

Bush Fire Assessment Report

Proposed:
Subdivision

At:
**25-39 Wyndella Road
and 898 New England
Highway, Lochinvar**

Reference Number: 230176

Prepared For:
Lochinvar Developments Pty Ltd

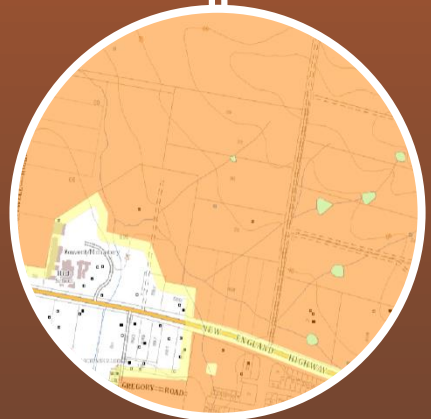
12th April 2023



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Version Control				
Version	Date	Author	Reviewed by	Details
1	20/03/2023	Andrew Muirhead	Ian Tyerman	Final Report
1	12/04/2023	Ian Tyerman		Updated Report

List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2018 as amended
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Maitland City Council
DA	Development Application
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2019</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

1.0 Introduction

Building Code and Bushfire Hazard Solutions P/L has been commissioned to prepare an independent Bushfire Assessment Report to accompany a Development Application seeking approval for a two hundred and sixty-two (262) lot subdivision, two parks and associated infrastructure at 25-39 Wyndella Road and 898 New England Highway, Lochinvar (The site).

The site will be developed over ten (10) stages with this assessment considering the overall site.

The subject site comprises of eight existing allotments that are legally identified as Lot 2-6 and 9 DP 747391 and Lot 12-13 DP 1219648. The land is zoned R1: General Residential and is located within Maitland City Council's local government area. The site is identified as being located within the 'Lochinvar Structure Plan – October 2007'.

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service. Maitland City Council's Bushfire Prone Land Map identifies the subject property as marginally containing Category 3 Vegetation and the Vegetation Buffer, therefore the subject site is considered 'bushfire prone'.

The development proposal seeks to subdivide eight existing allotments in to two hundred and sixty two (262) residential lots, two parks, a Riparian Corridor and associated infrastructure. The development is captured under section 100B of the *Rural Fires Act 1997* and must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service.

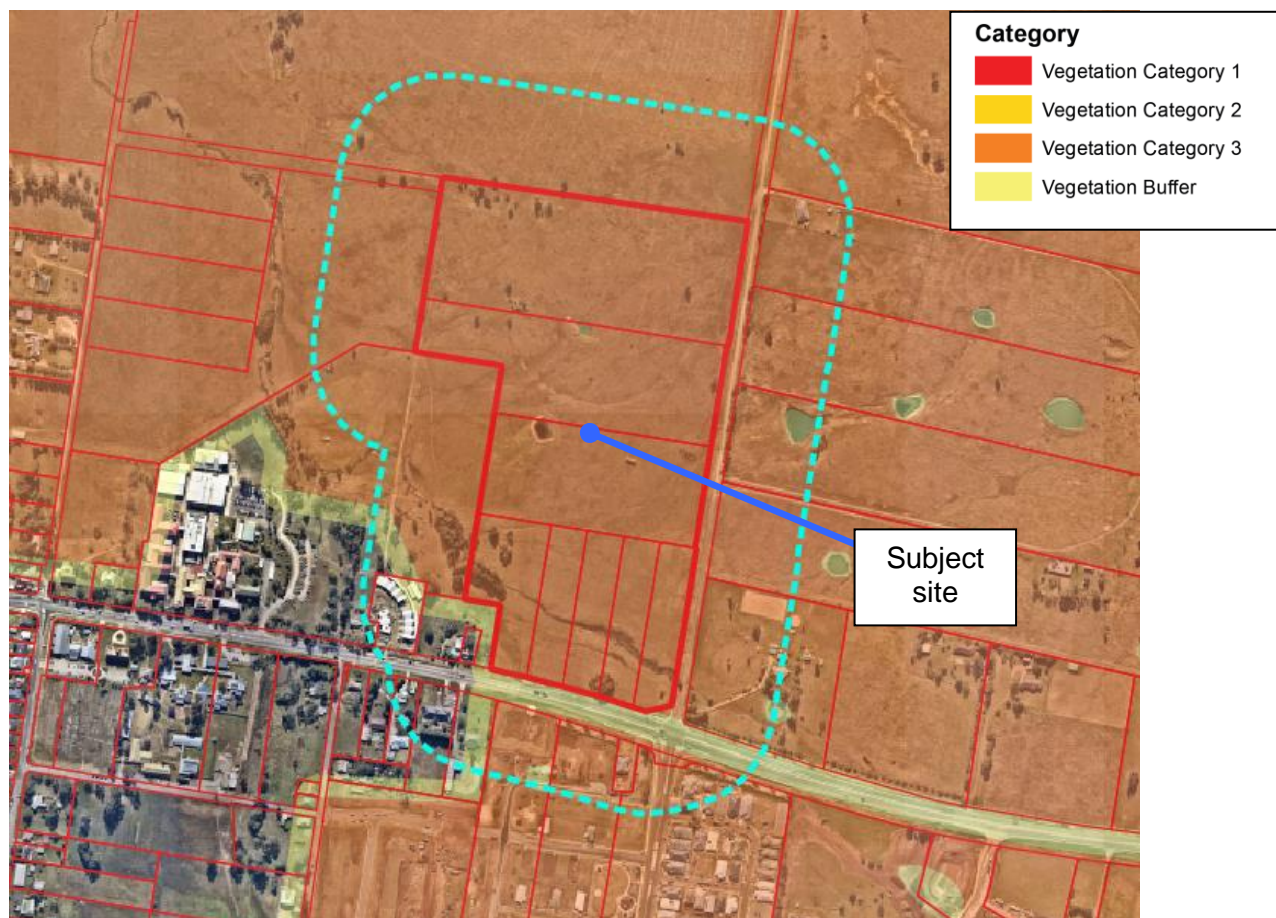


Figure 01: Extract from Maitland City Council's Bushfire Prone Land Map

2.0 Legislative Requirements

The site is subject to the following legislative provisions as it relates to bushfire planning and protection:

- *Environmental Planning & Assessment Act 1979*
- *Rural Fires Act 1997*
- *Rural Fires Regulation 2022*
- *Planning for Bush Fire Protection*

2.1 *Rural Fires Act 1997*

The subdivision of bushfire prone land which can be lawfully used for residential purposes is captured by section 100b of the *Rural Fires Act 1997*.

The development must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service (RFS).

2.2 *Environmental Planning & Assessment Act 1979*

Section 10.3 requires councils, where a Bush Fire Risk Management Plan applies, to record a bush fire prone land map after consulting with the Commissioner of the NSW Rural Fire Service (NSW RFS). The Commissioner will designate lands to be bush fire prone within an area and, when satisfied that the lands have been recorded on a map, certify the map as the Bush Fire Prone Land map.

As the proposal is subject to s.100B of the *Rural Fires Act 1997*, it is integrated development in accordance with s.4.46. This means that the proposed development requires authorization in respect of bush fire safety because of the subdivision of the land that is proposed to be lawfully used for residential purposes.

2.3 *Rural Fires Regulation 2022*

Section 45 sets out the relevant matters that must be considered when assessing a bushfire safety authority and includes an assessment of the proposal against Planning for Bush Fire Protection.

2.4 *Planning for Bush Fire Protection*

As the subject site is identified as being bushfire prone and the proposed development involves a residential subdivision the proposal is subject to the application of the relevant specifications and requirements of Planning for Bush Fire Protection.

The proposal is required to demonstrate that it achieves compliance with the following elements of PBP:

- Chapter 1 - Aim and Objectives
- Chapter 5 – Residential and Rural Residential Subdivisions

3.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide the Rural Fire Service and Council with an independent bushfire assessment together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject Development Application.

4.0 Scope of this Report

The scope of this report is limited to providing a bushfire assessment and recommendations for the subject property. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject property.

5.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2019*

	Northwest	North	East	South	West
Vegetation Structure	Grassland	Grassland	Grassland	Forested Wetlands	Grassland
Slope	0 - 5 degrees down	0 degrees and up	0 degrees and up	0 - 5 degrees down	0 - 5 degrees down
Required Asset Protection Zone	12 metres	10 metres	10 metres	12 metres	12 metres
Proposed Asset Protection Zone	>12 metres	>15 metres	20 metres	>12 metres	>15 metres
Bushfire Attack Level	BAL 29	BAL 19	BAL 19	BAL 29	BAL 29

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure (s5 PBP)	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03
Building Construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03
Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03

Asset Protection Zones

The available Asset Protection Zones (APZs) achieve and in most instances exceed the minimum requirements under table A1.12.2 PBP for the proposed building envelopes.

The available APZs are located within the subject site and include proposed roads and existing public roads.

Recommendations regarding ongoing management of the land within the overall site and within 50 metres of the proposed Stages will be included herein to ensure no hazard regenerates before the subsequent stages are developed.

Construction Level

No new dwellings are proposed as part of this DA. Those new allotments that are mapped as Bushfire Prone Land following this subdivision may require further assessment under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or s4.14 of the *Environmental Planning and Assessment Act 1997* at the time of any future application for the construction of any new dwellings on these newly created allotments.

6.0 Aerial view of the subject site



Figure 02: Aerial view of the subject area C/- Nearmap – June 2022
(140m assessment area blue line)

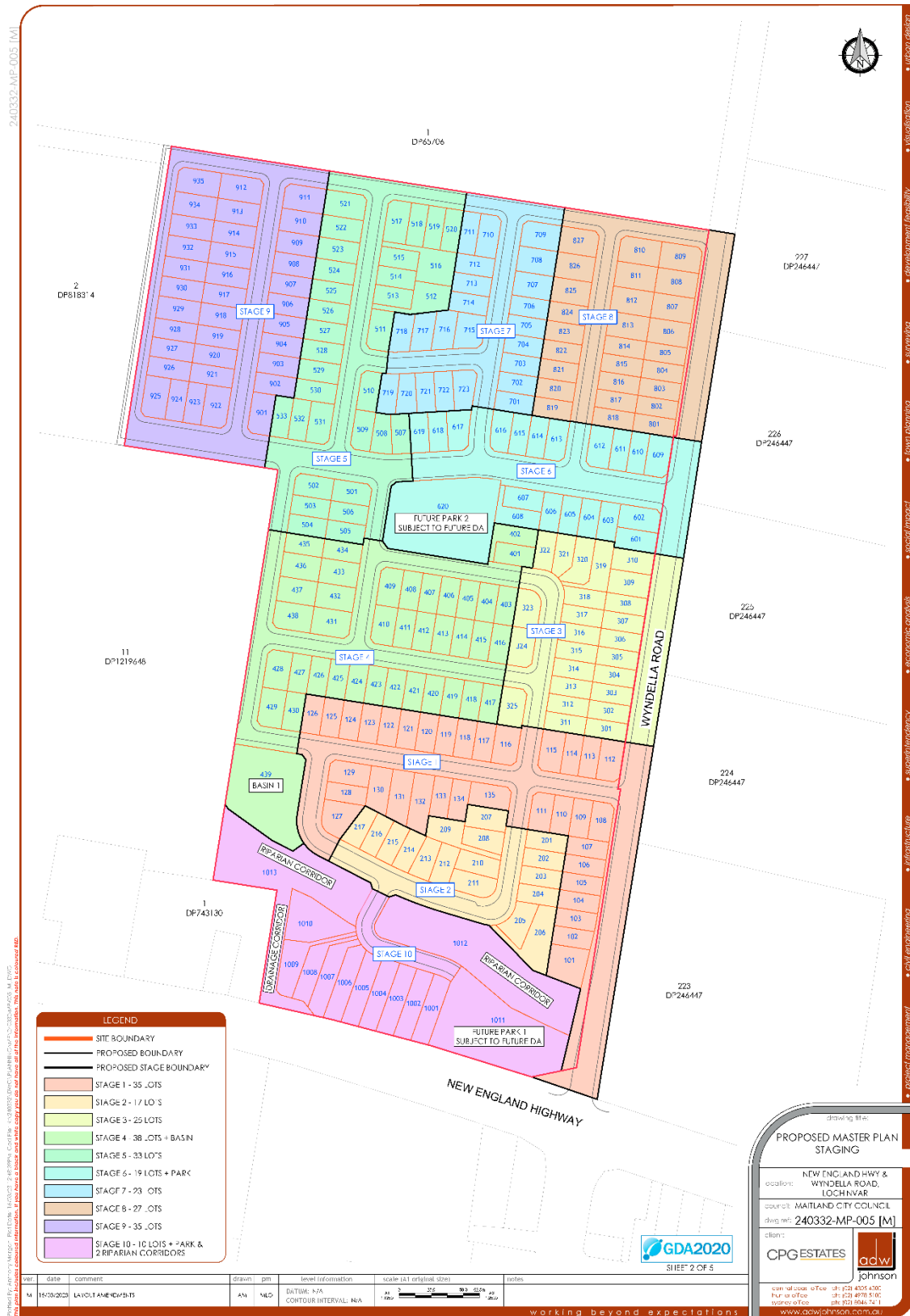


Figure 03: Master Plan Staging of Proposed Subdivision

7.0 Site Assessment

A representative of Building Code & Bushfire Hazard Solutions completed a site inspection of the subject site and surrounding area on 24 August 2022.

In addition the following external data sources have been relied upon for the site assessment:

- Aerial imagery of the subject area (NSW Spatial Services & Nearmap);
- 1 metre contour mapping of the subject area (Elevation and Depth Foundation Spatial Data – Geoscience Australia)
- NSW Planning Portal Spatial Viewer
- Vegetation mapping (NSW Vegetation)
- NSW Bush Fire Prone Land (NSW Rural Fire Service)

7.01 Location

The subject site comprises of eight (8) existing allotments that are legally identified as Lot 2-6 and 9 DP 747391 and Lot 12-13 DP 1219648 and known as 25-39 Wyndella Road and 898 New England Highway, Lochinvar.

The land is zoned R1: General Residential and is located within Maitland City Council local government area. The site is identified as being located within the '*Lochinvar Structure Plan – October 2007*'.

The subject site has street frontage to New England Highway to the south, Wyndella Road to the east and abuts neighbouring private allotments to the north and west.

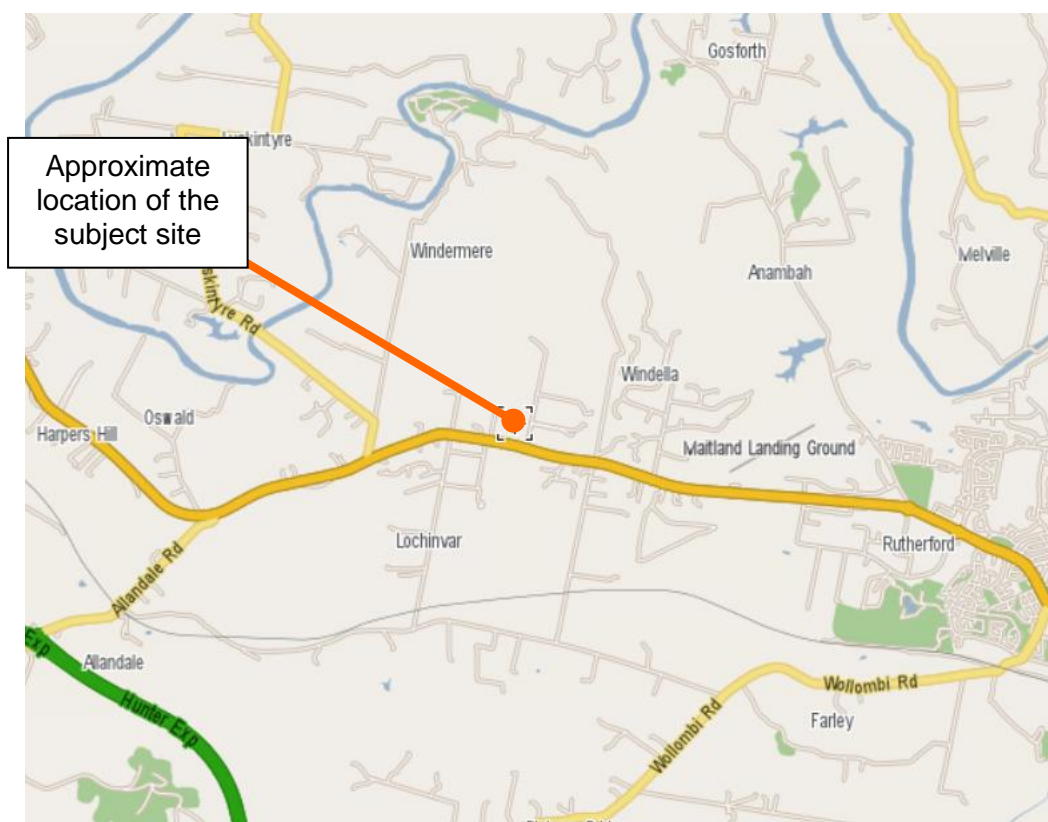


Figure 04: Extract from street-directory.com.au

7.02 Vegetation

In accordance with Appendix 1 'Site Assessment Methodology' of PBP we have undertaken an assessment of all vegetation formations within 140 metres of the development for each aspect as per Keith (2004).

As part of this bushfire assessment process consideration has been given to all existing vegetation within neighbouring allotments.

In this regard the vegetation identified as posing a potential hazard is located within neighbouring properties to the north, east, south and west and within the subject property to the south.

There is a small unnamed watercourse which bisects the southern portion of the property. The vegetation within this area currently consists of grasslands.

This area is identified on the '*Landscape documentation subdivision*' by Terras Landscape Architects Dated: 2/2/23 to be re-vegetated as a '*Forested Wetland*' and be the subject of a Vegetation Management Plan (VMP). The total width of this riparian area will be less than <50 metres, (generally <40m wide). In recognition of the revegetation of the southern watercourse, for the purpose of assessment under 'Planning for Bush Fire Protection' the vegetation posing a hazard to the south has been determined to be Forested Wetlands (*BioNet Vegetation Classification - Community Profile Report* (See attachment 02, page 32)).

The vegetation to the north, east and west has been the subject of historic grazing although there appeared to be minimal stock present during our inspection, therefore as a conservative assessment for the purpose of assessment under 'Planning for Bush Fire Protection' the vegetation posing a hazard to the north, east and west has been determined to be Grassland.

Existing dwellings (House paddocks) and horse paddocks are located to the southeast, southwest and northeast of the site, these dwellings and horse paddocks are currently managed and are considered not to pose a fire threat in accordance with sA1.10 Low Threat Vegetation – Exclusions of PBP.

Recommendations regarding ongoing management of the land within the overall site and within 50 metres of the proposed Stages will be included herein to ensure no hazard regenerates before the subsequent stages are developed



Photograph 01: View of the vegetation to the south along the creek



Photograph 02: View southwest of the vegetation within the neighbouring allotment to the west



Photograph 03: View northwest of the vegetation within the neighbouring allotments to the west



Photograph 04: View northeast of the vegetation within the neighbouring allotment to the northeast



Photograph 05: View southeast of the vegetation within the neighbouring allotment to the east

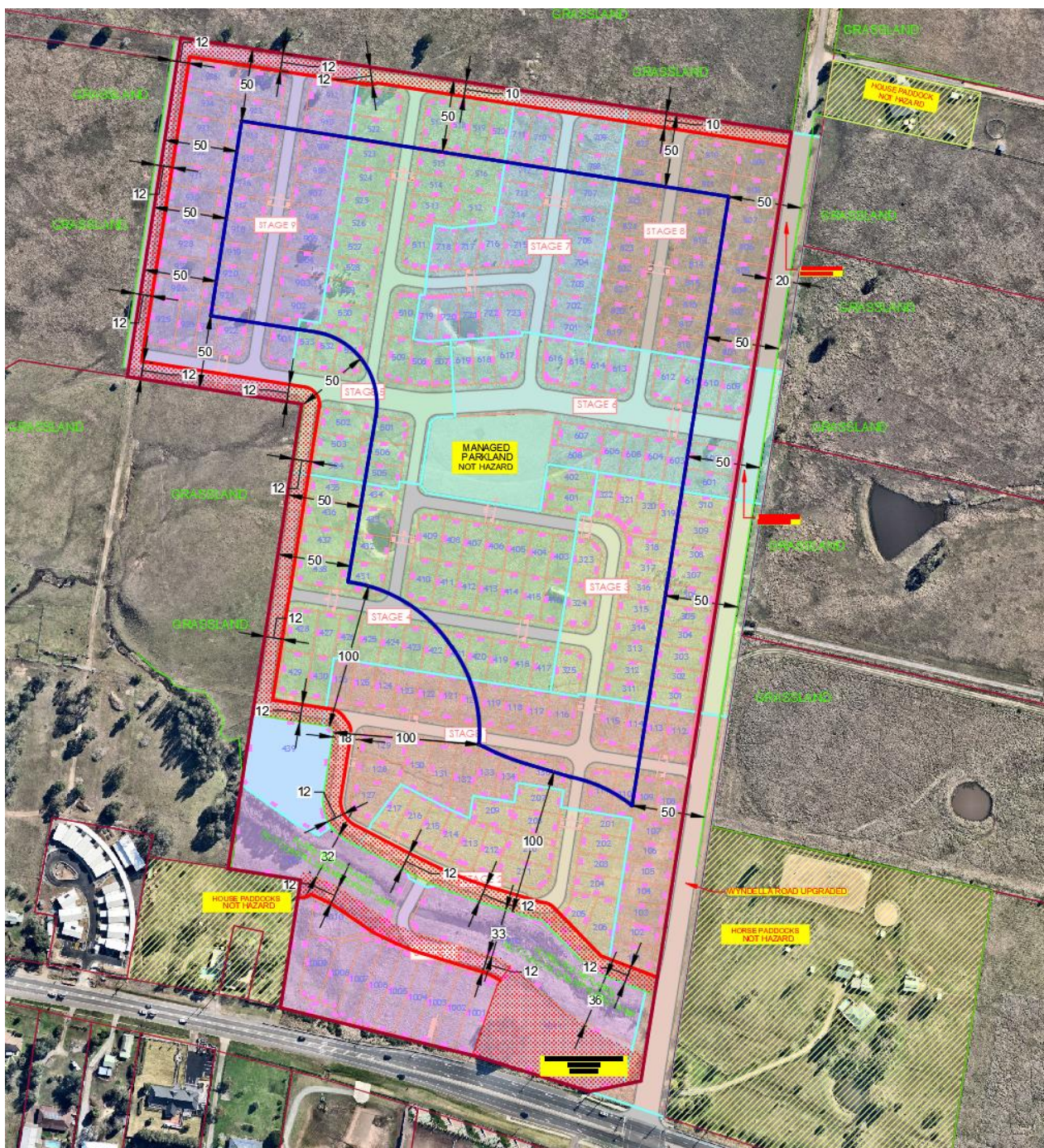


Figure 05: Extract from Site Overlay showing Vegetation extents and structure (Blue line 50m & 100m BAL Low line, Red Line minimum APZ) See attachment 01, page 32

7.03 Slope and Topography

The slope of the land under the classified vegetation has a direct influence on the forward rate of spread, fire intensity and radiant heat exposure. The effective slope is considered to be the slope under the classified vegetation which will most significantly influence bushfire behaviour toward the development site.

In accordance with A1.4 'Determine slope' of PBP the slope assessment is to be derived from the most detailed contour data available.

The slope that would most significantly influence bushfire behaviour was determined onsite using an inclinometer and verified from topographic mapping to be:

- 0 - 5 degrees down slope within the hazard to the south, southwest and west
- 0 degrees and up slope within the hazard to the north and east

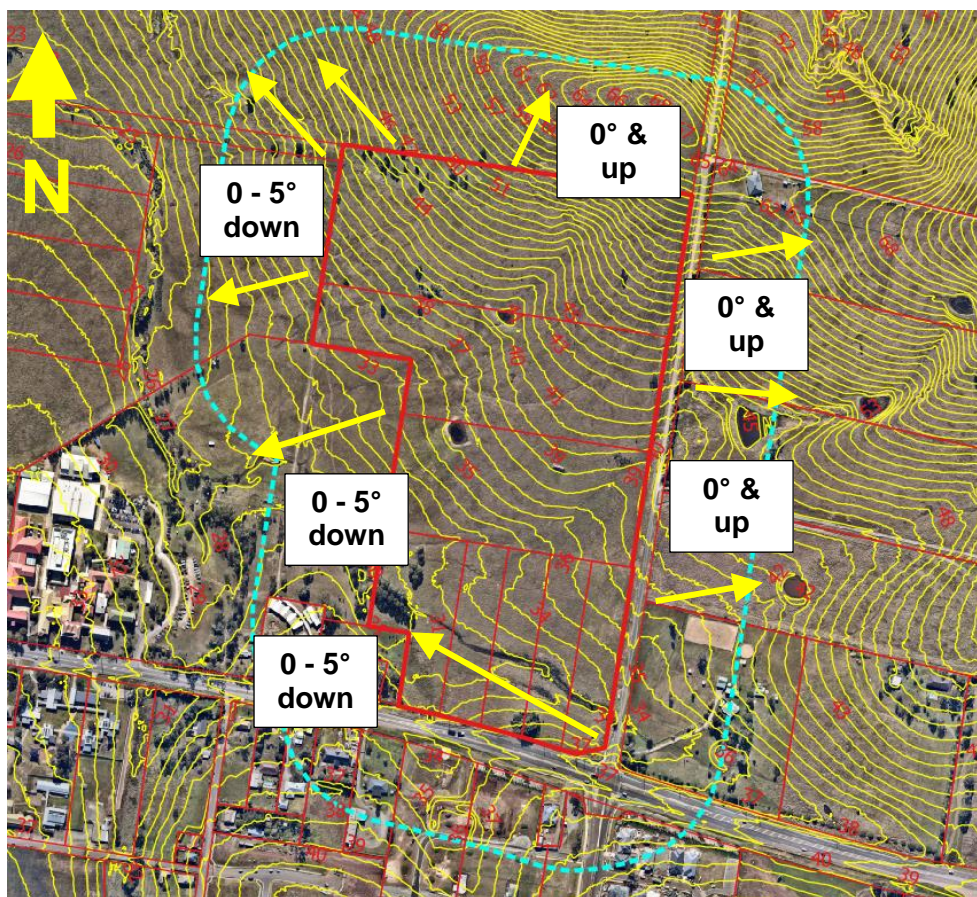


Figure 06: Extract from ELVIS – Geoscience Australia (1m contours)
Subject site (Thick red outline) & 140m assessment area (Blue line)

7.04 Fire Weather

All development which attracts an Asset Protection Zone under PBP requires the identification of the relevant Fire Danger Index (FDI). The FDI required to be used for development assessment purposes is based on the local government boundaries, being Maitland City Council in this instance.

In accordance with the NSW Rural Fire Service publication 'NSW Local Government Areas FDI' (2017) Maitland City Council forms part of the Greater Hunter Region Fire Weather District and attracts an FFDI of 100. As Grassland hazards are identified in this assessment a Grassland Fire Danger Index of 130 has been used in accordance with Table 5.1.4a of PBP.

8.0 Bushfire Protection Measures

8.01 Planning for Bush Fire Protection - 2019

Planning for Bush Fire Protection – 2019 (PBP) is applicable to development located on land determined as being 'bushfire prone' in accordance with the local Bushfire Prone Land Map.

Bushfire prone land are defined as those areas;

- *containing or within 100m of Category 1 Vegetation; or*
- *containing or within 30m of Category 2 or 3 Vegetation.*

Maitland City Council's Bushfire Prone Land Map identifies the subject property as containing Category 3 Vegetation and the Vegetation Buffer therefore PBP must apply in this instance.

The application of Planning for Bush Fire Protection requires satisfactory demonstration of the aim and objectives and the following bushfire protection measures (BPMs):

- Asset Protection Zones
- Building construction, siting & design
- Access arrangements
- Water supply & utilities
- Landscaping

The development proposal relates to the subdivision of eight existing allotments. The subdivision is captured under section 100B of the *Rural Fires Act 1997*.

8.02 Specific Objectives

The following table lists the specific objectives for residential and rural residential subdivisions with a dwelling entitlement in accordance with section 5.2 of PBP and our comments of the proposal compliance or otherwise.

Specific Objective	Comment
<i>minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);</i>	<p>The subdivision design is in accordance with the current zoning. The southern hazard bisects the property and allows for perimeter roads around this hazard.</p> <p>The proposed subdivision design does not expose the allotments to an increased bushfire hazard and does not result in an hourglass shape.</p>
<i>minimise vegetated corridors that permit the passage of bush fire towards buildings;</i>	<p>There is a vegetation corridor (Riparian) within the southern portion of the site along an existing creek. This Riparian zone does not currently exist and will be re-instated to a <50 metre width. Although the fire risk from this re-vegetated area is considered to be very low, the subdivision has been designed to minimise the fire threat from this area.</p>

Specific Objective	Comment
<i>provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;</i>	The proposed building envelopes are not located on a ridge-top.
<i>ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;</i>	<p>The minimum required Asset Protection Zones (APZs) were determined from Table A1.12.2 of PBP.</p> <p>All allotments achieve the minimum required APZs with the majority of the proposed allotments found to provide a building envelope which exceed the minimum required APZs.</p>
<i>ensure the ongoing maintenance of APZs;</i>	<p>The Asset Protection Zones will be within the subject property and include existing and proposed public roads.</p> <p>It is expected that the property management within the proposed allotments will be enforced by way of a condition of consent, similar to recommendation 1 of this report, as part of this development process.</p> <p>This will ensure ongoing management of the APZs within the site.</p>
<i>provide adequate access from all properties to the wider road network for residents and emergency services;</i>	<p>The existing road network provides adequate access and evacuation for occupants and emergency services.</p> <p>The existing road network provides occupants egress away from the bushfire hazard. A secondary emergency access is proposed from Wyndella Road along the southern portion of the revegetated watercourse providing separate emergency perimeter access to Stage 10.</p>
<i>provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression;</i>	Attending fire services will have comprehensive access to the identified hazards via existing and the new road network for hazard reduction and / or fire suppression activities.
<i>ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.</i>	Hydrants will be installed in accordance with AS2419.1 as part of this proposal. The proposed allotments will be within 90 metres of an existing hydrant and therefore the existing water supply is adequate in consideration of section 5.3.3 of PBP.

8.03 Bushfire Protection Measures

Section 5.3 'Bush fire protection measures' of PBP outlines the specific Bushfire Protection Measures (BPMs) applicable to residential and rural residential subdivisions, including APZs, Access and Services.

The following section addresses each BPM and the proposals compliance or otherwise.

Asset Protection Zones & Landscaping

An Asset Protection Zone (APZ) is an area between the development (in this instance building envelopes) and the identified bushfire hazards. It is also an area where the fuels are maintained to a minimum to prevent the spread of fire between a hazard and an asset.

The width of the APZs are determined by the vegetation structure of the identified hazard, Fire Danger Index, effective slope and the type of development (residential development or Special Fire Protection Purpose).

APZs for new residential subdivisions are determined from Table A1.12.2 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 29kW/m² at the closest point of the indicative building envelope.

In this instance the minimum required APZ was determined from Table A1.12.2 of PBP and are shown in the compliance tables in section 4 of this report.

The proposed allotments can provide building envelopes with Asset Protection Zones achieving or exceeding the minimum requirements under PBP.

The available APZs consist of the land within the subject site (including proposed roads) and existing managed grounds within neighbouring allotments.

Temporary APZs will be provided over the land within future stages to alleviate unnecessary construction provisions on future dwellings. Recommendations regarding ongoing management of the land outside that shown within Figure 05 (Attachment 01 page 32) and within 50 metres of each proposed stage release will be included herein to ensure no hazard regenerates before the subsequent stages are developed.

Consideration has been given to whether it is considered appropriate to have the aforementioned management/ temporary APZs within the future stages formalised by way of a positive covenant under section 88b of the *Conveyancing Act 1919*.

The subject site forms part of the '*Lochinvar Structure Plan – October 2007*' and as such it is considered reasonable to expect an accelerated development timeframe for the future stages. In considering the time required to have a positive covenant registered and then subsequently dissolved following the future stages it is not considered reasonable to use a positive covenant as the mechanism to ensure ongoing management of the temporary APZs.

The residual land is and will continue to be under the control of Lochinvar Developments Pty Ltd and with the resources available to this company it is considered that a development consent condition would be an ample mechanism to ensure the ongoing management of the temporary APZs until such time that the land is developed.

The Asset Protection Zones will be maintained in accordance with an Inner Protection Area as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019*.

Access

The subject property will be accessed from Wyndella Road to the east and all proposed allotments will have access to the proposed road networks.

Persons seeking to egress any future dwellings will be able to do so via existing and proposed road infrastructure.

The proposed perimeter roads will comply with the Perimeter road requirements detailed in section 5.3.2 of PBP and will provide a minimum 8 metre wide carriageway, consistent with the Acceptable Solutions for Perimeter Roads as detailed in Table 5.3b of PBP.

The proposed internal roads will comply with the non-perimeter road requirements detailed in section 5.3.2 of PBP.

The proposed internal roads will provide a minimum 5.5 metre carriageway, consistent with the Acceptable Solutions for Non-Perimeter Roads as detailed in Table 5.3b of PBP.

Occupants of the stage 1 will have access available to Wyndella Road via the Stage 1 road network.

In addition, as future stages progress an additional egress route to the east will become available.

It is noted that several sections of the proposed roads are located >100 metres from any bushfire hazard and >50 metres from any Grassland hazard (refer to Figure 07 overleaf and attachment 01, page 33) and therefore not on land considered 'bushfire prone'.

One of the general principles underlying Planning for Bush Fire Protection is that protection measures are governed by the degree of threat posed to a development.

As the proposed road carriageways achieve or exceed the minimum carriageway requirements for Public Roads as detailed in section 5.3.2 of PBP it is requested that the sections of road which are outside the 100metre buffer as shown on Figure 07 overleaf (attachment 01, page 32) be excluded from the parking restrictions described in section 5.3.2 of PBP.

The area around the overall site poses a low fire risk in consideration of the historic grazing of the surrounding allotments (Conservative grassland assessment) and there are no high bushfire hazards identified within 1km of the site. In addition that the area is part of the 'Lochinvar Release Area', there is an expectation that the surrounding area will be developed in the near future.

The site and surrounds are not identified on the Hunter Bush Fire Risk Management Plan (BFRMP) The BFRMP has the human settlement of Lochinvar assigned a risk level of 4 (Medium) with no treatment plans applied.

This request while not being common does present itself on large scale subdivisions and has been approved by the NSW Rural Fire Service in the past. The scale of the proposal and overall Lochinvar development in our opinion warrants this request.

An emergency access from Windella Road through the proposed Parkland with compliant Type 'D' turning provisions will be provided which will give emergency access to Stage 10 in accordance with the '*Advice on secondary access outcomes, Wyndella Road, Lochinvar*' by ADW Johnson (Attachment 03, page 33) and if required a secondary egress route away from the hazard.

In consideration of the risk posed to the subject site, the proposed access arrangements are considered adequate.

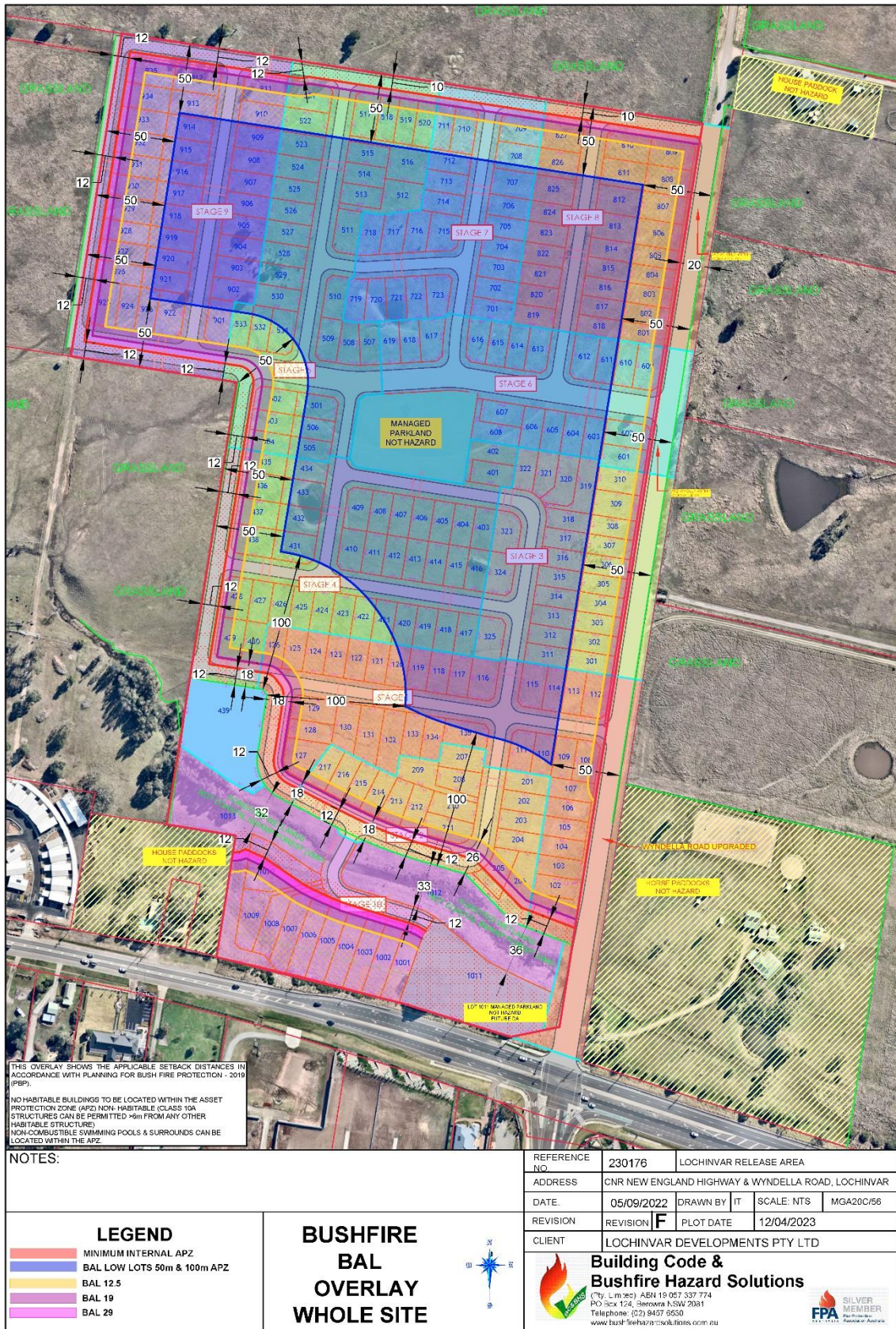


Figure 07: Overlay showing the applicable Bushfire Attack Levels (BAL)

The proposal includes a secondary access for emergency agencies (Stage 10) along the southern portion of the revegetated creek effectively creating separate emergency access to the site which will provide a shorter travel route and direct access to the Riparian hazard once Stage 10 is released.

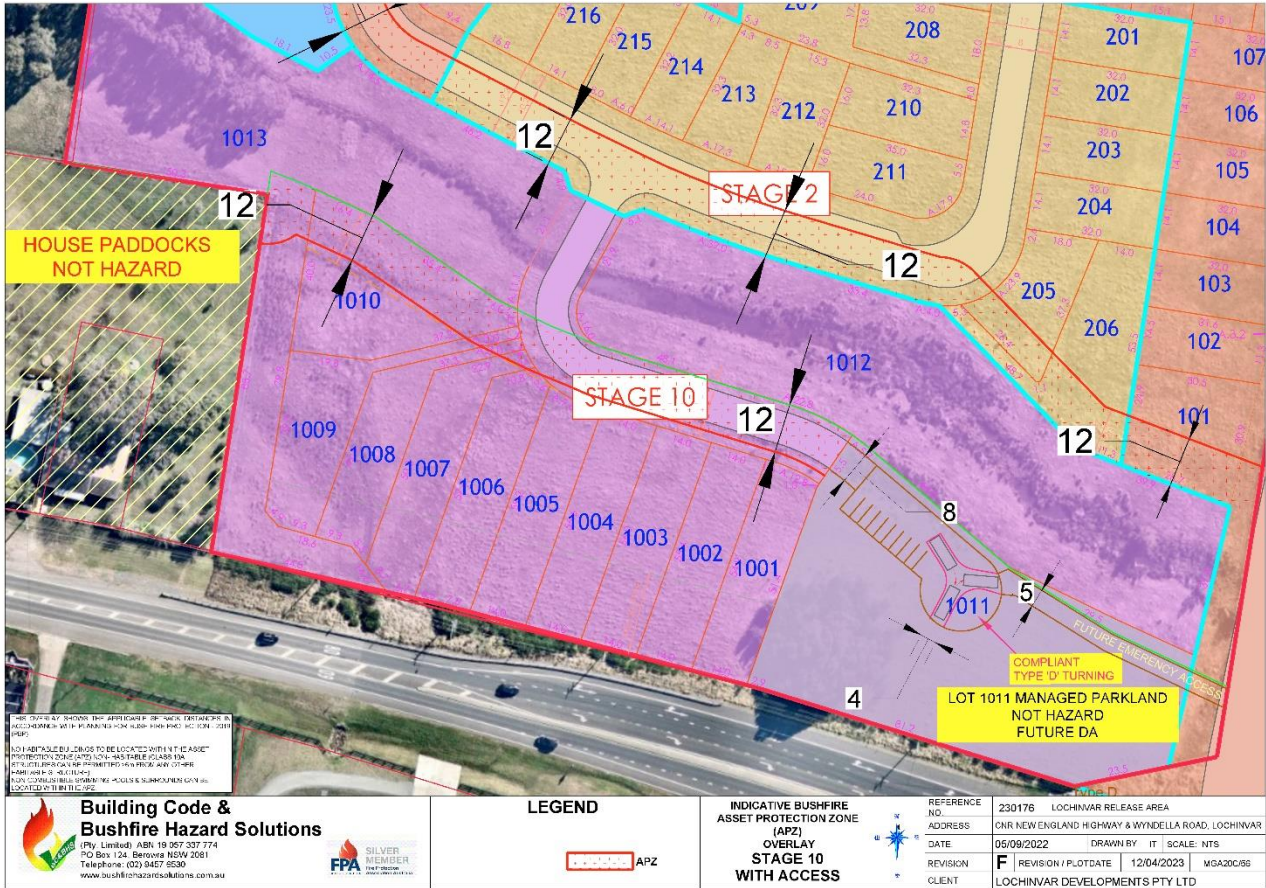


Figure 08: Overlay showing the proposed emergency access within the proposed parkland.

Attending fire services have comprehensive access to the identified hazards via the proposed perimeter and internal roads for hazard reduction and / or fire suppression activities. These roads will have hydrant points available at regular intervals and subsequently would be the logical fire-fighting platform for attending fire services.

The proposed access design is considered adequate for fire service access and occupant egress.

As the majority of the proposed road carriageways exceed the minimum carriageway requirements for Non-Perimeter Roads as detailed in section 5.3.2 of PBP it is requested that roads which are located greater than 100 metres from any current or future bushfire hazard and >50 metres from any identified grassland hazard as shown in attachment 01 be excluded from the parking restrictions described in section 5.3.2 of PBP.

This request while not being common does present itself on large scale subdivisions / precincts and has been approved by the NSW Rural Fire Service in the past. The scale of the proposal, future development of the 'Lochinvar Structure Plan – October 2007' and low risk nature of the hazard in our opinion warrants this request.

Services – Water, electricity & gas

Hydrants are available throughout existing road network for the replenishment of fire service vehicles and will be extended as part of this application. The most distant external point of the future building footprints will be <90 metres from an operational hydrant and therefore a Static Water Supply is not required in consideration of AS2419.1 – 2021 and chapter 7 of PBP.

Any future dwelling will be connected to the existing electrical network.

Any new gas connections must comply with Table 7.4a of PBP.

Recommendations will be included to ensure compliance with the electricity and gas services requirements.

Building Construction

No new dwellings are proposed as part of this application.

Those new allotments that are mapped as Bushfire Prone Land following this subdivision may require further assessment under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or s4.14 of the *Environmental Planning and Assessment Act 1997* at the time of any future application for the construction of any new dwellings on these newly created allotments.

8.04 Aim & Objectives of PBP

The following table details the aim and objectives of *Planning for Bush Fire Protection 2019* and the proposals ability to comply.

Aim / Objective	Comment
<p>The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</p>	<p>With the inclusion of the recommendations made herein it is of our opinion that the aim of PBP has been satisfied.</p>
<p>(i) afford buildings and their occupants protection from exposure to a bush fire;</p>	<p>The proposed allotment provides building envelope with Asset Protection Zones achieving or exceeding the minimum requirements under PBP.</p> <p>In conjunction with the application of the corresponding Bushfire Attack Level to the future dwellings the buildings will afford occupants protection from the exposure to a bushfire.</p>
<p>Objective</p>	<p>Comment</p>
<p>(ii) provide for a defendable space to be located around buildings;</p>	<p>The proposed allotment provides a building envelope with Asset Protection Zones achieving or exceeding the minimum requirements under PBP.</p> <p>The APZs include managed neighbouring allotments providing logical firefighting platforms.</p> <p>The proposed APZs provide an ample defendable space around the building envelopes.</p>
<p>(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</p>	<p>The proposed allotments provide building envelopes with Asset Protection Zones exceeding the minimum requirements under PBP.</p> <p>In conjunction with the application of the corresponding Bushfire Attack Level to the future dwellings the buildings will afford occupants protection from the exposure to a bushfire and will prevent the likely spread to buildings.</p>

(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;

We are of the opinion that appropriate operational access and egress for emergency service personnel and occupants will be available.

(v) provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and

The APZs will be maintained in accordance with the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019*.

Any new landscaping within the APZs is to comply with the provisions of Appendix 4 of PBP.

(vi) ensure that utility services are adequate to meet the needs of firefighters.

The proposed water supply is adequate for attending firefighters.

It is therefore of our opinion that the proposal can satisfactorily comply with the aim and objectives of *Planning for Bush Fire Protection 2019*.

8.05 Submission Detail

Section 45 of the *Rural Fires Regulation 2022* identifies various items which must be addressed and included within an application for a Bush Fire Safety Authority. The following table outlines these items and includes a corresponding response.

Submission Detail	Response
<i>(a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out,</i>	See section 7.01
<i>(b) a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection,</i>	See section 7.02
<i>(c) an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property),</i>	See section 7.03
<i>(d) identification of any significant environmental features on the property,</i>	None known
<i>(e) the details of any threatened species or threatened ecological community under the Biodiversity Conservation Act 2016 that is known to the applicant to exist on the property,</i>	None known
<i>(f) the details and location of any Aboriginal object (within the meaning of the National Parks and Wildlife Act 1974) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property,</i>	None known within site
<i>(g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters—</i>	See section 8.0

Submission Detail	Response
<i>(i) the extent to which the development is to provide for setbacks, including asset protection zones,</i>	See section 8.03
<i>(ii) the siting and adequacy of water supplies for fire fighting,</i>	See section 8.03
<i>(iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,</i>	Wyndella Road and New England Highway was found to generally have a carriageway generally >8 metres achieving the perimeter road requirements detailed in PBP.
<i>(iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,</i>	See Figure 07

<i>(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,</i>	See section 8.03
<i>(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,</i>	There are currently no bush fire maintenance plans or emergency procedures for the development site. It is encouraged that the future residents complete a Bushfire Survival Plan.
<i>(vii) the construction standards to be used for building elements in the development,</i>	See section 8.03
<i>(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,</i>	There is no existing bushfire sprinkler system, nor is one proposed. See section 8.03 for all bushfire protection measures
<i>(ix) any registered fire trails on the property,</i>	There are no registered fire trails within the subject site.

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with *Planning for Bush Fire Protection – 2019* and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' - 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. At this issue of subdivision certificate and in perpetuity all grounds within the proposed stage release, except for the Riparian Area as shown in attachment 01 (Page 32) or to the property boundary whichever comes first shall be maintained in accordance with an Asset Protection Zone (Inner Protection Area) as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019*.
2. Temporary internal APZs shall be provided over the land around each stage release within future stages to alleviate unnecessary construction provisions on future dwellings. The management of the land outside that shown within Figure 05 and within 50 metres of the proposed stage release shall be maintained in accordance with an Asset Protection Zone (Inner Protection Area) as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019* to ensure no hazard regenerates before the subsequent stages are developed.

The subject site forms part of the '*Lochinvar Structure Plan – October 2007*' and as such it is considered reasonable to expect an accelerated development timeframe for the future stages. In considering the time required to have a positive covenant registered and then subsequently dissolved following the future stages it is not considered reasonable to use a positive covenant as the mechanism to ensure ongoing management of the temporary APZs.

The residual land is and will continue to be under the control of Lochinvar Developments Pty Ltd and with the resources available to this company it is considered that a development consent condition would be an ample mechanism to ensure the ongoing management of the temporary APZs until such time that the land is developed.

Emergency management

3. That the occupants of any future dwellings complete a Bush Fire Survival Plan. The template for this plan is available at:
<https://www.rfs.nsw.gov.au/resources/bush-fire-survival-plan>.

Services (where applicable)

Water:

1. That the new hydrant system is to comply with the requirements detailed in Table 5.3c of *Planning for Bush Fire Protection 2019*, specifically:
 - fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021;
 - hydrants are not located within any road carriageway;
 - fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.
 - all above-ground water service pipes external to the building are metal, including and up to any taps.
 - 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:

2. Any new electrical services must comply with section 5.3.3 of *Planning for Bush Fire Protection 2019*, specifically:
 - 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 *ISSC3 Guideline for Management Vegetation Near Power Lines*.

Gas:

3. Any new gas services must comply with section 5.3.3 of *Planning for Bush Fire Protection 2019*, specifically:
 - reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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;
 - polymer-sheathed flexible gas supply lines are not used; and
 - above-ground gas service pipes are metal, including and up to any outlets.

Access

4. That the new Perimeter roads shall comply with the following requirements for Non-Perimeter Roads as detailed in Table 5.3b of *Planning for Bush Fire Protection 2019*:
 - are two-way sealed roads;
 - minimum 8m carriageway width kerb to kerb;
 - parking is provided outside of the carriageway width; hydrants are located clear of parking areas;
 - 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.

5. That the new internal roads shall comply with the following requirements for Non-Perimeter Roads as detailed in Table 5.3b of *Planning for Bush Fire Protection 2019*:
 - property access roads are two-wheel drive, all-weather roads with minimum 5.5 metre carriageway width;
 - traffic management devices are constructed to not prohibit access by emergency services vehicles;
 - maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;
 - 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.
 - hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
 - curves of roads have a minimum inner radius of 6m;
 - the road crossfall does not exceed 3 degrees; and
 - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

Note: The parking restrictions shall not apply to the sections of road that are not located on 'bushfire prone' land (i.e. greater than 50m from a Grassland hazard and 100m of a bushfire hazard as per Figure 05 and attachment 01 page 32 of this report).

10.0 Conclusion

The development proposal seeks to create a two hundred and sixty two lot subdivision, two parks and associated infrastructure at 25-39 Wyndella Road and 898 New England Highway, Lochinvar.

The subdivision is captured under section 100B of the *Rural Fires Act 1997*.

In accordance with the submission requirements for a Bush Fire Safety Authority as detailed in section 45 of the *Rural Fires Regulation 2022* an assessment of the extent to which the proposed development conforms with or deviates from *Planning for Bush Fire Protection (PBP)* is required.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development.

We are therefore in support of the application.

Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions



Ian Tyerman

Senior Bushfire Consultant
Graduate Certificate in Bushfire Protection
Planning for Bushfire Prone Areas - UTS Sydney
BPAD Level 2 Accredited Practitioner
BPAD Accreditation No. BPAD30356



11.0 Annexure 01

List of Referenced Documents

Australian Building Codes Board (2019). *National Construction Code Volume Two - Building Code of Australia*. ABCB

ELVIS -Elevation -Foundation Spatial Data. Elevation.fsdf.org.au. Available at: <http://elevation.fsdf.org.au/>

Environmental Planning and Assessment Act 1979

Landscape Documentation by: Terra Landscape Architects; Dated: 2/2/23

'*Lochinvar Structure Plan – October 2007*' Accessed at: <https://www.maitland.nsw.gov.au/my-council/planning-and-reporting/publications-plans-and-strategies/planning-strategies/lochinvar-structure-plan>

NSW Department of Planning and Environment (2019). *Planning Portal*. Accessed at: <https://www.planningportal.nsw.gov.au/>

NSW Rural Fire Service (2019). *Planning for Bush Fire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*.

Proposed Master Plan Overall by: ADW Johnson; Drawing No. 240332-MP-005 [M]; Version: M; Dated: 15/03/2023.

Proposed Master Plan Staging by: ADW Johnson; Drawing No. 240332-MP-005 [M]; Version: M; Dated: 15/03/2023.

Rural Fires Act 1997

Rural Fires Regulations 2022

Rural Fire Service NSW (2005). *Standards for Asset Protection Zones*

Rural Fire Service NSW (2017). *NSW Local Government Areas FDI*

Standards Australia (2018). *AS3959 Construction of buildings in bushfire-prone areas*.

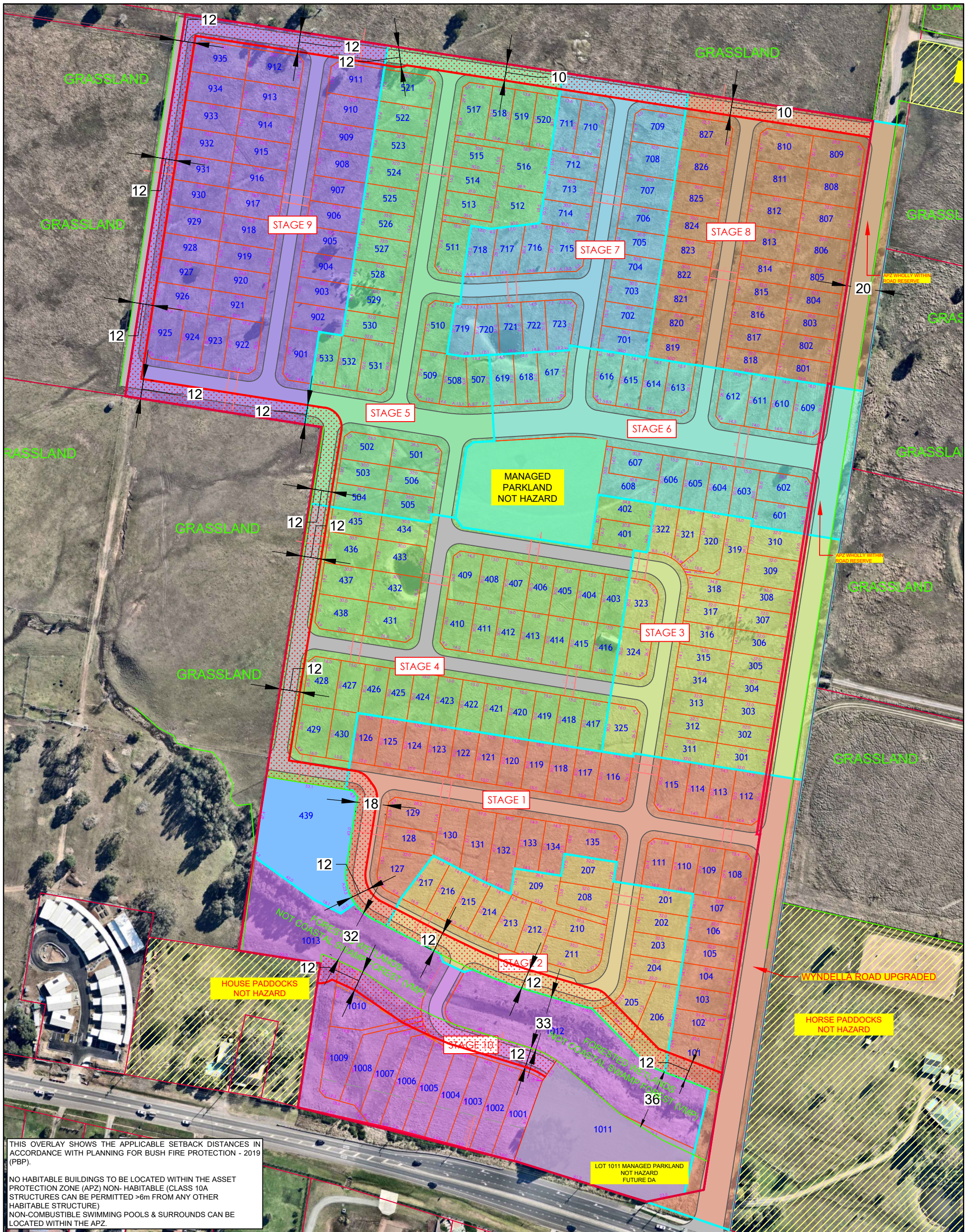
Standards Australia (2014). *AS/NZS 1596 The storage and handling of LP Gas*

Acknowledgements to:

Geoscience Australia
Nearmap
Street-directory.com.au

Attachments

Attachment 01:	Bushfire APZ Overlay Rev: F; Dated 12/04/2023.
Attachment 02:	<i>BioNet Vegetation Classification - Community Profile Report</i>
Attachment 03:	ADW Johnson Access Letter



THIS OVERLAY SHOWS THE APPLICABLE SETBACK DISTANCES IN ACCORDANCE WITH PLANNING FOR BUSH FIRE PROTECTION - 2019 (PBP).

NO HABITABLE BUILDINGS TO BE LOCATED WITHIN THE ASSET PROTECTION ZONE (APZ) NON-HABITABLE (CLASS 10A STRUCTURES CAN BE PERMITTED >6m FROM ANY OTHER HABITABLE STRUCTURE) NON-COMBUSTIBLE SWIMMING POOLS & SURROUNDS CAN BE LOCATED WITHIN THE APZ.

NOTES:	REFERENCE NO.	230176	LOCHINVAR RELEASE AREA		
	ADDRESS	CNR NEW ENGLAND HIGHWAY & WYNDELLA ROAD, LOCHINVAR			
	DATE.	05/09/2022	DRAWN BY	IT	SCALE: NTS MGA20C/56
	REVISION	REVISION F	PLOT DATE	12/04/2023	
	CLIENT	LOCHINVAR DEVELOPMENTS PTY LTD			

LEGEND

MINIMUM INTERNAL APZ

INDICATIVE BUSHFIRE ASSET PROTECTION ZONE (APZ) OVERLAY WHOLE SITE

Building Code & Bushfire Hazard Solutions
 (Pty. Limited) ABN 19 057 337 774
 PO Box 124, Berowra NSW 2081
 Telephone: (02) 9457 6530
 www.bushfirehazardsolutions.com.au

BioNet Vegetation Classification - Community Profile Report

Plant Community Type ID (PCT ID): 1728

PCT Name: Swamp Oak - Prickly Paperbark - Tall Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast

Classification Confidence Level: 2-High

Vegetation Description: Casuarina dominated Swamp Open Forests with a myrtaceous mid-stratum. The ground stratum be dominated by ferns; sedges or grasses depending on local inundation periods. This community is found in poorly drained sites from East Gosford north to Tuncurry. Substrates are unconsolidated sediments and elevations are below 20m.

Variation and Natural Disturbance:

Vegetation Formation: Forested Wetlands;

Vegetation Class: Coastal Floodplain Wetlands;

IBRA Bioregion(s): NSW North Coast; Sydney Basin;

IBRA Sub-region(s): Hunter; Karuah Manning; Macleay Hastings; Pittwater; Upper Hunter; Wyong; Yengo;

LGA: CESSNOCK; DUNGOG; GOSFORD; GREAT LAKES; GREATER TAREE; LAKE MACQUARIE; MAITLAND; NEWCASTLE; PORT MACQUARIE-HASTINGS; PORT STEPHENS; WYONG;

Lithology: Sandstone

Landform Pattern: Not Assessed

Landform Element: Not Assessed

Emergent species: None

Upper Stratum Species: Casuarina glauca;

Mid Stratum Species: Melaleuca styphelioides; Melaleuca nodosa;

Ground Stratum Species: Carex appressa; Juncus usitatus; Hypolepis muelleri; Gahnia clarkei; Entolasia marginata; Cynodon dactylon; Persicaria hydropiper; Baumea articulata;

Diagnostic Species:

(Species Name:Group Score, Group Frequency,Non Group Score, Non Group Frequency; Fidelity Class)

Casuarina glauca: 5, 100%, 3, 5%; positive

Melaleuca styphelioides: 2, 64%, 2, 5%; positive

Melaleuca nodosa: 2, 27%, 3, 11%; uninformative

Carex appressa: 3, 64%, 2, 7%; positive

Juncus usitatus: 2, 64%, 1, 3%; positive

Hypolepis muelleri: 5, 36%, 2, 4%; positive

Gahnia clarkei: 2, 55%, 2, 10%; uninformative

Entolasia marginata: 2, 55%, 2, 16%; uninformative

Cynodon dactylon: 3, 27%, 3, 7%; uninformative

Persicaria hydropiper: 3, 27%, 2, 0%; uninformative

Baumea articulata: 1, 27%, 3, 2%; uninformative

Fire Regime:

TEC Assessed: Has associated TEC

TEC List: Listed BC Act,E: Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (Part);

Associated TEC Comments: Forms part of the Endangered Ecological Community "Swamp oak floodplain forest of the NSW North Coast| Sydney Basin and South East Corner bioregions"

PCT Percent Cleared: 81.00

PCT Definition Status: Decommissioned



Our Ref: CLA: MKN: 240332

28th February 2023

The General Manager
Maitland City Council
263 High Street
MAITLAND NSW 2320

To Whom It May Concern,

**RE: ADVICE ON SECONDARY ACCESS OUTCOMES
WYNDELLA ROAD, LOCHINVAR**

ADW Johnson has been engaged by CPG Estates to provide concept engineering inputs for the proposed subdivision of Lots 2-6 and 9 DP 747391 and Lots 12-13 DP 1219648 at Lochinvar ('the site'). This letter describes primary and secondary access outcomes, specifically in relation to the requirements of Planning for Bush Fire Protection (PBF) 2019.

The site is located on Wyndella Road at Lochinvar and is intended for residential subdivision creating 262 lots. Primary access to the site is provided from Wyndella Road via three public road intersections. A cul-de-sac road within the proposed development provides primary access to ten lots located at the southern end of the site between the New England Highway (NEH) and an existing tributary of Lochinvar Creek.

The subject cul-de-sac road is approximately 170m long with a proposed turning bulb integrated with proposed parking for a future parkland located in the south-east corner of the site.

Secondary access to the ten cul-de-sac lots will be provided by a proposed 4.5 m wide trafficable concrete path. The path will connect the cul-de-sac and Wyndella road on the southern side of the Lochinvar creek tributary. Connectivity is therefore provided to Wyndella Road with favourable proximity to the NEH.

This secondary access will double as a shared cycleway and will integrate into the development's shared path network. Access to the path will be controlled by removable bollards at both ends.

Whilst secondary access is proposed to meet the requirements of PBF 2019, it would also provide access for other emergency responses (for example flood evacuation).

I trust that this letter provides robust context to the proposed development's primary and secondary accesses. If you have any questions regarding the above information please don't hesitate to contact the undersigned on (02) 4978 5100 or mitchellk@adwjohnson.com.au.

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Yours sincerely,

Mitchell Knox

MITCHELL KNOX
CIVIL ENGINEER
ADW JOHNSON PTY LTD
HUNTER OFFICE

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