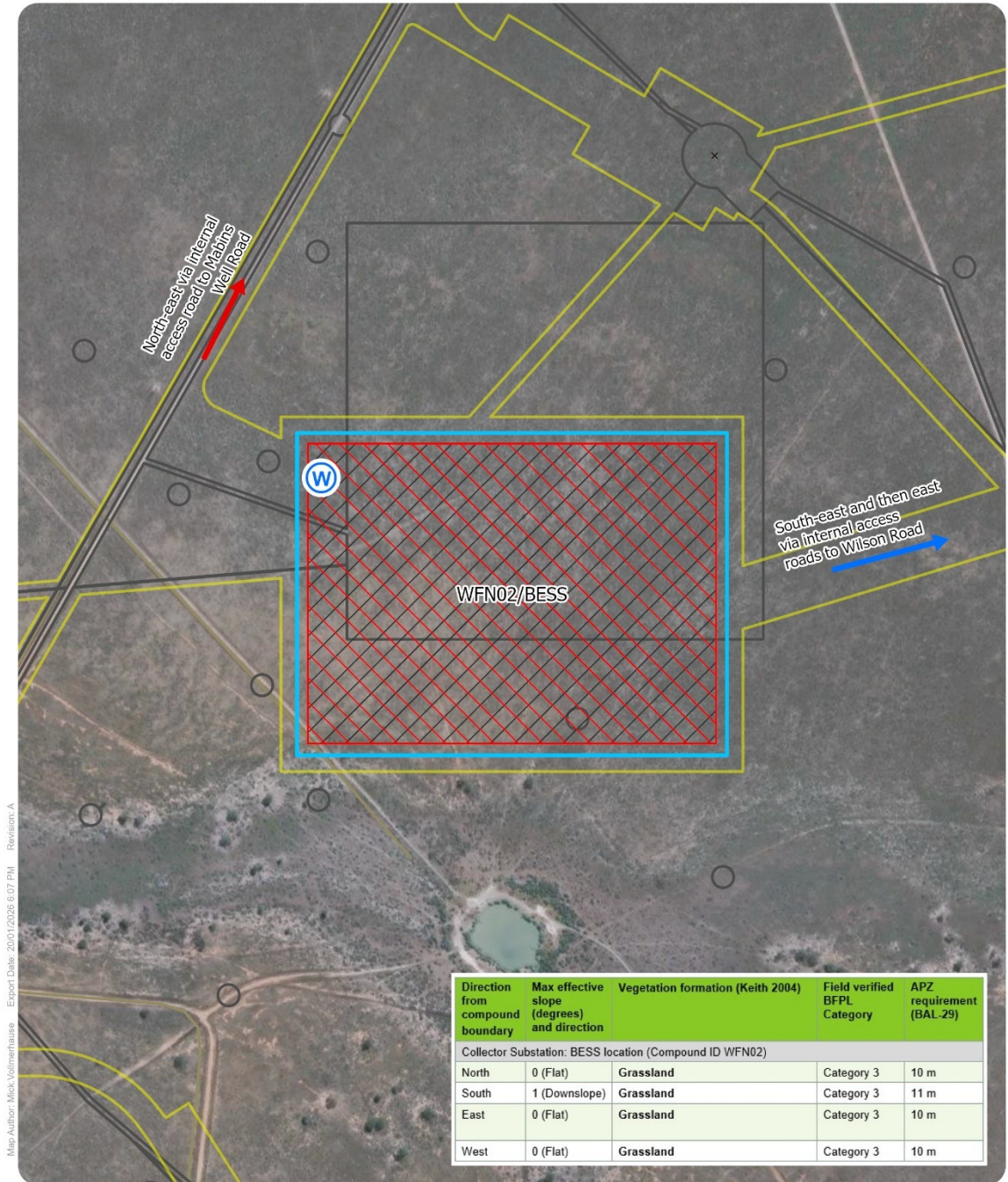


Figure 5-3 Bush fire mitigation measures for the modified project Collector Substation (WFN02/BESS)



Figure 5-4 Bush fire mitigation measures for the modified project Central Primary Substation (SSN01)



Figure 5-5 Bush fire mitigation measures for the modified project Collector Substation (WFN01)



Figure 5-6 Bush fire mitigation measures for the modified project Construction Compound (CC)

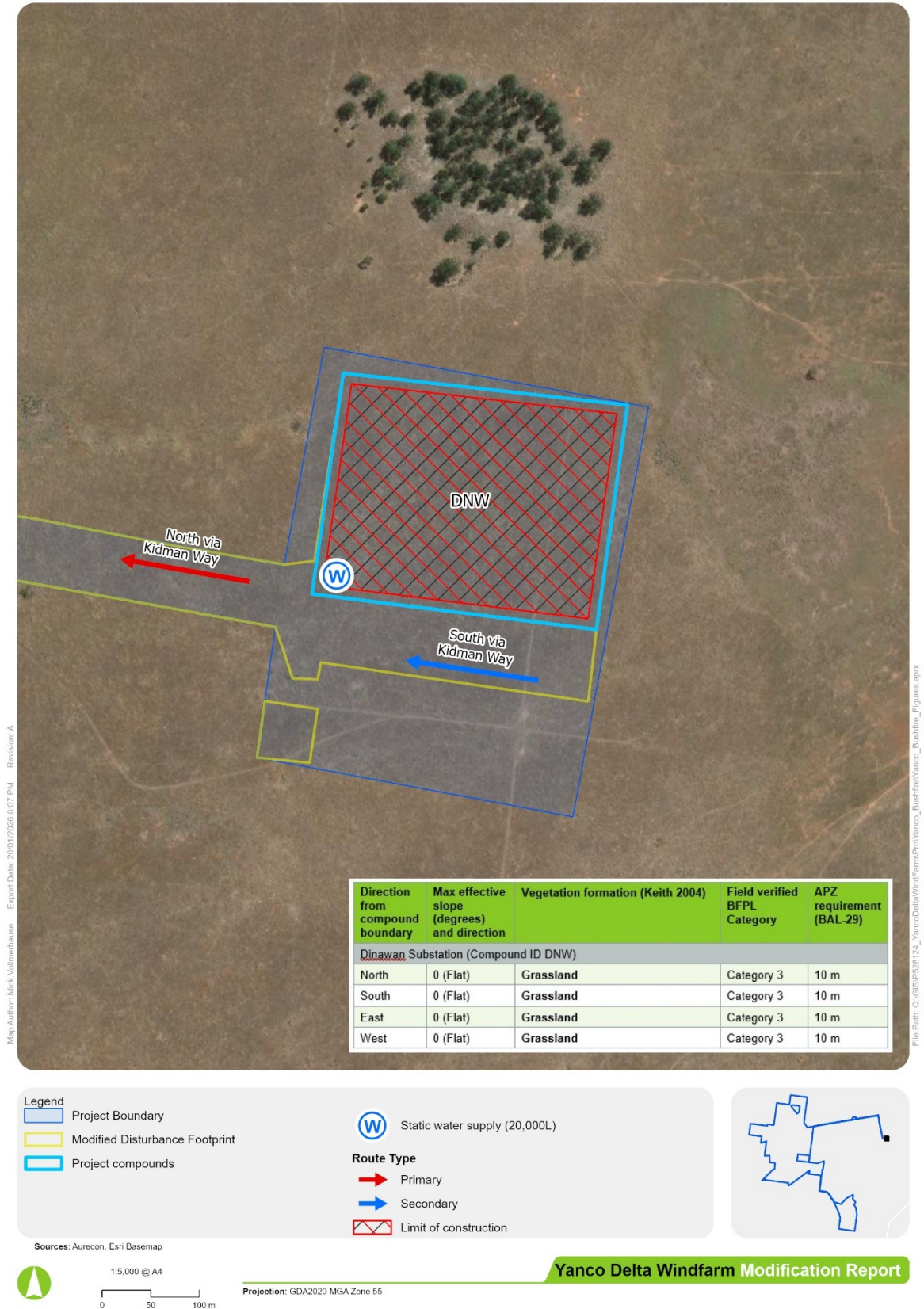


Figure 5-7 Bush fire mitigation measures for the modified project Dinawan Substation (DNW)



Figure 5-8 Bush fire mitigation measures for the modified project temporary workers accommodation (TWA)

5.5 Updated environmental management measures

A review of the EMMs provided in Appendix B of the Submissions Report (August 2023) from the approved project, as they relate to bush fire risk, is provided in Table 5-5. Any change to the EMMs as a result of the proposed modifications is shown in **bold** for additions or amendments, and ~~strike through~~ for deletions.

Table 5-5 Updated environmental management measures for the modified project related to bush fire risk assessment

Ref	Environmental management measures	Timing	Reason for change
Hazards and risks – bush fire			
BU1	The Project will implement the following permanent bush fire protections: ■ Asset Protection Zones (APZs) around each WTG (accomplished by hardstand, no additional vegetation management needed) to achieve BAL-29 ■ APZs around and construction on the substations and, BESS, and potential additional O&M facility to BAL-29 ■ An APZs around the and construction of the operation and maintenance facility which is to be constructed, construction compound (refuge of last resort), to achieve BAL-12.5 standard as the Project refuge of last resort ■ APZ around the temporary workers accommodation to provide <10 kW/m² (1200 K) radiant heat impact to buildings and construction to a minimum BAL-12.5 standard ■ Perimeter firebreak for all non-SFPP compounds. An all-weather perimeter road will be included as part of the SFPP compound (TWA) ■ Ongoing vegetation management (grazing, clearance around poles and overhead power lines) ■ Access for emergency response vehicles ■ Access tracks will be designed in accordance with the NSW Rural Fire Service Fire Trail Design, Construction and Maintenance Manual ■ Vehicle turning head requirements at all assets and/or stored water access points shall be at least 16 metres deep from the access road centreline to allow turning capability for Heavy Rigid Bulk Water vehicles ■ Road surface and crossing structures on internal roads shall be capable of carrying vehicles with a gross vehicle mass of 27 tonnes and an axle set load of 17 tonnes ■ A permanent, dedicated firefighting water source ■ Controls on Project actions to prevent bush fire ignition ■ Fire suppression systems in WTGs, substations, BESS ■ Project fire fighting vehicle.	Detailed design, construction, operation	BAL standard has not been specified in the EMMs for all elements of the approved project. Suggest adding BAL-29 requirement, and SFPP for the TWA to be consistent with other large State Significant Development projects. The TWA, which is a new structure proposed for the modified project, is classified as SFPP due to the temporary housing and sleeping facilities of occupants. This compound is subject to special bush fire protection requirements including an APZ to provide <10 kW/m² (1200 K) radiant heat impact to buildings and construction to a minimum BAL-12.5 standard as set out in AS3959. These provisions will need to be considered and included in detailed design, prior to construction. Updates to perimeter fire breaks and perimeter roads have been applied for more targeted mitigation measures for the modified project. Fire suppression systems for the BESS have been excluded from this mitigation measure as they will be addressed under a separate fire engineering scope of works (i.e. Condition of Consent B44 (Fire Safety Study) will be undertaken for the BESS). Fire suppression systems for WTGs and substations are not specifically related to bush fire protection or prevention. The requirement for a dedicated project firefighting vehicle has been reduced due to the implementation of mitigation measures associated with the inclusion of the SFPP compound and coordination for emergency management with the NSW RFS under Condition of Consent B48 (Emergency Plan).

Ref	Environmental management measures	Timing	Reason for change
BU2	Construction and Operation Bush Fire Emergency Management Plans will be developed for the Project in accordance with Planning for Bush Fire Protection (PBP) (NSW RFS, 2019) and in consultation with the NSW Rural Fire Service (RFS) including any requirements in relation to aerial firefighting). These plans will identify all relevant bush fire risks and mitigation measures associated with the construction and operation of the Project, including those listed in BU01 and: ■ Specific measures to prevent bush fire ignition or spread from Project activities ■ Work types that will not be conducted during total fire bans ■ Storage location and safety arrangements for any fuels or other hazardous or flammable materials ■ Notification protocols to the NSW RFS of any work with the potential to cause a fire in the surrounding vegetation ■ Instructions and triggers to shut down WTGs with an approaching fire ■ Any other measures required by the NSW RFS or other authorities to manage risk to aerial firefighting in the region ■ Notification protocols and contact details for the local NSW RFS Fire Control Centre, local fire brigades, CASA, Air Services Australia, Transgrid, and any other people or organisations who will be notified of an emergency at the Project ■ Location of firefighting water, any alternative water supplies that may be available during an emergency, and any other fire suppression equipment held on site ■ Bush fire emergency planning, including evacuation triggers, evacuation routes and when and where to take refuge.	Detailed design, Prior to construction, construction, operation	Nil proposed
BU3	Risks to firefighting operations will be managed, including: ■ Registering all towers (WTGs and meteorological monitoring towers) prior to emplacement on site ■ WTG shutdown procedures in a Y-position in case of a fire in the area.	Construction, operation	Nil proposed

6 Conclusion

This Revised Bushfire Risk Assessment Report details the updated design requirements of PBP (NSW RFS, 2019) in relation to the proposed modifications to the approved project. The updated assessment as part of the modification confirmed BFPL vegetation is present across all proposed compound sites and subsequent legislative requirements apply. The following mitigation measures have been applied to the Project to adhere to the legislated requirements of PBP:

- Asset Protection Zones, in accordance with PBP and AS3959:2018
- a static water supply of 20,000 litres at each compound
- primary and secondary access routes for emergency access and evacuation
- design and construction in accordance with relevant Australian Standards, and where relevant the network operator's standard.

Provided the proposed development is constructed and maintained in accordance with the requirements identified in Section 5, it is considered to satisfy the aims and objectives of the NCC, PBP (NSW RFS, 2019), and AS3959:2018.

7 References

- Aurecon (2025), Yanco Delta Wind Farm Scope 6 - Water Sourcing Strategy. Reference: P527118
- Australian Building Codes Board (2022), National Construction Code– Comprising the Building Code of Australia (Volumes One and Two) and Plumbing Code of Australia (Volume Three). ABCB Office Canberra
- Bureau of Meteorology (2025), Climate Data Online: Map Search, Accessed from:
<http://www.bom.gov.au/climate/data/index.shtml?bookmark=200&view=map>
- Brennan Consultants (2024), Origin Energy Yanco Delta Wind Farm Transmission Line Reliability & Conductor Serviceability Assessment associated with Bushfire Risk
- Department of Planning and Environment (2022), State significant development guidelines – preparing a modification report. State of NSW. Available from:
<https://www.planning.nsw.gov.au/sites/default/files/2023-03/ssd-guidelines-preparing-a-modification-report.pdf>
- Industry Safety Steering Committee (2016), ISSC3 - Guide for the Management of Vegetation in the Vicinity of Electricity Assets. Available from: [ISSC3 \(2016\) Guide for the Management of Vegetation in the Vicinity of Electricity Assets](#).
- Jacobs (2022a), Yanco Delta Wind Farm Environmental Impact Statement. On behalf of Virya Energy. Available from: [Yanco Delta Wind Farm - Environmental Impact Statement](#)
- Jacobs (2022b), Yanco Delta Wind Farm Technical Report – Bush fire risk. On behalf of Virya Energy. Available from: [Technical Report – Bush fire risk](#)
- Jacobs (2023a), Yanco Delta Wind Farm Submissions Report. On behalf of Virya Energy. Available from: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-50898971%2120230821T095101.693%20GMT>
- Jacobs (2023b), Yanco Delta Wind Farm Amendment report. On behalf of Virya Energy. Available from: <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-41743746%2120231214T223944.568%20GMT>
- Keith, D.A. (2004), Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales. Department of Environment and Conservation, Sydney NSW
- Mid Murray Zone Bush Fire Management Committee (2023), Bush Fire Risk Management Plan, available at https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0007/275848/Mid-Murray-BFRMP-final.pdf
- NSW Rural Fire Service (2017), Local government areas and FDI. Available from:
https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0007/55285/Local-government-areas-and-FDI.pdf
- NSW Rural Fire Service (2019), Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers. Prepared by NSW RFS Homebush NSW. Accessed from:
https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0005/130667/Planning-for-Bush-Fire-Protection-2019.pdf
- NSW Rural Fire Service (2022), NSW Bush Fire Prone Land. Available from:
<https://datasets.seed.nsw.gov.au/dataset/bush-fire-prone-land>
- NSW Rural Fire Service (2023), NSW Fire Trail Standards November 2023 Version 2.0. Available from:
<https://one.rfs.nsw.gov.au/assets/documents/community-documents/RFS-Fire-Trail-Standards-Nov2023-1702860741.pdf>
- NSW Rural Fire Service (2025), Planning for Bush Fire Protection ADDENDUM JANUARY 2025 A guide for councils, planners, fire authorities and developers. Available from:
https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0003/276195/2025-Addendum-to-Planning-for-Bush-Fire-Protection.pdf
- Standards Australia (2018), AS3959:2018 – Construction of Buildings in Bushfire-Prone Areas. Standards Australia, Sydney

Appendix A

Site photos



Image A-1 **Representative woodland formation**



Image A-2 **Representative grassland formation**

Document prepared by

Aurecon Australasia Pty Ltd

ABN 54 005 139 873

Level 1, 22-30 Wood Street

Mackay QLD 4740

PO Box 1060

Mackay QLD 4740

Australia

T +61 7 4977 5200

E mackay@aurecongroup.com

W aurecongroup.com