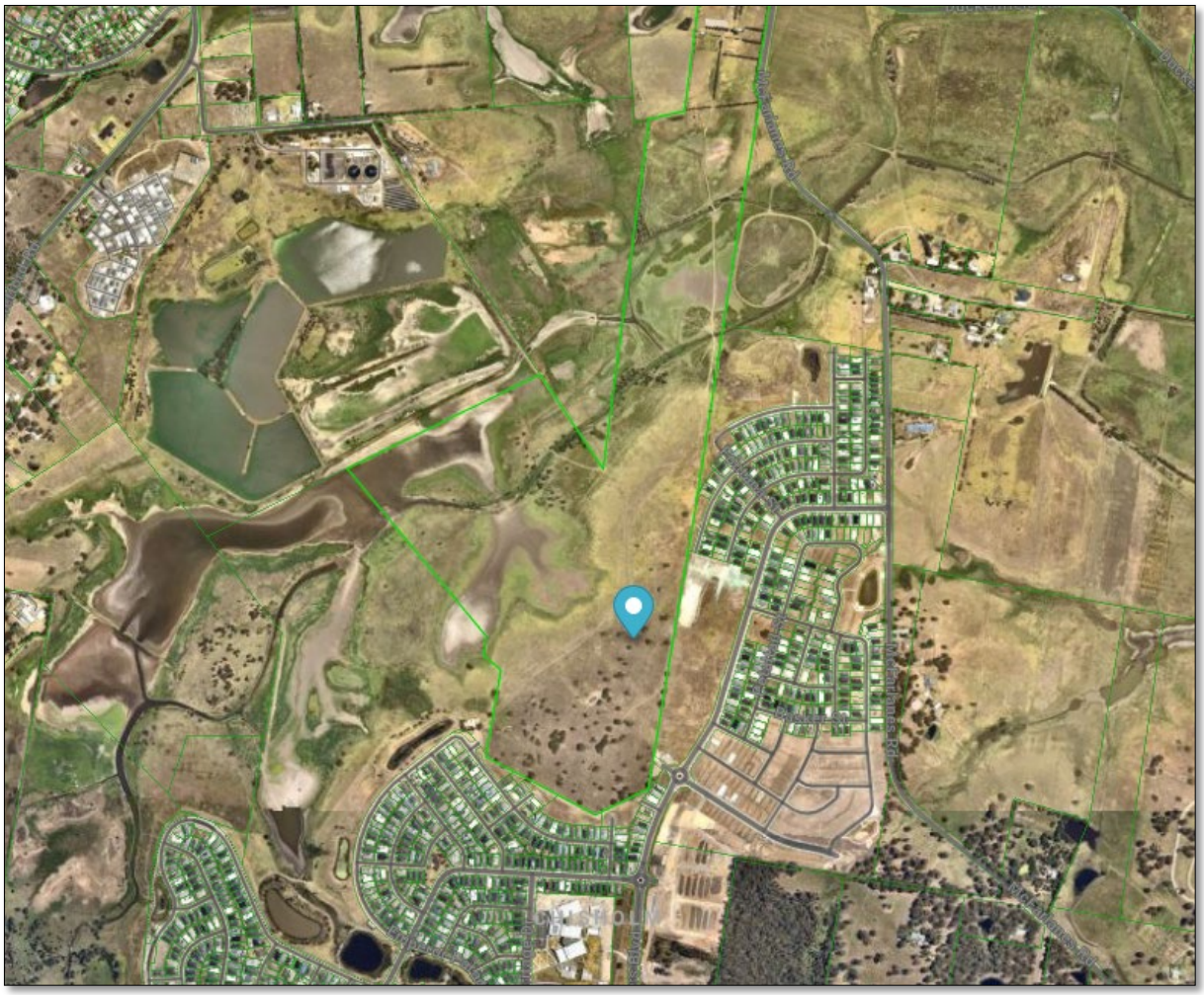
BUSHFIRE PLANNING AUSTRALIA

BUSHFIRE ASSESSMENT REPORT

Residential Subdivision

24 Duckenfield Road, Berry Park

Prepared for Avid Residential Estates



Bushfire Planning Australia

Stuart Greville
Accredited Bushfire Practitioner
BPAD-26202
✆ 0400 917 792
✉ stuart@bfpa.com.au

Reference: 2254 Berry Park Subdivision
Version: Final
Date: 8 May 2023

Disclaimer and Limitation

This report is prepared solely for Avid Residential Estates (the 'Client') for the specific purposes of only for which it is supplied (the 'Purpose'). This report is not for the benefit of any other person; either directly or indirectly and is strictly limited to the purpose and the facts and matters stated in it and will not be used for any other application.

This report is based on the site conditions surveyed at the time the document was prepared. The assessment of the bushfire threat made in this report is made in good faith based on the information available to Bushfire Planning Australia at the time.

The recommendations contained in this report are considered to be minimum standards and they do not guarantee that a building or assets will not be damaged in a bushfire. In the making of these comments and recommendations it should be understood that the focus of this document is to minimise the threat and impact of a bushfire.

Finally, the implementation of the adopted measures and recommendations within this report will contribute to the amelioration of the potential impact of any bushfire upon the development, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

Document Status: 2254 - Residential Subdivision

Version	Status	Purpose	Author	Review Date
1	Draft	Draft for Review	Katrina Mukevski	1 April 2023
2	Draft	Draft for Client Review	Stuart Greville	4 May 2023
3	Final	Final for Submission	Stuart Greville	8 May 2023

Certification

As the author of this Bushfire Assessment Report (BAR), I certify this BAR provides the detailed information required by the NSW Rural Fire Service under Clause 45 of the Rural Fires Regulation 2021 and Appendix 2 of Planning for Bushfire Protection 2019 for the purposes of an application for a bush fire safety authority under section 100B(4) of the Rural Fires Act 1997.

Stuart Greville

Accredited Bushfire Practitioner

BPAD-26202

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

Date: 8 May 2023

In signing the above, I declare the report is true and accurate to the best of my knowledge at the time of issue

Table of Contents

Figures

Tables

Plates

Appendices

Executive Summary

Bushfire Planning Australia (BPA) has been engaged by Avid Residential Estates (the 'Client') to undertake a Bushfire Assessment Report (BAR) for a residential subdivision at 24 Duckenfield Road, Berry Park; legally referred to as Lot 112 DP734271.

This BAR found the site was exposed to a marginal bushfire hazard contained to the actively grazed paddocks; primarily to the west of the site which is also subject to regular inundation. The vegetation mapped as bushfire prone has either been cleared or heavily modified and has been assessed as a *grassland* due to extensive tree clearing and the absence of any vegetation apart from pasture grasses.

Accordingly, the predominant vegetation surrounding the site in unmanaged conditions is consistent with a *grassland* vegetation formation as described in the NSW Rural Fire Service document Planning for Bushfire Protection 2019 (PBP 2019). Primarily as it cannot be guaranteed that the paddocks will continue to be actively grazed.

The BAR concludes that the hazard identified can be successfully mitigated by applying the requirements of PBP 2019, including Asset Protection Zones (APZs).

The following key recommendations have been designed to enable the proposed development to achieve the aims and objectives of PBP 2019:

1. All land within the development site zoned R1 Residential shall be managed as an inner protection area (IPA) as outlined Appendix 4 of PBP 2019 and the RFS document *Standards for asset protection zones*;
2. The APZs shown in **Figure 12 - Subdivision BAL Plan** shall be maintained in perpetuity in accordance with the requirements of Appendix 4 of PBP 2019;
3. Access shall be provided in accordance with the Performance Criteria detailed in Table 5.3b of PBP 2019. This will require the provision of a minimum of eight (8) separate road access points provided from the development site to the east ad south to ensure safe evacuation for all residents;
4. On-street vehicle parking may be permitted within road carriageways as all roads are a minimum 8m wide;
5. All temporary turning heads shall be constructed in accordance Appendix A3.3 of PBP 2019;
6. Vegetation within road verges (including swales) to be consistent with a grassland vegetation classification with tree canopy less than 10% at maturity (and considered unmanaged);
7. The Bushfire Attack Level (BAL) ratings identified in **Figure 12 - Subdivision BAL Plan** apply to all future dwellings to be constructed on the proposed lots. All future dwellings to be constructed on the proposed lots shall have due regard to the specific considerations given in the National Construction Code: Building Code of Australia (BCA) which makes specific reference to Australian Standard AS3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) and the NASH Standard Steel Framed Construction in Bushfire Prone Areas;
8. All new lots are to be connected to a reliable water supply network and that suitable fire hydrants are located throughout the development site that are clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure shall comply with AS2419.1 2005 and section 5.3.3 of PBP 2019;
9. Consideration should be given to landscaping and fuel loads on site to decrease potential fire hazards on site; and
10. The Rural Fire Service endorse the Subdivision BAL Plan contained in **Appendix D**.

This assessment has been made based on the bushfire hazards observed in and around the site at the time of inspection and production (May 2023).

Should the above recommendations be implemented, the existing bushfire risk should be suitably mitigated to offer an acceptable level of protection to life and property for those persons and assets occupying the site but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

1. Introduction

Bushfire Planning Australia (BPA) has been engaged by Avid Residential Estates (the 'Client') to undertake a Bushfire Assessment Report (BAR) for a residential subdivision at 24 Duckenfield Road, Berry Park, legally referred to as Lot 112 DP734271, and hereafter referred to as the 'site' (**Figure 2**).

The assessment aims to consider and assess the bushfire hazard and associated potential bushfire threat relevant to the proposed development, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the New South Wales Rural Fire Service (RFS) publication *Planning for Bushfire Protection 2019* (PBP 2019) that has been released and adopted through the *Environmental Planning and Assessment Amendment* (Planning for Bushfire Protection) *Regulation 2007* and the *Rural Fires Regulation 2013*.

2. Site Description

Table 1: Site Details

Address	24 Duckenfield Road, Berry Park
Title	Lot 112 DP734271
LGA	Maitland City Council
Subject Site Area	86.94 ha
Land Use Zone	R1 General Residential, C2 Environmental Conservation and RU2 Rural Landscape
Bushfire Prone Land	Vegetation Category 2 and Vegetation Buffer
Context	The site is an irregular shape that contains minimal vegetation as the land is either cleared or managed. Located in the south-western portion of the site is Four Mile Creek. Surrounding the site to the east and south are developed residential properties or subdivisions whilst to the west are cleared grazing lands.
Topography	The site is relatively flat and slopes west towards the floodplain.
Fire History	The site lies within a local government area with a Fire Danger Index (FDI) rating of 100.

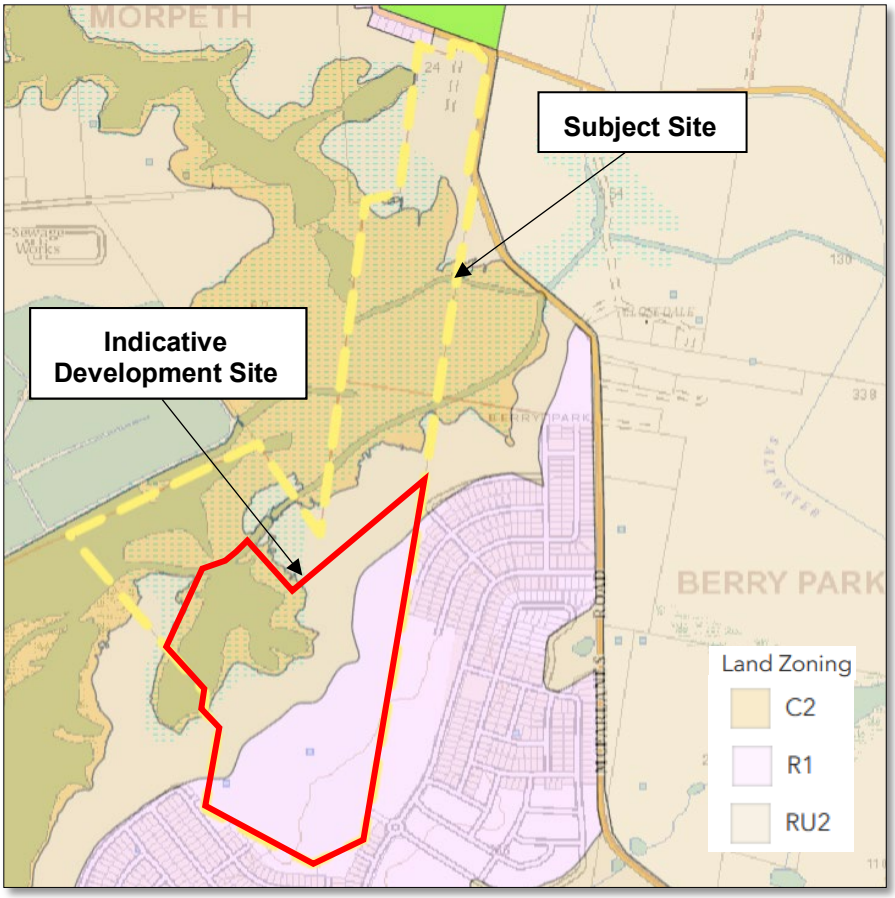


Figure 1: Land Zoning Map - Maitland LEP 2011

Project: Berry Park Subdivision
Job no: 2254

Figure 2

Site Location

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2023
Basemap: NSW Department of Customer Service 2022

N
W E
S

0 200 400
Meters

A3 Scale: 1:10,000

File:2254-BerryParkSUB-Fig1-SiteLocation-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

2.2. Bushfire Prone Land

Bushfire activity is prevalent in landscapes that carry fuel and the two predominant bushfire types are grassland and forest fires. Factors such as topographic characteristics and quantity of fuel loads influence the intensity and spread of fire. The scale of a bushfire hazard is tailored to the characteristics of the hazard, the size and characteristics of the affected population, types of land use exposed to bushfire, predicted development growth pressures and other factors affecting bushfire risk.

Figure 3 demonstrates the entire proposed development site is covered by bushfire prone Vegetation Category 3 with exception of narrow corridor of Vegetation Buffer located towards the western site boundary surrounding the existing water body's edge.

Similarly, Vegetation Category 3 bushfire prone land surrounds the site within 140m and also contains isolated corridors of Vegetation Buffer surrounding existing water bodies. Whilst the site is largely mapped as the lowest threat vegetation; Category 3, the vegetation is limited to actively grazed pastures and land that has continuously being used as farming land.

Project: Berry Park Subdivision
Job no: 2254

Figure 3

NSW Bush Fire Prone Land

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer

Bushfire Prone Land

Vegetation Category 1
Vegetation Category 3
Buffer

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
NSW Bush Fire Prone Land: NSW Rural Fire Service 2022
Aerial Photo: Nearmap 14/06/2022

N
W E
S

0 50 100 150 200 250
Meters

A3 Scale: 1:5,000

File:2254-BerryParkSUB-Fig2-BFPL-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

2.3. Proposed Development

The proposed development seeks to create a 282 lot Torrens Title residential subdivision along the eastern and southern boundary of the subject site.

A plan of the proposed residential subdivision is shown in **Figure 4** and detailed plans contained in **Appendix A.**

2.3.1. Rural Fire Service Pre-DA Advice – Performance Solution for Access: Parking within Carriageway

A Pre-DA Advice application was submitted to the RFS in September 2022 seeking advice regarding the proposed network of perimeter and non-perimeter roads; specifically the width of the proposed roads and the availability for on-street vehicle parking.

The design proposes a Performance Solution to permit parking within the carriegway. The proposed development includes minimum 8m wide non-perimeter roads and 10.5m perimeter roads; exceeding the minimum required carriegway by 2.5m.

The RFS provided a Pre-DA Advice Summary (**Appendix E**) on 9 February 2023 confirming the Performance Solution is supported.

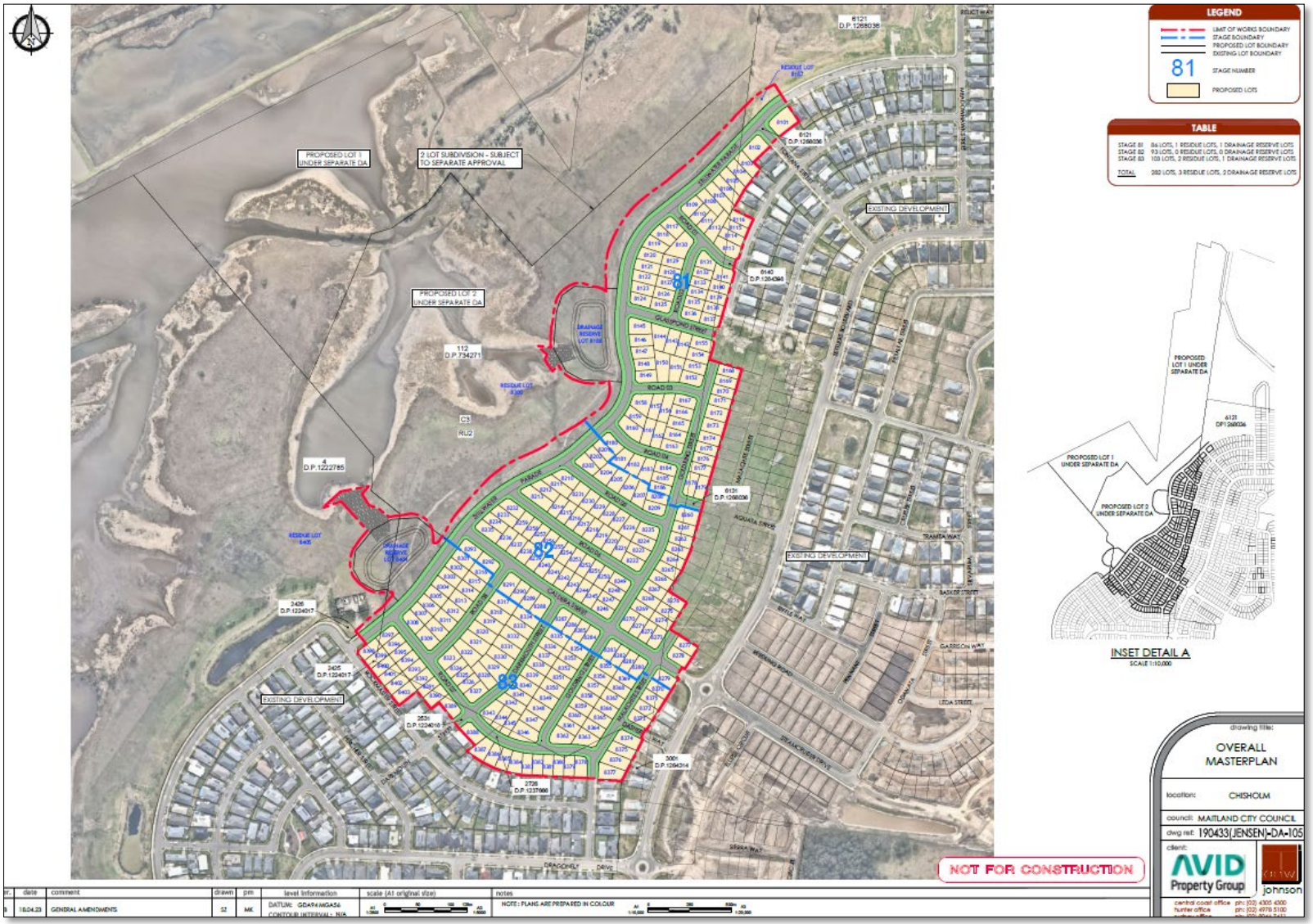


Figure 4: Proposed Development

2.4. Aims and Objectives

The assessment aims to consider and assess the bushfire hazard and associated potential bushfire threat relevant to the proposed development, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the New South Wales Rural Fire Service (RFS) publication *Planning for Bushfire Protection 2019* (PBP 2019) and the *Rural Fires Regulation 2013.*

This assessment has been undertaken in accordance with clause 44 of the Rural Fires Regulation 2013. This BAR also addresses the aims and objectives of PBP 2019, being:

- Afford buildings and their occupants protection from exposure to a bushfire;
- Provide 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 (BPMs); and
- Ensure that utility services are adequate to meet the needs of firefighters.

3. Bushfire Hazard Assessment

3.1. Vegetation Assessment

Vegetation classification over the site and surrounding area has been carried out as follows:

- Aerial Photograph Interpretation to map the vegetation classification and extent;
- Review of LiDAR point cloud data (NSW LPI);
- Reference to NSW State Vegetation Type, NSW Department of Planning, Industry and Environment 2022 (**Figure 5**); and
- Site inspection by Stuart Greville on 1 September 2022.

In accordance with PBP 2019, an assessment of the existing vegetation over a distance of 140m in all directions from the site was undertaken.

The findings of the site inspection were compared to the NSW State Vegetation Type mapping (**Figure 5**). The inconsistencies between the mapping sources were quantified during the site inspection.

The vegetation mapped as a bushfire prone to the east of the site as shown on **Figure 5**, was observed to have been removed as part of the approved residential development. All remaining mapped vegetation within the site mapped as a *forest* has been extensively modified and therefore assessed as a *grassland*. This is inconsistent with the current NSW State Vegetation Type that identifies the south-eastern portion of the site as *forest*, namely Hunter Macleay Dry Sclerophyll Forest. The existing vegetation within the balance of the site will continue to be managed identical to the current land management practices.

All remaining vegetation within 140m of the subject site has a history of being actively grazed and also regularly inundated by long-standing floodwaters. Notwithstanding, as the floodwater may recede to a point where the surface is revealed, and management of the vegetation cannot be guaranteed, the vegetation up to 100m from the site is classified as *grassland* or non-vegetated areas (roads, buildings and other structures).

Plate 1: Southern corner looking west across approved subdivision

Plate 2: Looking west across southern portion of site towards floodplain – through grazed paddock

Plate 3: Looking north east along eastern boundary towards approved residential development

Plate 4: Looking north along approximate R2 zone boundary

Plate 5: Looking north of the subject site

Plate 6: Looking west across the site towards floodplain

Project: Berry Park Subdivision
Job no: 2254

Figure 5

NSW State Vegetation Type (Class)

BUSHFIRE PLANNING AUSTRALIA

Subject Site

100m Buffer

140m Buffer

Vegetation Class

Coastal Floodplain Wetlands

Coastal Freshwater Lagoons

Hunter-Macleay Dry Sclerophyll Forests

Not native vegetation

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2023
NSW Vegetation Type: NSW Department of Planning, Industry and Environment 2022
Aerial photo: Nearmap 14/06/2022

N
W E
S

0 50 100 150 200 250
Meters

A3 Scale: 1:5,000

File:2254-BerryParkSUB-Fig3-Vegetation-NSW-SVT-230508
Date: 8/05/2023

3.2. Slope Assessment

The slope assessment was undertaken as follows:

- Review of LiDAR point cloud data - including DEM (NSW LPI);
- Detail survey of existing contours; and
- Site inspection on 1 September 2022.

An assessment of the slope over a distance of 140m in the hazard direction from the site boundary was undertaken. The effective slope was then calculated under the classified vegetation where there was a fire run greater than 50m. The topography of the site has been evaluated to identify both the average slope and by identifying the maximum slope present. These values help determine the level of gradient which will most significantly influence the fire behaviour of the site.

The effective slope in all directions is shown in **Figure 6, Figure 7** and **Table 2.**

Project: Berry Park
Subdivision Job No: 2254

Figure 6

Slope Analysis: LiDAR

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer
Contour (5m)

Slope

0° - 5°
5° - 10°
10° - 15°
15°- 20°
>20°

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
Surface analysis: Derived from Newcastle & Cassnock 1m resolution LiDAR: © Department Finance, Services and Innovation 2014

N
W E
S

0 50 100 150 200
Meters

A3 Scale: 1:4,500

File:2254-BerryParkSUB-Fig5-SlopeLiDAR-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

Project: Berry Park Subdivision
Job no: 2254

Figure 7

Digital Elevation Model

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer
Contour (5m)
Contour (1m)

Elevation (AHD)
High : 29m
Low : 1m

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2023
Surface analysis: Derived from LiDAR - Newcastle 1 metre Resolution Digital Elevation Model © Department Finance, Services and Innovation 2012

N
W E
S

0 50 100 150 200
Meters

A3 Scale: 1:4,500

File:2254-BerryParkSUB-Fig4-DEM-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

3.3. Results

The site inspection formed part of a reliability assessment to determine whether the site's mapped characteristics were consistent with the actual slope and vegetation characteristics observed on the site. It was confirmed on site the predominant vegetation classification presenting as a bushfire hazard, located to the west within and beyond the proposed development site, was identified as a *grassland* in accordance with the descriptions contained in Keith. The vegetation formation is used to assess the hazard as shown in **Table 2.**

The vegetation class and effective slope in all directions is shown in **Figure 8.**

Table 2: Slope and Vegetation

Transect	Vegetation Description	Vegetation Classification (PBP 2019)	Slope
T1 East	Existing residential subdivision east of the site	Non-Hazard (Existing development)	-2.2° Upslope
T2 East	Existing residential subdivision south of the site	Non-Hazard (Existing development)	-2.5° Upslope
T3 On-site	Grassland vegetation within the subject site, west of the proposed development site	*Grassland*	1.9° Downslope
T4 On-site	Grassland vegetation within the subject site, west of the proposed development site	*Grassland*	2.5° Downslope
T5 On-site	Drainage reserve (water basin) surrounded by grassland within the subject site, west of the proposed development site	*Grassland*	1.9° Downslope

Project: Berry Park Subdivision
Job no: 2254

Figure 8

Slope & Vegetation Assessment

BUSHFIRE PLANNING AUSTRALIA

- Subject Site
- 100m Buffer
- 140m Buffer
- Contour (5m)
- Contour (1m)
- RL
- Downslope transect
- Upslope transect

Proposed Development

- Lot Boundary
- Basins

Vegetation

- Cleared / managed Land
- Grassland
- Waterbody

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
Surface analysis: Derived from LiDAR - Newcastle 1 metre Resolution Digital Elevation Model © Department Finance, Services and Innovation 2012
Vegetation: BPA 2022
Aerial photo: Nearmap 14/06/2022

N W E S

0 50 100 150 200 250
Meters

A3 Scale: 1:5,000

File:2254-BerryParkSUB-Fig6-SlopeVeg-230508 Date: 8/05/2023

GEOVIEW GIS & mapping solutions for infrastructure, town planning & environmental management

3.4. Significant Environmental Features

There are no known environmental features of significance within the development footprint or the balance of the site. The development footprint is wholly located within that part of the site that is predominantly cleared.

3.5. Threatened Species, populations or ecological communities

The area of the site to be affected by the proposed development has been identified to minimise impact on any threatened species, population or EEC. All bushfire mitigation measures; including APZs have considered the existing and potential biodiversity values to avoid impact where possible.

3.6. Aboriginal Objects

A search of the AHIMS database (results contained in **Appendix B**) revealed there are no Aboriginal sites or places recorded in or near the subject site.

3.7. Bushfire Planning - Urban Release Area

The subject site is identified within a Bushfire Planning – Urban Release Area (URA) as indicated on **Figure 9** and **10**. As a subdivision of land within an URA, the assessment undertaken as part of the preparation of the BMP may exempt the proposed lots from reassessment of bushfire matters when future land owners are ready to construct a dwelling on their lot/s. For the future landowners to benefit from the available exemptions, a Post-Subdivision Bush Fire Attack Level Certificate (PSBC) must be obtained to allow for the streamlined process. To facilitate the PSBC, a Subdivision BAL Plan is required that demonstrates the location of APZs and that all new lots can suitably accommodated a dwelling envelope achieving BAL-29 or less.

A **Subdivision BAL Plan** has been prepared and contained in **Appendix D**. As part of the application for a BFSA it is requested the RFS endorse the included **Subdivision BAL Plan**.

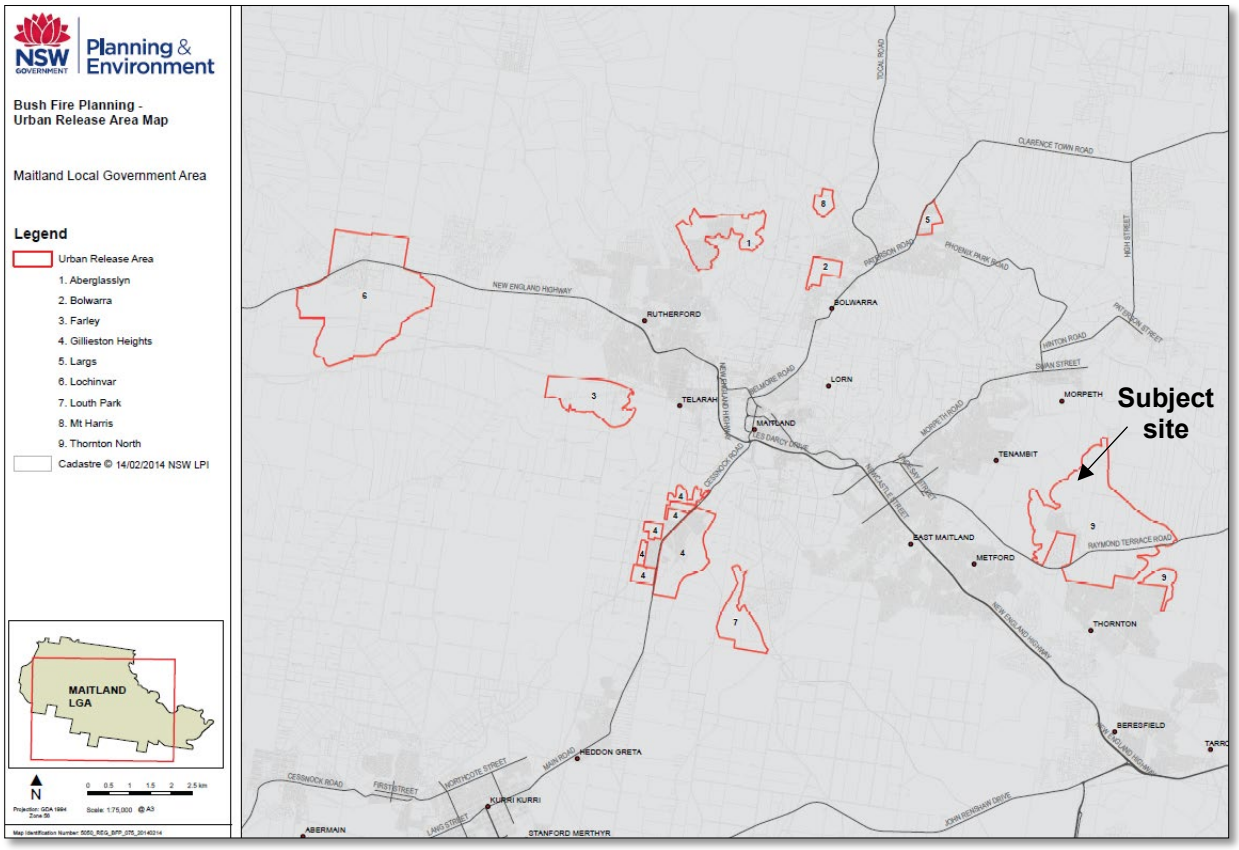


Figure 9: Bushfire Planning - Urban Release Area Map (Maitland LGA)

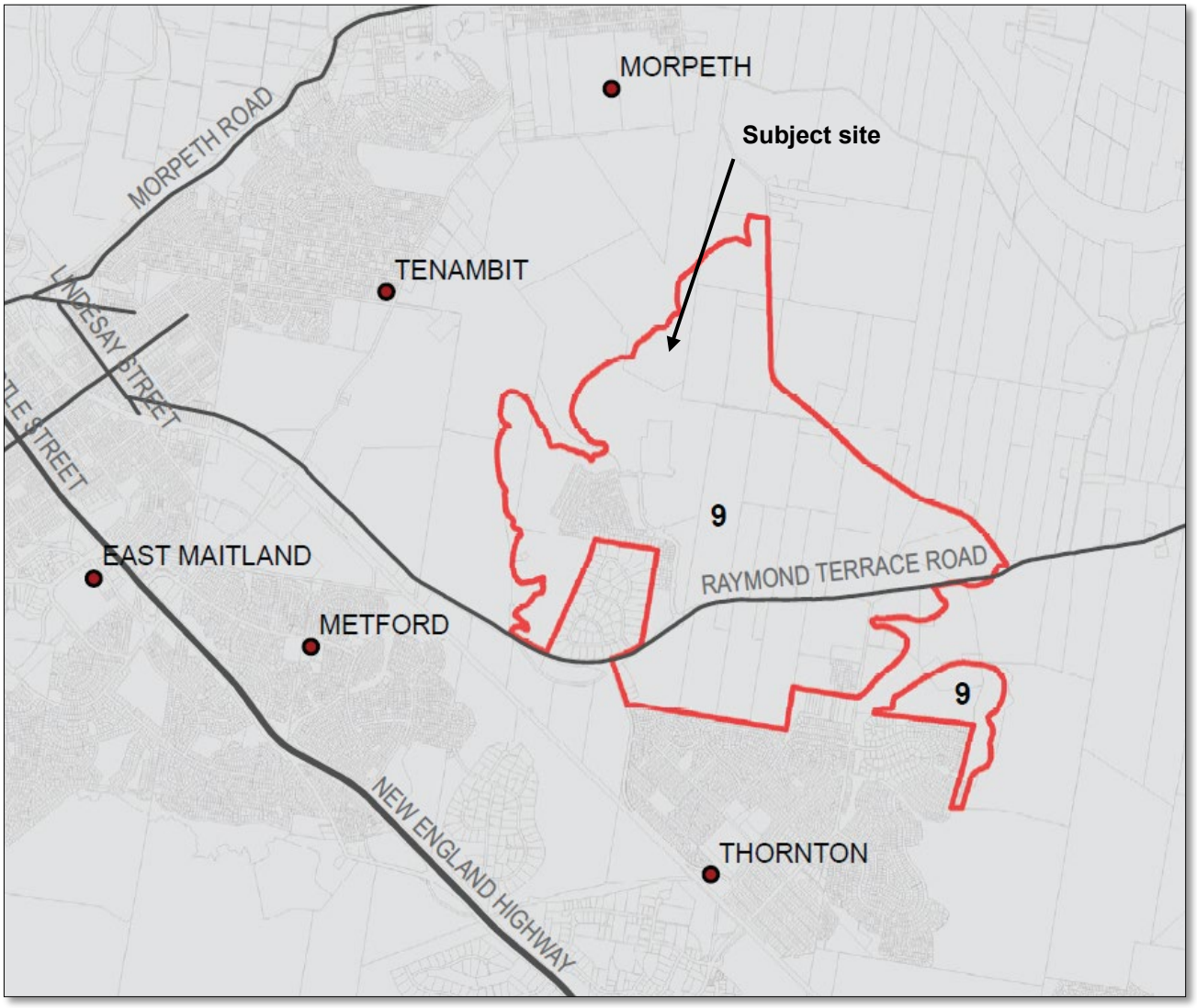


Figure 10: Bushfire Planning - Urban Release Area: Thornton North

4. Bushfire Protection Measures

This BAR has adopted the methodology to determine the appropriate Bushfire Protection Measures (BPMs) detailed in PBP 2019. As part of the BAR, the recommended BPMs demonstrate the aims and objectives of PBP 2019 have been satisified; including the matters considered by the RFS necessary to protect persons, property and the environment from the danger that may arise from a bushfire.

4.1. Asset Protection Zones – Performance Solution

An APZ is an area surrounding a development that is managed to reduce the bushfire hazard to an acceptable level to mitigate the risk to life and property. The required width of the APZ varies with slope and the type of hazard. An APZ can consist of both an inner protection area (IPA) and an outer protection area (OPA). In this instance the balance of the development site shall be managed as an IPA.

An APZ can include the following:

- Lawns;
- Discontinuous gardens;
- Swimming pools;
- Roads, driveways and managed verges;
- Unattached non-combustible garages with suitable separation from the dwelling;
- Open space / parkland; and
- Car parking.

The presence of a few shrubs or trees in the APZ is acceptable provided that they:

- Do not touch or overhang any buildings;
- Are well spread out and do not form a continuous canopy;
- Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
- Are located far enough away from any dwelling so that they will not ignite the dwelling by direct flame contact or radiant heat emission.

Woodpiles, wooden sheds, combustible material storage areas, large areas / quantities of garden mulch, stacked flammable building materials etc. are not recommended in the APZ.

4.1.1. Determining the Appropriate Setbacks

To achieve compliance with the performance criteria for APZs (Table 5.3a), the Acceptable Solutions outlined in Table A1.12.2 of PBP 2019 may be adopted as a deemed-to-satisify solution. Specifically, the recommended APZs have been calculated to ensure a building is able to be constructed will not be exposed to radiant heat levels greater than 29kW/m^2.

Refer to **Table 3** for the required APZs.

Table 3: Required APZ setback - FDI @ 100

Transect	Vegetation Classification (PBP 2019)	Slope	PBP 2019 (Table A1.12.2)	APZ Provided
T1 East	Non-Hazard (Existing development)	-2.2° Upslope	N/A	>100m
T2 East	Non-Hazard (Existing development)	-2.5° Upslope	N/A	>100m
T3 On-site	*Grassland*	1.9° Downslope	12m	>12m
T4 On-site	*Grassland*	2.5° Downslope	12m	>12m
T5 On-site	*Grassland*	1.9° Downslope	12m	>12m

The recommended APZ is considered to be reasonable in this instance and satisfies the Performance Criteria for APZs outlined in Table 5.3a of PBP 2019.

4.2. Access – Performance Solution

In the unlikely event of a serious bushfire, it will be essential to ensure that adequate ingress / egress and the provision of defendable space are afforded in the subdivision layout. All dwellings must have direct access to a public road. Section 5.3.2 of PBP 2019 requires a development to provide safe operational access to structures and water supply for emergency services while residents are seeking to evacuate.

Primary access to the proposed development will be available from several interconnecting streets via the neighbouring existing eastern and southern subdivisions. The proposed development provides a 10.5m wide perimeter road (Stillwater Parade) that separates the residential lots from the bushfire hazard. There are also several non-perimeter roads providing safe, direct access and egress to each residential lot. All non-perimeter roads are a minimum of 8m wide; with 2 non-perimeter roads being 10.5m and 11.0m wide (Glasspond Street and Caldera Street). Accordingly, all new roads comply with the Acceptable Solutions for public access roads (5.5m and 8m respectively).

Although the proposed road design complies with the Acceptable Solutions under Table 5.3b of PBP 2019, it is understood Maitland City Council requires on-street parking on both sides of the public roads. Consequently, an 8m wide non-perimeter road cannot fulfil this requirement as parking is only possible on 1 side of a road where a minimum 5.5m wide carriageway is required.

Accordingly, to ensure the proposed development complies with all relevant Acceptable Solutions of PBP 2019, a Performance Solution has been prepared to ensure the proposal is able to comply with the Performance Criteria detailed in Table 5.3b of PBP 2019.

A Pre-DA Advice application was submitted to the RFS in September 2022. The advice sought by the RFS aimed to obtain support for the proposed Performance Solution; specifically, the requirement to provide vehicle parking outside of road carriageway. The following information was provided to support the Performance Solution.

All new perimeter roads and non-perimeter roads are required to be designed in accordance with Maitland City Council development control plan and engineering specifications. The proposed 8m wide internal local streets (non-perimeter roads) are considered sufficiently wide enough to accommodate parking for light vehicles on both sides of road, outside of the primary vehicle carriageway. It is noted the standard for on-street parking required by Australian Standard AS2890.5:2020 Parking facilities On-street parking for roads with a speed limit of 50km/hr or less is to be between 2.0m and 2.3m. It is also noted that a RFS Category 1 Firefighting vehicle is 2.4m wide. Furthermore, applying the option of permitting short constrictions where the width of the access road may be reduced for sections less than 30m, an 8m wide road is considered wide enough to provide a continuous unobstructed carriageway with parking on both sides of the road. The combination of double width driveways along a typical residential local street will prevent a continuous line of parked cars on both sides of the local street. It is also unlikely that on-street parking demand in the locality would result in vehicles parked along both sides of non-perimeter (or perimeter) roads.

Due to the lower risk bushfire hazard to the east, we request the RFS customise the conditions of the BFSA to omit the Acceptable Solution requiring "parking is provided outside of the carriageway width". This will permit some infrequent parking within the carriageway without compromising emergency services vehicles. Alternatively, the RFS may consider a minimum 4m wide carriageway for non-perimeter roads and a 6.5m wide carriageway for perimeter roads. Both options are still able to achieve the Intent of Measures for Access.

The RFS provided their Pre-DA Advice Summary on 9 February 2023 and is contained **in Appendix E**. The RFS confirmed support for the proposed Performance Solution as it was considered an appropriate design solution commensurate with the bushfire risk profile of the site.

In summary, it is considered the proposed road network provides safe, all-weather two-way through roads and safe operational access for emergency service personnel and evacuation purposes; complying with the relevant provisions contained in Section 5.3.2 of PBP. Accordingly, the access requirements can be achieved by meeting the Performance Criteria under Table 5.3b of PBP 2019.

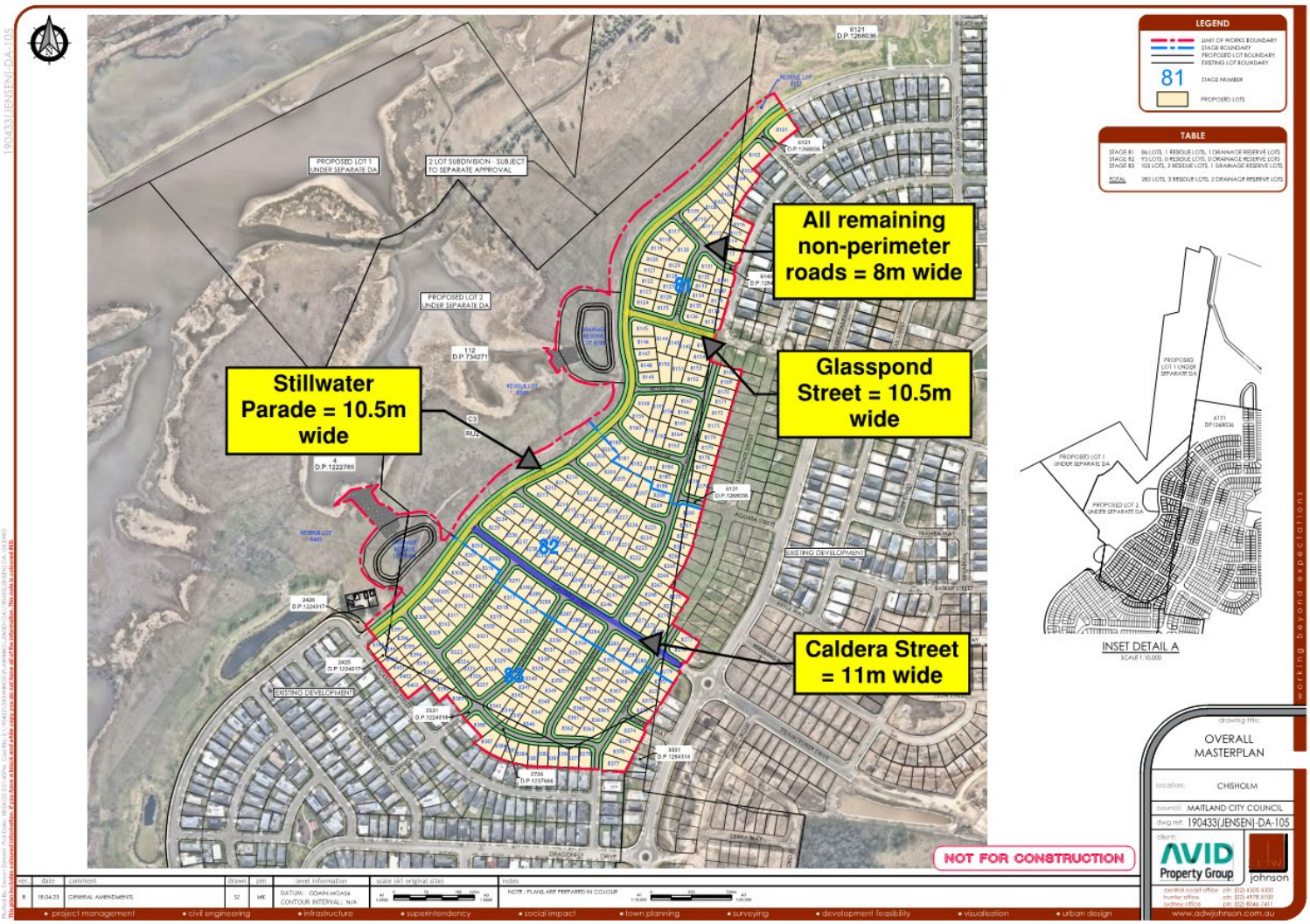


Figure 11: Road Hierarchy Plan

4.3. Services - water, electricity and gas

4.3.1. Water

The proposed development is able to be connected to a reticulated water supply in accordance with Table 5.3c of PBP 2019.

4.3.2. Electricity

The electricity services for the proposed development will be located underground.

4.3.3. Gas

Any existing or future reticulated or bottled gas will be installed and maintained according to the requirements of the relevant authorities and AS 1596-2002. It is expected that the location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.

4.4. Construction Standards - Bushfire Attack Level

All buildings must satisfy the Performance Requirements of the National Construction Code: Building Code of Australia (BCA). Part 2.3 of Volume 2 of the BCA applies to dwellings located within designated bushfire areas, which are defined as:

> *Land which has been designated under a power in legislation as being subject, or likely to be subject to, bushfires.*

Accordingly, any forthcoming habitable buildings must satisfy the requirements of Part 3.7.4 of the BCA. The *Deemed-to-Satisfy* (DTS) provision of the BCA can only be achieved if dwellings in bushfire prone areas are constructed in accordance with Australian Standard *AS3959-2018 Construction of buildings in bushfire prone areas*. Alternatively, the DTS provisions can also be achieved if the habitable building is constructed in accordance with the NASH Standard 'Steel Framed Construction in Bushfire Areas'.

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer/architect should be made aware of this recommendation.

The determinations of the appropriate bushfire attack level (BAL) is based on the maximum potential radiant heat exposure. BALs are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the BAL is derived by assessing the:

- Relevant GFDI = *100*;
- Flame temperature = *1090K*;
- Slope = *downslope*;
- Vegetation classification = *grassland*; and
- Building location.

The greatest bushfire hazard was found to the west of the site being a *grassland*. All sites with the development layout are exposed to BAL-29 or less.

Refer to **Table 4** and **Figure 12** for the required Bushfire Attack Levels (BALs).

Table 4: Required BALs (Table A1.12.5 PBP 2019)

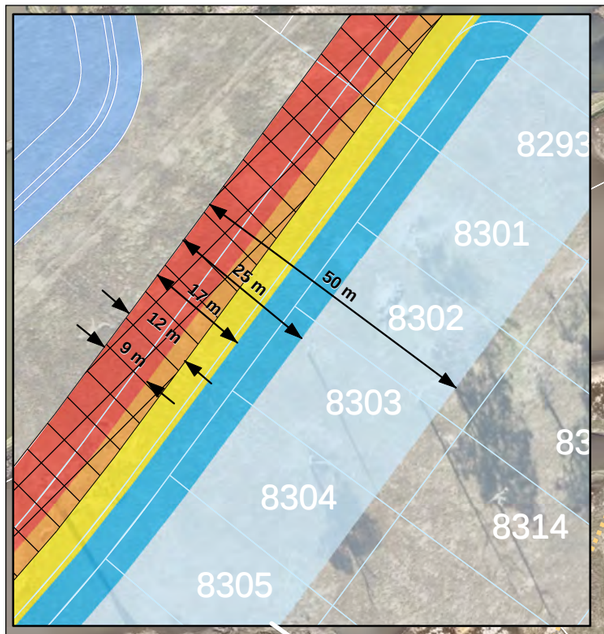
Transect	Vegetation Classification (PBP 2019)	Slope	APZ (PBP 2019 A1.12.5)	Distance from Hazard	Bushfire Attack Level (BAL)
T3 to T5 On-site West	*Grassland*	<5.0° Downslope	12m	0m-<9m	BAL-FZ
				9m-<12m	BAL-40
				12m-<17m	BAL-29
				17m-<25m	BAL-19
				25m-<50m	BAL-12.5

Project: Berry Park Subdivision
Job no: 2254

Figure 12

Subdivision BAL Plan

BUSHFIRE PLANNING AUSTRALIA



Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL
8101	BAL-19	8152	BAL-LOW	8203	BAL-19	8254	BAL-LOW	8305	BAL-12.5	8356	BAL-LOW
8102	BAL-19	8153	BAL-LOW	8204	BAL-LOW	8255	BAL-LOW	8306	BAL-12.5	8357	BAL-LOW
8103	BAL-12.5	8154	BAL-LOW	8205	BAL-LOW	8256	BAL-LOW	8307	BAL-12.5	8358	BAL-LOW
8104	BAL-12.5	8155	BAL-LOW	8206	BAL-LOW	8257	BAL-LOW	8308	BAL-19	8359	BAL-LOW
8105	BAL-12.5	8156	BAL-LOW	8207	BAL-LOW	8258	BAL-LOW	8309	BAL-LOW	8360	BAL-LOW
8106	BAL-12.5	8157	BAL-LOW	8208	BAL-LOW	8259	BAL-LOW	8310	BAL-LOW	8361	BAL-LOW
8107	BAL-12.5	8158	BAL-19	8209	BAL-LOW	8260	BAL-LOW	8311	BAL-LOW	8362	BAL-LOW
8108	BAL-12.5	8159	BAL-12.5	8210	BAL-19	8261	BAL-LOW	8312	BAL-LOW	8363	BAL-LOW
8109	BAL-19	8160	BAL-19	8211	BAL-12.5	8262	BAL-LOW	8313	BAL-LOW	8364	BAL-LOW
8110	BAL-12.5	8161	BAL-LOW	8212	BAL-12.5	8263	BAL-LOW	8314	BAL-LOW	8365	BAL-LOW
8111	BAL-LOW	8162	BAL-LOW	8213	BAL-19	8264	BAL-LOW	8315	BAL-LOW	8366	BAL-LOW
8112	BAL-LOW	8163	BAL-LOW	8214	BAL-LOW	8265	BAL-LOW	8316	BAL-LOW	8367	BAL-LOW
8113	BAL-LOW	8164	BAL-LOW	8215	BAL-LOW	8266	BAL-LOW	8317	BAL-LOW	8368	BAL-LOW
8114	BAL-LOW	8165	BAL-LOW	8216	BAL-LOW	8267	BAL-LOW	8318	BAL-LOW	8369	BAL-LOW
8115	BAL-LOW	8166	BAL-LOW	8217	BAL-LOW	8268	BAL-LOW	8319	BAL-LOW	8370	BAL-LOW
8116	BAL-LOW	8167	BAL-LOW	8218	BAL-LOW	8269	BAL-LOW	8320	BAL-LOW	8371	BAL-LOW
8117	BAL-19	8168	BAL-LOW	8219	BAL-LOW	8270	BAL-LOW	8321	BAL-LOW	8372	BAL-LOW
8118	BAL-12.5	8169	BAL-LOW	8220	BAL-LOW	8271	BAL-LOW	8322	BAL-LOW	8373	BAL-LOW
8119	BAL-12.5	8170	BAL-LOW	8221	BAL-LOW	8272	BAL-LOW	8323	BAL-LOW	8374	BAL-LOW
8120	BAL-12.5	8171	BAL-LOW	8222	BAL-LOW	8273	BAL-LOW	8324	BAL-LOW	8375	BAL-LOW
8121	BAL-12.5	8172	BAL-LOW	8223	BAL-LOW	8274	BAL-LOW	8325	BAL-LOW	8376	BAL-LOW
8122	BAL-12.5	8173	BAL-LOW	8224	BAL-LOW	8275	BAL-LOW	8326	BAL-LOW	8377	BAL-LOW
8123	BAL-12.5	8174	BAL-LOW	8225	BAL-LOW	8276	BAL-LOW	8327	BAL-LOW	8378	BAL-LOW
8124	BAL-19	8175	BAL-LOW	8226	BAL-LOW	8277	BAL-LOW	8328	BAL-LOW	8379	BAL-LOW
8125	BAL-LOW	8176	BAL-LOW	8227	BAL-LOW	8278	BAL-LOW	8329	BAL-LOW	8380	BAL-LOW
8126	BAL-LOW	8177	BAL-LOW	8228	BAL-LOW	8279	BAL-LOW	8330	BAL-LOW	8381	BAL-LOW
8127	BAL-LOW	8178	BAL-LOW	8229	BAL-LOW	8280	BAL-LOW	8331	BAL-LOW	8382	BAL-LOW
8128	BAL-LOW	8179	BAL-LOW	8230	BAL-LOW	8281	BAL-LOW	8332	BAL-LOW	8383	BAL-LOW
8129	BAL-LOW	8180	BAL-19	8231	BAL-LOW	8282	BAL-LOW	8333	BAL-LOW	8384	BAL-LOW
8130	BAL-LOW	8181	BAL-LOW	8232	BAL-19	8283	BAL-LOW	8334	BAL-LOW	8385	BAL-LOW
8131	BAL-LOW	8182	BAL-LOW	8233	BAL-12.5	8284	BAL-LOW	8335	BAL-LOW	8386	BAL-LOW
8132	BAL-LOW	8183	BAL-LOW	8234	BAL-12.5	8285	BAL-LOW	8336	BAL-LOW	8387	BAL-LOW
8133	BAL-LOW	8184	BAL-LOW	8235	BAL-19	8286	BAL-LOW	8337	BAL-LOW	8388	BAL-LOW
8134	BAL-LOW	8185	BAL-LOW	8236	BAL-LOW	8287	BAL-LOW	8338	BAL-LOW	8389	BAL-LOW
8135	BAL-LOW	8186	BAL-LOW	8237	BAL-LOW	8288	BAL-LOW	8339	BAL-LOW	8390	BAL-LOW
8136	BAL-LOW	8187	BAL-LOW	8238	BAL-LOW	8289	BAL-LOW	8340	BAL-LOW	8391	BAL-LOW
8137	BAL-LOW	8188	BAL-LOW	8239	BAL-LOW	8290	BAL-LOW	8341	BAL-LOW	8392	BAL-LOW
8138	BAL-LOW	8189	BAL-LOW	8240	BAL-LOW	8291	BAL-LOW	8342	BAL-LOW	8393	BAL-LOW
8139	BAL-LOW	8190	BAL-LOW	8241	BAL-LOW	8292	BAL-LOW	8343	BAL-LOW	8394	BAL-LOW
8140	BAL-LOW	8191	BAL-LOW	8242	BAL-LOW	8293	BAL-19	8344	BAL-LOW	8395	BAL-LOW
8141	BAL-LOW	8192	BAL-LOW	8243	BAL-LOW	8294	BAL-LOW	8345	BAL-LOW	8396	BAL-12.5
8142	BAL-LOW	8193	BAL-LOW	8244	BAL-LOW	8295	BAL-LOW	8346	BAL-LOW	8397	BAL-19
8143	BAL-LOW	8194	BAL-LOW	8245	BAL-LOW	8296	BAL-LOW	8347	BAL-LOW	8398	BAL-12.5
8144	BAL-LOW	8195	BAL-LOW	8246	BAL-LOW	8297	BAL-LOW	8348	BAL-LOW	8399	BAL-LOW
8145	BAL-19	8196	BAL-LOW	8247	BAL-LOW	8298	BAL-LOW	8349	BAL-LOW	8400	BAL-LOW
8146	BAL-12.5	8197	BAL-LOW	8248	BAL-LOW	8299	BAL-LOW	8350	BAL-LOW	8401	BAL-LOW
8147	BAL-12.5	8198	BAL-LOW	8249	BAL-LOW	8300	BAL-LOW	8351	BAL-LOW	8402	BAL-LOW
8148	BAL-12.5	8199	BAL-LOW	8250	BAL-LOW	8301	BAL-12.5	8352	BAL-LOW	8403	BAL-LOW
8149	BAL-19	8200	BAL-LOW	8251	BAL-LOW	8302	BAL-12.5	8353	BAL-LOW		
8150	BAL-LOW	8201	BAL-12.5	8252	BAL-LOW	8303	BAL-12.5	8354	BAL-LOW		
8151	BAL-LOW	8202	BAL-12.5	8253	BAL-LOW	8304	BAL-12.5	8355	BAL-LOW		

Subject Site
100m Buffer
140m Buffer

Proposed Development

Lot Boundary
Basins

Asset Protection Zone

Required Bushfire Attack Levels (AS3959-2018)

BAL - FZ
BAL - 40
BAL - 29
BAL - 19
BAL - 12.5

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
Surface analysis: Derived from LiDAR - Newcastle 1 metre Resolution Digital Elevation Model © Department Finance, Services and Innovation 2012
Vegetation: BPA 2022
Aerial photo: Nearmap 14/06/2022

N
W E
S

0 50 100 150 200
Meters

A3 Scale: 1:4,000

File:2254-BerryParkSUB-Fig7-BALs-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

4.5. Landscaping and Vegetation Management

In APZs and IPAs, the design and management of the landscaped areas in the vicinity of buildings have the potential to improve the chances of survival of people and buildings. Reduction of fuel does not require the removal of all vegetation. Trees and plants can provide some bushfire protection from strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns.

Generally landscaping in and around a bushfire hazard should consider the following:

- Priority given to retaining species that have a low flammability;
- Priority given to retaining species which do not drop much litter in the bushfire season, and which do not drop litter that persists as ground fuel in the bush fire season;
- Priority given to retaining smooth barked species over stringy bark; and
- Create discontinuous or gaps in the vegetation to slow down or break the progress of fire towards the dwellings.

Landscaping within APZs and IPAs should give due regard to fire retardant plants and ensure that fuel loads do not accumulate as a result of the selected plant varieties.

The principles of landscaping for bushfire protection aim to:

- Prevent flame impingement on dwellings;
- Provide a defendable space for property protection;
- Reduce fire spread;
- Deflect and filter embers;
- Provide shelter from radiant heat; and
- Reduce wind speed.

Plants that are less flammable have the following features;

- High moisture content;
- High levels of salt;
- Low volatile oil content of leaves;
- Smooth barks without ‘ribbons’ hanging from branches or trunks; and
- Dense crown and elevated branches.

Avoiding understorey planting and regular trimming of the lower limbs of trees also assists in reducing fire penetration into the canopy. Rainforests species such as Syzygium and figs are preferred to species with high fine fuel and/or oil content.

Careful thought must be given to the type and physical location of any proposed site landscaping. Inappropriately selected and positioned vegetation has the potential to ‘replace’ any previously removed fuel load.

Bearing in mind the desired aesthetic and environment sought by site landscaping, some basic principles have been recommended to help minimise the chance of such works contributing to the potential hazard on site.

Whilst it is recognised that fire-retardant plant species are not always the most aesthetically pleasing choice for site landscaping, the need for adequate protection of life and property requires that a suitable balance between visual and safety concerns be considered.

It is reiterated again that it is essential that any landscaped areas and surrounds are subject to ongoing fuel management and reduction to ensure that fine fuels do not build up.

4.6. Emergency Services

In the event of an emergency, there is a NSW Rural Fire Service located at 169 Swan Street, Morpeth within 2.2km (approximately 4 minutes) from the site (**Figure 13**). A second NSW Rural Fire Brigade is located Kooralbyn Street, Thornton within 8.8kms (approximately 12 minutes) from the site (**Figure 14**).

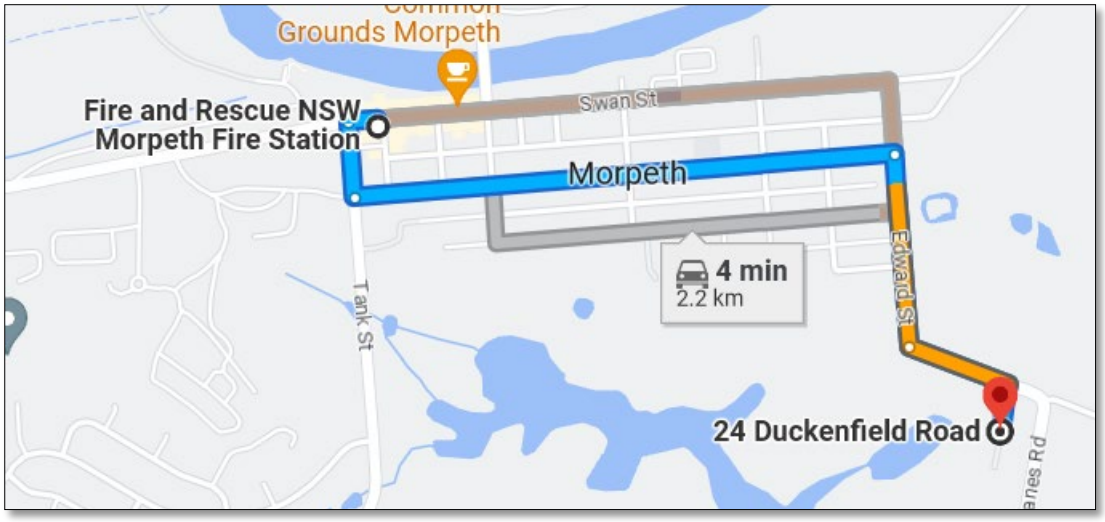


Figure 13: NSW Fire & Rescue Service - Morpeth

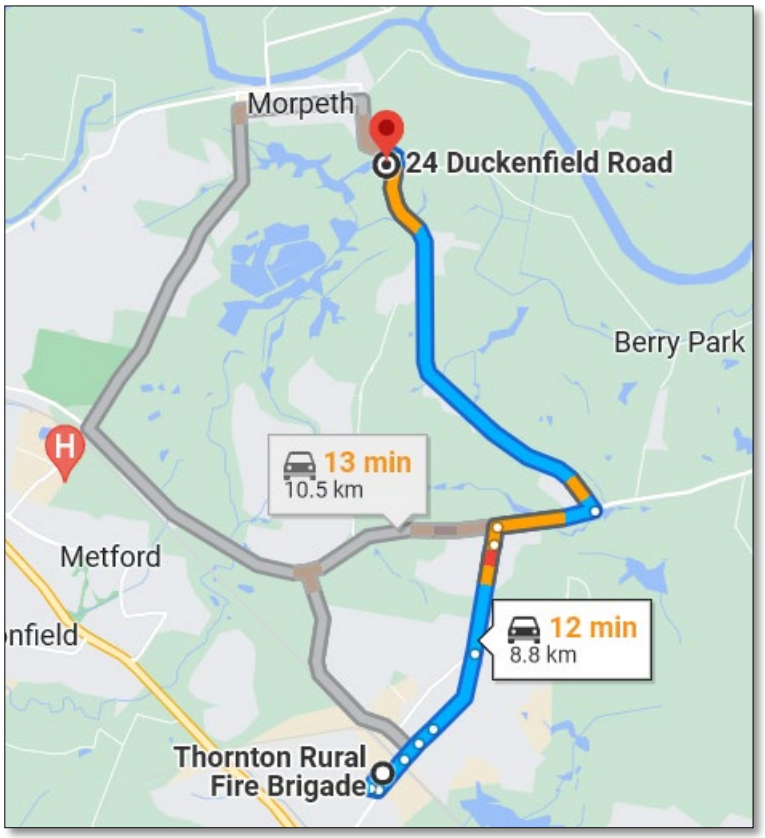


Figure 14: NSW Rural Fire Brigade - Thornton

5. Conclusion and Recommendations

Bushfire Planning Australia prepared a Bushfire Assessment Report for the proposed residential subdivision at 24 Duckenfield Road, Berry Park; legally referred to as Lot 112 DP734271.

This BAR found the site was exposed to a marginal bushfire hazard contained to the actively grazed paddocks; primarily to the west of the site which is also subject to regular inundation. The vegetation mapped as bushfire prone has either been cleared or heavily modified and has been assessed as a *grassland* due to extensive tree clearing and the absence of any vegetation apart from pasture grasses.

Accordingly, the predominant vegetation surrounding the site in unmanaged conditions is consistent with a *grassland* vegetation formation as described in the NSW Rural Fire Service document Planning for Bushfire Protection 2019 (PBP 2019). Primarily as it cannot be guaranteed that the paddocks will continue to be actively grazed.

The BAR concludes that the hazard identified can be successfully mitigated by applying the requirements of PBP 2019, including Asset Protection Zones (APZs).

The following key recommendations have been designed to enable the proposed development to achieve the aims and objectives of PBP 2019:

1. All land within the development site zoned R1 Residential shall be managed as an inner protection area (IPA) as outlined Appendix 4 of PBP 2019 and the RFS document *Standards for asset protection zones*;
2. The APZs shown in **Figure 12 - Subdivision BAL Plan** shall be maintained in perpetuity in accordance with the requirements of Appendix 4 of PBP 2019;
3. Access shall be provided in accordance with the Performance Criteria detailed in Table 5.3b of PBP 2019. This will require the provision of a minimum of four (4) separate road access points provided from the development site to the east and west to ensure safe evacuation for all residents;
4. On-street vehicle parking may be permitted within road carriageways as all roads are a minimum 8m wide;
5. All temporary turning heads shall be constructed in accordance Appendix A3.3 of PBP 2019;
6. Vegetation within road verges (including swales) to be consistent with a grassland vegetation classification with tree canopy less than 10% at maturity (and considered unmanaged);
7. The Bushfire Attack Level (BAL) ratings identified in **Figure 12 - Subdivision BAL Plan** apply to all future dwellings to be constructed on the proposed lots. All future dwellings to be constructed on the proposed lots shall have due regard to the specific considerations given in the National Construction Code: Building Code of Australia (BCA) which makes specific reference to Australian Standard AS3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) and the NASH Standard Steel Framed Construction in Bushfire Prone Areas;
8. All new lots are to be connected to a reliable water supply network and that suitable fire hydrants are located throughout the development site that are clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure shall comply with AS2419.1 2005 and section 5.3.3 of PBP 2019;
9. Consideration should be given to landscaping and fuel loads on site to decrease potential fire hazards on site; and
10. The Rural Fire Service endorse the Subdivision BAL Plan contained in **Appendix D**.

This assessment has been made based on the bushfire hazards observed in and around the site at the time of inspection and production (May 2023).

Should the above recommendations be implemented, the existing bushfire risk should be suitably mitigated to offer an acceptable level of protection to life and property for those persons and assets occupying the site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

6. References

- NSW Rural Fire Service (2005). Standards for Asset Protection Zones. NSW Rural Fire Service.
- NSW Rural Fire Service (2019). Planning for Bushfire Protection – A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.
- Ramsay, GC and Dawkins, D (1993). Building in Bushfire-prone Areas – Information and Advice. CSIRO and Standards Australia.
- Rural Fires and Environmental Assessment Legislation Amendment Act 2002.
- Standards Australia (2018). AS 3959 – 2018: Construction of Buildings in Bushfire-prone Areas.

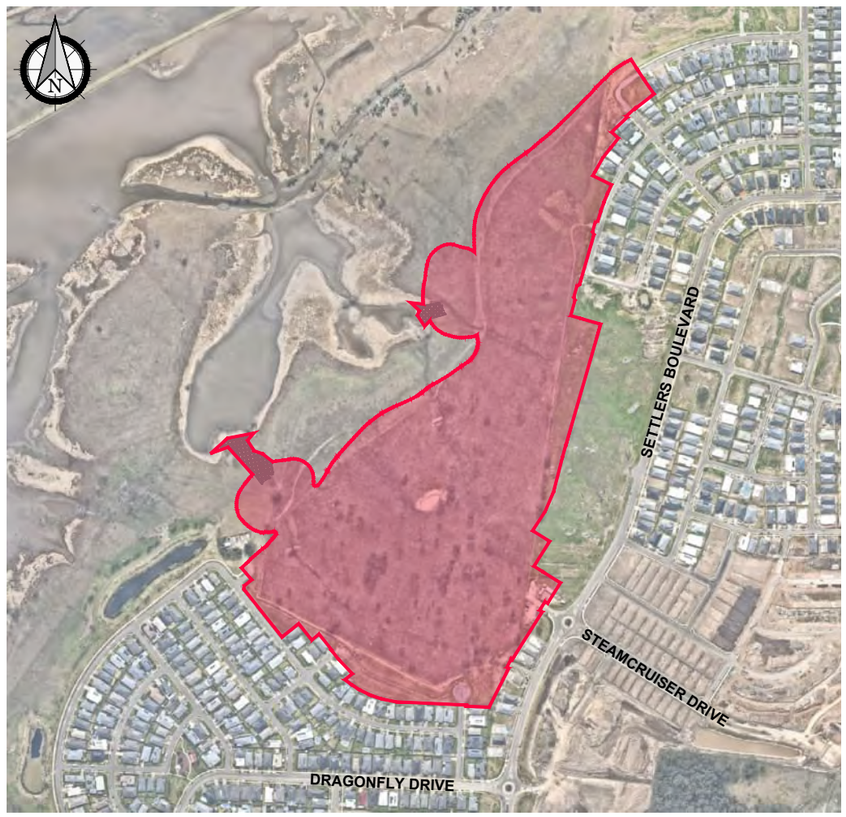
Appendix A: Proposed Plan of Subdivision

DEVELOPMENT APPLICATION

"WATERFORD" JENSEN

LOT 112 IN D.P.734271, LOT 6121 IN D.P.1268036, LOT 6140 IN D.P.1284398, LOT 6131 IN D.P.1268036, LOT 3001 IN D.P.1264314, LOT 2726 IN D.P.1237666, LOT 2531 IN D.P.1224018, LOT 2425 IN D.P.1224017 & LOT 4 IN D.P.1222785

RAYMOND TERRACE ROAD, CHISHOLM



INDEX OF DRAWINGS

DRAWING No.	TITLE NAME
DA-101	COVER SHEET & DRAWING INDEX
DA-102	LOCALITY PLAN - MAITLAND LGA
DA-103	LOCALITY PLAN - LOCAL CONTEXT
DA-104	EXISTING SITE NATURAL SURFACE PLAN
DA-105	OVERALL MASTERPLAN
DA-106	DETAIL PLAN - SHEET 1
DA-107	DETAIL PLAN - SHEET 2
DA-108	DETAIL PLAN - SHEET 3
DA-109	DETAIL PLAN - SHEET 4
DA-110	DETAIL PLAN - SHEET 5
DA-111	DETAIL PLAN - SHEET 6
DA-112	DETAIL PLAN - SHEET 7
DA-113	LOT SIZE PLAN
DA-114	ZONING & FLOOD MAPPING PLAN
DA-115	LOT DIVERSITY PLAN
DA-116	ACID SULPHATE SOILS MAPPING PLAN
DA-117	WALKABILITY PLAN

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:5,000 — 0 125 250m — A3 1:10,000	NOTE : PLANS ARE PREPARED IN COLOUR

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

drawing title:

COVER SHEET & DRAWING INDEX

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-101

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

190433(JENSEN)-DA-104

LEGEND

- LIMIT OF WORKS BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: 1.0m	A1 1:2000 — 0 50 100m — A3 1:4000	NOTE : PLANS ARE PREPARED IN COLOUR

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

drawing title:

EXISTING SITE NATURAL SURFACE PLAN

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-104

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

Plotted By: Steven Zammit Plot Date: 18/04/23 3:01:34PM Cad File: S:\190433\DRAWINGS\PLANNING\JENSEN DA\190433(JENSEN)-DA-104.DWG

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190433(JENSEN)-DA-105

PROPOSED LOT 1 UNDER SEPARATE DA

2 LOT SUBDIVISION - SUBJECT TO SEPARATE APPROVAL

PROPOSED LOT 2 UNDER SEPARATE DA

6121 D.P.1268036

RELICT WAY

RESIDUE LOT 8187

MEADOWHAWK STREET

6121 D.P.1268036

FONTANA STREET

STILLWATER PARADE

EXISTING DEVELOPMENT

6140 D.P.1284398

SETTLERS BOULEVARD

PETAJAJI STREET

ROAD 01

81

GLASSPOND STREET

DRAINAGE RESERVE LOT 8188

112 D.P.734271

RESIDUE LOT 8300

ROAD 03

C3

RU2

4 D.P.1222785

ROAD 04

MALACHITE STREET

GOLDBRICK STREET

6131 D.P.1268036

AQUATA STREET

CRUISER STREET

TRAMEA WAY

SILVARUM STREET

PARADE

STILLWATER

ROAD 05

82

RESIDUE LOT 8405

DRAINAGE RESERVE LOT 8404

CALDERA STREET

EXISTING DEVELOPMENT

BASKER STREET

RIFFLE WAY

2426 D.P.1224017

ROAD 06

DARKMOUTH STREET

GOLDBRICK STREET

MALACHITE STREET

83

GARRISON WAY

REEDLING ROAD

PENNANT STREET

ODANATA STREET

2425 D.P.1224017

ROCKMASTER STREET

EXISTING DEVELOPMENT

LEDA STREET

2531 D.P.1224018

DASHER WAY

PERCHER STREET

DARKMOUTH STREET

ELLIDIE CIRCUIT

STEAMCRUISER DRIVE

3001 D.P.1264314

2726 D.P.1237666

SIERRA WAY

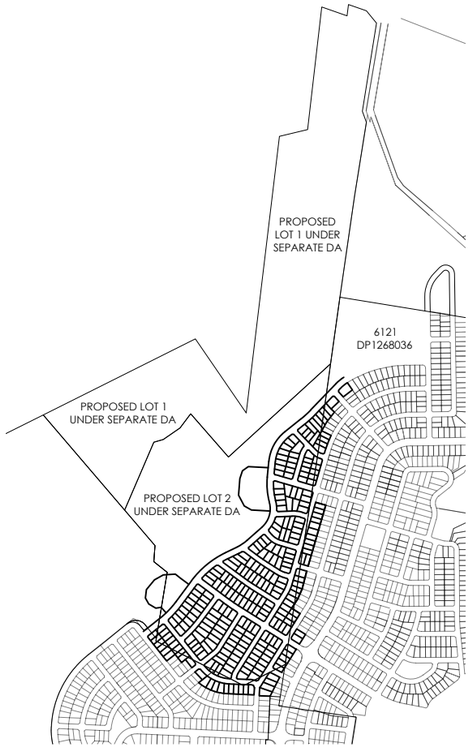
DRAGONFLY DRIVE

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS

TABLE

STAGE 81	86 LOTS, 1 RESIDUE LOTS, 1 DRAINAGE RESERVE LOTS
STAGE 82	93 LOTS, 0 RESIDUE LOTS, 0 DRAINAGE RESERVE LOTS
STAGE 83	103 LOTS, 2 RESIDUE LOTS, 1 DRAINAGE RESERVE LOTS
TOTAL	282 LOTS, 3 RESIDUE LOTS, 2 DRAINAGE RESERVE LOTS



INSET DETAIL A
SCALE 1:10,000

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:2500 0 50 100 125m A3 1:5000	NOTE : PLANS ARE PREPARED IN COLOUR A1 1:10,000 0 250 500m A3 1:20,000

drawing title:

OVERALL MASTERPLAN

location: CHISHOLM

council: MAITLAND CITY COUNCIL

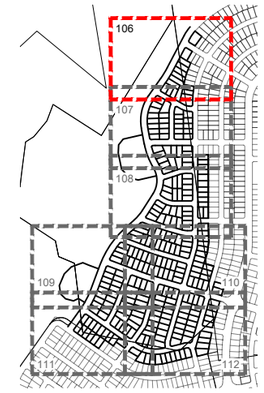
dwg ref: 190433(JENSEN)-DA-105

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

190433(JENSEN)-DA-106



DETAIL SHEET LAYOUT PLAN
N.T.S

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 0 12.5 25.0m A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

drawing title:

DETAIL PLAN
SHEET 1

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-106

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

190433(JENSEN)-DA-107

REFER SHEET 106 FOR CONTINUATION

ROAD 01

STILLWATER PARADE (4.5 - 10.5 - 6.0)

ROAD 02

GLASSPOND STREET (4.75 - 10.5 - 4.75)

GOLDRING STREET

EXISTING DEVELOPMENT

FUTURE SUBDIVISION
REFER APPROVED DA/2018/2020
(SUBJECT TO MODIFICATION)

DRAINAGE RESERVE
LOT 8188

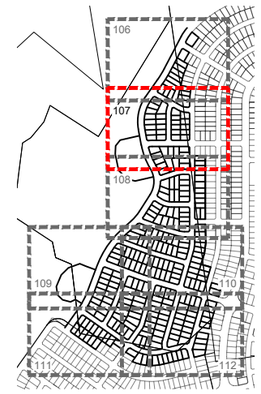
PROPOSED
STORMWATER
BASIN B

81

REFER SHEET 108 FOR CONTINUATION

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS



DETAIL SHEET LAYOUT PLAN
N.T.S

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 0 12.5 25.0m A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

drawing title:
DETAIL PLAN
SHEET 2

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-107

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

REFER SHEET 107 FOR CONTINUATION

DRAINAGE RESERVE
LOT 8188

PROPOSED
STORMWATER
BASIN B

RESIDUE LOT
8300

ROAD 03

ROAD 04

ROAD 05

STILLWATER PARADE (14.5 - 10.5 - 6.0)

GOLDRING STREET

MALACHITE STREET

AQUATA STREET

8147 632m²
8148 587m²
8149 614m²
8150 935m²
8151 790m²
8153 578m²
8152 648m²
8158 804m²
8157 642m²
8156 723m²
8167 589m²
8166 611m²
8165 611m²
8164 611m²
8163 605m²
8159 585m²
8160 845m²
8161 652m²
8162 653m²
8180 586m²
8201 556m²
8181 672m²
8182 677m²
8183 678m²
8184 571m²
8185 509m²
8202 555m²
8203 659m²
8204 708m²
8205 704m²
8206 705m²
8207 703m²
8186 509m²
8208 509m²
8209 589m²
8210 652m²
8211 724m²
8212 658m²
8231 660m²
8230 601m²
8229 558m²
8228 582m²
8168 540m²
8169 540m²
8170 540m²
8171 540m²
8172 703m²
8173 703m²
8174 578m²
8175 544m²
8176 544m²
8177 543m²
8178 649m²
8179 583m²
8260 810m²
8261 596m²

6283 6278 6277 6276 6271 6270 6269 6268 6267 6266 6265 6264 6262 6261 6225 6224 6223 6222 6221

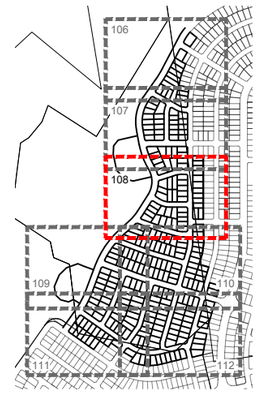
FUTURE SUBDIVISION
REFER APPROVED DA/2018/2020
(SUBJECT TO MODIFICATION)

REFER SHEET 109 FOR CONTINUATION

REFER SHEET 110 FOR CONTINUATION

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS



DETAIL SHEET LAYOUT PLAN
N.T.S

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 0 12.5 25.0m A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

drawing title:
DETAIL PLAN
SHEET 3

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-108

client: AVID Property Group

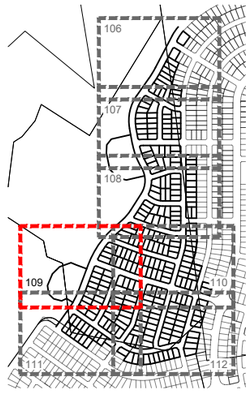
adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

190433(JENSEN)-DA-109

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS



DETAIL SHEET LAYOUT PLAN
N.T.S

REFER SHEET 108 FOR CONTINUATION

STILLWATER PARADE (4.5 - 10.5 - 6.0)

8211 724m² | 8212 658m² | 8213 889m² | 8214 566m² | 8215 561m² | 8231 660m²

8232 641m² | 8233 652m² | 8234 604m² | 8235 720m² | 8236 629m² | 8237 612m² | 8238 613m² | 8239 579m² | 8240 562m² | 8241 601m²

8259 578m² | 8258 509m² | 8257 543m² | 8256 576m² | 8255 525m²

8293 643m² | 8292 643m² | 8301 581m² | 8316 581m² | 8302 581m² | 8315 581m² | 8303 581m² | 8314 581m² | 8304 604m² | 8313 647m² | 8305 603m² | 8312 645m² | 8306 576m² | 8311 647m² | 8307 573m²

8291 758m² | 8290 617m² | 8289 610m² | 8288 733m² | 8317 797m² | 8318 752m² | 8319 765m² | 8320

ROAD 08

RESIDUE LOT 8405

DRAINAGE RESERVE LOT 8404

PROPOSED STORMWATER BASIN A

RESIDUE LOT 8405

82

REFER SHEET 110 FOR CONTINUATION

REFER SHEET 111 FOR CONTINUATION

REFER SHEET 112 FOR CONTINUATION

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 — 0 12.5 25.0m — A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

drawing title:
DETAIL PLAN
SHEET 4

location: CHISHOLM
council: MAITLAND CITY COUNCIL
dwg ref: 190433(JENSEN)-DA-109
client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

Plotted By: Steven Zammit Plot Date: 18/04/23 3:02:29PM Cad File: S:\190433\DRAWINGS\PLANNING\JENSEN DA\190433(JENSEN)-DA-109.DWG

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190433(JENSEN)-DA-110

REFER SHEET 108 FOR CONTINUATION

ROAD 05

ROAD 06

GOLDRING STREET

CALDERA STREET (4.5 - 11.0 - 4.5)

DARKMOUTH STREET

MALACHITE STREET

SETTLERS BOULEVARD

REFER SHEET 109 FOR CONTINUATION

REFER SHEET 111 FOR CONTINUATION

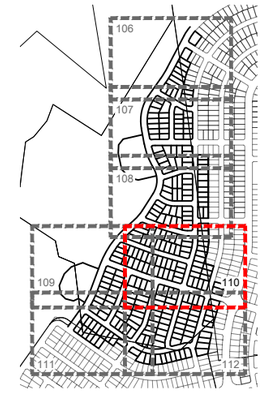
REFER SHEET 112 FOR CONTINUATION

82

FUTURE SUBDIVISION
REFER APPROVED DA/2018/2020
(SUBJECT TO MODIFICATION)

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS



DETAIL SHEET LAYOUT PLAN
N.T.S

NOT FOR CONSTRUCTION

drawing title:
DETAIL PLAN
SHEET 5

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-110

client: AVID Property Group

adw johnson

central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 0 12.5 25.0m A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

working beyond expectations

190433(JENSEN)-DA-111

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS

DETAIL SHEET LAYOUT PLAN

N.T.S

REFER SHEET 109 FOR CONTINUATION

REFER SHEET 110 FOR CONTINUATION

REFER SHEET 112 FOR CONTINUATION

RESIDUE LOT 8405

STILLWATER PARADE (14.5 - 10.5 - 6.0)

ROAD 08

ROAD 07

DARKMOUTH STREET

ROCKMASTER STREET

PERCHER STREET

EXISTING DEVELOPMENT

8305 603m² | 8306 576m² | 8307 573m² | 8308 638m² | 8309 727m² | 8310 652m² | 8311 647m² | 8312 645m² | 8313 647m² | 8314 700m²

8315 752m² | 8316 739m² | 8317 765m² | 8318 782m² | 8319 750m² | 8320 761m² | 8321 885m² | 8322 888m² | 8323 715m² | 8324 511m² | 8325 510m² | 8326 509m² | 8327 677m² | 8328 759m² | 8329 913m² | 8330 772m² | 8331 772m² | 8332 750m² | 8333 739m²

8334 603m² | 8335 603m² | 8336 603m² | 8337 603m² | 8338 603m² | 8339 603m² | 8340 603m² | 8341 603m² | 8342 685m² | 8343 731m² | 8344 623m² | 8345 582m²

8387 744m² | 8388 656m² | 8389 627m² | 8390 666m² | 8391 488m² | 8392 604m² | 8393 585m² | 8394 550m² | 8395 548m² | 8396 547m² | 8397 539m² | 8398 591m² | 8399 560m² | 8400 577m² | 8401 577m² | 8402 612m² | 8403 640m²

83

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	GENERAL AMENDMENTS	SZ	MK	DATUM: GDA94 MGA56 CONTOUR INTERVAL: N/A	A1 1:500 — 0 12.5 25.0m — A3 1:1000	NOTE : PLANS ARE PREPARED IN COLOUR

drawing title:

DETAIL PLAN
SHEET 6

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-111

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

190433(JENSEN)-DA-112

REFER SHEET 109 FOR CONTINUATION

REFER SHEET 110 FOR CONTINUATION

REFER SHEET 111 FOR CONTINUATION

DARKMOUTH STREET

GOLDRING STREET

MALACHITE STREET

DASHER WAY

ROAD 07

SETTLERS BOULEVARD

SPOTWING STREET

EXISTING DEVELOPMENT

EXISTING DEVELOPMENT

8318 752m² | 8319 765m² | 8320 782m² | 8326 509m² | 8327 677m² | 8328 759m² | 8329 913m² | 8330 772m² | 8331 761m² | 8332 750m² | 8333 739m² | 8334 700m² | 8335 638m² | 8336 603m² | 8337 603m² | 8338 603m² | 8339 646m² | 8340 675m² | 8341 603m² | 8342 685m² | 8343 731m² | 8344 623m² | 8345 582m² | 8346 1009m² | 8347 679m² | 8348 709m² | 8349 674m² | 8350 646m² | 8351 603m² | 8352 603m² | 8353 603m² | 8354 638m² | 8355 572m² | 8356 606m² | 8357 606m² | 8358 606m² | 8359 606m² | 8360 578m² | 8361 578m² | 8362 759m² | 8363 765m² | 8364 578m² | 8365 605m² | 8366 605m² | 8367 605m² | 8368 605m² | 8369 571m² | 8370 595m² | 8371 629m² | 8372 612m² | 8373 586m² | 8374 762m² | 8375 666m² | 8376 811m² | 8377 820m² | 8378 604m² | 8379 514m² | 8380 513m² | 8381 512m² | 8382 512m² | 8383 495m² | 8384 634m² | 8385 580m² | 8386 587m² | 8387 744m² | 8388 656m² | 8279 640m² | 8280 596m² | 8281 535m² | 8282 538m² | 8283 596m² | 8284 655m²

3002 | 3003 | 3004 | 3005 | 3006 | 3007 | 3008 | 3009 | 3010 | 3011 | 3012

3902 | 3903 | 3904 | 3905 | 3906 | 3907 | 3916 | 3917 | 3918 | 3919

83

LEGEND

- LIMIT OF WORKS BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- 81 STAGE NUMBER
- PROPOSED LOTS

106 | 107 | 108 | 109 | 110 | 111 | 112

DETAIL SHEET LAYOUT PLAN
N.T.S

NOT FOR CONSTRUCTION

ver.	date	comment	drawn	pm
B	18.04.23	GENERAL AMENDMENTS	SZ	MK

level information: DATUM: GDA94 MGA56; CONTOUR INTERVAL: N/A

scale (A1 original size): A1 1:500 | 0 12.5 25.0m | A3 1:1000

NOTE : PLANS ARE PREPARED IN COLOUR

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

drawing title:
DETAIL PLAN
SHEET 7

location: CHISHOLM

council: MAITLAND CITY COUNCIL

dwg ref: 190433(JENSEN)-DA-112

client: AVID Property Group

adw johnson
central coast office ph: (02) 4305 4300
hunter office ph: (02) 4978 5100
sydney office ph: (02) 8046 7411
www.adwjohnson.com.au

working beyond expectations

Appendix B: AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 2254 Berry Park (Jensen)

Client Service ID : 775626

Katrina Greville

21 Costata Crescent
Adamstown New South Wales 2289

Attention: Katrina Greville

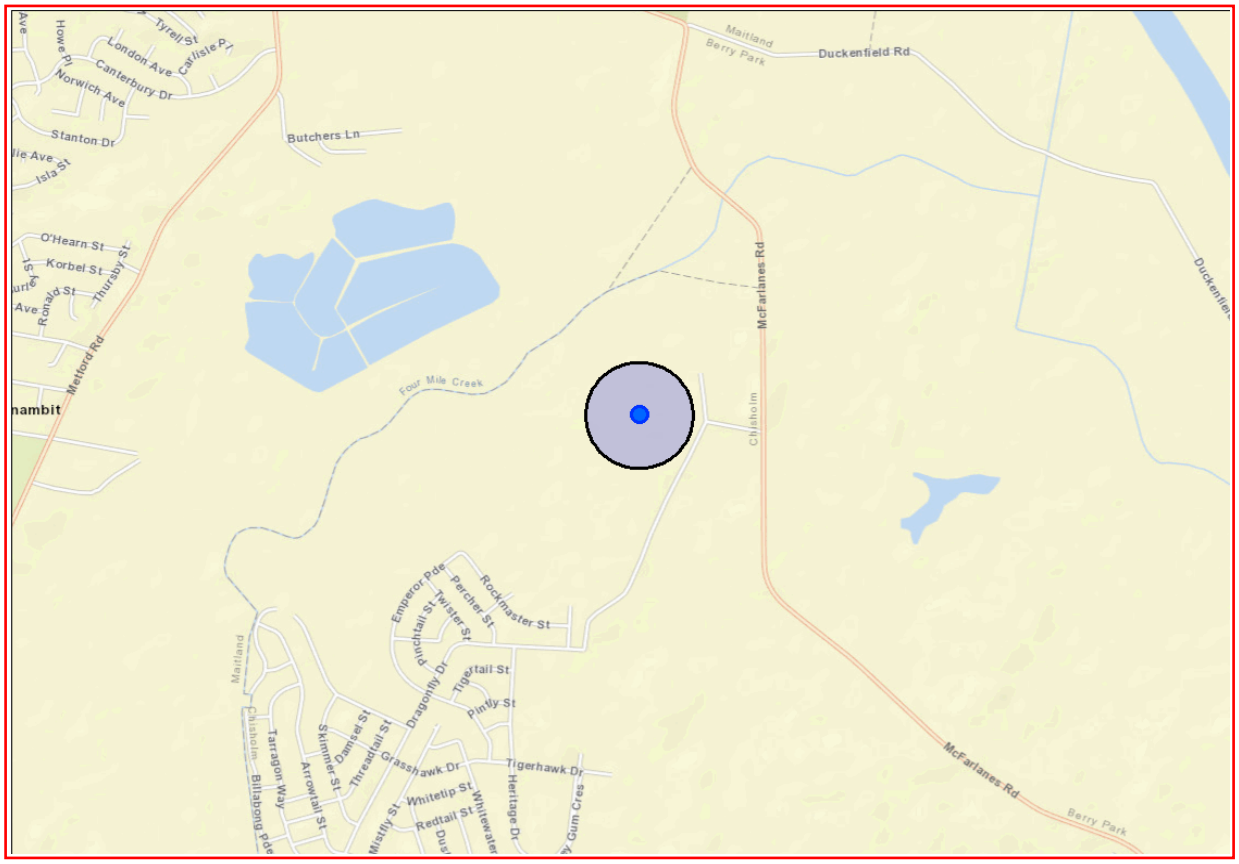
Email: klmukevski@bigpond.com

Date: 23 April 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Address : 39 GOLDRING STREET CHISHOLM 2322 with a Buffer of 200 meters, conducted by Katrina Greville on 23 April 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

Appendix C: Planning for Bushfire Protection 2019 – Compliance Table

Table 1: Aims and Objectives of Planning for Bushfire Protection 2019

Objectives	Satisfied	Comment
➢ Afford buildings and their occupants protection from exposure to a bush fire	✓	All lots within the proposed development are provided with sufficient separation from the nearest bushfire hazard by public roads.
➢ Provide for a defendable space to be located around buildings	✓	Defendable space by way of an APZ is provided between all new lots and the bushfire hazard to ensure radiant heat levels are below critical limits (well below 29kW/m^2).
➢ Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely fire spread to buildings	✓	Appropriate APZs are provided between the proposed lots and the hazard; provided by the perimeter road, which in addition to other mitigation measures such as suitable construction, will provide an acceptable level of protection to the buildings, and prevent the spread of fire to the buildings and onto adjoining buildings.
➢ Ensure that safe operational access and egress for emergency service personnel and residents is available	✓	Public road access will be provided from multiple non-perimeter roads of the neighbouring existing developments located to the east and south of the proposed development; including two connecting roads with carriageway widths 10.5m or greater (Glasspond Street and Caldera Street -11m). These two non-perimeter roads provide access from the 10.5m perimeter road to the existing public road network.
➢ Provide for ongoing management and maintenance of BPMs	✓	All owners will be responsible for the management and maintenance of the private property.
➢ Ensure that utility services are adequate to meet the needs of firefighters	✓	The development includes all essential utility services to meet the needs of firefighters; including a reliable water supply.

Table 2: Performance Criteria and Acceptable Solutions for residential subdivisions (Chapter 5 PBP 2019)

Intent of Measure	Performance Criteria	Acceptable Solution	Complies	Comment
			✓ - Acceptable Solution PS - Performance Solution	
5.3.1 ASSET PROTECTION ZONES Table 5.3a To provide sufficient space and maintain reduced fuel loads, so as to ensure radiant heat levels at buildings are below critical limits and to prevent direct flame contact with a building.	Potential building footprints must not be exposed to radiant heat levels exceeding 29kW/m^2 on each proposed lot.	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	✓	All proposed lots may be exposed to a maximum potential radiant heat level no greater than 19kW/m^2.
	APZs are managed and maintained to prevent the spread of a fire towards the building.	The APZ is managed in accordance with the requirements of Appendix 4	✓	All new landowners will be required to manage their respective lot as an IPA.
	The APZ is provided in perpetuity.	APZs are wholly within the boundaries of the development site.	✓	There are no exceptional circumstances that would require an APZ to be located external to the development site.
	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated.	The APZ is not located on lands with a slope exceeding 18°	✓	The site does not have a slope greater than 5°.
LANDSCAPING	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 APZ standards (see Appendix 4). Fencing is constructed in accordance with section 7.6.	✓	All new landscaping has considered the requirements of APZs per Appendix 4. All new fencing will be colorbond or similar non-combustible material; where installed.
5.3.2 ACCESS (General Requirements) **Table 5.3b** To provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.	Fire fighters are provided with safe all weather access to structures	Property access roads are two-wheel drive, all-weather roads	✓	Public road access will be provided from multiple non-perimeter roads (8m – 11m wide) from neighbouring existing developments located to the east and south of the proposed development.
		Perimeter roads are provided for residential subdivisions of three or more allotments	✓	
		Subdivisions of three or more allotments have more than one access in and out of the development		

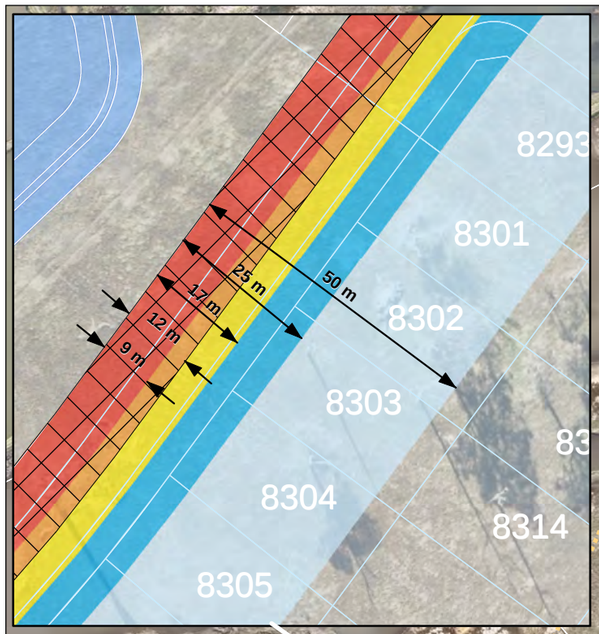
Intent of Measure	Performance Criteria	Acceptable Solution	Complies	Comment
			✓ - Acceptable Solution PS - Performance Solution	
		Traffic management devices are constructed to not prohibit access by emergency services vehicles.	✓	
		Access roads must provide suitable turning areas in accordance with Appendix 3.	✓	
ACCESS ROAD CAPACITY	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.	✓	
ACCESS TO WATER	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.	✓	All proposed lots should be connected to a reticulated water supply.
		Hydrants are provided in accordance with AS2419.1:2005	✓	
		There is suitable access for Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	✓	
PERIMETER ROADS	Perimeter access roads are designed to allow safe access and egress for medium rigid 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.	✓	A 10.5m wide perimeter road, Stillwater Parade, will be constructed on the western side of the development continuing along the entire urban interface. Due to the lower risk bushfire hazard to the east, we request the RFS customise the conditions of the BFSA to omit the Acceptable Solution requiring "*parking is provided outside of the carriageway width*". This will permit some infrequent parking within the carriageway without compromising emergency services vehicles.
		8m carriageway width kerb to kerb.	✓	
		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° and average grade is 10°.	✓	

Intent of Measure	Performance Criteria	Acceptable Solution	Complies	Comment
			✓ - Acceptable Solution PS - Performance Solution	
		The road crossfall does not exceed 3°.	✓	
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; and	✓	
NON-PERIMETER ROADS	Non-perimeter access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while occupants are evacuating.	Minimum 5.5m width kerb to kerb.	✓	Several new non-perimeter roads are proposed as part of the residential subdivision; including a 10.5m (Glasspond Street) and a 11m wide collector road (Caldera Street). All of the non-perimeter roads are 8m wide and connect to the existing neighbouring residential developments. Due to the lower risk bushfire hazard to the east, we request the RFS customise the conditions of the BFSA to omit the Acceptable Solution requiring "*parking is provided outside of the carriageway width*". This will permit some infrequent parking within the carriageway without compromising emergency services vehicles. The Pre-DA Advice Summary provided by the RFS (**Appendix E**) confirms the RFS support the proposed Performance Solution seeking to remove the requirement to provide parking outside the road carriageway.
		Parking is provided outside of the carriageway.	PS	
		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° and average grade is 10°.	✓	
		The road crossfall does not exceed 3°.	✓	
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; and	✓	
5.3.3 SERVICES Table 5.3c To provide adequate services for water for the protection of buildings during and after the passage of a bushfire, and not to locate gas and electricity so as not to contribute to the risk of fire to a building. **WATER**	Adequate water supplies is provided for firefighting purposes	Reticulated water is to be provided to the development, where available	✓	A reticulated water supply is provided.
		A static water supply is provided where no reticulated water is available	N/A	
		Static water supplies shall comply with Table 5.3d	N/A	
	Water supplies are located at regular intervals	Fire hydrant spacing, design and sizing comply with AS2419.1:2005;	✓	A reticulated water supply is provided.

Intent of Measure	Performance Criteria	Acceptable Solution	Complies	Comment
			✓ - Acceptable Solution PS - Performance Solution	
	The water supply is accessible and reliable for firefighting operations	Hydrants are not located within any road carriageway;	✓	
		Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	✓	A reticulated water supply is provided.
	Flows and pressures are appropriate	Fire hydrant flows and pressures comply with AS2419.1:2005.	✓	
	The integrity of the water supply is maintained	All above ground water service pipes are metal, including and up to any taps.	**Able to comply**	
ELECTRICITY	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 as follows: → lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and → no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines	**N/A**	
GAS	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 1596:2014 and the requirements of relevant authorities, metal piping is to be used.	✓	Any new gas connections will be underground and will be unlikely to create an additional hazard risk to surrounding bushland.

Intent of Measure	Performance Criteria	Acceptable Solution	Complies	Comment
			✓ - Acceptable Solution PS - Performance Solution	
		All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side;	✓	
		Connections to and from gas cylinders are metal:		
		Polymer-sheathed flexible gas supply lines are not used; and		
		Above-ground gas service pipes are metal, including and up to any outlets.		

Appendix D: Subdivision BAL Plan



Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL	Lot	BAL
8101	BAL-19	8152	BAL-LOW	8203	BAL-19	8254	BAL-LOW	8305	BAL-12.5	8356	BAL-LOW
8102	BAL-19	8153	BAL-LOW	8204	BAL-LOW	8255	BAL-LOW	8306	BAL-12.5	8357	BAL-LOW
8103	BAL-12.5	8154	BAL-LOW	8205	BAL-LOW	8256	BAL-LOW	8307	BAL-12.5	8358	BAL-LOW
8104	BAL-12.5	8155	BAL-LOW	8206	BAL-LOW	8257	BAL-LOW	8308	BAL-19	8359	BAL-LOW
8105	BAL-12.5	8156	BAL-LOW	8207	BAL-LOW	8258	BAL-LOW	8309	BAL-LOW	8360	BAL-LOW
8106	BAL-12.5	8157	BAL-LOW	8208	BAL-LOW	8259	BAL-LOW	8310	BAL-LOW	8361	BAL-LOW
8107	BAL-12.5	8158	BAL-19	8209	BAL-LOW	8260	BAL-LOW	8311	BAL-LOW	8362	BAL-LOW
8108	BAL-12.5	8159	BAL-12.5	8210	BAL-19	8261	BAL-LOW	8312	BAL-LOW	8363	BAL-LOW
8109	BAL-19	8160	BAL-19	8211	BAL-12.5	8262	BAL-LOW	8313	BAL-LOW	8364	BAL-LOW
8110	BAL-12.5	8161	BAL-12.5	8212	BAL-12.5	8263	BAL-LOW	8314	BAL-LOW	8365	BAL-LOW
8111	BAL-LOW	8162	BAL-LOW	8213	BAL-19	8264	BAL-LOW	8315	BAL-LOW	8366	BAL-LOW
8112	BAL-LOW	8163	BAL-LOW	8214	BAL-LOW	8265	BAL-LOW	8316	BAL-LOW	8367	BAL-LOW
8113	BAL-LOW	8164	BAL-LOW	8215	BAL-LOW	8266	BAL-LOW	8317	BAL-LOW	8368	BAL-LOW
8114	BAL-LOW	8165	BAL-LOW	8216	BAL-LOW	8267	BAL-LOW	8318	BAL-LOW	8369	BAL-LOW
8115	BAL-LOW	8166	BAL-LOW	8217	BAL-LOW	8268	BAL-LOW	8319	BAL-LOW	8370	BAL-LOW
8116	BAL-LOW	8167	BAL-LOW	8218	BAL-LOW	8269	BAL-LOW	8320	BAL-LOW	8371	BAL-LOW
8117	BAL-19	8168	BAL-LOW	8219	BAL-LOW	8270	BAL-LOW	8321	BAL-LOW	8372	BAL-LOW
8118	BAL-12.5	8169	BAL-LOW	8220	BAL-LOW	8271	BAL-LOW	8322	BAL-LOW	8373	BAL-LOW
8119	BAL-12.5	8170	BAL-LOW	8221	BAL-LOW	8272	BAL-LOW	8323	BAL-LOW	8374	BAL-LOW
8120	BAL-12.5	8171	BAL-LOW	8222	BAL-LOW	8273	BAL-LOW	8324	BAL-LOW	8375	BAL-LOW
8121	BAL-12.5	8172	BAL-LOW	8223	BAL-LOW	8274	BAL-LOW	8325	BAL-LOW	8376	BAL-LOW
8122	BAL-12.5	8173	BAL-LOW	8224	BAL-LOW	8275	BAL-LOW	8326	BAL-LOW	8377	BAL-LOW
8123	BAL-12.5	8174	BAL-LOW	8225	BAL-LOW	8276	BAL-LOW	8327	BAL-LOW	8378	BAL-LOW
8124	BAL-19	8175	BAL-LOW	8226	BAL-LOW	8277	BAL-LOW	8328	BAL-LOW	8379	BAL-LOW
8125	BAL-LOW	8176	BAL-LOW	8227	BAL-LOW	8278	BAL-LOW	8329	BAL-LOW	8380	BAL-LOW
8126	BAL-LOW	8177	BAL-LOW	8228	BAL-LOW	8279	BAL-LOW	8330	BAL-LOW	8381	BAL-LOW
8127	BAL-LOW	8178	BAL-LOW	8229	BAL-LOW	8280	BAL-LOW	8331	BAL-LOW	8382	BAL-LOW
8128	BAL-LOW	8179	BAL-LOW	8230	BAL-LOW	8281	BAL-LOW	8332	BAL-LOW	8383	BAL-LOW
8129	BAL-LOW	8180	BAL-19	8231	BAL-LOW	8282	BAL-LOW	8333	BAL-LOW	8384	BAL-LOW
8130	BAL-LOW	8181	BAL-LOW	8232	BAL-19	8283	BAL-LOW	8334	BAL-LOW	8385	BAL-LOW
8131	BAL-LOW	8182	BAL-LOW	8233	BAL-12.5	8284	BAL-LOW	8335	BAL-LOW	8386	BAL-LOW
8132	BAL-LOW	8183	BAL-LOW	8234	BAL-12.5	8285	BAL-LOW	8336	BAL-LOW	8387	BAL-LOW
8133	BAL-LOW	8184	BAL-LOW	8235	BAL-19	8286	BAL-LOW	8337	BAL-LOW	8388	BAL-LOW
8134	BAL-LOW	8185	BAL-LOW	8236	BAL-LOW	8287	BAL-LOW	8338	BAL-LOW	8389	BAL-LOW
8135	BAL-LOW	8186	BAL-LOW	8237	BAL-LOW	8288	BAL-LOW	8339	BAL-LOW	8390	BAL-LOW
8136	BAL-LOW	8187	BAL-LOW	8238	BAL-LOW	8289	BAL-LOW	8340	BAL-LOW	8391	BAL-LOW
8137	BAL-LOW	8188	BAL-LOW	8239	BAL-LOW	8290	BAL-LOW	8341	BAL-LOW	8392	BAL-LOW
8138	BAL-LOW	8189	BAL-LOW	8240	BAL-LOW	8291	BAL-LOW	8342	BAL-LOW	8393	BAL-LOW
8139	BAL-LOW	8190	BAL-LOW	8241	BAL-LOW	8292	BAL-LOW	8343	BAL-LOW	8394	BAL-LOW
8140	BAL-LOW	8191	BAL-LOW	8242	BAL-LOW	8293	BAL-19	8344	BAL-LOW	8395	BAL-LOW
8141	BAL-LOW	8192	BAL-LOW	8243	BAL-LOW	8294	BAL-LOW	8345	BAL-LOW	8396	BAL-12.5
8142	BAL-LOW	8193	BAL-LOW	8244	BAL-LOW	8295	BAL-LOW	8346	BAL-LOW	8397	BAL-19
8143	BAL-LOW	8194	BAL-LOW	8245	BAL-LOW	8296	BAL-LOW	8347	BAL-LOW	8398	BAL-12.5
8144	BAL-LOW	8195	BAL-LOW	8246	BAL-LOW	8297	BAL-LOW	8348	BAL-LOW	8399	BAL-LOW
8145	BAL-19	8196	BAL-LOW	8247	BAL-LOW	8298	BAL-LOW	8349	BAL-LOW	8400	BAL-LOW
8146	BAL-12.5	8197	BAL-LOW	8248	BAL-LOW	8299	BAL-LOW	8350	BAL-LOW	8401	BAL-LOW
8147	BAL-12.5	8198	BAL-LOW	8249	BAL-LOW	8300	BAL-LOW	8351	BAL-LOW	8402	BAL-LOW
8148	BAL-12.5	8199	BAL-LOW	8250	BAL-LOW	8301	BAL-12.5	8352	BAL-LOW	8403	BAL-LOW
8149	BAL-19	8200	BAL-LOW	8251	BAL-LOW	8302	BAL-12.5	8353	BAL-LOW		
8150	BAL-LOW	8201	BAL-12.5	8252	BAL-LOW	8303	BAL-12.5	8354	BAL-LOW		
8151	BAL-LOW	8202	BAL-12.5	8253	BAL-LOW	8304	BAL-12.5	8355	BAL-LOW		

Project: Berry Park Subdivision
Job no: 2254

Subdivision BAL Plan

BUSHFIRE PLANNING AUSTRALIA

- Subject Site
- 100m Buffer
- 140m Buffer
- Asset Protection Zone

Proposed Development

- Lot Boundary
- Basins

Required Bushfire Attack Levels (AS3959-2018)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
Surface analysis: Derived from LiDAR - Newcastle 1 metre Resolution Digital Elevation Model © Department Finance, Services and Innovation 2012
Vegetation: BPA 2022
Aerial photo: Nearmap 14/06/2022

N W E S

0 50 100 150 200
Meters

A3 Scale: 1:4,000

File:2254-BerryParkSUB-Fig7-BALs-230508 Date: 8/05/2023

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

Appendix E: RFS Pre-DA Advice

NSW RURAL FIRE SERVICE

PRE-DA ADVICE SUMMARY

Applicant:	Stuart Greville – Bushfire Planning Australia
Subject:	112//DP734271 – 24 Duckenfield Road, Berry Park NSW 2321 RFS Ref. PRE-DA20220928000181

Details of the proposal

- ☐ SFPP
- ☑ Residential subdivision
- ☐ Other

Bush fire protection issues discussed

- ☐ Hazard Assessment
- ☐ Asset Protection Zones
- ☑ Access — Reduction in carriageway widths on identified roads.
- ☐ Construction Standards
- ☐ Services
- ☐ Emergency and Evacuation Planning

Documentation / plans referenced

- Preliminary Road Design plans prepared by adwJohnson (Ref: 190433-SK-362, Version B, dated 21.09.2022)
- Slope and Vegetation Assessment prepared by Bushfire Planning Australia (Ref: 2254, dated 14/09/2022)
- Site photographs provided by Bushfire Planning Australia.

Advice Provided

- The proposed performance solution for access is supported in this instance as it is considered appropriate and commensurate with the bush fire risk profile of the site.
- The bush fire report, to be submitted in support of the development application, needs to clearly identify the proposed amendments to the acceptable solutions for access with an assessment of the potential bush fire risk of the site to justify these variations and to demonstrate compliance with the performance criteria for access in chapter 5 of *Planning for Bush Fire Protection 2019*.

Disclaimer

RFS advice is based on information provided and policy and legislative requirements applicable at the time. The advice should be copied into, or referenced in, any subsequent development application.

All efforts are made to identify issues of relevance and likely concern with the preliminary proposal. However, the comments and views in this document are based only on the plans and information submitted for preliminary assessment and discussion at the pre-DA meeting. You are advised that: -

- The views expressed may vary once detailed plans and information are submitted and formally assessed in the development application process, or as a result of issues contained in submissions by interested parties;
- Given the complexity of issues often involved and the limited time for full assessment, no guarantee is given that every issue of relevance will be identified;
- Amending one aspect of the proposal could result in changes which would create a different set of impacts from the original plans and therefore require further assessment and advice; and,
- The Pre-DA advice given does not bind Council officers, the elected Council members, or other parties to the DA process.

Submitted by:

Adam Small
Development Assessment and Planning Coordinator
Planning & Environment Services (East)
Built and Natural Environment

Approved by:

Kalpana Varghese
Supervisor - Development Assessment and Planning
Planning & Environment Services (East)
Built and Natural Environment

Date: 09 February 2023