Bushfire Assessment Report

‘Gracemere’ Function Centre

Prepared for

Catherine Coren

Final / November 2024

02 4054 9539
info@mjdenvironmental.com.au
PO Box 360 Waratah NSW 2298
MJDenvironmental.com.au

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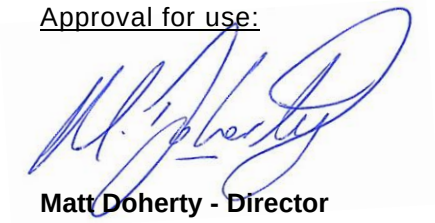


Matt Doherty - Director

19 November 2024

This report has been prepared in accordance with Appendix 2 of Planning for Bushfire Protection 2019 and certifies the development conforms to the specifications and requirements of S4.14 of the Environmental Planning and Assessment Act 1979.

EXECUTIVE SUMMARY

MJD Environmental has been engaged by Catherine Coren to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for the proposed construction of the 'Gracemere' Function Centre at Lot 10 DP 1035397, 893 Paterson Road, Woodville 2321.

The assessment has considered and assessed the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with *Planning for Bush Fire Protection 2019*), as adopted through the *Environmental Planning & Assessment Regulation 2021.* Reference is made to PBP Addendum (November 2022) where applicable.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adhered to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapter 8 of PBP (2019).

As the proposal is for the construction of a function centre, the development is likely to trigger the provisions of Section 8.3.11 of PBP - *Public assembly buildings* due to the proposed floor space area being greater than 500m^2*.* The use is not defined as a Special Fire Protection Purpose (SFPP) under the provisions of the Rural Fire Act and its regulation and does not require a Bush Fire Safety Authority (BFSA) but requires referral to the RFS under Section 4.14 of the *Environmental Planning and Assessment Act 1979*.

The proposed development is able to meet the performance criteria for acceptable solutions for commercial / industrial development, giving due regard to the requirements of Chapter 8 of PBP 2019, specifically section 8.3.1 and 8.3.11. A suitable package of BPMs has been developed that is commensurate with the assessed level of risk to the development.

This assessment has been made based on the bushfire hazards in and round the Site at the time of report production.

The assessment found that hazard vegetation types occur within 140m of the Site. The primary risk is from the Grassland vegetation south of the proposal. The slope under the hazard has been assessed as 5-10° downslope. As the site is within the Port Stephens LGA it has been assessed under a Forest Fire Danger Index (FFDI) rating of 100.

In summary, the following key recommendations have been generated to enable the proposal to comply with PBP (2019).

Asset Protection Zones

- An APZ of 45m is to be established to the north, south and west. A 36m APZ is to be established to the east.
- The entire development site will be managed as an IPA for the life of development.
- A Bush Fire Emergency Management and Evacuation Plan shall be prepared for the site as set out in Table 6.8d of PBP 2019 and consistent with the NSW RFS document A Guide to preparing a Bush Fire Emergency Management and Evacuation Plan. A copy of the Bushfire Emergency Management and Evacuation Plan is to be provided to the Local Emergency Management Committee prior to occupation of the development.

Access

- Existing access arrangements from Paterson Road will be maintained as part of the proposal. Access must comply with RFS requirements for access listed in Appendix 3 of PBP 2019 in terms of surface, vertical clearance, horizontal width, grades and minimum curve radius.

- The access bridge is less than the required 3.5m, a performance based solution including the addition of a passing bay on the eastern side of the bridge is proposed as detailed in **Section 3.2.1** and outlined below. The proposed Performance based solution:

    - Install a passing bay at the eastern approach to the bridge to facilitate ease of entry and exit over the bridge.

    - Trim the Willow adjacent to the bridge to increase line of site for vehicles.

    - Provide signage on both sides of the bridge indicating load rating and width.

- The weight capacity of the bridge within the site is sufficient to carry a fully loaded firefighting vehicle (up to 23 tonnes); the bridge is to have its load capacity clearly indicated.

Services – Water supply, Gas and Electricity

- Reticulated water supply is not available on the site. The site is greater than 1ha in area and therefore a minimum 20,000 litre static water supply is to be provided for fire fighting. The static supply is to be non-combustible, contain the correct fittings (per PBP 2019) and allow for a fire appliance to pull up, access and connect within 4m. The Site shall be connected to the existing power supply.

- The Site shall be connected to the existing power supply.

- Any future gas connection will be installed in accordance with the provisions of PBP (2019).

- Any water storage tanks [where provided] are to include connection points in accordance with PBP (2019) and be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order.

Landscaping

- Careful consideration of future site landscaping and ongoing fuel management must occur to minimise the potential impact of bushfire on the Site.

- Ongoing fuel management across the Site as part of the maintenance regime should give due consideration to Appendix 4 Asset Protection Zone Requirements of PBP (2019) which provides guidance on maintenance activities to assist in achieving the landscape principles.

Emergency Management

- A Bush Fire Emergency Management and Evacuation Plan shall be prepared for the site as set in Table 6.8d of PBP 2019 and consistent with the NSW RFS document. A Guide to Preparing a Bush Fire Emergency Management and Evacuation Plan. A copy of the Bushfire Emergency Management Plan is to be provided to the Local Emergency Management Committee (LMEC) prior to occupation of the development.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

GLOSSARY OF TERMS AND ABBREVIATIONS

Term/ Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419-2005	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
ASL	Above Sea Level
BAR	Bushfire Assessment Report
BCA	Building Code of Australia
BC Act	Biodiversity Conservation Act 2016
BMP	Bush Fire Management Plan
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BPL	Bush Fire Prone Land
BPLM	Bush Fire Prone Land Map
BPM	Bush Fire Protection Measures
DoE	Commonwealth Department of the Environment
DPI Water	NSW Department of Primary Industries – Water
DPE	NSW Department of Planning and Environment
EPA Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FDI	Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LEMC	Local Emergency Management Committee
LGA	Local Government Area
LLS Act	Local Land Services Act 2013
OPA	Outer Protection Area
OEH	NSW Office of Environment and Heritage
PBP or PBP (2019)	Planning for Bushfire Protection 2019
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation
RFS	NSW Rural Fire Service
SVTM	State Vegetation Type Mapping
TSC Act	NSW Threatened Species Conservation Act 1995 (as repealed)

1 Introduction

MJD Environmental has been engaged by Catherine Coren to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for the proposed construction of the 'Gracemere' Function Centre at Lot 10 DP 1035397, 893 Paterson Road, Woodville 2321 (hereafter referred to as the 'site'). Refer to **Figure 1.**

The assessment has considered and assessed the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with *Planning for Bush Fire Protection 2019*), as adopted through the *Environmental Planning & Assessment Regulation 2021.* Reference is made to PBP Addendum (November 2022) where applicable.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adhered to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapter 8 of PBP (2019).

1.1 Description of Proposal

The proposal intends to expand the scope and scale of the existing 'wedding ceremony' facility via the addition of a formal function centre to cater for not only weddings but a broader range of function types (e.g. corporate training, workshops etc) at other times. The expansion of the operation will allow the facility to capture corporate functions providing a fully equipped formal function venue inclusive of a multi-use hall, kitchen and toilet facilities, as well as associated car parking, waste-water management facilities and landscaping.

Refer to **Appendix A** for plans of the proposal.

1.2 Aims & Objectives

This BAR addresses the aims and objectives of PBP 2019, which are to:

- Afford buildings and their occupants protection from exposure to a bushfire;
- Provide for a defendable space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;
- Ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- Provide for ongoing management and maintenance of bushfire protection measures; and
- Ensure that utility services are adequate to meet the needs of firefighters.

1.3 Site Particulars

Locality	The site is situated at 893 Paterson Road, Woodville 2321
Land Title	Lot 10/DP1035397
LGA	Port Stephens Council
Area	Lot – 7.9 ha Site – 7.9 ha
Zoning	The site is zoned RU1 Primary production

Boundaries	The site is bound to the north and south by managed agricultural land. The Paterson River (7th order stream) runs north to south along the western boundary. And the east of the Lot is bound by Paterson Road.
Current Land Use	The site is currently operated as the 'Gracemere' Function Centre.
Topography	The site is relatively flat, gently sloping from 10m ASL, east to west.
Climate / Fire History	Port Stephens Council has a Forest Fire Danger Index (FFDI) rating of 100. The site is mapped with Hazard Vegetation Category 3 on the Bushfire Prone Land Map (DPE 2023). Refer to **Figure 2**.

'GRACEMERE' FUNCTION CENTRE – 893 PATERSON RD, WOODVILLE

FIGURE 1: SITE LOCATION

Legend

- Site Boundary
- Lot Boundary
- 1st Order Stream
- 2nd Order Stream
- 7th Order Stream

N
W E
S

0 60 120 180 240

Metres
1:3000

MJD Environmental

Aerial: Nearmap (2024) | Data: MJD Environmental, SCDW, NSW Spatial Services (2024) | Datum/Projection: GDA2020 / MGA zone 56 | Date: 2024-11-20 | Version: 1 | Z:\24065 - Woodville Function Centre | This plan should not be relied upon for critical design dimensions.

'GRACEMERE' FUNCTION CENTRE – 893 PATERSON RD, WOODVILLE

FIGURE 2:BUSHFIRE PRONE LAND

Legend

- Site Boundary
- Lot Boundary
- 1st Order Stream
- 2nd Order Stream
- 7th Order Stream

Bush Fire Prone Vegetation

- BFPV Buffer
- Category 3

N
W E
S

0 60 120 180 240

Metres
1:3000

MJD Environmental

Aerial: Nearmap (2024) | Data: MJD Environmental, NSW Rural Fire Service, SCDW, NSW Spatial Services (2024) | Datum/Projection: GDA2020 / MGA zone 56 | Date: 2024-11-20 | Version: 1 | Z:\24065 - Woodville Function Centre | This plan should not be relied upon for critical design dimensions.

2 Bushfire Hazard Analysis

2.1 Vegetation Assessment

Methodology

The vegetation in and around the site, to a distance of 140m, has been assessed in accordance with PBP 2019. This assessment has been made via a combination of:

- aerial photo interpretation
- reference to plant community type utilising the State Vegetation Type Map (SVTM DPE 2022)

The Site is mapped by the State Vegetation Type Mapping (DPE 2022) as containing three vegetation formations being Forested Wetlands, Rainforests and Freshwater Wetlands. However, an Ecologist from MJD Environmental attended the site on the 13th August 2024 and confirmed that rainforest vegetation and forested wetland is absent from the Lot. Historical grazing and current agricultural use of the land has resulted in vegetation within the site predominantly consisting of exotic forb and pasture species as well as an array of planted individuals within the manicured gardens and along wind breaks of the site. Refer to **Site Photos** below.

The vegetation has been classified for bushfire purposes into structure and formation using the system adopted by Keith (2004) and Appendix 1 of PBP (2019).

Vegetation Classification

Vegetation classification has been presented in **Table 1** below and **Figure 3**.

Table 1 Vegetation Classification

Direction	Description	Vegetation Classification
North	Agricultural land holding cattle. A windbreak containing planted *Casuarina glauca* along the northern boundary.	Grassland Vegetation
East	Pasture, Agricultural land holding cattle. Manicured gardens containing non endemic species. Exiting dwelling and shed[1]	Grassland Vegetation
South	Agricultural land holding cattle. Low lying pasture inundated via Paterson River	Grassland Vegetation
West	Agricultural land holding cattle. Low lying pasture inundated via Paterson River	Grassland Vegetation

[1] Vegetation present within the manicured gardens within the site have been excluded as per A1.10 Low Threat – Exclusions (PBP 2019). Specifically - Single areas of vegetation less than 1 hectare in area and greater than 100 metres separation from other areas of Category 1 or 2 vegetation.

Site Photos

Plate 1 Southern outlook from the proposed Function Centre footprint.

Plate 2 Northern outlook from the proposed Function Centre footprint

2.2 Slope Assessment

Methodology

In accordance with PBP (2019), an assessment of the slope was conducted throughout the site (where a hazard is present) and for a distance of 100m around the proposed Function Centre. Both the average slope and maximum slopes were considered to determine the level of gradient which will most significantly influence fire behaviour on the site. The slope was measured using Digital Elevation Model-(DEM) derived 1m contours.

Slope assessment was assisted by:

- DEM derived from LiDAR data (NSW Spatial Services);
- Extraction of contours from DEM (1m resolution); and
- Aerial imagery

Effective Slope

The slope class under the bushfire hazard within 100m is presented in **Table 2** below and **Figure 3**.

Table 2 Slope Classification

Direction	Vegetation Classification	Slope Class
North	Grassland Vegetation	0-5° Downslope (-0.2°)
East	Grassland Vegetation	Upslope (0.6°)
South	Grassland Vegetation	5-10° Downslope (-6.3°)
West	Grassland Vegetation	0-5° Downslope (-6°)

'GRACEMERE' FUNCTION CENTRE – 893 PATERSON RD, WOODVILLE

FIGURE 3: VEGETATION & SLOPE CLASSIFICATION

Legend

- Site Boundary
- Lot Boundary
- 1st Order Stream
- 2nd Order Stream
- Contours (1 m)
- Transects
- Elevation (m)

Vegetation (*Keith 2004*)

- Development Footprint
- Grassland
- Managed Land
- Waterbody

N W E S

0 20 40 60 80

Metres

1:1200

MJD Environmental

Aerial: Nearmap (2024) | Data: MJD Environmental, NSW Rural Fire Service, SCDW, NSW Spatial Services (2024) | Datum/Projection: GDA2020 / MGA zone 56 | Date: 2024-11-20 | Version: 1 | Z:\24065 - Woodville Function Centre | This plan should not be relied upon for critical design dimensions.

3 Bushfire Protection Measures

PBP sets out a suite of BPMs and criteria that require consideration and assessment for applicable proposals on bushfire prone land in order to provide an adequate level of protection to new developments.

The measures required to be assessed are listed below and discussed throughout this chapter:

- Asset Protection Zones (APZ)
- Access
- Services – Water supply, Gas and Electricity
- Landscaping and Fuel Management
- Emergency Management
- Chapter 8 Section 8.3.1 objectives

Whilst bushfire is not captured in the NCC for Class 5-8 buildings, the following objectives will be applied in relation to access, water supply and services, and emergency and evacuation planning:

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

The proposed development is able to meet the performance criteria for acceptable solutions for commercial development, giving due regards to the requirements of Chapter 8 of PBP 2019, specifically section 8.3.1. A suitable package of BPMs has been developed that is commensurate with the assessed level of risk to the development. The proposed Function Centre is also considered likely to trigger the provisions of Section 8.3.11 of PBP relating to *Public Assembly buildings* with floor space area greater than 500m^2. The use is not defined as a Special Fire Protection Purpose (SFPP) under the provisions of the Rural Fire Act and its Regulations and does not require a Bush Fire Safety Authority (BFSA) but requires referral to the RFS under Section 4.14 of the *Environmental Planning and Assessment Act 1979*. However, the existing access includes a bridge that does not meet the requirements for a minimum width of 3.5m therefore a performance based solution is proposed as detailed in **Section 3.2.1**.

3.1 Asset Protection Zone

An APZ is a buffer zone between the hazard and buildings that is progressively managed to minimise bushfire hazard (fuel loads and reduce potential radiant heat levels, flame, ember and smoke attack) PBP (2019), in order to mitigate risk to life and asset. Where a vegetation hazard has been determined, an APZ can consist of two areas being:

1) Inner Protection Area (IPA) – The IPA extends from the edge of the development/ buildings to the OPA. The IPA aims to provide defendable space and reduce potential for direct or spontaneous ignition by providing a heavily reduced or fuel free zone.
2) Outer Protection Area (OPA) – The OPA is located adjacent to the hazard. Within the OPA any trees and shrubs should be maintained in a manner such that the vegetation is not continuous in order to reduce flame length and fire intensity. A properly managed OPA can aid in ember attack by filtering embers and slowing the fires rate of spread.

An APZ can include the following:

- lawns;

- discontinuous gardens;
- swimming pools;
- driveways;
- detached garages;
- open space / parkland;
- car parking; and
- cycleway and formed walkways.

An IPA standard will apply to the proposed development, requiring management for the life of development. The built form of the proposed Function Centre is a factor in the risk profile of the proposal, where all buildings are to be built to the NCC / NASH and have regard to AS3959. Typically, the buildings are of a non-combustible wall material (fibre cement, stone, glass (that meets the AS3959/NASH/NCC), metal and timber look cladding and masonry) and non-combustible roof structures (including metal sheet roof, guttering and flashings or similar). A copy of the plan has been provided as **Appendix A.**

Section 3.1.1 and 3.1.2 below depict acceptable solution APZ and BAL for context only as it relates to residential developments (PBP 2019 Table A1.12.2). The APZ for the Function Centre has been assessed having due regard to the PBP (2019) Chapter 8 Section 8.3.1 objectives. In addition, a package of measures provided by the development includes:

- Provision of defendable space between the hazard and development;
- Appropriate building typology;
- Access and circulation suitable for a fully loaded fire appliance to the building frontage and ability to access side and rear on foot; and
- Provision of services in accordance with PBP (2019).

3.1.1 Determining APZs

The site lies within the Port Stephens LGA and therefore is assessed under a FFDI (Forest Fire Danger Index) rating of 100. APZ have been determined with reference to Chapter 8 along with Appendix 1 (as relevant) of PBP (2019). Acceptable solution SFPP separations as called up by Public Assembly Buildings (PBP Section 8.3.11) have been calculated in **Table 3** and mapped on **Figure 4** using Table A1.12.1 and Table A1.12.2. As discussed above, the package of measures has due regard to the PBP (2019) Chapter 8 Section 8.3.1 objectives.

Table 3 APZ (PBP 2019)

Direction	Vegetation Classification	Slope Class	APZ (PBP 2019 Table A1.12.2) Residential	APZ (PBP 2019 Table A1.12.1) SFPP
North	Grassland Vegetation	0-5° Downslope (-0.2°)	12m	40m
East	Grassland Vegetation	Upslope (0.6°)	10m	36m
South	Grassland Vegetation	5-10° Downslope (-6.3°)	13m	45m
West	Grassland Vegetation	0-5° Downslope (-6°)	13m	45m

'GRACEMERE' FUNCTION CENTRE – 893 PATERSON RD, WOODVILLE

Figure 4: SFPP ASSET PROTECTION ZONE (PBP 2019)

Legend

- Site Boundary
- Lot Boundary
- SFPP Asset Protection Zone

Vegetation (*Keith 2004*)

- Development Footprint
- Grassland
- Managed Land
- Waterbody

N
W E
S

0 10 20 30 40

Metres

1:500

MJD Environmental

Aerial: Nearmap (2024) | Data: MJD Environmental, NSW Rural Fire Service, SCDW, NSW Spatial Services (2024) | Datum/Projection: GDA2020 / MGA zone 56 | Date: 2024-11-20 | Version: 1 | Z:\24065 - Woodville Function Centre | This plan should not be relied upon for critical design dimensions.

3.2 Access

In the event of a serious bushfire threat to the proposed development, it will be essential to ensure that adequate ingress/ egress is afforded in the development design with due regard to the requirements of Table 6.8b, Chapter 8.3.1 and Appendix 3 of PBP (2019).

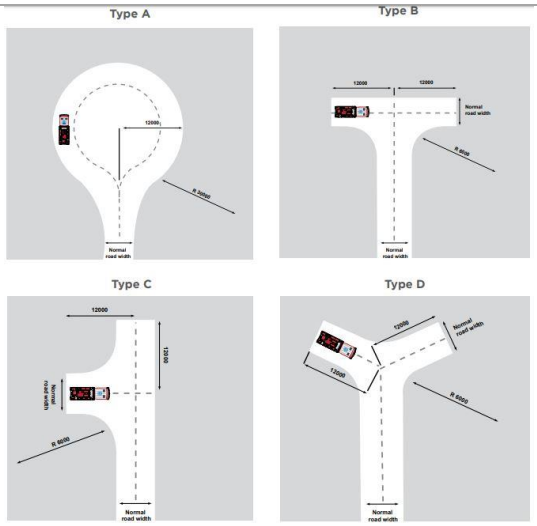
Existing access arrangements from Paterson Road will be maintained as part of the proposal. Paterson Road is a formed, sealed, two-way public road. The existing internal access road is sealed and is proposed to be extended to the Function Centre carpark for guests, staff and service vehicles. The access road can comply with the acceptable solutions observing curve radius, vertical clearance, grade and crossfall. Additionally, adequate space exists to provide compliant passing bays per PBP. Refer to **Appendix A** for Site Plan showing access.

An existing bridge is located 120m along the property access road from the Patterson Road access (Refer to Photos **Section 3.2.1**). The bridge is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); however, the bridge will require signage to clearly indicate load rating. The bridge has a trafficable width of 3.04m and is advised by the owner to be sufficient to carry truck. Acknowledging the minimum width of 3.5 meters applies to the single lane access road, a performance solution is sought for the bridge. This has been detailed in **Section 3.2.1**.

The following summarises the requirements of Table 6.8b, and Appendix 3 of PBP (2019). Deviations from the above acceptable solutions for access may be considered (depending on the situation) through a performance-based assessment.

Table 4 Acceptable solutions for access (PBP 2019)

<table>
<tr><th>Performance Criteria</th><th>Acceptable Solutions</th></tr>
<tr><td colspan="2">The intent may be achieved where:</td></tr>
<tr><td>General Requirements
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.</td><td>SFPP access roads are two-wheel drive, all-weather roads;
access is provided to all structures;
traffic management devise are constructed to not prohibit access by emergency services vehicles;
access roads must provide suitable turning areas in accordance with Appendix 3; and
one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants outside of these areas to ensure accessibility to reticulated water for fire suppression.
<table>
<tr><th>Curve radius (inside edge in metres)</th><th>Swept path (metres width)</th></tr>
<tr><td>< 40</td><td>4.0</td></tr>
<tr><td>40 - 69</td><td>3.0</td></tr>
<tr><td>70 - 100</td><td>2.7</td></tr>
<tr><td>> 100</td><td>2.5</td></tr>
</table></td></tr>
</table>

	
▪ the capacity of access roads is adequate for firefighting vehicles.	▪ the capacity of perimeter and non-perimeter road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
▪ 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 4m of the static water supply where no reticulated supply is available.
Perimeter access 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 8m 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 500m; ▪ curves of roads have a minimum inner radius of 6m; ▪ 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 4m to any overhanging obstructions, including tree branches, is provided.
Non-perimeter access roads ▪ non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	▪ minimum 5.5m 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 500m; ▪ curves of roads have a minimum inner radius of 6m; ▪ 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 4m to any overhanging obstructions, including tree branches, is provided.

3.2.1 Performance Based Solution

The existing primary access to the site contains a bridge that is required to be crossed to enter and exit the site. The bridge does not meet the minimum requirements regarding width (3.5m minimum width) as the trafficable width is 3.04m wide. The bridge has a load rating of up to 23 tonnes and currently allows for a truck and dog to cross, which the landowner advises has occurred on a number of occasions without concern. The primary access is 200m from the front of the property to the required turning bay with the bridge occurring 120m from the entry. There is currently relatively clear line of site on both approaches as per **Plate 3** and **Plate 4** below.

The proposed Performance based solution:

- Install a passing bay at the eastern approach to the bridge to facilitate ease of entry and exit over the bridge.
- Trim the Willow adjacent to the bridge to increase line of site for vehicles.
- Provide signage on both sides of the bridge indicating load rating and width.

Plate 3: Eastern approach to access bridge

Plate 4: Western approach to access bridge

3.3 Services – Water, Electricity, Gas

The site is to be developed in accordance with the PBP (2019) acceptable solutions for services listed in **Table 6**.

The proposal is able to satisfy these requirements given:

- Reticulated water supply is not available on the site. The site is greater than 1ha in area and therefore a minimum 20,000 litre static water supply is to be provided for fire fighting. The static supply is to be non-combustible, contain the correct fittings (per PBP 2019) and allow for a fire appliance to pull up, access and connect within 4m.

  Notably existing dams and swimming pool on site provide additional water.
- The Site shall be connected to the existing power supply.
- Any future gas connection will be installed in accordance with the provisions of PBP (2019).
- Any water storage tanks [where provided] are to include connection points in accordance with PBP (2019) and be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order.

Table 5 Acceptable solutions for services (Table 6.8c of PBP 2019)

Performance Criteria	Acceptable Solutions
The intent may be achieved where:	
▪ 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 litre minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.
▪ 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.
▪ Flows and pressure are appropriate.	▪ Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
▪ 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.
▪ Water supplies are adequate in areas where reticulated water is not available.	▪ A connection for firefighting purposes is located within the non-hazard side / away from the structure; a 65mm 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 200mm to allow tankers to refill direct from the tank; ▪ a hardened ground surface for truck access is supplied within 4m 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 (see 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

Performance Criteria	Acceptable Solutions
	▪ 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 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; Any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and ▪ fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels and installed in accordance with the relevant clauses of AS 2441:2005 Installation of fire hose reels.
Electricity Services ▪ Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings	▪ Where practicable, electrical transmission lines are underground. ▪ Where practicable, electrical transmission lines are underground; where overhead, electrical transmission lines are proposed as follow: o lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and o no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.
Gas services ▪ Location 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/NZ 1596:2014 – *The storage and handling of LP Gas*, 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; ▪ if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion; ▪ polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used; and ▪ above-ground gas service pipes are metal, including and up to any outlets.

3.4 Landscaping & Fuel Management

All future landscaping on the Site should be designed and managed to minimise impact of bushfire based on the principles set out in PBP (2019) being:

- Prevent flame contact / direct ignition on the building;
- Provide a defendable space for property protection;
- Reduce fire spread;
- Deflect and filter embers;
- Provide shelter from radiant heat; and
- Reduce wind speed.

In this manner, consideration should be given to species selection, planting location, flammability and size at maturity to ensure discontinuous canopy/ structure both vertically and horizontally to ensure the above principles are met.

Ongoing fuel management across the site as part of the maintenance regime should comply with the NSW RFS '*Asset protection zone standards'* and *Appendix 4 - Asset Protection Zone Requirements* of PBP (2019) which provides guidance on maintenance activities to assist in achieving the landscape principles.

3.5 Emergency Management

Any fire within the site would be attended in the first instance by the Bolwarra Heights Fire Brigade, Bolwarra.

To assist emergency response from the NSW RFS and/or NSW Fire and Rescue, site access is to comply with the provisions set out in PBP (2019) and all tanks including connection points be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order.

A Bush Fire Emergency Management and Evacuation Plan shall be prepared for the Site as set out in Table 6.8d of PBP 2019 and summarised in **Table 7** below. *Emergency Management*

A copy of the Bushfire Emergency Management Plan is to be provided to the Local Emergency Management Committee (LEMC) prior to occupation of the development. The LEMC is responsible for the prevention and preparation for emergencies and disasters. The responsibilities include the development of emergency management plans, risk management and education programs. An LEMC comprises of local representatives from NSW RFS, NSW Police, SES, Fire and Rescue NSW and other related agencies.

Table 6 Acceptable solutions for Emergency Management (PBP 2019)

Performance Criteria	Acceptable Solutions
The intent may be achieved where:	
a Bush Fire Emergency Management and Evacuation Plan is prepared.	▪ a Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, and AS 3745:2010 *Planning for emergencies in facilities* ▪ the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants. Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.
appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan.	▪ an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual; and ▪ detailed plans of all emergency assembly areas including on site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted.

3.6 Appraisal against 8.3.1 objectives

The broad objectives are listed with comment on how they are achieved in **Table 8** below.

Table 7 Appraisal against 8.3.1 Objectives

Objective (PBP 2019)	Comment
To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation	▪ Refer to Section 3.2. The proposal shall provide and maintain appropriate ingress/egress to the site. Specifically, direct access to the Site occurs from Paterson Road being a two way public road and is a formed, sealed road within the property for guests, service and delivery. ▪ A performance-based solution is proposed to satisfy access requirements as detailed in **Section 3.2.1**
To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development	▪ In all cases future occupants can exit and travel away from the bushfire hazard located to the west by travelling east via the access road as required. ▪ There is no mapped bushfire hazard occurring in the landscape to the immediate north and east. Occupants can safely mobilise across this landscape within the site away from the grassland hazard. ▪ In addition to the provision of a combination of bushfire mitigation measures including defendable space, management within the development area to an IPA standard (as above), access, provision of water for firefighting purposes via use of hydrants situated at the site access points per PBP (2019), the nature of the commercial buildings construction materials used on external facades and roofing are considered to provide increased bushfire resilience outlined in AS3959-2018/NCC/NASH. ▪ Specifically, the buildings are of a non-combustible wall materials (fibre cement, stone, glass (that meets the AS3959/NASH/NCC), metal and timber look cladding and masonry) and non-combustible roof structures (including metal sheet roof, guttering and flashings or similar). ▪ A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, and AS 3745:2010 *Planning for emergencies in facilities.* **This objective is satisfied.**
To 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	Refer to Section 3.3. The proposal can satisfy this requirement given: The proposal is able to satisfy these requirements given: ▪ Reticulated water supply shall be extended and augmented within the site, where this does not occur a static water supply to include dedicated fire fighting supply will be supplied. ▪ The Site shall be connected to the existing power supply. ▪ Any future gas connection will be installed in accordance with the provisions of PBP (2019). ▪ Any water storage tanks [where provided] are to include connection points in accordance with PBP (2019) and be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order. **This objective is satisfied.**
Provide for the storage of hazardous materials away from the hazard wherever possible	▪ Power and Gas connections will be in accordance with PBP (2019). **This objective is satisfied.**

4 Compliance

In order to verify compliance of the proposed development with the relevant Bush Fire Protection Measures (BPM) as outlined in PBP (2019), **Table 8** is provided as a reference. This verification adhered to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapter 6 of PBP (2019).

Table 8 Proposal Compliance against performance criteria and acceptable solutions

Performance Criteria	Acceptable Solutions	Compliance
Asset Protection Zones		
The intent may be achieved where:		
▪ Radiant heat levels greater than 10kW/m^2 (calculated at 1200K) 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.	APZ is provided and is in accordance with Table … **Complies with Acceptable Solution.**
▪ APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	▪ APZ are located on lands with a slope less than 18 degrees.	APZs are wholly within the boundaries of the development site and on lands with a slope less than 18 degrees. **Complies with Acceptable Solution.**
▪ 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 of this document, and is wholly within the boundaries of the development site; ▪ APZ are wholly within the boundaries of the development site; and ▪ other structures located within the APZ need to be located further than 6m from the refuge building	**N/A.**
Landscaping		
The intent may be achieved where		
▪ 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; and ▪ Fencing is constructed in accordance with section 7.6.	**Complies with Acceptable Solution**
Construction Standards		
The intent may be achieved where:		

Performance Criteria	Acceptable Solutions	Compliance
▪ the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact	▪ a construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	**Complies with Acceptable Solution**
Access		
The intent may be achieved where:		
▪ 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; 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.	Existing access arrangements from Paterson Road will be maintained as part of the proposal. Property access roads are two-wheel drive, all-weather roads. However, the existing property access road and bridge is less than 3.5 metres in width (approximately 3.04m). Nonetheless, property access is a gravel road free of vertical obstructions and kerbs, with grassland vegetation along the interface. Access must comply with RFS requirements for access listed in Appendix 3 of PBP 2019 in terms of surface, vertical clearance, horizontal width, grades and minimum curve radius. A performance-based solution is proposed to satisfy access requirements as detailed in **Section 3.2.1** **Does not comply with Acceptable Solution. Performance Solution provided.**
▪ 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.	The capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes). The weight capacity of the bridge located within the site is to be sufficient to carry a fully loaded firefighting vehicle (up to 23 tonnes); the bridge is to have its load capacity clearly indicated. **Complies with Acceptable Solution.**
▪ 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 provided for Category 1 fire appliance to within 4m of the static water supply. **Complies with Acceptable Solution.**

Performance Criteria	Acceptable Solutions	Compliance
	▪ there is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available.	
Perimeter Roads		
The intent may be achieved where:		
▪ 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 8m 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 500m; ▪ curves of roads have a minimum inner radius of 6m; ▪ 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 4m to any overhanging obstructions, including tree branches, is provided.	**N/A**
Non-Perimeter Roads		
The intent may be achieved where:		
▪ non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	▪ minimum 5.5m 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 500m; ▪ curves of roads have a minimum inner radius of 6m; ▪ the maximum grade road is 15 degrees and average grade of not more than 10 degrees;	**N/A**

Performance Criteria	Acceptable Solutions	Compliance
	▪ the road crossfall does not exceed 3 degrees; and ▪ a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	
Services – Water, Electricity and Gas		
The intent may be achieved where:		
▪ 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.	The property is serviced via a static water supply and therefore a minimum 10, 000 litre static water supply is required per building. In addition to the required static supply, a further supply of static water is provided in the form of a property dam and a swimming pool **Complies with Acceptable Solution**
Water supplies		
The intent may be achieved where:		
▪ an adequate water supply is provided for firefighting purposes.	▪ reticulated water is to be provided to the development, where available; and ▪ a minimum 10,000 litres minimum static water supply is provided where no reticulated water is available.	Reticulated water is not available to the site, therefore a static water supply (10,000L per occupied building) is to be provided. **Complies with Acceptable Solution.**
▪ water supplies are located at regular intervals; and ▪ 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.	Reticulated water is not available to the site, therefore a static water supply (10,000L per occupied building) is to be provided. **Complies with Acceptable Solution.**
▪ flows and pressure are appropriate.	▪ fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	Reticulated water is not available to the site, therefore a static water supply (10,000L per occupied building) is to be provided. **Complies with Acceptable Solution.**

Performance Criteria	Acceptable Solutions	Compliance
▪ 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.	Above ground water services are to be metal, including and up to any taps. **Complies with Acceptable Solution.**
▪ water supplies are adequate in areas where reticulated water is not available.	▪ a connection for firefighting purposes is located within the IPA or non hazard side and away from the structure; a 65mm 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 200mm to allow tankers to refill direct from the tank; ▪ a hardened ground surface for truck access is supplied within 4m; ▪ above-ground tanks are manufactured from concrete or metal; ▪ raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959); ▪ unobstructed access can be provided at all times; ▪ underground tanks are clearly marked; ▪ tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; ▪ all exposed water pipes external to the building are metal, including any fittings; ▪ where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and ▪ fire hose reels are constructed in accordance with AS/NZS 1221:1997 and installed in accordance with the relevant clauses of AS 2441:2005	Above ground water services are to be provided in accordance with Table 5.3d, within the IPA, on the non-hazard side of the function centre and must comply with the relevant requirements as listed. **Complies with Acceptable Solution.**

Performance Criteria	Acceptable Solutions	Compliance
Electricity Services		
▪ location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings	▪ where practicable, electrical transmission lines are underground; ▪ where overhead electrical transmission lines are proposed: ○ 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 ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	Electrical services to the site will comply with the relevant requirements as listed. **Complies with Acceptable Solution.**
Gas service		
▪ 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 10m and shielded on the hazard side; ▪ connections to and from gas cylinders are metal; ▪ if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion; ▪ polymer-sheathed flexible gas supply lines are not used; and ▪ above-ground gas service pipes are metal, including and up to any outlets.	Gas services to the site will comply with the relevant requirements as listed. **Complies with Acceptable Solution.**

5 Conclusion & Recommendations

MJD Environmental has been engaged by Catherine Coren to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for the proposed construction of the 'Gracemere' Function Centre at Lot 10 DP 1035397, 893 Paterson Road, Woodville 2321.

The assessment has considered and assessed the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with Planning for Bush Fire Protection 2019), as adopted through the Environmental Planning & Assessment Regulation 2021. Reference is made to PBP Addendum (November 2022) where applicable.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adhered to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapter 8 of PBP (2019).As the proposal is for the construction of a function centre, the development is likely to trigger the provisions of Section 8.3.11 of PBP - *Public assembly buildings* due to the proposed floor space area being greater than 500m^2. The use is not defined as a Special Fire Protection Purpose (SFPP) under the provisions of the Rural Fire Act and its regulation and does not require a Bush Fire Safety Authority (BFSA) but requires referral to the RFS under Section 4.14 of the *Environmental Planning and Assessment Act 1979*.

The proposed development is able to meet the performance criteria for acceptable solutions for commercial / industrial development, giving due regard to the requirements of Chapter 8 of PBP 2019, specifically section 8.3.1 and 8.3.11. A suitable package of BPMs has been developed that is commensurate with the assessed level of risk to the development.

This assessment has been made based on the bushfire hazards in and round the Site at the time of report production.

The assessment found that hazard vegetation types occur within 140m of the Site. The primary risk is from the Grassland vegetation south of the proposal. The slope under the hazard has been assessed as 5-10° downslope. As the site is within the Port Stephens LGA it has been assessed under a Forest Fire Danger Index (FFDI) rating of 100.

In summary, the following key recommendations have been generated to enable the proposal to comply with PBP (2019).

Asset Protection Zones

- An APZ of 45m is to be established to the north, south and west. A 36m APZ is to be established to the east.
- The entire development site will be managed as an IPA for the life of development.
- A Bush Fire Emergency Management and Evacuation Plan shall be prepared for the site as set out in Table 6.8d of PBP 2019 and consistent with the NSW RFS document *A Guide to preparing a Bush Fire Emergency Management and Evacuation Plan*. A copy of the Bushfire Emergency Management and Evacuation Plan is to be provided to the Local Emergency Management Committee prior to occupation of the development.

Access

- Existing access arrangements from Paterson Road will be maintained as part of the proposal. Access must comply with RFS requirements for access listed in Appendix 3 of PBP 2019 in terms of surface, vertical clearance, horizontal width, grades and minimum curve radius.

- The access bridge is less than the required 3.5m, a performance based solution including the addition of a passing bay on the eastern side of the bridge is proposed as detailed in **Section 3.2.1** and outlined below. The proposed Performance based solution:
    - Install a passing bay at the eastern approach to the bridge to facilitate ease of entry and exit over the bridge.
    - Trim the Willow adjacent to the bridge to increase line of site for vehicles.
    - Provide signage on both sides of the bridge indicating load rating and width.
- The weight capacity of the bridge within the site is sufficient to carry a fully loaded firefighting vehicle (up to 23 tonnes); the bridge is to have its load capacity clearly indicated.

Services – Water supply, Gas and Electricity

- Reticulated water supply is not available on the site. The site is greater than 1ha in area and therefore a minimum 20,000 litre static water supply is to be provided for fire fighting. The static supply is to be non-combustible, contain the correct fittings (per PBP 2019) and allow for a fire appliance to pull up, access and connect within 4m. The Site shall be connected to the existing power supply.
- Any future gas connection will be installed in accordance with the provisions of PBP (2019).
- Any water storage tanks [where provided] are to include connection points in accordance with PBP (2019) and be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order.

Landscaping

- Careful consideration of future site landscaping and ongoing fuel management must occur to minimise the potential impact of bushfire on the Site.
- Ongoing fuel management across the Site as part of the maintenance regime should give due consideration to Appendix 4 Asset Protection Zone Requirements of PBP (2019) which provides guidance on maintenance activities to assist in achieving the landscape principles.

Emergency Management

- A Bush Fire Emergency Management and Evacuation Plan shall be prepared for the site as set in Table 6.8d of PBP 2019 and consistent with the NSW RFS document. A Guide to Preparing a Bush Fire Emergency Management and Evacuation Plan. A copy of the Bushfire Emergency Management Plan is to be provided to the Local Emergency Management Committee (LMEC) prior to occupation of the development.

6 Bibliography

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Appendix A Plan of Proposal