Karingal Green
Outline Development Plan

Proposed ODP Amendment
November 2018
Activ Foundation Inc

Creative
DESIGN+PLANNING

KARINGAL GREEN ODP
PROPOSED ODP AMENDMENT

NOVEMBER 2018

Prepared for:

Activ Foundation Inc
PO Box 446
Wembley WA 6913

Prepared by:

Creative Design + Planning
28 Brown Street
EAST PERTH WA 6004
T: 9325 0200 F: 9325 4818 E: info@creativedp.com.au

DOCUMENT STATUS

VERSION	COMMENT	PREPARED BY	REVIEWED BY	REVIEW DATE	APPROVED BY	ISSUE DATE
0		CH	KB	31.10.2018	KB	6.11.2018

Disclaimer and Copyright
This document was commissioned by and prepared for the exclusive use of our Client. It is subject to and issued in accordance with the agreement between our Client and CD+P.
CD+P acts in all professional matters as a faithful advisor to its clients and exercises all reasonable skill and care in the provision of professional services. The information presented herein has been compiled from a number of sources using a variety of methods. Except where expressly stated, CD+P does not attempt to verify the accuracy, validity or comprehensiveness of this document, or the misapplication or misinterpretation by third parties of its contents.
This document cannot be copied or reproduced in whole or part for any purpose without the prior written consent of CD+P.

CONTENTS

1 Introduction 1

2 Location and Land Ownership 1

3 Surrounding Amenity 1

4 Zoning and ODP 2

5 Proposed ODP Amendment 2

6 Yield Comparision 2

6.1 Single or Grouped Dwellings 2

6.2 Multiple Dwellings 3

7 Grounds for ODP Amendment 3

7.1 State Government Strategic Planning Framework 3

7.2 City of Kalamunda Planning Framework 3

7.2.1 Local Planning Strategy 3

7.2.2 Local Housing Policy 4

7.2.3 City of Kalamunda Amendment 82 to Local Planning Scheme No.3 4

7.3 Indicative Built Form Outcomes and Diversity 5

7.4 Bushfire 6

7.5 Additional Justification 6

8 Conclusion 7

FIGURES

Figure 1 Location Plan

Figure 2 Orthophoto

Figure 3 Context Plan

Figure 4 Current Outline Development Plan

Figure 5 Proposed Amendment to Outline Development Plan

APPENDICES

Appendix 1 Indicative Built Form Outcomes

Appendix 2 Bushfire Management Plan

1 INTRODUCTION

On behalf of the Activ Foundation Inc we propose an amendment to the Karingal Green Outline Development Plan (ODP). The proposed amendment involves the density increase from R30 to R60 for Lot 265 Callophylla Way, Lot 316 Catspaw Way and Lot 321 Buttercup Crescent, High Wycombe.

2 LOCATION AND LAND OWNERSHIP

The proposed ODP amendment relates to three (3) lots as follows, all owned by Activ Foundation Inc:

Property	Area
Lot 265 Calophylla Way	1,998m2
Lot 316 Catspaw Way	2,003m2
Lot 321 Buttercup Crescent	1,846m2

The lots are located approximately 15km to the east of the Perth CBD within the established Karingal Green residential area.

Lot 265 Calophylla Way has street frontage to three (3) sides being Calophylla Way to the north, Lambertia Crescent to the west and Hybanthus Ave to the south. The site directly abuts Activ's housing and home care facility to the east and is in close proximity to the conservation and open space area to the north.

Lot 316 Catspaw Way and Lot 321 Buttercup Crescent have single street frontage and abut single residential homes to the east and west. The sites directly abut each other along their rear boundaries and both are in close proximity to the conservation and open space area to the north.

The plans provided as **Figure 1** and **Figure 2**, show the location of the three lots.

3 SURROUNDING AMENITY

By virtue of their location within an established urban area, the lots are offered excellent regional road and public transport access and access to important amenities, including shopping centres and educational and community facilities. A context plan has been included at **Figure 3**.

The site is located within close proximity to Kalamunda Road, classified as 'Other Regional Roads' under the Metropolitan Region Scheme which has a connection to Roe Highway to the east and Abernethy Road to the west. There are existing Transperth bus services operating along Kalamunda Road. The Midland Train Station is located approximately 4.5km to the north of the site.

There are a number of local and neighbourhood shopping centres located within close proximity to the site, including the High Wycombe Shopping Centre and the Maida Vale Local Centre.

The following educational and community facilities are located nearby:

- High Wycombe – Goodstart Early Learning Centre;
- Matthew Gibney Catholic Primary School;
- High Wycombe Primary School; and
- High Wycombe Community and Recreation Centre.

4 ZONING AND ODP

The sites are zoned 'Urban' under the Metropolitan Region Scheme and 'Urban Development' pursuant to the City of Kalamunda Local Planning Scheme No.3 (LPS No.3).

The sites form part of the Karingal Green Outline Development Plan (Karingal Green ODP) area and are zoned 'Grouped Dwellings R30'. The current Karingal Green ODP is included at **Figure 4.**

5 PROPOSED ODP AMENDMENT

The proposed amendment to the ODP involves the density up-coding for the three (3) above mentioned lots from R30 to R60 (refer **Figure 4 and 5**). The sites present as an infill opportunity and are ideally located to accommodate higher density residential development. The proposed amendment seeks to provide greater flexibility in the delivery of medium density residential development in response to recent trends in market demand.

At the time the Karingal Green ODP was adopted by the then Shire of Kalamunda (now being a significant number of years ago), development at a density of R30 responded to the 'typical' medium density built form product available to the market. However, innovations in built product and trends towards smaller homes now lends the sites to higher density residential development in order to maximise this infill opportunity and deliver market responsive housing forms.

6 YIELD COMPARISION

Indicative yield estimates based on the current and proposed zoning for each site have been calculated and are tabulated below in **Table 1.**

Table 1: Yield Comparisons

YIELD ESTIMATES											
Lot	Gross Area (m2)	Current R30 Scenario					Proposed R60 Scenario				
		Single/Grouped Dwelling		Multiple Dwelling			Single/Grouped Dwelling		Multiple Dwelling		
		Avg. Lot Size (m2)	Dwelling Yield	Plot Ratio	Avg. Dwg Size (m2)	Dwelling Yield	Avg. Lot Size (m2)	Dwelling Yield	Plot Ratio	Avg. Dwg Size (m2)	Dwelling Yield
265	1998	300	6	0.5	80	12	150	13	0.7	80	17
316	2003		6			12		13			17
321	1846		6			11		12			16
TOTAL			18			35		38			50

6.1 Single or Grouped Dwellings

Under the current R30 density coding, the sites could each accommodate a maximum dwelling yield of 6 single or grouped dwellings, this being a total of 18 single or grouped dwellings across the three (3) sites. Under the proposed R60 density, each site could accommodate a maximum dwelling yield of 12-13 single or grouped dwellings, this being a total of 38 dwellings across the three (3) sites. **This represents the potential for an additional 20 single or grouped dwellings across all three sites if the higher R Code is applied.**

6.2 Multiple Dwellings

Under the current R 30 density coding each site could accommodate11 - 12 multiple dwellings based on a plot ratio of 0.5 and average dwelling size of 80m2, this being a total of 35 multiple dwellings across the three (3) sites. Under the proposed R60 density, each site could accommodate a dwelling yield of 16 - 17 multiple dwellings based on a plot ratio of 0.7 allowed by the R Codes and an average dwelling size of 80m2, this being a total of 50 multiple dwellings across the three (3) sites. **This represents the potential for an additional 15 multiple dwellings across all three sites if the higher R Code is applied.**

7 GROUNDS FOR ODP AMENDMENT

We provide the following rationale in support of the proposed amendment.

7.1 State Government Strategic Planning Framework

- The proposed ODP Amendment is consistent with the State's 'urban consolidation' and infill directive, as identified in the key strategic planning documents including the Sub-regional frameworks, Directions 2031 and Beyond, Liveable Neighbourhoods and Perth to Peel @ 3.5 million.
- The State government's strategic position targets the containment of urban sprawl through consolidation measures. The proposed amendment will facilitate high density residential infill development within an established area.
- The above-mentioned strategic State government documents encourage infill development, increased housing diversity, adaptability, affordability and choice. They promote higher density housing to be within close proximity to areas of higher amenity, being activity centres, public open space, commercial facilities and public transport. The proposed ODP amendment responds to these key strategic documents by delivering higher density residential infill development in a well located and serviced area.
- With regards to Liveable Neighbourhoods, R18 states "higher density housing in areas close to town and neighbourhood centres, near public transport stops, and in areas with high amenity such as next to parks". Liveable Neighbourhoods encourages the siting of medium density residential development within walking distance of community facilities. The Context Plan (refer **Figure 3**) identifies the amenity in the vicinity of the 400m and 800m catchment of the sites. There are a number of centres within the 800m catchment of the sites. In addition, public transport services operate along Kalamunda Road, located just outside of the 400m catchment of the sites. This public transit route connects to the Kalamunda District Centre. The sites are also located in the immediate vicinity of public open space. The majority of the amenities are within the 800m catchment of the sites and therefore considered to be very accessible to the site.

7.2 City of Kalamunda Planning Framework

Pre lodgement discussions with the City of Kalamunda have indicated that there is in principle support for the increased density to R60. The proposed ODP Amendment is consistent with the existing planning framework at the City of Kalamunda as outlined below.

7.2.1 Local Planning Strategy

- The propose ODP Amendment is consistent with the City of Kalamunda's Local Planning Strategy, which aims to "Identify medium density infill development opportunities around activity centres, public transport and public open spaces, subject to urban design and streetscape guidelines". The sites are ideally located to accommodate medium density infill development within close proximity to important amenities, including public transport, activity centres, community and education facilities and public open space.

7.2.2 Local Housing Policy

- The proposed ODP Amendment is consistent with the objectives of the City of Kalamunda's Local Housing Policy, specifically:
    - "To provide for a greater variety of lot sizes and housing types that will cater for the diverse needs of the community at a density that can ultimately support the provision of local services, while at the same time meeting the social and economic needs of the Shire's changing demographics"; and
    - "To identify suitable areas for greater housing choice which are strategically located, i.e. close to, or well connected to, existing and future services (for example, employment centres, main transport routes/hubs, community facilities, shopping centres, and most importantly, the two District Centres within the Shire – Kalamunda and Forrestfield."
- The predominant dwelling type in this locality is single detached family homes. The proposed amendment will provide a range of smaller household sizes which will provide greater housing choice and respond to the diverse needs of the community.

7.2.3 City of Kalamunda Amendment 82 to Local Planning Scheme No.3

Amendment 82 to the City's Local Planning Scheme, gazetted in 2016, introduced dual density coding into some areas of Kalamunda and introduced Clause 5.24 in LPS 3. Although not directly relevant to this proposal, the underlying concept and justification accepted as part of Amendment 82 by the City, WAPC and Minister, for the application for a higher density code to a parcel of land should be considered as part of the assessment of this proposal to up code three (3) sites form R30 to R60.

Clause 5.2.4 of LPS 3 states:

"In considering development applications for land within the dual coded areas depicted on the Scheme Map, the local government will apply the lower density unless:

a) The minimum area of the total development site being not less than 1,000 square metres; or

b) The parent lot has two or more frontages to a public road; or

c) The parent lot is the only lot between two lots with two or more frontages to a public road; or

d) The parent lot is the only lot between two lots where one or both of the adjoining lots have been developed at the higher dual density code; or

e) The development is designed to accommodate a mixture of dwelling types and shall include two or more types of dwelling as defined by the R-Codes and at least one dwelling in the development is two storeys; and

f) The development is designed with due regard for any relevant Local Planning Policy or Design Guidelines for dual density coded areas; and

g) The development can be serviced by reticulated sewerage in accordance with the Government Sewerage Policy."

The three (3) sites comply with the criteria outlined in Clause 5.24 of the LSP 3 for the application of a higher density code as follows:

- All three sites have an area greater than 1,000m2;
- Lot 265 has three frontages to a public road;
- Lots 316 and 321 are both the only lot between two lots with two or more frontages to a public road; and
- The lot adjoining Lot 265 has been developed for special purposes at a density higher than the surrounding single residential density of R15/20.

It is noted that with smaller lots it is increasingly difficult to achieve good design. A larger area for development provides greater scope to provide high quality development. The size of the three (3) lots is in the order of 2,000m2 each, this being double the Scheme requirement for the application of a higher density in other dual coded areas. Each site forming part of this ODP amendment is therefore of a large enough size to facilitate a superior design outcome.

Corner lot development scenarios (as is the case for Lot 265) are identified as a core opportunity for higher density housing with dwellings / lots being able to have their own street frontage and therefore promoting consistent streetscape and passive visual surveillance. Further, for those lots not on a corner, a wide street frontage (as is the case for Lots 316 and 321) is a design advantage and allows for a greater positive contribution to streetscape. All three sites forming part of this ODP Amendment have appropriate frontage to enable a high quality design and streetscape outcome to be achieved.



7.3 Indicative Built Form Outcomes and Diversity

In order to support this proposed ODP Amendment, indicative built form scenarios have been developed for each of the three sites – refer **Appendix 1**. The imagery that has been prepared illustrates different development and housing product scenarios that are all responsive to current market trends towards smaller dwelling types offering a diversity of housing product within a locality.

This built form imagery is intended to be indicative only and it is noted that for each site there are multiple access and dwelling configuration opportunities by virtue of the large size and road frontage. All of the sites are close to 2000m2 in area and thus are of an appropriate size and dimension to enable the delivery of a high quality medium density built form outcome which can address the surrounding streetscapes and enable the concealment of car parking.

The indicative built form outcomes provided illustrate that the development of the sites under the R60 provisions of the R-Codes will not compromise the amenity of the surrounding established residential area or negatively impact on the streetscape. The R-Codes include a range of objectives and design principles, together with deemed-to-comply criteria which set out one way of achieving each design principle. Any future proposals for development at a density of R60 will therefore be considered in the context of these provisions which ensure the delivery of appropriate development outcomes for the site and in the context of the surrounding area. This proposed amendment will contribute to the character and amenity of this central portion of the Karingal Green residential area by providing greater diversity in housing stock and built form outcomes. In addition, the ODP Amendment may deliver greater housing affordability within the locality to attract a broader and more diverse demographic.

With regard to tree retention, there are no trees on Lots 316 and 321 however Lot 265 does contain some mature trees. The indicative built form design for Lot 265 shows how these trees can be retained. Maximum effort should be made to retain these trees where possible as part of the future development of Lot 265.

The built form designs provided have incorporated all parking requirements (resident and visitor) within the sites. However, it is noted that future development proposals may indicate the need for on street parking to function as visitor parking for the developments. This matter will be addressed at the development application stage. There is adequate road verge area in proximity to each site to accommodate some on street parking if deemed necessary. In addition, any impacts on the footpaths will be addressed by the development application.

7.4 Bushfire

As the three sites are located in a bushfire prone area, a Bushfire Management Plan (refer **Appendix 2**) has been prepared to support this proposed ODP Amendment despite the fact that the sites are already zoned for Residential R30 purposes. The results of the report demonstrate that the residential development of these lots can occur in compliance with bushfire policies and requirements. Due to the vegetation in the conservation reserve to the north the lots are affected by BAL ratings which will require some construction and fire management strategies to be implemented. However, none of this impacts the proposed rezoning, noting that the land is already zoned for residential development. The required strategies to mitigate bushfire risk are to be implemented at the development and building stage of the process.

7.5 Additional Justification

In addition to the above justification provided for the proposed ODP amendment, we take this opportunity to provide additional information and justification as follows:

- This proposed amendment has been lodged in response to consideration of the changing landscape of disability funding in Australia. As the largest disability services provider in Western Australia, Activ has been successfully delivering a range of vital services to the community since 1951, including Employment, Accommodation, Community Based Services and Transport. The proposed changes to funding arrangements for the provisions of disability services introduced by the Australian Government under the National Disability Insurance Scheme will transform the way disability funding is delivered to organisations, such as Activ. This has prompted Activ to review its existing portfolio of assets to ensure the ongoing delivery of essential services to the community.
- The rezoning of these 3 sites to R60 should be considered in the context of the existing and future Aged Care development within Karingal Green, rather than purely the established residential context.
- Upcoding of a nearby lot (Lot 426 Pipe Lily Drive) from R30 to R60 was approved by the WAPC in 2016. The justification for upcoding the subject three (3) sites is consistent to that provided for the previous upcoding of Lot 426 Pipe Lily Drive.
- It is acknowledged that the proposed R60 density coding is higher than the prevailing residential density within the locality, however it is considered that within the context of the development of the Aged Care site, the recent upcoding of the nearby Lot 426 Pipe Lily Drive from R30 to R60 and the accessibility of the location to amenities and services, the density is considered compatible and complementary to the intent of the structure plan and is in accordance with the Shire's Local Housing Strategy.
- The development of the sites to R60 will complement the future Aged Care facility and R60 development at Lot 426.
- The R60 coding allows for the delivery of a greater diversity of housing product, including smaller 1- 2 bedroom apartments as part of a Multiple Dwelling development. Whilst it is acknowledged these could be delivered at a lower density, the commercial viability of the development would be compromised as a result of the reduction in yield. It is anticipated the future development of the site would offer a housing product not currently available in the local context.

- The proposed density change in the area would allow for the development of additional dwellings with access to community facilities and public transport, but would also allow for a greater variety of housing options in the vicinity of nearby and future aged and other care facilities which may cater to family members or carers wishing to remain close to community members whose needs require the use of such facilities.
- All detailed design elements associated with the future R60 development of the site could be addressed as part of a Development Application.
- Recent trends in development industry standards reflect a shift towards density codings of R60 and greater for the delivery of medium density housing product, being the opportunity for both Grouped and Multiple dwelling development. A R40 density code or lower limits the ability to deliver commercially viable medium density development as a result of lower plot ratio and other R-Code standards.

8 CONCLUSION

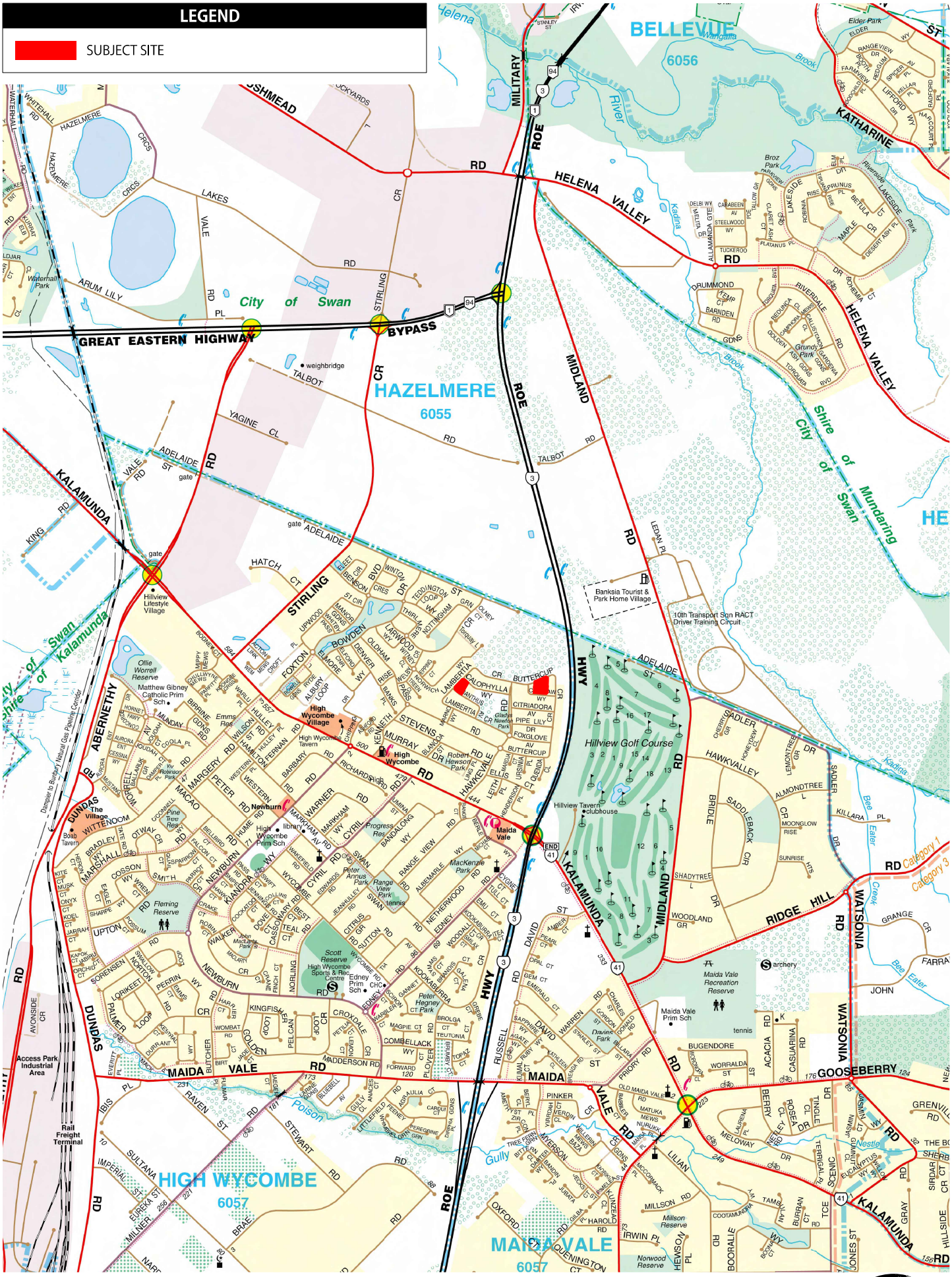
In conclusion and summary:

- The proposed ODP amendment is consistent with the strategic directive of the State government in relation to infill development and urban consolidation.
- The proposed amendment is consistent with the City's Local Planning Strategy, Local Housing Policy and the recent Amendment No.82 to Town Planning Scheme No.3.
- The indicative built form imagery and plans a provided demonstrates that a high quality design and streetscape outcome is likely on these sites given the large areas and frontages.

Based on the information presented, we now request Council's approval of the proposed amendment to the ODP.

FIGURES

Figure 1
Location Plan



LOCATION PLAN

Figure 1

NORTH

0 250 500 750m

Scale: 1:25,000@A4 Date: 06/08/2018 Plan: ACTHW-5-006

Creative DESIGN+PLANNING

Figure 2
Orthophoto



FIGURE 2 - AERIAL BASE PLAN

Lot 265 Calophylla Way, Lot 316 Catspaw Way & Lot 321 Buttercup Cr, HIGH WYCOMBE

NORTH

0 20 40 60m

Scale: 1:2000@A4 Date: 06/08/2018 Plan: ACTHW-5-010

Creative DESIGN+PLANNING

Figure 3
Context Plan



FIGURE 3 - AERIAL CONTEXT PLAN

Lot 265 Calophylla Way, Lot 316 Catspaw Way & Lot 321 Buttercup Cr, HIGH WYCOMBE

NORTH

0 75 150 225m

Scale: 1:7,500@A4 Date: 06/08/2018 Plan: ACTHW-5-009

Creative DESIGN+PLANNING

Figure 4
Current Outline Development Plan



EXISTING



PROPOSED

ODP AMENDMENT PLAN

Figure 4

NORTH

0 50 100 150m

Scale: 1:5,000@A4 Date: 03/09/2018 Plan: ACTHW-5-007

Creative DESIGN+PLANNING

Figure 5
Proposed Amendment to Outline Development Plan



KARINGAL GREEN PROPOSED ODP

Figure 5

NORTH

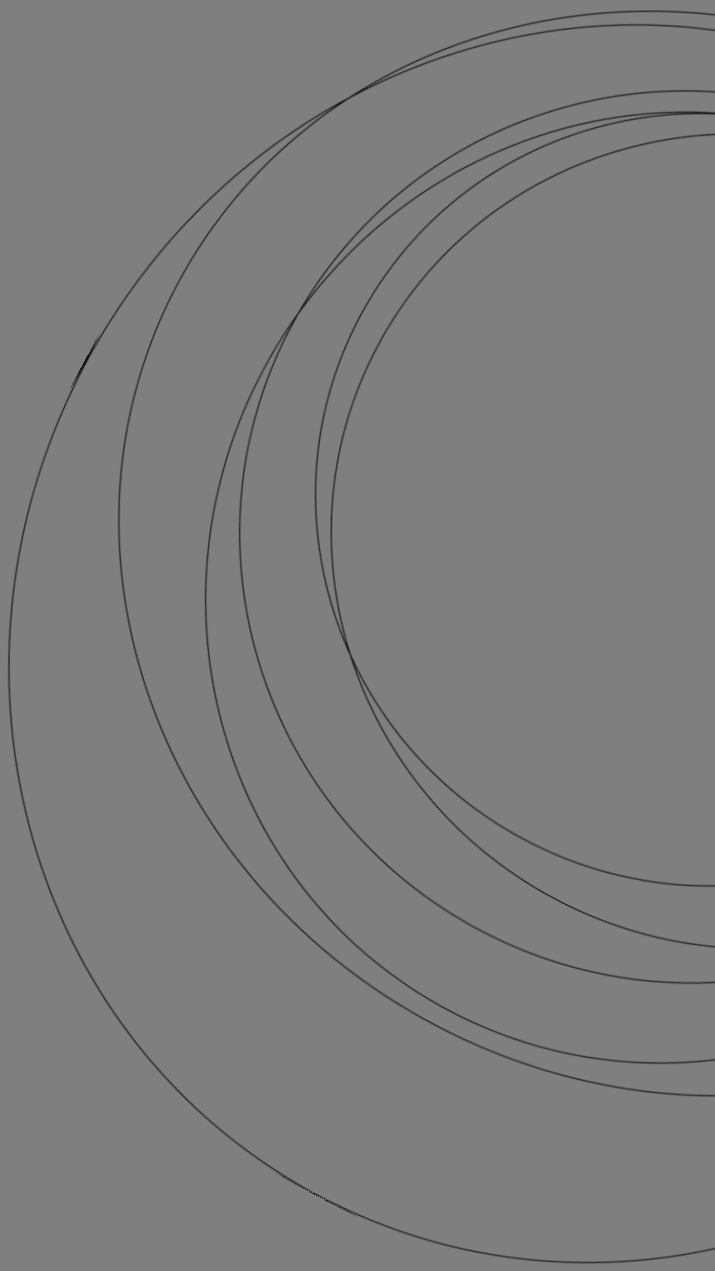
0 50 100 150m

Scale: 1:5,000@A4 Date: 13/09/2018 Plan: ACTHW-5-008

Creative DESIGN+PLANNING

APPENDICES

Appendix 1
Indicative Built Form Outcomes

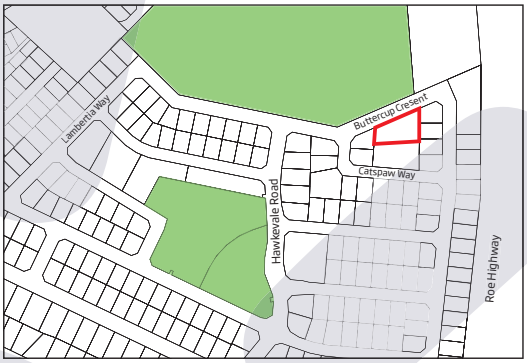


INDICATIVE BUILT FORM LOT 321

(R60 Multiple Dwelling Scenario)

activ
we believe in you

LOCATION



ASSUMPTIONS

Provision	R-Code R60 Requirement	Provided
Gross Area	1,846m²	
Plot Ratio	0.7	0.7
Plot Ratio Area	1,292m²	1,292m²
Average Dwelling Size	-	80m²
Multiple Dwelling (Apartment) Yield	-	16
Primary Street Setback	2m	☑
Car Parking	1.25 Bays per dwelling i.e. 20 Bays	21 Bays
Visitor Bays	0.25 Bay per dwelling i.e. 4 Bays	4 Bays
Bin Provision	☑	☑

SITE PLAN



3D / STREETSCAPE

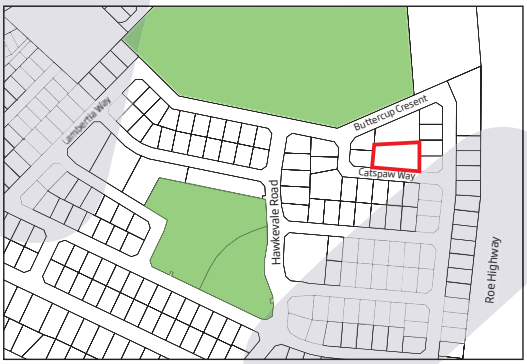


INDICATIVE BUILT FORM LOT 316

(R60 Grouped Dwelling Scenario)

activ
we believe in you

LOCATION



SITE PLAN



ASSUMPTIONS

Provision	R-Code R60 Requirement	Provided
Gross Area	2,003m²	
Minimum Lot Size	120m²	☑
Average Lot Size	150m²	166.9m²
Net Developable Area	-	1,659m²
Common Property	-	344m²
(Strata) Lot Yield	13 (max)	12
Primary Street Setback	2m	☑
Outdoor Living Areas	16m²	☑
Car Parking	2 Bays per 2+ Bedder	☑
Visitor Bays	1 Bay per 4 group dwellings i.e. 3 Bays	☑
Bin Provision	☑	☑

3D / STREETSCAPE



INDICATIVE BUILT FORM LOT 265

(R60 Grouped Housing Scenario)

activ
we believe in you

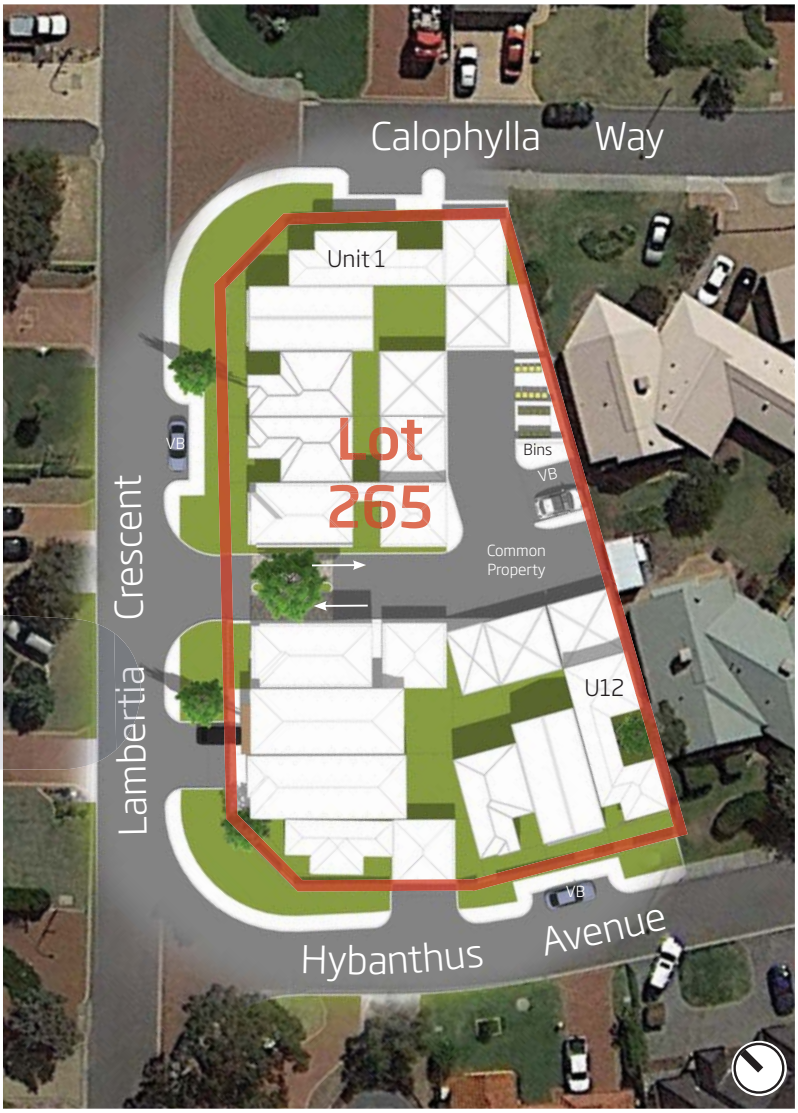
LOCATION



ASSUMPTIONS

Provision	R-Code R60 Requirement	Provided
Gross Area	1998m²	
Minimum Lot Size	120m²	☑
Average Lot Size	150m²	166.5m²
Net Developable Area	-	1556m²
Common Property	-	442m²
(Strata) Lot Yield	13 (max)	12
Primary Street Setback	2m	☑
Outdoor Living Areas	16m²	☑
Car Parking	2 Bays per 2+ Bedder	☑
Visitor Bays	4 Bays	☑
Bin Provision	☑	☑

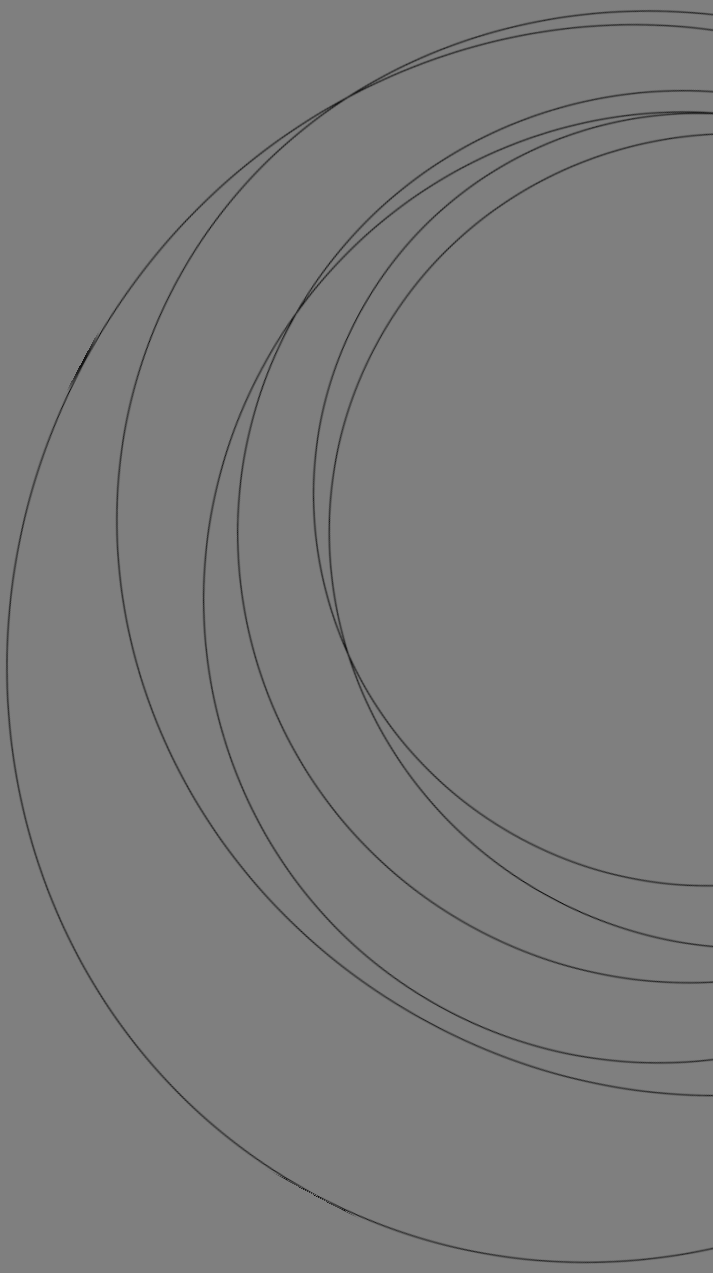
SITE PLAN



3D / STREETSCAPE



Appendix 2
Bushfire Management Plan



FPA AUSTRALIA | Fire Protection Association Australia | Life. Property. Environment.

BPAD Bushfire Planning & Design

Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Lots 265, 316 and 321 Karingel Green

Suburb: High Wycombe **State:** WA **P/code:** 6057

Local government area: City of Kalamunda

Description of the planning proposal: Outline Development Plan amendment

BMP Plan / Reference Number: CDP18477.01 **Version:** R001 Rev 0 **Date of Issue:** 2/11/2018

Client / Business Name: Creative Design and Planning on behalf of Activ Foundation

Reason for referral to DFES	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 BPC elements)?	☐	☑
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
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	☐	☑

If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

An Outline Development Plan is considered a strategic planning proposal.

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Zac Cockerill	Level 2	BPAD37803	31/08/2019
Company		**Contact No.**	
Strategen Environmental		(08) 9792 4797	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct

Signature of Practitioner  **Date** 2/11/2018



intelligent outcomes | respected experience

Outline Development Plan amendment: Lots 265, 316 and 321 Karingel Green, High Wycombe

Bushfire Management Plan

Prepared for
Creative Design & Planning
by Strategen

November 2018

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

strategen ENVIRONMENTAL

Outline Development Plan amendment: Lots 265, 316 and 321 Karingel Green, High Wycombe

Bushfire Management Plan

Strategen is a trading name of
Strategen Environmental Consultants Pty Ltd
Level 1, 50 Subiaco Square Road Subiaco WA 6008
ACN: 056 190 419

November 2018

Limitations

Scope of services

This report ("the report") has been prepared by Strategen Environmental Consultants Pty Ltd (Strategen) in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

Reliance on data

In preparing the report, Strategen has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen has also not attempted to determine whether any material matter has been omitted from the data. Strategen will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen. The making of any assumption does not imply that Strategen has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. Strategen disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law of Western Australia as at the date of this report.

Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

Document control

Client: Creative Design & Planning

Report Version	Revision No.	Purpose	Strategen author/reviewer and accreditation details	Submitted to Client
				Date
Draft Report	Rev A	For review by client	B Mastrangelo (BPAD45985) / Z Cockerill (BPAD37803)	15/10/2018
Final Report	**Rev 0**	**Issued for use: to accompany ODP submission**	**Z Cockerill (BPAD37803)**	**2/11/2018**

Filename: CDP18477_01 R001 Rev 0 - 2 November 2018

Table of contents

1. Proposal details 1

2. Environmental considerations 3

2.1 Native vegetation – modification and clearing 3
2.2 Revegetation / Landscape Plans 3

3. Bushfire assessment results 4

3.1 Assessment inputs 4
3.1.1 Vegetation classification 4
3.1.2 Effective slope 4
3.1.3 Summary of inputs 4
3.2 Assessment outputs 7
3.2.1 Bushfire Attack Level (BAL) assessment 7

4. Identification of bushfire hazard issues 11

4.1 Bushfire context and issues 11

5. Assessment against the bushfire protection criteria 12

5.1 Compliance table 12
5.2 Additional management strategies 13
5.2.1 City of Kalamunda Firebreak Notice 13
5.2.2 Compliance with AS 3959 13

6. Responsibilities for implementation and management of the bushfire measures 14

7. References 15

List of tables

Table 1: Summary of vegetation classifications, exclusions and effective slope 4
Table 2: Method 1 BAL calculation 7
Table 3: Compliance with the bushfire protection criteria of the Guidelines 12
Table 4: Responsibilities for implementation and management of the bushfire measures 14

List of figures

Figure 1: Location plan 2
Figure 2: Vegetation classification and effective slope - Lot 265 5
Figure 3: Vegetation classification and effective slope - Lot 316 and Lot 321 6
Figure 4: BAL contour assessment and bushfire management measures - Lot 265 9
Figure 5: BAL contour assessment and bushfire management measures - Lots 316 and 321 10

List of appendices

Appendix 1 Asset Protection Zone Standards (Schedule 1, the Guidelines)
Appendix 2 City of Kalamunda Firebreak Notice
Appendix 3 Georeferenced site photos

1. Proposal details

Creative Design and Planning, on behalf of Activ Foundation (the developer), is seeking to amend the Outline Development Plan (ODP) to enable recoding of Lots 265, 316 and 321 Karingel Green, High Wycombe (the project area), situated within the City of Kalamunda.

Figure 1 details the location plan for the proposed development and provides an overview of existing on-ground conditions. The project area is surrounded by existing residential development to the south, west and east, and remnant vegetation to the north and encompasses two separate locations, as outlined below:

- Lot 265 to the west, bound by Lambertia Crescent, Calophylla Way and Hybanthus Avenue
- Lots 316 and 321 to the east, bound by Catspaw Way and Buttercup Crescent.

The project area is situated within a designated bushfire prone area according to the DFES State Map of Bush Fire Prone Areas (DFES 2018; refer to Plate 1), which triggers bushfire planning requirements under Policy Measure 6.3 of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; WAPC 2015).

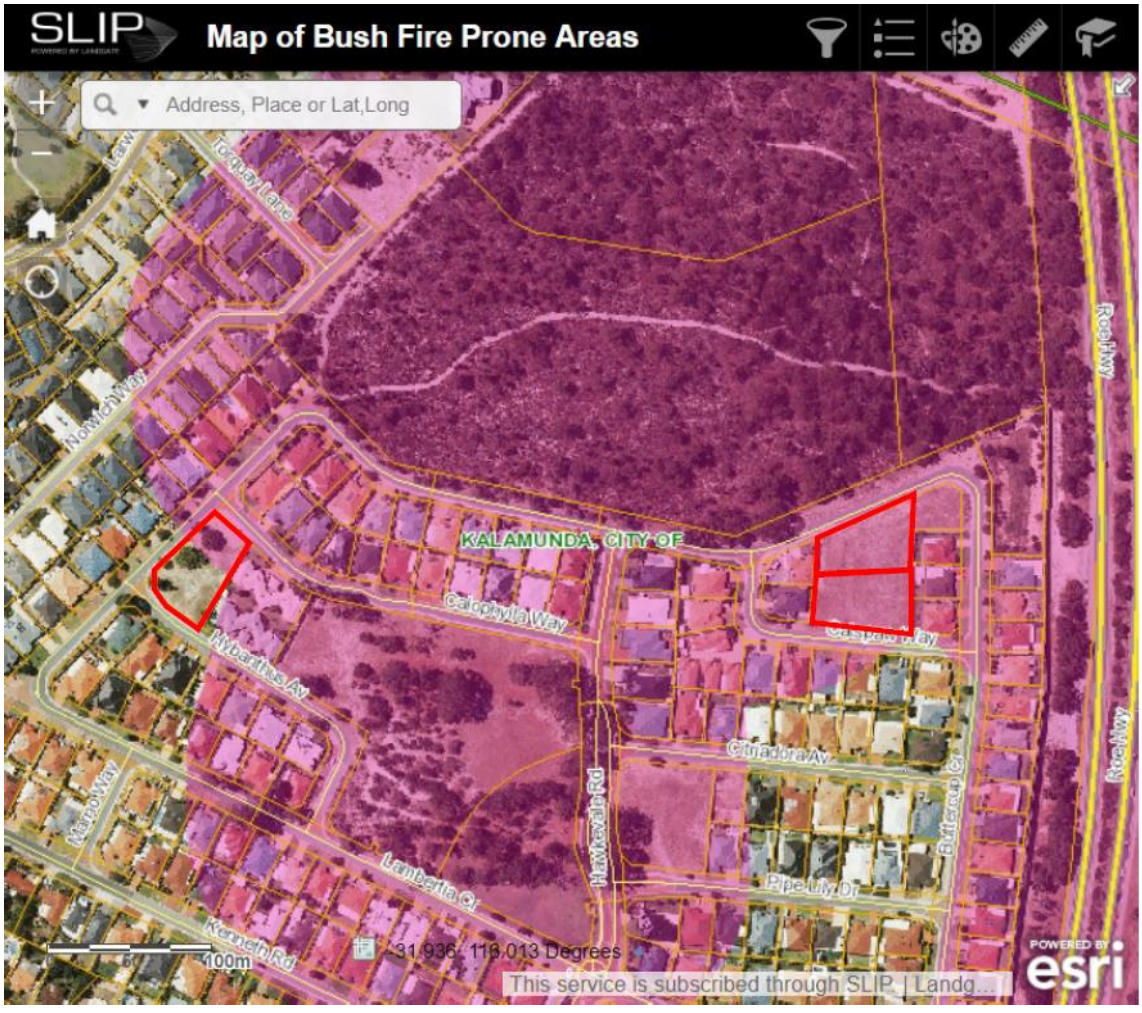


Plate 1: Map of Bushfire Prone Areas 2018 (DFES)

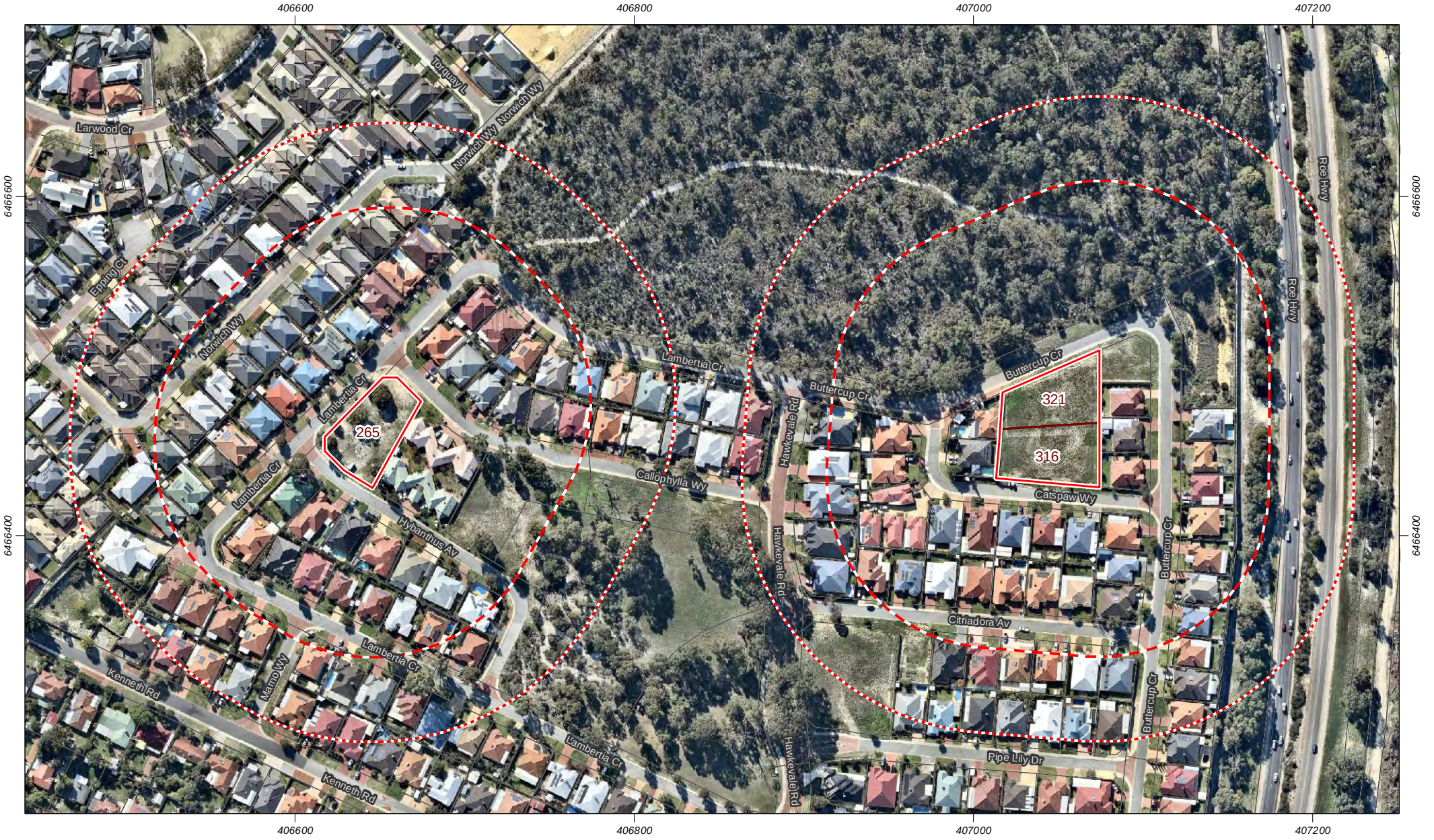


Figure 1: Location plan

N

Scale 1:3,000 at A4

0 40 80 m

Coordinate System: GDA 1994 MGA Zone 50

Date: 6/09/2018

Legend

- Project area
- Lot boundary
- 100m assessment area
- 150m assessment area
- Cadastre

strategen ENVIRONMENTAL

Q:\Consult\2018\CDP\CDP18477\01_GIS_documents\ArcMap_documents\CDP18477_G001_RevA.mxd

© 2017. Whilst every care has been taken to prepare this map, Strategen & Delara Sarban makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Nearmap: Aerial image, flown 06/2018. Landgate: Cadastre, 07/2018. Created by: jcrute

2. Environmental considerations

2.1 Native vegetation – modification and clearing

The subject lots are predominantly cleared apart from three individual trees within Lot 265. Proposed development may require removal of these trees.

A search of publicly available environmental data revealed that:

- Threatened and Priority Flora and Endangered Fauna may exist within the project area and the adjacent vegetation to the north within Hawkesvale Reserve
- no RAMSAR wetlands exist within the project area or the adjacent vegetation
- Hawkesvale Reserve to the north is a Bush Forever site
- no Geomorphic Wetlands of the Swan Coastal Plain exist within project area or the adjacent vegetation
- Environmentally Sensitive Areas exist within the adjacent vegetation
- no Swan Bioplan Regionally Significant Natural Areas exist within the subject lot or the adjacent vegetation
- Banksia Woodland EPBC listed Threatened Ecological Community (TEC) is mapped as likely to occur to the north of the project area within the Hawkesvale Reserve
- no Tuart Woodlands exist within the project area or adjacent vegetation
- Potential Quenda habitat exists to the north within Hawkesvale Reserve
- other Threatened Ecological Communities may exist within the adjacent vegetation
- areas of mapped EPBC listed Carnaby's Black Cockatoo habitat including potential feeding areas, confirmed roosting areas and possible breeding areas exist to the north of the project area within Hawkesvale Reserve.

Strategen understands that since the subject lots are already cleared, the relevant environmental approvals for the proposed development have already been sought as part of previous planning stages.

2.2 Revegetation / Landscape Plans

No revegetation / landscaping is proposed as part of the proposed development.

3. Bushfire assessment results

3.1 Assessment inputs

3.1.1 Vegetation classification

Strategen assessed classified vegetation and exclusions within 150 m of the project area through on-ground verification on 30 August 2018 in accordance with AS 3959 and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP, 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions are contained in Appendix 3.

3.1.2 Effective slope

Site observations identified the effective slope under classified vegetation within the project areas and adjacent 150 m. Results were cross-referenced with DAFWA 2 m contour data.

3.1.3 Summary of inputs

Figure 2 (for Lot 265) and Figure 3 (for Lots 316 and 321) illustrate the anticipated post-development vegetation classifications, exclusions and effective slopes within the project area and adjacent 150 m. A summary of results is provided in Table 1.

Table 1: Summary of vegetation classifications, exclusions and effective slope

Vegetation plot	Applied vegetation classification/ exclusions clause	Effective slope under classified vegetation
1	Class A forest	Downslope >0-5 degrees
2	Class B woodland	Flat / up-slope (0 degrees)
3	Class B woodland	Downslope >0-5 degrees
4	Class D scrub	Flat / up-slope (0 degrees)
5	Class D scrub	Downslope >0-5 degrees
6	Class C shrubland	Downslope >0-5 degrees
7	Class G grassland	Flat / up-slope (0 degrees)
8	Excluded under Clause 2.2.3.2 (e) and (f)	N/A

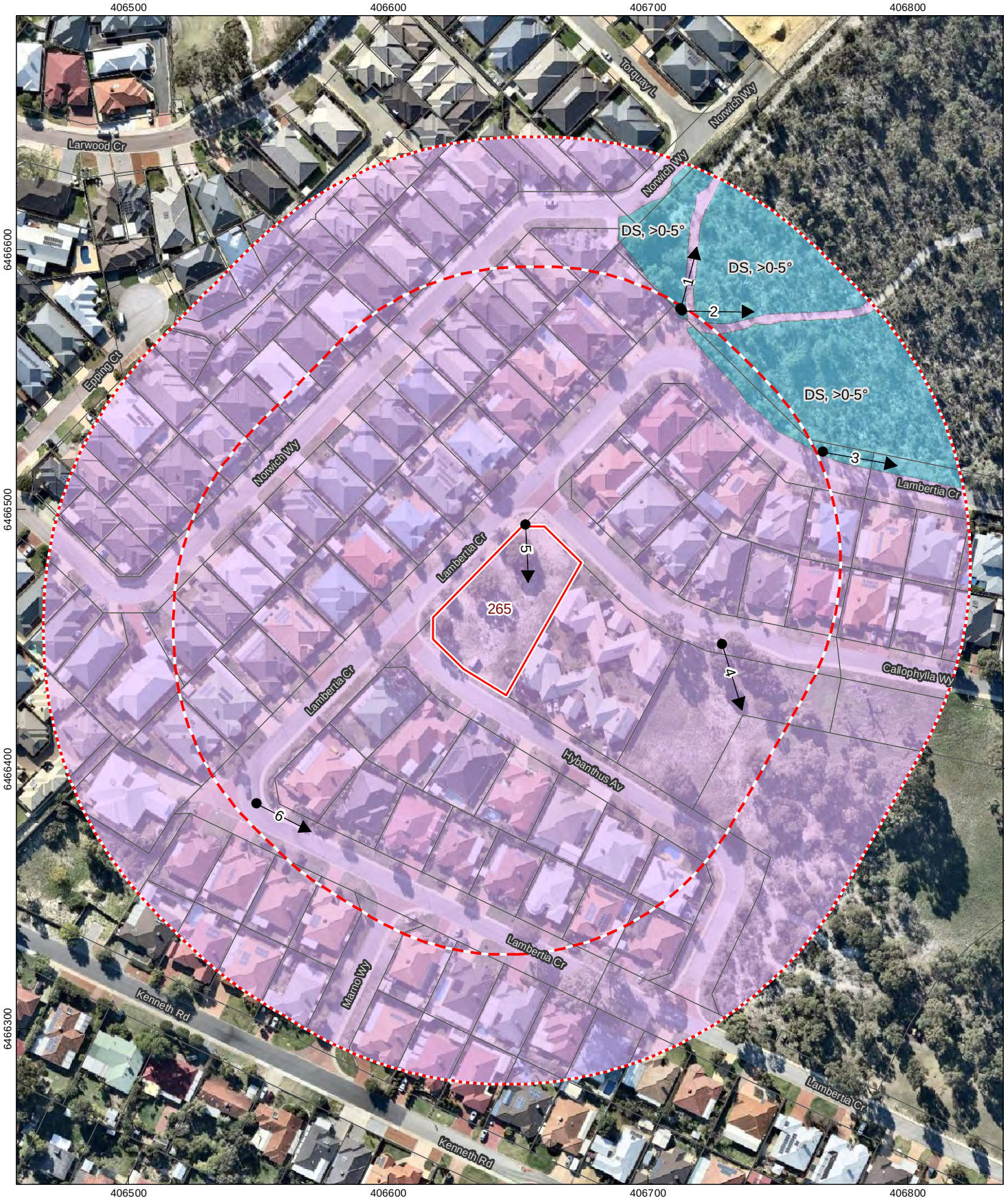


Figure 2: Vegetation classification and effective slope - Lot 265

N

Scale 1:2,000 at A4

0 20 40 m

Coordinate System: GDA 1994 MGA Zone 50

Date: 21/09/2018

Legend

- Photo point and direction
- Project area
- 100m assessment area
- 150m assessment area
- Cadastre

Vegetation class

- Class B Woodland
- Excluded under Clause 2.2.3.2. (e) and (f)

strategen ENVIRONMENTAL

Q:\Consult\2018\CDP\CDP18477\01_GIS_documents\ArcMap_documents\CDP18477_G002_RevB.mxd

info@strategen.com.au | www.strategen.com.au

© 2017. Whilst every care has been taken to prepare this map, Strategen & Delara Sarban makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Nearmap: Aerial image, flown 06/2018. Landgate: Cadastre, 07/2018. Created by: jcrute

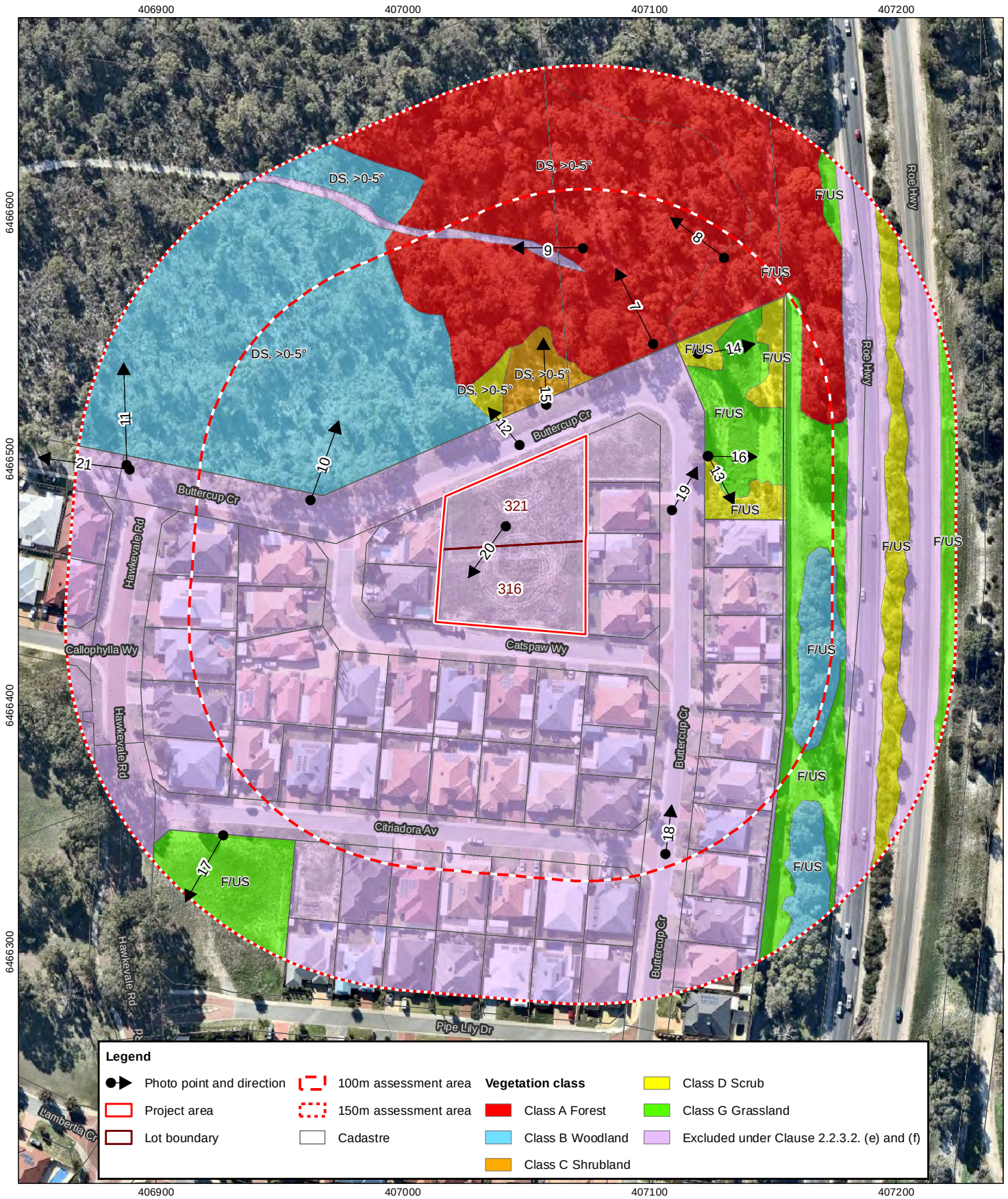


Figure 3: Vegetation classification and effective slope - Lot 316 and Lot 321

N

Scale 1:2,100 at A4

0 20 40 m

Coordinate System: GDA 1994 MGA Zone 50

Date: 21/09/2018

Q:\Consult\2018\CDP\CDP18477\01_GIS_documents\ArcMap_documents\CDP18477_G003_RevB.mxd

info@strategen.com.au | www.strategen.com.au

© 2017. Whilst every care has been taken to prepare this map, Strategen & Delara Sarban makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Nearmap: Aerial image, flown 06/2018. Landgate: Cadastre, 07/2018. Created by: jcrute

3.2 Assessment outputs

3.2.1 Bushfire Attack Level (BAL) assessment

Strategen has undertaken a BAL assessment in accordance with Method 1 of AS 3959 for the proposed development. The Method 1 procedure for calculating the BAL (as outlined in AS 3959) incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation class
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by proposed development and subsequently informs the standard of building construction (if applicable) and/or setbacks required for proposed habitable development to potentially withstand such impacts.

Results of the BAL assessment are depicted in the form of a BAL contour map, provided in Figure 4 (for Lot 265) and Figure 5 (for Lots 316 and 321). Table 2 provides a summary of BAL calculation results and the following provides a summary of the mapped BAL impact over the project area:

- Lot 265 is partially impacted by BAL-12.5 (BAL-Low may be achievable for future development based on an appropriate building setback off Calophylla Way)
- Lot 316 is wholly impacted by BAL-12.5
- Lot 321 is partially impacted by BAL-40; however, a 4 m tapered building setback off the north-eastern corner of the lot fronting Buttercup Crescent in the form of an Asset Protection Zone (APZ) would ensure BAL-29 was achieved (furthermore, additional setbacks off Buttercup Crescent could enable BAL-19 to be achieved).

Table 2: Method 1 BAL calculation

Classified vegetation	Effective slope	BAL contour width (m)	BAL rating	Comment
Class A forest	Downslope >0-5 degrees	<20	BAL–FZ	No development is proposed in this area
		20–<27	BAL–40	No development is proposed in this area (4 m APZ setback – refer to Figure 4)
		27–<37	BAL–29	Development may occur in this area
		37–<50	BAL–19	Development will occur in this area
		50–<100	BAL–12.5	Development will occur in this area
Class B woodland	Flat/upslope	<10	BAL–FZ	No development is proposed in this area
		10–<14	BAL–40	No development is proposed in this area
		14–<20	BAL–29	No development is proposed in this area
		20–<29	BAL–19	No development is proposed in this area
		29–<100	BAL–12.5	Development will occur in this area
Class B woodland	Downslope >0-5 degrees	<13	BAL–FZ	No development is proposed in this area
		13–<17	BAL–40	No development is proposed in this area
		17–<25	BAL–29	Development may occur in this area
		25–<35	BAL–19	Development will occur in this area
		35–<100	BAL–12.5	Development will occur in this area
Class D scrub	Flat/upslope	<7	BAL–FZ	No development is proposed in this area
		7–<9	BAL–40	No development is proposed in this area
		9–<13	BAL–29	No development is proposed in this area

		13–<19	BAL–19	No development is proposed in this area
		19–<100	BAL–12.5	Development will occur in this area
Class D scrub	Downslope >0-5 degrees	<11	BAL–FZ	No development is proposed in this area
		11–<15	BAL–40	No development is proposed in this area
		15–<22	BAL–29	Development may occur in this area
		22–<31	BAL–19	Development will occur in this area
		31–<100	BAL–12.5	Development will occur in this area
Class C shrubland	Downslope >0-5 degrees	<7	BAL–FZ	No development is proposed in this area
		7–<10	BAL–40	No development is proposed in this area
		10–<15	BAL–29	No development is proposed in this area
		15–<22	BAL–19	Development may occur in this area
		22–<100	BAL–12.5	Development will occur in this area
Class G grassland	Flat/upslope	<6	BAL–FZ	No development is proposed in this area
		6–<8	BAL–40	No development is proposed in this area
		8–<12	BAL–29	No development is proposed in this area
		12–<17	BAL–19	No development is proposed in this area
		17–<50	BAL–12.5	No development is proposed in this area

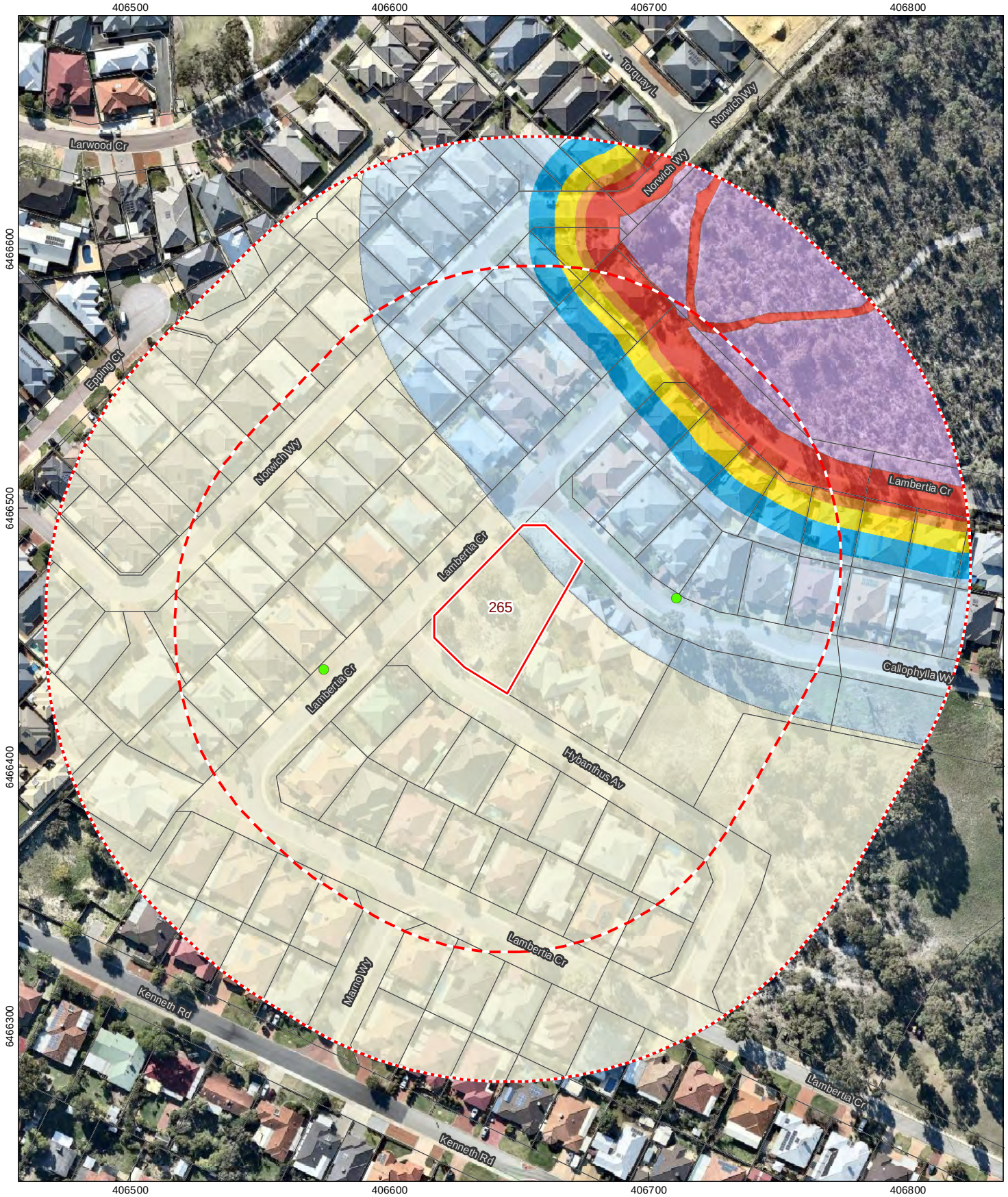


Figure 4: BAL contour assessment and bushfire management measures – Lot 265

N

Scale 1:2,000 at A4

0 20 40 m

Coordinate System: GDA 1994 MGA Zone 50

Date: 21/09/2018

Legend

- Water hydrant
- Project area
- 100m assessment area
- 150m assessment area
- Cadastre
- Classified vegetation

BAL contours

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

strategen ENVIRONMENTAL

Q:\Consult\2018\CDP\CDP18477\01_GIS_documents\ArcMap_documents\CDP18477_G004_RevA.mxd

info@strategen.com.au | www.strategen.com.au

© 2017. Whilst every care has been taken to prepare this map, Strategen & Delara Sarban makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Nearmap: Aerial image, flown 06/2018. Landgate: Cadastre, 07/2018. Created by: jcrute

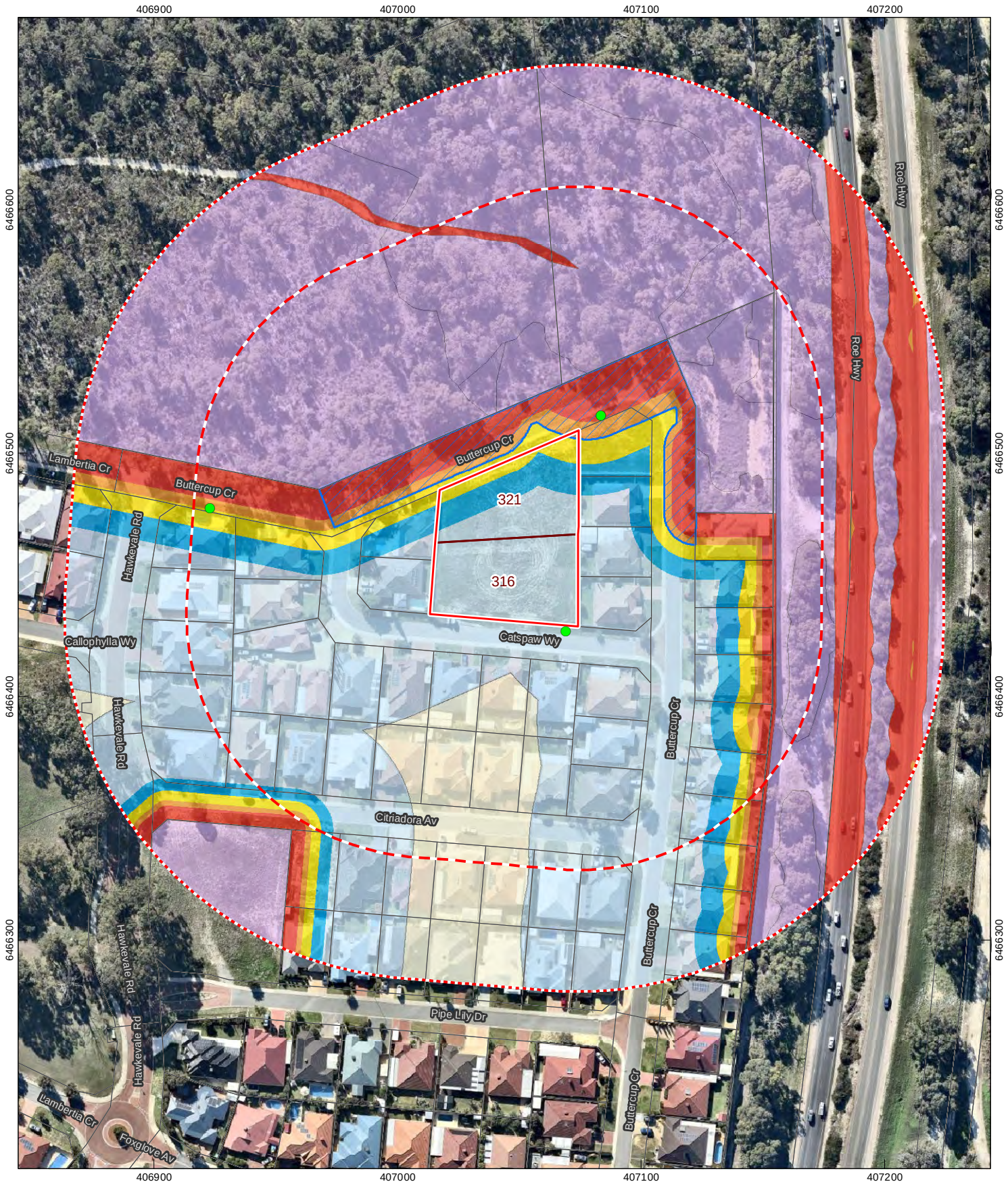


Figure 5: BAL contour assessment and bushfire management measures – Lots 316 and 321

N

Scale 1:2,100 at A4

0 20 40 m

Coordinate System: GDA 1994 MGA Zone 50

Date: 21/09/2018

Legend

- Water hydrant
- Project area
- Lot boundary
- 100m assessment area
- 150m assessment area
- Cadastre
- Classified vegetation
- APZ
- **BAL contours**
- BAL FZ
- BAL 40
- BAL 29
- BAL 19
- BAL 12.5
- BAL Low

strategen ENVIRONMENTAL

Q:\Consult\2018\CDP\CDP18477\01_GIS_documents\ArcMap_documents\CDP18477_G005_RevA.mxd

info@strategen.com.au | www.strategen.com.au

© 2017. Whilst every care has been taken to prepare this map, Strategen & Delara Sarban makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Nearmap: Aerial image, flown 06/2018. Landgate: Cadastre, 07/2018. Created by: jcrute

4. Identification of bushfire hazard issues

4.1 Bushfire context and issues

The project area is predominantly surrounded by a mixture of existing development in the form of roads, residential dwellings and low threat managed landscaping that do not pose a significant bushfire threat.

Given that the subject lots are in a cleared, low threat state, the greatest threat to the proposed development is from intact remnant vegetation retained to the north. Separation from this mixture of forest, woodland, scrub and shrubland vegetation is provided by the 20 m wide Buttercup Crescent road reserve, which forms a permanent and substantial buffer to the proposed development.

The bushfire risk to the proposed development posed by these hazards is considered readily manageable through standard application of acceptable solutions under the Guidelines (see Table 3), as well as through a direct bushfire suppression response if required. Due to the legacy nature of development in the area, the majority of the bushfire protection criteria are already achieved.

5. Assessment against the bushfire protection criteria

5.1 Compliance table

An acceptable solutions assessment against the bushfire protection criteria from the Guidelines is provided in Table 3.

Table 3: Compliance with the bushfire protection criteria of the Guidelines

Bushfire protection criteria	Method of compliance Acceptable solutions	Proposed bushfire management strategies
Element 1: Location	A1.1 Development location	The BAL contour assessment maps (Figure 4 and Figure 5) demonstrate that following implementation of a 4 m tapered APZ setback within Lot 321, the highest BAL applicable to the proposed development is BAL-29.
Element 2: Siting and design	A2.1 Asset Protection Zone	In order to provide sufficient separation from the unmanaged woodland and forest vegetation adjacent to Buttercup Drive, a 4 m wide tapered APZ setback is required within Lot 321 from the northeast. The proposed APZ setback will ensure Lot 321 achieves BAL-29 (additional setbacks could be implemented to further reduce the rating to BAL-19). The mandatory setback requirement could be enforced via standard R-code setbacks and/or via restrictive covenant on title. Lots 265 and 316 are subject to a worst-case rating of BAL-12.5 without any specific APZ requirements; however, Lot 265 could achieve BAL-Low subject to the provision of additional setbacks. APZs are required to be maintained in a low threat state in accordance with Schedule 1 of the Guidelines (refer to Appendix 1).
Element 3: Vehicular access	A3.1 Two access routes.	Proposed development will be serviced by the existing residential road network, enabling occupants to travel safely to two different destinations. Access to the major transport route of Roe Highway can be achieved via Hawkevale Road and Kalamunda Road. In this regard, the proposed development is provided with two access routes which meets the requirements of A3.1.
	A3.2 Public road	N/A – no public roads are proposed as part of the development.
	A3.3 Cul-de-sac (including a dead-end-road)	N/A – no cul-de-sacs are proposed as part of the development and the project area is not serviced by an existing cul-de-sac.
	A3.4 Battle-axe	N/A – no battle-axes are proposed as part of the development and the project area is not serviced by an existing battle-axe.
	A3.5 Private driveway longer than 50 m	N/A – the proposed development will be located within 50 m of a public road.
	A3.6 Emergency access way	N/A – the proposed development does not require EAWs to provide through access to a public road.
	A3.7 Fire service access routes (perimeter roads)	N/A – the proposed development does not require perimeter roads to achieve access within and around the project area.
	A3.8 Firebreak width	The subject lot will be required to comply with the City of Kalamunda Firebreak Notice (see Section 5.2.1 and Appendix 2 for details).
Element 4: Water	A4.1 Reticulated areas	The proposed development is serviced by existing reticulated firefighting water hydrants as illustrated in Figure 4 and Figure 5.
	A4.2 Non-reticulated areas	N/A – reticulated area (A4.1 applies).

Bushfire protection criteria	Method of compliance Acceptable solutions	Proposed bushfire management strategies
	A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	N/A – reticulated area (A4.1 applies).

5.2 Additional management strategies

The following additional bushfire management strategies are to be considered for the proposed development:

5.2.1 City of Kalamunda Firebreak Notice

The subject lots will be required to meet the following relevant requirements of the City of Kalamunda Firebreak Notice for properties 4000 m^2 and under:

- slash grass: have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50 mm across the entire property
- clean gutters: ensure all roofs, gutters and walls of all buildings are free of flammable matter
- remove dead flammable material: maintain all dead flammable material below 8 tonne per hectare.

5.2.2 Compliance with AS 3959

Bushfire construction provisions of the National Construction Code require that buildings comply with the AS 3959 construction requirements in accordance with the assessed BAL under AS 3959, provided the building is a Class 1, 2, 3 or associated Class 10a building.

6. Responsibilities for implementation and management of the bushfire measures

Table 4 outlines the responsibilities of the developer/s, landowner/s and local government with regards to the initial implementation and ongoing maintenance of the required actions.

Table 4: Responsibilities for implementation and management of the bushfire measures

Landowner/occupier - ongoing	
No.	Management action
1	Implement and maintain the 4 m tapered APZ setback to the standards stated in the BMP
2	Comply with the City of Kalamunda Firebreak Notice issued under s33 of the Bush Fires Act 1954
Local government – ongoing	
No.	Management action
1	Maintain road reserves in a low threat state (excluded under Clause 2.2.3.2 (f))
2	Enforce compliance with the City of Kalamunda Firebreak Notice as required

7. References

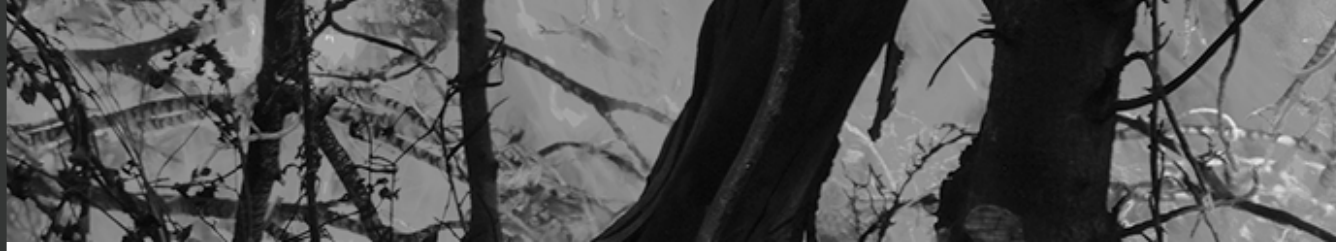
Department of Fire and Emergency Services (DFES) 2018, *Map of Bush Fire Prone Areas 2017*, Department of Fire and Emergency Services, Perth.

Standards Australia (SA) 2009, *Australian Standard AS 3959–2009 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.

Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.

Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.

Appendix 1
Asset Protection Zone Standards
(Schedule 1, the Guidelines)

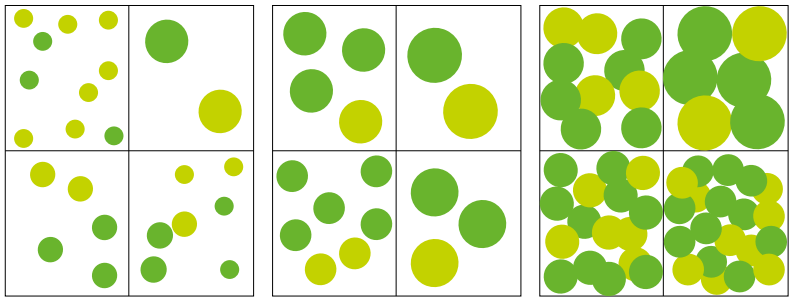


ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

- **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



- **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.

Appendix 2
City of Kalamunda Firebreak Notice

City of Kalamunda 2018/2019

FIRE HAZARD REDUCTION 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 and prevention of bushfires and pursuant to the powers contained in Section 33 of the *Bush Fires Act 1954 (WA)*, as the property owner or occupier of land within the City of Kalamunda, you are hereby required **before 1 November 2018** to comply with the below conditions.

The applicable works outlined below, **must be completed before 1 November 2018** and maintained **up to and including 31 March 2019**.

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.

ALL VACANT LAND

☐ **SLASH GRASS**
Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

VACANT LAND OVER 2000m²

☐ **SLASH GRASS**
Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

☐ **INSTALL FIRE BREAK**
Install and maintain a 3m wide by 4m high clearance, bare mineral earth, trafficable fire break immediately inside the entire perimeter. A reticulated and maintained green lawn may be accepted in lieu of a fire break.

PROPERTIES 4000m² AND UNDER

☐ **SLASH GRASS**
Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

☐ **CLEAN GUTTERS**
Ensure the roofs, gutters and walls of all buildings are free of flammable matter.

☐ **REMOVE DFM** (Dead Flammable Material)
Maintain all dead flammable material below 8 tonne per hectare. (See definition fuel load)

PROPERTIES OVER 4000m²

☐ **SLASH GRASS**
Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

☐ **CLEAN GUTTERS**
Ensure the roofs, gutters and walls of all buildings are free of flammable matter.

☐ **REMOVE DFM** (Dead Flammable Material)
Maintain all dead flammable material below 8 tonne per hectare. (See definition fuel load)

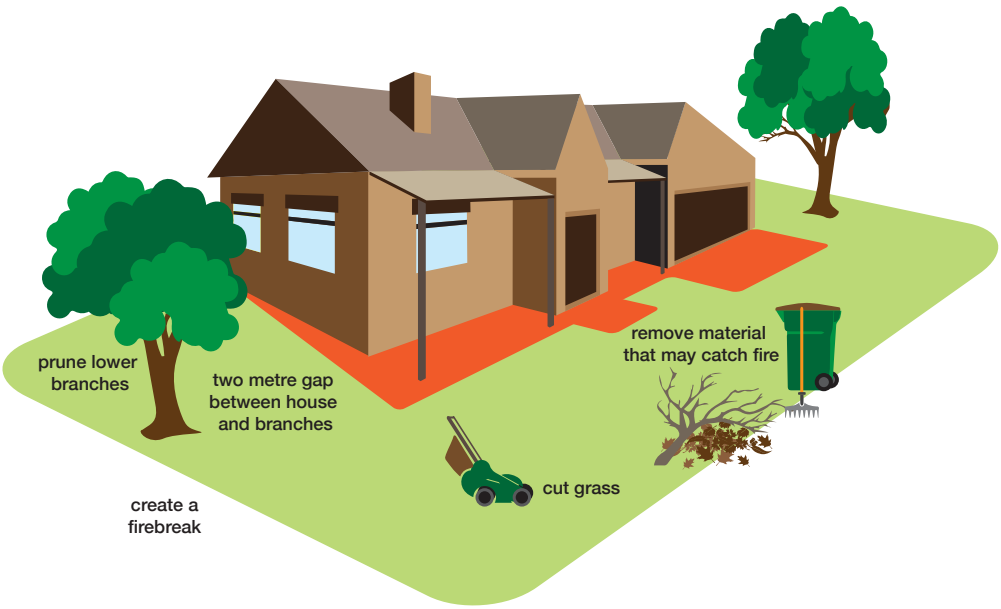
☐ **INSTALL FIRE BREAK**
Install and maintain a 3m wide by 4m high clearance, bare mineral earth, trafficable fire break immediately inside the entire perimeter. A reticulated and maintained green lawn maybe accepted in lieu of a fire break.

☐ **ASSET PROTECTION ZONE (APZ)**
Install and maintain an APZ 20m fuel reduced zone, around buildings or an asset of value which extends from the outermost point, whether residential, commercial, industrial or environmental. Fuel reduced is a reduction in the vegetation sufficient to reduce the impact of bushfire onto that asset.

- Trees over 5m in height must be under pruned to a height of 2m from the ground.
- Trees or shrubs within 2m of the asset, must be pruned to a height no greater than 2m.
- Fuel load within 20m of the asset must be kept to a minimum.

City of Kalamunda 2018/2019 **Fire Hazard Reduction Notice**





ADDITIONAL WORKS

In addition to the noted requirements, 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 reduction (Additional Works) where, in the opinion of the officer, such Additional Works are necessary to prevent the outbreak and/or the spread of a bush fire.

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 2018, 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 at any time.



FUEL DUMPS AND DEPOTS

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

By order of the City of Kalamunda.

Rhonda Hardy
CHIEF EXECUTIVE OFFICER

Phone 9257 9999
Email enquiries@kalamunda.wa.gov.au
Web www.kalamunda.wa.gov.au/fire

DEFINITIONS

Fuel load
This is the leaf litter on the ground inclusive of leaves, twigs (up to 6mm diameter) and bark. A litter depth of 15mm from the top of the layer to the mineral earth beneath is indicative of approximately 8 tonnes per hectare.

city of kalamunda

Appendix 3
Georeferenced site photos



Photo ID: 1

Plot number		Plot 3
Vegetation classification or exclusion clause	**Existing**	Class B woodland
	Post-development	Class B woodland
Description / justification for classification		Sparse eucalyptus woodland over low shrubs with no significant midstorey

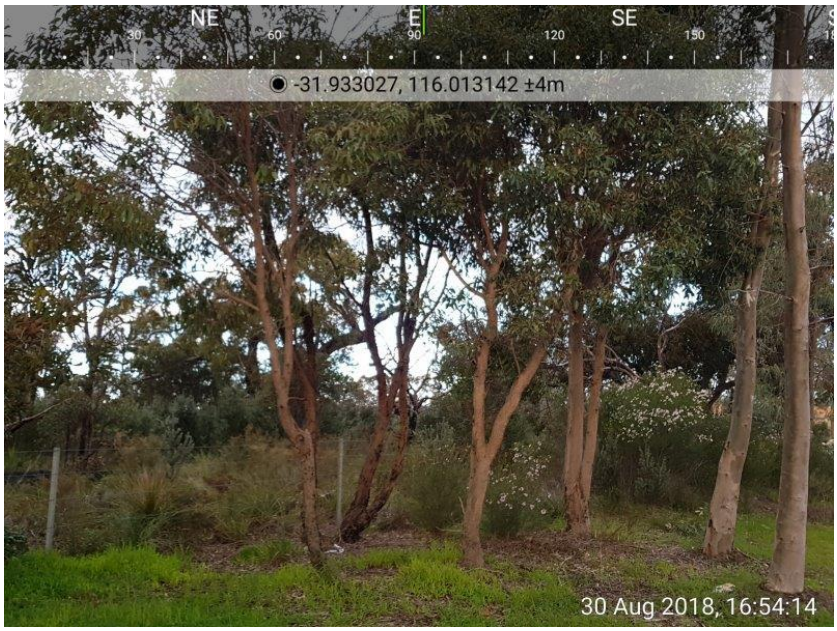


Photo ID: 2

Plot number		Plot 3
Vegetation classification or exclusion clause	**Existing**	Class B woodland
	Post-development	Class B woodland
Description / justification for classification		Sparse eucalyptus woodland over low shrubs with no significant midstorey



Photo ID: 3

Plot number		Plot 3
Vegetation classification or exclusion clause	**Existing**	Class B woodland
	Post-development	Class B woodland
Description / justification for classification		Sparse eucalyptus woodland over low shrubs with no significant midstorey



Photo ID: 4

Plot number		N/A
Vegetation classification or exclusion clause	**Existing**	Excluded under Clauses 2.2.3.2 (e) and (f)
	Post-development	As above
Description / justification for classification		Non-vegetated areas and low-threat vegetation



Photo ID: 5

Plot number		N/A
Vegetation classification or exclusion clause	**Existing**	Excluded under Clauses 2.2.3.2 (e) and (f)
	Post-development	As above
Description / justification for classification		Low threat vegetation (grassland management enforced via annual firebreak notice)

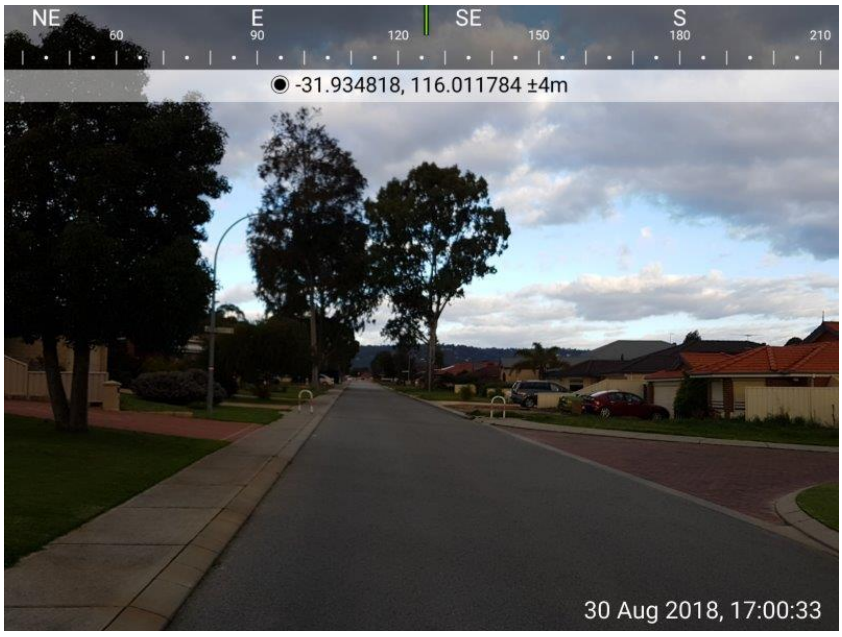


Photo ID: 6

Plot number		N/A
Vegetation classification or exclusion clause	**Existing**	Excluded under Clauses 2.2.3.2 (e) and (f)
	Post-development	As above
Description / justification for classification		Non-vegetated areas and low-threat vegetation

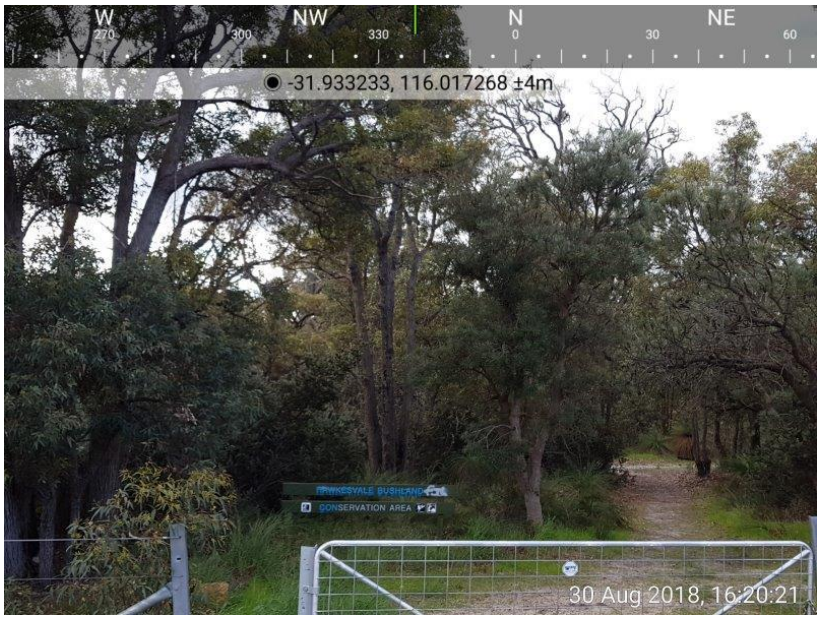


Photo ID: 7

Plot number		Plot 1
Vegetation classification or exclusion clause	**Existing**	Class A forest
	Post-development	Class A forest
Description / justification for classification		Trees 10-20 m with a multi-tiered fuel profile



Photo ID: 8

Plot number		Plot 1
Vegetation classification or exclusion clause	**Existing**	Class A forest
	Post-development	Class A forest
Description / justification for classification		Trees 10-20 m with a multi-tiered fuel profile

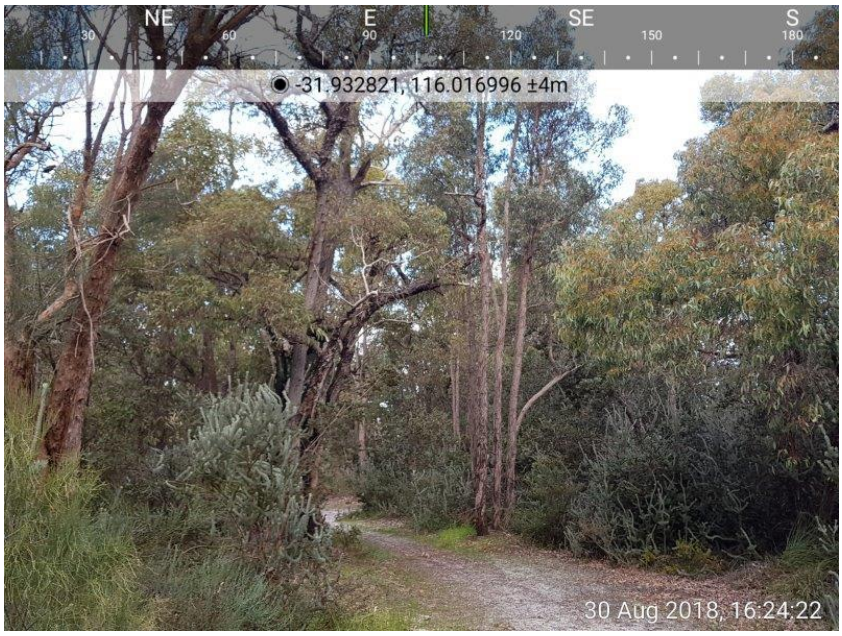


Photo ID: 9

Plot number		Plot 1
Vegetation classification or exclusion clause	**Existing**	Class A forest
	Post-development	Class A forest
Description / justification for classification		Trees 10-20 m with a multi-tiered fuel profile



Photo ID: 10

Plot number		Plot 3
Vegetation classification or exclusion clause	**Existing**	Class B woodland
	Post-development	Class B woodland
Description / justification for classification		Mixture of Banksia and Eucalypts, lacking a shrubby middle layer, trees 5-20 m, low shrub ground cover



Photo ID: 11

Plot number		Plot 3
Vegetation classification or exclusion clause	**Existing**	Class B woodland
	Post-development	Class B woodland
Description / justification for classification		Banksia woodland with low shrub ground cover



Photo ID: 12

Plot number		Plot 5
Vegetation classification or exclusion clause	**Existing**	Class D scrub
	Post-development	Class D scrub
Description / justification for classification		Shrubs greater than 2 m in height



Photo ID: 13

Plot number		Plot 4
Vegetation classification or exclusion clause	**Existing**	Class D scrub
	Post-development	Class D scrub
Description / justification for classification		Shrubs greater than 2 m in height

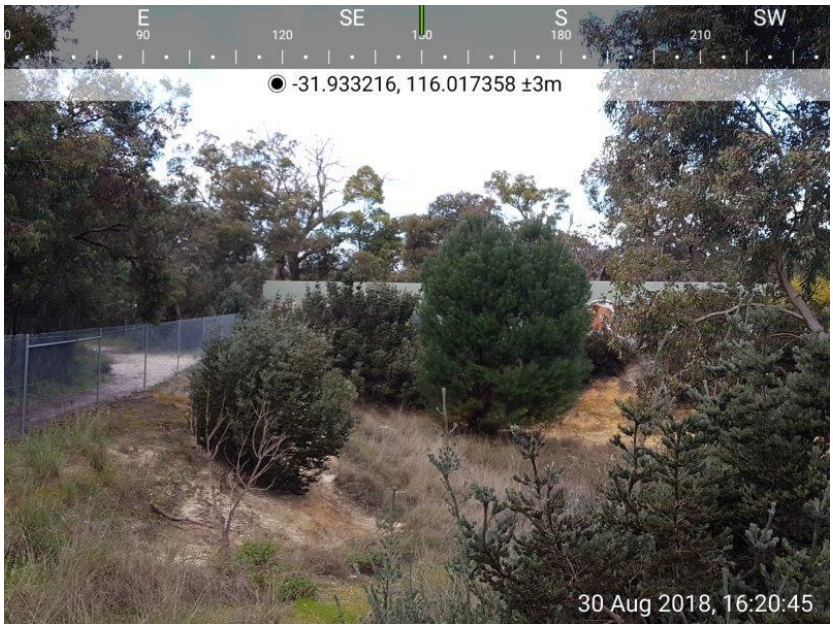


Photo ID: 14

Plot number	Plot 4
Vegetation classification or exclusion clause	Class D scrub
Description / justification for classification	Shrubs greater than 2 m in height



Photo ID: 15

Plot number	Plot 6
Vegetation classification or exclusion clause	Class C shrubland in foreground (Class A forest in background)
Description / justification for classification	Shrubs less than 2 m in height



Photo ID: 16

Plot number	Plot 7
Vegetation classification or exclusion clause	Class G grassland
Description / justification for classification	Fine fuel vegetation structure dominated by grasses.



Photo ID: 17

Plot number	Plot 7
Vegetation classification or exclusion clause	Class G grassland
Description / justification for classification	Fine fuel vegetation structure dominated by grasses. Likely managed in the summer months but classified as a precaution.



Photo ID: 18

Plot number	N/A
Vegetation classification or exclusion clause	Excluded under Clauses 2.2.3.2 (e) and (f)
Description / justification for classification	Non-vegetated and low-threat residential development.

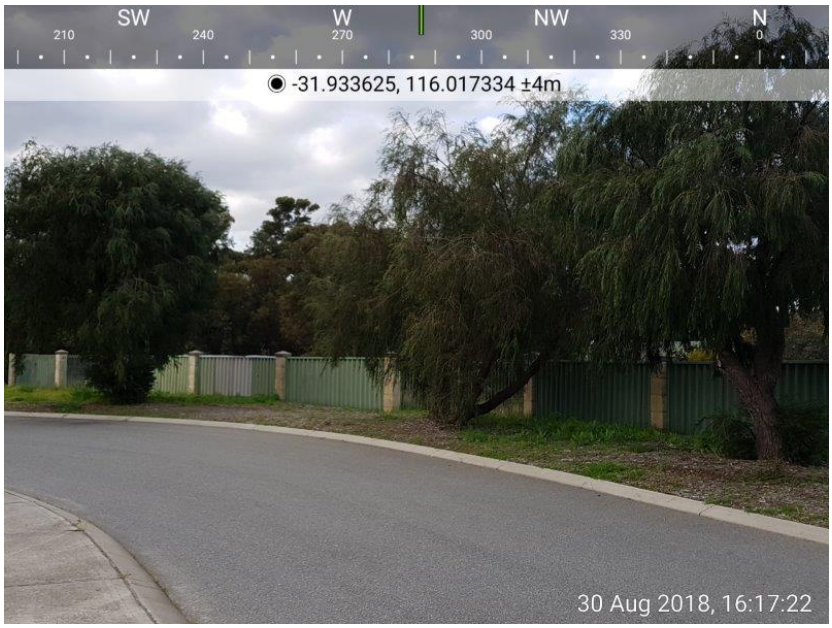


Photo ID: 19

Plot number	N/A
Vegetation classification or exclusion clause	Excluded under Clauses 2.2.3.2 (e) and (f)
Description / justification for classification	Non-vegetated and low-threat residential development



Photo ID: 20

Plot number	Plot 9
Vegetation classification or exclusion clause	Excluded under Clauses 2.2.3.2 (e) and (f)
Description / justification for classification	Non-vegetated and low-threat residential development. Proposed development site to be maintained in a low-threat state (grassland management enforced under annual firebreak notice).

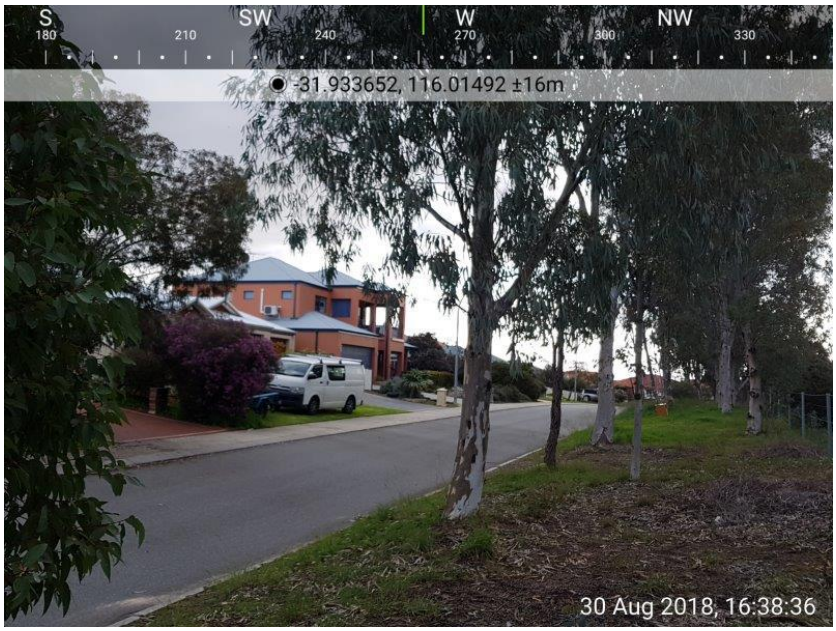


Photo ID: 21

Plot number	N/A
Vegetation classification or exclusion clause	Exclusion under Clause 2.2.3.2 (e) and (f)
Description / justification for classification	Non-vegetated and low-threat residential development. City managed road reserve.

CREATIVE DESIGN + PLANNING
www.creativedp.com.au

28 Brown Street
EAST PERTH WA 6004
PO Box 6697 EAST PERTH WA 6892
P (08) 9325 0200 | **E** info@creativedp.com.au