

# **BUSHFIRE THREAT ASSESSMENT**

## FOR

# PROPOSED RESIDENTIAL SUBDIVISION

AT GUNDY ROAD, SCONE (LOT 2 DP 1169320)

Prepared by:

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#### Disclaimer

Not withstanding 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 residential subdivision at Lot 2 DP 1169320 – Gundy Road, Scone, within the Upper Hunter Local Government Area (the site).

This Bushfire Threat Assessment Report has been prepared in accordance with the additional information requested from NSW RFS in their letter dated the 11 March 2022. Please find following the information requested by RFS in **BOLD**, with the appropriate response following.

The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted and cannot support the current application. The following concerns have been identified:

# • Are all adjoining owners party to the proposed development and specifically to approvals relevant to the now proposed fire trails.

The adjoining land to the east, south and west where the proposed fire-trails occur is under the same ownership and the fire trails are registered as a section 88B restriction to land use under the 'Conveyancing Act 1919'. Refer to Section 6 of this BTA for further information.

# • The bushfire report needs to address the new Plan Set identified as Revision O. This revised report will need to discuss the proposed modifications, including;

• Providing a new APZ plan,

The BTA has been updated to address the new Plan Set identified as Revision O, with revised APZs refer to Figure 4-1 APZ Map within this BTA.

 Discussion of the proposed fire trail, that is now proposed to be located upon adjoining lands, is to be provided. Details of its construction and ongoing maintenance will need to be included. This should have included written agreements from the land owner as part of the proposal. These are now needed to be provided.

Details of the fire trails are addressed in Section 6 of this BTA.

 Discussion of the proposed vegetation buffer and how it will operate alongside 10m and 12m APZs

The proposed fire trails acts as a barrier (defined edge) between the APZs and the 6m vegetation buffers.

• The bushfire report needs to confirm the location of the pocket park and any impacts it may provide (hazard, management etc).



The proposed park occurs on the southern side of Road 3. Road 3 is 18m wide and therefore provides an APZ of greater than 16m between any further dwelling and the proposed park in the event that the park is not managed.

• The bushfire report needs to discuss the proposed eastern emergency access, that is now proposed in lieu of the western emergency exit (Plan Set "M" included in Appendix A of the previous bushfire assessment report). It is noted that no discussion of the emergency access road has been made by the bushfire consultant.

The eastern emergency access has been addressed in Section 6 of this BTA.

• The bushfire assessment report will need to identify if the proposed fire trail will need specific construction outcomes, where it is located to the south of and within a 40m wide storm water discharge easement (in relation to the SW stormwater basin No. 4).

The firetails and specific construction outcomes are addressed in Section 6 of this BTA.

• The bushfire assessment report has noted that a perimeter road has not been provided and is not required as, *the site is surrounded by grassland which provides access/egress for firefighting vehicles*. This is not an acceptable outcome. Generally a fire trail is not an accepted alternative for a perimeter road, and as the development now includes a fire trail an assessment of its likely improvements are needed to be provided.

The performance requirements of the fire trail have been addressed in Section 6 of this BTA.

• Identify how the Lots Benefited and Burdened (prepared by Morgan and English and dated 21/02/2022) operate for APZs (10m 12m). Why haven't lots within the subdivision, that will benefit from an APZ, been identified in the document?

The easement document has the ability to be updated accordingly, identifying each and every Lot benefited, at the time of subdivision certificate release. The benefited Lots have not been expressly identified in the Morgan and English Letter, given the Lot references are subject to change, up until Deposited Plan and associated 88B preparation. These Lots will benefit by the APZ easement, thus a condition within the GTAs reflecting this requirement is accepted.



The report demonstrates compliance with Planning for Bushfire Protection 2019 (NSW RFS, 2019), and 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 for the proposed subdivision:

- Assessment in accordance with PBP 2019 has shown that future dwellings within the lots will be able to comply with the required BALs. In any case, future dwellings within the site will be assessed under Section 4.14 of EP&A Act for each individual dwelling upon application.
- Reticulated water is extended into the site. The development will be linked to the water pressure mains and the proposed internal fire hydrant spacing, sizing and pressures are to comply with AS 2419.1-2005 Fire Hydrant Installations System design, installation and commissioning (2017).
- APZS are required in accordance with Table 4-1 of this report between the surrounding Woodland and Grassland vegetation and future dwellings.
- The proposed access internal road is to meet either the performance criteria or acceptable solutions as detailed in Section 6 of this report and Section 4.1.3 (1) of PBP.



Sarah Jones

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## **Terms & Abbreviations**

Abbreviation	Meaning		
APZ	Asset Protection Zone		
AS2419 -2005	Australian Standard – Fire Hydrant Installations		
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas		
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		
EPA Act	NSW Environmental Planning and Assessment Act 1979		
FFDI	Forest Fire Danger Index		
FMP	Fuel Management Plan		
ha	hectare		
IPA	Inner Protection Area		
LGA	Local Government Area		
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		
UHSC	Upper Hunter Shire Council		



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## INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning at Lot 2 DP 1169320, Gundy Road, Scone, within the Upper Hunter Local Government Area (the site) (Figure 1-1). The proposal is for a residential subdivision along with associated infrastructure such as access roads and drainage basins (the proposal). 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.I Site Particulars

Locality:	Lot 2 DP 1169320, Gundy Road, Scone NSW		
LGA:	Upper Hunter (UH)		
Forest Danger Index:	100 FDI		
Current Land Use:	The site currently contains native vegetation		
Climate / Fire History:	The site lies within a geographical area with a Fire Danger Index (FDI) rating of 100. Extreme bushfire weather is therefore associated with long periods of drought, high temperatures, low humidity and gusty often north-westerly winds.		



CLIENT SITE DETAILS DATE

Client 150 Gundy Road Scone 27 September 2021







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Ref No 2216



for which it was supplied and in accordance with the terms of engagement for the commission.



### **I.2** Description of the Proposal

This assessment has been undertaken for a proposed residential subdivision of Lot 2 DP 1169320. The subdivision is divided by a drainage reserve, so for the purposes of this report the subdivision will be referred to as the following"

- Northern Part of the Subdivision (North of the drainage reserve); and
- Southern Part of the Subdivision (South of the drainage reserve).

Refer to Appendix A for proposed subdivision plans.

### **I.3** Legislative Requirements

The Site has been mapped as Bush Fire Prone Land Map (BFPLM) by Upper Hunter. This report forms part of the supporting documentation for a Development Application (DA) to be submitted to UH.

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

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

### 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 10m.



## **3 SITE ASSESSMENT**

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

### 3.1 Vegetation 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 Figure 3-1 that shows the vegetation post development.

In accordance with PBP (RFS 2019), an assessment of the slope that the vegetation considered a bushfire hazard was undertaken and the results are presented in Table 3.1 and Table 3.2 and Figure 3-1 below.

Northern Section of the Subdivision			
Direction	Vegetation Type	Slope	
North	Managed land and existing residential developments	Adjacent	
East	Grassland	Adjacent	
South	Vegetation associated with a drainage reserve, this has been assessed as Woodland Vegetation	Adjacent	
West	Grassland and existing Residential developments	Adjacent	

#### Table 3-1: Vegetation Classification for the Northern part of the Subdivision



### Table 3-2 Vegetation Classification for the Southern part of the subdivision

Southern Section of the Subdivision			
Direction Vegetation Type		Slope	
North	Vegetation associated with a drainage reserve, this has been assessed as Woodland Vegetation	Adjacent	
East	Grassland	Adjacent	
South	Grassland	Adjacent	
West	Grassland	Adjacent	



### 3.2 Effective Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the slope affecting the bushfire behaviour was undertaken for a distance of 100m from the edge of the lot boundaries in the direction of the bushfire hazard.

The slopes leading away from the site have 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. Refer to Table 3-3 and Table 3-4 for Vegetation and Slope Assessment for the site. Refer to Figure 3-1 for Vegetation Map.

Northern Section of the Subdivision			
Direction	Vegetation Type	Slope	
North	Existing Residential Subdivision	Upslope 0-5 degrees	
East	Grassland and Woodland	Upslope 0-5 degrees	
South	Vegetation to be retained within the site in the Drainage Reserve assessed as Woodland Vegetation	Flat land	
West	Grassland	Downslope 0-5 degrees	

#### Table 3-3 Vegetation & Slope Assessment for Northern Part of the Subdivision

#### Table 3-4 Vegetation & Slope Assessment for Southern Subdivision

Southern Section of the Subdivision				
Direction	Vegetation Type	Slope		
North	Woodland associated with Drainage Reserve	Upslope 0-5 degrees		
East	Vegetation to be retained within the site in the Drainage Reserve assessed as Woodland Vegetation	Upslope 0-5 degrees		
South	Grassland	Downslope 0 – 5 degrees		
West	Grassland	Downslope 0 – 5 degrees		



### FIGURE 3-1: VEGETATION MAP

CLIENT Client SITE DETAILS Lot 2 Gundy Road Scone DATE 22 March 2022



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## **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 habitable buildings within the site using the vegetation and slope data identified in Section 3-1 of this report.

The site lies within Upper Hunter 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 the proposed buildings within the site was determined using Table A1.12.2 in PBP (RFS, 2019). Refer to Table 4-1 and Figure 4-1 for required APZs for future habitable buildings.

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided <sup>1</sup>
North	Existing Residential Subdivision	Upslope 0-5 degrees	N/A
East	Grassland	Upslope 0-5 degrees	10m APZ
South	Vegetation to be retained within the site in the Drainage Reserve assessed as Woodland Vegetation	Downslope 0 – 5 degrees	16m
West	Grassland	Downslope 0- 5 degrees	12m

#### Table 4-1: Recommended APZs for Northern Part of the Subdivision



### Table 4-2 Vegetation & Slope Assessment for Southern Part of the Subdivision

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided <sup>1</sup>
North	Vegetation to be retained within the site in the Drainage Reserve assessed as Woodland Vegetation	Downslope – 5 degrees	16m
East	Grassland	Upslope 0-5 degrees	10m
South	Grassland	cross-slope	10m
West	Grassland	Downslope 0 – 5 degrees	12m



## FIGURE 4-1: ASSET PROTECTION ZONES MAP

CLIENT Client SITE DETAILS Lot 2 Gundy Road Scone DATE 22 March 2022



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## **5 DWELLING DESIGN & 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  $kW/m^2$ .

#### (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  $kW/m^2$ .

### 5.1 Determination of Bushfire Attack Levels

Using a FFDI of 100, the information relating to vegetation, slope and according to Table A1.12.5 of PBP 2019 that determined the appropriate BAL. The results from this bush fire risk assessment are detailed below in Table 4-1–Bush Fire Attack Assessment and Figure 4-1 shows the vegetation.

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Grassland occurs on land classified as 'Flat / upslope/cross-slope	10–<15m	BAL-29	Sect 3 & 7 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
	15–<22	BAL- 19	Sect 3 & 6 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3

#### Table 5-1: Determination of BALs for Future dwellings within site



Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
	22–50	BAL-12.5	Sect 3 & 5 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
	>50m	BAL-LOW	No Requirements
Grassland occurs on land classified as 'Downslope 0 – 5 degrees	12-<17	BAL-29	Sect 3 & 7 of AS3959
	17–<25	BAL- 19	Sect 3 & 6 of AS3959
	25–<50	BAL-12.5	Sect 3 & 5 of AS3959
	>100m	BAL-LOW	No construction requirements
	16-<23m	BAL-29	Sect 3 & 7 of AS3959
Manufland O. F.	23-<32m	BAL-19	Sect 3 & 6 of AS3959
downslope Degrees	32-<100	BAL-12.5	Sect 3 & 5 of AS3959
	>100m	BAL-LOW	No construction requirements

Given, the information in Table 5-1 above any future dwellings within the lots will be able to comply with AS3959-2018. These will be subject to further assessment under Section 4.14 of the EP&A Act depending on location of future dwellings and retained vegetation within the site.



### FIGURE 5-1: BUSHFIRE ATTACK LEVELS

CLIENT SITE DETAILS DATE





Level 1, 146 Hunter Street, Newcastle NSW 2300

#### Disclaimer

The BALS as depicted on this map have been determined by vegetation within 100m of the site at the time of the assessment in October 2021. It should be noted that conditions may change over time, that may result in different BALs for the site.

Although every care has been taken in the preparation of this map the author accepts no responsibility for any misprints, errors, omissions, inaccuracies in these maps or damages resulting from the use of this information.

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## **6 COMPLIANCE**

The proposal is for a residential subdivision and therefore development standards apply. Table 5-1 details the proposed compliance with Development Standards for Residential and Rural Residential Subdivisions. Table 6-1: Proposed Dwelling Compliance with Development Standards

	Acceptable Solutions	Performance Criteria	Compliance
		Asset Protection Zon	es
>	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m <sup>2</sup> on each proposed lot.	<b>Complies with Acceptable Solution –</b> APZs for the site have been provided in accordance with A1.12.2. Refer to Section 4 of this BTA
>	APZs are managed in accordance with the requirements of Appendix 4.	APZs are managed and maintained to prevent the spread of a fire towards the building.	<b>Complies with Acceptable Solution –</b> APZs on site are to be managed in accordance with Appendix 4 of the PBP 2019.
>	APZs are wholly within the boundaries of the development site	the APZs is provided in perpetuity	<b>Complies with Performance Solution –</b> APZs to the north, east and west occurs on adjoining land, to provide management of the APZs, firetails will be provided and an 88b instrument is in place to ensure that the APZs are provided in perpetuity. Refer to Appendix C for 88b.
>	APZs are located on lands with a slope less than 18 degrees.	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	<b>Complies with Acceptable Solution –</b> APZs occur on land less than 18 degrees
		Landscaping	
>	landscaping is in accordance with Appendix 4; and fencing is constructed in accordance with section 7.6.	landscaping is designed and managed to minimise flame contact and radiant	Complies with Acceptable Solution –



	heat to buildings, and the potential for wind-driven embers to cause ignitions.	All landscaping within the site will meet the requirements of the acceptable solution. Refer to Appendix D for Landscape Plan.
Α	ccess (General Requirer	nents)
<ul> <li>&gt; property access roads are two-wheel drive, all -weather roads;</li> <li>&gt; perimeter roads are provided for residential subdivisions of three or more allotments;</li> <li>&gt; subdivisions of three or more allotments have more than one access in and out of the development;</li> <li>&gt; traffic management devices are constructed to not prohibit access by emergency services vehicles;</li> <li>&gt; maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;</li> <li>&gt; all roads are through roads;</li> <li>&gt; 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;</li> </ul>	firefighting vehicles are provided with safe, all-weather access to structures.	Complies with Performance Solution – All roads within the site are designed to meet the requirements of the acceptable solution, with the exception of perimeter roads do not occur along the northern boundary due to Gundy Road occurring in this direction and along the eastern, western and southern boundaries due to only grassland occurring in these directions and that fire trails will occur along these boundaries. The fire trails will be all weather. Refer to Appendix E for Traffic Engineer Report. A secondary / emergency access occurs to the north-east that will provide alternative access / egress in time of an emergency.

#### Bushfire Threat Assessment – Gundy Rd, Scone



>	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.		
>	the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.	the capacity of access roads is adequate for firefighting vehicles.	<b>Complies with Acceptable Solution –</b> All roads within the site are designed to meet the requirements of the acceptable solution.
>	hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;	there is appropriate access to water supply.	<b>Complies with Acceptable Solution –</b> Hydrants are to be positions appropriately across the site.
>	hydrants are provided in accordance with the relevant clauses of AS 2419.1:2017 - Fire hydrant installations System design, installation and commissioning; and		



	there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.		
		Perimeter Roads	
$\rangle$	are two-way sealed roads;	access roads are designed to allow safe	Can Comply with Acceptable Solution –
>	minimum 8m carriageway width kerb to kerb;	access and egress for firefighting vehicles while residents are evacuating	All access roads to the site are designed to meet the requirements of the acceptable solution.
>	parking is provided outside of the carriageway width;	as well as providing a safe operational environment for emergency service	
>	hydrants are located clear of parking areas;	personnel during firefighting and emergency management on the	
>	are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	interface.	
>	curves of roads have a minimum inner radius of 6m;		
>	the maximum grade road is 15 degrees and average grade of not more than 10 degrees;		
>	the road crossfall does not exceed 3 degrees; and		
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.		
		Non-Perimeter Road	S



$ \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	minimum 5.5m carriageway width kerb to kerb; parking is provided outside of the carriageway width; hydrants are located clear of parking areas; 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	access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Complies with Acceptable Solution –
	branches, is provided.		
		Property Access	
>	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.	firefighting vehicles can access the dwelling and exit the property safely.	Complies with Acceptable Solution – All future lots are to be connected to a public road by a driveway <70m
	In circumstances where this cannot occur, the following requirements apply:		



$\rangle$	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;	
>	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;	
$\rangle$	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	
>	reticulated water is to be provided to the development where available;	adequate water supplies are provided for firefighting purposes.	Complies with Acceptable Solution – All lots are to be connected to reticulated water.
>	a static water and hydrant 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.		
>	fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2017;	Water supplies are located at regular intervals; and the water supply is accessible and	<b>Can Comply with Acceptable Solution –</b> Hydrants are to be positions appropriately across the site.
>	hydrants are not located within any road carriageway; and	reliable for firefighting operations.	
>	reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.		
>	fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017.	flows and pressure are appropriate.	Complies with Acceptable Solution – Flows and pressure assumed



<ul> <li>&gt; all above-ground metal, including a above-ground water concrete or metal.</li> </ul>	water service pipes are nd up to any taps; and storage tanks shall be of	the integrity of the water supply is maintained.	<b>Complies with Acceptable Solution –</b> All above ground water service pipes will meet the requirements.
		Electricity Services	
<ul> <li>&gt; where practicable lines are undergree</li> <li>&gt; where overhead,</li> <li>&gt; lines are p installed w 30m, unle or riparian</li> <li>no part of a than the d Guideline fo Power Lines</li> </ul>	e, electrical transmission bund; electrical transmission proposed as follows: lines are <i>v</i> ith short pole spacing of ss crossing gullies, gorges areas; and tree is closer to a power line istance set out in ISSC3 r Managing Vegetation Near	location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Complies with Acceptable Solution –
		Gas Services	
<ul> <li>reticulated or bott maintained in acc 1596:2014 - The Gas, the requiren and metal piping</li> </ul>	led gas is installed and ordance with AS/NZS storage and handling of LP nents of relevant authorities, is used;	location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	<b>Can Complies with Acceptable Solution –</b> All future dwellings are able to meet the requirements for gas service



<ul> <li>all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;</li> </ul>	
<ul> <li>connections to and from gas cylinders are metal;</li> </ul>	
<ul> <li>polymer-sheathed flexible gas supply lines are not used; and</li> </ul>	
<ul> <li>above-ground gas service pipes are metal, including and up to any outlets.</li> </ul>	



## 7 CONCLUSION & RECOMMENDATIONS

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed residential subdivision at Lot 2 DP 1169320 – Gundy Road, Scone, within the Upper Hunter Local Government Area (the site).

This Bushfire Threat Assessment Report has been prepared in accordance with the additional information requested from NSW RFS in their letter dated the 11 March 20022. Please find following the information requested by RFS in **BOLD**, with the appropriate response following.

The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted and cannot support the current application. The following concerns have been identified and addressed:

• Are all adjoining owners party to the proposed development and specifically to approvals relevant to the now proposed fire trails.

The adjoining land to the east, south and west where the proposed fire-trails occur is under the same ownership and the fire trails are registered as a section 88B restriction to land use under the 'Conveyancing Act 1919'. Refer to Section 6 of this BTA for further information.

- The bushfire report needs to address the new Plan Set identified as Revision O. This revised report will need to discuss the proposed modifications, including;
- Providing a new APZ plan,

The BTA has been updated to address the new Plan Set identified as Revision O, with revised APZs refer to Figure 4-1 APZ Map within this BTA.

 Discussion of the proposed fire trail, that is now proposed to be located upon adjoining lands, is to be provided. Details of its construction and ongoing maintenance will need to be included. This should have included written agreements from the land owner as part of the proposal. These are now needed to be provided.

Details of the fire trails are addressed in Section 6 of this BTA.

• Discussion of the proposed vegetation buffer and how it will operate alongside 10m and 12m APZs

The proposed fire trails acts as a barrier (defined edge) between the APZs and the 6m vegetation buffers.

• The bushfire report needs to confirm the location of the pocket park and any impacts it may provide (hazard, management etc).



The proposed park occurs on the southern side of Road 3. Road 3 is 18m wide and therefore provides an APZ of greater than 16m between any further dwelling and the proposed park in the event that the park is not managed.

• The bushfire report needs to discuss the proposed eastern emergency access, that is now proposed in lieu of the western emergency exit (Plan Set "M" included in Appendix A of the previous bushfire assessment report). It is noted that no discussion of the emergency access road has been made by the bushfire consultant.

The eastern emergency access has been addressed in Section 6 of this BTA.

• The bushfire assessment report will need to identify if the proposed fire trail will need specific construction outcomes, where it is located to the south of and within a 40m wide storm water discharge easement (in relation to the SW stormwater basin No. 4).

The firetails and specific construction outcomes are addressed in Section 6 of this BTA.

• The bushfire assessment report has noted that a perimeter road has not been provided and is not required as, *the site is surrounded by grassland which provides access/egress for firefighting vehicles*. This is not an acceptable outcome. Generally, a fire trail is not an accepted alternative for a perimeter road, and as the development now includes a fire trail an assessment of its likely improvements are needed to be provided.

The performance requirements of the fire trail have been addressed in Section 6 of this BTA.

• Identify how the Lots Benefited and Burdened (prepared by Morgan and English and dated 21/02/2022) operate for APZs (10m 12m). Why haven't lots within the subdivision, that will benefit from an APZ, been identified in the document?

The easement document has the ability to be updated accordingly, identifying each and every Lot benefited, at the time of subdivision certificate release. The benefited Lots have not been expressly identified in the Morgan and English Letter, given the Lot references are subject to change, up until Deposited Plan and associated 88B preparation. These Lots will benefit by the APZ easement, thus a condition within the GTAs reflecting this requirement is accepted.



## 8 **BIBLIOGRAPHY**

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## APPENDIX A PROPOSED SITE PLANS
# GUNDY ROAD, SCONE PROPOSED SUBDIVISION OF LOT 2 IN DP1169320

SHEET INDEX	
COVER_001	COVER AND SHEET INDEX
DETAIL_001	DETAIL SURVEY
STAGE_001	STAGING PLAN
STAGE_002	STAGING PLAN - STAGE 1-3
STAGE_003	STAGING PLAN - STAGE 4
STAGE_004	STAGING PLAN - STAGE 5
STAGE_005	STAGING PLAN - STAGE 6
STAGE_006	STAGING PLAN - STAGE 7
STAGE_007	STAGING PLAN - STAGE 8
STAGE_008	STAGING PLAN - STAGE 9
STAGE_009	STAGING PLAN - STAGE 10
STAGE_010	STAGING PLAN - STAGE 11
STAGE_011	STAGING PLAN - STAGE 12
STAGE_012	STAGING PLAN - STAGE 13
STAGE_013	STAGING PLAN - STAGE 14
STAGE_014	STAGING PLAN - STAGE 15
STAGE_015	STAGING PLAN - STAGE 16
PATHWAY_001	FOOTPATH / CYCLEWAY PLAN
DUPLEX_001	DUPLEX LOTS PLAN
BUSROUTE_001	BUS ROUTE PLAN
WATER_001	WATER SERVICING STRATEGY
SEW_001	SEWER DRAINAGE STRATEGY
SEW_002	CATCHMENT 1
SEW 003	CATCHMENT 2
	CATCHMENT 3
EMERG 001	EMERGENCY ACCESS PLAN & RURAL INTERFACE SECTION



MM HYNDES BAILEY & Co.
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Surveying the Hunter since 1920

Ph: 02 65432475 Email: office @hbsurveys.com PO Box 26, MUSWELLBROOK NSW 2333



H.SCALE:	A3 CONT. INT:	CLIENT: CHARLES DAVI
V.SCALE	DATUM:	
DATE 8.03.2022	FILE: COVER_001	

ID PTY LTD	LGA: UPPER HUNTER	JOB REF:	
	PARISH: SCONE	217133	
	COUNTY: BRISBANE	VER P	





(PO Box 26), MUSWELLBROOK NSW 2333

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22	909			
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18	770			
13	765			
30	789			
23	798			
32	802			
27	804			
36	827			
21	810			
35	862			
24	881			
28	903			
21	827			
20	758			
384	829			
ID PTV	/ LTD		LGA: UPPER HUNTER	JOB REF:
- • • •			PARISH' SCONE	217133
			TRIGH. GOUNE	
			COUNTY: BRISBANE	VER P



A3 CONT. INT: H.SCALE: 1:1500 **MM HYNDES BAILEY & Co.** CLIENT: CHARLES DAV Þ STAGING PLAN - STAGE 1 - 3 **REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN** PROPOSED SUBDIVISION V.SCALE DATUM: Surveying the Hunter since 1920 LOT 2 IN DP1169320, GUNDY ROAD SCONE Ph: 02 65432475 Email: office @hbsurveys.com.au FILE: STAGE\_002 DATE 8.03.2022 PO Box 26, MUSWELLBROOK NSW 2333

(V3) GUNDY ROAD - LANDSCAPE ZONE (RESTRICTION ON USE OF LAND NO ACCESS) (APZ 10m) - ASSET PROTECTION ZONE 10m WIDE
306 1165m <sup>2</sup> 60 <sup>15</sup> 307 1226m <sup>2</sup> 307 1226m <sup>2</sup> 1226m <sup>2</sup> 1226m <sup>2</sup> 1226m <sup>2</sup> 1072 10
ROAD FOR FUTURE EXPANS
STING DAM
ID PTY LTD LGA: UPPER HUNTER LGA: UPPER HUNTER 217133 PARISH: SCONE COUNTY: BRISBANE VER P





(APZ 12) - ASSET PROTECTION ZONE 12m WIDE
(V1) RESTRICTION ON THE USE OF LAND
(V2) POSITIVE COVENANT
(X1) - RESTRICTION ON USE OF LAND

NO DEVELOPMENT ON LOT 514 WITHOUT COUNCIL CONSENT REGARDING SALINTY MANAGEMENT

**MM HYNDES BAILEY & Co.** REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920



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STAGING PLAN - STAGE 5 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE

H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAV
V.SCALE	DATUM:	
DATE 8.03.2022	FILE: STAGE_004	

VID PTY LTD	LGA: UPPER HUNTER	JOB REF:
	PARISH: SCONE	217100
	COUNTY: BRISBANE	VER P

- PROPOSED CYCLEWAY 2.5m WIDE
- PROPOSED FOOTPATH 1.2m WIDE



MM HYNDES BAILEY & Co.	STAGING PLAN - STAGE 6 PROPOSED SUBDIVISION	H.SCALE: 1:1000	A3 CONT. INT:	CLIENT: CHARLES DAVI
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920		V.SCALE	DATUM:	
Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333		DATE 8.03.2022	FILE: STAGE_005	

11 .0 1m <sup>2</sup> .0 2 86 07 19.1 413 732m <sup>2</sup>		
414 718m <sup>2</sup> 64 701 751m <sup>2</sup>		
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/ID PTY LTD	LGA: UPPER HUNTER	JOB REF: 217133
	COUNTY: BRISBANE	VER P

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		(APZ 10m)			1348m <sup>2</sup> (V1)

(V1) RESTRICTION ON THE USE OF LAND (APZ 10m) - ASSET PROTECTION ZONE 10m WIDE

#### MM HYNDES BAILEY & Co. REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN



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MR

STAGING PLAN - STAGE 7 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE

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H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVID
V.SCALE	DATUM:	
DATE 8.03.2022	FILE: STAGE_006	

ID PTY LTD	LGA: UPPER HUNTER	JOB REF:
	PARISH: SCONE	217100
	COUNTY: BRISBANE	VER P

#### — PROPOSED FOOTPATH 1.2m WIDE



MM HYNDES BAILEY & Co.			H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVI
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920	$\langle HB \rangle$	PROPOSED SUBDIVISION	V.SCALE	DATUM:	
Ph: 02 65432475 Ema <b>li:</b> office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333		LOT 2 IN DP (169320, GUNDY ROAD SCONE	DATE 8.03.2022	FILE: STAGE_007	

(V1) RESTRICTION ON THE USE OF LAND (V2) POSITIVE COVENANT (APZ 10m) - ASSET PROTECTION ZONE 10m WIDE						
PROPOSED FOOTPATH 1.2m WIDE PROPOSED CYCLEWAY 2.5m WIDE						
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COUNTY: BRISBANE

VER P



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	H.SCALE: 1:1500 A	3 CONT. INT:	CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER	JOB REF:
PROPOSED SUBDIVISION	V.SCALE	DATUM:		PARISH: SCONE	21/100
LOT 2 IN DE LI09320, GUNDT ROAD SCONE	DATE 8.03.2022	FILE: STAGE_008		COUNTY: BRISBANE	VER P

PROPOSED FOOTPATH 1.2m WIDE



MM HYNDES BAILEY & Co.		H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER	JOB REF:
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920	PROPOSED SUBDIVISION	V.SCALE	DATUM:		PARISH: SCONE	217133
Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333	LOT Z IN DP (169320, GUND) ROAD SCONE	DATE 8.03.2022	FILE: STAGE_009		COUNTY: BRISBANE	VER P

PROPOSED FOOTPATH 1.2m WIDE
 PROPOSED CYCLEWAY 2.5m WIDE





/ID PTY LTD	LGA: UPPER HUNTER	JOB REF:	
	PARISH: SCONE	217133	
	COUNTY: BRISBANE	VER P	

#### PROPOSED FOOTPATH 1.2m WIDE



MM HYNDES BAILEY & Co.		H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER	JOB REF:
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920	PROPOSED SUBDIVISION	V.SCALE	DATUM:		PARISH: SCONE	217133
Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333	LOT 2 IN DP1169320, GUNDY ROAD SCONE	DATE 8.03.2022	FILE: STAGE_011		COUNTY: BRISBANE	VER P



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STAGING PLAN - STAGE 13 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE

H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVI
V.SCALE	DATUM:	
DATE 8.03.2022	FILE: STAGE_012	

#### PROPOSED FOOTPATH 1.2m WIDE

(V1) RESTRICTION ON THE USE OF LAND (V2) POSITIVE COVENANT

(APZ 12) - ASSET PROTECTION ZONE 12m WIDE (APZ 10m) - ASSET PROTECTION ZONE 10m WIDE

	-		
ID PTY LTD	LGA: UPPER HUNTER	JOB REF:	
	PARISH: SCONE	217133	
	COUNTY: BRISBANE	VER P	

	(APZ 10m) - ASSET PROTECTION ZONE 10m WIDI (V1) RESTRICTION ON THE USE OF LAND (V2) POSITIVE COVENANT	RAVEL ACCE.	SS TRACK FO	2.96 19.96 19.9 (V1) DR RFS RIGHT C
MM HYNDES BAILEY & Co.		H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAV
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920	PROPOSED SUBDIVISION	V.SCALE	DATUM:	
Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333	LOT 2 IN DP1169320, GUNDY ROAD SCONE	DATE 8.03.2022	FILE: STAGE_013	



PROPOSED FOOTPATH 1.2m WIDE
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ADPTYLTD LGA: UPPER HUNTER JOB REF: 217133 PARISH: SCONE

COUNTY: BRISBANE

VER P



CONT. INT:

FILE: STAGE 014

DATUM:

H.SCALE: 1:1500

DATE 8.03.2022

V.SCALE

(V1) RESTRICTION ON THE USE OF LAND(V2) POSITIVE COVENANT(APZ 10m) - ASSET PROTECTION ZONE 10m WIDE

MM HYNDES BAILEY & Co. REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920

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MR



STAGING PLAN - STAGE 15

LOT 2 IN DP1169320, GUNDY ROAD SCONE

PROPOSED SUBDIVISION

CLIENT: CHARLES DAVID PTY LTD
LGA: UPPER HUNTER
JOB REF:
217133
PARISH: SCONE
COUNTY: BRISBANE
VER P

#### PROPOSED FOOTPATH 1.2m WIDE





STAGING PLAN - STAGE 16 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE

H.SCALE: 1:1500	A3 CONT. INT:	CLIENT: CHARLES DAVID PTY LTD
V.SCALE	DATUM:	
DATE 8.03.2022	FILE: STAGE_015	

.TD	LGA: UPPER HUNTER	JOB REF:
	PARISH: SCONE	217133
	COUNTY: BRISBANE	VER P

APZ	10m) -	ASSET	PROTE	CTION	ZONE	10m	WIDE
	,						

PZ 10m) - ASSET	PROTECTION	ZONE 1	0m WIDE
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42.02 PAT	ΗV
42.06	10.4
- → 749m <sup>2</sup>	_
42.18 → 716 802m <sup>2</sup>	
42.35	
<sup>19</sup> 717 <sup>10</sup> 898m <sup>2</sup>	
<sup>.00</sup> / <sub>98</sub> 718	2.78
99 856m <sup>2</sup>	
101 4. 836m <sup>2</sup> 836m <sup>2</sup>	3.8
20 20	)
720 812m <sup>2</sup> 721 820r	 m <sup>2</sup>
5. 66 16 20	
(APZ 10m)	

PROPOSED FOOTPATH 1.2m WIDE













MM HYNDES BAILEY & Co. REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN Surveying the Hunter since 1920



PROPOSED INTERNAL SEWERAGE DRAINAGE STRATEGY CATCHMENT AREA 1 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE DATI

(V3)		PLAI	<ul> <li>150MM GRAVITY RETICULATION</li> <li>300MM GRAVITY TRUNK SEWER</li> </ul>	SEWER MAIN MAIN
202 202 203 203 203 203 203 203		(v3) (v3)	V3) (V3) 306 307 INV 223.3 309 30	A PATHWAY (APZ 10m)
E STRATEGY ALIA WSA 002 'ONLY ARE ARE NOT I	FOR CONSTRUCTION	7 ( 5 ) //////		
SCALE: 1:1250 A	3 CONT. INT: 0.5m	CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER	JOB REF:
SCALE	DATUM: AHD	· · · · · · · · · · · · · · · · · · ·	PARISH: SCONE	217133
ATE 8.03.2022	DRAWING: SEW_002		COUNTY: BRISBANE	VER P

Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333



Surveying the Hunter since 1920 Ph: 02 65432475 Email: office @hbsurveys.com.au 16 COMMON ROAD (PO Box 26), MUSWELLBROOK NSW 2333

REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN

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7Þ)

CATCHMENT AREA 2 PROPOSED SUBDIVISION LOT 2 IN DP1169320, GUNDY ROAD SCONE

PUBLIC PARK           K MAIN PuPVC           PUBLIC PARK           K MAIN PuPVC           E 1.6%           409         410         411           612         613         413           612         613         414           MDE)         701         615         70           614         INV 225.5         701         616         703           617         704         618         705         619         706           619         706         701         613         70         701           618         705         701         613         70           6102         1603         70         70           1602         1603         70         70           1002         1603         70         70           1003         70         70         70           1003         70         70         70           1003         70         70         70           1003         70         70         70           1003         70         70         70           1003         70         70         70	412 412 417 417 417 417 416 415 709 710 710 712 713 714 714 714 715 08 716 717 610 718 719 710 716 717 610 718 719 719 710 711 713 714 715 717 610 719 710 711 712 713 714 715 716 717 717 718 719 719 719 719 719 719 719 719	Image: Sector		
	(APZ 10m)			
H.SCALE: 1:2000 A	3 CONT. INT: 0.5m DATUM: AHD	CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER PARISH: SCONE	JOB REF: 217133
DATE 8.03.2022	DRAWING: SEW_003		COUNTY: BRISBANE	VER P



PROPOSED INTERNAL SEWERAGE DRAINAGE STRATEGY H.SCALE: 1:2500 A3 CONT. INT: 0.5m MM HYNDES BAILEY & Co. CATCHMENT AREA 3 REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN IЬ PROPOSED SUBDIVISION V.SCALE DATUM: AHD Surveying the Hunter since 1920 LOT 2 IN DP1169320, GUNDY ROAD SCONE Ph: 02 65432475 Email: office @hbsurveys.com.au PO Box 26, MUSWELLBROOK NSW 2333 DRAWING: SEW\_004 DATE 8.03.2022

CLIENT: CHARLES DAVID PTY LTD	LGA: UPPER HUNTER PARISH: SCONE	JOB REF: 217133
	COUNTY: BRISBANE	VER P





TY LTD	LGA: UPPER HUNTER	
	PARISH: SCONE	217133
	COUNTY: BRISBANE	VER P

## APPENDIX B ASSET PROTECTION ZONES

An Asset Protection Zone (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 (refer to Figure B-1 below). 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). An APZ can include the following:

- Lawns;
- Discontinuous gardens;
- Swimming pools;
- Driveways;
- Unattached non-combustible garages with suitable separation from the Dwelling;
- Open space / parkland; and
- Car parking.

#### Figure 1: Components of an APZ (PBP 2019)





#### **Inner Protection Area**

The Inner Protection Area (IPA) extends from the edge of the OPA to the development. The IPA aims to ensure that the presence of fuels which could contribute to a fire event / intensity, are minimised close to the development. The performance of the IPA must be such that:

- There is minimal fine fuel at ground level which could be set alight by a bushfire; and
- Any vegetation in the IPA does not provide a path for the transfer of fire to the development that is, the fuels are discontinuous.

The presence of a few shrubs or trees in the IPA 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 permitted in the IPA

#### **Outer Protection Area**

The Outer Protection Area (OPA) is located adjacent to the hazard. Within the OPA any trees and shrubs should be maintained in a manner such that the vegetation is not continuous. Fine fuel loadings should be kept to a level where the fire intensity expected will not impact on adjacent developments.

## **APPENDIX C** 88B EASEMENT

## APPENDIX D LANDSCAPE PLANS

## Gundy Road, SCONE Lot 2 / DP 1169320

# Development Application Landscape Design Report





DATE: MARCH 2022

PROJECT NO.ISSUE:GSP200221 - DAD - FOR SUBMISSION

#### LEGEND

SITE BOUNDARY

PROPOSED LOTS Housing subject to separate applications

PROPOSED OPEN SPACE AND CONNECTIONS Refer L07

PROPOSED MASS PLANTING Refer L02

DRAINAGE RESERVE Refer Ecologist's Report for details

EXISTING TREES TO BE RETAINED Refer Ecologist's Report for details

ABORIGINAL MARKED TREE TO BE PROTECTED Refer Ecologist's Report for details

EXISTING TREES TO BE REMOVED Refer Ecologist's Report for details

PROPOSED GUNDY ROAD SCREEN PLANTING Refer L04

PROPOSED 6m SCREEN PLANTING Refer L05

PROPOSED 10m APZ and Fire Trail Access Refer Bushfire Report for details

DETENTION BASINS Refer L05 for Planting Details Refer Engineer's Plans for details

PROPOSED FOOTPATH

PROPOSED VERGE

PROPOSED ROAD Refer to Engineer's drawings for details

VENTURE CLOSE





L02 Street Tree Master Plan

GUNDY ROAD, SCONE, NSW DATE: MARCH 2022 PROJECT NO. GSP200221 - DA ISSUE: D - FOR SUBMISSION



#### LEGEND

SITE BOUNDARY

PROPOSED LOTS Housing subject to separate applications

PROPOSED OPEN SPACE AND CONNECTIONS Subject to future detail

PROPOSED MASS PLANTING Refer L03 Planting Schedule

DRAINAGE RESERVE Refer to Ecology Report for management details

DETENTION BASINS Refer L05 for Planting Details Refer Engineer's Plans for details

PROPOSED FOOTPATH

PROPOSED VERGE

PROPOSED ROAD Refer to Engineer's drawings for details

PROPOSED GUNDY ROAD SCREEN PLANTING Refer L04

PROPOSED 6m SCREEN PLANTING Refer L05

PROPOSED 10m APZ and Fire Trail Access Refer Bushfire Report for details

NEW TREES Refer Planting Schedule (Page L03) ACER NEGUNDO 'SENSATION'

BACKHOUSIA CITRIODORA

BRACHYCHITON ACERIFOLIUS

BUCKINGHAMIA CELSISSIMA

CALODENDRON CAPENSE

EUCALYPTUS PIPERITA

EUCALYPTUS ROBUSTA

EUCALYPTUS SIDEROXYLON 'ROSEA'

ELAEOCARPUS RETICULATUS

LOPHOSTEMON CONFERTUS

PISTACHIO CHINENSIS

PRUNUS CERASIFERA 'OAKVALE CRIMSON SPIRE'

TRISTANIOPSIS LAURINA 'LUSCIOUS'

WATERHOUSIA FLORIBUNDA 'GREEN AVENUE'



#### SUGGESTED PLANT SCHEDULE

Key	Botanical Name	Common Name	Pot Size	Mature Height	Mature Spread
STRE	ET TREES	1			
01	Acer negundo 'Sensation'	Box Elder	75L	10m	8m
02	Backhousia citriodora	Lemon Myrtle	75L	8m	4m
03	Brachychiton acerifolius	Illawarra Flame Tree	75L	12m	6m
04	Buckinghamia celsissima	Ivory Curl Tree	75L	10m	4m
05	Calodendrum capense	Cape Chestnut	75L	10m	6m
06	Corymbia gummifera	Red Bloodwood	75L	15m	10m
07	Elaecarpus reticulatus	Blueberry Ash	75L	8m	5m
08	Eucalyptus piperita	Sydney Peppermint	75L	20m	10m
09	Eucalyptus robusta	Swamp Mahogany	75L	15m	5m
10	Eucalyptus sideroxylon 'Rosea'	Red Flowering Ironbark	75L	15m	6m
11	Lophostemon confertus	Brush Box	75L	5m	4m
12	Pistacia chinensis	Chinese Pistachio	75L	10m	6m
13	Prunus cerasifera 'Oakvale Crimson Spire'	Purple-leaf Cherry Plum	75L	8m	4m
14	Tristaniopsis laurina 'Luscious'	Water Gum	75L	8m	4m
15	Waterhousea floribunda 'Green Avenue'	Weeping LillyPilly	75L	15m	9m
MAS	S PLANTED MEDIAN / ROUNDABOUT				
Gras	ses				
16	Dietes grandiflora	Wild Iris	140mm	1.2m	1.2m
17	Westringia 'Zena'	Coastal Rosemary	140mm	1m	1m
18	Liriope muscari 'Just Right'	Liriope	140mm	0.5m	0.5m
Grou	ndcovers				
19	Hardenbergia 'Meema'	Meema	140mm	0.4m	2m
20	Myoporum parvifolium	Boobialla	140mm	0.3m	2m







GUNDY ROAD, SCONE, NSW DATE: MARCH 2022 PROJECT NO. GSP200221 - DA ISSUE: D - FOR SUBMISSION





















GREEN SPACE PLANNING Co. 3/19 BOLTON STREET NEWCASTLE NSW 2300 PH 0423 684 382

#### LANDSCAPE BUFFER PLANTING

#### Landscape Approach

- A three (3) metre vegetation corridor is proposed, for the purpose of creating a visual screen between the site and Gundy Road.
- Proposed species have been chosen for their demonstrated performance and for being hardy and low maintenance.
- The landscape treatment buffer contains a hedge line of *Acmena Smithii 'Cherry Surprise'* punctuated by *Tristaniopsis laurina 'Luscious'* and *Buckinghamia celsissima* trees alternated for visual interest.
- The property boundary fence is proposed to be lap and cap fencing, with the fence along the Gundy Road frontage to be a rural style typical post and rail fence.

#### PLANT SCHEDULE

Key	Botanical Name	Common Name	Mature Height	Mature Spread
Cano	py Trees			
В	Buckinghamia celsissima	Ivory Curl Tree	8m	4m
Т	Tristaniopsis laurina 'Luscious'	Luscious	8m	4m
Hedg	le			
А	Acmena smithii 'Cherry Surprise'	Lilly Pilly	2m	1.5m



#### INDICATIVE PLANTING PLAN



GUNDY ROAD,DATE:PROJECT NO.SCONE, NSWMARCH 2022GSP200221 - DA

ISSUE: D - FOR SUBMISSION



#### LANDSCAPE BUFFER PLANTING

#### Landscape Approach

- A six (6) metre vegetation corridor is proposed, for the purpose of creating a wind break and visual buffer, between the property boundary line and the Fire Trail Access (10m Asset Protection Zone). The buffer is proposed within the RU4 zoned land.
- A mix of appropriate native species is proposed, which are in line with the Ecology Report recommendations and also have low flammability characteristics. Species have also been chosen for their demonstrated ability to be sustainable within a low maintenance environment. Native species will also enhance the environmental value associated with the buffer planting.
- The landscape treatment buffer is proposed to contain a suitable combination of trees, shrubs and grasses to create a visual diversity and promote a rural woodland character.
- Retention of existing significant hollow bearing trees within the buffer is proposed.
- A staggered planting pattern is proposed in order to simulate a natural setting and be an effective wind break.



#### PLANT SCHEDULE

Key	Botanical Name	Common Name	Mature Height	Mature Spread
Cano	ppy Trees			
	Angophoa costata	Smoothbarked Apple Myrtle	20m	12m
	Tristaniopsis laurina	Kanooka Gum	15m	6m
Medi	um Trees		·	
	Acacia dealbata	Hickory Wattle	12m	8m
	Acacia implexa	Hickory Wattle	8m	7m
	Elaeocarpus reticulatus	Blueberry Ash	9m	4m
Grou	ndcovers and Grasses	·		1
	Aristida ramosa	Purple Wiregrass	0.9m	0.5m
	Austrostipa aristiglumis	Speargrass	2m	1.2m
	Austrostipa scabra	Slender Bamboo Grass	0.6m	0.6m
	Correa alba	White Correa	1.5m	1.5m
	Cyperus gracilis	Slender Flat-sedge	0.3m	0.3m
	Dianella revoluta	Flax Lily	1m	0.8m
	Geranium solanderi	Native Geranium	0.5m	0.5m
	Lomandra filiformis	Mat Rush	0.4m	0.4m
	Themeda triandra	Kangaroo Grass	1.5m	0.5m
	Wahlenbergia communis	Bluebell	0.7m	0.5m



#### INDICATIVE PLANTING PLAN

### L05 Boundary Buffer Planting

GUNDY ROAD, SCONE, NSW DATE: MARCH 2022 PROJECT NO. GSP200221 - DA ISSUE: D - FOR SUBMISSION SMALL SHRUBS, GRASSES AND GROUNDCOVERS. STAGGERED PLANT IN A STAGGERED PATTERN ALONG THE EXTERNAL EDGES OF THE CORRIDOR IN SPECIES GROUPS OF 3-5.

#### TALL TREES.

PLANT THROUGH THE CENTRE OF THE CORRIDOR. ALLOW 3 TREES PER 10M SECTION WITH APPROX. 3M SPACING BETWEEN EACH TREE.

MEDIUM TREES. PLANT BETWEEN THE LOWEST LAYER AND THE TREES. PLANT IN A STAGGERED PATTERN IN ALTERNATIVE SPECIES GROUPS OF 3-5.




GUNDY ROAD, SCONE, NSW

DATE: MARCH 2022

PROJECT NO. GSP200221 - DA

ISSUE: D - FOR SUBMISSION



HYDROSEED TREATMENT (COUCH)

## HYDROSEED TREATMENT (COUCH)

NATIVE GRASS PLANTING TO EXTENT OF PROPOSED BATTER. REFER TO ENGINEER'S PLANS FOR DETAILS AND PLANT SCHEDULE FOR SPECIES.



GUNDY ROAD, SCONE, NSW

DATE: MARCH 2022 PROJECT NO. GSP200221 - DA

ISSUE:

D - FOR SUBMISSION

POTENTIAL RECREATION USE STRATEGY THERE ARE FOUR DEDICATED OPEN SPACES WITHIN THE SUBDIVISION INTENDED FOR PUBLIC RECREATION USE. THE OPPORTUNITY EXISTS TO PROVIDE EACH OF THESE SPACES WITH A DIFFERENT FOCUS TO CATER FOR THE WIDER COMMUNITY AND GROWING DEMAND FOR QUALITY OPEN SPACE. SUGGESTED PURPOSES FOR EACH ARE AS BELOW AND WOULD BE SUBJECT TO FURTHER CONSULTATION AND DETAILED



 RECREATION SPACE 2 - PASSIVE PLAY AND PLAYGROUND
OPPORTUNITY WITHIN THIS OPEN SPACE AREA TO INCLUDE AN ACTIVE PLAYGROUND AREA WITH PLAY SPACE EQUIPMENT SUITED TO 2-12 YEAR OLDS. PARK TO ALSO INCORPORATE BBQ, PICNIC TABLES AND SHELTERS.



B RECREATION SPACE 3 - YOUTH FACILITIES OPEN SPACE AREA POTENTIAL TO INCLUDE YOUTH FACILITIES - SUCH AS A MULTI-COURT, REBOUND WALL AND SKATE PARK.



OPEN SPACE AREA POTENTIAL TO INCLUDE A WALKING AND TRIKE TRAIL





## APPENDIX E TRAFFIC ENGINEER REPORT