CITY OF KALAMUNDA

LOCAL PLANNING SCHEME NO. 3

AMENDMENT NO. 35

Density increase of Lot 31 (16) and Lot 32 (20) Halleendale Road and Lot 33 (10) Dan Close, Walliston, from Residential Bushland R2.5 to Residential Bushland R5

Prepared by

ALTUS PLANNING

November 2017

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1	16/10/17	Initial	BL	JA
2	29/11/17	Revised resolution pages	BL	JA

PLANNING AND DEVELOPMENT ACT 2005

RESOLUTION DECIDING TO AMEND A LOCAL PLANNING SCHEME

SHIRE OF KALAMUNDA

LOCAL PLANNING SCHEME NO. 3

AMENDMENT NO. 35

That Council in pursuance of Part 5 of the *Planning and Development Act 2005*, amends Local Planning Scheme No. 3 by:

1. Changing the density of Lot 31 (16) and Lot 32 (20) Halleendale Road and Lot 33 (10) Dan Close, Walliston, from Residential Bushland R2.5 to Residential Bushland R5 and amend the Scheme Map accordingly.

2. Rezoning the north-west portion of Lot 9000 (20) Dan Close, Walliston, from Special Rural to Residential Bushland R5.

In accordance with the Scheme Amendment Map.

Subject to amendment documents and the required administration fee being submitted, the documents being adopted by Council and the Amendment being formally advertised for 42 days in accordance with the provisions of the Town Planning Regulations 1967, with reference to the Western Australian Planning Commission.

Dated this _____ day of _____ 20___

_____
(Chief Executive Officer)

SCHEME AMENDMENT REPORT

1.	**LOCAL AUTHORITY**	City of Kalamunda
2.	**DESCRIPTION OF TOWN PLANNING SCHEME**	Local Planning Scheme No. 3
3.	**TYPE OF SCHEME**	District Zoning Scheme
4.	**SERIAL NO. OF AMENDMENT**	35
5.	**PROPOSAL**	To amend the City of Kalamunda Local Planning Scheme No. 3 by: 1. Changing the density of Lot 31 (16) and Lot 32 (20) Halleendale Road and Lot 33 (10) Dan Close, Walliston, from Residential Bushland R2.5 to Residential Bushland R5 and amend the Scheme Map accordingly. 2. Rezoning the north-west portion of Lot 9000 (20) Dan Close, Walliston, from Special Rural to Residential Bushland R5.

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Appendix 1: Bushfire Management Plan

Appendix 2: Conceptual Subdivision Plan

1.0 Introduction

This report has been prepared for the City of Kalamunda's ('the City') consideration to change the density of Lot 31 (No. 16) & 32 (No. 20) Halleendale Road and Lot 33 (No. 10) Dan Close, Walliston ('the subject land' or 'land') from 'Residential Bushland R2.5' to 'Residential Bushland R5' under the City's Local Planning Scheme No. 3 ('LPS3') ('the proposed amendment' or 'proposal').

The proposal will allow the abovementioned properties to be developed and subdivided in accordance with the R5 density as specified in Table 1 of the Residential Design Codes ('the R-Codes').

2.0 Background

2.1 Location

The subject land is located in the locality of Walliston, approximately 21km to the south-east of the Perth Central Business District. More specifically, the subject land exists on the southern side of Halleendale Road in the street block bound by Canning Road to the west and Lawnbrook Road to the east.

Lots 31 and 32 (No. 16 and 20) Halleendale Road both have direct frontage to Halleendale Road, whilst Lot 33 (No. 10) Dan Close exists immediately to the south of these lots and has direct frontage to Dan Close, a cul-de-sac accessed off Halleendale Road.

2.2 Site Area

The combined land area of the subject lands is 12,004m^2 (1.2ha). Specifically, Lot 32 (No. 20) Halleendale Road and Lot 33 (No. 10) Dan Close both measure 4,002m^2, whilst Lot 31 (No. 16) Halleendale Road measures 4,000m^2.

2.3 Ownership

The land subject of the proposed amendment is contained under the following Certificates of Title:

Lot	Diagram/Plan	Title	Street Address	Proprietor(s)
31	40101	2567-212	16 Halleendale Road	Linetta & Fortunato Carameli
32	40101	2567-213	20 Halleendale Road	Tanya Lea & Darren John Wallace
33	40101	2567-214	10 Dan Close	Keith John & Karen Elizabeth Elmy

2.4 Current & Surrounding Land Uses

The subject land is currently utilized for low density, residential purposes and exists with three (3) residential dwellings exist across the lots.

The land is adjoined by the Kalamunda Christian School on its western boundary. The subject land is otherwise surrounded by predominantly existing rural uses to the south and east, with urban (residential) uses to the north and west.

2.5 Physical Characteristics

The subject land falls approximately 3m from the north-west of Lot 31 (No. 16) Halleendale Road to the south-east of Lot 33 (No. 10) Dan Close.

The subject land is largely devoid of vegetation and there are no known watercourses or wetlands which exist over the land.

2.6 Infrastructure

The subject land is currently serviced by a reticulated water supply which runs along the northern side of Halleendale Road and the western side of Dan Close.

A reticulated sewerage service is currently not available in the locality.

3.0 Planning Framework

3.1 State & Regional Planning Context

3.1.1 Metropolitan Region Scheme

By virtue of Metropolitan Region Scheme Amendment 1292/57 – North-East and North-West Districts Omnibus 1 which was gazetted on 14 July 2017, the subject land was excluded from the 'Rural' zone and included in the 'Urban' zone under the Metropolitan Region Scheme ('MRS').

3.1.2 State Planning Policies

State Planning Policy 2.4 – Basic Raw Materials

The subject land is contained within the Policy Area of State Planning Policy 2.4 – Basic Raw Materials ('SPP2.4') however it is not contained within an existing 'Extraction Area', a 'Key Extraction Area' or a 'Priority Resource Location'.

Accordingly, further consideration of SPP2.4 is not deemed necessary in this instance.

State Planning Policy 3.1 – Residential Design Codes

Pursuant to Table 1 of the R-Codes, the minimum lot size of the R2.5 density code (current) is 4,000m^2 and the minimum lot size of the R5 density code (proposed) is 2,000m^2.

Accordingly, the proposed amendment would enable the subject lands to be re-subdivided and thereby increase the total lot yield from three (3) to six (6).

State Planning Policy 3.7 – Planning in Bushfire Prone Areas

The subject land is designated as being within a bushfire prone area pursuant to the Department of Fire and Emergency Services' mapping and therefore State Planning Policy 3.7 – Planning in Bushfire Prone Areas ('SPP3.7') is applicable to the proposed amendment.

In accordance with Policy Measure 6.2 of SPP3.7, strategic planning proposals within designated bushfire prone areas and that have a Bushfire Attack Level ('BAL') above BAL-LOW are to comply with Policy Measure 6.3.

Policy Measure 6.3 sets out a series of information that is to accompany the proposal and this has been provided in the Bushfire Management Plan ('BMP') prepared by RUIC Fire and dated October 2017 (refer to **Appendix 1**).

The BMP demonstrates that the proposed amendment and subsequent subdivision can comply with SPP3.7 and the associated Guidelines for Planning in Bushfire Prone Areas Version 1.2, subject to the various mitigation strategies contained within.

3.1.3 State Planning Strategies

Directions 2031 and Beyond

Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon ('Directions 2031') is a high order spatial framework and strategic plan for metropolitan Perth and the Peel region. The purpose of Directions 2031 is to provide a vision for the future growth of the region based on the estimation that by the year 2031, the Perth and Peel region will have a population exceeding 2.2 million.

The subject land is contained within the north-east sub-region of Directions 2031 and it is stated that:

> *"Under the connected city scenario, the north-east sub-region is forecast to grow to an estimated population of 258,000 by 2031, a 37 per cent increase on current population levels. The additional 40,000 dwellings necessary to accommodate this growth will need to be carefully planned to ensure the natural attributes, built heritage and local character of the area are protected."*

The proposed amendment is considered consistent with Directions 2031's growth objective and given the surrounding development and the subject land's recent rezoning under the MRS, is considered not to have any adverse impacts on the natural attributes, built heritage or local character of the area.

Draft Perth and Peel@3.5million and North-East Sub-Regional Planning Framework

The draft North-East Sub-Regional Planning Framework forms part of the Western Australian Planning Commission's ('WAPC') draft Perth and Peel@3.5million suite of strategic land use planning documents which aim to accommodate 3.5 million people by 2050. When finalised, the draft North-East Sub-Regional Planning Framework, along with the other three (3) draft sub-regional planning frameworks, will become sub-regional structure plans.

Consistent with MRS Amendment 1292/57, the subject land is shown as 'Urban' pursuant to Plan 1.

3.1.4 Development Control Policies

Development Control Policy 2.5 – Special Residential Zones

The 'Residential Bushland' zoning under LPS3 is effectively a 'Special Residential' zoning which is covered by Development Control Policy 2.5 – Special Residential Zones ('DC2.5').

In relation to lot sizes, clause 3.2.1 states that the minimum lot size for Special Residential zones should be 2,000m^2 or the equivalent of an R5 density coding, where reticulated water is provided. The proposed amendment would enable the further subdivision of the subject land in accordance with DC2.5.

3.1.5 Other Policies

Draft Government Sewerage Policy 2016

The subject land is not connected to reticulated sewer. Reticulated sewer exists approximately 2km to the north of the subject land.

Clause 6.2 of the Draft Government Sewerage Policy 2016 outlines exemptions to the policy's mandatory requirement to connect to subdivision. Specifically, clause 6.2(1) provides that an exemption may be considered for residential subdivisions for the creation of lots greater than:

> *d) 2,000m^2 where the proposed lot is not in a public drinking water source area or a sewage sensitive area. For heavy soils, secondary treatment systems will be required to achieve this lot size (refer to Table 1 in Schedule 3).*

As mentioned, the minimum lot size under the proposed R5 density coding is 2,000m^2. Furthermore, the subject land is not contained within a public drinking water source area and

nor is it within a sewerage sensitive area. The proposal therefore meets the requirements for an exemption as per the above.

In addition to the above, the City's officers visited the subject land on 3 August 2017 and advised the proponent that septic tanks and leech drains would be considered acceptable for the further subdivision of all three (3) properties.

3.2 Local Planning Context

3.2.1 Local Planning Scheme No. 3

The subject land is currently zoned 'Residential Bushland' with a density coding of R2.5 pursuant to the City's LPS3.

Clause 4.2.1 provides the following objectives for the zone:

- *To promote the development and use of land primarily for single detached houses, ensuring that development is designed and sited in a manner which is sensitive to the environmental characteristics of the land.*

- *To give due consideration to land uses that are compatible with the amenity of surrounding residential development.*

- *Encourage the retention and rehabilitation of native vegetation and the minimisation of bush fire hazard.*

Furthermore, clause 5.8.1 outlines that subdivision of land within the 'Residential Bushland' zone will only be supported where reticulated scheme water is or can be made available and that the proposed lot sizes comply with the relevant R-Codes. As previously addressed in this report, the land is currently serviced by reticulated water and has sufficient land area to enable re-subdivision consistent with the R5 density coding (minimum lot area of 2,000m^2).

3.2.2 Local Planning Strategy

The City's (formerly Shire) Local Planning Strategy ('Strategy') was endorsed by the WAPC in February 2013.

Under clause 2.4.10, the third strategy under the heading 'Rural' is:

- *Promote the use of Residential Bushland zone (minimum 2,000sqm and 4,000sqm lots) as a means of preserving trees and endemic vegetation.*

In accordance with Table 1 of the R-Codes, the minimum lot area for the R5 density code is 2,000m^2 and therefore the proposed density increase is consistent with the City's Strategy.

It is also noted that Figure 21 of the City's Strategy does not identify the subject land or its immediate surrounds as being within the 'Potential Future Sewerage Area'.

4.0 Proposal

4.1 Amendment Specifications

It is proposed that the zoning of Lot 31 (No. 16) and 32 (No. 20) Halleendale Road and Lot 33 (No. 10) Dan Close pursuant to LPS3 remain as 'Residential Bushland'. It is proposed that the density coding attributed to the land under LPS3 be amended from 'R2.5' to 'R5'.

The proposed amendment will enable the re-subdivision of the subject land, creating a maximum of three (3) additional lots (refer to **Appendix 2 – Conceptual Subdivision Plan**).

4.2 Planning Justification

The proposed amendment is consistent with the objectives of the 'Residential Bushland' zone, as outlined in clause 4.2.1 of LPS3. Furthermore, the minimum lot size permissible lot size under the proposed R5 density coding is consistent with DC2.5 and the City's Strategy. The minimum lot size is also sufficient to warrant an exemption under the draft Government Sewerage Policy.

Given that LPS3 and the R-Codes limit the number of dwellings to lots to a single dwelling, the maximum number of new, additional dwellings potentially created from the proposed amendment is three (3). This is not considered to have any effect on the amenity of the area, or the objectives, purpose and intent of the land as considered under LPS3. Furthermore, it is noted that the proposed density coding remains consistent with other areas of land zoned 'Residential Bushland' within the municipal area.

The current zoning of the subject land acts as a buffer between the residential properties with higher densities (R10, with average lot sizes of 1,000m^2) to the north of Halleendale Road, and Special Rural (1ha) zoned properties to the south of the land.

5.0 Conclusion

The proposed amendment seeks to amend the coding of Lot 31 (No. 16) and Lot 32 (No. 20) Hallendale Road and Lot 33 (No. 10) Dan Close, Walliston under LPS3 from 'R2.5' to 'R5'. The zoning of the land is to remain 'Residential Bushland'.

This follows the recent gazettal of Metropolitan Region Scheme Amendment 1292/57 – North-East and North-West Districts Omnibus 1 which included the land in the 'Urban' zone under the MRS.

The proposed amendment is not considered to have any impacts on the objectives of the zone, the local amenity of the area, or be contrary to the relevant statutory framework. Furthermore, the 'R5' coding is considered to be consistent with the provisions of the draft Government Sewerage Policy with respect to land not connected to reticulated sewer and is capable of being suitably managed from a bushfire management perspective.

Altus Planning

PLANNING AND DEVELOPMENT ACT 2005

RESOLUTION TO AMEND LOCAL PLANNING SCHEME

CITY OF KALAMUNDA

LOCAL PLANNING SCHEME NO. 3

AMENDMENT NO. 35

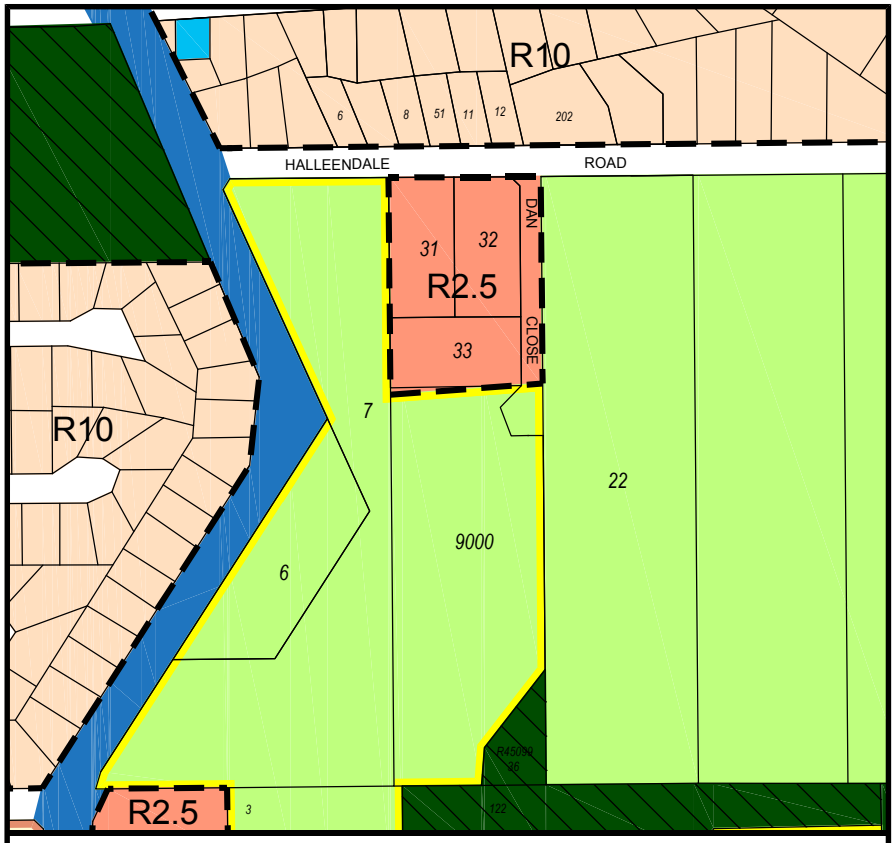
Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act 2005*, amend the above Local Planning Scheme by:

1. Changing the density of Lot 31 (16) and Lot 32 (20) Halleendale Road and Lot 33 (10) Dan Close, Walliston, from Residential Bushland R2.5 to Residential Bushland R5 and amend the Scheme Map accordingly.

2. Rezoning the north-west portion of Lot 9000 (20) Dan Close, Walliston, from Special Rural to Residential Bushland R5.

CITY OF KALAMUNDA
TOWN PLANNING SCHEME No. 3

Planning and Development Act 2005



EXISTING ZONING

LEGEND

METROPOLITAN REGION SCHEME RESERVES

OTHER REGIONAL ROADS

LOCAL SCHEME RESERVES

LOCAL OPEN SPACE

ZONES

RESIDENTIAL

RESIDENTIAL BUSHLAND

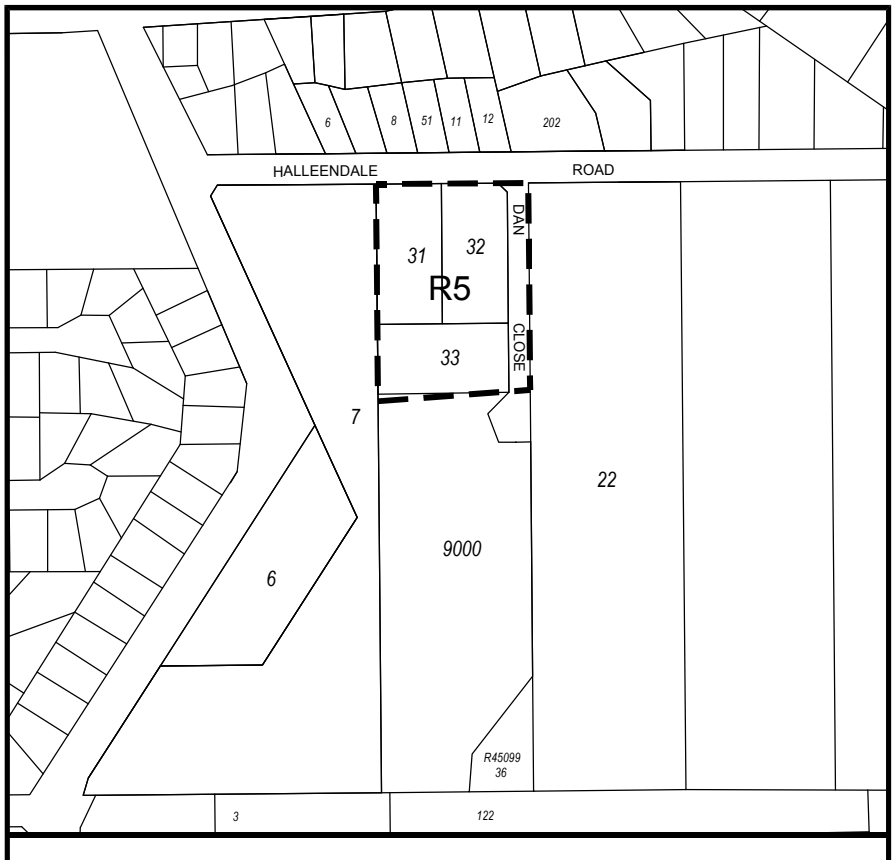
COMMERCIAL

RURAL AGRICULTURE

SPECIAL RURAL

OTHER

R2.5 R CODES



SCHEME (AMENDMENT) MAP

N

SCALE: 1:5000
DATE: 29.08.2017

Amendment No. 35

COUNCIL ADOPTION

This Standard Amendment was adopted by resolution of the Council of the City of Kalamunda at the Ordinary Meeting of the Council held on the _____ day of _____, 20_____.

.....
MAYOR

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the City of Kalamunda at the Ordinary Meeting of the Council held on the _____ day _____, 20_____, proceed to advertise this Amendment.

.....
MAYOR

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RECOMMENDATION

This Amendment is recommended for support by resolution of the City of Kalamunda at the Ordinary Meeting of the Council held on the _____ day of _____, 20_____ and the Common Seal of the City of Kalamunda was hereunto affixed by the authority of a resolution of the Council in the presence of:

.....
MAYOR

.....
CHIEF EXECUTIVE OFFICER

WAPC ENDORSEMENT (r.63)

.....
DELEGATED UNDER S.16 OF
THE P&D ACT 2005

DATE.....

APPROVAL GRANTED

.....
MINISTER FOR PLANNING

DATE.....

Appendix 1: Bushfire Management Plan

Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address: Lots 31 & 32 Halleendale Road and Lot 33 Dan Close, Walliston

Site visit: Yes ☑ No ☐

Date of site visit (if applicable): Day 29th Month August Year 2017

Report author: Jeremy Durstaon / Erika Dawson (Grad Dip Bushfire Protection)

WA BPAD accreditation level (please circle):

Not accredited ☐ Level 1 BAL assessor ☐ Level 2 practitioner ☐ Level 3 practitioner ☑

If accredited please provide the following.

BPAD accreditation number: 36371 Accreditation expiry: Month August Year 2018

Bushfire management plan version number: 1.1

Bushfire management plan date: Day 15th Month October Year 2017

Client/business name: Linetta & Fortunato Carameli, Tanya Lea & Darren John Wallace and Keith John & Karen Elizabeth Elmy

	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?		✔
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?	✔	

Is the proposal any of the following (see SPP 3.7 for definitions)?	Yes	No
Unavoidable development (in BAL-40 or BAL-FZ)		✔
Strategic planning proposal (including rezoning applications)	✔	
Minor development (in BAL-40 or BAL-FZ)		✔
High risk land-use		✔
Vulnerable land-use		✔

None of the above ☐

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Performance Solution for FSAR
Strategic Planning Proposal

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author  Date 16/10/2017

BAL ASSESSMENTS | BUSHFIRE MANAGEMENT PLANS | CONSULTANCY

RUIC FIRE

BUSHFIRE MANAGEMENT PLAN

Strategic Planning Proposal

Lots 31 & 32 Halleendale Road
and Lot 33 Dan Close, Walliston

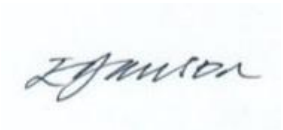
Version: 1.1 Reference: 7226 Date: October 2017



Project Number:	7226
Project Name:	Lots 31 & 32 Halleendale Road and Lot 33 Dan Close, Walliston
Author:	Jeremy Durston, Grad Cert Development Planning, BPAD36525 Level 1
Reviewed by:	Erika Dawson, Grad Dip Bushfire Protection, BPAD36371 Level 3
Version:	1.1
Date of issue:	15th October 2017



Author: Jeremy Durston
Date: 4th October 2017



Reviewed by: Erika Dawson
Date: 15th October 2017

In the signing the above, the author declares that this Bushfire Management Plan meets the requirements of State Planning Policy 3.7. This report supersedes all previous Bushfire Management Plans for the site.

DISCLAIMER AND LIMITATION

This report is prepared solely for **Linetta & Fortunato Carameli, Tanya Lea & Darren John Wallace and Keith John & Karen Elizabeth Elmy** (the 'proponent') and any future landowners of the subject lot(s)and is not for the benefit of any other person and may not be relied upon by any other person.

The mitigation strategies contained in this Bushfire Management Plan are considered to be prudent minimum standards only, based on the writer's experience as well as standards prescribed by relevant authorities. It is expressly stated that RUIC Fire and the writer do not guarantee that if such standards are complied with or if a property owner exercises prudence, that a building or property will not be damaged or that lives will not be lost in a bush fire.

Fire is an extremely unpredictable force of nature. Changing climatic factors (whether predictable or otherwise) either before or at the time of a fire can also significantly affect the nature of a fire and in a bushfire prone area it is not possible to completely guard against bushfire.

Further, the growth, planting or removal of vegetation; poor maintenance of any fire prevention measures; addition of structures not included in this report; or other activity can and will change the bushfire threat to all properties detailed in the report. Further, the achievement of the level of implementation of fire precautions will depend on the actions of the landowner or occupiers of the land, over which RUIC Fire has no control. If the proponent becomes concerned about changing factors then a new Fire Risk Management Plan should be requested.

To the maximum extent permitted by the law, RUIC Fire, its employees, officers, agents and the writer ("RUIC Fire") excludes all liability whatsoever for:

1. claim, damage, loss or injury to any property and any person caused by fire or as a result of fire or indeed howsoever caused;
2. errors or omissions in this report except where grossly negligent; and

the proponent expressly acknowledges that they have been made aware of this exclusion and that such exclusion of liability is reasonable in all the circumstances.

If despite the provisions of the above disclaimer RUIC Fire is found liable then RUIC Fire limits its liability to the lesser of the maximum extent permitted by the law and the proceeds paid out by RUIC Fire's professional or public liability insurance following the making of a successful claim against such insurer.

RUIC Fire accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report and its supporting material by any third party.

This report is valid for a period of three years only from the date of its issue. All BAL ratings identified in this report are indicative and are required to be verified at the time of construction of individual buildings to ensure appropriate setbacks identified in the proposed development have been achieved.

RUIC Fire is a trading name of

Rural Fire Risk Consultancy Pty Ltd

ABN: 48 151 451 713

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1.0 Introduction

1.1 Subject Site

The site the subject of this Bushfire Management Plan (BMP) is Lots 31 & 32 Halleendale Road and Lot 33 Dan Close, Walliston. The site is located within the municipality of the City of Kalamunda. Figure 1A illustrates the subject site and its immediate surrounds.

The site is identified as being Bushfire Prone on the Map of Bush Fire Prone Areas 2017 (OBRM, 2017).

The site currently comprises three separate lots zoned Residential Bushland with density coding of R2.5. The lots are from 4000m² to 4002m² in area and each has been developed with a single house and associated outbuildings.

The proponent has not identified any relevant environmental considerations, including wetlands, foreshore reserves, Bush Forever sites, Environmentally Sensitive Areas, threatened species or communities, remnant native vegetation or other reserves located within the site or being affected by the development.

1.2 Development Description

The development involves a Scheme Amendment to amend the density coding of the site to R5 (already initiated and referenced as Amendment No. 35) and subdivision of the three subject lots into 6 lots from 2000m² to 2004m² in area (the development).

The proposed development is illustrated in Figure 1B.

1.3 Previous Bushfire Assessments

There are no known previous bushfire assessments that have been undertaken for the site.



Figure 1A: *Site Overview*

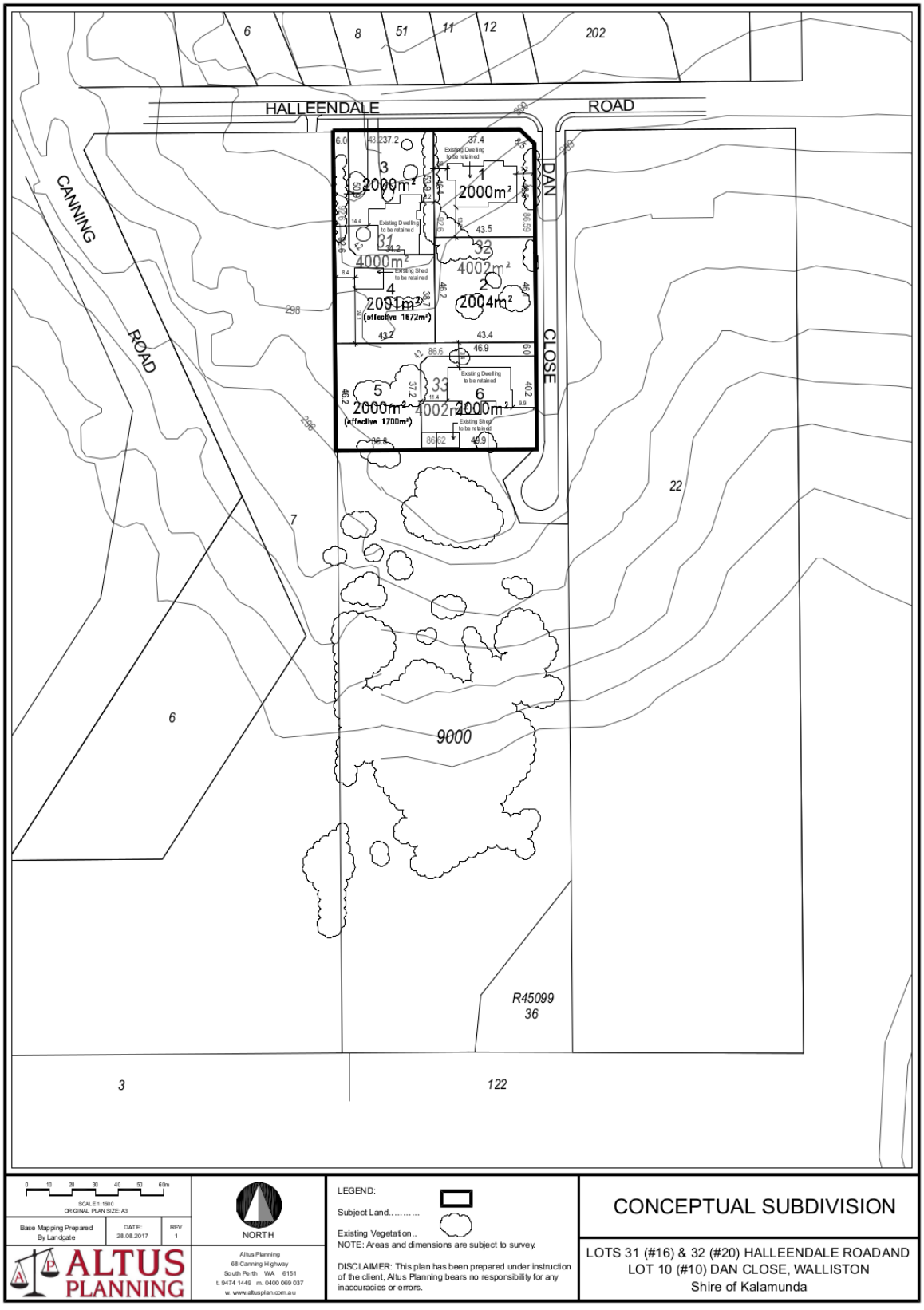


Figure 1B: Conceptual Subdivision Plan

2.0 Spatial Consideration of Bushfire Threat

2.1 Effective Slope

Effective slope under each vegetation plot was assessed in accordance with the methodology detailed in *AS 3959-2009 Construction of buildings in bushfire prone areas* (AS 3959) (Standards Australia, 2009). Slope data was measured on site and cross referenced with Landgate elevation data.

Slope throughout the assessment area was found to be relatively flat with minimal variation in relief. The effective slope of each vegetation plot is listed in the tables provided in Section 2.2 below.

2.2 Bushfire Fuels

The location and extent of AS 3959 vegetation structures, including Clause 2.2.3.2 exclusions, within 150 metres of the site are mapped in Figure 2A and illustrated in the photos below.

Bushfire fuel loads are identified as consistent with AS 3959 Table B2 for radiant heat flux modelling purposes. All bushfire structures and fuel loads are assessed in their mature states (including revegetation and rehabilitation areas) unless otherwise identified.

Plot 1	
Existing	Exclusion 2.2.3.2 (f) low threat vegetation
Post Development	Exclusion 2.2.3.2 (f) low threat vegetation
Effective Slope	N/A
Plot 1 comprises the orchard located to the east of the subject site. The vegetation consists of fruit frees with maintained grass, and the area is managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies: "all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"	



Photo ID: 1a



Photo ID: 1b

Plot 2	
Existing	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Post Development	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Effective Slope	N/A

Plot 2 comprises the School grounds located to the west of the subject site. It comprises buildings, non-vegetated areas and areas of garden and lawn managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies:
"all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"



Photo ID: 2a



Photo ID: 2b



Photo ID: 2c



Photo ID: 2d

Plot 3	
Existing	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Post Development	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Effective Slope	N/A

Plot 3 comprises the developed residential areas to the north of the subject site. This area includes houses with gardens and lawns managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies:
"all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"



Photo ID: 3a



Photo ID: 3b



Photo ID: 3c



Photo ID: 3d

Plot 3



Photo ID: 3e

Plot 4	
Existing	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Post Development	Exclusion 2.2.3.2 (f) low threat vegetation and (e) non-vegetated areas.
Effective Slope	N/A

Plot 4 comprises the developed residential areas to the west of the subject site. This area includes houses with gardens and lawns managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies:
"all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"



Photo ID: 4a



Photo ID: 4b

Plot 5	
Existing	Exclusion 2.2.3.2 (f) low threat vegetation
Post Development	Exclusion 2.2.3.2 (f) low threat vegetation
Effective Slope	N/A
Plot 5 comprises the area of 'Bill Shaw Reserve' and includes park vegetation managed for low threat by the City of Kalamunda.	



Photo ID: 5a

Plot 6	
Existing	Class B Woodland
Post Development	Class B Woodland
Effective Slope	Downslope 3 degrees

Plot 6 comprises Woodland vegetation located to the south of the site. The vegetation consists of trees 2-30m high at maturity with a grass understorey and canopy cover between 10-30%.



Photo ID: 6a



Photo ID: 6b



Photo ID: 6c

Plot 7	
Existing	Class A Forest
Post Development	Class A Forest
Effective Slope	Flat/upslope
Plot 7 comprises the upslope vegetation located in the adjacent school grounds and continuing into the Canning Road reserve. The vegetation consists of trees 2-30m high at maturity with grass trees and shrubs, and with canopy cover greater than 30%.	



Photo ID: 7a

Plot 8	
Existing	Class A Forest
Post Development	Class A Forest
Effective Slope	Downslope 3 degrees

Plot 8 comprises downslope vegetation located in the Canning Road reserve and continuing into the area adjacent to the School grounds. The vegetation consists of trees 2-30m high at maturity with canopy cover greater than 30%.



Photo ID: 8a



Photo ID: 8b



Photo ID: 8c (Vegetation in background)

Plot 9	
Existing	Class G Grassland
Post Development	Class G Grassland
Effective Slope	Flat
Plot 9 comprises the area immediately adjacent to the south of the site. The vegetation includes grass that may potentially not comply with low threat standard.	



Photo ID: 9a



Photo ID: 9b

Plot 10	
Existing	Exclusion 2.2.3.2 (e) non-vegetated areas.
Post Development	Exclusion 2.2.3.2 (e) non-vegetated areas.
Effective Slope	N/A
Plot 10 comprises a non-vegetated car park and turnaround area.	



Photo ID: 10a (Foreground)

Plot 11	
Existing	Exclusion 2.2.3.2 (e) non-vegetated areas
Post Development	Exclusion 2.2.3.2 (e) non-vegetated areas
Effective Slope	N/A
Plot 11 consists of non-vegetated road paving and foot paths.	

Plot 12	
Existing	Exclusion 2.2.3.2 (e) non-vegetated areas and (f) low threat vegetation
Post Development	Exclusion 2.2.3.2 (e) non-vegetated areas and (f) low threat vegetation
Effective Slope	N/A
Plot 12 consists of the subject site, including the existing maintained residential lots with cultivated gardens and lawns managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies: "all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"	



Photo ID: 12a



Photo ID: 12b

Plot 12



Photo ID: 12c



Photo ID: 12d



Photo ID: 12e



Photo ID: 12f

Plot 13	
Existing	Exclusion 2.2.3.2 (e) non-vegetated areas and (f) low threat vegetation
Post Development	Exclusion 2.2.3.2 (e) non-vegetated areas and (f) low threat vegetation
Effective Slope	N/A
Plot 13 consists of the residence and surrounding area to the east of the subject site, including the existing cultivated gardens and lawns managed for low threat. This area is managed in accordance with the City of Kalamunda Firebreak and Fuel Load Notice, which specifies: "all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted)"	



Photo ID: 13a



Figure 2A: *Post Development Vegetation Classifications*

2.3 Potential Bushfire Impact

Potential bushfire impact analysis was undertaken in accordance with AS 3959 Methodology 1 to determine the potential worst case scenario radiant heat impact on each of the lots in the proposed development.

In accordance with SPP 3.7, a BAL Contour Map has been prepared to illustrate the potential radiant heat impacts and associated BAL ratings for the assessment area after the development is completed (see Figure 2B).

The following table (Table 2A) outlines the worst case BAL for each of the Vegetation Plots based on separation distance to the external property boundary.

Table 2A: *Worst case BAL that applies to the site lot boundary*

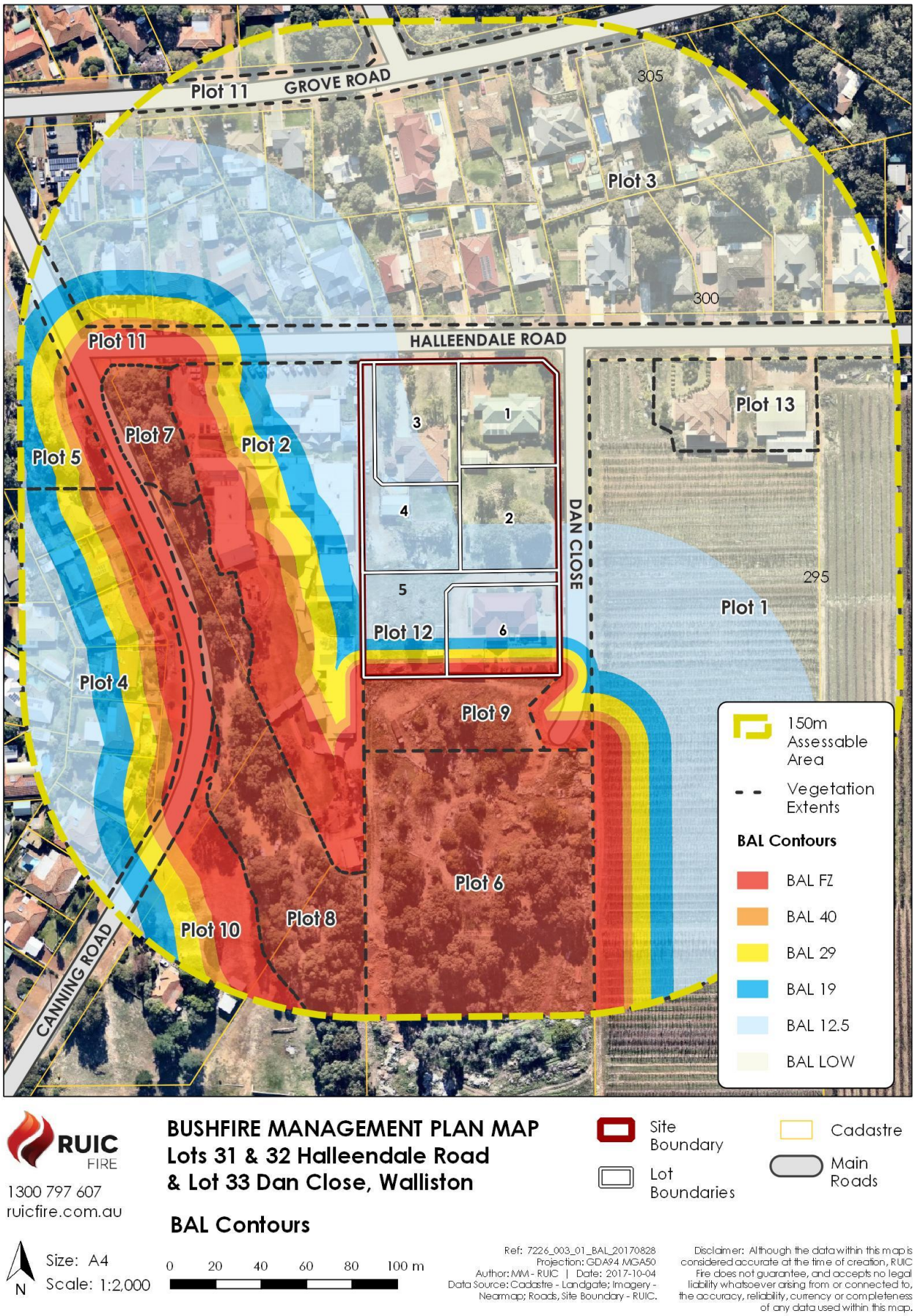
Vegetation Plot	Vegetation Classification	Effective Slope	Separation	BAL
Plot 1	Exclusion 2.2.3.2(f)	-	-	BAL-LOW
Plot 2	Exclusion 2.2.3.2(e/f)	-	-	BAL-LOW
Plot 3	Exclusion 2.2.3.2(e/f)	-	-	BAL-LOW
Plot 4	Exclusion 2.2.3.2(e/f)	-	-	BAL-LOW
Plot 5	Exclusion 2.2.3.2(f)	-	-	BAL-LOW
Plot 6	Class B Woodland	Downslope 3°	32m	BAL-19
Plot 7	Class A Forest	Flat/upslope	71m	BAL-12.5
Plot 8	Class A Forest	Downslope 3°	46m	BAL-19
Plot 9	Class G Grassland	Flat	0m	BAL-FZ^
Plot 10	Exclusion 2.2.3.2(e)	-	-	BAL-LOW
Plot 11	Exclusion 2.2.3.2(e)	-	--	BAL-LOW
Plot 12	Exclusion 2.2.3.2(e/f)	-	-	BAL-LOW
Plot 13	Exclusion 2.2.3.2(e/f)	-	-	BAL-LOW
			Worst case BAL	**BAL-FZ**

Notes:
^BAL-FZ applies to the south lot boundary fronting Plot 9. Existing dwelling is located in BAL-19, existing shed is located within BAL-FZ, however has >6m separation to the dwelling. These buildings are subject to previous approval and are not subject to bushfire planning provisions.
All other future habitable development is able to achieve BAL-29 or less through an 8m setback as a condition of subdivision approval.

With the implementation of 8m building setbacks from the southern boundary of the site, the BAL from Plot 9 for Lots 5 and 6 would be reduced to BAL-29. Therefore, the future lots can achieve the maximum permitted BAL-29, for habitable buildings, as outlined in the following table (Table 2B).

Table 2B: *Worst case BAL Post Development that applies to each proposed lot*

Proposed Lot	Initial BAL	Mandatory Setback	Revised BAL
1	BAL-LOW	-	-
2	BAL-12.5	-	-
3	BAL-12.5	-	-
4	BAL-12.5	-	-
5	BAL-FZ	8m southern boundary setback	BAL-29
6	BAL-FZ	8m southern boundary setback	BAL-29



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BUSHFIRE MANAGEMENT PLAN MAP
Lots 31 & 32 Halleendale Road
& Lot 33 Dan Close, Walliston

BAL Contours

Site Boundary
Lot Boundaries
Cadastre
Main Roads

N
Size: A4
Scale: 1:2,000

0 20 40 60 80 100 m

Ref: 7226_003_01_BAL_20170828
Projection: GDA94 MGA50
Author: MM - RUIC | Date: 2017-10-04
Data Source: Cadastre - Landgate; Imagery - Nearmap; Roads, Site Boundary - RUIC.

Disclaimer: Although the data within this map is considered accurate at the time of creation, RUIC Fire does not guarantee, and accepts no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of any data used within this map.

Figure 2B: *BAL Contour Map*

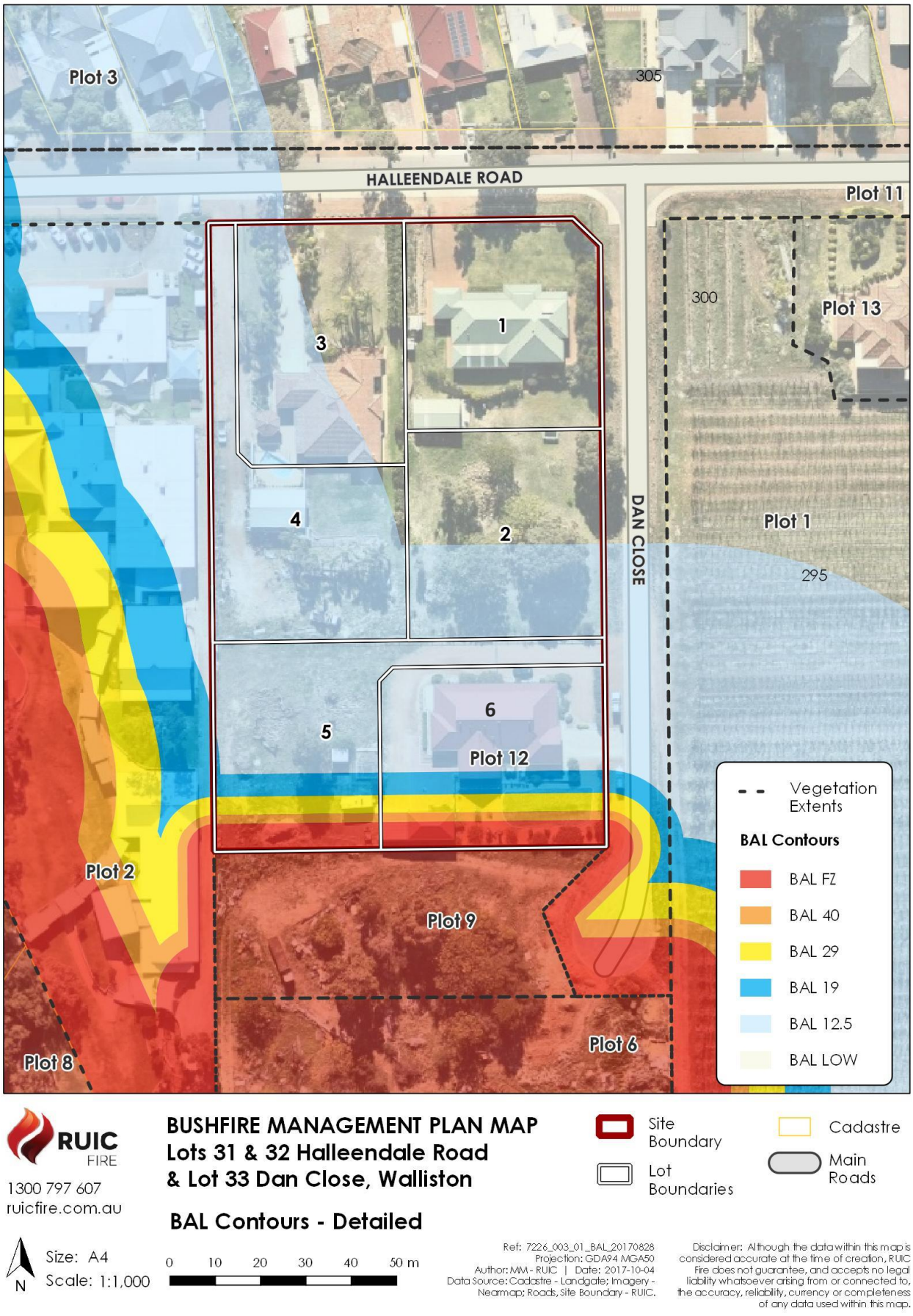


Figure 2C: *BAL Contour Map (detailed)*

2.4 Bushfire Context

Large areas of continuous native vegetation exist at a distance of approximately 350m to the south east and 450m to the east of the site. The immediate bushfire threat is from remnant stands of vegetation and unmanaged grass located in the Special Rural areas to the west and south of the site. The vegetation is offsite and not within the control of the landowner of the subject site.

2.5 Bushfire Hazard Issues

From the BAL Contour Map (Figure 2B), the following bushfire hazard issues have been identified:

- Lots 5 and 6 are subject to a rating of BAL-FZ. Boundary setbacks of a minimum 8m are required to reduce the BAL rating to BAL-29. A s70A Notification on Title is required to enforce a minimum 8m setback from the south boundary for proposed lots 5 & 6.
- Lots 4 & 5 require a 6m right of way for an emergency access way and fire service access route as depicted in figure 4A.
- Lots 1 to 4 are subject to a BAL rating of no greater than BAL-12.5.
- The proposed battle-axe access legs to lots 4 and 5 are subject to a BAL rating of BAL-12.5.
- The BAL ratings provided in the BAL Contour map and Table 2A are indicative only and are for the purposes of demonstrating compliance with the bushfire protection criteria of SPP 3.7. The BAL Contour map is to be updated following the implementation of the bushfire strategies contained within this report. Alternatively, an individual BAL assessment is to be completed prior to the issue of the building permit.
- Future residential BCA Class 1, 2, 3 and associated Class 10a buildings are to be constructed to the applicable construction standard of AS 3959.
- Lots 2 to 6 are subject to a BAL rating above BAL-LOW. The bushfire selection criteria relevant to the development are addressed in Section 4 of this report.

3.0 Proposal Compliance and Justification

3.1 State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7)

SPP3.7 applies to all development applications in designated bushfire prone areas.

3.1.1 Objectives

Policy Measure 5 contains the objectives of SPP 3.7. The following demonstrates how the proposed development meets each of the objectives.

Objective 1: ***Avoid any increase in the threat of bushfire to people, property, and infrastructure. The preservation of life and management of bushfire impact is paramount.***

Development Response
Objective 1 is satisfied through the compliance of the proposed development with all required Policy Principles as detailed below and all Performance Principles of the Guidelines as detailed in Section 4 of this report.

Objective 2: ***Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.***

Development Response
Objective 2 is satisfied through the appropriate identification and assessment of all relevant bushfire hazards as detailed in Section 2 of this report, specifically the BAL Contour Mapping.

Objective 3: ***Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.***

Development Response
Objective 3 is satisfied through the compliance of the proposed development with all required Policy Principles as detailed below and all Performance Principles of the Guidelines as detailed in Section 4 of this report.

Objective 4: ***Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.***

Development Response
Objective 4 is satisfied through the appropriate consideration of all biodiversity and environmental assets as detailed in Section 1 of this report in the development of bushfire related risk mitigation strategies detailed in Section 4 of this report.

3.1.2 Policy Measures

3.1.2.1 Strategic Planning Proposals

Policy Measure 6.2 requires that strategic planning proposals within designated bushfire prone areas and that have a BAL above BAL-LOW are to comply with Policy Measure 6.3.

3.1.2.2 Information to Accompany Strategic Planning and Subdivision Proposals

Policy Measure 6.3 applies to strategic planning proposals and Policy Measure 6.4 to subdivisions. They require certain information to be provided with such applications. The following Table (Table 3A) outlines where the required information has been provided.

Table 3A: *Compliance of the proposed development with the Policy Measures of SPP 3.7.*

Policy Measure	Description	Development Response
a	(i) the results of a BHL assessment determining the applicable hazard level(s) across the subject land, in accordance with the methodology set out in the Guidelines. BHL assessments should be prepared by an accredited Bushfire Planning Practitioner; or (ii) where the lot layout of the proposal is known, a BAL Contour Map to determine the indicative acceptable BAL ratings across the subject site, in accordance with the Guidelines. The BAL Contour Map should be prepared by an accredited Bushfire Planning Practitioner; and	Figures 2B and 2C provide the BAL Contour Maps.
b	The identification of any bushfire hazard issues arising from the relevant assessment; and	Section 2.5 addresses the bushfire hazard issues.
c	Clear demonstration that compliance with the bushfire protection criteria in the Guidelines can be achieved in subsequent planning stages.	Section 4 provides an assessment of the development against the bushfire protection criteria.

3.1.2.3 Vulnerable or High Risk Land Uses

The proposed development, at this stage, is not known to contain any vulnerable or high risk land uses.

3.1.2.4 Applications in BAL-40/BAL-FZ Areas

On completion of development, the developable land would not be subject to BAL-40 or BAL-FZ as outlined in Section 2.3 and Table 2b. Whilst the first 8m, measured from the southern lot boundary, of Lots 5 & 6 have a radiant heat impact >BAL-29, a s70A Notice on Title provides enforcement to prevent habitable development within these areas. Access to/from the lots is not through this area.

3.1.2.5 Advice of State/Relevant Authority/s for Emergency Services to be Sought

The proposed development:

- Complies with the SPP3.7 Policy measures;
- Does **propose additional/alternative measures**; and
- Does not contain unavoidable development, vulnerable or high risk land uses.
- Is a Strategic Planning Proposal.

Therefore, the **advice of State/Relevant Authorities for Emergency Services is required** to be sought for this application.

3.1.2.6 Advice of State/Relevant Agencies/Authorities for Environmental Protection to be Sought

The proposed subdivision:

- Is not known to propose clearing of vegetation within environmentally sensitive areas protected under State or Federal legislation;
- Is not known to propose clearing of locally significant native vegetation; and
- Does not abut vegetated land managed by that authority.

Therefore, the advice of State/Relevant Agencies/Authorities for Environmental Protection **is not required** to be sought for this application.

3.2 Guidelines for Planning in Bushfire Prone Areas Version 1.2 (the Guidelines)

The Guidelines apply to strategic planning proposals located within designated bushfire prone areas. The Guidelines provide supporting information for implementation of SPP 3.7. Specifically, they provide the Bushfire Protection Criteria to be addressed for all applications.

This report has also been developed in order to comply with the requirements of all referenced and applicable documents.

4.0 Bushfire Risk Management Measures

The bush fire risk mitigation strategies detailed in this report are designed to comply with the Bushfire Protection Criteria detailed *in Guidelines for Planning in Bushfire Prone Areas Version 1.1* (the Guidelines) *Appendix 4* (WAPC, 2017b).

i. The notation (P3) refers to Performance Principle 3 of the Guidelines Appendix 4.

ii. The notation (A3.1) refers to Acceptable Solution 3.1 of the Guidelines Appendix 4.

iii. The notation (E3.1) refers to Explanatory Note 3.1 of the Guidelines Appendix 4.

iv. Where discrepancy occurs between State and Local bushfire planning provisions the higher standard of mitigation has been selected.

4.1 Element 1 - Location

Intent: To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.

Performance Principle (P1): The strategic planning proposal, subdivision and development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low, or a BAL–29 or below, and the risk can be managed. For unavoidable development in areas where BAL–40 or BAL–FZ applies, demonstrating that the risk can be managed to the satisfaction of the Department of Fire and Emergency Services and the decision-maker.

The following table outlines the Acceptable Solutions (AS) that are relevant to the proposal; identifies where a Performance Solution (PS) has been used instead of an AS; and states, where applicable, the reason why the AS is not relevant to the proposal.

Solution	AS	PS	N/A	Comment
A1.1 Development location	☒	☐	☐	

Acceptable Solution A1.1 Development location

The strategic planning proposal, subdivision and development application is located in an area that is or will, on completion, be subject to either a low moderate or low bushfire hazard level, or BAL–29 or below.

Development Response/Recommendations

As outlined in Figure 2A and Table 2A, the development would ensure all future habitable buildings are, upon completion of development, located in an area subject to BAL-29 or lower.

Due to vegetation located immediately external to Lots 5 and 6, these lots require building setbacks of at least 8m from their southern boundary to achieve ratings of BAL-29 or less for these lots. This is to be enforced through a s70A Notification on Title preventing habitable development within 8m of the southern lot boundary. Access to/from the lots is not through this area.

4.2 Element 2 - Siting and design of Development

Intent: To ensure that the siting of development minimises the level of bushfire impact.

Performance Principle (P2): The siting and design of the strategic planning proposal, subdivision or development application, including roads, paths and landscaping, is appropriate to the level of bushfire threat that applies to the site. That it minimises the bushfire risk to people, property and infrastructure, including compliance with AS 3959 if appropriate.

The following table outlines the Acceptable Solutions (AS) that are relevant to the proposal; identifies where a Performance Solution (PS) has been used instead of an AS; and states, where applicable, the reason why the AS is not relevant to the proposal.

Solution	AS	PS	N/A	Comment
A2.1 Asset Protection Zone	☒	☐	☐	

Acceptable Solution A2.1 Asset Protection Zone (APZ)

Every building is surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

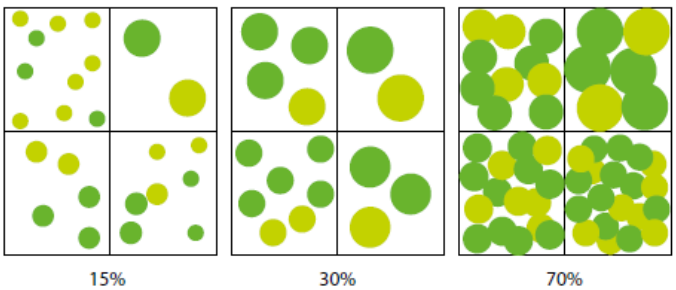
a. **Width**: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29) in all circumstances.

b. **Location**: the APZ should be contained solely within the boundaries of the lot on which a building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).

c. **Management**: the APZ is managed in accordance with the requirements of *'Standards for Asset Protection Zones' (below):*

- **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
- **Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
- **Fine Fuel load**: combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.
- **Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.

Figure 16: Tree canopy cover – ranging from 15 to 70 per cent at maturity



Source: *The Guidelines (WAPC, 2017)*

- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m$_2$ in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.
- **Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.
- **Grass:** should be managed to maintain a height of 100 millimetres or less.

Explanatory Notes:
An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. The width of the required APZ varies with slope and vegetation. The APZ should at a minimum be of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29). It should be lot specific. Hazard separation in the form of using subdivision design elements (refer to E2) or excluded and low threat vegetation adjacent to the lot may be used to reduce the dimensions of the APZ within the lot.

The APZ includes a defendable space which is an area adjoining the asset within which firefighting operations can be undertaken to defend the structure. Vegetation within the defendable space should be kept at an absolute minimum and the area should be free from combustible items and obstructions. The width of the defendable space is dependent on the space which is available on the property, but as a minimum should be 3 metres.

The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity. The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

Development Response/Recommendations

The APZ(s) proposed as part of this development are illustrated in Figure 4A. The entirety of each lot is to be managed as an APZ in future.

This is consistent with the City of Kalamunda 2017/18 Firebreak and Fuel Load Notice, Section 2.

Implementation

i. APZs to be implemented prior to the clearance of subdivision for affected lots in accordance with Figure 4A and provisions a-c above.

ii. It is the responsibility of the developer to ensure the APZ standard is established.

iii. It is the responsibility of the individual property owner to ensure the APZ standard continues to be achieved post completion of the construction.

4.3 Element 3 - Vehicular Access

Intent: To ensure that the vehicular access serving a subdivision/ development is safe in the event of a bush fire occurring.

Performance Principle (P3): The internal layout, design and construction of public and private vehicular access in the subdivision/development allows emergency and other vehicles to move through it easily and safely at all times.

The following table outlines the Acceptable Solutions (AS) that are relevant to the proposal; identifies where a Performance Solution (PS) has been used instead of an AS; and states, where applicable, the reason why the AS is not relevant to the proposal.

Solution	AS	PS	N/A	Comment
A3.1 Two access routes	☒	☐	☐	
A3.2 Public road	☐	☐	☒	
A3.3 Cul-de-sac (including a dead-end road)	☐	☐	☒	
A3.4 Battle-axe	☒	☐	☐	
A3.5 Private driveway longer than 50 metres	☒	☐	☐	
A3.6 Emergency access way	☒	☐	☐	
A3.7 Fire service access routes (perimeter roads)	☐	☒	☐	
A3.8 Firebreak width	☐	☐	☒	

Table 4A: *Vehicular access technical requirements*

Technical Requirement	Public road	Cul-de-sac	Private driveway	Emergency access way	Fire service access routes
Minimum trafficable surface (m)	6	6	4	6	6
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4	N/A	4.5	4.5	4.5
Maximum grade over <50m	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum crossfall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5

Acceptable Solution A3.1 Two access routes

Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents/the public at all times and under all weather conditions.

Development Response/Recommendations

Figures 4A and 4B illustrate access available to the site. The development achieves at least two different vehicular access routes, both connecting to the public road network to provide egress to two different destinations at all times.

Lots 1, 3 and 4 have immediate access to Hallandale Road. Lots 2, 5 and 6 have immediate access off Dan Close. An emergency access way provides access for lots 2, 5 and 6 to access Halleendale Road. Halleendale Road provides access in two directions.

Acceptable Solution A3.2 Public roads

Development Response/Recommendations

N/A. The proposed development does not include the construction of any new public roads. Therefore, A3.2 is not applicable to this development.

Acceptable Solution A3.3 Cul-de-sac (including a dead-end road)

A cul-de-sac and/or a dead end road should be avoided in bushfire prone areas. Where no alternative exists (i.e. the lot layout already exists and/or will need to be demonstrated by the proponent), the following requirements are to be achieved:

a. Requirements in Table 4A, Column 2;

b. Maximum length: 200 metres (if public emergency access is provided between cul-de-sac heads maximum length can be increased to 600 metres provided no more than eight lots are serviced and the emergency access way is no more than 600 metres); and

c. Turn-around area requirements, including a minimum 17.5 metre diameter head.

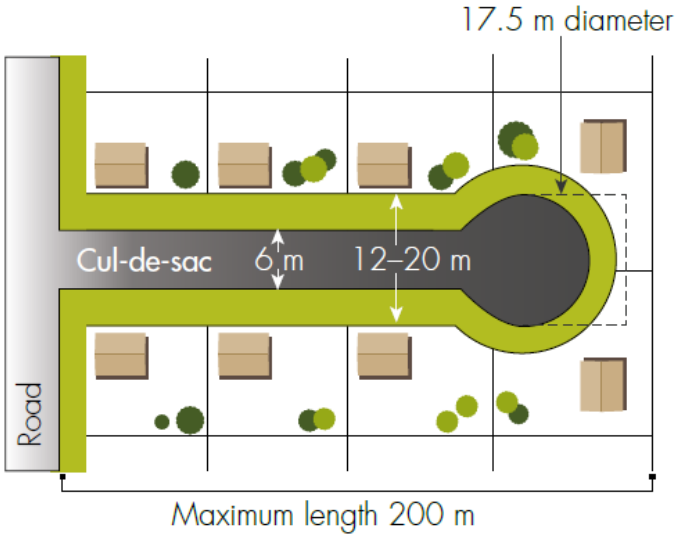


Figure 18: Minimum design requirements for a cul-de-sac

Source: *The Guidelines (WAPC, 2017)*

Development Response/Recommendations

N/A. The proposed development does not include the construction of any new cul-de-sacs. Therefore, A3.3 is not applicable to this development.

The exiting Dan Close cul-de-sac is compliant with the guidelines, being approximately 155m in length and servicing three lots.

Acceptable Solution A3.4 Battle-axe

Battle-axe access leg should be avoided in bushfire prone areas. Where no alternative exists, (this will need to be demonstrated by the proponent) all of the following requirements are to be achieved:

a. Requirements in Table 4A, Column 3;

b. Maximum length: 600 metres; and

c. Minimum width: six metres.

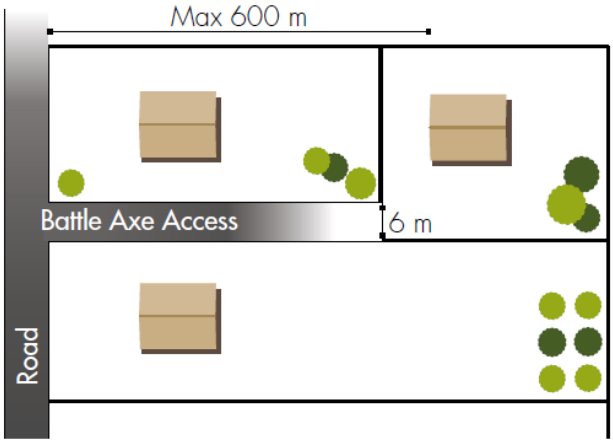


Figure 19: Minimum design requirements for a battle-axe
Source: *The Guidelines (WAPC, 2017)*

Development Response/Recommendations

Battle-axe access legs are proposed for Lots 4 and 5, being 6m in width and maximum leg length is approximately 55m. Due to spatial limitations and the existing development on the site, an internal road cannot be constructed with direct connection to Halleendale Road.

Alternatively, Dan Close is an existing cul-de-sac and it considered unacceptable to create an additional cul-de-sac within the development with connection only to Dan Close. In the absence of access alternatives, battle-axe access legs are considered necessary.

Further, the proposed subdivision design ensures that both proposed battle-axe legs will be subject to a BAL rating of no greater than BAL-12.5. As illustrated in Figure 4A, so as to augment the proposed battle-axe legs, an emergency access way will be required to ensure emergency and other vehicles can move through the subdivision easily and safely at all times via areas moving away from any bushfire threat.

Implementation

i. To be implemented prior to the clearance of subdivision for affected lots that the battle-axe services.

ii. It is the responsibility of the developer to ensure the battle-axe meets the required standard in accordance with Table 4A and provisions b-c above.

iii. It is the responsibility of the individual land owner to ensure the battle-axe continues to meet the required standard.

Acceptable Solution 3.5 Private driveway longer than 50 metres

A private driveway is to meet all of the following requirements:

a. Requirements in Table 4A, Column 3;

b. Required where a house site is more than 50 metres from a public road;

c. Passing bays: every 200 metres with a minimum length of 20 metres and a minimum width of two metres (i.e. the combined width of the passing bay and constructed private driveway to be a minimum six metres);

d. Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres) and within 50 metres of a house; and

e. Any bridges or culverts are able to support a minimum weight capacity of 15 tonnes.

f. All-weather surface (i.e. compacted gravel, limestone or sealed).

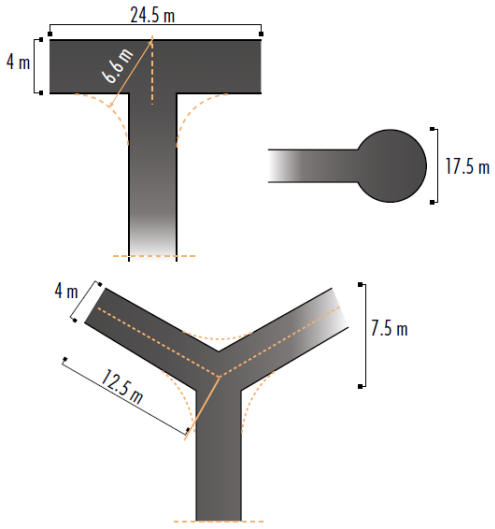


Figure 20: Design requirements for a private driveway longer than 50 metres
Turning areas should allow type 3.4 fire appliances to turn safely

Source: *The Guidelines (WAPC, 2017)*

Development Response/Recommendations

Figure 4A illustrates the private driveways longer than 50 metres proposed as part of the development. Private driveways longer than 50m are to comply with the specifications of Table 4A.

Implementation

i. To be implemented prior to occupation of the habitable building serviced by the private driveway.

ii. It is the responsibility of the individual land owner to ensure the private driveway meets the required standard in accordance with Table 4A and provisions b-f above.

iii. It is the responsibility of the individual land owner to ensure the private driveway continues to meet the required standard.

Acceptable Solution 3.6 Emergency access way (EAW)

An access way that does not provide through access to a public road is to be avoided in bushfire prone areas. Where no alternative exists (this will need to be demonstrated by the proponent), an emergency access way is to be provided as an alternative link to a public road during emergencies. An emergency access way is to meet all of the following requirements:

a. Requirements in Table 4, Column 4;

b. No further than 600 metres from a public road;

c. Provided as right of way or public access easement in gross to ensure accessibility to the public and fire services during an emergency; and

d. Must be signposted.

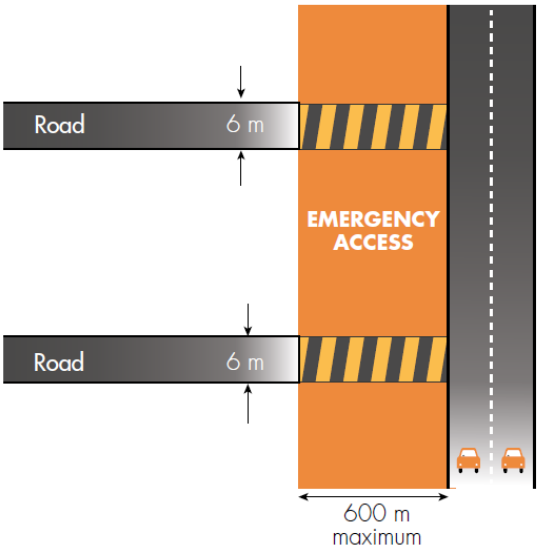


Figure 21: Minimum design requirements for an emergency access way

Source: *The Guidelines (WAPC, 2017)*

Development Response/Recommendations

Figure 4A illustrates the emergency access way proposed as part of the development. The emergency access way is to comply with the specifications of Table 4A.

The emergency access way is to provide secondary access for Lots 2, 5 and 6 in the unlikely event that Dan Close is not trafficable. The EAW can also serve as a Fire Service Access Route as detailed in A3.7.

Implementation

i. To be implemented prior to the clearance of subdivision for affected lots that the emergency access way services.

ii. It is the responsibility of the developer to ensure the emergency access way meets the required standard in accordance with Table 4A and provisions b-d above.

iii. It is the responsibility of the individual landowner to ensure the emergency access ways continue to meet the required standard.

Performance Solution 3.7 Fire service access routes (perimeter roads)

Fire service access routes are to be established to provide access within and around the edge of the subdivision and related development to provide direct access to bushfire prone areas for fire fighters and link between public road networks for firefighting purposes. Fire service access routes are to meet the following requirements:

a. Requirements Table 4, Column 5;

b. Provided as right of ways or public access easements in gross to ensure accessibility to the public and fire services during an emergency;

c. Surface: all-weather (i.e. compacted gravel, limestone or sealed)

d. Dead end roads are not permitted;

e. Turn-around areas designed to accommodate type 3.4 appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres);

f. No further than 600 metres from a public road;

g. Allow for two-way traffic and;

h. Must be signposted.

Development Response/Recommendations

Figure 4A illustrates the fire service access proposed as part of the development. The fire service access is to comply with the specifications of Table 4A.

Existing buildings within proposed Lot 6 prevent the FSAR traversing the southern boundary of this lot. Dan Close terminates at the south east corner of proposed Lot 6 and provides access to the bushfire prone vegetation located within the lot external to the southern boundaries of Lots 5 & 6.

The proposed FSAR extends along the west boundary of Lot 5 and connects to the EAW extending to Halleendale Road, moving away from the bushfire hazard. The total length of this leg, measured from Dan Close to Halleendale Road is approximately 140m. A gate is to be provided in the south-west corner of Lot 5 for fire service access in the event that they require access to/from the lots. This gate and FSAR may be removed upon development of the southern lot (Lot 9000) external to the subdivision.

Additionally, fire service vehicles can access Lot 5 via the proposed cul-de-sac leg, which is to be constructed to the same standards as a FSAR. This solution ensures Performance Principle (P3) can be achieved, allowing emergency and other vehicles to move through it easily and safely at all times.

<u>Implementation</u>

i. To be implemented prior to the clearance of subdivision for affected lots serviced by the fire service access route.

ii. It is the responsibility of the developer to ensure the fire service access route meets the required standard in accordance with Table 4A and provisions b-h above.

iii. It is the responsibility of the individual landowner to ensure the fire service access route continues to meet the required standard.

Acceptable Solution A3.8 Firebreak width

Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three metres or to the level as prescribed in the local firebreak notice issued by the local government.

Development Response/Recommendations

N/A. No Firebreaks are proposed. The annual City of Kalamunda Firebreak and Fuel Load Notice as amended requires lots less than 0.5ha in area to have a 3 metre wide internal perimeter firebreak, unless the property is maintained clear of flammable matter by slashing and mowing or maintaining living garden beds or lawn. The proposed APZ over the entire site fulfils this requirement.

4.4 Element 4 - Water

Intent: To ensure that water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.

Performance Principle (P4): The subdivision, development or land use is provided with a permanent and secure water supply that is sufficient for firefighting purposes.

The following table outlines the Acceptable Solutions (AS) that are relevant to the proposal; identifies where a Performance Solution (PS) has been used instead of an AS; and states, where applicable, the reason why the AS is not relevant to the proposal.

Solution	AS	PS	N/A	Comment
A4.1 Reticulated areas	☒	☐	☐	
A4.2 Non-reticulated areas	☐	☐	☒	
A4.3 Individual lots within non-reticulated areas	☐	☐	☒	

Acceptable Solution A4.1 Reticulated areas

The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.

Development Response/Recommendations

The site is serviced by reticulated scheme water and firefighting hydrants, satisfying Acceptable Solution A4.1. The locations of existing hydrants are shown in Figure 4A.

Acceptable Solution A4.2 Non-reticulated areas

Development Response/Recommendations

N/A. The site is serviced by reticulated scheme water and firefighting hydrants. Therefore, A4.2 is not applicable to this development.

Acceptable Solution A4.3 Individual lots within non-reticulated areas

Development Response/Recommendations

N/A. The site is serviced by reticulated scheme water and firefighting hydrants. Therefore, A4.3 is not applicable to this development.



Figure 4A: *Bushfire Management Strategies Map*

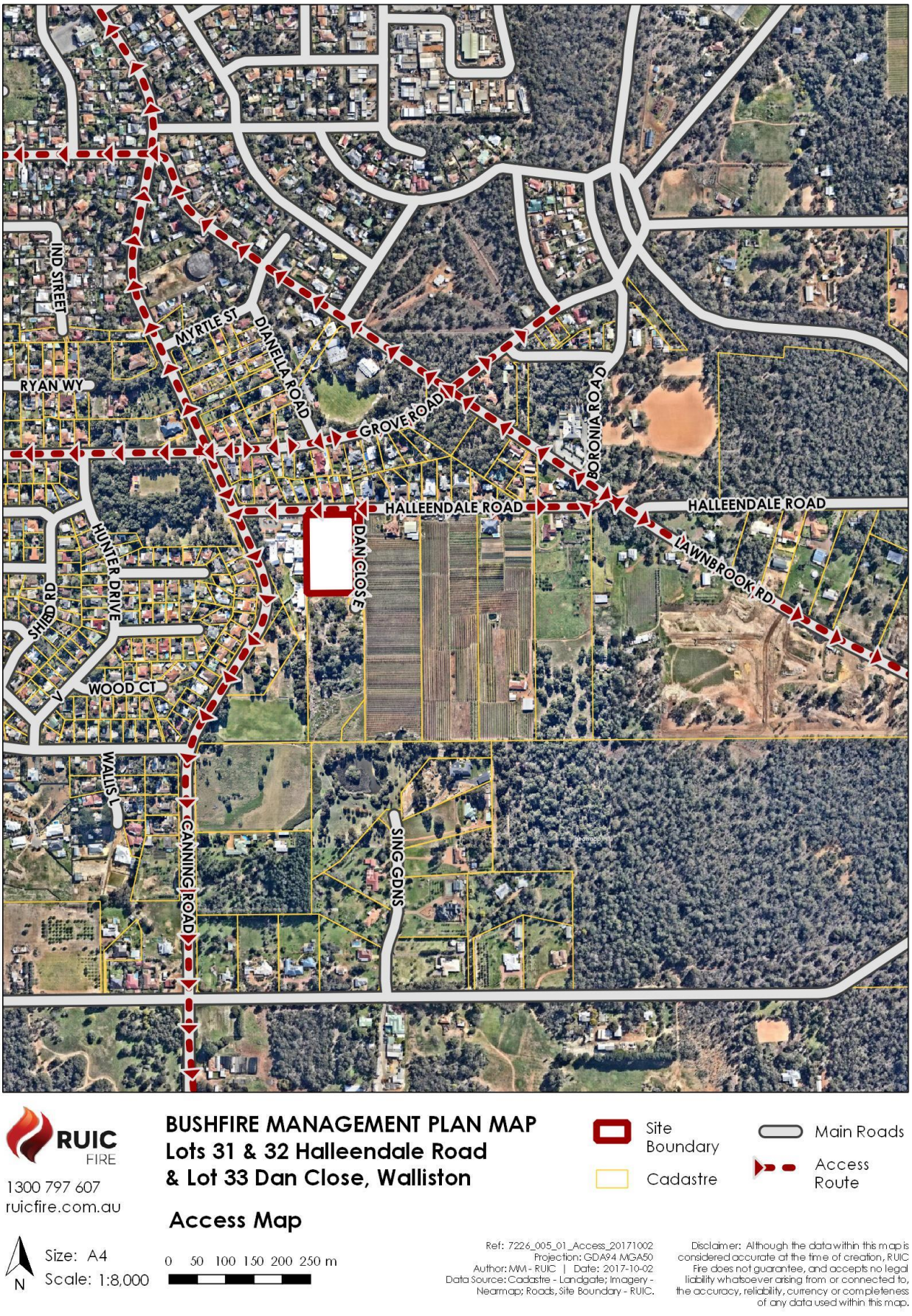


Figure 4B: *Site Access*

5.0 Implementation and Enforcement

Table 5A: *Schedule of Works*

Strategy	Implementation		Maintenance	
	Responsible	Time Frame	Responsible	Time Frame
Amendments to BMP	Any amendments to this BMP shall be approved by the relevant Jurisdiction Having Authority			
Asset Protection Zone	Developer	Prior to clearance of subdivision	Individual land owner	Ongoing
Construction to AS 3959	Individual land owner & Local Government	On construction of all habitable buildings	Individual land owner	Ongoing
Public roads	N/A	N/A	N/A	N/A
Cul-de-sacs	N/A	N/A	N/A	N/A
Battle-axes	Developer	Prior to clearance of subdivision	Individual land owner	Ongoing
Private driveways longer than 50m	Individual land owner	Prior to occupation of habitable buildings	Individual land owner	Ongoing
Emergency access ways	Developer	Prior to clearance of subdivision	Individual land owner	Ongoing
Fire service access routes	Developer	Prior to clearance of subdivision	Individual land owner	Ongoing
Firebreaks	N/A	N/A	N/A	N/A
Firefighting water (hydrants)	Existing	Existing	Water Corporation	Ongoing
Firefighting water (private tanks)	N/A	N/A	N/A	N/A
Public Open Space	N/A	N/A	N/A	N/A
Firefighting services and response	DFES and Local Government	Ongoing	DFES and Local Government	Ongoing
Fuel load reduction and firebreak notice works	Individual Landowner	In accordance with firebreak notice	Individual Landowner	Ongoing
Issue of fuel load reduction and firebreak notice	Local Government	In accordance with firebreak notice	Local Government	In accordance with firebreak notice

Strategy	Implementation		Maintenance	
	Responsible	Time Frame	Responsible	Time Frame
Inspection and issue of works orders or fines	Local Government	Ongoing	Local Government	Ongoing

6.0 References

City of Kalamunda. (2017). City of Kalamunda Fire Break and Fuel Reduction Notice. City of Kalamunda, WA.

OBRM. (2016). Map of Bush Fire Prone Areas 2016. Office of Bushfire Risk Management, Perth, WA.

Standards Australia. (2009). AS 3959-2009 Construction of buildings in bushfire prone areas. SAI Global.

WAPC. (2015). State Planning Policy 3.7 Planning in Bushfire Prone Areas. Western Australian Planning Commission & Department of Planning.

WAPC. (2016). Planning Bulletin 111/2016 Planning in Bushfire Prone Areas. Western Australian Planning Commission.

WAPC. (2017a). Guidelines for Planning in Bushfire Prone Areas Version 1.2. Western Australian Planning Commission, Department of Planning & Department of Fire and Emergency Services.

WAPC. (2017b). Guidelines for Planning in Bushfire Prone Areas Appendices Version 1.2. Western Australian Planning Commission, Department of Planning & Department of Fire and Emergency Services.

7.0 Appendix 1

Local Government Firebreak Notice

City of Kalamunda 2017/2018

FIREBREAK AND FUEL LOAD NOTICE

Bush Fires Act 1954

Notice to Owners and/or Occupiers* of Land situated within the City of Kalamunda.

As a measure to assist in the control of bushfires and pursuant to the powers contained in section 33 of the *Bush Fires Act 1954* (as amended), as the property owner or occupier of land within the City of Kalamunda, you are hereby required before 1 November 2017, or within 14 days of becoming an owner or occupier of land if after this date, to comply with the requirements set out in this notice.

The applicable works outlined below must be completed before 1 November 2017 and maintained up to and including 31 March 2018.

Persons who fail to comply with the requirements of this notice may be issued with an infringement notice penalty ($250) or prosecuted with an increased penalty (maximum penalty $5,000). Additionally, the City of Kalamunda may carry out the required work at cost to the owner/occupier.

1. Land, with a building on it, with an area *greater than* 5,000m^2

You are required to:

- ☐ Have all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted).
- ☐ Install bare earth firebreaks three (3) metres wide immediately inside and along all boundaries of land in a continuous form, including on boundaries adjacent to roads, rail and drain reserves and all public open space reserves, with all overhanging branches, trees, limbs etc. to be trimmed back from over the firebreak area from ground level to a minimum height of four (4) metres. Driveways must also be maintained to these conditions.
- ☐ Ensure the roofs, gutters and walls of all buildings on the land are free of flammable matter.
- ☐ Install and maintain an Asset Protection Zone in accordance with the requirements set out in Part 4 of this Notice.

2. Land, with a building on it, with an area *less than* 5,000 m^2

You are required to:

- ☐ Have all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants and lawn under cultivation are excepted).
- ☐ Install a firebreak immediately inside all external boundaries of the property unless the property is maintained clear of flammable matter by slashing and mowing or maintaining living garden beds or lawn.
- ☐ Ensure the roofs, gutters, walls of all buildings on the land are free of flammable matter. Driveways must also be maintained to these conditions.
- ☐ Install and maintain an Asset Protection Zone in accordance with the requirements set out in Part 4 of this Notice.

** Please note that the Bush Fires Act 1954 (WA) requires the owner or occupier of land to attend to all requirements in this Notice. The City may take action against either the owner or occupier of land for a failure to comply with this Notice at its absolute discretion.*

city of kalamunda

3. All Vacant Land

You are required to:

- ☐ Have all flammable matter slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property (living trees, shrubs, plants under and lawn under cultivation excepted).
- ☐ On vacant land larger than 1,000 m², install bare earth firebreaks three (3) metres wide immediately inside and along all boundaries of land in a continuous form, including on boundaries adjacent to roads, rail and drain reserves and all public open space reserves, with all overhanging branches, trees, limbs etc. to be trimmed back from over the firebreak area from ground level to a minimum height of four (4) metres. Driveways must also be maintained to these conditions. A Fire Control Officer may request firebreaks to be installed on vacant land under 1,000m² should they deem it necessary under Part 5 of this Notice to reduce risk of fire.

4. Asset Protection Zones

The area of land that extends out 20m from a habitable building or attached structure (for example verandas or gazebos) within the boundaries of a lot on which a habitable building is situated, is considered to be an Asset Protection Zone, also known as 'Building Protection Zone' (Asset Protection Zone).

In the Asset Protection Zone, unless an approved 'Alternative Bushfire Management Plan' is in place:

- ☐ Non-flammable managed vegetation, reticulated lawns and gardens and other non-flammable features are permitted only.
- ☐ All grass must be maintained to or under 50mm in height.
- ☐ Mature trees over five (5) metres in height must be under pruned to at least a height of two (2) metres from the ground (which means you must prune branches and leaves etc. from the ground up to the first 2 metres in height of the tree).
- ☐ Tree or shrubs over two (2) metres high must not be within 2 metres of a habitable building.

5. Additional Works

In addition to the requirements noted above, regardless of land size and location, the City of Kalamunda or its duly authorised officer(s) may require you to undertake additional works on your property to improve access and/ or undertake further hazard removal (Additional Works) where, in the opinion of an authorised officer, such Additional Works are necessary to prevent the outbreak and/or the spread of a bush fire.

6. Firebreak Variations

If you consider for any reason that it is impractical to clear firebreaks as required by this Notice, or if natural features render firebreaks unnecessary, you may apply in writing to the City of Kalamunda or its duly authorised officers, not later than 1 October 2017, for alternative positions, or other methods of fire prevention on your land.

If permission is not granted, you must comply with the requirements of this Notice. This applies to variations to the Asset Protection Zone as well. The Chief Bush Fire Control Officer reserves the right to review and revoke any variation granted.

Fuel Dumps and Depots

You are required to remove all flammable matter within ten (10) metres of where fuel drums, fuel ramps or fuel dumps are located, and where fuel drums, whether containing fuel or not, are stored.

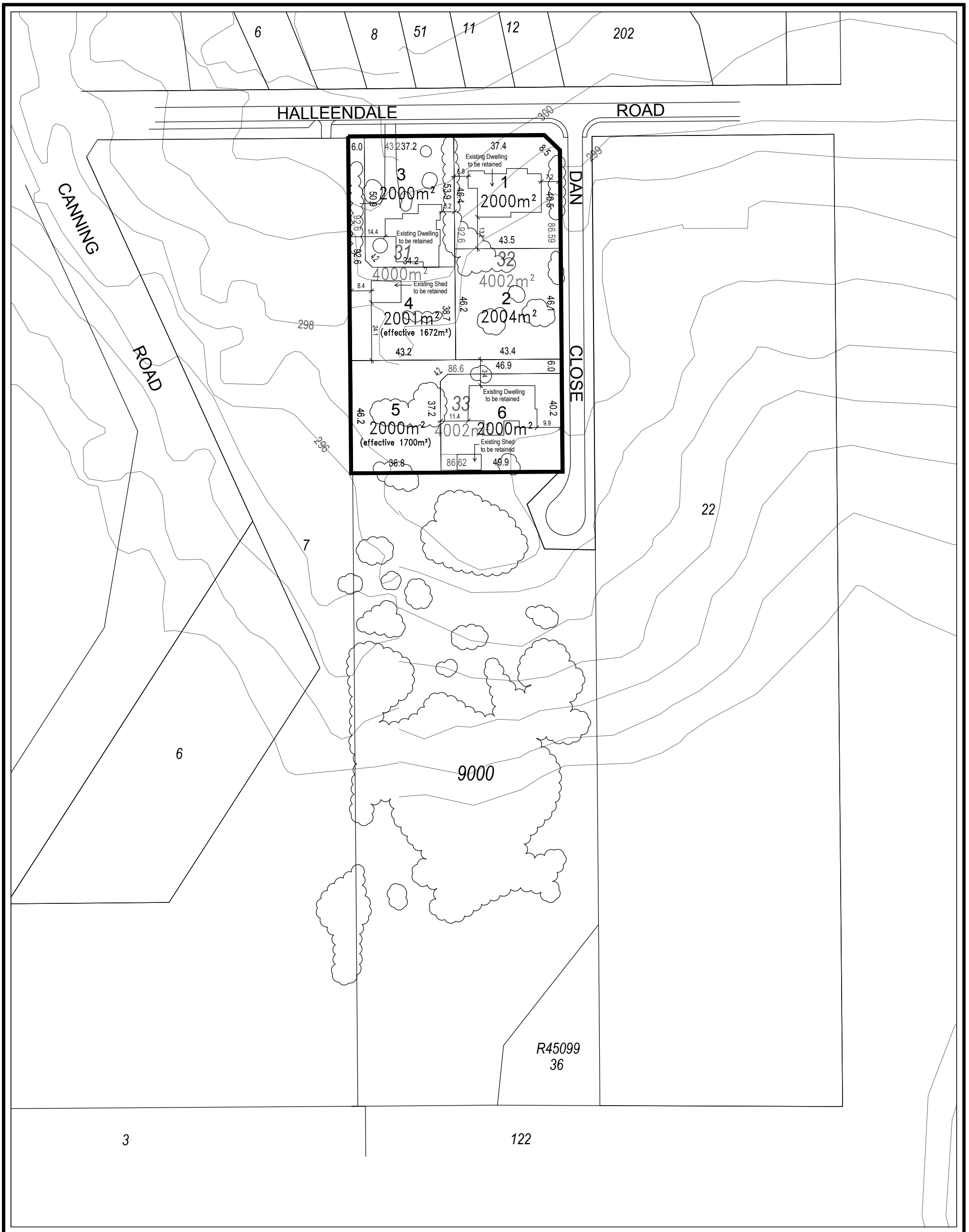
By order of the City of Kalamunda.

Rhonda Hardy

CHIEF EXECUTIVE OFFICER

city of kalamunda

Appendix 2: Conceptual Subdivision Plan



0 10 20 30 40 50 60m

SCALE 1:1500
ORIGINAL PLAN SIZE: A3

Base Mapping Prepared By Landgate	DATE: 28.08.2017	REV 1

NORTH

ALTUS PLANNING

Altus Planning
68 Canning Highway
South Perth WA 6151
t. 9474 1449 m. 0400 069 037
w. www.altusplan.com.au

LEGEND:

Subject Land.....

Existing Vegetation..

NOTE: Areas and dimensions are subject to survey.

DISCLAIMER: This plan has been prepared under instruction of the client, Altus Planning bears no responsibility for any inaccuracies or errors.

CONCEPTUAL SUBDIVISION

LOTS 31 (#16) & 32 (#20) HALLEENDALE ROADAND
LOT 10 (#10) DAN CLOSE, WALLISTON
Shire of Kalamunda