

The background of the page features several thin, red, curved lines that sweep across the white space, creating a sense of movement and design.

City of Busselton

# STRUCTURE PLAN

LOT 2656 BUTTERLY ROAD YALLINGUP

**Kerygma Pty Ltd**

August 2019

**larry smith planning**

urban and strategic planning & design

City of Busselton

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# STRUCTURE PLAN – RURAL RESIDENTIAL

## Lot 2656 Butterly Road, Yallingup

August 2019

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for Kerygma Pty Ltd

Prepared by:

larry smith planning

In association with:

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smith fire consultants

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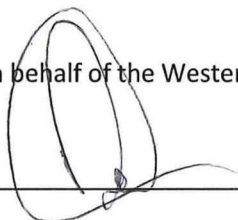
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## ENDORSEMENT PAGE

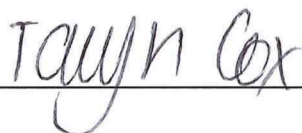
This structure plan is prepared under the provisions of the City of Busselton Local Planning Scheme No. 21.

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON: 21 August 2019

Signed for and on behalf of the Western Australian Planning Commission:



an officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:



Witness

23 August 2019

Date

21 August 2029

Date of Expiry

**TABLE OF AMENDMENTS**

<b>Amendment No</b>	<b>Summary of Amendment</b>	<b>Amendment Type</b>	<b>Date Approved by WAPC</b>

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## structure plan summary

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Lot 2656 Butterly Road, Yallingup was acquired by the current Owners, Kerygma Pty Ltd, in 2014 from the Butterly family who had held and farmed the land and adjoining lands to Wildwood Road since the early 1900's.

The lot, which has an area of 40.05ha, is located within the southern portion of the Commonage Rural Residential Precinct, north of Wildwood Road and west of Commonage Road and has been used for grazing purposes for many years by the former owners and continues to be grazed.

Primary sealed road access to the lot is from Butterly Road, which leads north from Wildwood Road and adjoins the eastern and north-eastern boundaries of the lot. Secondary access is available to the western portion of the lot from Zamia Grove, a sealed road to the south serving a small rural residential enclave leading off Wildwood Road. This access – Dryandra Avenue – is currently unmade but will be constructed as part of the proposed subdivision.

Lot 2656 is divided into two distinct sections by a vegetated, central north south ridge rising to approximately 110m AHD. The land to east of the ridge rises to Butterly Road and is mostly parkland cleared with fringing vegetation to the north and south and characterised by creek running from the SE to NW. The land to the west of the central ridge falls to the west and is parkland cleared with fringing vegetation to the south.

It is considered unlikely that the subject site supports any flora species of conservation significance or Threatened Ecological Communities given that it has been substantially cleared and has experienced prolonged livestock grazing. Six Schedule 1 fauna species have the potential to occur or visit the site for foraging but are unlikely to rely on the site given the extent of clearing and prolonged grazing. No wetlands of conservation significance occur on the site and no known sites of aboriginal heritage are present. A land capability assessment together with soils sampling of the site have determined that the proposed lots are suitable for on-site effluent disposal.

The lot is zoned Rural Residential under the City of Busselton Local Planning Scheme No 21 and it is the intention of the Owners to subdivide the land for rural residential purposes. A number of lots within the proposed subdivision will be owned and developed by members of the Owner's family.

The Structure Plan [*Plan 1 : Structure Plan Map*] proposes a total of 13 lots, 12 ranging in area from 1ha to 2+ha and a large lot of approximately 22ha. The Structure Plan is consistent with the relevant planning instruments except in respect of the minimum lot size for which a reduction from 2ha to 1ha is sought to facilitate the retention of the central ridgeline vegetation, the provision of a rural mosaic and improved landscape outcomes. It is noted that the adjacent Lot 115 approved Structure Plan also employs a reduction in minimum lot size to 1ha.

The proposed subdivision features a large, elevated north-south belt of remnant vegetation within the central portion of the site, dividing the site into two portions. The eastern portion is serviced from Butterly Road and comprises six lots including the large lot. The seven lots of the western portion are serviced by a new road from Zamia Grove – Dryandra Avenue – linking to the internal road network of the adjacent Lot 115 subdivision through to Wildwood Road.

Importantly, the subdivision of Lot 2656 will also resolve alternative fire escape from The Dell Retreat to the immediate north. As part of the subdivision of Lot 2656, it is proposed to construct the existing PAW off The Dell Retreat and a proposed PAW in Lot 115 Wildwood Road to the immediate west to rural road standards. Construction of these PAWS as roads will link The Dell Retreat into the road system of Lot 115 and on to Wildwood Road. The existing and proposed PAW within Lot 115 will also be vested as public roads.

The Structure Plan proposes that significant areas of remnant vegetation be protected within Development Exclusion Areas. The Plan also provides for re-vegetation of the western most portion of Lot 1 and portion of the Creek line within the eastern portion of Lot 1 together with re-establishment of understorey within the Development Exclusion areas. All areas of re-vegetation will be undertaken using low risk indigenous species, particularly those endemic to the area wherever possible.

A Bushfire Management Plan has been prepared for the site which will significantly reduce the fire threat to people and property within the subdivision. The subdivision is unlikely to be staged and all lots will be serviced with underground electricity and communications services and drainage will be via roadside swales.

### Overview – Lot 2656 Structure Plan

Item	Data		Structure Plan Ref (Section No)
Total area covered by the Structure Plan	40.0563ha		
Area of each land use proposed:	Hectares	Lot yield	
• Residential	0	0	
• Commercial	0	0	
• Industrial	0	0	
• Rural Residential	39.4843ha	13	
Total estimated lot yield	13		
Estimated number of dwellings	13		
Estimated residential site density	1 lot / 3.08ha site area		
Estimated population	34 (@2.6p/household)		
Number of high schools	0		
Number of primary schools	0		
Estimated commercial floor space	0		
Estimated area and percentage of public open space given over to:			
• Regional open space	0 hectares	0%	
• District open space	0 hectares	0%	
• Neighbourhood parks	0 hectares	0%	
	0 parks		
• Local parks	0 hectares	0%	
	0 parks		
Estimated percentage of natural Area in private lots	8.9 hectares	22%	

Lot 2656 Butterly Road, Yallingup

City of Busselton

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## PART 1 : STRUCTURE PLAN IMPLEMENTATION

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## 1. structure plan area

This Structure Plan applies to the whole of Lot 2656 on Deposited Plan 153480, Butterly Road, Yallingup within the City of Busselton and as contained in Certificate of Title Volume 1335 / Folio 238 [Appendix 1: Certificate of Title] and the associated proposed road connections on adjacent land, being the land wholly contained within the Structure Plan Area as denoted on the Structure Plan Map (Plan 1).

## 2. operation

This Structure Plan comes into operation on the date the proposed Structure Plan is approved by the WA Planning Commission.

## 3. staging

The subdivision of Lot 2656 is unlikely to be staged.

## 4. subdivision & development requirements

1. Subdivision and development shall be generally in accordance with the approved Structure Plan.
2. No further subdivision of lots identified on the approved Structure Plan Map (Plan 1) shall be allowed.
3. As a condition of subdivision approval for proposed Lots 1 - 6, a 6-metre wide, sealed public road shall be constructed at the developer's cost linking Dell Retreat and proposed Dryandra Avenue on Lot 115. This road link shall follow the alignment of the existing and proposed pedestrian, fire service and emergency access reserves, as shown on Structure Plan Map (Plan 1).
4. Dryandra Avenue and its extension to Zamia Grove is to be aligned, designed and constructed to minimise the clearing remnant vegetation to the satisfaction of the Local Government.
5. As a condition of subdivision and prior to subdivisional works, an Urban Water Management Plan (UWMP) is to be prepared to the satisfaction of the Local Government.
6. As a condition of the first subdivision approval and prior to subdivisional works, a Western Grey Kangaroo Management Plan shall be prepared and implemented to the satisfaction of the Department of Biodiversity, Conservation and Attractions.
7. As a condition of subdivision, the proponent will be required to prepare and implement, to the satisfaction of the Local Government, a Revegetation Plan for the Revegetation Areas and Development Exclusion Areas as shown on the Structure Plan Map (Plan 1). The Revegetation Plan is to consist of local endemic species, including but not limited to 'Western Australian Peppermint' (*Agonis flexuosa*).
8. No development, fencing or clearing of remnant endemic vegetation may take place in a Development Exclusion Area or Revegetation Area; except:
  - for the construction and maintenance of a Local Government approved accessway or firebreak; or
  - where Development Approval for fencing or clearing has been obtained from the Local Government.

In considering any Development Applications, there will be a general presumption against supporting works within the Development Exclusion Areas or Revegetation Areas.

## 5. local development plans

No Local development Plans are required by this Structure Plan.

## 6. other requirements

There are no infrastructure requirements applying to this Structure Plan.

The City of Busselton has adopted a Development Contribution Policy for the general rural areas of the Shire to assist towards the provision of Community Infrastructure.

## 7. additional information

The Structure Plan requires the provision of:

Additional Information	Approval Stage	Consultation Required
Urban Water Management Plan	Condition of subdivision requiring preparation and approval of the Plan prior to commencement of site works and implementation prior to clearance of approval condition.	City of Busselton
Revegetation Plan of Development Exclusion and Revegetation Areas	Condition of subdivision requiring preparation, approval and implementation of the Plan.	City of Busselton
Western Grey Kangaroo Management Plan.	Condition of subdivision requiring preparation, approval and implementation of the Plan.	Dept of Biodiversity, Conservation and Attractions





#### DEVELOPMENT SUMMARY

TOTAL SITE AREA	40.0563ha
TOTAL NUMBER OF LOTS	13
MINIMUM LOT AREA	1.01ha
MAXIMUM LOT AREA	20.24ha
DENSITY	1 Lot / 3.08ha
ROAD RESERVE	5720m <sup>2</sup>

#### NOTES

Base data supplied by Landgate.  
Base mapping supplied by Busseton Survey Office and Survey Graphics.

Areas and dimensions shown are subject to final survey calculations.  
All carriageways are shown for illustrative purposes only and are subject to detailed engineering design.

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#### LEGEND

- Structure Plan Boundary
- Development Exclusion Area
- Revegetation Area



Kerygma Pty Ltd : CLIENT  
1:4,000@A3 : SCALE  
1 July 2019 : DATE  
9125 SP7.5 : PLAN No  
LS : REVISION  
LS : PLANNER  
LS : DRAWN

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## STRUCTURE PLAN MAP LOT 2656 BUTTERLY ROAD, YALLINGUP : PLAN 1



Lot 2656 Butterly Road, Yallingup

City of Busselton

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Appendix 2 : Environmental and Land Capability  
Assessment – Accendo Australia

Appendix 4 : Services Assessment  
Development Engineering Consultants

## 1. planning background

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### 1.1 introduction & purpose

Lot 2656 Butterly Road, Yallingup was acquired by the current Owners, Kerygma Pty Ltd, in 2014 from the Butterly family who had held and farmed the land and adjoining lands to Wildwood Road since the early 1900's.

The Butterly family retain the balance lands towards Wildwood Road (Lot 115) and have obtained Structure Plan and Subdivision Approval for a rural residential estate. Lot 2656 and the Butterly Lot 115 remain as two of the few un-subdivided lots within the southern portion of the Commonage Rural Residential Precinct.

Lot 2656 is located within the southern portion of the Commonage Rural Residential Precinct north of Wildwood Road and west of Commonage Road and has been used for grazing purposes for many years by the former owners and continues to be grazed [Figure 1 : Aerial View].

It is the intention of the current Owners to subdivide the land for rural residential purposes. A number of lots within the proposed subdivision will be owned and developed for rural residential purposes by members of the Owner's family.

The Structure Plan proposes a total of 13 lots, 12 ranging in area from 1ha to 2ha+ and a large lot of approximately 22ha. The proposed subdivision features a large, elevated north-south belt of remnant vegetation within the central portion of the site, dividing the site into two portions [Plan 1 & Figure 2 : Structure Plan Map].

The eastern portion is serviced from Butterly Road and comprises six lots including the large lot, Lot 1. The seven lots of the western portion are serviced by a new road – Dryandra Avenue - leading from Zamia Grove and linking with the internal road network of the adjacent Lot 115 subdivision to the west.

Importantly, the subdivision of Lot 2656 will also resolve alternative fire escape from The Dell Retreat to the immediate north. As part of the subdivision of Lot 2656, it is proposed to construct the existing PAW off The Dell Retreat and a proposed PAW in Lot 115 Wildwood Road to the immediate west to rural road standards. Construction of these PAWs as roads will link The Dell Retreat into Dryandra Ave and on to Wildwood Road. The existing and proposed PAW within Lot 115 will also be vested as public roads.

The Structure Plan proposes that a significant band of remnant vegetation within the central portion of the lot be protected within a Development Exclusion Area. The Plan also provides for re-vegetation of the western most portion of Lot 1 and portion of the creek line within the eastern portion of Lot 1 together with re-establishment of understorey within the Development Exclusion areas. All areas of re-vegetation will be undertaken using low fire risk indigenous species, particularly those endemic to the area wherever possible.

All lots will be serviced with underground electricity and communications services and drainage will be via roadside swales. Soil testing has confirmed suitability for on-site effluent disposal. It is unlikely that the subdivision will be staged.





Source : Landgate

LOT 2656 BUTTERLY ROAD, YALLINGUP

Figure 1 : Aerial View





#### DEVELOPMENT SUMMARY

TOTAL SITE AREA	40.0563ha
TOTAL NUMBER OF LOTS	13
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STRUCTURE PLAN MAP : LOT 2656 BUTTERLY ROAD, YALLINGUP : Figure 2



## 1.2 land description

The subject land is described as Lot 2656 on Plan 153480 in Certificate of Title Volume 1335, Folio 238 [Appendix 1 : Certificate of Title]. The lot has an area of 40.0563ha and is generally “L” shaped being approximately 1160m east to west and 520m north to south in the East narrowing to 300m north to south in the West [Figure 1 : Aerial View].

Primary sealed road access to the lot is from Butterly Road, which leads north from Wildwood Road and adjoins the eastern and north-eastern boundaries of the lot. Secondary access is available to the western portion of the lot from Zamia Grove, a sealed road serving a small rural residential enclave to the south of the lot and leading off Wildwood Road. This access – Dryandra Ave – is currently unmade but will be constructed as part of the proposed subdivision.

Lot 2656 is divided into two distinct sections by a vegetated, central north south ridge rising to approximately 110m AHD.

The land to east of the ridge, which comprises approximately two-thirds of the lot, is characterised by a creek running from the SE to NW with the land each side of the creek rising to the ridge on the west and to Butterly Road on the east. The land abutting Butterly Road lies at around 115m AHD and as a consequence enjoys long range views to the Leeuwin Ridge and ocean glimpses. The eastern portion of the lot is mostly parkland cleared with fringing vegetation to the north and south. Pleasant northward and internal views are also achievable from the lower portions within this eastern area. A locally fed creek flows in a SE to NW direction feeding an existing dam within the eastern portion of Lot 2656.

The land to the west of the central ridge falls to the west to approximately 85mAHD and is parkland cleared with fringing vegetation to the south. Three small dams exist within the western portion of the lot which enjoys pleasant longer range views to the north and west.

Lot 2656 is bounded to the north, east and south by existing rural residential subdivision. The land to the west, Lot 115, the balance of the Butterly family landholdings is the subject of an approved Structure Plan and Subdivision Approval for rural residential purposes. The Lot 115 Structure plan proposes a total of 29 lots ranging in area from 1ha to 4ha based on a loop road system with connection to Wildwood Road. Provision is also made within the Structure Plan for vehicular connection to Lot 2656 mid-way along the western boundary [Figure 3 : Lot 115 Structure Plan Map]. Subdivision of Lot 115 is well progressed.

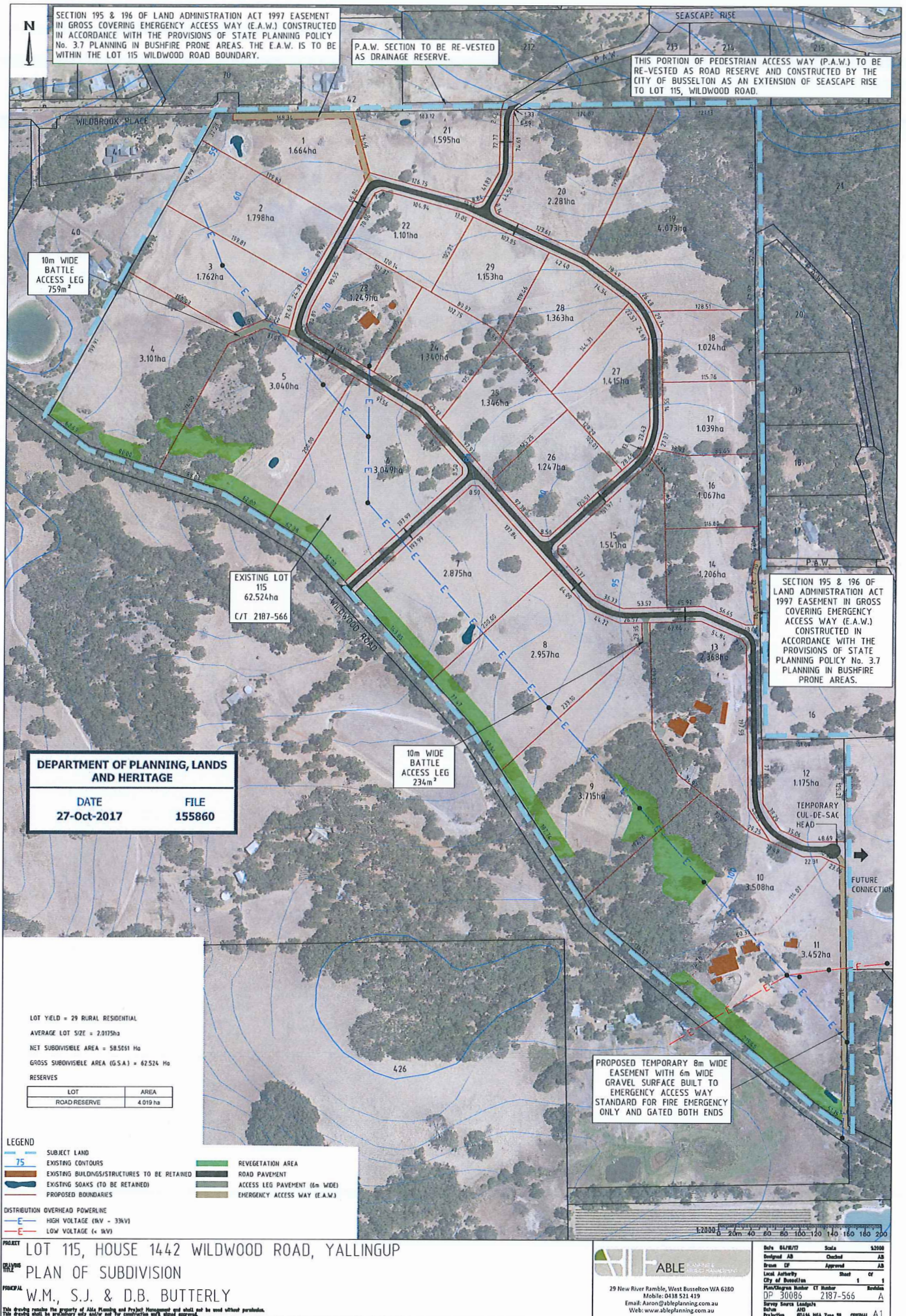
The Owners of Lot 2656 have entered into a Contract of Sale for the purchase of proposed Lot 15 of Lot 115 in order to provide for marginal widening of the road connection from Dell Retreat to Dryandra Ave which provides alternative fire escape for residents of Dell Retreat.

## 1.3 planning framework

The following section considers and discusses only those documents directly relevant to the design and approval of the proposed Structure Plan as the land is zoned Rural Residential. As such subdivision and development of the land for rural residential purposes is therefore compliant with the higher level planning documents including:

- SPP 6.1 – Leeuwin-Naturaliste Ridge Policy;
- South-West Framework;





Source:  
Able Planning & Project Management

Figure 3 : Lot 115 Wildwood Road Structure Plan



- SPP 2 – Environment and Natural Resources Policy; and
- SPP 3 – Urban Growth and Settlement

### **1.3.1 zoning**

Lot 2656, as with the adjoining lots, is zoned Rural Residential under the **City of Busselton Local Planning Scheme No 21** and located within a Landscape Value Area. Other than for Lot 115 to the west, all adjacent lots have been subdivided for rural residential purposes.

Clause 4.2.8 of the Scheme sets out the Objectives and Policies of the Zone:

#### “Objectives

- (a) To encourage development for the purpose of closer rural settlement on land which is suitable for such a purpose, and is in reasonable proximity to existing urban areas.*
- (b) To ensure that development maintains the rural character of the locality, maintains a high level of residential amenity and minimises disturbance to the landscape through construction of buildings and structures, clearing, earthworks and access roads.*
- (c) To enable a range of activities and land uses associated with the residential occupation of land.*
- (d) To discourage or prohibit development not compatible with the predominantly rural nature and residential amenity of the zone.*
- (e) To enable the development of land for other purposes where it can be demonstrated by the applicant that suitable land or buildings for the proposed purposes are not available elsewhere, and where such purposes would not detrimentally affect the rural residential character of nearby land.*
- (f) To direct and control the form rural residential subdivision takes to prevent a demand for the unreasonable and uneconomic provision or extension of services and facilities.*
- (g) To promote and encourage cluster subdivision and other innovative rural residential designs, having consideration for conservation values.*
- (h) To discourage ribbon development along Caves Road and other roads and to maintain the rural and natural ambience of transport corridors generally.*

#### Policies

- (a) To encourage rural residential subdivision by permitting a range of lot sizes in conventional subdivision subject to a general minimum lot area of 1 hectare with an average minimum lot area of approximately 2 hectares; and providing greater flexibility for lots created within appropriate cluster subdivisions or by strata or survey strata subdivision, dependent upon the special physical characteristics of the land.*
- (b) To ensure the provision of road, electricity, postal and telephone services and, where appropriate and practical, water services.*
- (c) To ensure the provision of community facilities and emergency services in the vicinity of rural residential developments.*
- (d) To ensure that services, facilities and recreation areas are centrally located.*

- (e) To encourage generally, and require specifically in rural residential subdivision, the provision of vegetation and fauna corridors and the revegetation of the land.*
- (f) To adequately protect any areas or sites of conservation value within the design of any subdivision and development.*
- (g) To provide flexibility for the development of appropriately located and scaled tourist facilities consistent with preservation of residential amenity.*
- (h) To implement and adhere to the adopted recommendations and outcomes of the Local Rural Planning Strategy, adopted by local government and endorsed by the Commission.*
- (i) To provide opportunities for small-scale agriculture on cleared land of a type that will not lead to land use conflicts with the rural residential use of adjoining land.”*

It is considered that the proposed Structure Plan is consistent with the Objectives and Policies of the Zone as it maintains the rural character of the locality through minimal disturbance of the land and promotes the cluster subdivision approach resulting in significant landscape gains. Further it adopts a minimum 1h lot size providing a range of lot sizes, protects areas of significant remnant vegetation in a major fauna corridor, provides the necessary service infrastructure and significantly improves alternative routes of escape for existing residents.

Clause 6.4 of the Scheme sets down provisions relating to the Landscape Value Area and in particular requires:

*“6.4.1 The local government shall not grant planning approval for the clearing or development of any land identified within a Landscape Value area on the Scheme map, unless it has considered -*

- (a) whether the development will be compatible with the maintenance and enhancement, as far as is practicable, of the existing rural and scenic character of the locality;*
- (b) whether the development will materially affect any wildlife refuge, significant wetland, coastal environment or any identified site containing Aboriginal archaeological relics; and*
- (c) disturbance to the natural environment, including -*
  - (i) visual effects of clearing for development;*
  - (ii) maintenance of rural character; and*
  - (iii) habitat disturbance.*

*6.4.2 The local government shall not grant planning approval for the carrying out of development on land within the Landscape Value area or on land on or near any ridgelines where, in the opinion of the local government, that development is likely to substantially detract from the visual amenity of the area, having regard to, among other things, the cumulative visual effect of the development related to other development that may be anticipated in the locality and in the area generally.”*

The proposed Structure Plan is consistent with Clause 6.4 as it is compatible with the local rural landscape, retains and protects significant areas of remnant vegetation and enhances the rural landscape.

### *1.3.2 regional & sub-regional structure plans*

The **Commonage Area Consolidated Structure Plan** is the primary document directly relevant to the proposed Structure Plan establishes as it establishes the primary criteria for subdivision within the Commonage Area. Lot 2656 is located within Precinct 5B which sets a minimum lot size of 2ha and an average of 3ha, permitting up to 13 lots within Lot 2656. The Structure Plan also seeks to retain the existing creekline within a broader habitat corridor.

The Commonage Structure Plan is a compilation of a number of individual Structure Plans and is in excess of a decade old and in need of review. Since its adoption in 2004 there have been a number of more recent local and regional strategies including the review of the City of Busselton Local Planning Strategy which will impact on the Commonage Structure Plan.

The proposed Structure Plan is consistent with the Commonage Structure Plan except in so far as it adopts a minimum lot size of 1ha to facilitate improved landscape outcomes. The adoption of a 1ha minimum lot is considered essential to maintaining and enhancing the landscape amenity of the site and in particular preservation of the broad belt of remnant vegetation along the central ridge.

### *1.3.3 planning strategies*

The **City of Busselton Local Rural Planning Strategy** establishes the broad land use framework for the rural areas of the City. The Strategy defines eight Precincts of which the Commonage area including the subject site is part of Precinct 6.

The Strategy seeks to:

- Consolidate rural residential land use and provide for a diversification in small-scale and low-key tourist, rural and home based activities in a manner that sustains the existing natural environment, landscape values and residential amenity of the area with well-developed pedestrian and habitat/biodiversity links; and
- Promote the retention of rural amenity and appropriately scaled rural land uses where compatible with rural residential amenity.

The Strategy identifies a number of Objectives under the key areas of Environment, Economic and Social and requires the land use and subdivision be in accordance with the Commonage Consolidated Structure Plan.

The proposed Structure Plan for Lot 2656 is consistent with the Commonage Structure Plan and Rural Strategy as it:

- Protects the substantial tracts of remnant vegetation and creekline vegetation;
- Establishes a significant environmental corridor through the site;
- Provides a mosaic of rural and natural landscape; and
- Through cluster subdivision protects the landscape value of the locality.

The **City of Busselton Local Planning Strategy** (Draft) provides a comprehensive review of the planning of the whole of the City setting broad planning directions for the longer term future which will be

progressively implemented through the review of the Local Planning Scheme and local Planning Strategies and Structure Plans.

In respect of the Commonage area, the Strategy recognises the area as a major rural residential precinct within which the greater bulk of rural housing growth was to be confined. The Commonage Precinct is regarded as being well placed to the major services offered by the Dunsborough Townsite and its limited to poor agricultural values ensures that higher value agricultural land to the south is not impacted by subdivisional pressures for rural residential.

The proposed Structure Plan is consistent with the Draft Local Planning Strategy.

### *1.3.4 planning policies*

**State Planning Policy 3.7 – Planning in Bushfire Prone Areas** requires that land that has a bushfire risk or designated as being bushfire prone be accompanied by a BAL assessment to determine the extent and nature of measures to be undertaken in the subdivision and development of the land to reduce fire risks. A BAL assessment has been undertaken for the proposed Structure and is discussed further in Section 3.1 of Part 2.

The **Acid Sulfate Soils Planning Guidelines** require that subdivision or development of land consider the impact of Acid Sulfate Soils. An assessment of the risk of Acid Sulfate Soils has been undertaken and is further discussed in Section 2.3 of Part 2.

The **Stormwater Management Manual for WA** identifies water sensitive design principles. Stormwater management is discussed further in Section 3.1 of Part 2 and recognises the need for preparation of a Stormwater / Urban Water Management Plan as a condition of subdivision approval.

### *1.3.5 other approvals and decisions*

There are no other approvals and decisions pertaining to this proposal.

### *1.3.6 pre-lodgement consultations*

Pre-lodgement consultation has been held with Planning Officers of the City of Busselton and Department of Planning, Lands and Heritage in respect of utilisation of a minimum lot size of 1ha in lieu of the 2ha required under the Commonage Consolidated Structure Plan. Both sets of Officers generally supported the reduction in minimum lot size subject to retention of the average lot size as proposed by the Structure Plan.

Pre-lodgement consultation has been held with Planning Officers of the City of Busselton to discuss and resolve the Structure Plan now presented and in particular provision of adequate emergency escape routes not only from Lot 2656 but also the exiting rural residential areas to the immediate north. The Structure Plan will resolve long standing concerns in respect of emergency escape from The Dell Retreat.

## 2. site conditions & constraints

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The following section provides an overview of the environmental site conditions and constraints. *Accendo Australia* was engaged by the Owners to undertake an Environmental and Land Capability Assessment. The full Assessment Report appears as Appendix 2.

### 2.1 land use

The subject site has predominately been cleared of native vegetation for agricultural purposes and continues to be used for livestock grazing. Site specific features for the subject site include:

- Isolated paddock trees predominately consisting of Marri (*Corymbia calophylla*), Jarrah (*Eucalyptus marginata*) and Peppermint (*Agonis flexuosa*);
- Several small remnants of native vegetation which have been subjected to livestock grazing;
- A new house and three sheds;
- Six existing soaks/dams; and
- A watercourse which intersects the eastern portion of the subject site.

### 2.2 topography, landform and soils

The natural topography of the subject site is undulating with the elevation ranging from approximately 85 metres (m) Australian Height Datum (AHD) in the north-western corner to 120 m AHD in the north-eastern corner of the subject site.

The subject site lies in the Leeuwin Block geomorphic zone. The Leeuwin Block is a narrow area along the west coast extending between Cape Naturaliste and Cape Leeuwin, dominated by a gently undulating lateritic plateau lying 20-80 m above sea level. Soils on the plateau include loamy gravels and grey deep sandy duplex soils.

The Department of Agriculture and Food's (DAF's) Shared Land Information Portal (SLIP) maps the subject site as occurring within the Wilyabrup Valleys and the Cowaramup Uplands soil-landscape unit systems, described as:

- Wilyabrup Valleys System: Granitic valleys, in the Leeuwin Zone. Loamy gravel, sandy gravel and loamy earth; and
- Cowaramup Uplands System: Lateritic plateau, in the Leeuwin Zone. Sandy gravel, loamy gravel and grey sandy duplex.

The soil units associated with these systems that occur within the subject site include:

- Wilyabrup narrow valley floor Phase: Narrow V-shaped drainage depressions;
- Wilyabrup gentle slope Phase: Gentle valley slopes on colluvium and weathered mantle over granite;
- Cowaramup gentle slope Phase: Lateritic rises and gentle slopes on weathered mantle over granite (approximately 16.58 ha); and



- Cowaramup wet vales Phase - Small, broad U-shaped drainage depressions with swampy floors. Gravelly duplex (Forest Grove) soils on sideslopes and poorly drained alluvial soils on valley floor.

During the Accendo site visit, two test pits were excavated to an approximate depth of 1.5 m below ground surface. Two discrete soil units were observed within the subject site which included:

- Loamy gravels; and
- Grey, deep sandy duplex soils.

## 2.3 acid sulfate soils

Acid Sulfate Soils (ASS) is the common name given to naturally occurring soil and sediment containing iron sulfides. Mapping prepared by the Department for Planning and Infrastructure (DPI) to support the Western Australian Planning Commission's (WAPC's) Planning Bulletin 64: *Acid Sulfate Soils* (WAPC 2007) indicates that the majority of the subject site is classified as having a *"moderate to low risk of ASS, generally occurring at a greater depth than 3 metres"* with the remainder of the subject site having *"no known risk of ASS, generally occurring at a greater depth than 3 metres"*.

During excavation of the two test pits, no soil or groundwater characteristics associated with ASS or the formation of ASS were identified.

## 2.4 site contamination

The majority of the land within the subject site can be described as cleared land for rural purposes. Based on anecdotal evidence, chemicals and petrochemical substances have not been stored or used on the subject site. Furthermore, no evidence of asbestos, chemical drums/containers or other indicators of contamination were identified during the recent site visit.

A search of the Department of Water and Environment Regulation's (DWER's) known contaminated sites database (DWER 2016) identified that the subject site is not listed as a contaminated site. No contaminated sites have been identified in proximity to the subject site.

Given the previous land use and absence of any evidence relating to contamination, the risk of site contamination is considered low and no further action is required.

## 2.5 hydrology

### 2.5.1 groundwater

The subject site is located within the proclaimed Busselton–Capel Groundwater Area and the Dunsborough–Vasse Groundwater Sub-area.

Groundwater within the locality typically occurs in thin lenses of coarse quartz sands overlying bedrock usually at depths greater than 7 m beneath the ground and do not represent a significant groundwater resource. During excavation of the test pits, no groundwater was encountered.

The subject site does not lie within any existing or potential Public Drinking Water Source Areas (PDWSA).

No requirement for fill and/or subsoil drainage is expected.

### 2.5.2 surface Water

Surface water predominately drains in a north-west direction towards several incised vales within the subject site. These vales amalgamate with the watercourse that intersects the eastern portion of the subject site, and ultimately discharges to the Donald Creek located approximately 650 m from the subject site. The Donald Creek is an ephemeral tributary of the Gunyulgup Brook. The Gunyulgup Brook catchment drains an area of 47 km<sup>2</sup> and discharges into the sea at Smith's Beach, south of the Yallingup townsite (Hunt *et al.* 2002).

The subject site contains six dams which have been excavated to provide water for livestock. It is probable that they receive water by a combination of underground springs and the seepage of rainwater along the interface between soil and bedrock.

A minimum 30 m buffer should be provided from any building envelope to the watercourse. To enable further protection of the onsite watercourse, it is recommended that the remnant vegetation adjacent to the waterway within the north-eastern portion of the subject site is retained and fenced.

## 2.6 wetlands

Wetlands within Western Australia are classified on the basis of landform and water permanence pursuant to the Semeniuk (1995) classification system.

The subject site does not contain any other mapped wetlands of conservation significance.

## 2.7 vegetation and flora

### 2.7.1 flora

A search for known rare and Priority flora within or in proximity to the subject site was undertaken through a review of databases.

A total of 19 conservation significant flora have been recorded within 5 km of the subject site including 14 species of Priority Flora and five Declared Rare species. The EPBC Act Protected Matters database search returned ten results for listed Threatened flora species.

Based on available soil types within the subject site, it is possible for three species of conservation significance to occur within the subject site. Nonetheless, it is considered unlikely that the subject site supports any flora species of conservation significance given that it has predominately been cleared and has experienced prolonged livestock grazing.

The proposed Structure Plan has been specifically designed to avoid impacts to vegetation by establishing 'Development Exclusion Zones' that contain remnant vegetation. Roads have also been strategically designed to avoid remnant trees as far as practicable.

### 2.7.2 vegetation

The vegetation of the subject site falls within Beard's Menzies botanical sub-districts of the Darling Botanical District (Beard 1981). Beard described Vegetation Systems within the botanical districts which summarize the range of vegetation formations present. The subject site is situated within the Chapman Vegetation System which consists of Jarrah–Marri forests that may be stunted in places by poor drainage.

Within the locality Flooded gum (*Eucalyptus rudis*) and Black butt (*E. patens*) may occur locally on heavier soils with thickets dominated by *Taxandria linearifolia* found in a narrow zone along drainage lines.

According to vegetation mapping by Matiske (1998), the subject site falls within the Cowaramup (C2) and Wilyabrup (W2) Vegetation Complexes.

The mapped Matiske (1998) vegetation complexes can be used to determine vegetation extent and status within a bioregion. The EPA recognises vegetation associations that are not well represented in reserves as being 'significant'.

The national objectives and targets for biodiversity conservation in Australia have a target to prevent clearance of ecological communities with an extent below 30% of their pre- European extent remaining. In relation to the subject site, Cowaramup – Cw2 is the only vegetation complex that has less than 30% of its pre- European extent remaining.

Based on site observations and analysis of aerial photography, the subject site has been extensively cleared, resulting in highly degraded vegetation primarily consisting of introduced grasses. Areas of remnant vegetation have historically been grazed by livestock resulting in scattered paddock trees and isolated remnants of Jarrah, Marri and Peppermint trees. Notwithstanding this, the watercourse which traverses the subject site does contain areas of vegetation that retain some structure. On this basis, the vegetation condition is considered to range from 'Completely Degraded' to 'Degraded'.

A search was undertaken of the DBCA's Threatened Ecological Communities (TEC) database and the EPBC Act Protected Matters database for Threatened Ecological Communities (TEC's). No known TECs have been recorded within a one kilometre radius of the subject site. Furthermore, native vegetation within the subject site is predominately restricted to grazed remnants of vegetation and therefore it is considered very unlikely to contain a vegetation community of conservation significance.

### 2.7.3 Environmentally Sensitive Areas

Section 51B of the EP Act allows the Minister to declare an Environmentally Sensitive Area (ESA). The subject site does not contain any mapped ESAs.

## 2.8 fauna

A search of the Department of Biodiversity, Conservation and Attractions (DBCA) Threatened Fauna database was undertaken to establish whether Scheduled species as listed under the *Wildlife Conservation Act 1954* have been recorded in proximity to the subject site. Fourteen fauna species listed as Schedule 1 species and nine Schedule 3 species have been recorded within a 5 km radius of the subject site. Additionally, the DBCA Priority fauna database identified one Priority 3, two Priority 4 and one Priority 5 species' within this zone.

The EPBC Act Protected Matters Search Tool also identified several threatened and migratory species that could potentially occur within or in proximity to the subject site. This included six species classified as Vulnerable, six Endangered species and eight Migratory bird species.

Of the abovementioned conservation significant species, based on preferred habitat types, six species have the potential to occur within the subject site. A further assessment to determine the likelihood of the remaining three species to occur within the subject site is provided below.

- ***Merops ornatus* (Rainbow Bee-eater) (Migratory)** : This is a widespread aerial species that does visit disturbed sites. While it may infrequently visit the subject site, the species will move away from disturbances. Furthermore, the subject site does not provide habitat critical for the survival of this species.
- ***Phascogale tapoatafa* subsp. *tapoatafa* (Southern Brush-tailed Phascogale) (Endangered)** : This species is known to occur from Perth to Albany. It occurs at low densities in the northern Jarrah forest. The highest densities occur in the Perup/Kingston area, Collie River valley, and near Margaret River and Busselton. Records are less common from wetter forests.

The current status of this species in the general area is difficult to determine. Most of the subject site is unsuitable for the species due to extensive clearing. The subject site does not provide habitat critical for the survival of this species.

- ***Pseudocheirus occidentalis* (Western Ringtail Possum) (Vulnerable)** : The Western Ringtail Possum (WRP) is endemic to the south-west of Western Australia. With the exception of the few isolated inland populations in Eucalypt forests, the WRP generally occurs in coastal Peppermint (*Agonis flexuosa*) woodland, Peppermint/Tuart (*Eucalyptus gomphocephala*) woodland, and Peppermint/Eucalypt woodland associations, with the highest density populations occurring within the Busselton to Dunsborough coastal strip. This species has also been recorded in proximity to the subject site in low densities.

The availability of coastal Peppermint trees and based on previous surveys within proximity to the subject site, the WRP may occur within the subject site at low densities.

- ***Calyptrorhynchus banksia naso* (Forest Red-tailed Black Cockatoo) (Vulnerable)** : The Forest Red-tailed Black Cockatoo occurs in the south-west of Western Australia, approximately south-west of a line between Gingin and the Green Range (near Wellstead, east of Albany). The range of this sub-species is closely associated with the distribution of Marri (*Corymbia calophylla*); its favoured nesting and foraging tree species. This species typically breeds in tree hollows with a depth of 1 – 5 m primarily in Marri (*Corymbia calophylla*) and Jarrah (*Eucalyptus marginata*).

During the recent site visit, potential breeding habitat for this species was identified within the subject site.

Given the potential availability of foraging and breeding habitat within the subject site, the Forest Red-tailed Black Cockatoo may visit the subject site.

- ***Calyptrorhynchus latirostris* (Carnaby's Black Cockatoo) (Endangered)** : Carnaby's Black Cockatoo occurs in the south-west of Western Australia, approximately south-west of a line between the Murchison River (near Kalbarri) and Cape Arid National Park (east of Esperance). This species has been recorded in proximity to the subject site. The subject site is located outside of the Carnaby's Black Cockatoo breeding range (SEWPaC 2012).

Carnaby's Black Cockatoo forages in native shrubland, kwongan heathland and woodland dominated by proteaceous plant species such as Banksia spp., Hakea spp. and Grevillea spp. (SEWPaC 2012).

Carnaby's Black Cockatoo may visit the subject site for breeding purposes. However, given that remnant vegetation does not contain preferential foraging habitat for this species, its occurrence is considered unlikely.

- ***Calyptorhynchus baudinii* (Baudin's Black Cockatoo) (Endangered)** : Baudin's Black Cockatoo occurs in the south-west of Western Australia, approximately south-west of a line between Morangup (near Bullsbrook, north of Perth) and Waychinicup National Park (east of Albany). This species generally breeds in the Karri, Marri and Wandoo forests in the southern parts of the species' range and move north to the Darling Range and Swan Coastal Plain during autumn and winter.

Baudin's Black Cockatoo may visit the subject site for breeding and/or foraging purposes. However, given that remnant vegetation within the subject site is largely restricted to scattered paddock trees, this species is very unlikely to rely on the subject site for its persistence.

While the occurrence of WRPs within the subject site is unknown, the establishment of the 'Development Exclusion Zone' and the strategic road design protects the majority of remnant vegetation within the subject site. On this basis, any potential impacts to this species as a result of the proposed subdivision are expected to be minimal.

## 2.9 aboriginal heritage

All Aboriginal sites in Western Australia are provided protection under the *Aboriginal Heritage Act 1972*. An online search for relevant Aboriginal heritage information was undertaken using the Department of Aboriginal Affairs (DAA) Aboriginal Inquiry.

Results of the DAA database search revealed that no Aboriginal heritage sites are present within the subject site. Nonetheless, it is important to note that Aboriginal heritage sites may still exist in or adjacent to the subject site that are not yet known to DAA, or may not yet been listed on the Aboriginal Heritage Register.

## 2.10 effluent disposal

### 2.10.1 effluent disposal criteria

Land capability assessment (LCA) refers to the ability of land to support a type of land use without causing damage (Austin & Cocks 1978). It considers both the specific requirements of the land use including the risks of degradation associated with the land use.

The Department of Agriculture and Food (DAF) has developed a system for the assessment of land capability for various land uses including rural-residential, hobby farming and agriculture (Wells and King 1989). Furthermore, the Draft *country sewerage policy* (Department of Health 2003) requires the demonstration that an area of suitable land is available for long term onsite wastewater disposal.

In order to provide a measure of on-ground verification of the site characteristics that can in turn be used to conduct the LCA, a number of site-specific parameters were investigated during the Accendo site visit on the 9<sup>th</sup> November 2016. These included:

- Excavating two test-pits to an approximate depth of 1.5 m; and
- Collection and analysis of soil samples from each of the test-pits for Phosphorus Retention Index (PRI).

### *2.10.2 assessment of land qualities*

The DAF have developed a set of criteria for the assessment of the ability of land to support septic tank systems (Wells 1989). The criteria can also be used to determine the suitability for effluent disposal from Aerobic Treatment Units (ATUs). The process of evaluation involves the detailed consideration of land qualities, land use requirement and land characteristics. The land qualities associated with 'onsite effluent disposal' include:

- Waterlogging risk;
- Microbial purification ability;
- Ease of excavation;
- Flood hazard;
- Land instability hazard; and
- Soil absorption ability.

The DAF has prepared a general land capability rating system that can be applied to all soil types. An assessment of the land qualities based on a desktop and site specific investigation has been undertaken for the following three soil units within the subject site:

- Wilyabrup gentle slope Phase;
- Cowaramup wet vales Phase; and
- Cowaramup gentle slope Phase.

The Wilyabrup narrow valley floor Phase has been excluded from this assessment as building envelopes and associated infrastructure will not be contained within this soil unit given its proximity to the watercourse.

**Waterlogging** : The DAF have categorised the risk of waterlogging for the assessed soil units as follows:

Wilyabrup gentle slope Phase - less than 3% risk;

Cowaramup wet vales Phase – 50 to 70%; and

Cowaramup gentle slope Phase - 10 to 30% risk (van Gool 1990).

**Microbial Purification Risk** : The DAF have categorised the microbial purification risk for the assessed soil units as follows:

Wilyabrup gentle slope Phase - 10 to 30% risk;

Cowaramup wet vales Phase – 50 to 70% risk; and

Cowaramup gentle slope Phase - 10 to 30% risk (van Gool 1990).

Depth to the water table is a key consideration regarding microbial purification as it affects the effluent travel time available for removal of microbes and for organic matter to be oxidised prior to reaching the water table. The accepted standard depth of soil required for adequate microbe removal is 1.2 m. During excavation of the test pits (to a depth of 1.5), groundwater was not encountered. Anecdotal information suggests that depth to groundwater is in excess of 7 m below ground surface.

**Phosphorus Export Risk :** The DAF have categorised the risk of phosphorus export risk for the assessed soil units as follows:

Wilyabrup gentle slope Phase - 10 to 30% risk;

Cowaramup wet vales Phase – 30 to 50% risk; and

Cowaramup gentle slope Phase - 10 to 30% risk (van Gool 1990).

PRI quantifies the ability of a soil to bind and retain phosphate and therefore the capacity for the purification of nutrients. Soils with an increased PRI have an elevated capacity to retain phosphate and remove nutrients. During the excavation of the two test pits within the subject site, soil samples were collected and analysed for PRI. The results demonstrate that the PRI of the soil samples have a moderate to high capacity to bind and retain nutrients.

**Ease of Excavation :** At approximately 1.5 m below ground surface within the Wilyabrup gentle slope Phase soil unit, laterite rocks and stiff clay profiles were encountered. On this basis, ease of excavation of this soil unit is moderate. To a lesser extent clayey sands were also identified within the Cowaramup gentle slope Phase.

**Flood Risk :** The DAF have categorised the Wilyabrup gentle slope Phase and the Cowaramup gentle slope Phase land units as having a 3–10% risk of flooding, while the Cowaramup wet vales Phase has a marginally increased risk of 10-30%. Notwithstanding this, in consideration of the elevated topography of the subject site, the flood risk is considered very low.

**Land Instability Hazard :** All land units within the subject site have been assessed as having a low land instability risk which can be attributed to the gently undulating slopes.

**Soil Absorption Ability :** The loamy gravel and sandy gravel soil horizons within the Wilyabrup gentle slope Phase and the Cowaramup gentle slope Phase are permeable with only 3-10% of the land unit having poor soil absorption ability. The Cowaramup wet vales Phase are slightly less well drained with 10-30% of the land unit having poor soil absorption ability.

### *2.10.3 onsite effluent disposal*

The physical and chemical characteristics of the three assessed soil units have been examined and capability classes assigned to the 'onsite effluent disposal' land use.

The Wilyabrup gentle slope Phase and the Cowaramup gentle slope Phase soil units have been assessed as having a High capability to support onsite effluent disposal, while the Cowaramup wet vales Phase has a Moderate capability. The potential constraining land qualities associated with this soil unit are 'purification ability', 'waterlogging', 'absorption ability' and 'ease of excavation'. The Moderate capability rating can be attributed to this land units association with the watercourse that intercepts the subject site. Nonetheless, with appropriate setbacks and management measures, these constraints can be easily overcome.

The conventional system for onsite disposal and treatment of domestic liquid waste consists of one or more septic tank units connected to a soil absorption system such as a leach drain. Septic tank units are typically connected to two leach drains to enable the release of effluent. Successful functioning of this system relies on the soils ability to absorb and purify the effluent.

Based on the results of the LCA, the use of onsite effluent disposal systems is considered suitable within the assessed soil units. It will however, be necessary to consider the use of appropriate earthmoving

equipment (i.e. 20 tonne excavator or heavier), setbacks to the watercourse and erosion controls during construction works.

Management requirements for the use on onsite effluent disposal systems for the assessed soil units include the following:

- The surface gradient of the disposal area should be less than 10%;
- The distance between the base of the disposal system (i.e. trench bottom, bed base) and the groundwater table and impermeable layer (i.e. bedrock, clay) should not be less than 1.2 m ;
- On completion of the proposed disposal area, appropriate landscaping should be undertaken (i.e. planting of shallow rooted grasses / shrubs);
- A 30 m buffer is required from private water supplies (intended for human consumption) to the effluent disposal area; and
- Provision of a 30 m setback from the effluent disposal area to the watercourse and any soaks/dams.



### 3. technical studies

The following section provides an overview of the fire management and engineering conditions and constraints.

- *Smith Bushfire Consulting* was engaged by the Owners to undertake a BAL and Bushfire Management Plan. The full BMP Report appears as Appendix 3.
- *Development Engineering Consultants* was engaged by the Owners to undertake an Engineering Assessment. The full Assessment Report appears as Appendix 4 and a Stormwater Drainage Management Plan appears as Appendix 5.

#### 3.1 bushfire management plan

The Western Australian Planning Commission (WAPC) and the Fire and Emergency Services Authority of Western Australia (FESA) jointly developed *State Planning Policy 3.7: Planning in Bushfire Prone Areas* and *Guidelines for Planning in Bushfire Prone Areas* the objectives of which are to:

- Avoid any increase in the threat of bushfire to people, property and infrastructure;
- Reduce the vulnerability to bushfire through the identification and consideration of bushfire risks in decision making at all stages of the planning and development process;
- Ensure higher order strategic planning documents, strategic planning proposals, subdivision and development applications take bushfire protection requirements into account; and
- Achieve an appropriate balance between bushfire risk management measures, biodiversity conservation values, environmental protection and landscape amenity.

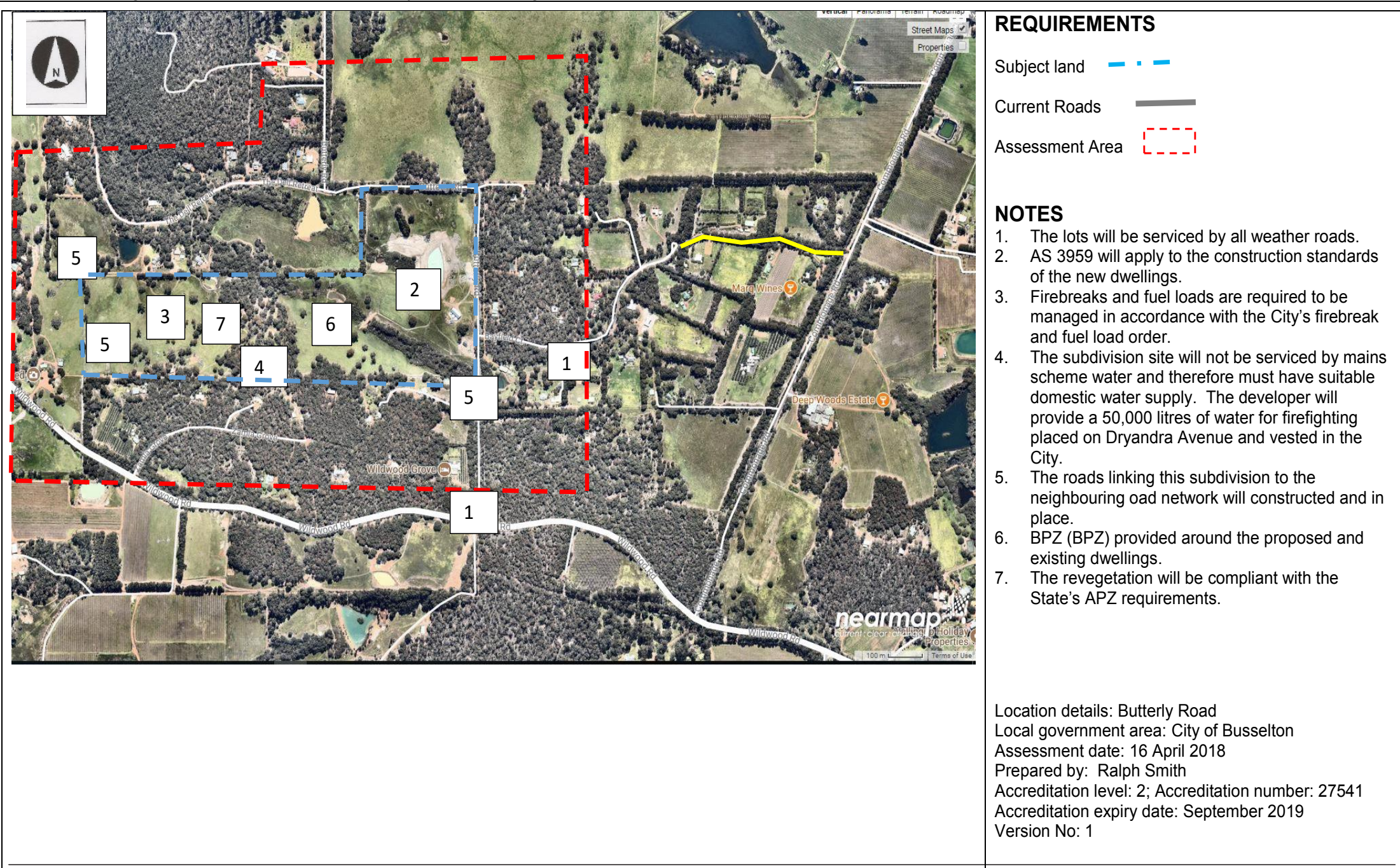
These guidelines form the foundation for fire risk management planning in WA at a community and land development level.

A Bushfire Hazard Level Assessment has been prepared which considers vegetation type and structure, climate and the topography of the site. The two main areas of remnant vegetation comprise the central ridgeline and the creekline. The Jarrah / Marri / Peppermint Woodland of the main central ridgeline within the lot is considered a Class B – Moderate bushfire hazard. The Teatree vegetation of the creekline is considered Class D – Extreme bushfire hazard. The balance cleared Grassland areas of the site areas are Class G – Grassland and a Moderate bushfire hazard.

A Bushfire Management Plan has been prepared for Lot 2656 to reduce the impacts to residents and fire fighters in the event of bushfire within or near the site [Figure 4 : Bushfire Management Plan].

Numerous access options were considered during the development of the BMP. The proposed access for this subdivision is based on utilising the current bitumen roads being Butterly Road, Wildwood Road and the proposed road within the subdivision, being Dryandra Avenue, which links to Zamia Grove, which is also in place. It is proposed that Dryandra Avenue will continue into the road network nearing completion within the approved Lot 115 development to the west. This access option is also identified in the approved access plan for the land to the west. The two public access ways (PAW) currently endorsed, one off The Dell Retreat, and the other within the approved development to the west, will also link to the approved road





Source : Smith Bushfire Consulting

LOT 2656 BUTTERLY ROAD, YALLINGUP

Figure 4 : Bushfire Management Plan



network to the development (Lot 115) to the west. These PAWs will have a change of reservation to become roads that will be required to be constructed to meet the requirements of the Guidelines.

These road options provide numerous alternative access routes to a number of different locations. This makes the access compliant with Element 3 of the Guidelines

There is also the option in an emergency, to utilise the emergency access way (EAW) which is in place and links to Bayfield Court through to Butterly Road and Commonage Road. Butterly Road, Bayfield Court and Commonage Road are all bitumen roads.

Provided the requirements of this BMP are maintained, the fire risk to people and property within the proposed Site is considered moderate. The Management Plan concludes that:

- The lot development complies with the Guidelines. The highest BAL rating for a proposed new building envelope is BAL-29.
- There are two access options leading to two different destinations. This is available to the access leading to and from the subdivision.
- Butterly Road, Bayfield Court and The Dell Retreat are all public roads. They link to other bitumen roads that provide all weather access.
- It is proposed that the internal perimeter firebreaks all have a gate placed on the fence so that access is provided for the firefighters e.g. between lots 10, 11, 12 and 13.
- The subdivision will require appropriate water supply to meet the Guidelines, which is a dedicated static water supply for firefighting that has an effective 50,000 litres. This will be located on Dryandra Avenue.

The Bushfire Management Plan (BMP) for Lot 2656 demonstrates that all fire protection requirements can be achieved.

## 3.2 engineering

### 3.2.1 site & services

The site, located on the west side of Butterly Rd is accessed from Butterly Rd, which also contains the power and Telstra services underground.

The site has been generally cleared in the past, with stands of remnant bush of Jarrah and Marri trees, with the remainder grass pasture. Site soils are described as Sgm2 Silty gravelly sands (colluvium) on the slopes, and GT2 Laterite gravel on the ridge tops. Both soil types are described on the Environmental Geological Survey Plan of the geological Survey of WA as being generally suitable for housing development.

The site is undulating with slopes on the eastern half averaging 10%, and on the western half 10% to 15%. The proposed road to be constructed off Zamia Grove is at a gradient of approximately 6%.

It is proposed to develop the land as a 13 lot rural residential subdivision, with all required services. The site is generally cleared apart from remnant stands of trees. The proposed Structure Plan has carefully maintained the remnant bush, although the proposed access from Zamia Grove will involve selective clearing of the road reserve to allow the access road and underground services to be installed. Each lot will be supplied with power and communications connections from the existing and proposed roads. All subdivision roads and required services will be designed and constructed to current Council and other service authority standards. There is no intention to upgrade the existing Butterly Rd as it is in good condition.

The only earthworks on the site will be those required for the construction of Dryandra Avenue including the link to Zamia Grove, which are expected to be minimal.

### *3.2.2 roads*

The subdivisional road – Dryandra Avenue – off Zamia Grove will be designed and constructed to City of Busselton rural road standards, and will be a 6 metre sealed pavement with unsealed shoulders. Driveway crossovers will be installed for the new lots.

The connection from Dell Retreat to Dryandra Ave will also be constructed as a 6m sealed pavement.

### *3.2.3 drainage*

Drainage for the new road will be by way of runoff from the sealed pavement onto the verge as is normal in rural road construction. Some drainage runoff channels may be required, and where necessary these will be rock pitched to control scour.

### *3.2.4 power*

Single phase HV and LV underground infrastructure exists on the northern side of Zamia Grove in the vicinity of the intersection closest to the proposed development. The HV & LV underground cable then runs along southern side as it heads towards Wildwood Road. The underground infrastructure is supplied via single phase HV overhead aerials which runs east for approximately 1.8km and tapping off the 3 phase network located at the intersection of Wildwood Road and Commonage Road.

For the eastern side of the development, underground HV and LV infrastructure run adjacent to proposed Lots 1-4 and then onto the eastern side of the north-south section of Butterly Road reserve as it heads into Bayfield Court. The HV cable emanates from the 3 phase HV aerial network located on Commonage Road and supplies combination of padmount and pole top mounted transformers located along the route of Bayfield Court, Butterly Road and The Dell Retreat. As the transformers supplied by the HV cable are single phase, it is likely that the HV cable is also of a single phase nature.

All internal power reticulation lines and transformer installations including under-grounding / relocation of any existing infrastructure, will be completed at the cost of the developer including the upgrading (as necessary) of any existing HV switchgear units and the maintenance of supply to all existing / surrounding properties.

### *3.2.5 water supply*

The site is remote from Water Corporation reticulated supply and there is no possibility of this being extended to the development. The new residences will therefore be required to supply their own potable water supply by way of roof rainwater collection tanks. These tanks are also to have a dedicated fire outlet.

### *3.2.6 waste water*

The site is remote from Water Corporation sewer services, and there is no possibility of such being extended to the site. The new residences will need to install ATU's for disposal of residential waste water.

### *3.2.7 telephone & nbn*

The surrounding area is serviced by Telstra copper network routing via Wildwood Rd, Bayfield Cr and Zamia Gr – see DBYD attached. Existing Telstra Multiplexers, serviced by optical fibre cable, are located on

Butterly Rd, near Bayfield Cr and on the corner of Wildwood and Commonage Roads, with both being parented on Yallingup exchange some 11Km route length to the north west. Under the Telecommunications Act 1997, Developers are obliged to provide fibre ready pit and pipe to new subdivisions and under Federal Ministerial policy, Developers are responsible for the provision of telecommunications infrastructure, both at Developer expense.

### *3.2.8 gas*

Reticulated gas services are not available, and if required for domestic use, individual residences can install bottled gas.

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