



Hinge Road North Structure Plan Lot 801 Hinge Road, HARVEY



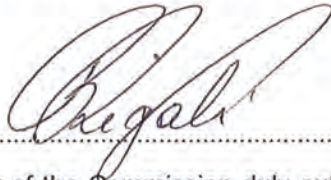
April 2019

This structure plan is prepared under the provisions of the Shire of Harvey District Planning Scheme No. 1 and the Planning and Development (Local Planning Schemes) Regulations 2015.

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

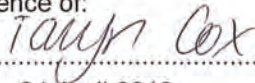
24 April 2019

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

24 April 2019

Date

24 April 2029

Date of Expiry

Table of Amendments

Amendment No.	Summary of Amendment	Amendment Type	Date approved by WAPC

Table of Density Plans

Density Plan No.	Area of density plan application	Date endorsed by WAPC

Executive Summary

The Structure Plan area comprises entirely of Lot 801 on Plan 26281, being the whole of the land on Certificate of Title Volume 2519 and Folio 296 (the **Land**). The Land is 1.18 hectares in area and is located in south-east part of the Harvey Townsite.

The development of the Land is supported by designations in the local and region schemes. The Land is zoned 'Residential Development' in the Shire of Harvey's (Shire) Local Scheme No 1 (Scheme No 1), and 'Urban' in the Greater Bunbury Region Scheme.

The Land abuts the north side of part of an existing WA Planning Commission (WAPC) endorsed Structure Plan (Hinge Road South) which applies to Lots 3 and 802 Hinge Road. The objective of this Structure Plan is to complete the 'Hinge Road South' planning by 'rounding off' the privately-owned portion of land south of existing Shire controlled land by way of a continuation of residential development consistent with the existing endorsed Structure Plan.

The proximity of the land to the town's facilities and amenities makes it a logical implementation of the schemes' zonings.

Summary Statistics

Item	Data	Structure Plan Ref (section no.)
Total area covered by the Structure Plan	1.1879 ha	1 Structure Plan Area
Area of each land use proposed:		
i. Residential	1.1879 ha	17 lots ¹
ii. Commercial	0 ha	0 lots
iii. Industrial	0 ha	0 lots
iv. Rural Residential	0 ha	0 lots
Total estimated lot yield	12 - 28 lots ²	
Estimated number of dwellings	12 - 28 dwellings	Part 6
Estimated residential site density	R15 to R40 dwellings per hectare	Part 6
Estimated population	24 - 56 persons ³	Part 6
Number of high schools	0 high schools	Part 8
Number of primary schools	0 high schools	Part 8
Estimated commercial floor space	0 net lettable m ²	n/a
Estimated area and percentage of public open space given over to:		
i. Regional open space	0 ha	0 %
ii. District open space	0 ha	0 %
iii. Neighbourhood parks	0 ha	0 parks
iv. Local parks	0 ha	0 parks
Estimated percentage of natural area	0 ha	0 %

¹ Expected lot yield

² Yield calculated from R15 to R40

³ Based on 2 persons per household



Lot 801
1.19ha

- Hinge Road South Lots**
- Residential R15
 - Public Open Space
 - Area Requiring a Local Development Plan

- Legend**
- Structure Plan Area
 - R-Codes
 - Bushfire Attack Level
 - BAL 29

HINGE ROAD NORTH STRUCTURE PLAN
Lot 801 Hinge Road, HARVEY

Scale at A4
1:1,000



PLANWEST (WA) Pty Ltd email: planwes@bigpond.net.au

Data Sources: Aerial photographs - Nearmap; Cadastre - Landgate
Projection: GDA 1984 MGA Zone 50

April 2019

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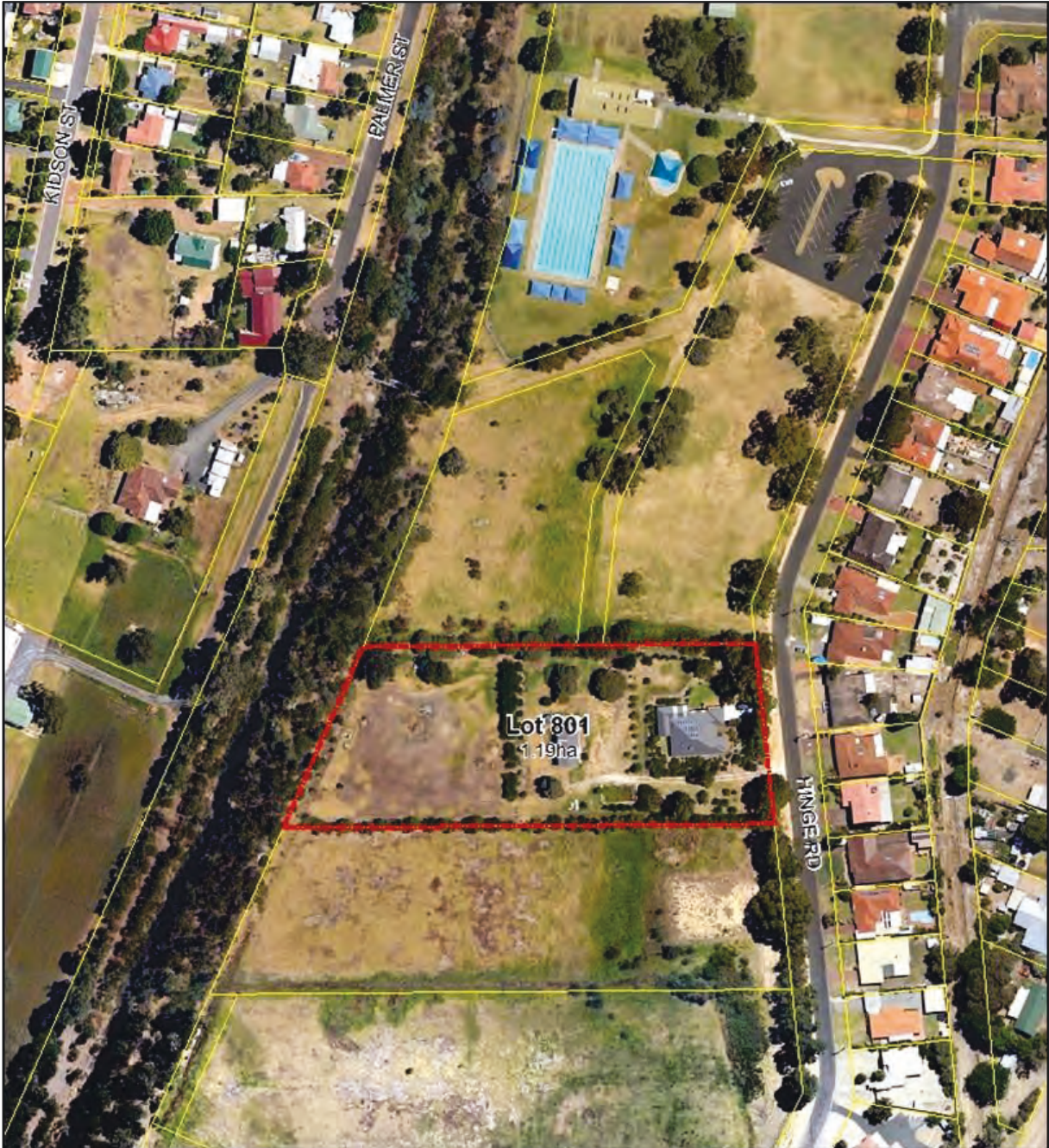
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Part One – Implementation

1 Structure Plan Area

The Structure Plan area comprises entirely of Lot 801 on Plan 26281, being the whole of the land on Certificate of Title Volume 2519 and Folio 296 (the **Land**). The boundary of the Land is shown in red in **Figure 1** below.

Figure 1 - Structure Plan Area



Source: Landgate, Nearmap and Planwest

The Land is surrounded by:

- i. Lot 36 on Plan 9763 to the north which is partially zoned for recreation and partially zoned for tourism. Lot 36 comprises of cleared land with stands of vegetation, Merriden Park, the Dr Peter Topham Memorial Swimming Pool and a carpark. Additionally, Reserve 29002 runs through Lot 36 and terminates at the boundary of the Land.
- ii. Hinge Road to the east, and beyond Hinge Road, fully developed residential land.
- iii. Lot 802 on Plan 26281 to the south (currently vacant land that will be developed into residential lots pursuant to WAPC subdivision approvals Refs: 151854 and 154684).
- iv. The Harvey Diversion Drain (the **HDD**) to the west and beyond the HDD, cleared land used predominately for farming and agricultural purposes but zoned for future residential development.

The Land is 1.1879 ha and is shown below with a provisional lot layout (**Figure 2**).

Figure 2 - Lot 801 Hinge Road, Showing Southern Approved Structure Plan



Source: Landgate, Nearmap and Planwest

The purpose of the Structure Plan is to annexe this lot to the existing WAPC endorsed Structure Plan immediately south of the Land over Lots 3 and 801 Hinge Road (**Existing Structure Plan**). A general outline of a proposed subdivision of the existing Structure Plan is shown in **Figure 2** and subsequent Figures in this report.

2 Operation

Pursuant to Clause 28 of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015* this Structure Plan comes into effect on the date it is approved by the Western Australian Planning Commission (**WAPC**) and has effect for a period of 10 years commencing on the day on which the WAPC endorses its approval to this Structure Plan.

3 Staging

Given the small area of the Land and the small number of lots to be produced under this Structure Plan it is not considered necessary to include a staging plan in this Structure Plan depicting the development of the Land in stages.

4 Subdivision and Development Requirements

The Land is zoned as residential development under the Shire of Harvey's Town Planning Scheme No. 1 (**TPS 1**).

The Land is zoned as Urban under Greater Bunbury Region Scheme (**GBRS**).

No rezoning of the Land is required to implement this Structure Plan. However, this Structure Plan designates a residential development density for the land as a split code of R15/40. The lower, default density of R15 will allow the subdivision and development of the land consistent with the Hinge Road South Structure Plan area to the south of the Land.

The higher density code will only apply if:

- a. the lot being developed has an area greater than 1,000m²; and,
- b. a Local Development Plan (LDP) is first approved by the Shire under the provisions of *Planning and Development (Local Planning Schemes) Regulations 2015*.

As the Land enjoys frontage to adequate reticulated sewer and water supplies it is proposed to allow for greater densities where an LDP can demonstrate that the development layout is consistent with the R40 code design principles.

4.1 Land Use Permissibility

Land Use permissibility within the subject land shall be in accordance with the corresponding zone and reserves under the region and district/local planning schemes and due regard shall be given to the provisions of the structure plan.

4.2 Hazards and Separation Areas

Development of residential lots shall have due regard to the provisions of the approved Bushfire Management Plan and BAL ratings.

4.3 Conditions of Subdivision Approval

At the time of subdivision the following conditions may be recommended, requiring the preparation and/or implementation of:

- i a contribution towards the intersection of Hinge Road and South Western Highway;
- ii the upgrading of Hinge Road;
- iii a dual use path construction;
- iv a geo-technical report;
- v an urban water management plan;
- vi a Bushfire Management Plan, including BAL Contour Plan;
- vii a notification on title advising that the particular lot is bushfire prone if rated BAL-12.5 or greater, and may be subject to a bushfire management plan and additional planning and building requirements may apply;
- viii a restrictive covenant on the title of lots which are partly designated BAL-FZ and BAL-40 stating that habitable buildings are not permitted in the areas designated BAL-FZ and BAL-40 by the Bushfire Management Plan;
- ix of a contribution of public open space being not less than 10 percent of the gross subdivisible area of Lot 9100 on Deposited Plan 415157; and
- x the provision of standard public utility services.

5 Local Development Plans

A Local Development Plan (**LDP**) will be prepared for the R40 coded lot pursuant to the WAPC's Local Development Plan Framework and Schedule 2 '*Deemed Provision*' for the *Local Planning Schemes* of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The LDP is to address dwelling design criteria consistent with Liveable Neighbourhoods (e.g. visual outlook of public open space, public streets and vegetated areas).

6 Other Requirements

6.1 Public Open Space

Pursuant to Design Principle 9 of *Liveable Neighbourhoods* (2015, there should be 10 per cent of the gross subdivisible area of their land to be vested in the Crown (under Section 152 of the *Planning and Development Act 2005* [the **PD Act**]) for public open space and foreshore management purposes.

The gross subdivisible area excludes non-urban zoned land as per the region schemes and non-residential land uses under any applicable local planning scheme (such as commercial and industrial) that do not generate the need for a contribution to public open space, such as school sites, regional roads, transmission corridors and Bush Forever sites. No portions of the Land meet this criteria under *Liveable Neighbourhoods* and, as such, the entire area of the Land constitutes the gross subdivisible area.

Pursuant to Section 153 of the PD Act, a cash payment can be made by a subdivider to a local government in lieu of all or part of the 10 per cent public open space contribution (commonly referred to as "cash-in-lieu"). Pursuant to Section 153 of the Planning and Development Act 2005, such a payment must be approved by both the Shire and the WAPC.

Liveable Neighbourhoods provides that all residential lots should be located within walking distance (that is 300 metres) to a public open space site of any size, to meet the daily needs of residents, and should also be within the catchment of public open space sites providing access to nature, sport and recreation opportunities. *Liveable Neighbourhoods* further provides the following circumstances where a cash-in-lieu payment may be more appropriate than the setting aside of a particular parcel of land:

- i. for small subdivisions generally less than 1 ha, the provision of 10 per cent public open space results in a 1,000m² area of public open space, which may be deemed by the local government to be impractical in terms of use and/or management;
- ii. small, unusable and irregular shaped areas of land;
- iii. sufficient public open space is already available in the locality (but is not all developed yet);
- iv. public open space has been provided in earlier subdivisions within the locality;
- v. public open space is planned in another nearby location by way of a local planning scheme or structure plan; or
- vi. where the local government requires funds to assist in maintaining or upgrading existing POS in the locality.

No public open space is proposed in this Structure Plan for the following reasons:

- i. The small area of the Land being developed (only 1.18ha) would produce an impractical and insignificant area of public open space of 0.118ha (or 1,180m²).
- ii. Merriden Park (a large grassed area with park benches) contained within Lot 36 (the land immediately north of and adjoining the Land) is approximately 300 m from the Land.
- iii. An area of public open space is proposed as part of the Existing Structure Plan over Lots 3 and 802 (and approved for creation in WAPC Refs: 151854 and 154684) of 0.53ha is approximately 28m from the southern boundary of the Land and is directly accessible from the Land via *Future Road 2*.
- iv. There are multiple parks located less than a 10-minute drive from the Land.

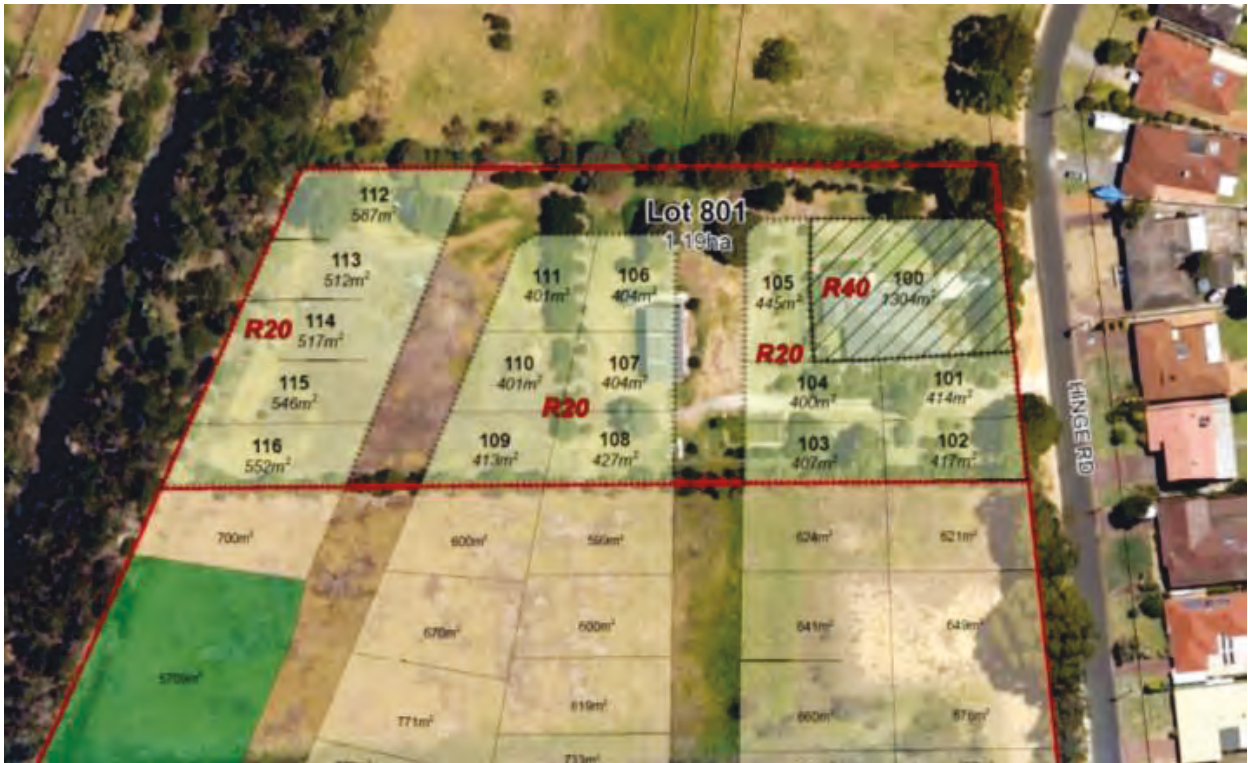
In conclusion, a cash-in-lieu payment is to be paid being equivalent to 10 percent of the gross subdivisible area of Lot 801 at the time of subdivision. Deferral of this payment for the R40 coded lot until its further subdivision may be considered by the Commission.

6.2 Residential Density Targets

The residential density target proposed for the Land is R20 to R40. The **existing** dwelling situated on the Land will need to be contained in a lot of about 1,300m² in size to provide an appropriate setting.

Figure 3 depicts the residential density range that applies to the Land under this Structure Plan as an example only. The purpose of the range is to provide the opportunity for a variety of dwelling densities and dwelling types. The existing dwelling situated on the Land will need to be contained in a lot of about 1,300m² in size to provide an appropriate setting.

Figure 3 – Preliminary Design



Source: Landgate, Nearmap and Planwest

The proposed range of lot sizes will provide a potential for group housing with smaller more compact land areas. It is anticipated that there may be a demand for these greater densities in areas in close proximity to the Town's recreation facilities and the other town centre services and amenities.

By applying these densities this Structure Plan establishes a residential site density target of a minimum of approximately 12 dwellings and a maximum of approximately 28 dwellings (taking into account the area loss for creation of access roads).

The Shire of Harvey's information sheet *Residential Split Coding* states "*Split coding provides a flexible approach to residential development in the Shire*". Split coding residential density over the Land is proposed in order to allow flexibility for future development over the Land in order to accommodate the projected population growth in Harvey (as detailed in 1.3 Planning Framework below) and given the Land is located in close proximity to the Harvey Town Centre.

This is particularly relevant to this part of the Structure Plan given its proximity to the Shire's recreation facilities.

6.3 Services

It is not anticipated that additional headworks infrastructure, or contributions to community facilities will be required to service the new lots the subject of this structure plan. School sites and recreational facilities are already available in the town and are in close proximity.

Reticulated sewers, water mains, power and communication services are being brought into the area by the fact of the development of the Existing Structure Plan, currently under construction, which has recently been brought into the same ownership.

Existing drainage assets include an existing open drain running parallel to the north boundary of the Land which reports directly to the Harvey Diversion Drain which, following early discussions with the Shire, is proposed to be piped as part of the development of the Land.

Site water management and drainage design rationale shall be consistent with the existing LWMS and UWMP for the Existing Structure Plan. The planning for the Existing Structure Plan area anticipated the development of Lot 801.

Given the small size of the Land, it is unnecessary to prepare a Local Water Management Strategy to support this Structure Plan. However, it should be recommended by the Shire that the WAPC imposes as a condition of subdivision of the Land that an Urban Water Management Plan be prepared and implemented.

6.4 Roads and traffic

This Structure Plan completes the road system contemplated by the Hinge Road South structure plan. The proposed road layout provides for connections of the two north-south roads with another connection to Hinge Road. This system incorporates, and completes, the road drainage system.

Given the minimal dwelling yield of this Structure Plan there will be negligible impact on the traffic on the road system.

6.5 Bushfire issues

Consistent with the State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP3.7); and the Guidelines for Planning in Bushfire Prone Areas (Guidelines and Appendices); a Bushfire risk assessment by way of a BAL contour plan has been prepared by an accredited bush fire planning and design practitioner and is contained in **Appendix 1** of this Structure Plan.

The road layout enables safe vehicular and pedestrian access/egress in the event of a fire emergency. The main entry road connects to Hinge Road, with two roads providing links to land to the south thus creating better circulation for the local road system.

The availability of a water reticulation system allows the inclusion of fire hydrants into the proposed road network system to assist with fire-fighting.

6 Additional Information

No additional information is required to be submitted for the Structure Plan.

Part Two – Explanatory Report

1 Planning Background

1.1 Introduction and purpose

The purpose of this Structure Plan is to guide subdivision and infrastructure servicing of the Land in an orderly and proper manner and in accordance with the Shire of Harvey and the State planning framework.

1.2 Land description

1.2.1 Location

The Land comprises entirely of Lot 801 on Plan 26281 (No. 32 Hinge Road, Harvey), being the whole of the land on Certificate of Title Volume 2519 and Folio 296.

The Land is located within the Harvey townsite and is approximately 1.3 km (by road) southeast of the Shire of Harvey Council Chambers (located in the centre of town).

The Land occurs within the Bunbury-Wellington sub-region of the South West Region of Western Australia.

The location of the Land is depicted in **Figure 4**.

Figure 4 - Location Map



Source: Landgate, Planwest

1.2.2 Area and land use

The Land is 1.1879 ha in area and currently comprises of a residential dwelling, a shed/ancillary dwelling and a large cleared area with stands of vegetation and vegetation bordering the perimeter of the Land.

Historically the Land has supported low intensity rural land use activities (such as grazing and agistment).

1.2.3 Legal description and ownership

The registered proprietor of the Land on Certificate of Title Volume 2519 and Folio 296 is Daverose (WA) Pty Ltd.

1.3 Planning Framework

1.3.1 Zoning and reservations

The Land is zoned as 'Residential development' under the Shire of Harvey's Town Planning Scheme No. 1 (**TPS 1**). Refer to **Figure 5** for an extract of TPS 1 depicting the Land.

The Land is zoned as 'Urban' under Greater Bunbury Region Scheme (**GBRS**). Refer to **Figure 6** for an extract of GBRS depicting the Land.

1.3.2 Regional and sub-regional structure plan

The Greater Bunbury Strategy 2013 (discussed further below) containing the Greater Bunbury Sub-regional Structure Plan 2013 depicts the land as urban undeveloped land.

1.3.3 Planning strategies

The Greater Bunbury Strategy 2013

The Greater Bunbury Strategy 2013 was prepared by the Department of Planning to guide urban, industrial and regional land use planning; and associated infrastructure delivery in the Greater Bunbury sub-region in the short, medium and long term. As stated at page 5, the Greater Bunbury Strategy 2013 is "*not a statutory plan, but rather is a strategic document that aims to guide the planning and management of growth and development via a broad set of policy principles and responsibilities*". The Greater Bunbury Strategy 2013 provides for urban infill and greenfield urban expansion areas for a population growth in Greater Bunbury to at least 150,000 people from the 2011 census figures of 83,598 people.

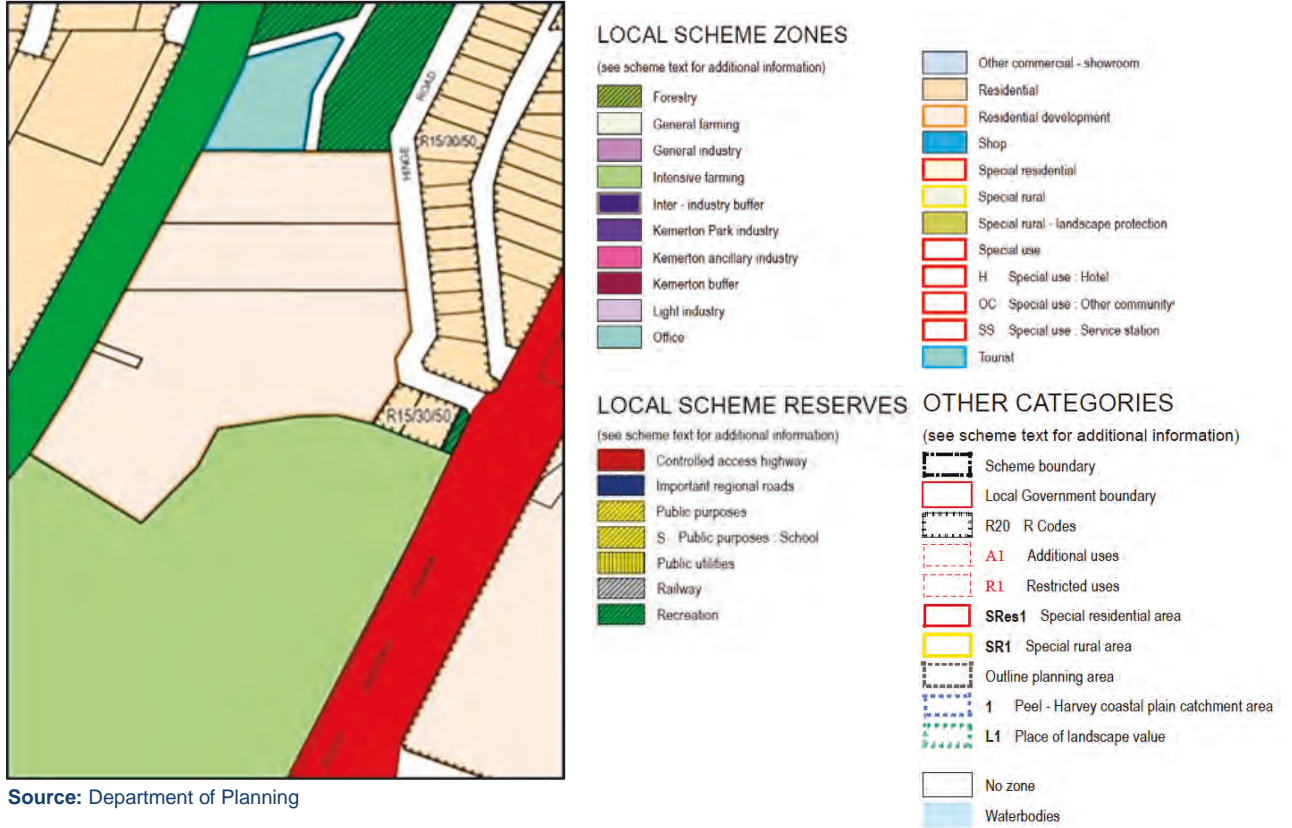
The final Greater Bunbury Strategy 2013 was prepared after the Draft Greater Bunbury Strategy (also referred to as the Greater Bunbury Strategy 2011—2031 and Beyond) was issued for comment, and should be read in conjunction with the *Report on Submissions – What was said about the draft Greater Bunbury Strategy (2011)*.

The Greater Bunbury Strategy 2013 supersedes the portion of the Bunbury Wellington Region Plan (published in 1995) that relates to land use within the Shires of Harvey, Capel and Dardanup and the City of Bunbury.

South West Regional Planning and Infrastructure Framework

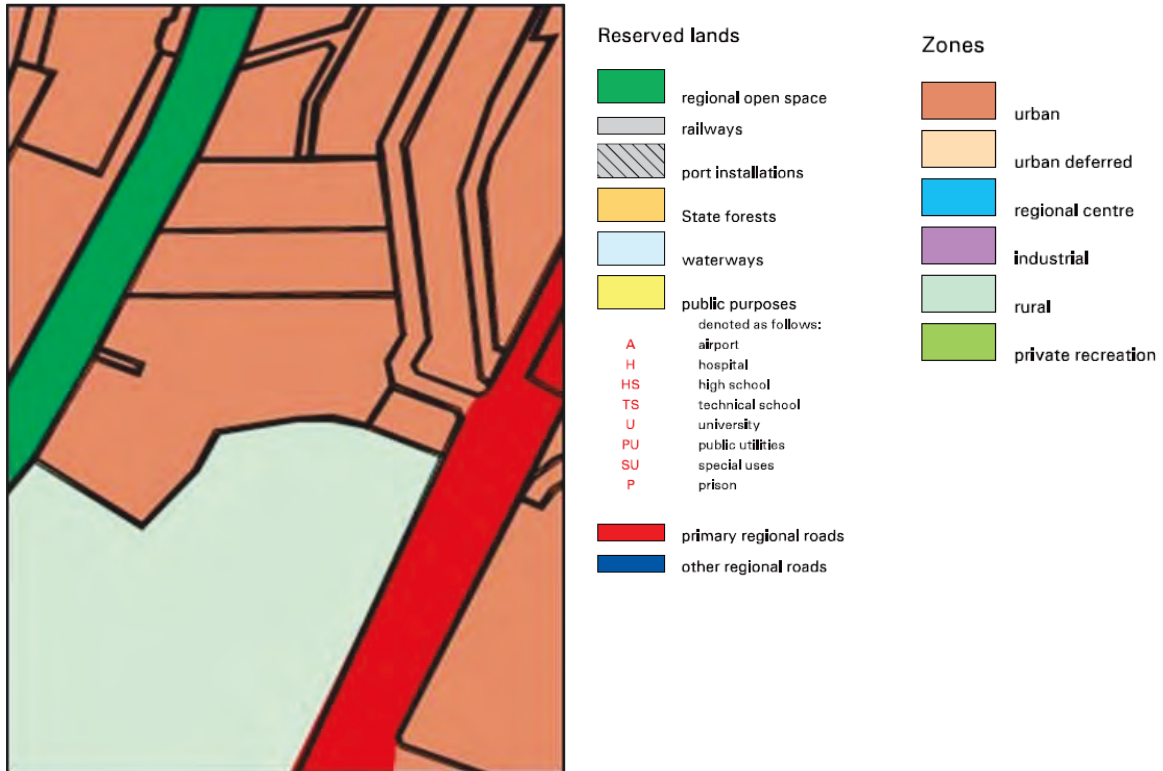
The South West Regional Planning and Infrastructure Framework (the **SW Framework**) has been endorsed by the WAPC as a regional strategy. The SW Framework provides an overall strategic context for land-use planning in the South West of WA and outlines the WAPC's position in relation to broad planning issues such as transport, agriculture, communities and climate change, and the major infrastructure requirements for the region. It identifies infrastructure and planning priorities for the region to achieve sustainable growth.

Figure 5 - Extract from TPS 1 depicting the Land



Source: Department of Planning

Figure 6 - Extract from the GBRs depicting the Land



Source: Department of Planning

The Bunbury Geographe Regional Growth Plan

The Bunbury Geographe Regional Growth Plan was developed by the Shires of Harvey, Dardanup and Capel and the City of Bunbury and launched in February 2017. The primary objective of the Bunbury Geographe Regional Growth Plan is to create long term economic and social development within the Bunbury Geographe region to support population growth of 12,000 persons, \$400 million Gross Regional Product and the creation of 2,500 jobs. The Bunbury Geographe Regional Growth Plan is underpinned by a Program of Actions which details the initiatives that will be taken in order to implement the Bunbury Geographe Regional Growth Plan and to stimulate and support growth in the region. The Program of Actions is a live management document that will be reviewed and updated annually.

Current initiatives in the Program of Actions relevant to the Shire of Harvey are the Myalup-Wellington Water for Food initiative and expansion of the Western Australian College of Agriculture in Harvey.

1.3.4 Planning policies

Liveable Neighbourhoods

Liveable Neighbourhoods is a policy that guides the design and assessment of structure plans and subdivisions for new urban (predominately residential) areas in the metropolitan area and country centres, on greenfield and large brownfield (urban infill) sites. A number of versions and updates to *Liveable Neighbourhoods* have been developed and the latest version of *Liveable Neighbourhoods* (2015) replaces all previous editions.

Liveable Neighbourhoods sets out 6 elements to guide the various aspects of neighbourhood design comprising community design, movement network, activity centres, lot design, public open space and education.

Activity Centres for Greater Bunbury Policy

The *Activity Centres for Greater Bunbury Policy* (2012) applies to the area within the boundary of the Greater Bunbury Region Scheme and is established on the principles of State Planning Policy 4.2 - Activity Centres for Perth and Peel. The *Activity Centres for Greater Bunbury Policy* specifies broad planning requirements for the planning and development of new activity centres the redevelopment of existing centres within the City of Bunbury and the Shires of Capel, Dardanup and Harvey.

1.3.5 Other approvals and decisions

The *Hinge Road Local Structure Plan* over Lots 3 and 802 Hinge Road (the land immediately adjacent and south of the Land) was approved by the WAPC on 19 September 2016 (WAPC Ref: SPN/0700).

The land the subject of the *Hinge Road Local Structure Plan* over Lots 3 and 802 Hinge Road was approved for subdivision by the WAPC under WAPC Refs: 151854 and 154684.

1.3.6 Pre-lodgement consultation

Pre-lodgement consultation will be undertaken in accordance with the Advertising Notice attached in **Appendix 2**.

2 Site conditions and constraints

2.1 Biodiversity and natural area assets

A search of the *WA Atlas Shared Land Information Platform (WA Atlas)* on 17 July 2017 did not identify any threatened ecological communities; or threatened priority flora or fauna on the Land.

A search of the Protected Matters Search Tool on 17 July 2017 did not identify any matters of national environmental significance on the Land.

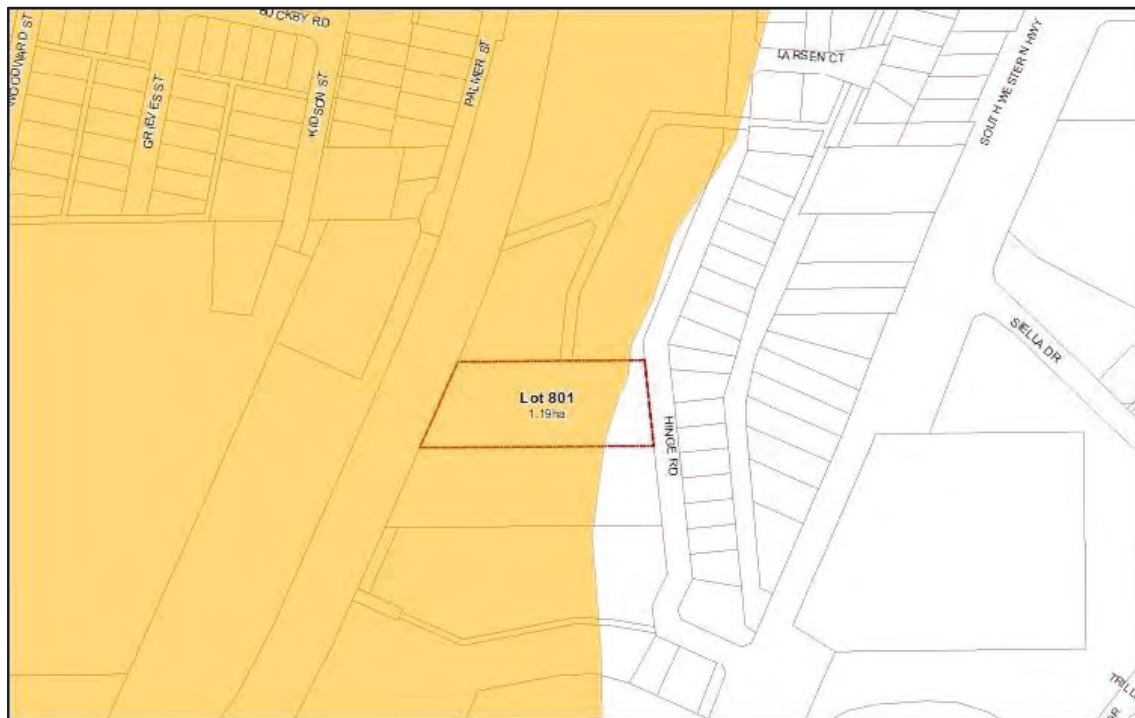
2.2 Landform and soils

The soils at the Land consist of thin clay soil over Guildford Formation clay (MJB Payne Consultants, 2008).

The Land is considered to be gently sloping and generally ranges from 38.5m AHD in the east to 35m Australian Height Datum (**AHD**) towards the south west. The majority of the site is between 35m AHD and 36.5m AHD.

A search of the *Acid Sulfate Soil Risk Map, Swan Coastal Plain* on the WA Atlas on 14 July 2017 identified (in orange) a portion of the Land as having a moderate to low risk of acid sulfate soils occurring within 3m of natural soil surface. Refer to **Figure 7** for an extract of the WA Atlas depicting the acid sulphate soil risk at the Land.

Figure 7 – WA Atlas – Acid Sulfate Soil Risk Map, Swan Coastal Plain



Source: WA Atlas, Landgate, Planwest

The current landform is fully cleared of native vegetation, has been historically used for grazing and rural purposes and has been developed with a dwelling, outbuildings, citrus fruit trees and other non-indigenous vegetation.

As such, the land does not support any indigenous fauna or flora habitats of any significance.

2.3 Groundwater and surface water

The Land generally slopes gently towards the Harvey River Diversion Drain to the west, with a marginal fall to the south-western corner.

The Land has a thin veneer of sandy material overlaying sandy clay or clayey sand, and a high groundwater table.

A search of the Geomorphic Wetlands Dataset on WA Atlas on 17 July 2017 identified the majority of the Land as a Multiple Use Wetland. In-situ site conditions at the Land do not support this classification over the Land. **Figure 8** shows the Multiple Use area in blue.

Large portions of the south west of WA are identified as a Multiple Use Wetland and are fully developed. In the vicinity of the Land, areas of fully developed residential land, the Harvey Townsite, multiple roads and most of Lots 3 and 802 Hinge Road (approved for subdivision) have also been identified as a Multiple Use Wetland.

As such, the classification over the Land as a Multiple Use Wetland is not expected to impact or be a bar upon the subdivision or development of the Land.

Figure 8 – WA Atlas – Geomorphic Wetlands Dataset



Source: WA Atlas, Landgate, Planwest

Stass Environmental undertook groundwater level monitoring over Lots 3 and 802 Hinge Road in the winters of 2012 and 2013 in order to collect the maximum ground water levels. This groundwater level monitoring identified relatively shallow groundwater levels and a flow direction to the west by southwest (correlating to the fall on the Harvey Diversion Drain). See the approved *Hinge Road Local Structure Plan* over Lots 3 and 802 Hinge Road.

No groundwater level monitoring has been undertaken to support this Structure Plan, as the monitoring undertaken for Lots 3 and 802 Hinge Road can be sufficiently extrapolated for the purposes of this Structure Plan and because the site is so small and given that an Urban Water Management Plan (**UWMP**) is proposed to be included into any development or subdivision approval issued by the Shire or by the WAPC respectively (as the case may be), during which an appropriate level of detail in ground water monitoring and/or ground truthing (as required) will be conducted.

2.4 Bushfire hazard

A portion of the Land has recently been designated as a bushfire prone area on the *Map of Bush Fire Prone Areas* and as such, that portion of the Land has been identified by the Fire and Emergency Services Commissioner as being subject to, or likely to be subject to, a bushfire attack. **Figure 9** shows the extent of the fire prone areas in red hatched.

Figure 9 - Map of Bush Fire Prone Areas



Source: DFES, Landgate, Planwest

The Land fronts Hinge Road and this Structure Plan proposes to construct two roads that will connect to the road layout depicted in the approved *Hinge Road Local Structure Plan* over Lots 3 and 802 Hinge Road. As such, in the event of a fire emergency, the road layout enables safe vehicular and pedestrian access/egress.

Reticulated water is also proposed to service the Land which provides a source of water for fire-fighting purposes. Hydrant locations will be determined at the detailed engineering design stage.

Bushfire risk at the land will be managed at the relevant time and by the processes contained within *State Planning Policy 3.7 Planning in Bushfire Prone Areas; Guidelines for Planning in Bushfire Prone Areas* and *Australian Standard 3959 – 2000 Construction of buildings in bushfire prone areas*, as amended from time to time. **Appendix A** contains a Bushfire Management Plan, and BAL contour plan, for the Structure Plan area.

2.5 Heritage

A search of the Department of Aboriginal Affairs Aboriginal Heritage Inquiry System conducted on 14 July 2017 returned no Aboriginal Sites or Heritage Areas within the search area.

No sites listed in the *Shire of Harvey Municipal Heritage Inventory Review – 2014* occur within the Land.

2.6 Coast and foreshores

There are no coastal features or foreshore areas in this Structure plan area.

2.7 Context and other land use constraints and opportunities

The Land is located within the Harvey townsite. **Figure 10** provides a wider view of the townsite with respect to the Land.

Figure 10 - The Land in Context of the Townsite



Source: Landgate, Nearmap, Planwest

The Land is situated on Hinge Road and is connected by Hinge Road to the South Western Highway (a Primary Distributor Road) and to Uduc Road (the main street within the Harvey town centre). As such, the Land is well connected to both the centre of Harvey, the wider area of Harvey and the towns surrounding Harvey.

A range of facilities and amenities are located in close proximity to the Land and includes the following:

- i. Harvey railway station;
- ii. Harvey Primary School, Harvey Senior High School, and St Anne's School;
- iii. South Regional TAFE - Harvey Campus and WA College of Agriculture;
- iv. Harvey Hospital;
- v. the Harvey Medical Group, Wellington Medical Centre and General Practitioners;
- vi. the Shire of Harvey Council Chambers;
- vii. Harvey Community Resource Centre and the Harvey Recreation and Cultural Centre;
- viii. the Harvey Post office;
- ix. Various other facilities including IGA, cafes and restaurants, liquor stores, petrol stations and Dr Peter Topham Memorial Swimming Pool.

The above facilities and amenities support subdivision of the Land and its development into residential land.

There are no existing internal roads or pedestrian networks servicing the Land. This Structure Plan is designed so as to connect to the internal roads proposed in the *Hinge Road Local Structure Plan* over Lots 3 and 802 Hinge Road.

There are no existing public transport facilities servicing the Land. As mentioned above, the Harvey railway station is in close proximity (and is approximately 1.2 km by road). TransWa operates the Australind Train which has two services a day operating between Perth and Bunbury and stopping at the Harvey railway station.

3 Technical Studies Appendix

Appendix 1

A BAL contour plan has been prepared by an accredited bush fire planning and design practitioner and is contained in Appendix 1 of this Structure Plan.

BUSHFIRE MANAGEMENT PLAN

Lot 801 Hinge Road, Harvey



REVISION 2 – 19/06/2018

Civil Technology

Consulting Civil Engineers • Project Managers • Land Surveyors
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Canning Vale WA 6970

1. Introduction

1.1 The purpose of this Bushfire Management Plan

This Bushfire Management Plan (**BMP**) sets out the background and commitments for bushfire management for the proposed subdivision of Lot 801 Hinge Road, Harvey (**the Subject Site**) in the Shire of Harvey (**the Shire**) by Daverose (WA) Pty Ltd (**the Subdivider**).

An application for the subdivision of the Subject Site into 17 residential-sized lots (one of which contains an existing residential dwelling) was submitted to the Western Australian Planning Commission (**WAPC**) for approval on 27th March 2018 (WAPC Reference No. 156460)

This BMP has been prepared to support the proposed subdivision of the Subject Site and to illustrate that the subdivision has been assessed in accordance with Australian Standard AS3959-2009 (**AS 3959**), meets the requirements of AS 3959 and meets the *Western Australian Planning Commission's Guidelines for Planning in Bushfire Prone Areas* (December 2017; **the Guidelines**).

1.2 General description of the Subject Site and its local context

The Subject Site has an area of 11,871m² (approx.). It is located west of Hinge Road, Harvey, east of the Harvey River Diversion Drain (**HRDD**) and south of Uduc Road, Harvey.

The adjoining land to the south of the Subject Site comprises of residential lots that began development in early 2017 (WAPC Reference No. 151854). Within the Harvey Town Planning Scheme No. 1 (**TPS1**), the land located immediately north-west of the Subject Site is zoned Tourist and the land to the north-east is zoned Recreation, which is part of the land containing Dr Peter Topham Memorial Swimming Pool.

The Subject Site is located approximately 250m west of South Western Highway and is situated in the south-eastern corner of the Harvey town site.

A plan depicting the locality in which the Subject Site is positioned relative to the township of Harvey and South Western Highway is attached hereto as Appendix A. The location of the Subject Site is indicated with a red border.

A copy of the plan submitted to the WAPC for approval is attached hereto as Appendix B

1.3 Bushfire significance

Land to the west of the Subject Site contains vegetation classifiable pursuant to AS 3959. The Subject Site is within 100m of this vegetation and, as such, a portion of the Subject Site has been designated by the Fire and Emergency Services (**FES**) Commissioner as being within a Bush Fire Prone Area. That is, the Subject Site has been identified by the Commissioner as being subject to, or likely to be subject to, bushfire attack.

In light of the above, this BMP has been prepared to support the subdivision application for the Subject Site to prove that the site is capable of subdivision in a manner such that no proposed future dwellings are subject to a Bushfire Attack Level (**BAL**) greater than a BAL-29.

1.4 The proposed development

The Subject Site is proposed to be subdivided into 17 residential lots comprising of varying sizes ranging from 400m² to 1304m². One of these 17 lots will contain an existing residential dwelling.

All habitable lots created as part of the proposed subdivision will be serviced by sealed roads, reticulated water, sewer and gas supply and an underground power and communication network.

2. Bushfire Risk Management Measures

The Guidelines provide bushfire protection criteria to assist in the assessment of proposed bushfire risk management measures which are required for strategic planning proposals, subdivision or development applications in bushfire prone areas. These bushfire protection criteria outlined in the Guidelines are described as follows:

Element 1 – Location

Element 2 – Siting and Design of Development

Element 3 – Vehicular Access

Element 4 – Water

Within each element:

- a) Performance Principles set out strategic and structural objectives; and,
- b) Acceptable solutions set out strategic or structural solutions which if put in place, will be deemed to satisfy the Performance Principles

Demonstrating compliance with the above bushfire protection criteria set out in all of the four elements ensures that the proposed development application is compliant with the requirements of SPP3.7 and as such is suitable for development.

Set out below describes how it is proposed to satisfy the strategic objective of each Element.

2.1 *Protection of human lives and property*

The following systems exist and are proposed to protect, as far as is possible, the lives of residents and their assets from bushfire damage at the Subject Site:

- a) Approvals for house construction are now regulated such that habitable building developments must comply with the appropriate level of construction standards contained within AS 3959.
- b) The Subdivider will provide a copy of this BMP and other appropriate fire prevention documentation to each initial lot purchaser.

2.2 *Element 1 – Location*

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

Performance Principle (P2): The strategic planning proposal, subdivision and development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low, or a BAL-29 or below, and the risk can be managed. For unavoidable development in areas where BAL-40 or BAL-FZ applies, demonstrating that the risk can be managed to the satisfaction of the Department of Fire and Emergency Services and the decision-maker.

Applicable Acceptable Solutions

- A1.1 Development Location: The strategic planning proposal, subdivision and development application is located in an area that is or will, on completion of development on the proposed lots, be subject to either a moderate or low bushfire hazard level, of BAL-29 or below.

How does this proposal meet the requirements of this Element?

In the case of the proposal, the highest identified BAL rating within a building envelope is BAL-29 which applies to the proposed lots which back onto the HRDD. The remaining proposed lots will be subject to a BAL-12.5 or lower.

The lots that back onto the HRDD were positioned as such to enable the continuation of the subdivisional roads that were approved as part of the adjacent (southern) stage of the same project. Knowing that the vegetation adjacent to these lots could potentially lead to a higher BAL rating, they were designed with sufficient depth to allow for a large enough building envelope outside of the BAL-FZ and BAL-40 areas.

Unless the BAL rating within these lots is mitigated by clearing of the HRDD or by the installation of a suitable fire control wall along the east boundary of the HRDD, then the building envelopes will be enforced by a restrictive covenant on title under section 129A of the *Transfer of Land Act 1893*, which will ensure habitable buildings being placed outside of the restriction area.

A copy of the BAL contour plan is attached hereto as Appendix C.

The BAL contour plan also describes the plots of vegetation and notes their classification for determining the resultant BAL rating on the lots created as part of the subdivision. It also shows the areas of vegetation being excluded from the BAL assessment and provides a reason why the exclusion applies per AS 3959.

The plots of vegetation that have been classified as generating a BAL contour are pictured below (all photos were taken by drone on 30 Jan 2018):

Plot 1: Class B Woodland

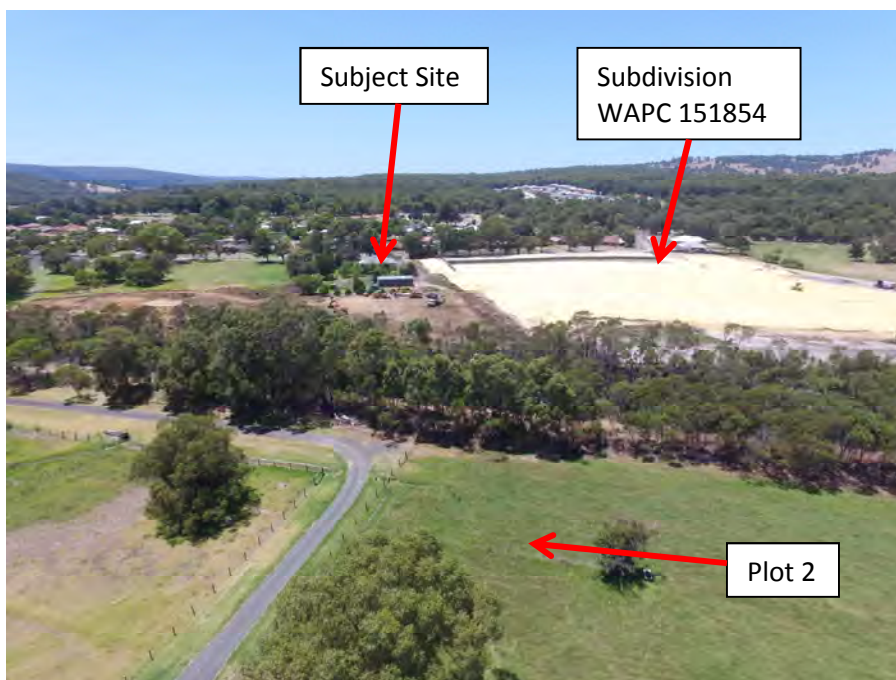
Justification: Vegetation lacks any middle story with the understory being primarily unmanaged grassy structures. Foliage cover less than 30%. A photo of the classified vegetation is below showing the vegetation adjacent to the Subject Site.



Excluded Vegetation

The plots of vegetation being excluded from generating a BAL contour and the reasons why they are being excluded are particularised below:

- Plot 2 – this plot of vegetation has been excluded under Clause 2.2.3.2 (c) of AS 3959 as it contains multiple areas of vegetation less than 0.25ha in area which are not located within 20m of classified vegetation or the site.



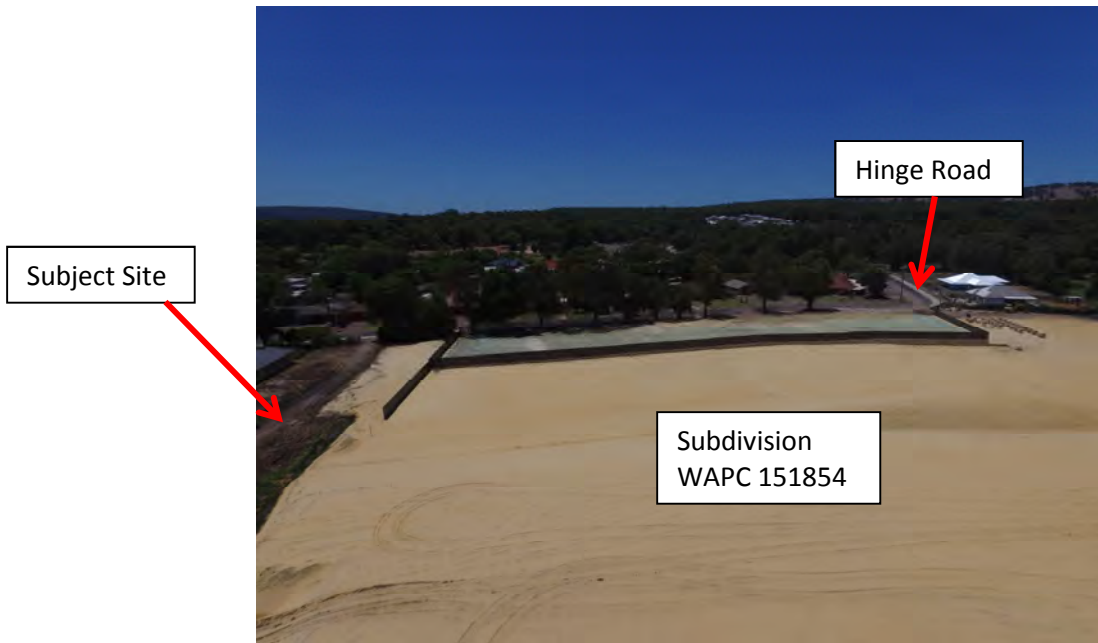
- Plot 3 – this plot of vegetation has been excluded under Clause 2.2.3.2 (f) of AS 3959 because the grassy understory is kept at a minimal fuel condition by the Shire. The overstorey includes scattered trees. These trees are further than 20 metres from the classified vegetation of Plot 1. The eastern extent of this plot reaches the boundary with Hinge Road.



- Plot 4 – this plot of vegetation has been excluded under Clause 2.2.3.2 (f) of AS 3959 as it is located within an existing managed road reserve which will continue to be managed post development.



- Plot 5 – this plot of vegetation has been excluded under Clause 2.2.3.2 (e) of AS 3959 as it does not contain any vegetation because it has recently been cleared, cut and filled for the construction of the future lots approved under WAPC number 151854. A photo of the current location of the future lots of the southern subdivision is shown below.



- Vegetation within the boundaries of the Subject Site has either already been cleared or will be cleared as part of the subdivision process and therefore are not relevant to and excluded from this BAL assessment.

Thus, by ensuring that new building envelopes created as part of this subdivision are not subject to a bushfire attack level greater than BAL-29, the proposal satisfies Element 1 of the bushfire protection criteria.

2.3 Element 2 – Siting & Design of Development

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

Performance Principle (P1): The siting and design of the strategic planning proposal, subdivision or development application, including roads, paths and landscaping, is appropriate to the level of bushfire threat that applies to the site. That it incorporates a defensible space and significantly reduces the heat intensities at the building surface thereby minimising the bushfire risk to people, property and infrastructure, including compliance with AS 3959 if appropriate.

Applicable Acceptable Solutions

- A1.2 Asset Protection Zone (APZ): Every habitable building is surrounded by, and every proposed lot can achieve, an APZ, which meets the following requirements:
 - **Width:** Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m² (BAL-29) in all circumstances.

- **Location:** the APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).
- **Management:** the APZ is managed in accordance with the requirements of ‘Standards for Asset Protection Zones’. (see Schedule 1).

How does this proposal meet the requirements of this Element?

The Guidelines recommend that this Element can be satisfied by establishing an APZ on each proposed lot.

The APZ is a low fuel area immediately surrounding the habitable dwelling which is designed to minimise the likelihood of flame contact with the dwelling and increase the size of the defendable space from which firefighting operations can be undertaken to defend the dwelling.

The Guidelines state that the APZ should at a minimum be of sufficient size to ensure that the habitable dwelling is not subject to a BAL rating that exceeds BAL-29 (29kW/m²).

Within the Shire of Harvey’s Firebreak Notice 2017/18 for residential land, it states that:

- *“Where the area of the land is 2,024m² (approx. ½ acre) or less, remove all flammable material on the land except live standing trees, shrubs and plants, from the whole of the land.”*

In the instance of this subdivision, no proposed building envelope is subject to a BAL rating greater than 29. That being the case, an APZ within the confines of each lot is not required.

The proposed lots which happen to back onto the HRDD will have a restricted Building Envelope as depicted on the attached BAL contour plan. These Building Envelopes will be positioned to provide an adequate separation distance between the proposed lots and the bushfire hazard and provide a defendable space and will significantly reduce the heat intensities which the proposed new buildings might be subject to. As a result, the maximum BAL that these building envelopes will be subject to will be a BAL-29.

Due to the above aspects, the proposal satisfies Element 2 of the bushfire protection criteria.

2.4 Element 3 – Vehicular Access

Intent: To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.

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

Applicable Acceptable Solutions

- A3.1 Two access routes: Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two

different destinations and are available to all residents/the public at all times under all weather conditions.

- A3.2 Public road: A public road that is to meet the requirements in Table 4, Column 1.

How does this proposal meet the requirements of this Element?

The Guidelines suggests a number of solutions to satisfy this Element, the relevant/application solutions can be described as:

- a. The provision of two access routes to the proposed lots which connect to the public road network and provides safe access and egress to two different destinations and are available to the public at all times and are trafficable under all weather conditions; and,
- b. Ensuring that the public roads are built to a standard which ensures they allow two-way traffic and allow conventional 2 wheel drive vehicles and fire appliances to travel safely on them (i.e. road).

The proposed subdivisional roads that will be situated within the Subject Site will allow for connection both directly to Hinge Road from the Subject Site, and also indirectly to Hinge Road through the roads that are currently under development as part of the subdivision to the south of the Subject Site. All subdivisional roads and existing Hinge Road will permit dual direction access/egress to each proposed lot in the event of a fire emergency, together with the ability to provide for rapid access of firefighting appliances.

In the event of a fire and the need for evacuation, lot owners will be able to move to Hinge Road via either the proposed road of the subdivision on the Subject Site or the road of the subdivision being constructed to the south and, from there, to the major arterial road, the South Western Highway (to the southeast), or other roads such as Uduc Road (to the north). These roads are fully constructed 6m wide sealed roads (or better) and provide safe access and egress to at least two different locations and are available to all residents/the public at all times and under all weather conditions.

A plan depicting the surrounding local road network is included hereto as Appendix D.

In addition, all proposed new and existing public roads to which they connect meet the minimum requirements of Acceptable Solution A3.2 as detailed in Table 4 of the Guidelines. In that:

- i. Minimum Trafficable surface is greater than or equal to 6m.
- ii. Horizontal clearance is greater than or equal to 6m.
- iii. The vertical clearance is greater than or equal to 4.5m.
- iv. The maximum grade over 10m is less than 1 in 10.
- v. The minimum weight capacity is greater than 15 tonnes.
- vi. The maximum cross fall is less than 1 in 33.
- vii. The minimum inner radius of curves is greater than 8.5 (m).

It should be noted that the proposed Subject Site will be situated adjacent to two managed

Public Open Space areas; an existing one to the north and one to the south which is being created as part of that subdivision.

Due to the above aspects, the proposal satisfies Element 3 of the bushfire protection criteria.

2.5 Element 4 - Water supply

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

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

Applicable Acceptable Solutions

- A4.1 Reticulated Areas: The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.

How does this proposal meet the requirements of this Element?

The Subdivider will arrange for every proposed lot to be serviced with a reticulated pressurised water supply that will be designed and constructed in accordance with the Water Corporation's Design Standard 63 inclusive of spacing fire hydrants at intervals not exceeding 200 metres.

There is one existing fire hydrant adjacent to the proposed subdivision, located at the north-eastern corner of the Subject Site on the existing Lot 55 Hinge Road. Another fire hydrant is located to the south-east of the Subject Site on Lot 67 Hinge Road, close to the intersection of Hinge Road and South Western Highway.

Due to the above aspects, the proposal satisfies Element 4 of the bushfire protection criteria.

3. Responsibility for actions set out in this Bushfire Management Plan

This BMP becomes operational as a condition of subdivision approval. In implementing this BMP, the following responsibilities have been determined.

3.1 Landowner/Developer's (Prior to Sale) responsibilities

- a) The Subdivider will advise purchasers of any lot with a BAL rating of 12.5 or greater (via this Bushfire Management Plan) of the requirements set out in Section 3.2 of this BMP.
- b) Upon the sale of a lot with a BAL of 12.5 or greater, the Subdivider will supply to each lot purchaser a copy of this BMP, the Homeowners Bush Fire Survival Manual, Prepare Act Survive (or similar appropriate documentation) and a copy of any current firebreak notice requirement of the Shire.
- c) The Subdivider will arrange for a Notification under section 70A of the *Transfer of Land Act 1893* to be registered on the Certificate of Title to each proposed lot with a BAL-12.5 rating or greater advising prospective purchasers that a Bushfire Management Plan applies

to that lot.

- d) The subdivider will arrange for all unsold lots to be managed to a minimal fuel condition in accordance with:
 - i. The attached BAL Contour Plan,
 - ii. Schedule 1 of Element 2 (Standards for Asset Protection Zones) of the Guidelines which details the criteria required to maintain the vegetation to a minimal fuel condition; and,
 - iii. AS 3959 Clause 2.2.3.2 (f).

3.2 Landowner/Occupier's (Ongoing) responsibilities

The owners/occupiers of all lots created by the subdivision of the Subject Site will be responsible for undertaking, complying with and implementing measures to protect their own assets from the threat and risk of bushfire, as follows:

- a) Minimise potential bushfire fuels to mitigate the risk of fire on the property and complying with any bushfire mitigation instructions from the DFES, the Shire or the local Fire Brigade.
- b) Ensure that their lot complies with this BMP.
- c) Comply with the setbacks prescribed by the R-Codes.
- d) Comply with the building standards stipulated by AS 3959-2009 (as amended) having regard to the BAL specified for the particular lot.
- e) Determine and submit to the Shire together with any application for the issue of a Building Permit the BAL rating specified for the building having regard to the then applicable bushfire risk condition of the Subject Site.

3.3 Local Government Responsibilities

The author recommends that the Shire takes up the following responsibilities in relation to the subdivision and future development of the Subject Site.

- a) Apply the appropriate building conditions to the location (setbacks) and construction of dwellings on the proposed lots, as set out on the BAL Contour Plan included hereto as Appendix C of this Bushfire Management Plan.
- b) Enforce any annual Firebreak Order or any Notice issued by the City under section 33(1) of the *Bush Fires Act 1954* so as to minimize the bushfire hazard on the proposed lots, particularly when they are not yet fully developed.
- c) Advise occupiers of any temporary road works in the area that might impede ordinary traffic movement.
- d) Ensure compliance with this BMP.
- e) Ensure that the new and existing public road reserve verges are managed in a minimal fuel condition in accordance with AS3959 & the Guidelines.

4. Disclaimer

The consultant preparing this Bushfire Management Plan takes no responsibility for the impacts of a future bushfire on any values at the Subject Site. The consultant has done its best in this Bushfire Management Plan to alert residents to the threat of bushfires, and to suggest measures to minimise these threats and potential bushfire damage, but there may occur an unusual combination of events or human actions or lack of actions which could not reasonably have been expected at the time of plan preparation. The consultant takes no responsibility for the standard of bushfire preparedness or damage mitigation undertaken by lot owners in the future.

Author Declaration

I declare that the information provided is true and correct to the best of my knowledge.

Signature:



Benjamin Fosbery
(BSc. Enviro Science & Planning)

Signature:

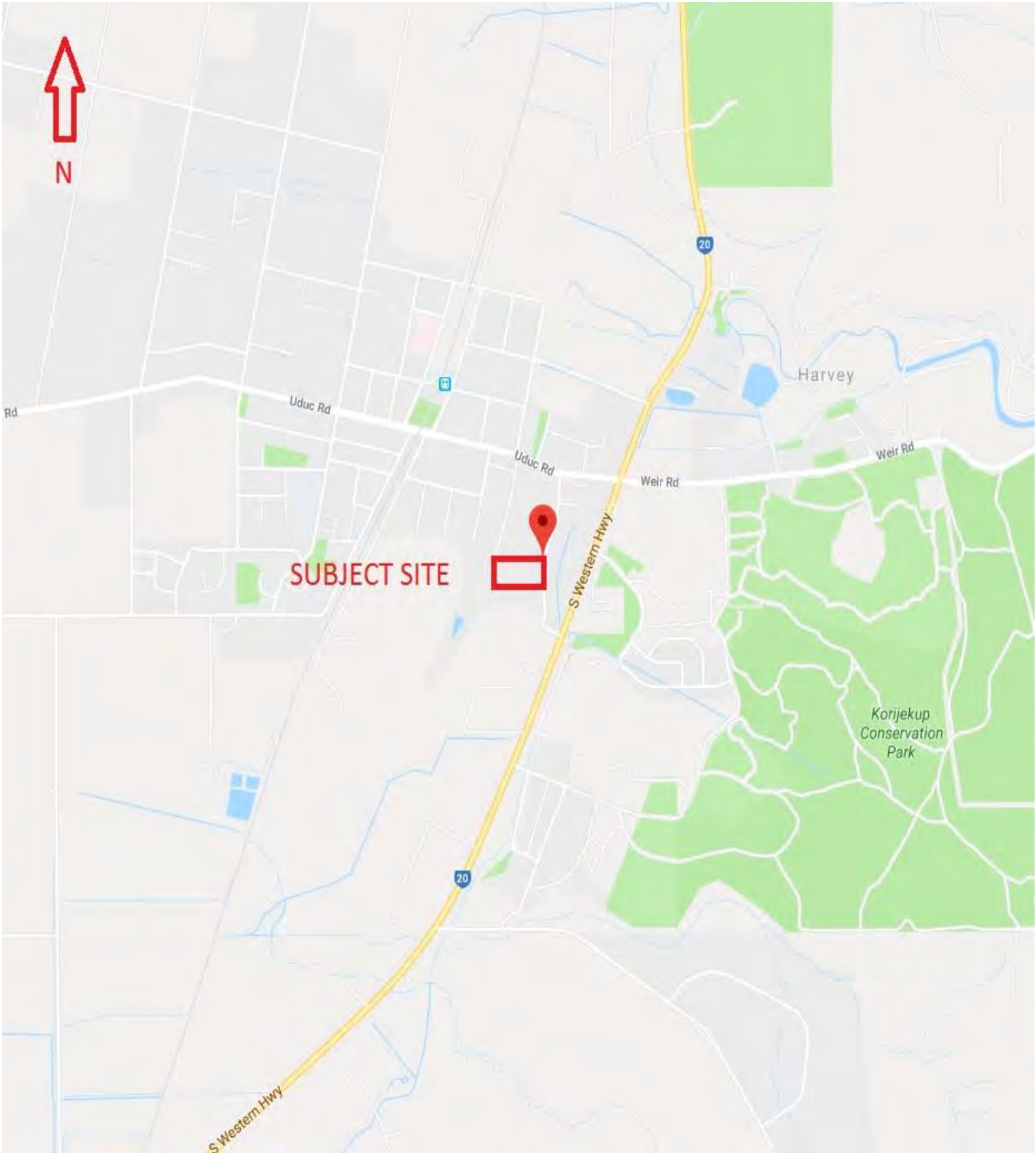


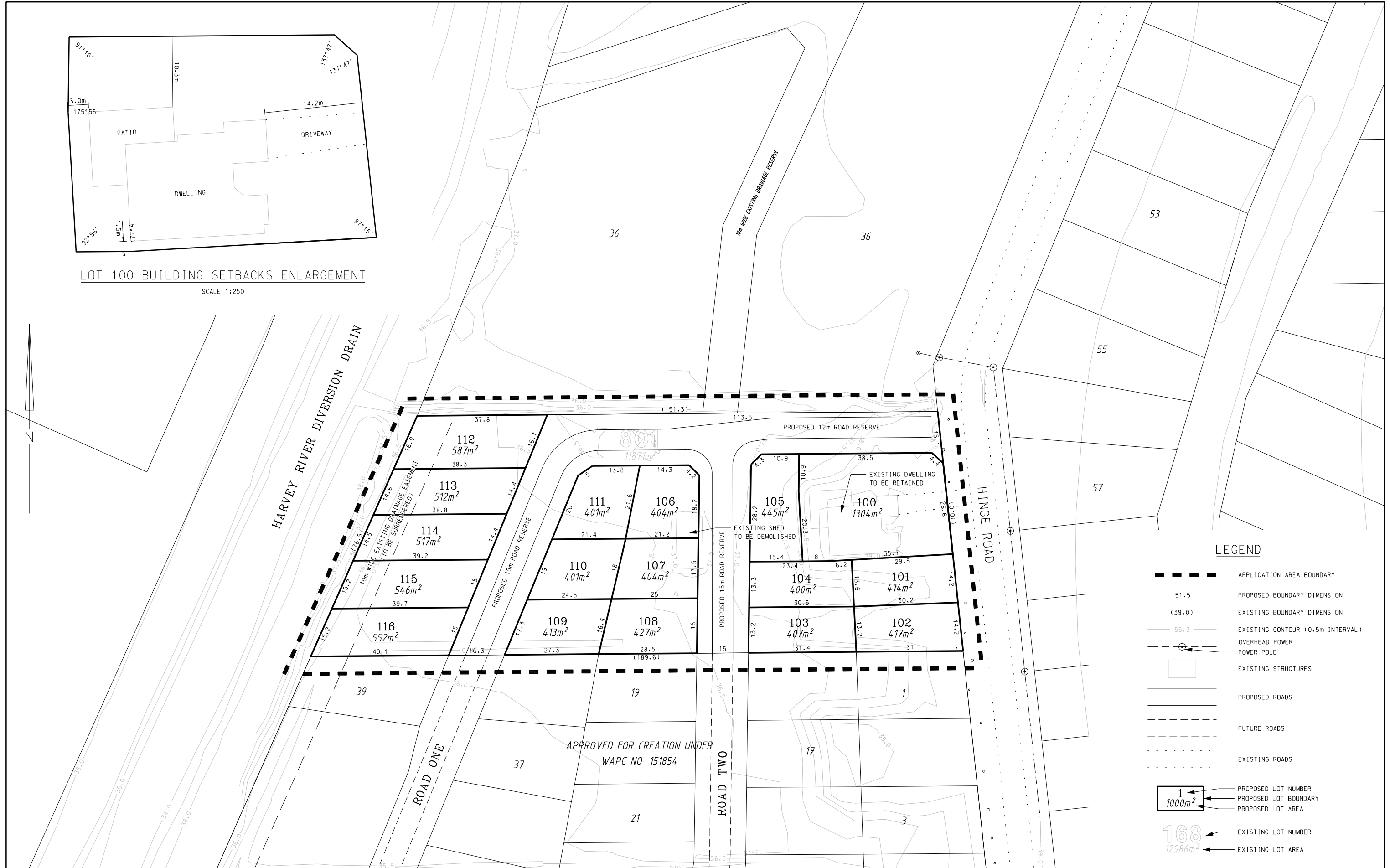
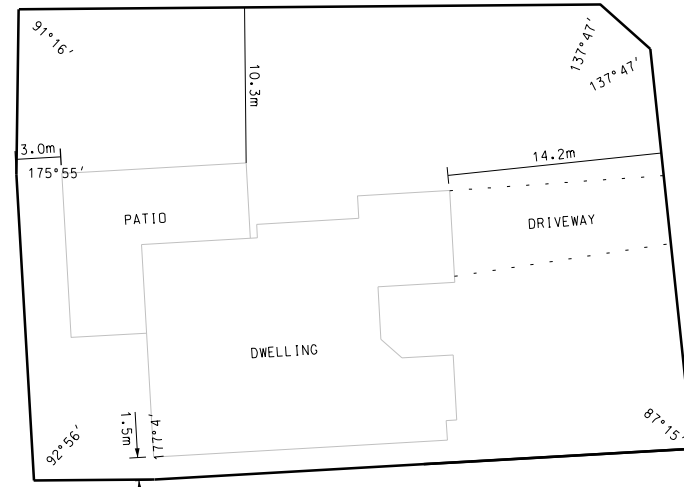
Christopher Elms
(BE Civil Eng. (Hons) MIEAust)
Project Engineer
BPAD40196

Appendices

- A. Locality Depiction (with red border around Subject Site)
- B. Application Plan
- C. BAL Contour Plan
- D. Local Road Network

APPENDIX A





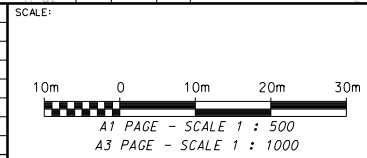
LEGEND

- APPLICATION AREA BOUNDARY
- 51.5 PROPOSED BOUNDARY DIMENSION
- (39.0) EXISTING BOUNDARY DIMENSION
- 55.3 EXISTING CONTOUR (0.5m INTERVAL)
- OVERHEAD POWER
- POWER POLE
- EXISTING STRUCTURES
- PROPOSED ROADS
- FUTURE ROADS
- EXISTING ROADS
- 1 PROPOSED LOT NUMBER
- 1000m² PROPOSED LOT BOUNDARY
- 1000m² PROPOSED LOT AREA
- 168 EXISTING LOT NUMBER
- 12986m² EXISTING LOT AREA

APPROVED FOR CREATION UNDER
WAPC NO: 151854

Appendix B

No.	DATE	BY	DESCRIPTION



DRAWN: B. FOSBERY	DESIGNED BY: CIVIL TECHNOLOGY CONSULTING CIVIL AND STRUCTURAL ENGINEERS
CHECKED: I. MCKELLAR	15 CHARLES STREET SOUTH PERTH W.A. 6151 PH: (08) 9367 2533 FAX: (08) 9367 8046
APPROVED:	W.A.P.C. No.:
	TO BE ISSUED

DRT DEVELOPMENTS PTY LTD			
PROPOSED SUBDIVISION OF LOT 801 HINGE ROAD, HARVEY			
APPLICATION PLAN SHIRE OF HARVEY			
FILE NAME: 842-04-001	DATE: 19-03-2018	DRAWING No.:	AMDT No.:
		842-04-001	



PLOT 2 - LOW THREAT VEGETATION
EXCLUDED UNDER CLAUSE 2.2.3.2 (c)

PLOT 3 - LOW THREAT VEGETATION
MANAGED GRASSLAND
EXCLUDED UNDER CLAUSE 2.2.3.2 (f)

PLOT 1 - CLASS B WOODLAND
UPSLOPE/FLAT

PLOT 4 - LOW THREAT VEGETATION
EXCLUDED FROM BUSHFIRE PRONE AREA
EXCLUDED UNDER CLAUSE 2.2.3.2 (c) AND (d)

PLOT 5 - NON-VEGETATED AREA
CUT AND FILLED
EXCLUDED UNDER CLAUSE 2.2.3.2 (e)
CLEARED FOR FUTURE LOTS
APPROVED UNDER WAPC NO. 151854

NOTES

1. ALL EXISTING VEGETATION WITHIN THE APPLICATION BOUNDARY THAT SITS WITHIN THE DECLARED BUSHFIRE PRONE AREA HAS BEEN CLEARED OR IS TO BE CLEARED.
2. BACKGROUND IMAGE TAKEN FROM NEARMAP WEBSITE. IMAGE DATE 13 DECEMBER 2017. INSET DRONE IMAGE TAKEN 30 JANUARY 2018.
3. VEGETATION WITHIN THE SUBJECT SITE IS NOT ASSESSED AS IT WILL BE CLEARED AS PART OF SUBDIVISION.
4. THE MINIMUM PRIMARY ROAD SETBACKS ARE 6 METRES.
5. THE MINIMUM SECONDARY ROAD SETBACKS ARE 1.5 METRES.
6. THE MINIMUM SIDE AND REAR SETBACKS ARE 1 METRE (SUBJECT TO WALL LENGTH AND PRESENCE OF AN OPENING ACCORDING TO THE RESIDENTIAL DESIGN CODES).

LEGEND

- SUBJECT SITE
- 101 PROPOSED LOT BOUNDARY
PROPOSED LOT NUMBER
- 270m² BUILDING ENVELOPE
BUILDING ENVELOPE AREA
- EXISTING LOT BOUNDARY
- BAL ASSESSMENT AREA
(100M FROM APPLICATION BOUNDARY)
- EXISTING VEGETATION LIMIT
- 36.0 EXISTING CONTOUR
- BORDER OF DRONE IMAGERY SOURCE
(SEE NOTE 2)

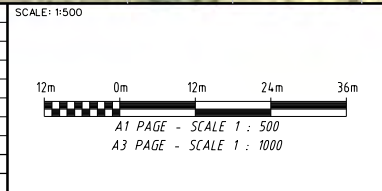
**BAL CONTOURS
WOODLAND - UPSLOPE/FLAT**

- BAL - LOW - 100M FROM THE EXISTING VEGETATION LIMIT
- BAL - 12.5 - 29M FROM THE EXISTING VEGETATION LIMIT
- BAL - 19 - 20M FROM THE EXISTING VEGETATION LIMIT
- BAL - 29 - 14M FROM THE EXISTING VEGETATION LIMIT
- BAL - 40 - 10M FROM THE EXISTING VEGETATION LIMIT
- BAL - FZ - EXISTING VEGETATION LIMIT



Appendix C

No.	DATE	BY	DESCRIPTION



DRAWN: B. FOSBERY
CHECKED: C. ELMS
APPROVED: [Signature]
BE Civil (Hous) MEASUR
BPAD 40196

DESIGNED BY: CIVIL TECHNOLOGY CONSULTING CIVIL AND STRUCTURAL ENGINEERS
15 CHARLES STREET SOUTH PERTH W.A. 6151
PH: (08) 9367 2533
FAX: (08) 9367 8046
W.A.P.C. No.:
TO BE ISSUED

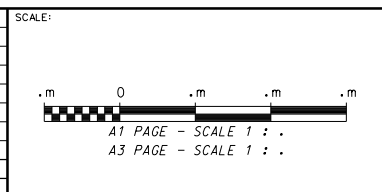
DAVEROSE (WA) PTY LTD
STRUCTURE PLAN
LOT 801 HINGE ROAD, HARVEY
BAL CONTOUR PLAN
SHIRE OF HARVEY

FILE NAME: 824-04-BAL.DGN
DATE: 19-03-18
DRAWING No.: 824-04-BAL
AMD No.: .



Appendix D

No.	DATE	BY	DESCRIPTION



DRAWN:
B. FOSBERY

CHECKED:
C. ELMS

APPROVED:
[Signature]
BE (Civil) (Hons) (MEng)
BPAD 40196

DESIGNED BY:
**CIVIL TECHNOLOGY
CONSULTING CIVIL
AND STRUCTURAL ENGINEERS**

15 CHARLES STREET
SOUTH PERTH W.A. 6151
PH: (08) 9367 2533
FAX: (08) 9367 8046

W.A.P.C. No.:

DAVEROSE (WA) PTY LTD		
STRUCTURE PLAN LOT 801 HINGE ROAD, HARVEY ACCESS/EGRESS PLAN SHIRE OF HARVEY		
FILE NAME: 842-BMP-APPENDIX C.DGN	DATE: 01-03-2018	DRAWING No.1 842-BMP-APPENDIX D