



BUSHFIRE THREAT ASSESSMENT

FOR
A PROPOSED 1 INTO 2 LOT
SUBDIVISION

AT

442 LOUTH PARK ROAD,
LOUTH PARK NSW 2320

Prepared by:

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Disclaimer

Notwithstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.



Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed 1 into 2 lot subdivision at 442 Louth Park Road, Louth Park. The report forms part of the supporting documentation for a DA to be submitted to Maitland City Council (MCC).

The report demonstrates compliance with Planning for Bushfire Protection 2019 (NSW RFS, 2019), AS3959-2018 Construction of Buildings in Bush Fire Prone Areas.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- The existing dwelling on proposed Lot 1 is to be upgraded for ember protection, and a 20,000L water tank is to be provided for firefighting purposes. Additionally, the existing access road on Lot 1 is to be upgraded to meet the acceptable solution set out in Table 5.3b of PBP 2019 and Section 6 of this report. These upgrades provide a better outcome for bushfire protection than the measures that are currently in place.
- The existing class 10a storage building on proposed Lot 1 is greater than 6m from any habitable building, and therefore does not require any bushfire protection measures in accordance with Section 8.3.2 of PBP 2019.
- Assessment in accordance with Table A1.12.5 of PBP 2019 has shown that any future dwellings on proposed Lot 2 will meet the requirements of BAL-29. This is based on the provision of APZs as per Section 4 of this report, which are indicative only and do not require clearing at this stage.
- Fencing – All new fencing and gates shall be constructed in accordance with the NSW Rural Fire Service Guideline: Fast Fact – Fences or Gates in Bushfire Prone Areas.
- Home owners should prepare a Bush Fire Survival Plan refer to the RFS Website http://www.rfs.nsw.gov.au/file_system/attachments/Attachment_Bush_FireSurvivalPlan.pdf

**I certify the development conforms to the relevant specifications and requirements of
Planning for Bushfire Protection 2019**



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Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419-2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
<i>EPA Act</i>	<i>NSW Environmental Planning and Assessment Act 1979</i>
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
MCC	Maitland City Council
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation



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I INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed 1 into 2 lot subdivision at 442 Louth Park Road, Louth Park, hereafter referred to as the “site” (refer to Figure 1-1 for site locality). Refer to Appendix A for Proposed Site Plans.

This BTA is suitable for submission with a Development Application (DA) and provides information on measures that will enable the development to comply with ‘Planning for Bushfire Protection’ (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

I.1 Site Particulars

Locality:	442 Louth Park Road, Louth Park NSW 2320
Lot / DP:	Lot 1 / DP 221762
LGA:	Maitland City Council
Current Land Use:	Existing dwelling on large allotment
Forest Danger Index:	100 FFDI

Figure 1-1: Site Location





I.2 Description of the Proposal

This DA relates to the proposal for a 1 into 2 lot subdivision. Refer to Appendix A for proposed plans.

I.3 Legislative Requirements

The Site has been mapped as Bush Fire Prone Land Map (BFPLM) by MCC.

This report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area.

I.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's);
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.



2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 2m.



3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Table 3-1 and Table 3-2.

In accordance with PBP (RFS 2019), an assessment of the slope underneath the vegetation considered a bushfire hazard was undertaken and the results are presented in Table 3-1 and Table 3-2 below.

Table 3-1: Vegetation classification for existing dwelling on Lot 1

Direction	Vegetation Type	Slope
North	Forest Vegetation	Downslope 0-5°
East	Forest Vegetation	Downslope 0-5°
South	Forest Vegetation	Cross-slope
West	Remnant Vegetation ¹	Upslope

Table 3-2: Vegetation classification for Lot 2

Direction	Vegetation Type	Slope
North	Forest	Downslope 0-5°
East	Forest	Downslope 0-5°
South	Woodland	Upslope
South-West	Woodland	Upslope
West	Managed Land – Residential Development	N/A

¹ Remnant vegetation in accordance with Section A1.11 of PBP 2019 as it has a shape that provides a fire run of less than 50m.

4 BUSHFIRE PROTECTION ASSESSMENT

4.1 Asset Protection Zones (APZ)

The PBP (RFS, 2019) guidelines has been used to determine the widths of the APZs required for future habitable buildings within proposed Lot 2 using the vegetation and slope data identified in Section 3-1 of this report.

The site lies within Maitland Local Government Area and therefore is assessed under a FDI rating of 100. Using the results from the Site Assessment (section 3-1 of this report) the deemed to satisfy APZ requirements for future dwellings within proposed Lot 2 was determined using Table A1.12.2 in PBP (RFS, 2019). Refer to Table 4-1 and Figure 4-1 for required for required APZs within proposed Lot 2. It is noted that these APZs are indicative only and do not require clearing at this stage.

Table 4-1: Recommended APZs for Lot 2

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided ²	Width of allowable OPA ³	Comment
North	Forest	Downslope 0-5°	>29m	10m	Acceptable solution in accordance with PBP (RFS, 2019)
East	Forest	Downslope 0-5°	>29m	10m	Acceptable solution in accordance with PBP (RFS, 2019)
South	Woodland	Upslope	>12m	N/A	Acceptable solution in accordance with PBP (RFS, 2019)
South-West	Woodland	Upslope	>12m	N/A	Acceptable solution in accordance with PBP (RFS, 2019)
West	Managed Land – Residential Development	N/A	N/A	N/A	Acceptable solution in accordance with PBP (RFS, 2019)

² APZ as per Table A1.12.2 in PBP 2019.

³ OPA – Outer Protection Area as per Table A1.12.4 in PBP 2019 (See Appendix B in this report).

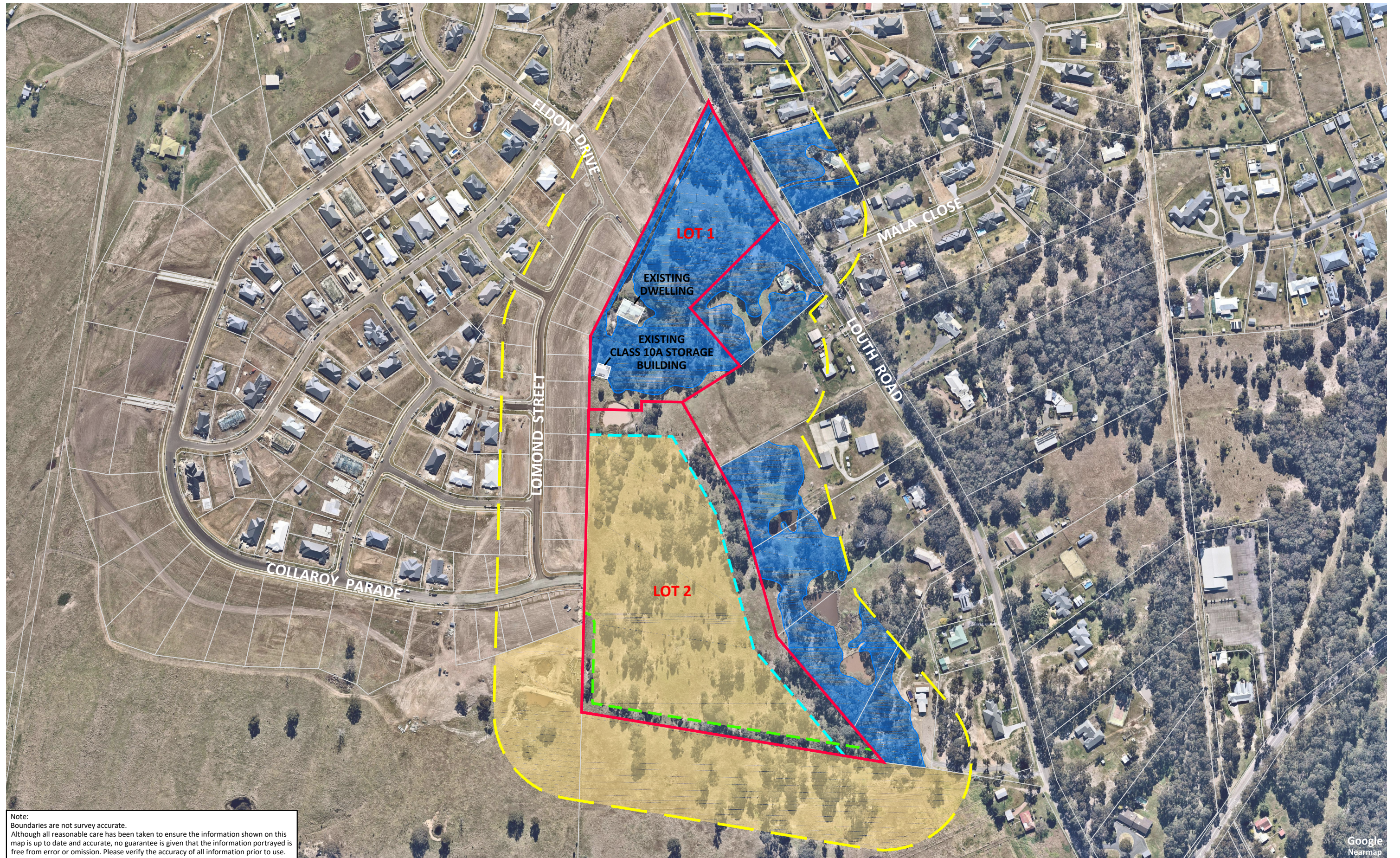
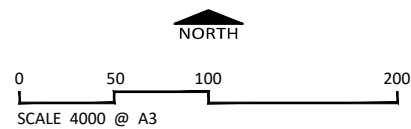


FIGURE 4-1: ASSET PROTECTION ZONES

CLIENT Client
 No.442 Louth Park Road Louth Park
 DATE 13 October 2021

Legend

- Subject Site
- 100m Buffer
- 29m APZ
- 12m APZ
- Open Forest
- Woodland



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5 DWELLING DESIGN AND CONSTRUCTION

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. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2018.

The determinations of the appropriate BAL 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 construction level is derived by assessing the:

- Relevant FFDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

(a) **BAL – LOW** The risk is considered to be **VERY LOW**
There is insufficient risk to warrant any specific construction requirements but there are still some risks.

(b) **BAL – 12.5** The risk is considered to be **LOW**
There is a risk of ember attack.

The construction elements are expected to be exposed to a heat flux not greater than 12.5 k/m².

(c) **BAL – 19** The risk is considered to be **MODERATE**
There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.

The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m².

(d) **BAL-29** The risk is considered to be **HIGH**
There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.

The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m².



(e) **BAL-40** The risk is considered to be **VERY HIGH**

There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m².

(f) **BAL-FZ** The risk is considered to be **EXTREME**

There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux greater than 40 kW/m².

5.1 Determination of Bushfire Attack Levels

As the site lies within an LGA designated an FFDI of 100, the information relating to vegetation and slope was applied to Table A1.12.5 of PBP 2019 to determine the appropriate BAL ratings. The results from this bush fire risk assessment are detailed below in Table 5-1 and Table 5-2.

Table 5-1: Determination of BALs for existing dwelling on Lot 1

Vegetation Type & Direction	Effective Slope	Separation Distance from Vegetation	Bushfire Attack Level (BAL)
Forest to the North	Downslope 0-5°	Adjacent	BAL-FZ
Forest to the East	Downslope 0-5°	Adjacent	BAL-FZ
Forest to the South	Cross-slope	Adjacent	BAL-FZ
Remnant Vegetation to the West	Upslope	Adjacent	BAL-FZ

Given the information in Table 4-1, the existing dwelling on Lot 1 has been assessed as BAL-FZ. As such, this dwelling is to be upgraded for ember protection. This provides a better outcome for bushfire protection than measures that are currently in place.



Table 5-2: Determination of BALs for Lot 2

Vegetation Type & Direction	Effective Slope	Separation Distance from Vegetation	Bushfire Attack Level (BAL)
Forest to the North	Downslope 0-5°	>29m	BAL-29
Forest to the East	Downslope 0-5°	>29m	BAL-29
Woodland to the South	Upslope	>12m	BAL-29
Woodland to the South-West	Upslope	>12m	BAL-29
Managed Land to the West	N/A	N/A	BAL-29

Given the information in Table 4-2, any future dwellings on Lot 2 will be able to meet the requirements of BAL-29.



6 COMPLIANCE

The proposal is for a dwelling and therefore development standards apply. Table 5-1 details the compliance with Development Standards for Residential and Rural residential subdivisions.

Table 6-1: Proposed Compliance with Development Standards

Acceptable Solutions	Performance Criteria	Compliance
ASSET PROTECTION ZONES		
› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 based on the FFDI	› Potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot.	<p>Complies with Performance Criteria –</p> <p><u>Proposed Lot 1</u> An APZ is not provided for the existing dwelling on Lot 1. However, the dwelling is to be upgraded for ember protection, a 20,000L static water supply is to be provided, and the property access road is to be upgraded. These upgrades provide a better outcome for bushfire protection than the measures that are currently in place.</p> <p><u>Proposed Lot 2</u> APZs have been provided in accordance with Table A1.12.2 of PBP 2019. These APZs are indicative only and do not require clearing at this stage.</p>



<ul style="list-style-type: none"> › APZs are managed in accordance with the requirements of Appendix 4 of PBP. 	<ul style="list-style-type: none"> › APZs are managed and maintained to prevent the spread of a fire to the building. 	<p>Complies with Acceptable Solution – the site is to be managed to the requirements of PBP Appendix 4 (summarised in Appendix B here)</p>
<ul style="list-style-type: none"> › APZs are wholly within the boundaries of the development site. › APZ are located on lands with a slope less than 18 degrees. 	<ul style="list-style-type: none"> › the APZ is provided in perpetuity. › APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. 	<p>Complies with Acceptable Solution – APZs are on site and do not occur on steep land.</p>
LANDSCAPES		
<ul style="list-style-type: none"> › Landscaping is in accordance with Appendix 4; and › Fencing is constructed in accordance with section 7.6. 	<ul style="list-style-type: none"> › Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions. 	<p>Complies with Acceptable Solution – Landscaping will occur in accordance with Appendix 4 of PBP 2019.</p>
Access (General Requirements)		
<ul style="list-style-type: none"> › property access roads are two-wheel drive, all-weather roads. › 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; › 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 	<ul style="list-style-type: none"> › firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation. 	<p>Complies with Performance Criteria – while a secondary access road is not provided on proposed Lot 1, the existing access road is to be upgraded to meet all other requirements of the acceptable solution. This provides a better outcome for bushfire protection than measures that are currently in place. A perimeter road is not required as the proposal is for less than 3 allotments.</p>



<p>road design standards, whichever is the lesser gradient;</p> <ul style="list-style-type: none"> › all roads are through roads; › dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; › where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; › where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system; and › one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression. 		
<ul style="list-style-type: none"> › 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. 	<ul style="list-style-type: none"> › the capacity of access roads is adequate for firefighting vehicles. 	<p>Complies with Acceptable Solution – the existing access road on proposed Lot 1 is to be upgraded to meet the requirements of the acceptable solution. This provides a better outcome for bushfire protection than measures that are currently in place.</p>



<ul style="list-style-type: none"> › hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; › hydrants are provided in accordance with the relevant clauses of AS 2419.1:2017; › There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available. 	<ul style="list-style-type: none"> › there is appropriate access to water supply. 	<p>Can Comply with Acceptable Solution – suitable access to the static water supply is to be provided.</p>
Perimeter Roads		
<ul style="list-style-type: none"> › 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. 	<ul style="list-style-type: none"> › access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. 	<p>N/A – a perimeter road is not required as the proposal is for less than 3 allotments.</p>
Non-Perimeter Roads		
<ul style="list-style-type: none"> › minimum 5.5m carriageway width kerb to kerb; › parking is provided outside of the carriageway width; hydrants are located clear of parking areas; 	<ul style="list-style-type: none"> › access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating. 	<p>N/A – no non-perimeter roads are proposed.</p>



<ul style="list-style-type: none"> › roads 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 road crossfall does not exceed 3 degrees; and › a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 		
Property Access		
<ul style="list-style-type: none"> › There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. <p>In circumstances where this cannot occur, the following requirements apply:</p> <ul style="list-style-type: none"> › minimum 4m carriageway width; › in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay; 	<p>firefighting vehicles can access the dwelling and exit the property safely.</p>	<p>Can Comply with Acceptable Solution – the existing access road on proposed Lot 1 is to be upgraded to meet the requirements of the acceptable solution. This provides a better outcome for bushfire protection than measures that are currently in place.</p>



- > a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;
- > provide a suitable turning area in accordance with Appendix 3;
- > curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;
- > the minimum distance between inner and outer curves is 6m;
- > the crossfall is not more than 10 degrees;
- > maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and
- > a development comprising more than three dwellings has access by dedication of a road and not by right of way.

Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.



WATER SUPPLIES

<ul style="list-style-type: none"> › reticulated water is to be provided to the development, where available; and › a static water supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and › Static water supplies shall comply with Table 5.3d. 	<ul style="list-style-type: none"> › an adequate water supply is provided for firefighting purposes. 	<p>Can Comply with Acceptable Solution – A 20,000L water tank is to be provided on proposed Lot 1 for firefighting purposes.</p>
<ul style="list-style-type: none"> › fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2017; › hydrants are not located within any road carriageway; and › reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads. 	<ul style="list-style-type: none"> › water supplies are located at regular intervals; and › the water supply is accessible and reliable for firefighting operations. 	<p>Can Comply with Acceptable Solution – A 20,000L water tank is to be provided on proposed Lot 1 for firefighting purposes.</p>
<ul style="list-style-type: none"> › fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017. 	<ul style="list-style-type: none"> › flows and pressure are appropriate. 	<p>N/A – static water supply to be provided</p>
<ul style="list-style-type: none"> › all above-ground water service pipes are metal, including and up to any taps; and above ground water storage tanks shall be of concrete or metal. 	<ul style="list-style-type: none"> › the integrity of the water supply is maintained. 	<p>Can Comply with Acceptable Solution – above ground water services can be met.</p>



ELECTRICITY SERVICES

<ul style="list-style-type: none"> > where practicable, electrical transmission lines are underground; and > where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> o lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and o no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines. 	<ul style="list-style-type: none"> > location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings. 	<p>Can Comply with Acceptable Solution – Electrical services to the site can meet the requirements of the Acceptable solution.</p>
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GAS SERVICES

<ul style="list-style-type: none"> > reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; > all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; > connections to and from gas cylinders are metal; > polymer-sheathed flexible gas supply lines are not used; and > above-ground gas service pipes are metal, including and up to any outlets. 	<ul style="list-style-type: none"> > location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings. 	<p>Can Comply with Acceptable Solution – Gas services to the site can meet the requirements of the Acceptable Solution.</p>
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7 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Risk Assessment has been undertaken for a proposed subdivision at 442 Louth Park Road, Louth Park. The report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the site. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- The existing dwelling on proposed Lot 1 is to be upgraded for ember protection, and a 20,000L water tank is to be provided for firefighting purposes. Additionally, the existing access road on Lot 1 is to be upgraded to meet the acceptable solution set out in Table 5.3b of PBP 2019 and Section 6 of this report. These upgrades provide a better outcome for bushfire protection than the measures that are currently in place.
- The existing class 10a storage building on proposed Lot 1 is greater than 6m from any habitable building, and therefore does not require any bushfire protection measures in accordance with Section 8.3.2 of PBP 2019.
- Assessment in accordance with Table A1.12.5 of PBP 2019 has shown that any future dwellings on proposed Lot 2 will meet the requirements of BAL-29. This is based on the provision of APZs as per Section 4 of this report, which are indicative only and do not require clearing at this stage.
- Fencing – All new fencing and gates shall be constructed in accordance with the NSW Rural Fire Service Guideline: Fast Fact – Fences or Gates in Bushfire Prone Areas.
- Home owners should prepare a Bush Fire Survival Plan refer to the RFS Website http://www.rfs.nsw.gov.au/file_system/attachments/Attachment_Bush_FireSurvivalPlan.pdf

**I certify the development conforms to the relevant specifications and requirements of
Planning for Bushfire Protection 2019**



8 BIBLIOGRAPHY

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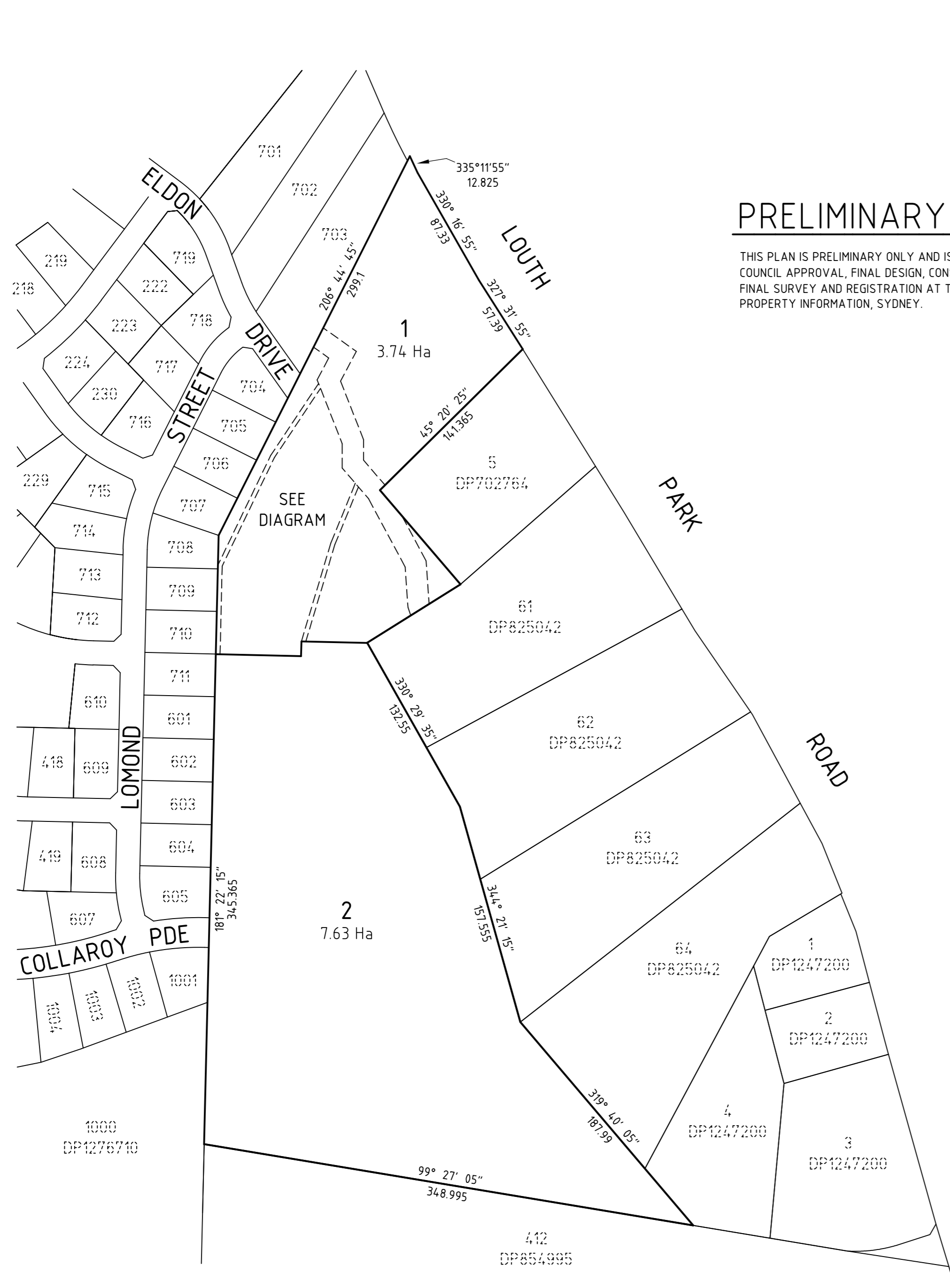
Rural Fires and Environmental Assessment Legislation Amendment Act 2002.

Standards Australia (2018). *AS 3959 – 2018: Construction of Buildings in Bushfire-prone Areas*.

APPENDIX A PROPOSED SITE PLANS

M.C.A.

(SCIMS)



PRELIMINARY ONLY

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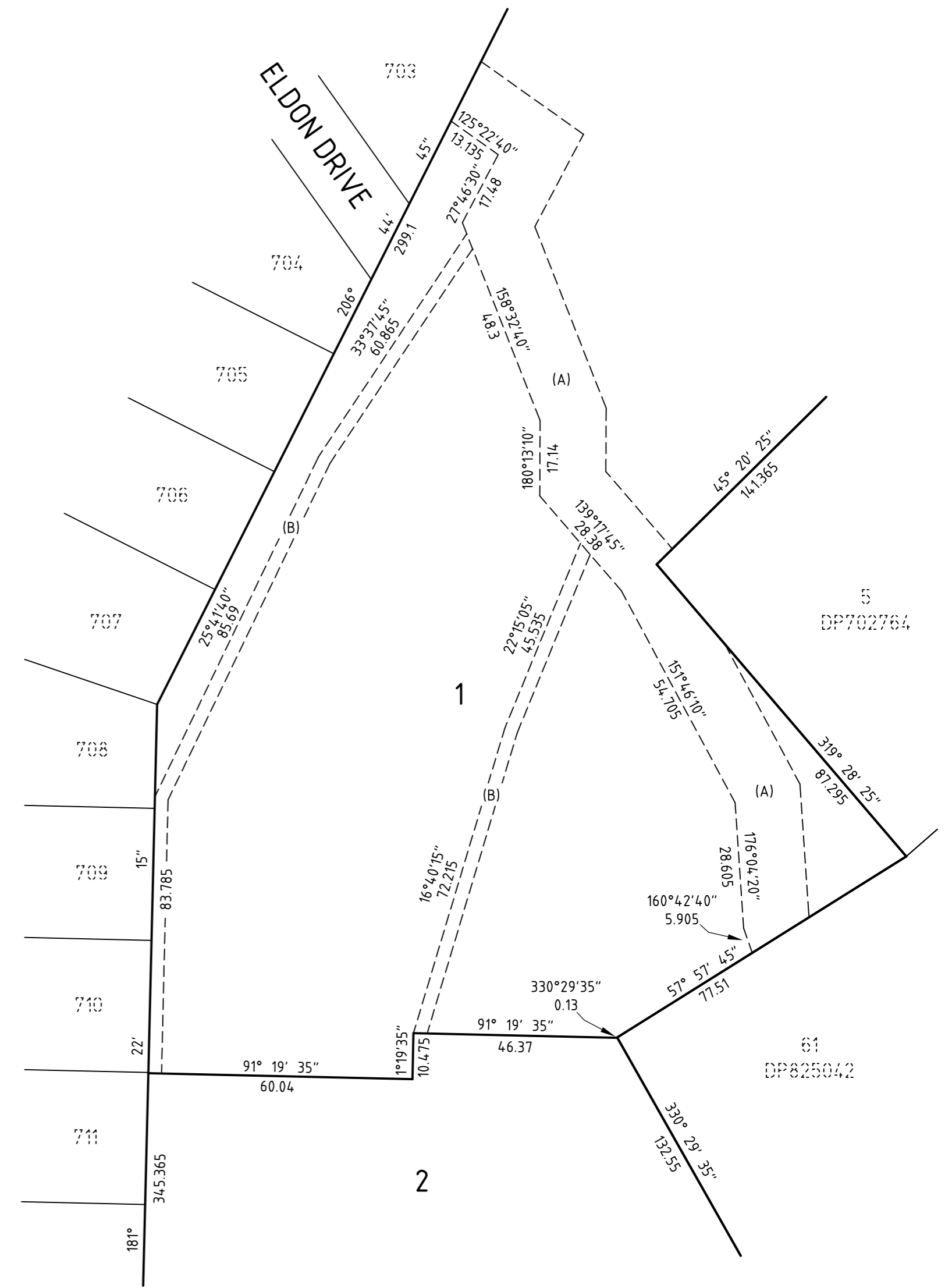


DIAGRAM
RR 1:1000

- (A) EASEMENT TO DRAIN WATER 15 WIDE & VARIABLE
- (B) EASEMENT TO DRAIN WATER 3 WIDE

<p>SURVEYOR Name: THOMAS F CAMPBELL Date: Reference: 21823_DP(Draft)_R1_210902</p>	<p>PLAN OF SUBDIVISION OF LOT 1 DP221762</p>	<p>LGA: MAITLAND Locality: LOUTH PARK Reduction Ratio 1:2500 Lengths are in metres.</p>	<p>REGISTERED</p>	<p>DP</p>
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<p style="text-align: right;">Office Use Only</p> <p>Registered:</p> <p>Title System:</p>	<p style="text-align: right;">Office Use Only</p> <h2 style="text-align: center; border-bottom: 1px solid black;">PRELIMINARY ONLY</h2> <p style="font-size: small;">THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.</p>
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<h3>PLAN OF SUBDIVISION OF LOT 1 DP221762</h3>	<p>LGA: MAITLAND</p> <p>Locality: LOUTH PARK</p> <p>Parish: MAITLAND</p> <p>County: NORTHUMBERLAND</p>
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<p style="text-align: center;">Survey Certificate</p> <p style="text-align: center;">THOMAS F CAMPBELL</p> <p>I, of <u>Delfs Lascelles Pty Ltd, 260 Maitland Road Mayfield 2304</u> a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i>, certify that:</p> <p>*(a) The land shown in the plan was surveyed in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>, is accurate and the survey was completed on, or</p> <p>*(b) The part of the land shown in the plan (*being/*excluding **) was surveyed in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>, the part surveyed is accurate and the survey was completed on the part not surveyed was compiled in accordance with that Regulation, or</p> <p>*(c) The land shown in this plan was compiled in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>.</p> <p>Datum Line: 'X' - 'Y'</p> <p>Type: *Urban/*Rural</p> <p>The terrain is *Level Undulating / *Steep Mountainous.</p> <p>Signature: Dated:</p> <p>Surveyor Identification No: 8704</p> <p>Surveyor registered under the <i>Surveying and Spatial information Act 2002</i></p> <p style="font-size: x-small;">* Strike through if inapplicable. ** Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.</p>	<p style="text-align: center;">Crown Lands NSW/Western Lands Office Approval</p> <p>I, (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.</p> <p>Signature:</p> <p>Date:</p> <p>File Number:</p> <p>Office:</p>
---	---

<p style="text-align: center;">Subdivision Certificate</p> <p>I, *Authorised Person/*General Manager/*Registered Certifier, certify that the provisions of section 6.15 of the <i>Environmental Planning and Assessment Act 1979</i> have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.</p> <p>Signature:</p> <p>Accreditation number:</p> <p>Consent Authority:</p> <p>Date of endorsement:</p> <p>Subdivision Certificate number:</p> <p>File number:</p> <p style="font-size: x-small;">* Strike through if inapplicable</p>	<p>Plans used in the preparation of survey/compilation.</p> <p>DP 221762</p>
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<p>Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.</p>	<p>Surveyor's Reference: 21823_DP(Draft)_R1_210902</p>
<p>Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A</p>	

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**PLAN OF SUBDIVISION OF
LOT 1 DP221762**

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals - See 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number :

Date of Endorsement :

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919, AS AMENDED, IT IS INTENDED TO CREATE:-

1. EASEMENT TO DRAIN WATER 15 WIDE & VARIABLE (A)
2. EASEMENT TO DRAIN WATER 3 WIDE (B)

LOT	STREET No.	ROAD NAME	ROAD TYPE	LOCALITY
1	442	LOUTH PARK	ROAD	LOUTH PARK
2				LOUTH PARK

.....
GRAHAM STEVENS COX

.....
KRYSTEN RUTH COX

If space is insufficient use additional annexure sheet

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Registered:

PRELIMINARY ONLY

**PLAN OF SUBDIVISION OF
LOT 1 DP221762**

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.

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- Signatures and seals - See 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number :

Date of Endorsement :

EXECUTED by

MAITLAND MUTUAL BUILDING SOCIETY LIMITED

If space is insufficient use additional annexure sheet

APPENDIX B ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMS, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

Figure A4.1

Typical Inner and Outer Protection Areas.

