



Appendices

Item 12.2.2A

**UNDER SEPARATE
ELECTRONIC COVER**

ORDINARY COUNCIL MEETING

To Be Held

Wednesday, 22nd November 2023

Commencing at 5.00pm

At

ADMINISTRATION CENTRE EATON

1 Council Drive - EATON

This document is available in alternative formats such as:
~ Large Print
~ Electronic Format [emailed]
Upon request.

LOCAL STRUCTURE PLAN

Parkridge Estate



(Appendix ORD: 12.2.2A Under E Separate Cover)

DOCUMENT CONTROL

| Control Version | Date | Status | Distribution | Comment |
|-----------------|------------|--------|-------------------|------------|
| A | 30/08/2022 | Draft | Internal | QA check |
| B | 02/09/2022 | Draft | Client | For review |
| C | 29/09/2022 | Draft | Client | For review |
| D | 21/10/2022 | Final | Shire of Dardanup | Lodgement |
| E | 26/05/2022 | Final | Shire of Dardanup | Lodgement |

Prepared for: Parkridge Pty Ltd
Prepared by: KS
Reviewed by: LB

Date: 26 May 2023
Job No: 22294
Ref: E

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ENDORSEMENT PAGE

This Structure Plan is prepared under the provisions of the Shire of Dardanup Local Planning Scheme No. 3.

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

..... Date

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

..... Date

..... Date of Expiry

TABLE OF AMENDMENT(S)

| Amendment No. | Summary of Amendment | Amendment Type | Date approved by WAPC |
|----------------------|---|-----------------------|------------------------------|
| 1 | Removal of POS and reconfiguration of residential cells. Inclusion of Lot 9504 | Standard | |
| | | | |

TABLE OF DENSITY PLANS

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

Executive Summary

Local Structure Plan
Parkridge Estate, Eaton

The Local Structure Plan (LSP) area falls within the locality of Eaton in the Shire of Dardanup. The subject land is situated to the west of Eaton Drive, approximately 2.5km from the Eaton Fair Shopping Precinct and approximately 12km by road, northeast of the Bunbury City Centre.

This LSP area will accommodate low and medium density residential housing. The LSP outlines a land use and movement network framework for the development of the subject site.

The lots subject to this modification were formed from the original Lot 1 of Wellington Location 19 (Location 19), purchased by Parkridge Pty Ltd in 1993. The land area of Location 19, being 254.2595ha, has subsequently been developed for residential purposes, public open space (POS), Regional Open Space (ROS), a recreation centre, a high school, a primary school, and an aged care facility.

The original LSP for Location 19 formed part of the initial Amendment 47 to the Shire of Dardanup's Town Planning Scheme No. 3 (TPS 3), which was approved and endorsed by the Minister in 1993.

Subsequently, a revised LSP for the northern portion of Location 19 was approved by the Western Australian Planning Commission (WAPC) on October 1, 2019.

The northern portion of the site and land subject to this modification including Lots 9008, 9504 and portion of 9503 are the remaining portions to be developed from the original landholding.

This modification seeks to consolidate the POS contribution following an audit of POS already ceded from Location 19. The POS Audit has recently been completed and submitted to the Department of Planning, Lands and Heritage (DPLH) for review and consideration.

Lot 9504 (the 'homestead lot') was the original location of Hough's Homestead and while identified within the Development Zone in the Shire of Dardanup's Local Planning Scheme, it has been included in the Structure Plan to establish a residential zoning to allow development of this lot. An amended access is proposed from the homestead lot, through lot 9503 to Peninsula Lakes Drive.

The LSP Summary Table below details the nature and key outcomes of the LSP.

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TABLE 1 – LSP SUMMARY TABLE

| ITEM | DATA | STRUCTURE PLAN REF (section no.) |
|---|------------------------------------|---|
| Total area of Location 19 | 254.2595 ha | |
| Total area covered by this LSP modification | 28.8702 ha | Section 1.2 |
| Area of each land use proposed: | Hectares Lot Yield | |
| - Residential (R30 – 40) | 17.8599 400 lots | Section 4.4 |
| - Residential (R5) | 1.9602ha 1 lot | Section 4.4 |
| Total estimated lot yield | 446 lots @ 400m ² | Section 4.4 |
| Estimated number of dwellings | 446 dwellings | Section 4.4 |
| Estimated residential site density | 15.4 dwellings per site hectare | Section 4.4 |
| Estimated population | 1115 people * | Section 4.4 |

* Based on ABS 2021 Census – Eaton Average number of people per household 2.5.

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Table of Technical Appendices

| Appendix No. | Document Title | Nature of Document | Referral/Approval Agency | Approval Status & Modification |
|--------------|---|--------------------|--|--------------------------------|
| A | Certificates of Title | Supporting | - | - |
| B | POS Audit | Supporting | - | - |
| C | Environmental Assessment and Black Cockatoo Habitat Tree review | Supporting | - | - |
| D | Local Water Management Strategy | Original Approved | Shire of Dardanup and Department of Water and Environmental Regulation | Submitted to Shire and DWER |
| E | Bushfire Management Plans | Approved | Department of Fire and Emergency Services | - |
| F | Transport Impact Assessment | Supporting | - | Updated version attached |
| G | Servicing Report | Supporting | - | - |

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Part One - Implementation

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1 LOCAL STRUCTURE PLAN AREA

This modification to the approved Local Structure Plan applies to Lots 9008 and 9503 Peninsula Lakes Drive and Lot 9504 Leicester Ramble, Eaton, being the land contained within the inner edge of the line denoting the Local Structure Plan boundary shown on the Local Structure Plan Map (**Plan 1**).

2 OPERATION

In accordance with Schedule 2, Part 4 of the *Planning and Development (Local Planning Schemes) Regulations 2015* ('Regulations'), this Structure Plan comes into operation when it is approved by the Western Australian Planning Commission ('WAPC'), pursuant to Schedule 2, Part 4, Clause 22 of the Regulations.

3 STAGING

Development of areas within the Structure Plan may be determined by servicing constraints. Implementation will occur through subdivision applications prepared by the developer in response to market demand. It is anticipated that development will expand to the north from the existing residential lots created previously in Parkridge.

4 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

Subdivision within the Structure Plan area is to be in accordance with the residential density code prescribed by the Structure Plan.

Land use permissibility within the Structure Plan area shall be in accordance with the corresponding zone or reserve under the Scheme.

The following subdivision and development requirements are to be implemented in conjunction with the Structure Plan map:

1. Subdivision, development, and land use within the structure plan area is to be generally in accordance with the Structure Plan.
2. All proposed lots are to be connected to reticulated water, sewer, power and telecommunications.
3. Lots requiring the preparation of a Local Development Plan shall be determined in accordance with Liveable Neighbourhoods and noted on the required Density Plan of the proposed subdivision to be provided prior to an application for subdivision.

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5 OTHER REQUIREMENTS

5.1 DENSITY PLANS

The land identified as residential within existing Lot 9008 has designated a code range of R30-40. A Density Plan that determines final R-Code allocation is required for each stage of subdivision within the Structure Plan area.

The allocation of residential densities shall be in accordance with the following locational criteria:

- a) The R30 density code shall apply as the base code to all 'Residential' zoned lots, with the exception of identified in the density plan with each subdivision application or shown on the LSP Map.
- b) Medium densities of up to R40 shall be provided throughout the site to provide for a mix of lot sizes and affordable home sites.

5.2 LOT 9504 – HOMESTEAD LOT

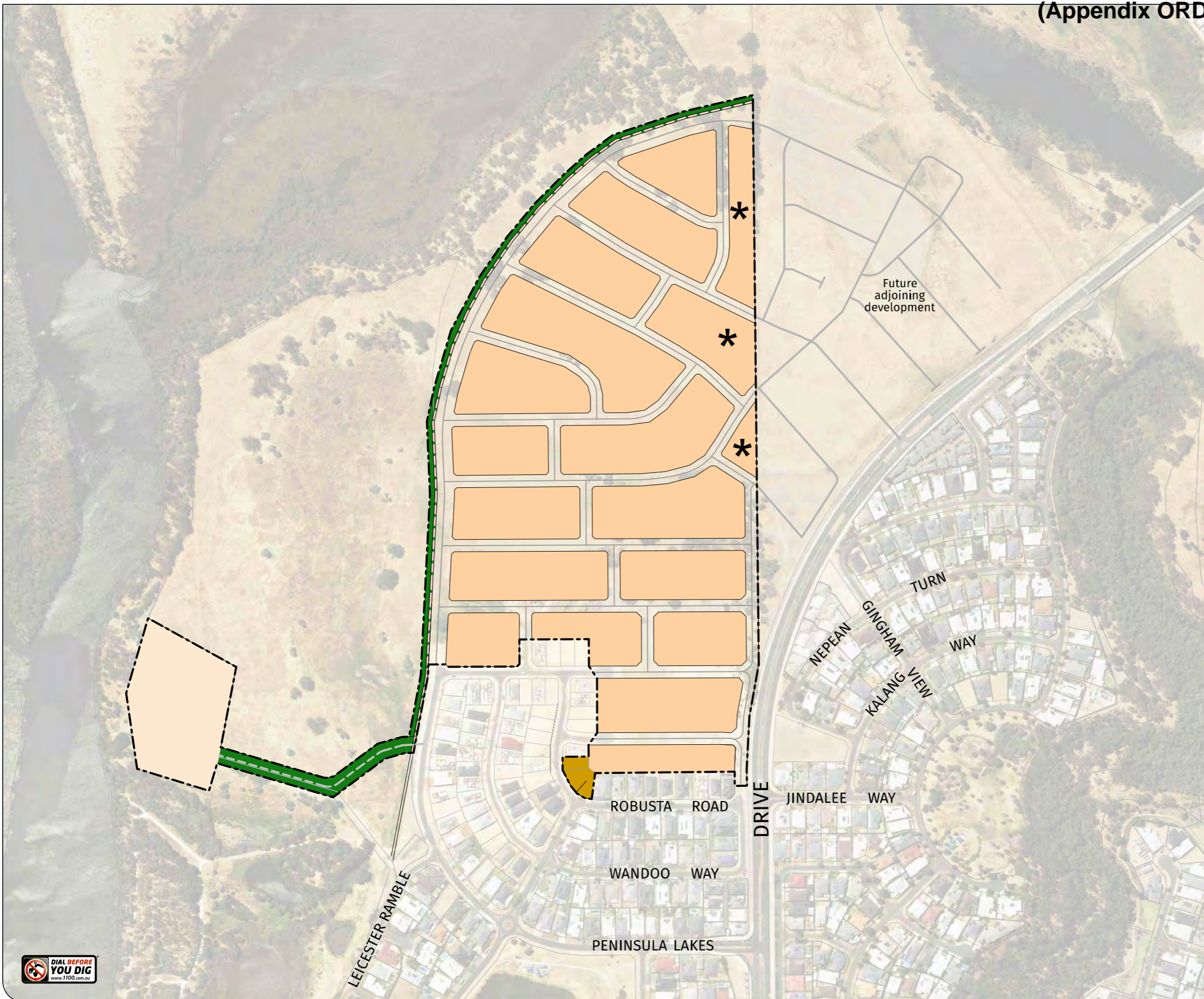
Lot 9504, known as the 'Homestead Lot' is to have a density coding of R5 for future development, with access via a modified battle-axe leg through Lot 9503.

5.3 FOOTPATHS

The applicant/owner shall make provision for footpaths through the structure plan area. The location and width of footpaths are to be determined at subdivision stage and shall be in accordance with the requirements of Liveable Neighbourhoods.

LEGEND

- EXISTING CADASTRE
- STRUCTURE PLAN BOUNDARY
- PROPOSED CADASTRE
- RESIDENTIAL: R40
- RESIDENTIAL: R20 - R40
- RESIDENTIAL: R5
- PUBLIC OPEN SPACE
- REGIONAL OPEN SPACE
- LOCAL ROADS
- PRIVATE ACCESSWAY
- - - PROPOSED MANAGED LOW FUEL ZONE (3m WIDTH)
- * RESIDENTIAL DENSITY TO BE CONSISTENT WITH ADJOINING STRUCTURE PLAN



STRUCTURE PLAN MODIFICATION

Robusta Road, Eaton
PARKRIDGE

Plan No. | 22294-07
Date | 29/03/23
Drawn | NP
Checked | KS
Revision | E

BUNBURY OFFICE:
21 Spencer Street,
BUNBURY WA 6230
T: 08 9792 6000
E: bunbury@harleydykstra.com.au
W: www.harleydykstra.com.au

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Scale | 1:1000@A3



NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey



Harley Dykstra

PLANNING & SURVEY SOLUTIONS

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Part Two - Explanatory Report

(Appendix ORD: 12.2.2A Under E Separate Cover)

1 PLANNING BACKGROUND

1.1 Introduction and Purpose

This Local Structure Plan (LSP) modification has been prepared by Harley Dykstra on behalf of Parkridge Group Pty Ltd. The LSP considers the POS provided for the original landholding being for Lot 1 of Wellington Location 19 (Location 19). The portion subject to this LSP modification are Lots 9008 and Portion of 9503 Peninsula Lakes Drive and 9504 Leicester Ramble, Eaton (the 'subject land').

This LSP has been prepared in accordance with the obligations set out in the Shire of Dardanup Town Planning Scheme No.3 for 'Residential' development.

This proposal is accompanied by a Structure Plan Map (**Figure 1**) prepared in accordance with the *Planning and Development (Local Planning Scheme) Regulations, 2015*, which is included at Part One of this Report.

The Explanatory Section of this Structure Plan report includes a detailed description of the proposal, provides an evaluation of the relevant town planning, environmental, bushfire management, local water management and servicing considerations applicable to the land, and details the rationale supporting the proposed LSP layout and development requirements. The Explanatory Section also includes the history of WAPC subdivision approvals requiring the provision of Public Open in relation to Location 19.

Specialist reporting was undertaken for the Structure Plan approved in October 2019 and as the developable area and intent of the approved plan has not altered significantly, these reports are still relevant.

The objectives of the Structure Plan are to:

- Provide a framework to guide the use, subdivision and development of the land to create a high quality, liveable urban precinct; and
- Provide for a range of lot products and sizes to facilitate the creation of a diverse housing mix of typologies and range of affordability to cater for a varied demographic.

1.2 Land Description

Location & Context

The subject land, known as 'Parkridge' is located within the locality of Eaton, within the Shire of Dardanup. It is approximately 2.5km north of the Eaton town centre.

Parkridge is a successful residential development providing low to medium density homesites.

Eaton Drive links Parkridge and the residential development of Millbridge to the east to Treendale to the north of the Collie River.

The location of Parkridge can be seen in **Figure 1** (overleaf).

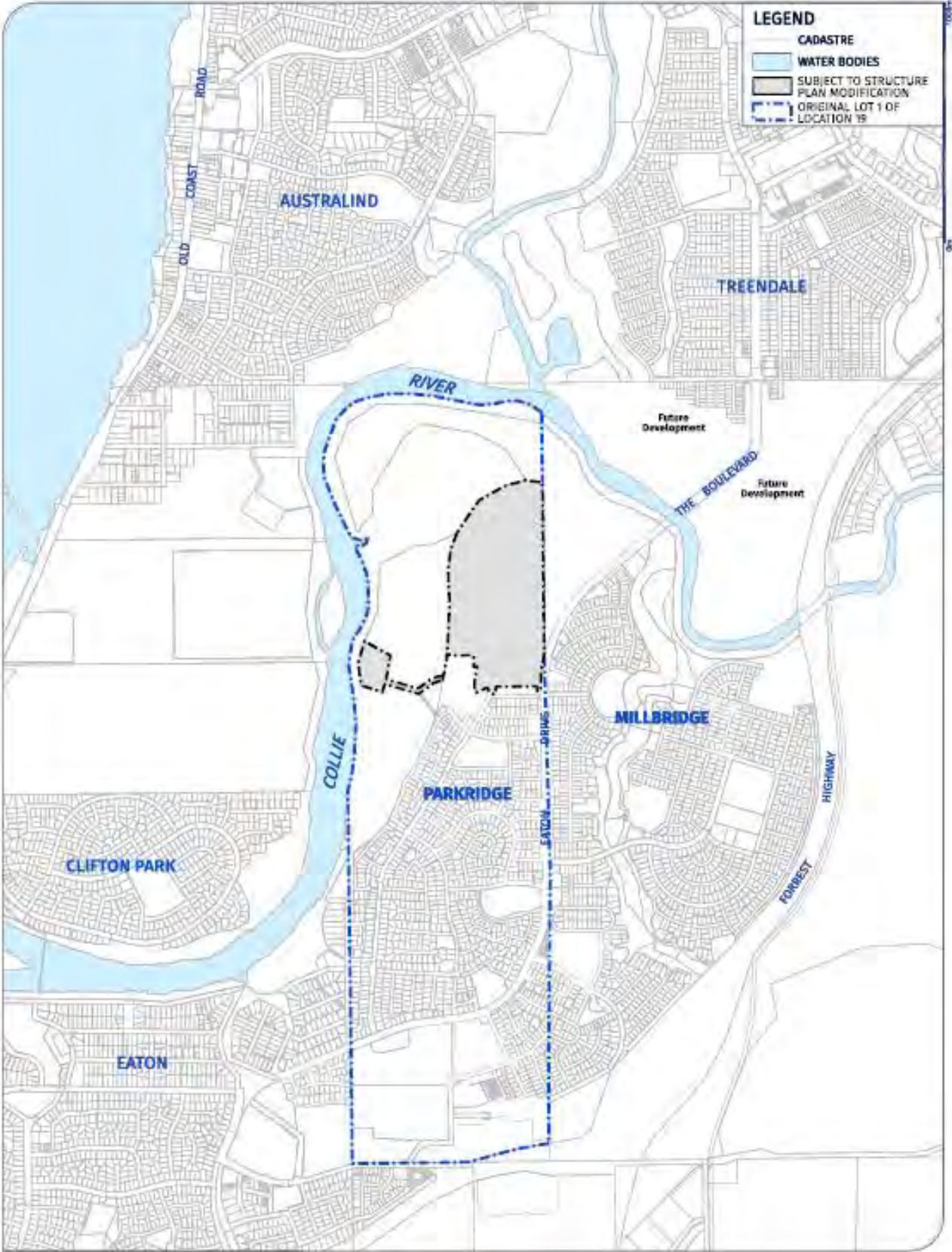


FIGURE 1 – LOCATION PLAN

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Area and Land Use

Location 19, comprised an area of 254.2595ha and was bounded by the Collie River to the north and north-eastern boundaries. Forrest Highway now adjoins the original southern boundary.

The land subject to this LSP modification is the northern portion of Location 19 has an area of 28.8702ha which includes Lots 9008 being the main parcel of land, Lot 9504 being the homestead lot and access and lots 170 & 169 Robusta Road for the purpose of change of density coding. .

The land is parkland cleared with some small patches of remnant vegetation, most of which relate to the Collie River foreshore area.

Other than lots under development on the southern edge, the site is vacant and has been used for broad acre farming/grazing with improved pasture.

Development has occurred from the southern portion of the site generally in a northern direction with staged subdivision and allocation of POS. Several POS Audits and calculations have been undertaken with the latest prepared by Harley Dykstra submitted to DPLH in June 2022. A copy of the POS Audit is available for review at **Appendix B**.

Since the approval of the original Structure Plan, approximately 75% of the estate has been developed. The remaining northern portion of the site is subject to this Structure Plan modification.

Legal Description and Ownership

Details of the land subject to modification are shown in Table 1 below. Copies of the Certificates of Title are included at **Appendix A**.

TABLE 2 – LAND OWNERSHIP DETAILS

| Lot No. | Plan/ Diagram | Volume | Folio | Registered Proprietor(s) |
|---------|------------------|--------|-------|--------------------------|
| 9008 | 423332 | 4023 | 709 | PARKRIDGE GROUP PTY LTD |
| 9504 | 50198 | 2632 | 555 | LANCETT COURT PTY LTD |
| 9503 | 50198 | 2632 | 554 | PARKRIDGE GROUP PTY LTD |

1.3 Background Planning Information

The original Structure Plan for Location 19 (Parkridge) was adopted by the Shire of Dardanup in December 1991 and endorsed by the WAPC.

The Shire of Dardanup also initiated Amendment 47 to TPS 3 to rezone Location 19 to Residential Area and Recreation. Amendment 47 was approved in July 1993.

Between 1993 and 2007, Parkridge subdivided Location 19 in accordance with the approved Structure Plan with several stages of development resulting in residential lots and POS being created.

In early 2007, planning consultants, Koltasz Smith prepared a revised Structure Plan for the northern portion of the site which, following consultation with the Shire of Dardanup, included a proposed

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sports ground. However, after matters relating to the provision of POS were unable to be resolved the 2007 Structure Plan was not progressed.

Further subdivisions were approved by the WAPC with the condition that Public Open Space be vested in the Crown in accordance with the Planning and Development Act 2015. This was accepted by the developer and subsequent portions of land were provided as POS and the conditions of the approval cleared by the Shire and WAPC.

In 2015, The Shire of Dardanup rezoned the remaining portion of Location 19 yet to be developed to a 'Development' zone. This change of zoning resulted in a Local Structure Plan to be approved prior to any further subdivision. Additionally, the Shire of Dardanup resolved to prepare a Local Structure Plan for Parkridge land. This Structure Plan was also not progressed.

In 2016, the WAPC refused an application for subdivision primarily on the grounds that there was no approved Local Structure Plan over the application area.

To progress development of the remaining portion of Parkridge, planning consultants TME/Calibre were instructed to prepare a Local Structure Plan over the northern portion of the site. This Local Structure Plan was approved on October 1, 2019.

In March 2022, correspondence between Mr Saulsman of Parkridge Group and the West Australian Planning Commission (WAPC) resulted in the WAPC recommending an audit be undertaken to determine the POS already ceded and the balance of POS to be provided on the remaining land to be developed.

The POS Audit seeks to confirm the amount of POS provided to date, and to guide and justify a modification to the approved Structure Plan. The POS Audit was submitted to the DPLH in June 2022 for review and comment. A copy of the Audit can be found in **Appendix B**.

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2 PLANNING FRAMEWORK

2.1 ZONING AND RESERVATIONS

Greater Bunbury Region Scheme

Most of the lot 9008 is zoned 'Urban' under the Greater Bunbury Region Scheme (GBRS). A small section of the north-western edge of lot 9008 is zoned Regional Open Space as is the land to the west and north of lot 9008.

All of lot 9504 is zoned Urban except for the battleaxe portion of the lot which is zoned Regional Open Space. The land surrounding lot 9504 is also zoned Regional Open Space.

Lot 9503 is wholly zoned Regional Open Space.

Shire of Dardanup - Town Planning Scheme No. 3

The land zoned Urban in the GBRS is identified as 'Development' zone within the Shire of Dardanup's Town Planning Scheme No.3 as shown in **Figure 2**.

Clause 3.16.9 of the scheme identifies that 'It is intended that the land in a Residential Development Area be progressively developed for residential purposes and such other business and public uses as are normally associated with residential development'.

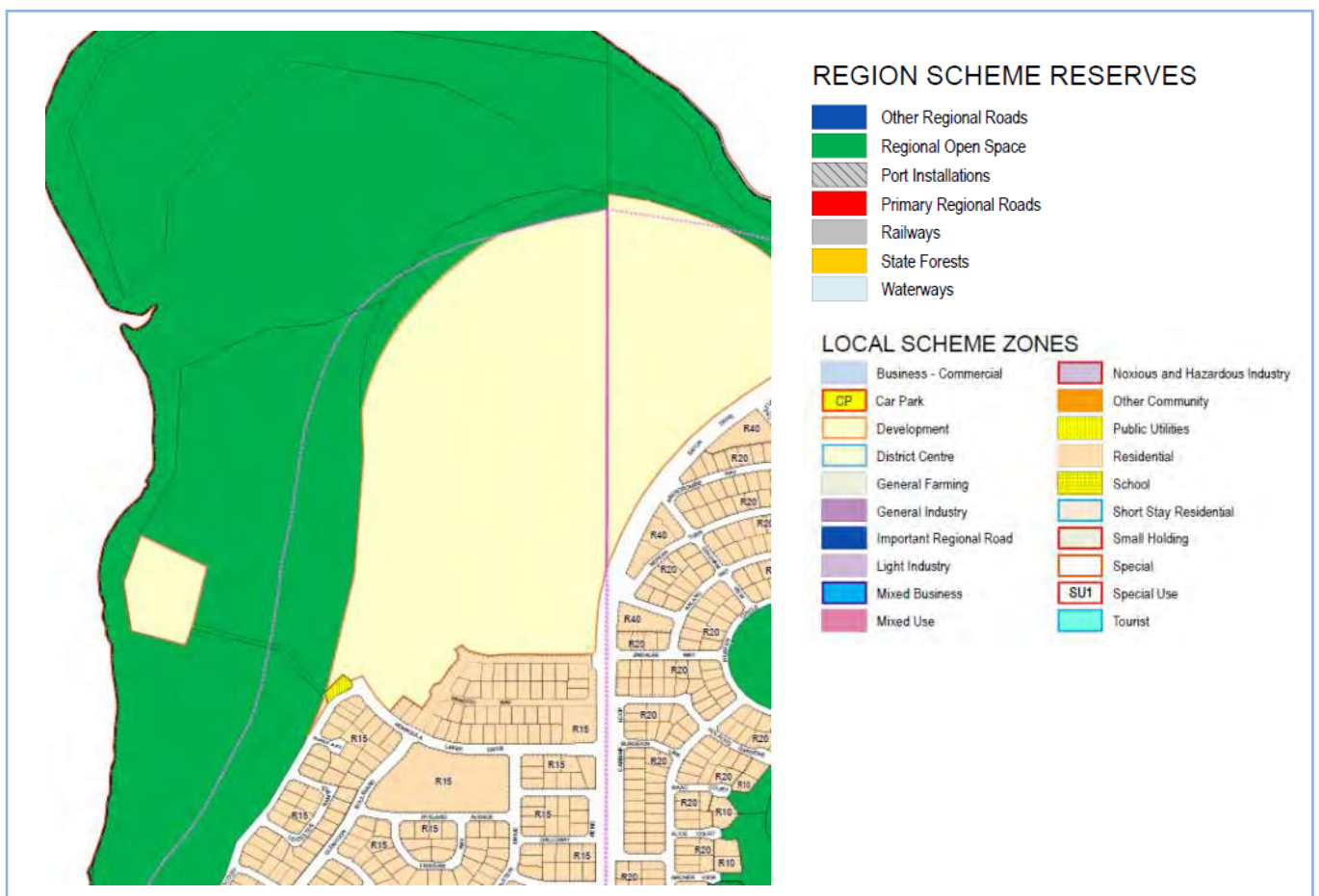


FIGURE 2 – ZONING MAP

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Shire of Dardanup – Draft Local Planning Scheme No. 9

The Shire of Dardanup has prepared a Draft Local Planning Scheme which was advertised for comment early in 2023. The zoning shown on the Draft scheme is consistent with that shown in the current Town Planning Scheme No.3.

Regional and sub-regional structure plan

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 terms.

The Greater Bunbury Sub-Regional Structure Plan 2013 identifies the land as 'Urban Undeveloped Land' and 'Regional Open Space' reservation, consistent with the zonings of TPS No.3.

Shire of Dardanup Local Planning Strategy

The Shire of Dardanup Local Planning Strategy was adopted by Council in March 2014 was prepared to provide a strategic plan that will plan for the future of the Shire in a responsible manner and reflect the aspirations of the shire and its community, accommodates future needs, and creates opportunities to enhance local attributes.

At the time of the Strategy's completion, it estimated that the Eaton/Millbridge urban area would reach a population of 15,000 persons when fully developed, possibly higher if the residential densities are increased.

The residential portion of the subject land is identified for urban development in the Greater Bunbury Region Scheme and Shire of Dardanup Town Planning Strategy, development of this site is likely to have been incorporated into the population and housing predictions included within the Local Planning Strategy.

Residential density proposed for the subject land is consistent with the current TPS 3, discussions will continue with officers at the Shire of Dardanup during the structure planning process, to ensure the proposed development is consistent with the densities proposed as part of LPS 9.

2.2 PLANNING POLICIES

Livable Neighbourhoods

Livable Neighbourhoods (LN) is the WAPC's primary policy for the design and assessment of structure plans (regional, district and local) and subdivision for new urban (predominantly residential) areas in Perth metropolitan and Peel regions and major regional centres, on greenfield and large infill sites.

Element 1 of LN defines the principles of community design and guides the broad planning of urban areas to foster a sense of community, local identity, and space. Objective 5 of LN states: Provide public open space that meets the recreational, social and health needs of existing and future communities.

LN defines the walking distance, using the pedestrian network, between residents and the nearest POS (of any size) should be no more than 300m over the neighbourhood as a whole. Further, where regional open space (ROS) adjoins the site it should be considered as a major component of the POS network to provide function at a neighbourhood scale. The following table from LN defines the POS size hierarchy and catchment area for accessibility.

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| | Small | Local | Neighbourhood | District |
|-------------------------|----------------------------------|---------|---------------|---------------|
| Size | Up to 4000m ² (0.4ha) | 0.4-1ha | 1ha – 5ha | 5ha and above |
| Accessibility catchment | 300m | 300m | 800m | 2km |

It is generally accepted that a typical 400m walkable catchment is sufficient in residential areas to access an activity centre or open space. This was confirmed in correspondence (19th August 2022) from the DPLH in response to the POS Audit submitted. Figure 3 demonstrates the walkable catchments in relation to the POS and ROS at Parkridge.

Element 5 of LN specifically addresses the provision and requirement of POS to contribute to the quality of life, vitality, identity, community interaction and sense of place in neighbourhoods.

LN identifies the function of POS as, sport, recreation and nature. All publicly accessible land can contribute to function, even if it is not a POS site. For example, a regional sporting facility on regional open space (ROS) providing sport opportunities, a Bush Forever site providing a nature function and a walking trail on an easement providing recreation opportunities.

Further, LN states ROS were identified at regional/subregional planning level, should be accessible and useable for local residents as local POS.

LN states the provision of POS in residential areas is 10% of the gross subdivisible area. This is to be provided free of cost and vested in the Crown under the provisions of Section 152 of the *Planning and Development Act 2005*.

POS land considered to be restricted can provide a portion of the POS contribution, however this is limited to 2% of the overall minimum 10% contribution.

LN requires the calculation of POS is to be demonstrated through the preparation of a POS Schedule consistent with the proforma shown as Table 16 in LN. A POS schedule for Parkridge is provided in Section 4.2 of this report, which demonstrates sufficient POS has been provided for Location 19.

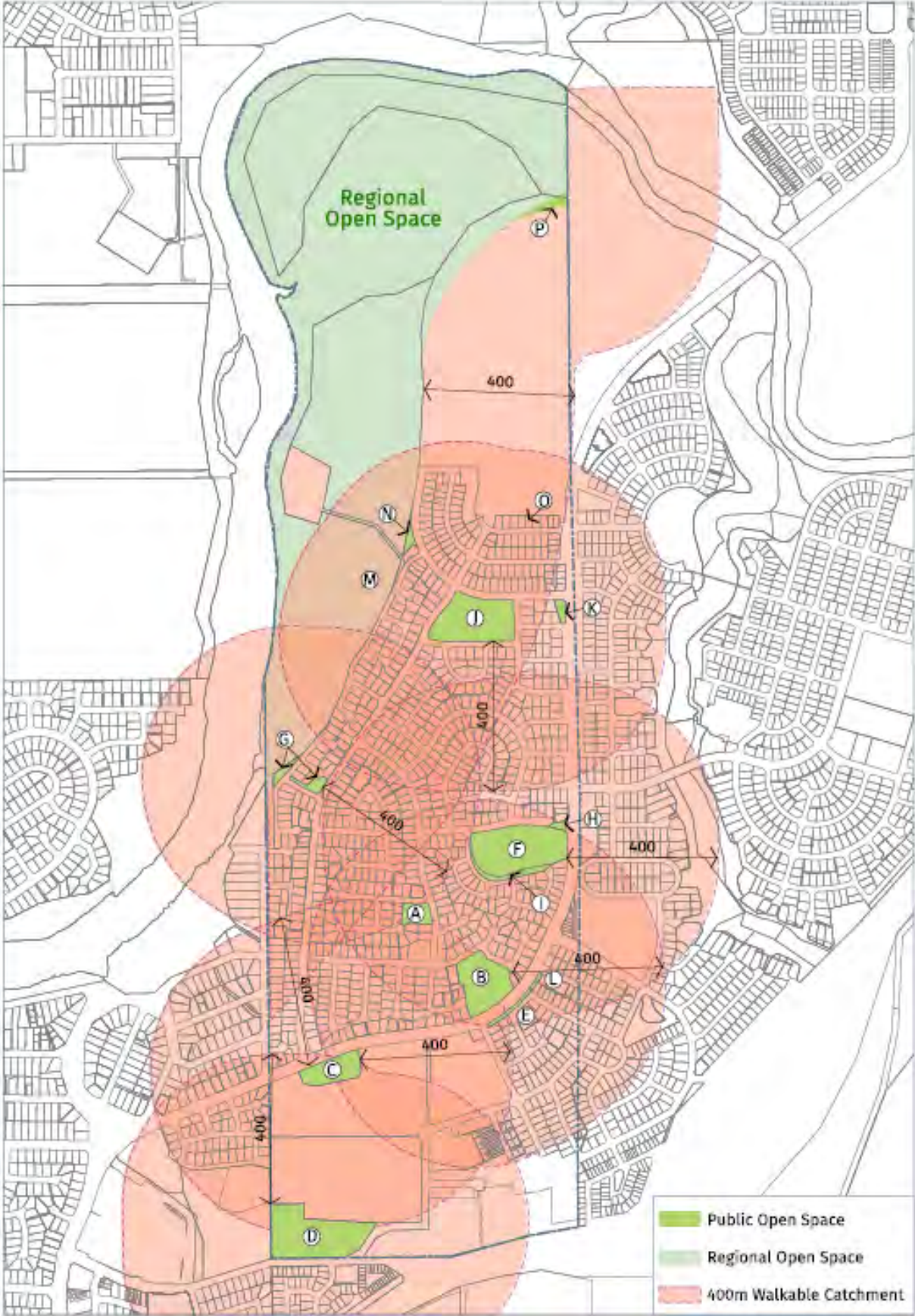


Figure 3 – Walkable Catchments

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Development Control Policy 2.3 – Public Open Space in Residential Areas

The basic component of this policy is the requirement that 10% of the gross subdivisible area of a conditional subdivision shall be given up free of cost by the subdivider for public open space. This has been the basis of public open space policy in the State for many years and emanates from the recommendations of the Plan for the Metropolitan Region Perth and Fremantle, 1955 Report (the Stephenson - Hepburn Plan).

The general requirements of the policy states:

“The Commission's normal requirement in residential areas is that, where practicable, 10 percent of the gross subdivisible area be given up free of cost by the subdivider and vested in the Crown under the provisions of Section 20A of the Town Planning and Development Act, 1928 (as amended) as a Reserve for Recreation. In determining the gross subdivisible area the Commission deducts any land which is surveyed for schools, major regional roads, public utility sites, municipal use sites, or, at its discretion, any other nonresidential use site.”

The determination of POS requirement for Parkridge has been calculated by various audits and calculations over several years. It has previously been accepted by the DPLH and the WAPC that the State Administrative Tribunal (SAT) resolution WASAT 113 (DR231 of 2010) that the total POS to be provided for Location 19 was **13.2513 hectares**.

It must be noted that the POS Audit (**Appendix B**) details the POS ceded to the Crown in accordance with the relevant WAPC condition of subdivision and in accordance Section 152 of the *Planning and Development Act 2005*, and in accordance with Section 41 of the *Land Administration Act 1997*. This POS is subject to the Minister’s Management Order given to the Local Authority.

Development Control Policy 5.3 - Use of Land Reserved for Parks and Recreation and Regional Open Space

This policy establishes the Western Australian Planning Commission’s (WAPC) position regarding the use and development of land reserved for Parks and Recreation in the Metropolitan Region Scheme (MRS) and Regional Open Space in the Greater Bunbury and Peel Region Schemes (GBRS and PRS).

The policy outlines the circumstances that may be appropriate to permit incorporated clubs, community groups and in some circumstances private business to locate on land reserved for Parks and Recreation or Regional Open Space (ROS). Further the policy states that land reserved for Parks and Recreation or Regional Open Space may be used for:

- passive recreation.
- active sporting pursuits.
- cultural and or community activities.
- activities promoting community education of the environment; and/or
- uses that are compatible with and or support the amenity of the reservation (i.e. cafe, restaurant) where specific facilities for such purposes have been approved by the WAPC.

The use of ROS for community recreation has been investigated by the Shire of Dardanup for purposes such as the off-lead dog exercise area, proposed to the west of Parkridge Estate. Council resolved at its Ordinary Council meeting of 28th April 2021, it develop detailed designs and costings for the location.

Formal dual use paths and nature walkways currently are located in the ROS along the Collie River Foreshore. These will be developed further as Parkridge continues the release of staged development in a northerly direction.

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The use of the ROS for such purposes is a desirable outcome for the benefit of both Parkridge residents and the general community. The design of the LSP road network allows easy access to the ROS by being orientated in such a way that most streets lead directly to the ROS.

State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 (SPP 3.7) seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. SPP 3.7 applies to strategic planning proposals, including Structure Plans, over land designated as bushfire prone by the Department of Fire and Emergency Services. **Figure 3 (overleaf)** is an excerpt of this map.

Given the Structure Plan area is partially designated as Bushfire Prone, SPP 3.7 is applicable to the LSP area. The requirements of SPP 3.7 are addressed by a Bushfire Management Plan prepared by Lushfire and Planning. Further details are provided in Section 6.1 of this report.

Shire of Dardanup Development Policy No.28 – Acid Sulphate Soils

The Shire of Dardanup recognises the Western Australian (WAPC) Planning Bulletin No. 64, which forms part of the Shire's Policy as the appropriate means of dealing with Acid Sulphate Soils.

The Policy indicates that any areas of high-risk Acid Sulphate Soils are to be identified on a Development Guide Plan or Subdivision Guide Plan, prior to the approval of the subdivision or rezoning of development. Any application on such land, should be accompanied by a Detailed Site Assessment and an Acid Sulphate Soil Management Plan that addresses the matter set out in the Western Australian (WAPC) Planning Bulletin No. 64 prior to the approval of the subdivision, rezoning or development.

The small pocket of urban development on the eastern edge of the subject is identified as High to Moderate risk according to Acid Sulphate Soil Risk Mapping from the Department of Environment Regulation.

A Detailed Site Assessment and Acid Sulphate Soil Management Plan will be undertaken as part of the subdivision stage of development.

Shire of Dardanup Development Policy No.20 – Local Biodiversity

The Shire of Dardanup Local Biodiversity Policy was endorsed in 2011. The Policy aims to preserve significant areas of remnant vegetation, significant wetlands, and waterways as well as key biodiversity corridors for future generations.

Lot 9503 and most the adjoining land to the west of the structure plan area is identified for Regional Open Space, consistent with Town Planning Scheme No.3. The Structure Plan design ensures there is a defined boundary between the Regional Open Space and the Urban development in the form of a road, which also acts as an additional fire buffer measure.

The structure plan design and designation of Regional Open Space allocations are consistent with the Shire's Local Biodiversity Policy.

Shire of Dardanup Development Policy No.18 – Sustainability

The objective of the Sustainability Policy is 'to enable the Environmental, Social and Economic objectives at all levels of development to be clarified and described how they can be implemented. As part of the Structure Planning and Subdivision stages of this project, consideration and implementation of suitable sustainability aspects will be undertaken. Preparation of the supporting Local Water Management Strategy will also incorporate suitable sustainability measures to improve the development.

(Appendix ORD: 12.2.2A Under E Separate Cover)

2.3 PRE LODGEMENT CONSULTATION

This Structure Plan proposal has been prepared following consultation with the Shire of Dardanup and the Department of Planning, Lands and Heritage (DPLH).

Further, a POS Audit has been submitted to the DPLH for their review and comment, with a response provided on 19th August 2022.

(Appendix ORD: 12.2.2A Under E Separate Cover)

3 SITE CONDITIONS AND CONSTRAINTS

3.1 BIODIVERSITY AND NATURAL AREA ASSETS

The subject land is currently vacant. Historically the land was used for grazing and until recently cattle were on the undeveloped portion of the site. There is a pocket of vegetation located on the eastern edge and some well-established groupings of trees along the northern boundary. The northern and western boundaries adjoin the Collie River foreshore reserve, which contains remnant vegetation.

The area subject to the structure plan has previously been assessed by the EPA during the preparation of the Region Scheme, and subsequent amendments to the Local Planning Scheme. The site has also previously been subject to an approved subdivision design that proposed to clear the remnant vegetation.

Accendo environmental consultants were engaged by the proponent to prepare an environmental assessment to support the preparation of the approved Structure Plan in 2018. A review of the Environmental Assessment was conducted in December 2022, a copy of this assessment can be found at **Appendix C**.

A Black Cockatoo Habitat Tree Review was carried out by Greg Harwood, Zoologist, in November 2022 which concluded that no evidence of cockatoo was present and no evidence of suitable tree hollows were found. A copy of the assessment can be found at **Appendix C**.

The environmental assessment can be summarised by the following:

- As a result of historical and current anthropogenic disturbances, the vegetation within the subject site is in a 'Degraded' to 'Completely Degraded' condition. It is very unlikely to contain any flora or vegetation of conservation significance and it does not provide any ecological connectivity to surrounding environmental features (i.e. the Collie River).
- The fauna assessment determined that the fauna habitat values at the subject site have been severely compromised by the removal of most of the original native vegetation and the degradation of the main remnant patches.
- There is no evidence of WRPs utilising vegetation with the subject site as habitat and overall, habitat quality in areas to be developed are low/very low.
- Based on the results of the assessment and the scale of the proposed development, likely impacts on WRPs and black cockatoos and/or their preferred habitat are negligible (Harewood 2018). Accordingly, no further approval requirements are considered necessary in accordance with the EPBC Act or the EP Act.
- A portion of the subject site is mapped as containing a MU wetland. MU wetlands have few remaining functions, values and typically their attributes have been considerably degraded such that they provide limited ecological value. On this basis, MU wetlands do not usually preclude development. The impacts to the MU wetlands within the subject site are minimal as these wetlands are in a "Completely Degraded" condition and are considered suitable for development.

The reporting concludes there exist no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development. Accendo considers that there are no fatal flaws or key environmental values that cannot be accommodated to enable development of the subject site for its intended purpose.

(Appendix ORD: 12.2.2A Under E Separate Cover)

3.2 LANDFORM AND SOILS

The site sits at a reasonably flat contour of 5m AHD, before sloping down towards the Collie River.

The subject landforms part of the Pinjarra System and is made up of the following units.

- P6a: Very undulating alluvial terraces and low rises contiguous with the plain, with deep moderately well to well drained soils associated with major current river systems and larger streams. Acidic red and yellow duplex soils, less common. Typically, loamy duplexes supergroups (40%).
- P6b: Very undulating alluvial terraces and low rises contiguous with the plain, with deep moderately well to well drained soils associated with prior stream deposits. Soils are uniform brownish sands (40% brown deep sand, 30% yellow deep sand).
- B6: Sandplain and broad extremely low rises with imperfectly drained deep or very deep grey siliceous sands. Pale deep sand (55%), poor sand effective duplex.

3.3 GROUNDWATER AND SURFACE WATER

Winter groundwater levels at the site are approximately 3m from the surface at the eastern boundary sloping towards the Collie River, in line with surface topography. A Local Water Management Strategy (LWMS) was prepared for the Approved Structure Plan for the site and is included as **Appendix D**.

The objective of this LWMS is to detail the best management practices approach to water management that will be undertaken for this development, in accordance with Better Urban Water Management (WAPC, 2008). This will include managing, protecting and conserving the total water cycle of the local environment and the greater catchment. The practices will involve:

- Stormwater management that incorporates the latest's water sensitive urban design practices.
- Groundwater resource management.
- Protection and enhancement of ecosystems dependent on water resources from the subject land;
- Sustainable water servicing.

It is important to acknowledge the current surface water flow through the wetland, which includes the nutrient run-off from the surrounding paddocks, is not treated. The LWMS seeks to improve significantly this outcome through incorporating best stormwater quality management practice consistent with Better Urban Water Management principles.

It is anticipated that the above management mechanisms will improve the current condition of the wetland as well as providing suitable waterbird habitat. It is expected that development of the subject site will have a positive impact on groundwater quality through Best Management Practices and the treatment of stormwater prior to infiltration.

3.4 BUSHFIRE HAZARD

A Bushfire Management Plan (BMP) was prepared for the approved Structure Plan for Parkridge Estate. Additionally, a specific BMP for the Homestead Lot has been undertaken by Level 3 consultant, Bushfire West. Both of these reports can be found at **Appendix E**.

The aim of these reports is to reduce the threat to the residents in the proposed subdivision in the event of a bushfire within or adjacent to the development. It demonstrates:

- How the hazard level will be reduced and maintained for the life of the development; and
- That compliance with the Bushfire Protection Criteria in the Guidelines can be achieved.

All of the proposed lots will have a Bushfire Attack Level of BAL-29 rating or less. The majority of the lots in the Estate will have a BAL-12.5 or BAL-Low rating.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Due to the expected lot yield, there are potentially a number of stages of residential development.

Until the adjoining Lot 3001 to east is developed, an Emergency Access way will be created through Lot 3001 along the alignment of the proposed subdivision road giving secondary access to Eaton Drive.

The BMP illustrates the potential radiant heat impacts and associated BAL ratings of the proposed subdivision in reference to any classified vegetation remaining within 100 metres of the assessment area after the development is completed.

Table 4 (of the BMP Report) and the BAL assessment confirms that all lots have a BAL-29 or lower rating. The proposed subdivision complies with the objectives of the State Planning Policy 3.7 as:

1. It avoids any increase in the threat of bushfire to people, property and infrastructure
2. It reduces vulnerability to bushfire through the identification and consideration of bushfire risks in the design of the development and the decision-making process.
3. The design of the subdivision and the development takes into account bushfire protection requirements and includes specific bushfire protection measures
4. Achieves an appropriate balance between bushfire risk management measures and biodiversity, conservation values and environmental protection.

3.5 HERITAGE

Hough Homestead is located on Lot 9504 and is listed in the Shire of Dardanup Local Heritage Survey (Place No,44, 2016). The homestead is detailed as having 'some/moderate significance' within the Heritage Survey. An excerpt from the Survey describes the homestead as:

'Although it is recognised that the place is subject to ongoing deterioration likely to result in its eventual demise from the landscape. However, the place should be recognised by interpretation of the former residence, the families associated with it (Taylor) and the farming undertaken on the property possibly through heritage/historic trails or through Oral History recordings with the family and descendants. Any archival information or other records (such as photographs) should be actively sourced and retained for future reference material'

As the actual homestead is in a dilapidated state with only some of the original building material remaining on site, little of the homestead is available to be retained or in fact salvaged. The developers will investigate ways to incorporate the history of the site into the future development, possibly through the style of development and a commemorative name plaque.

3.6 TRAFFIC IMPACT ASSESSMENT

A Traffic Impact Assessment was prepared in support of the approved Structure Plan and the future development of Parkridge Estate, Eaton. This report prepared by Stantec in March 2023. The report determined the proposed road network would adequately cater for the needs of the expected population. A complete copy of this report is in **Appendix F**.

The bridge constructed over the Collie River links Eaton Drive through to Treendale (to the North of the development). The bridge allows residents access to the Treendale Shopping Centre, Eaton Fair Shopping Centre and other services and facilities.

The intersections of Peninsula Lakes Drive and the new northern connection with Eaton Drive are anticipated to operate at LOS A with minimal queues and delays in the 2038 ultimate design year. Hence, it is anticipated that the estimated trips to be generated by the Parkridge Structure Plan will not significantly affect the surrounding road network.

(Appendix ORD: 12.2.2A Under E Separate Cover)

3.7 CONTEXT AND OTHER LAND USE CONSTRAINTS AND OPPORTUNITIES

Land to the immediate south and east of Parkridge is all zoned for residential development and forms part of the Eaton and Millbridge Estates. Further to the north, within the Shire of Harvey is Treendale Estate and Clifton Park is located on the western side of the Collie River. The location of subject land in conjunction with these residential estates is consistent with the development proposed for the site.

(Appendix ORD: 12.2.2A Under E Separate Cover)

4 LAND USE AND SUBDIVISION REQUIREMENTS

The landowner is looking to pursue development within the area subject to modification within the Structure Plan area. Residential development is proposed for the area consistent with the zoning of the Scheme and surrounding developments.

The breakdown of land use areas is detailed in the Structure Plan Table (**Table 1**) and identified on the Structure Plan (**Figure 1: Local Structure Plan**).

The structure plan report is supported by a Local Water Management Strategy, Bushfire Management Plan, Traffic Management Plan, Environmental Assessment, Servicing and Infrastructure Report, and the Structure Plan Map which has been prepared in accordance with the requirements of Clause 3.16 of TPS 3 and Schedule 2, Part 4, clause 16 of the deemed provisions of the Regulations.

4.1 DESIGN PRINCIPLES

The structure plan design features residential cells with roads linking to the ROS and Collie River Foreshore.

The main road connections into the development will be the extension of Peninsula Lakes Drive and Robusta Road. Other than the existing intersection of Peninsula Lakes Drive/ Eaton Drive and the proposed northern intersection (on land to be developed by Millbridge) no roads are proposed to connect directly with Eaton Drive.

The adjoining regional open space to the Collie River is located to serve the community needs, provide a buffer to adjoining and surrounding land uses, integration and protection to existing vegetated areas and enhance sensitive water cycle management.

4.2 PUBLIC OPEN SPACE

Public Open Space has been provided throughout the original landholding and the use of the Regional Open Space to the west and north of the site provides adequate open space area to address community needs.

Several audits and calculations of the POS requirement for Parkridge have been undertaken by private consultants, the Shire of Dardanup and the DPLH over a number of years. However, it has generally been accepted that the SAT resolution - WASAT 113 (DR231 of 2010), that the total POS to be provided for Location 19 was **13.2513ha**.

A comprehensive POS Audit has been undertaken by Harley Dykstra and is included in **Appendix B**. The audit concludes that sufficient POS has been provided through the staged development of Parkridge Land and therefore no provision of POS is proposed through the remaining land to be developed.

The following Public Open Space Schedule is a calculation of POS provided through the staged subdivision of the original landholding, being Location 19 and includes equivalent areas from cash-in-lieu payments.

A cash-in-lieu payment of \$150,000 was made to fulfill condition of approval 141716 in 2020. This relates to the area referenced as 'O' on **Table 4** and **Figure 4**.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 3: Public Open Space Schedule

| Public open space schedule | | |
|---|---------|----------------|
| Calculation of Required POS Provision | | |
| Total site area (ha) | | 254.2595 |
| Required Public Open Space (10%) as determined by SAT WASAT 113 (DR231 of 2010) | | 13.2513 |
| Breakdown of POS Provided | | |
| Unrestricted Public Open Space provided | | |
| Sport | 0.0000 | |
| Recreation | 15.6811 | |
| Nature | 0.0000 | |
| <i>Total Unrestricted POS</i> | 15.6811 | |
| Total Unrestricted POS | | 15.6811 |
| Excess POS | | 2.4298 |

The details of each parcel of existing and proposed POS within Location 19 are tabled below. Plan reference numbers relate to those shown on **Figure 4 – POS Audit Plan**.

Table 4: Open Space details by Parcel

| Plan Ref | Reserve No. | Lot Details | WAPC ref | Date Ceded | Common Name | Area (ha) | Purpose |
|---|-------------|-----------------|----------|------------|------------------------------|----------------|---|
| A | 45333 | 5820 on P22133 | 89548 | 1998 | Lusitano Park | 0.4169 | Public Recreation |
| B | 44580 | 5767 on P21400 | 48548 | 1997 | Sindhi Park | 1.6977 | Public Recreation |
| C | 45531 | 4 on D91019 | 97513 | 1999 | Bethanie Park | 0.9732 | Public Recreation |
| D | 45358 | 19 on DP41075 | 97513 | 1998 | Eaton Recreation Centre site | 2.9057 | Public Recreation |
| E | 46255 | 6060 on P23654 | 108130 | 2001 | Eaton Drive linear strip | 0.1664 | Public Recreation |
| F | 48392 | 1028 on DP1028 | 118210 | 2005 | Cleveland Bay Park | 2.7625 | Public Recreation |
| G | 50572 | 437 on DP42392 | 118006 | 2010 | Gromark Park | 0.2025 | Public Recreation |
| | | 438 on DP42392 | | 2010 | | 0.1481 | |
| H | 48364 | 890 on P42393 | 125521 | 2005 | Cleveland Bay Park | 0.0739 | Public Recreation |
| I | 48392 | 300 on DP47211 | 126335 | 2008 | Cleveland Bay Park | 0.331 | Public Recreation |
| J | 48933 | 874 on DP48838 | 127566 | 2006 | Peninsula Lakes Park | 2.3695 | Public Recreation |
| K | 48870 | 875 on DP50198 | 127566 | 2006 | Peninsula Lakes Drive Entry | 0.1451 | Public Recreation |
| L | 46255 | 878 on DP52369 | 127984 | 2001 | Eaton Drive linear strip | 0.027 | Public Recreation |
| M | 43641 | 5679 on P19531 | 91326 | 1995 | Leicester Reserve | 1.8611 | Public Rec, Foreshore Manage & Drainage |
| N | 53879 | 8001 on P420816 | 159295 | 2021 | Peninsula near Homestead lot | 0.1411 | Public Recreation |
| TOTAL POS AREA CEDED TO DATE | | | | | | 14.2217 | |
| O | | | 141716 | | | 0.4704 | Cash-in-lieu payment |
| P | | | | | NE portion lot 9008 | 0.294 | Zoned Recreation - LPS 3 |
| Q | | | | | SE portion lot 9000 | 0.695 | Zoned Recreation - LPS 3 |
| TOTAL POS AREA WITH CASH-IN-LIEU PAYMENT | | | | | | 15.6811 | |
| CALCULATED POS REQUIRED FOR LOCATION 19 | | | | | | 13.2513 | |
| SHORTFALL/SURPLUS OF POS | | | | | | 2.4298 | Surplus |



Figure 4 – POS Audit Plan

(Appendix ORD: 12.2.2A Under E Separate Cover)

4.3 RESIDENTIAL

The undeveloped portion of Parkridge Estate, being subject to this Structure Plan modification is proposed to yield in order of 497 lots at an average size of 450m² as identified on the Structure Plan (refer *Figure 1*), although this may vary depending on the market demand at the time of development.

A Density Range of between R20-R40 has been identified on Lot 9008. This enables a range of lots sizes to be created at subdivision stage in accordance with the criteria set out in Part 1 of this Structure Plan.

The estimated population based on the lot yield is 1,292 persons. This calculation is based on the Australian Bureau of Statistics 2021 Census for Eaton, Millbridge and Pelican Point average number of people per household of 2.6.

Lot 9504 proposes a low-density residential coding of R5 with a modified access leg. The current access leg is of insufficient width to allow for batters to raise the level of the finished surface. The access leg proposed also allows access onto Peninsula Lakes Drive to avoid the landscaped verge of Leicester Ramble and the existing sewer pump station site with associated pressure mains on lot 873.

As per the requirements of the Structure Plan Framework, a Density Plan will be lodged in conjunction with the subdivision application to allocate the final density for each stage.

The very eastern portion of urban development (as identified on the Structure Plan) will be developed in conjunction with the development timeframe of Lot 3001 to ensure residential lots and road alignments are congruent.

4.4 MOVEMENT NETWORKS

As part of the Local Structure Plan, it is proposed that Peninsula Lakes Drive continue northward into the development and essentially form the western development boundary between the residential estate and the Regional Open Space.

No additional connection points directly onto Eaton Drive are proposed as part of the Structure Plan. Connection onto Eaton Drive will occur through the existing Peninsula Lakes Drive, or a future connection further north as part of the adjoining site.

Traffic calming measures along Peninsula Lakes Drive are to form part of the road design at subdivision stage.

Provision is to be made for on-street parking within road reserves at regular intervals along the length of Peninsula Lakes Drive adjoining the Regional Open Space.

4.5 WATER MANAGEMENT

A Local Water Management Strategy (LWMS) was undertaken as part of the approved Structure Plan and updated to address the modification proposed. A copy of the updated LWMS is attached at **Appendix D**.

Figure 2 of the LWMS identifies the key elements for the Local Water Management Strategy, including the direction of flows and location of bioretention basins.

The bioretention basins will be designed to create new wetlands habitats by the use of locally native plant species and by maintaining pre-development surface and groundwater flows to the buffer area, the vegetation will be provided with similar water needs after development, whilst experiencing improved water quality through the use of constructed vegetated bioretention areas (swales) and other suitably designed and best practice water sensitive urban design techniques.

(Appendix ORD: 12.2.2A Under E Separate Cover)

4.6 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

The proposed development of Parkridge Estate, Eaton will require connection to reticulated water and sewer, both of which are in the adjoining residential developments and readily available for connection.

Power, gas and telecommunications will be connected as part of the subdivisional works. A Servicing Report has been prepared which demonstrates the land is capable of being supplied with the necessary infrastructure to proceed with development. This Assessment is included as **Appendix G**.

4.7 LANDSCAPING

The requirements of the Overall Landscape Management Plan as referenced in Part 1 Section 1.4 #4 are as follows:

- The provision of street trees throughout the Structure Plan area in accordance Liveable Neighbourhoods.

5 CONCLUSION

The proposed modification to the Parkridge Local Structure Plan has been prepared in accordance with the requirements of the *Planning and Development (Local Planning Schemes) Regulations 2015*. Further, the Structure Plan complies with the applicable State and Local Planning Policy Framework as set out in section 2.2 of this Report.

This LSP has been prepared to outline a land use and movement network framework for the development of Parkridge Estate, to accommodate low and medium residential housing. The LSP demonstrates that sufficient POS has been provided with Location 19 through the previous development of the land parcel.

The LSP seeks to stipulate the key boundaries between land uses, address the key interface considerations and identify the key matters that need to be addressed at the detailed subdivision and development stages. This LSP therefore affords a certain degree of flexibility for innovative and creative detailed design responses, if there is compliance with the key elements and principles of the LSP and that the key objectives are realised.

Following adoption of the Structure Plan, development and subdivision applications can be considered and approved where they comply with the Structure Plan.

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDICES INDEX

| APPENDIX NO. | NATURE OF DOCUMENT |
|---------------------|------------------------------|
| A | Certificates of Title |
| B | POS Audit |
| C | Environmental Assessment |
| D | Local Water Management |
| E | Bushfire Management Plans |
| F | Traffic Management Report |
| G | Servicing and Infrastructure |

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX A | CERTIFICATES OF TITLE

(Appendix ORD: 12.2.2A Under E Separate Cover)

WESTERN



AUSTRALIA

| | |
|--|---|
| REGISTER NUMBER 9503/DP50198 | |
| DUPLICATE EDITION 2 | DATE DUPLICATE ISSUED 15/5/2012 |

RECORD OF CERTIFICATE OF TITLE UNDER THE TRANSFER OF LAND ACT 1893

VOLUME 2632 FOLIO 554

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 9503 ON DEPOSITED PLAN 50198

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

PARKRIDGE GROUP PTY LTD OF POST OFFICE BOX 1684, WANGARA

(AF J891143) REGISTERED 28/8/2006

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

- *M867083 NOTIFICATION - SECTION 180 COMPENSATION PAID PLANNING & DEVELOPMENT ACT 2005 REGISTERED 22/12/2014.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP50198
PREVIOUS TITLE: 2212-388
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY: SHIRE OF DARDANUP

(Appendix ORD: 12.2.2A Under E Separate Cover)

WESTERN



AUSTRALIA

| | |
|-------------------|-----------------------|
| REGISTER NUMBER | |
| 9504/DP50198 | |
| DUPLICATE EDITION | DATE DUPLICATE ISSUED |
| 3 | 12/5/2016 |

RECORD OF CERTIFICATE OF TITLE UNDER THE TRANSFER OF LAND ACT 1893

VOLUME 2632 FOLIO 555

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 9504 ON DEPOSITED PLAN 50198

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

LANCETT COURT PTY LTD OF PO BOX 829 CANNING BRIDGE APPLECROSS

(T N317137) REGISTERED 3/5/2016

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP50198
PREVIOUS TITLE: 2212-388, 2212-392
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY: SHIRE OF DARDANUP

(Appendix ORD: 12.2.2A Under E Separate Cover)

WESTERN



AUSTRALIA

| | |
|---|-------------------------------------|
| REGISTER NUMBER 9008/DP423332 | |
| DUPLICATE EDITION N/A | DATE DUPLICATE ISSUED N/A |

RECORD OF CERTIFICATE OF TITLE UNDER THE TRANSFER OF LAND ACT 1893

VOLUME
4023

FOLIO
709

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 9008 ON DEPOSITED PLAN 423332

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

PARKRIDGE GROUP PTY LTD OF POST OFFICE BOX 8357 SOUTH PERTH WA 6151
(AF P223454) REGISTERED 19/8/2022

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

- *O983809 MORTGAGE TO CERTANE CT PTY LTD OF 167 EDGECLIFF ROAD WOOLLAHRA NSW 2025 REGISTERED 17/12/2021.
- *EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR DRAINAGE/SEWERAGE PURPOSES TO LOCAL AUTHORITY - SEE DEPOSITED PLAN 423332

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP423332
PREVIOUS TITLE: 4001-555
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY: SHIRE OF DARDANUP

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING
O165775

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX B | POS Audit

POS AUDIT

Parkridge Estate, Eaton



Harley Dykstra[®]

PLANNING & SURVEY SOLUTIONS

(Appendix ORD: 12.2.2A Under E Separate Cover)

DOCUMENT CONTROL

| Control Version | Date | Status | Distribution | Comment |
|-----------------|------------|--------|------------------|---------------------------|
| A | 31/05/2022 | Draft | HD | For QA |
| B | 16/06/2022 | Draft | Client | For Review |
| C | 21/06/2022 | Final | WAPC | For Lodgement |
| D | 21/10/2022 | Final | Local Government | Supporting document - LSP |

Prepared for: Parkridge Group Pty Ltd
Prepared by: KS
Reviewed by: LB

Date: 21 October 2022
Job No: 22294
Ref: D

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Please note that the information in this report may not be directly applicable towards another client. The Consultant warns against adapting this report's strategies/contents to another land area which has not been researched and analysed by the Consultant. Otherwise, the Consultant accepts no liability whatsoever for a third party's use of, or reliance upon, this specific document.

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1. INTRODUCTION

Parkridge Estate located in Eaton, within the Shire of Dardanup is a residential estate which commenced planning in 1993.

The original Lot 1 of Wellington Location 19 purchased by Parkridge Group in 1993, has subsequently been developed and now includes:

- Approximately 1500 residential lots;
- A high school;
- A primary school;
- A Child Care Centre;
- Two aged care/retirement villages;
- Public Open Space (POS); and
- Regional Open Space (ROS).

The northern portion of the estate currently being developed is subject to an approved Structure Plan.

In March 2022, correspondence between Mr Saulsman of Parkridge Group and the West Australian Planning Commission (WAPC) resulted in the WAPC recommending an audit be undertaken to determine the POS already ceded and the balance of POS to be provided on the remaining land to be developed.

This POS Audit seeks to clarify the amount of POS provided to date, to guide and justify a modification to the approved Structure Plan.

(Appendix ORD: 12.2.2A Under E Separate Cover)

2. SUBDIVISION/ SUBJECT LAND HISTORY

The original Lot 1 of Location 19, compromised an area of 254.2595 hectares and was bounded by the Collie River to the north and north-eastern boundaries. Forrest Highway now adjoins the original southern boundary.

Numerous subdivision approvals have been issued by the WAPC allowing lots to be developed together with the provision of POS.

2.1 Previous POS Calculations and Planning Applications

The POS provided on the development of Location 19 has been subject to various planning approvals, State Administration Tribunal determinations and Audits. These methods are described below.

Structure Plan and Rezoning of Location 19

A Structure Plan for Location 19 was adopted by the Shire of Dardanup in December 1991 and endorsed by the WAPC. The Structure Plan designated the land as Residential R15 and determined the total POS to be ceded, subject to detailed design was to be **12.98 hectares**.

The Shire also initiated Amendment 47 to TPS 3 to zone location 19 to Residential Area and Recreation. Amendment 47 was finally approval was in July 1993.

A subsequent appeal to the State Administrative Tribunal determined the following:

- i. In 2010, The Parkridge Group appealed against a decision of the WAPC to impose conditions relating to POS provision. WASAT 113 (DR231 of 2010) (WAPC ref:1417160).
- ii. The SAT dismissed the POS. It did not resolve the POS for the balance of the land but confirmed (para 34) that Parkridge and the WAPC had agreed that the total POS for Location 19 was **13.2513 hectares**.
- iii. At (para 35), The SAT recommended that to determine the balance of POS, a POS Audit be carried out.

Shire of Dardanup POS Audit

In May 2002, the WAPC issued an approval for subdivision (ref 118210) for a large portion of the Parkridge development, being the land east of Lusitano Avenue and west of Eaton Drive.

Condition 12 of the approval required 10% of the of the subdivisible land be provided as 'Reserve for Recreation'. Further, advice Note (v) recommended that a public open audit be undertaken to ascertain the amount of POS provided by the subdivider for the estate.

Subsequently, the Shire of Dardanup undertook a POS Audit in May 2002. The Shire confirmed that the POS ceded by Parkridge was **8.4239 hectares** being 9.146% of the land.

This figure was disputed by the DPLH following a subsequent audit undertaken by planning officers of DPLH.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Structure Plan Review

In January 2007, Parkridge appointed Koltasz Smith Town Planners to prepare a Structure Plan for Locations 9501, 9502, and 9504 Robusta Road, Eaton.

In February 2007, Kris Kennedy of Koltasz Smith met with the Shire of Dardanup's Planning Officers to discuss the proposed Structure Plan. The Officers advised that 10% of the land, some 4ha had to be provided as POS and the Shire would not entertain the Structure Plan unless this was agreed to and resolved "upfront".

In March 2007, Parkridge sought clarity from the DPLH regarding the total provision of POS, which DPLH responded to in June 2007 with an audit of the POS ceded to date. The audit was of the view:

- An area of 0.3904 hectares of Reserve 45531 (Ref C on Audit Plan) was a drainage basin, and this area was deemed not to be POS for the purpose of the calculations.
- Part of Reserve 48933, (Ref J on Audit Plan), calculates that 0.7500 hectares is a drainage basin, and this area was deemed not to be POS for the purpose of the calculations.
- Part of Reserve 48392 (Ref F on Audit Plan), calculates that 2.5996 hectares being EPP wetland was deemed not to be POS for the purpose of the calculations.

In November 2007, the Shire of Dardanup advised Parkridge that for the Shire to consider any proposed Structure Plan, the requirements of the POS audit as determined by the DPLH in June 2007 was to be met.

In 2010, The Parkridge Group appealed against a decision of the WAPC to impose conditions relating to POS provision. WASAT 113 (DR231 of 2010) (WAPC ref:1417160).

Although SAT dismissed the appeal, it did resolve that (para 34) Parkridge and the WAPC had agreed that the total POS to be provided for Location 19 was **13.2513 hectares**.

At (para 35), the SAT recommended that to determine the balance of POS, a POS Audit be carried out.

Parkridge – POS Audit

In 2013, Planning Consultancy firm Gray Lewis were engaged by Parkridge Group to undertake a report to examine the history of subdivision approvals and specifically the POS provided to date. The report included an overall POS audit and examined in detail each parcel of POS ceded as a reserve.

The Audit established that Parkridge had provided **14.5 hectares** (in 2014). The Grey Lewis audit is available at **Appendix E**.

DPLH Calculation of POS

In email correspondence (Sept 12, 2014) between DPLH Planning Officer, Mr David Brash and Parkridge Group Director, Mr Thurston Saulsman, Mr Brash confirmed that the total POS obligation for the Gross subdivisible Area of the original land parcel, Location 19 is **13.2513 hectares**.

Mr Brash advises (Sept 12, 2014) that 11.8879 hectares is the total area of POS ceded to date, not including WAPC 141716 and agreement was to be sought with Mr Saulsman.

However, the correspondence also states that the Department does not agree with the subdivider in terms of the 10% POS credit, specifically some of the parcels ceded to date would not meet the requirements of POS and should not be included in calculations.

The calculations provided with the correspondence state the following:

(Appendix ORD: 12.2.2A Under E Separate Cover)

- An area of 0.3904 hectares of Reserve 45531 (Ref C on Audit Plan) is a drainage basin, and this area is excluded as POS.
- Part of Reserve 48933, (Ref J on Audit Plan), calculates that 0.7500 hectares is a drainage basin, and this area is excluded as POS.
- Part of Reserve 48392 (Ref F on Audit Plan), calculates that 2.5996 hectares being EPP wetland is excluded as POS.

A copy of the above mentioned correspondence can be found in **Appendix G**.

2.2 Subdivision Applications

Since 1993, various subdivision applications have been submitted to facilitate the staged development of Parkridge.

As per the conditions of the various WAPC approvals, Reserves 45531, 48933, and 48392 were ceded as Public Open Space reserves in accordance with the relevant WAPC Conditions and accepted at the time as part of the 10% POS Contribution.

Several parcels of land have been sold to other developers over the course of the development of Location 19 with POS ceded as development has progressed as well as cash-in-lieu payments made.

3. EXISTING POS

An audit plan has been prepared to visually assist in the calculation and position of the POS already provided as part of the development of the original Lot 1 on Location 19.

Reference letters have been allocated to each parcel of POS. For ease of review, the letters are consistent to those on the audit undertaken by Gray Lewis in 2013.

The main parcels of POS and their function are described below. These and other POS provided as part of the original Location 19 are shown on the plan and tables in **Appendices B and C**.

Further details on the drainage function of these parcels are outlined in the Technical Note by Edgeloe Engineering, which can be found at **Appendix A**.

3.1 Reserve 45531 (Ref C on Audit Plan)

Reserve 45531, being lot 4 on Diagram 91019, on Eaton Drive was created in 1999 as part of WAPC approval 97513 issued in August of 1995. The approval included residential lots, a high school, primary school and 3 reserves for recreation.

At the time the reserve was ceded for the purpose of Public Recreation, no drainage function was in place. A Landgate enquiry report showing details of the reserve can be seen in **Appendix D**.

Details of the later drainage function of the reserve and evident in historical aerial photography is detailed in the Engineering Technical Note at **Appendix A**.

Although a portion of the reserve is currently used as a drainage basin for the Bethanie retirement village, in 1999 at the time of ceding this was not the case. Reserve 45521 was not required for drainage function as part of the development of lots subject to WAPC approval 97513 and can be assumed that at the time of ceding was accepted as unrestricted POS for the purpose of Public Recreation.

(Appendix ORD: 12.2.2A Under E Separate Cover)

3.2 Reserve 48392 (Ref F on Audit Plan)

Reserve 48392, being lots 1028 and 300, Cleveland Bay Avenue, was ceded in 2005 for the purpose of Public Recreation. A Landgate enquiry report confirming these details can be seen in **Appendix D**.

The reserve was created through the WAPC subdivision approval 118210, issued in May 2002. Condition 12 of the approval, was a requirement that *'10% of the subdivisible land, in a position to be agreed between the subdivider and the local government, being shown on the Diagram or Plan of Survey as a reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the crown'*. A further footnote advised this could be arranged by payment cash-in-lieu of the provision of open space.

Further, relating to WAPC approval 118210, no condition was imposed requiring the ceding of additional land specifically for the purposes of wetland.

As Condition 12 was cleared by the Shire of Dardanup, and no cash-in-lieu payment made, this would conclude Reserve 48392 was deemed as part of the 10% POS requirement.

The DPLH has considered the matter of the ceding of Reserve 48392 on numerous occasions. Although current policy may not support the ceding of this site as POS, it is evident through the clearance of the condition requiring a 10% Pos contribution that this was deemed accepted at the time.

The ceding of Reserve 48392 was specifically addressed on the following applications:

a) WAPC 101406 November 1996,

The Planning Officer noted in his report, WAPC 101406 November 1996, that the applicant requested the wetland area be excised from the application and they would liaise with the DEP regarding the wetland area.

b) WAPC 108764 October 1998,

In the Planning officer report, October 1998 WAPC 108764, the Planning officer, confirms that it was agreed that the wetland be given up as Public Open Space. The report notes there is no objection from the Water Commission. The report was authorized by Mr Mike Schramm and subdivision was recommended for approval on 10 March 1999.

c) WAPC 125521 June 2004

In June 2004 in WAPC 125521, the reporting officer states, in the report the POS requirement has been met via the ceding of wetlands under an earlier subdivision approval.

Further, relating to this parcel of land, the Shire of Dardanup's 2002 POS Audit deemed Reserve 48392 to be POS.

The following aerial photographs show the land in 2003 following the ceding of the reserve and more recently in 2022 showing an expansion of the wetland vegetation.

(Appendix ORD: 12.2.2A Under E Separate Cover)



Aerial Photography 14/01/2003 (Landgate)



Aerial Photography 12/02/21 (Landgate)

3.3 Reserve 48933 (Ref J on Audit Plan)

Reserve 48933, being lot 874 on Deposited Plan 3547012, Peninsula Lakes Drive, was created in 2006 as part of Subdivision Approval 127566. The subdivision approval was for 92 residential lots as well as the POS now known as Peninsula Lakes Park. A Landgate enquiry report confirming the Reserve details can be seen in **Appendix D**.

The water body within the POS was existing prior to the reserve being created being an agricultural dam from the original farm of the locality. At the time of subdivision, it was initially proposed that the dam be filled as part of the subdivisional earthworks, as it was not required for drainage purposes and had no significant environmental value.

A request from the Shire of Dardrup however, was that the water body be retained as a feature within the POS to be enhanced and landscaped. A landscape plan was subsequently prepared with the water body as a component of the POS.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Drainage for this portion of the estate was designed as a pit and pipe network with storm water eventually entering a nutrient stripping pond located in the Regional Open Space. Further explanation of the drainage function of this reserve can be found in the Engineering Technical Note at **Appendix A**.

Condition 12 of the WAPC subdivision approval 127566, required that *'10% of the subdivisible land, in a position to be agreed between the subdivider and the local government, being shown on the Diagram or Plan of Survey as a reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the crown'*.

In relation to condition 12, two advice notes were included in the approval. These were as follows:
iii) *'The applicant's attention is drawn to the provisions of Section 20C of the Town Planning and Development Act, 1928 whereby arrangements can be made, subject to further approval of the Commission, for a cash-in-lieu contribution by the applicant to the Local Government, in respect of Condition 12 of this approval.'*

iv) states *'..it is recommended that a public open space audit be undertaken to ascertain the amount of public open space provided by the developer for the estate.'*

Reserve 48933 being 2.3695ha and a smaller portion of POS on Eaton Drive being 1451m² were created as part of WAPC approval 127566 and ceded in 2006. As Condition 12 was cleared by the Shire of Dardanup and WAPC, it concludes the POS was accepted and satisfied the requirements of the condition. No cash-in-lieu arrangement was made as part of meeting the conditions of the approval.

Condition 20 of the subdivision approval was that *'the subdivider prepare a drainage/public open space management plan to the specification of the Shire of Dardanup and to the satisfaction of the Western Australian Planning Commission'*. Further advice note vii) states *'The Shire of Dardanup advises that Condition 20 has been imposed to ensure that drainage works form an integral part of the public open space, but do not detract from the use of the public open space for passive recreation purposes.'*

Detailed drainage designs were prepared and approved by the Shire of Dardanup as part of satisfying the conditions of the subdivision approval. A Landscape Plan was also undertaken by Landscape Architects PLAN E, an extract of which can be seen in the Engineering Technical Note at **Appendix A**.

The Shire of Dardanup cleared the relevant conditions imposed with the deposited plan certified and signed by the Chief Executive Officer. Deposited Plan 48838 was subsequently endorsed by the WAPC and Landgate.

3.4 Reserve 43641 (Ref M on Audit Plan)

The original subdivision (WAPC ref 91326) of Location 19 in October 1993 was to divide the parcel into 5 superlots.

Condition 1 of the subdivision approval was that a 42.37 ha portion of land be ceded as 'Reserve of Recreation, Foreshore Management and Drainage'. However, as access to the land to be ceded was required an access leg was added and a parcel of 44.231ha was ceded. Agreement was reached at the time that the access leg, being 1.861ha, be credited to POS.

A copy of the WAPC approval and Plan 19531 showing the original superlot subdivision can be found at **Appendix F**.

(Appendix ORD: 12.2.2A Under E Separate Cover)

4. POS CALCULATION

The tables at **Appendix C** detail:

1. The POS requirements for Location 19; and
2. Each parcel of POS provided to date, cash-in-lieu equivalents and an area of Recreation zone identified in the Shire of Dardanup's Local Planning Scheme.

Table 1a calculates the POS requirement based on the agreed area of 13.2513ha using the format within Liveable Neighbourhoods (LN), the operational policy for the design and assessment of structure plans. The calculation of POS provided (with each parcel detailed in Table 2) is **11.31%**.

Table 2 is a breakdown of each parcel of POS, cash-in-lieu equivalent and land zoned Recreation in the Shire of Dardanup's Local Planning Scheme. It should be noted that the parcels of POS referenced in the Table 2 have accepted as the 10% POS requirement of each of the relevant WAPC approvals. The total POS provided and zoned, detailed in Table 2 is **14.9861ha**.

Liveable Neighbourhoods

LN gives direction on the function and allocation of POS and specifies the circumstances that land can be deemed as 'restricted use public open space'.

Restricted use public open space can contribute a maximum of two per cent towards the 10 per cent of the gross subdivisible area minimum public open space requirement.

LN states: *Eligible restricted use public open space (that may form a partial contribution to the 10 per cent public open space provision) include:*

- *reserved land encumbered by easements (for example, power lines, sewer, gas);*
- *buffers to an environmentally sensitive area; and*
- *a resource enhancement wetland, multiple use wetland, or wetland of a similar environmental value provided that:*
 - *the sites contribute to the network of public open space and provide a function for the community; and*
 - *it is supported by local government, referral agencies and the WAPC.*

If the calculation of unrestricted POS was to be retrospectively applied to areas referenced as C, F and J, the provision of POS allocated to date is **10.49%**. This calculation is demonstrated in **Table 1b**.

5. CONCLUSION

The audit is based on approvals and allocation of POS through the subdivision process as Parkridge Estate has been developed.

This audit considers the purpose and landuse at the time of ceding of each of the parcels of POS within the original Location 19. It is considered unreasonable to apply current planning policies to POS accepted and ceded at the time of subdivision.

It should be acknowledged that land given up as POS to clear a subdivision condition and accepted by the local government and the WAPC are final and remove any further obligation or liability for the subdivided land to contribute POS.

Both the methods used within this audit conclude the POS provided for Location 19 is in excess of the 10% requirement and therefore the POS obligation has been met. Accordingly, a proposed modification to the Structure Plan will be submitted to the Shire of Dardanup in due course.

Acknowledgement and acceptance of this audit is respectfully sought from the DPLH and the Shire of Dardanup.

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX A | ENGINEERING TECHNICAL NOTE

Technical Note

EDGELOE
Engineering

Date: 21 April 2022

Project No: 20006

To: Kylie Shaw

From: Wayne Edgeloe

Client: Parkridge Group Pty Ltd

Subject: PARKRIDGE ESTATE POS

1 INTRODUCTION

Edgeloe Engineering has been requested to provide a background summary of two parcels of POS in Parkridge Estate in regards their drainage functions.

Wayne Edgeloe under former employment became involved the two subject parcels as described as follows.

2 RESERVE 45531

My first involvement in this site was in 2002 when TME (former employer) was engaged by the Shire of Dardanup to do a drainage study of the area around this site. TME job reference 02272. Refer Figure 1.



Figure 1 Reserve 45531 Locality Plan

(Appendix ORD: 12.2.2A Under E Separate Cover)

My recollection is that at that time was that the Shire stormwater system had previously been discharging into the wetland areas near the current Primary School site and other depressed wet areas. This basin was then excavated to cater for redirected drainage and then became part of the Shire Drainage system.

This basin was constructed between 2001 and 2003 as shown in Figure 2.

Prior to the construction of the basin the site only had a small surface channel flowing across it.



Figure 2 Reserve 45531 Historic photos

The modelling that was done was on the basis this was a pre-existing basin to be used as part of the overall regional drainage system and it catered for major flows from along Eaton Drive before they were then subsequently discharged into the downstream system and the river.

I do not have access to the old files for this project but they can be accessed from Calibre if permission is received from Shire of Dardanup to access those model files and summary report.

Those files will show clearly the extent of the drainage systems.

Around the same time, I also became involved in design of the adjoining Bethanie Aged Care development. TME job No 03014. Again, I do not have access to those files but recall the drainage basin was used at that time for discharge of overflows from the Bethanie development.

Again, permission to access those files would be to be obtained from Churches of Christ to determine the full extent of drainage going into that basin.

My overall recollection is that when Parkridge development occurred this basin was connected into that Estate Drainage System together with the flows from the Church of Christ site.

It should also be noted that this site was created in 1996 as a Reserve for Recreation but it wasn't until after 2001 that the Shire excavated it for drainage purposes.

This is shown on the certificate of title as follows in Figure 3.

(Appendix ORD: 12.2.2A Under E Separate Cover)



Figure 3 Certificate of Title showing creation of Reserve 45531

(Appendix ORD: 12.2.2A Under E Separate Cover)

3 RESERVE 48933

At the time of my first involvement in Parkridge Estate in 2002 the lake in this location was an existing farm dam as shown as follows. Refer Figures 4 and 5.



Figure 4 Reserve 48933 Locality Plan



Figure 5 Historic Aerial Photo approx. 2002

At the time of development around this lake I recall that it wasn't needed for a drainage function but in fact there was a desire from the Shire for the water body to be retained in the POS and landscaped around it.

As such it was retained at the time and in addition some drainage was directed into the lake to ensure it was always full of water, even though stormwater could easily have been diverted past the lake into a new wetland system that was constructed in the foreshore area.

A landscape plan was also prepared at the time as shown as follows that shows the lake becoming an integral retained portion of the POS area. Refer Figure 6

(Appendix ORD: 12.2.2A Under E Separate Cover)

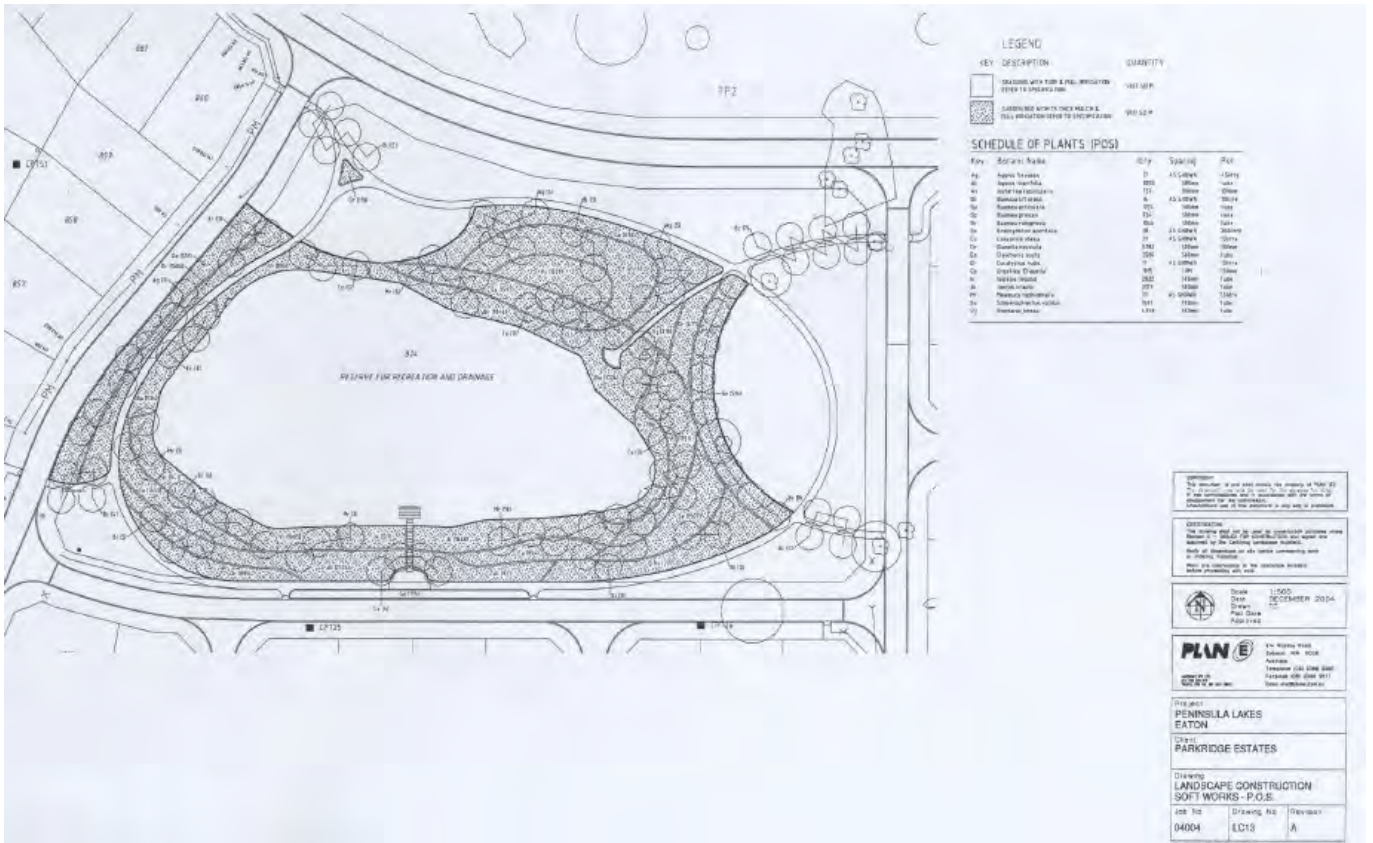


Figure 6 Reserve 48933 Concept Landscape Plan

4 SUMMARY

For both Reserves 45531 and 48933 my recollection is that rather than forming integral drainage functions for the adjoining Parkridge subdivisions they were for:

- Reserve 45531- was improved and formed an integral part of the regional Shire of Dardanup Drainage System
- Reserve 48933- was retained as water body with the main purpose of improving the open space area and was not solely for drainage from the Parkridge Estate adjoining and could have been bypassed except for the need to keep water flowing into the lake area.

I trust this investigation meets your requirements and should you require any further information please let me know.

Yours sincerely
Edgeloe Engineering Pty Ltd

R W EDGELOE BEng (Hons) FIEAust CPEng RPEQ NER APEC Engineer IntPE (Aus)
Director
Edgeloe Engineering

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX B | PLAN OF POS PROVIDED



POS AUDIT PLAN

Location 19
PARKRIDGE ESTATE, EATON

Plan No. | 22294-12
Date | 04/05/22
Drawn | KS
Checked | LB
Revision | A

BUNBURY OFFICE:
21 Spencer Street,
BUNBURY WA 6230
T: 08 9792 6000
E: bunbury@harleydykstra.com.au
W: www.harleydykstra.com.au

ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

Scale | 1:10,000@A3



NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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PLANNING & SURVEY SOLUTIONS

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX C | POS AUDIT TABLES

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 1 - POS Requirement

| Public open space schedule | | |
|--|---------|----------------|
| Calculation of Required POS Provision | | |
| Total site area (ha) | | 254.2595 |
| Required Public Open Space (10%) as determined by SAT WASAT 11 (DR231 of 2010) | | 13.2513 |
| Breakdown of POS Provided | | |
| Unrestricted Public Open Space provided | | |
| Sport | 0.0000 | |
| Recreation | 15.6811 | |
| Nature | 0.0000 | |
| <i>Total Unrestricted POS</i> | 15.6811 | |
| Total Unrestricted POS | | 15.6811 |
| Excess POS | | 2.4298 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 1b - POS Requirement with Restricted POS Calculation

| Public open space schedule | | |
|--|---------|----------------|
| Calculation of Required POS Provision | | |
| Total site area (ha) | | 254.2595 |
| Required Public Open Space (10%) AGREED AREA | | 13.2513 |
| Breakdown of POS Provided | | |
| Restricted Public Open Space | | |
| Conservation Category Wetland Buffer (up to 50m) | 0.0000 | |
| Resource Enhancement, multiple use wetland or similar and associated buffers (up to 30m) | 3.7400 | |
| Reserved land encumbered by easements ie powerlines, sewer gas - deemed suitable for POS | 0.0000 | |
| <i>Total Restricted POS</i> | 3.7400 | |
| <i>Maximum 20% credit</i> | 2.6503 | |
| Total Restricted POS Credited to a maximum of 20% | | 2.6503 |
| Surplus Restricted POS Not Credited i.e. over the maximum 20% | 1.0897 | |
| Unrestricted Public Open Space: by function (refer Note 4) | | |
| Sport | 0.0000 | |
| Recreation | 11.2461 | |
| Nature | 0.0000 | |
| <i>Total Unrestricted POS</i> | 11.2461 | |
| Total Unrestricted POS | | 11.2461 |
| Total | | 13.8964 |
| POS Provision as Percentage of Gross Subdivisible Area | | 10.49% |

| Unrestricted POS breakdown | |
|---|-------------|
| Reserve 45521 Part Drainage Basin (Ref C) | 0.3904 |
| Reserve 48933 Part Drainage Basin (Ref J) | 0.75 |
| Reserve 48392 Wetland (Ref F) | 2.5996 |
| TOTAL | 3.74 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 2 - POS Provided

| Plan Ref | Reserve No. | Lot Details | WAPC ref | Date Ceded | Common Name | Area (ha) | Purpose | Comments |
|---|-------------|-----------------|----------|------------|------------------------------|----------------|---|---|
| A | 45333 | 5820 on P22133 | 89548 | 1998 | Lusitano Park | 0.4169 | Public Recreation | |
| B | 44580 | 5767 on P21400 | 48548 | 1997 | Sindhi Park | 1.6977 | Public Recreation | |
| C | 45531 | 4 on D91019 | 97513 | 1999 | Bethanie Park | 0.9732 | Public Recreation | |
| D | 45358 | 19 on DP41075 | 97513 | 1998 | Eaton Recreation Centre site | 2.9057 | Public Recreation | |
| E | 46255 | 6060 on P23654 | 108130 | 2001 | Eaton Drive linear strip | 0.1664 | Public Recreation | |
| F | 48392 | 1028 on DP1028 | 118210 | 2005 | Cleveland Bay Park | 2.7625 | Public Recreation | |
| G | 50572 | 437 on DP42392 | 118006 | 2010 | Gromark Park | 0.2025 | Public Recreation | |
| | | 438 on DP42392 | | 2010 | | 0.1481 | | |
| H | 48364 | 890 on P42393 | 125521 | 2005 | Cleveland Bay Park | 0.0739 | Public Recreation | |
| I | 48392 | 300 on DP47211 | 126335 | 2008 | Cleveland Bay Park | 0.331 | Public Recreation | |
| J | 48933 | 874 on DP48838 | 127566 | 2006 | Peninsula Lakes Park | 2.3695 | Public Recreation | |
| K | 48870 | 875 on DP50198 | 127566 | 2006 | Peninsula Lakes Drive Entry | 0.1451 | Public Recreation | |
| L | 46255 | 878 on DP52369 | 127984 | 2001 | Eaton Drive linear strip | 0.027 | Public Recreation | |
| M | 43641 | 5679 on P19531 | 91326 | 1995 | Leicester Reserve | 1.8611 | Public Rec, Foreshore Manage & Drainage | 42.37ha ROS required as condition of subdivision. Balance as POS. |
| N | 53879 | 8001 on P420816 | 159295 | 2021 | Peninsula near Homestead lot | 0.1411 | Public Recreation | |
| TOTAL POS AREA CEDED TO DATE | | | | | | 14.2217 | | |
| O | | | 141716 | | | 0.4704 | | Cash-in-lieu payment area equivalent |
| P | | | | | NE portion lot 9008 | 0.294 | Zoned Recreation - LPS 3 | Area zoned Recreation in LPS 3 |
| Q | | | | | SE portion lot 9000 | 0.695 | Zoned Recreation - LPS 3 | Area zoned Recreation in LPS 3 |
| TOTAL POS AREA WITH CASH-IN-LIEU PAYMENT | | | | | | 15.6811 | | |
| CALCULATED POS REQUIRED FOR LOCATION 19 | | | | | | 13.2513 | | From Table 1 - POS Calculation Table |
| SHORTFALL/SURPLUS OF POS | | | | | | 2.4298 | | Surplus |

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX D | LANDGATE ENQUIRIES

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -45333

| | | | |
|---------------------------------------|----------------|------------------------|-------------------|
| Reserve | 45333 | Legal Area (ha) | 0.4169 |
| Name | LUSITANO PARK | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | 2632-1997 | | |
| Notes | N/A | | |
| Additional Reserve Information | N/A | | |

| | | |
|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 18/10/2010 |

| | |
|-------------------------|------------------------|
| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | G812382 |

| |
|-------------------|
| Land Use |
| PUBLIC RECREATION |

| |
|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|------------------------|------------------------------|-------------|---------|------------------------|
| LR3035/309 | Lot 5820 On Plan 22133 | 1 Shetland Place, EATON 6232 | 2632/1997. | 1202324 | 4169 |

| | |
|---------------------------------------|---------------|
| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|--------------------------|
| L454282 | 15/10/2010 | Current Name | LUSITANO PARK |
| G812381 | 05/06/1998 | Current Area | 0.4169 |
| G812381 | 05/06/1998 | Current Purpose | PUBLIC RECREATION |
| G812381 | 05/06/1998 | Correspondence File Number | 2632-1997 |
| G812381 | 05/06/1998 | Location | WELLINGTON LOCATION 5820 |
| G812381 | 05/06/1998 | Public Plan | BG 30 (2) 06.34 |
| G812381 | 05/06/1998 | Street Name | LUSITANO AVENUE |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|-------------------------|
| G812381 | 05/06/1998 | Survey Number | LTO:PLAN 22133 |
| G812382 | 05/06/1998 | Current Vesting | VEST: SHIRE OF DARDANUP |
| N/A | 05/06/1998 | Class | C |

date: May 5, 2022, 8:49:16 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -44580

| | | | |
|---------------------------------------|----------------|------------------------|-------------------|
| Reserve | 44580 | Legal Area (ha) | 1.6975 |
| Name | SINDHI PARK | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | 2004/1996 | | |
| Notes | N/A | | |
| Additional Reserve Information | N/A | | |

| | | |
|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 18/10/2010 |

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| Management Order | Document Number |
| VEST:SHIRE OF DARDANUP | N/A |

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| Land Use |
| PUBLIC RECREATION |

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|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|------------------------|----------------------------|-------------|---------|------------------------|
| LR3107/846 | Lot 5767 On Plan 21400 | 3 Sindhi Close, EATON 6232 | 2004/996. | 1168879 | 16976.968 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|------------------------|
| L454302 | 15/10/2010 | Current Name | SINDHI PARK |
| 109 | 10/01/1997 | Current Vesting | VEST:SHIRE OF DARDANUP |
| 111 | 10/01/1997 | Current Area | 1.6975 |
| 111 | 10/01/1997 | Class | C |
| 111 | 10/01/1997 | Current Purpose | PUBLIC RECREATION |
| 111 | 10/01/1997 | Formerly | LOT 128 ON PLAN 21400 |
| 111 | 10/01/1997 | Correspondence File Number | 2004/1996 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|------------------------|
| 111 | 10/01/1997 | Location | WELLINGTON LOC 5767 |
| 111 | 10/01/1997 | Original Gazettal and page | ORIGINAL GAZETTE |
| 111 | 10/01/1997 | Public Plan | BG30 (2) 06.34 |
| 111 | 10/01/1997 | Street Name | EATON DRIVE |

date: May 5, 2022, 8:54:11 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -45531

| | | | |
|---------------------------------------|-----------------|------------------------|-------------------|
| Reserve | 45531 | Legal Area (ha) | 0.9729 |
| Name | N/A | Status | CURRENT |
| Type | N/A | Current Purpose | PUBLIC RECREATION |
| File Number | 01775-1998-01RO | | |
| Notes | N/A | | |
| Additional Reserve Information | N/A | | |

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|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD) | 03/03/1999 |

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| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | H031386 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|------------------------|-----------------------------|-------------|---------|------------------------|
| LR3021/721 | Lot 4 On Diagram 91019 | 109 Eaton Drive, EATON 6232 | 1775/1998. | 1168922 | 9731.638 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|----------------------|
| H031385 | 19/02/1999 | Current Area | 0.9729 |
| H031385 | 19/02/1999 | Current Purpose | PUBLIC RECREATION |
| H031385 | 19/02/1999 | Correspondence File Number | 01775-1998-01RO |
| H031385 | 19/02/1999 | Lot/Town Lot | EATON LOT 4 |
| H031385 | 19/02/1999 | Public Plan | BG30(2)06.33 |
| H031385 | 19/02/1999 | Street Name | EATON DRIVE |
| H031385 | 19/02/1999 | Survey Number | L.T.O. DIAGRAM 91019 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|-------------------------|
| H031386 | 19/02/1999 | Current Vesting | VEST: SHIRE OF DARDANUP |
| N/A | 19/02/1999 | Class | C |

date: May 4, 2022, 10:16:13 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -45358

| | | | |
|---------------------------------------|---------------|------------------------|-------------------|
| Reserve | 45358 | Legal Area (ha) | 2.9057 |
| Name | N/A | Status | CURRENT |
| Type | N/A | Current Purpose | PUBLIC RECREATION |
| File Number | 408-1998-01RO | | |
| Notes | N/A | | |
| Additional Reserve Information | N/A | | |

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|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 18/09/2004 |

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| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | G811898 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|--------------------------------|---------------------------------|-----------------|----------|------------------------|
| LR3133/938 | Lot 19 On Deposited Plan 41075 | 18 Recreation Drive, EATON 6232 | 00408-1998-01RO | 11267585 | 29057 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|------------------------|---------------------|
| I909203 | 04/06/2004 | Current Area | 2.9057 HA |
| I909203 | 04/06/2004 | Lot/Town Lot | LOT 19 ON DP41075 |
| I909203 | 04/06/2004 | Survey Number | DP41075 |
| G811897 | 05/06/1998 | Current Purpose | PUBLIC RECREATION |
| G811897 | 05/06/1998 | Historical Area | 2.5744 |
| G811897 | 05/06/1998 | Previous Lot/Locations | WELLINGTON LOC 5822 |
| G811897 | 05/06/1998 | Public Plan | BG30 (2) 06.33 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|-------------------------|
| G811897 | 05/06/1998 | Street Name | RECREATION DRIVE |
| G811898 | 05/06/1998 | Current Vesting | VEST: SHIRE OF DARDANUP |
| N/A | 05/06/1998 | Class | C |
| N/A | 05/06/1998 | Correspondence File Number | 408-1998-01RO |

date: May 5, 2022, 9:01:51 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -46255

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 46255 | Legal Area (ha) | 0.1936 |
| Name | N/A | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | 01656-2000-01RO | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 6060 ON P23651 & LOT 878 ON DP52369 (K95603) | | |

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| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSL) | 12/04/2007 |

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| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | H637894 |

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| Land Use |
| PUBLIC RECREATION |

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|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|-------------------------------|------------------|----------|------------------------|
| LR3120/919 | Lot 6060 On Plan 23651 | 173 Eaton Drive, EATON 6232 | 01656-2000-01RO. | 1293633 | 1663.619 |
| LR3140/742 | Lot 878 On Deposited Plan 52369 | 27 Ballarat Court, EATON 6232 | 01656-2000-01RO | 11619383 | 270 |

| | |
|---------------------------------------|---------------|
| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|--------------------------|
| K095603 | 20/02/2007 | Current Area | 0.1936 |
| H637893 | 05/01/2001 | Current Purpose | PUBLIC RECREATION |
| H637893 | 05/01/2001 | Correspondence File Number | 01656-2000-01RO |
| H637893 | 05/01/2001 | Historical Area | 0.1666 |
| H637893 | 05/01/2001 | Location | WELLINGTON LOCATION 6060 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|-------------------------|
| H637893 | 05/01/2001 | Lot/Town Lot | FORMERLEY LOT 843 |
| H637893 | 05/01/2001 | Public Plan | BG30 (02)6.34 |
| H637893 | 05/01/2001 | Street Name | EATON DRIVE |
| H637893 | 05/01/2001 | Survey Number | LTO: PLAN 23651 |
| H637894 | 05/01/2001 | Current Vesting | VEST: SHIRE OF DARDANUP |
| N/A | 05/01/2001 | Class | C |

date: May 5, 2022, 9:05:12 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -48392

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 48392 | Legal Area (ha) | 3.0935 |
| Name | N/A | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 1028 ON DP24719 & LOT 300 ON DP47211 (K603456) | | |

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|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 17/06/2008 |

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| Management Order | Document Number |
| N/A | N/A |

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| Land Use |
| PUBLIC RECREATION |

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|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|----------------------------------|---|-----------------|----------|------------------------|
| LR3000/557 | Lot 300 On Deposited Plan 47211 | No Street Address Information Available | 50969-2005-01RO | 11542811 | 3310 |
| LR3137/30 | Lot 1028 On Deposited Plan 24719 | No Street Address Information Available | 50969-2005-01RO | 1344540 | 27625 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|-------------------|
| K603456 | 22/05/2008 | Current Area | 3.0935 |
| J522150 | 24/11/2005 | Class | C |
| J522150 | 24/11/2005 | Current Purpose | PUBLIC RECREATION |
| J522150 | 24/11/2005 | Historical Area | 2.7625 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -50572

| | | | |
|---------------------------------------|---|------------------------|-------------------|
| Reserve | 50572 | Legal Area (ha) | 0.3506 |
| Name | N/A | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOTS 437 & 438 ON DP42392 (L316647) | | |

| | | |
|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSL) | 05/08/2010 |

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| Management Order | Document Number |
| SHIRE OF DARDANUP | L382185 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|---|-----------------|----------|------------------------|
| LR3159/261 | Lot 437 On Deposited Plan 42392 | No Street Address Information Available | 00805-2009-01RO | 11377056 | 2025 |
| LR3159/262 | Lot 438 On Deposited Plan 42392 | No Street Address Information Available | 00805-2009-01RO | 11377080 | 1481 |

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|---------------------------------------|---------------|
| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|------------------------------------|
| L382185 | 23/07/2010 | Current Vesting | MANAGEMENT ORDER SHIRE OF DARDANUP |
| L316647 | 17/05/2010 | Current Area | 0.3506 |
| L316647 | 17/05/2010 | Class | C |
| L316647 | 17/05/2010 | Current Purpose | PUBLIC RECREATION |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -48364

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 48364 | Legal Area (ha) | 0.0739 |
| Name | N/A | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 890 ON DP42393 (J484603) | | |

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| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSL) | 30/01/2006 |

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|-------------------------|------------------------|
| Management Order | Document Number |
| SHIRE OF DARDANUP | J533642 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|-------------------------------------|-----------------|----------|------------------------|
| LR3136/807 | Lot 890 On Deposited Plan 42393 | 31 Cleveland Bay Avenue, EATON 6232 | 50898-2005-01RO | 11480585 | 739 |

| | |
|---------------------------------------|---------------|
| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|------------------------------------|
| J533642 | 02/12/2005 | Current Vesting | MANAGEMENT ORDER SHIRE OF DARDANUP |
| J484602 | 26/10/2005 | Current Area | 0.0739 |
| J484603 | 26/10/2005 | Class | C |
| J484603 | 26/10/2005 | Current Purpose | PUBLIC RECREATION |
| J484603 | 26/10/2005 | Historical Area | 0.0890 |

date: May 5, 2022, 9:32:16 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -48933

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 48933 | Legal Area (ha) | 2.3695 |
| Name | PENINSULA LAKES PARK | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 874 ON DP48838 (J999440) | | |

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| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 18/10/2010 |

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| Management Order | Document Number |
| SHIRE OF DARDANUP | J999441 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|---|-----------------|----------|------------------------|
| LR3140/137 | Lot 874 On Deposited Plan 48838 | No Street Address Information Available | 50414-2006-01RO | 11514267 | 23695 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|------------------------------------|
| L454296 | 15/10/2010 | Current Name | PENINSULA LAKES PARK |
| J999440 | 24/11/2006 | Current Area | 2.3695 |
| J999440 | 24/11/2006 | Class | C |
| J999440 | 24/11/2006 | Current Purpose | PUBLIC RECREATION |
| J999441 | 24/11/2006 | Current Vesting | MANAGEMENT ORDER SHIRE OF DARDANUP |

date: May 4, 2022, 2:17:58 PM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -48870

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 48870 | Legal Area (ha) | 0.1451 |
| Name | N/A | Status | CURRENT |
| Type | N/A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 875 ON DP50198 (J938466) | | |

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| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD) | 09/07/2007 |

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| Management Order | Document Number |
| SHIRE OF DARDANUP | J938467 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|-------------------------------------|-----------------|----------|------------------------|
| LR3139/203 | Lot 875 On Deposited Plan 50198 | 1 Peninsula Lakes Drive, EATON 6232 | 50951-2006-01RO | 11561844 | 1451 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|------------------------------------|
| J938466 | 04/10/2006 | Current Area | 0.1451 |
| J938466 | 04/10/2006 | Class | C |
| J938466 | 04/10/2006 | Current Purpose | PUBLIC RECREATION |
| J938467 | 04/10/2006 | Current Vesting | MANAGEMENT ORDER SHIRE OF DARDANUP |

date: May 5, 2022, 9:50:59 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -46255

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 46255 | Legal Area (ha) | 0.1936 |
| Name | N/A | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION |
| File Number | 01656-2000-01RO | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 6060 ON P23651 & LOT 878 ON DP52369 (K95603) | | |

| | | |
|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSL) | 12/04/2007 |

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| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | H637894 |

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| Land Use |
| PUBLIC RECREATION |

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|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|---------------------------------|-------------------------------|------------------|----------|------------------------|
| LR3120/919 | Lot 6060 On Plan 23651 | 173 Eaton Drive, EATON 6232 | 01656-2000-01RO. | 1293633 | 1663.619 |
| LR3140/742 | Lot 878 On Deposited Plan 52369 | 27 Ballarat Court, EATON 6232 | 01656-2000-01RO | 11619383 | 270 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|--------------------------|
| K095603 | 20/02/2007 | Current Area | 0.1936 |
| H637893 | 05/01/2001 | Current Purpose | PUBLIC RECREATION |
| H637893 | 05/01/2001 | Correspondence File Number | 01656-2000-01RO |
| H637893 | 05/01/2001 | Historical Area | 0.1666 |
| H637893 | 05/01/2001 | Location | WELLINGTON LOCATION 6060 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|-------------------------|
| H637893 | 05/01/2001 | Lot/Town Lot | FORMERLEY LOT 843 |
| H637893 | 05/01/2001 | Public Plan | BG30 (02)6.34 |
| H637893 | 05/01/2001 | Street Name | EATON DRIVE |
| H637893 | 05/01/2001 | Survey Number | LTO: PLAN 23651 |
| H637894 | 05/01/2001 | Current Vesting | VEST: SHIRE OF DARDANUP |
| N/A | 05/01/2001 | Class | C |

date: May 5, 2022, 11:12:33 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -43641

| | | | |
|---------------------------------------|-------------------|------------------------|--|
| Reserve | 43641 | Legal Area (ha) | 44.2311 |
| Name | LEICESTER RESERVE | Status | CURRENT |
| Type | Subject to 20A | Current Purpose | PUBLIC RECREATION, FORESHORE MANAGEMENT AND DRAINAGE |
| File Number | 405/1995 | | |
| Notes | N/A | | |
| Additional Reserve Information | N/A | | |

| | | |
|--------------|---|----------------------------|
| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD) | 29/10/2010 |

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|-------------------------|------------------------|
| Management Order | Document Number |
| VEST: SHIRE OF DARDANUP | N/A |

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| Land Use |
| DRAINAGE |
| PUBLIC RECREATION |
| FORESHORE PROTECTION |

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|-----------------------------------|
| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|------------------------|-----------------------------|-------------|---------|------------------------|
| LR3104/781 | Lot 5679 On Plan 19531 | 49 Leake Street, EATON 6232 | 405/1995. | 1093320 | 442311 |

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| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|-----------------|----------------------------------|
| L464997 | 28/10/2010 | Current Name | LEICESTER RESERVE |
| 6249 | 29/12/1995 | Vesting Revoked | REVOKED (ORDER DATED 11/07/1995) |
| 6251 | 29/12/1995 | Current Vesting | VEST: SHIRE OF DARDANUP |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|----------------------------|--|
| 6260 | 29/12/1995 | Current Purpose | PUBLIC RECREATION, FORESHORE MANAGEMENT & DRAINAGE |
| 2918 | 11/07/1995 | Historical Vesting | VEST:SHIRE OF DARDANUP |
| 2924 | 11/07/1995 | Current Area | 44.2311 |
| 2924 | 11/07/1995 | Class | C |
| 2924 | 11/07/1995 | Formerly | LOT 5 ON PLAN 19531 |
| 2924 | 11/07/1995 | Correspondence File Number | 405/1995 |
| 2924 | 11/07/1995 | Historical Purposes | PUBLIC RECREATION |
| 2924 | 11/07/1995 | Location | WELLINGTON LOC 5679 |
| 2924 | 11/07/1995 | Original Gazettal and page | ORIGINAL GAZETTE |
| 2924 | 11/07/1995 | Public Plan | BG30 (2) 06.34, 06.35 AND 06.36 |
| 2924 | 11/07/1995 | Street Name | LEAKE STREET |

date: May 5, 2022, 11:32:30 AM

(Appendix ORD: 12.2.2A Under E Separate Cover)

Reserve Details Report -53879

| | | | |
|---------------------------------------|--|------------------------|-------------------|
| Reserve | 53879 | Legal Area (ha) | 0.1411 |
| Name | N/A | Status | CURRENT |
| Type | N/A | Current Purpose | PUBLIC RECREATION |
| File Number | N/A | | |
| Notes | N/A | | |
| Additional Reserve Information | RESERVE COMPRISES LOT 8001 ON DP420816 (O900416) | | |

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| Class | Responsible Agency | Date of Last Change |
| C | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) | 23/12/2021 |

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| Management Order | Document Number |
| SHIRE OF DARDANUP | O900417 |

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| Land Use |
| PUBLIC RECREATION |

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| Local Government Authority |
| SHIRE OF DARDANUP |

| CLT Number | Parcel Identifier | Street Address, Suburb | File Number | PIN | Area (m ²) |
|------------|-----------------------------------|---|-----------------|----------|------------------------|
| LR3173/33 | Lot 8001 On Deposited Plan 420816 | No Street Address Information Available | 00123-2021-01RO | 12485735 | 1411 |

| | |
|---------------------------------------|---------------|
| Previous Certificates of Title | Status |
|---------------------------------------|---------------|

| Document Number/Gazette Page | Date | Type | Text |
|------------------------------|------------|--------------------|---|
| O900416 | 08/10/2021 | Current Area | 0.1411 |
| O900416 | 08/10/2021 | Class | C |
| O900416 | 08/10/2021 | Current Purpose | PUBLIC RECREATION |
| O900416 | 08/10/2021 | Land Use | 7610 |
| O900416 | 08/10/2021 | Responsible Agency | DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSLSD) |
| O900417 | 08/10/2021 | Current Vesting | MANAGEMENT ORDER SHIRE OF DARDANUP |

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APPENDIX E | GREY LEWIS AUDIT



GRAY & LEWIS
LAND USE PLANNERS

**PUBLIC OPEN SPACE
INFORMATION**

FOR

PARKRIDGE GROUP PTY LTD

June 2014

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Document | Version | Date |
|--|----------------|-------------------------|
| POS Report Nov 2013 | 3 | 15 November 2013 |
| POS Report June 2014 | 4 | 17 June 2014 |
| FILE PATH NAME G:\FILES 100701 - 100859\100818\AA POS Information\POS Report June 2014.doc | | |

HISTORY OF WAPC APPROVALS

1.0 Introduction

This report examines the history of existing subdivision approvals for Parkridge Estate and scenarios for public open space.

Gray & Lewis has been provided with a chronology of subdivision approvals from Cornerstone Legal received on the 16 August 2013. The approvals have been numbered consecutively as summarised in Attachment 1.

Copies of the approvals referred to in this report which relate to public open space provision are included as attachments and numbered consecutively.

A plan showing the history of WAPC approvals is included as Figure 1. An overall audit plan has been included as Figure 2.

All reserves and open space areas have been labelled A – N throughout this report consistent with Figure 2.

2.0 Reserve 45333 (A) and Reserve 44580 (B)

The Western Australian Planning Commission (WAPC) issued approval on the 27 August 1993 for subdivision of original superlot 2. The WAPC reference was 89548 - Attachment 2.

The subdivision plan showed three public open space reservations including the wetland in Reserve 48392. The wetland was created under a separate future subdivision approval.

Condition 17 of the approval required *'the proposed reserves shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act (as amended), such land to be ceded free of cost and without any payment of compensation by the crown'*.

The WAPC Policy DC 2.2 requires that 10% of the subdivisible area to be ceded as public open space. The Policy is generally applied for subdivisions creating 5 or more lots.

Under the Policy DC2.2 the Commission may require that the public open space for the whole of a parcel of land be met entirely from the first stage of subdivision, or from any succeeding stage, if it considers desirable.

The subdivision area was approximately 49.2 hectares therefore the 10% public open space requirement consisted of 4.92 hectares.

Two reserves were created under this approval being Reserve 45333 and Reserve 44580. This report refers to them as 'A' and 'B' in Figure 2.

There is no indication in the approval that the reserves were required for any drainage or that there was any requirement for cash in lieu of open space.

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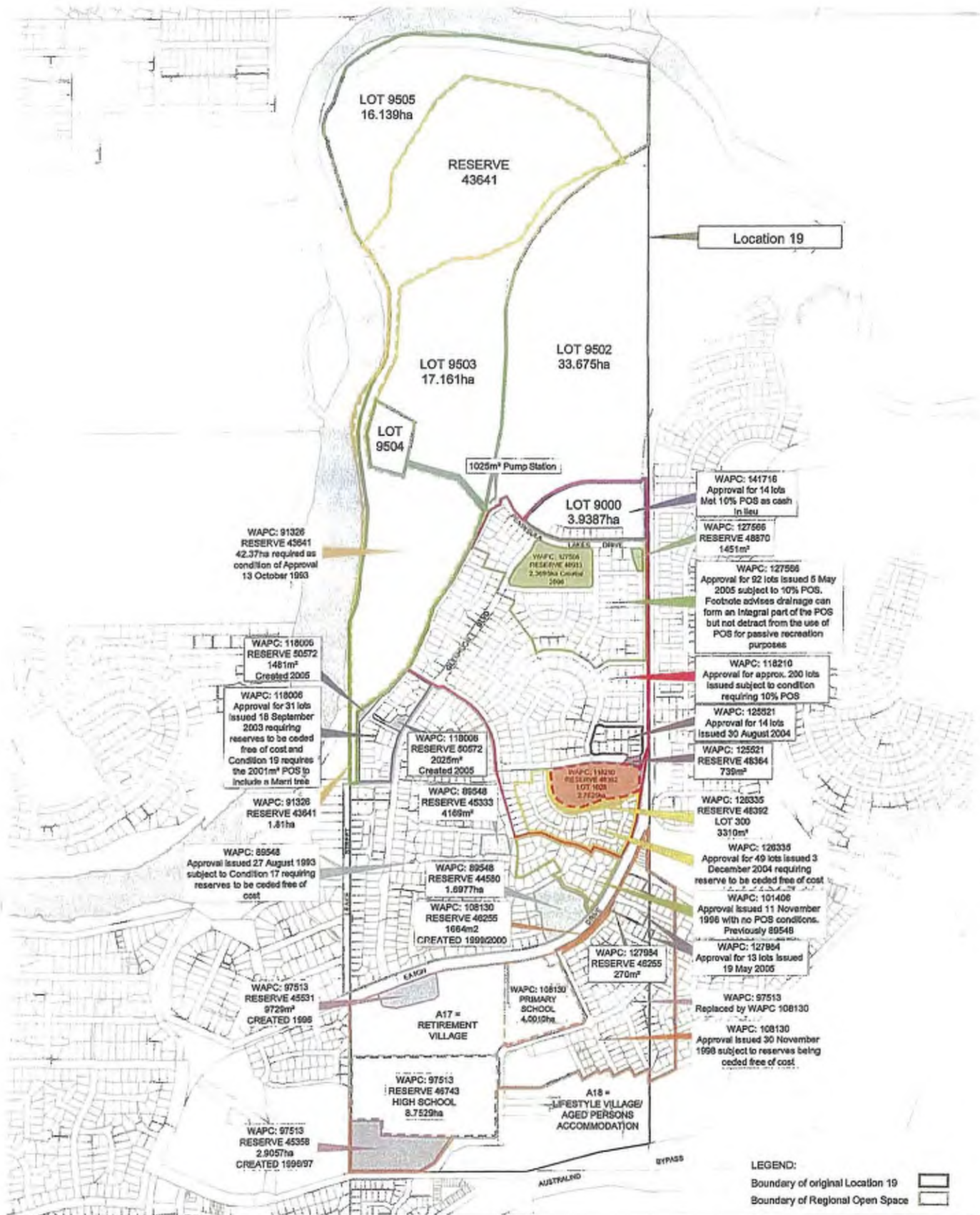


Figure 1

OVERALL POS AUDIT PLAN
Peninsula Precinct - Parkridge Estate
EATON



GRAY & LEWIS
LAND USE PLANNERS
Suite 5, 2 Hardy Street
South Perth, WA 6151
T (08) 9474 1722
F (08) 9474 1172
parth@graylewis.com.au

JOB REFERENCE: 100810 DATE: 8th NOVEMBER 2013

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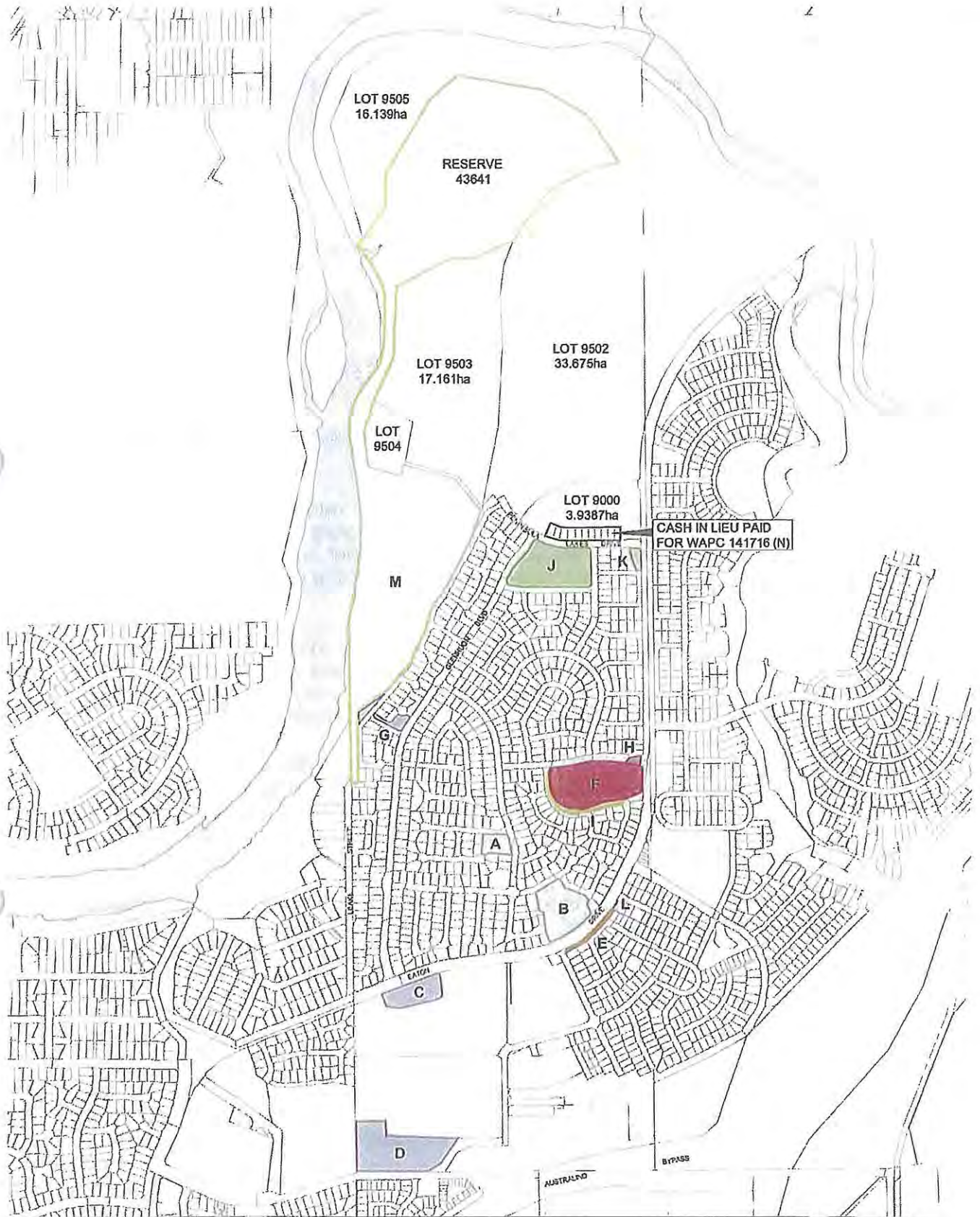
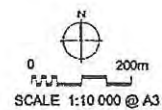


Figure 2

OVERALL POS AUDIT PLAN
Peninsula Precinct - Parkridge Estate
EATON

JOB REFERENCE: 100618 DATE: 6th NOVEMBER 2013

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GRAY & LEWIS
 LAND USE PLANNERS
 Suite 5, 2 Hardy Street
 South Perth, WA 6151
 T (08) 9474 1722
 F (08) 9474 1172
 perth@graylewis.com.au

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Reserve 45333 is located on the corner of Shetland Place and Lusitano Avenue. It is grassed and contains a playground. The full area of 4169m² as public open space, as it clearly functions as a local park. It has a Management Order (G812382) to Shire of Dardanup for Public Recreation, and the Shire of Dardanup confirmed the reserve was included as public open space in their audit dated 30 May 2002.

Reserve 44580 is known as Sindhi Park and contains grassed areas, vegetation areas and pathways. The full area of 1.6977 hectares is credited as public open space as it has clearly been developed as a local park.

3.0 Reserve 45531 (C) and Reserve 97513 (D)

The Western Australian Planning Commission (WAPC) issued another approval on the 24 August 1995. The WAPC reference was 97513 - Attachment 3.

The subdivision plan showed three reserves for recreation, a high school, a primary school and residential lots.

Condition 19 of the approval required *'the proposed reserves shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act (as amended), such land to be ceded free of cost and without any payment of compensation by the crown'*.

A footnote on the planning approval stated *"In respect to Condition 19, there appears to be a discrepancy over the actual size of the subject lot. Prior to submitting Diagrams of Survey to the Commission the subdivider is requested to provide to the Commission a public open space schedule for the whole subdivision area.'*

Reserve 45531 and Reserve 45358 were created under this subdivision. As the subdivision was cleared it has been assumed that the reserves for recreation were accepted as being sufficient for public open space. It has also been assumed that the WAPC checked the public open space provision at clearance stage due to the footnote advice indicating that there was a discrepancy over the lot size.

Reserve 45531 has an area of 9729m² is grassed, landscaped, contains pathways and a water body (with fountain).

Under Liveable Neighbourhoods permanent drainage detention areas are normally excluded from open space calculations.

The Commission can allow urban water management areas such as detention areas to be included as *'restricted open space'* where *'the area is not subject to inundation more frequently than a one year average reoccurrence interval rainfall event and does not present a safety hazard'* and *'the area of the swale is contoured, unfenced and grassed and / or landscaped'*; and *'the area forms part of an appropriate management plan'*.

It is understood that no drainage was required within Reserve 45531 as part of the developers subdivision, and therefore it has been assumed that it was ceded in its entirety as unrestricted public open space.

It is also understood that the local government required drainage within the reserve some years after the open space was created. The developer should not be

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penalised by drainage developed in the reserve which is not required for the subdivision. Any drainage works installed after subdivision does not negate the fact that the land was ceded for the purpose of public open space.

Engineering advice indicates that the basin in Reserve 45531 was constructed after subdivision occurred to compensate upstream flows from Murdoch Drive to the south, before discharge down Eaton Drive and eventually the Collie River – Attachment 4.

If the basin was constructed to cater for drainage of land to the south of Parkridge Estate, then it does not mitigate that the reserve was ceded as open space at the time of subdivision.

Reserve 45531 is vested to the Shire of Dardanup with a Management Order for Public Recreation.

Reserve 45358 on Recreation Drive has an area of 2.907 hectares. The land was ceded as open space by the developer however the local government has developed it with the Eaton Recreation Centre and carparking.

The fact that the local government has developed the Reserve does not negate that the land has been ceded for public open space. The entire area has been included in public open space calculations.

Under R27 of Element 4 of Liveable Neighbourhoods, the WAPC can agree to community purpose sites being provided as part of the overall public open space provision, in consultation with the local government. It is not known if the local government consulted the WAPC prior to developing the open space for community purposes.

It is noted that there is a water body on this reserve however it is not known if it was provided by the local government as part of the recreation centre development which incorporates new hardstand areas requiring drainage. It has been assumed it was not drainage provided by the subdivider and the land was ceded as unrestricted open space.

There is a management order for Reserve 45358 to the Shire of Dardanup for Public Recreation.

The Western Australian Planning Commission issued an approval on the 11 November 1996 for approximately 30 lots. The WAPC reference was 101406.

Although the subdivision created more than 5 lots the approval did not require any public open space to be ceded or any cash in lieu of open space.

This indicates that the WAPC had not identified any shortfall of open space at that time and was satisfied with the public open space provided in the previous 1993 and 1996 approvals. Alternatively the WAPC would have been satisfied that additional open space would be provided as part of future subdivision.

The approval did not include any footnote advice requesting a public open space audit. This indicates that the WAPC was satisfied public open space provision was sufficient at this time and had no ongoing concerns over public open space provision.

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4.0 Reserve 46255 (E)

The Western Australian Planning Commission issued an approval on the 30 November 1998 for lots in the south east portion of original Location 19. The WAPC reference was 108130 - Attachment 5.

The subdivision plan showed a small Reserve for Recreation parallel to Eaton Drive.

Condition 16 of the approval requires that *'the proposed reserves shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act (as amended), such land to be ceded free of cost and without any payment of compensation by the crown'*.

The area has been included as open space as it has been ceded free of cost, and is not required for drainage. The area is landscaped.

It is noted that the Reserve forms part of the 10% public open space contribution as the local government advised other subdividers have given up small areas of open space along Eaton Drive - Attachment 6.

There is a Management Order for the Reserve to the Shire of Dardanup for the purpose of Public Recreation.

5.0 Reserve 48392 - Wetland: Lot 1028 (F)

The Western Australian Planning Commission (WAPC) issued approval on the 20 May 2002. The WAPC reference was 118210 - Attachment 7.

The subdivision plan showed three reserves for recreation including Reserve 48933, Reserve 48870 and the wetland on Reserve 48392. Only the wetland Reserve 48392 was created under this approval in 2005.

Condition 12 of the approval required *'10% of the subdivisible land, in a position to be agreed between the subdivider and the local government, being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the crown'*.

A footnote on the planning approval stated *"In respect to Condition 12, it is recommended that a public open space audit be undertaken to ascertain the amount of public open space provided by the subdivider for the estate."*

Another footnote also advised that arrangements could be made for payment of cash in lieu of open space.

As the local government and WAPC cleared Condition 12, this report concludes that it has been accepted that the subdivision area complied with the 10% POS requirement. The WAPC has certified compliance with Condition 12 at clearance stage. This report assumes no cash in lieu was paid.

Under Liveable Neighbourhoods the WAPC can accept eight percent of open space for active and passive recreation where the remaining two percent is allocated for restricted public open space such as *'natural wetlands'*.

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R33 of Liveable Neighbourhoods supports this and allows 'a *resource enhancement wetland, multiple use wetland, or wetland of a similar environmental value*' to be included as restricted open space 'provided that the area included as open space is useable for recreation purposes and there is an agreement with the local government (or other management authority), referral agencies and the WAPC on a management plan that enhances the wetland'.

The complication in considering the wetland under Liveable Neighbourhoods is that the wetland is a conservation category wetland and not a resource enhancement or multiple use wetland. A conservation category wetland has a higher management category than resource enhancement or multiple use wetlands.

A management plan must have been agreed to by the local government and the then Waters and Rivers Commission as Condition 20 of the approval was cleared.

Condition 20 required 'the subdivider making arrangements satisfactory to the Western Australian Planning Commission for preparation and implementation of a Foreshore Management Plan'.

The Management Plan was required to address drainage, vegetation rehabilitation works, weed management, provision of a dual use path and uniform fencing according to footnote (vii) on the approval. Footnote (vii) also cites that the foreshore area was to be maintained for a two year period.

The inclusion of the wetland may be disputed by the WAPC as R11 in Element 4 of Liveable Neighbourhoods states that 'An Environmental Policy Wetland, conservation category wetland, or wetland of a similar environmental value shall be ceded to the Crown free of cost and without payment of compensation by the crown in addition to the 10 per cent public open space contribution. The area of the wetland should not be included in the gross subdivisible area on which the public open space contribution is determined.'

The wetland is described as a 'Conservation Category' or 'Environmental Protection Policy' in the WAPC approval dated 3 December 2004 issued for the wetland foreshore created separately - Attachment 11.

There are mitigating factors that may make it difficult for the WAPC to dispute that the wetland should be excluded as:

- (a) There was no condition specifying that the wetland should be ceded free of cost without payment of compensation so the wetland had to be ceded as open space in accordance with Condition 12 therefore formed part of the 10% open space requirement.
- (b) There was a management plan approved in line with Liveable Neighbourhoods.
- (c) There was no payment of cash in lieu indicating that the wetland was accepted as meeting the 10% POS condition.
- (d) Although R11 in Liveable Neighbourhoods discusses ceding Conservation Category wetlands free of cost, the fact that a management plan was agreed to indicates it may have been accepted as open space.

The Department of Planning advised in correspondence dated 5 June 2007 that an area of 0.4939 hectares could be credited as open space associated with Lot 1028 within Reserve 48392, excluding the EPP Lake. It is not clear on which basis the

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Department has accepted that only some of the reserve can be accredited given that the only condition imposed required 10% public open space – Attachment 8.

6.0 Reserve 50572 (G)

The Western Australian Planning Commission (WAPC) issued approval on the 18 September 2003 for 31 lots. The WAPC reference was 118006 - Attachment 9.

Condition 12 of the approval requires *'the proposed public open space shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the crown'*.

The subdivision plan cites a total subdivisible area of 3.4902 hectares and the combined open space area of 3482m² equates to exactly 10% of the subdivisible area.

There is no cash in lieu advice or footnote that indicates any shortfall of open space.

There is a management order for the reserve to the Shire of Dardanup for the purpose of public recreation (LR382185).

Liveable Neighbourhoods states in R14 of Element 4 that local parks can include small parks and be responsive to specific site requirements (eg tree retention and significant landscape features).

The western portion of Reserve 50572 contains native vegetation and the eastern portion included a Marri tree to be protected so are consistent with Liveable Neighbourhoods.

7.0 Reserve 125521 (H)

The Western Australian Planning Commission (WAPC) issued approval on the 30 August 2004 for 14 lots. The WAPC reference was 125521 - Attachment 10.

The subdivision plan showed one public open space reservation of 730m².

Condition 11 of the approval required *'the proposed reserves shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act (as amended), such land to be ceded free of cost and without any payment of compensation by the crown'*.

It appears that the WAPC was satisfied that the subdivision met the 10% public open space requirement based on the proposed 730m² reserve, and as this land was previously included in subdivision WAPC 118210 where the 10% public open space requirement had already been cleared.

There was no requirement for payment of cash in of open space even though the subdivision created more than 5 lots.

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8.0 Reserve 48392 (I)

The Western Australian Planning Commission (WAPC) issued approval on the 3 December 2004 for 49 lots. The WAPC reference was 126335 - Attachment 11.

The subdivision plan showed one public open space reservation of 3310m² to the south of the wetland on Reserve 48392. The land was required as foreshore to the wetland created as Lot 1028 to the north.

Condition 24 of the approval required *'the proposed foreshore reserves shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as Public Open space and vested in the crown under Section 20A of the Town Planning and Development Act (as amended), such land to be ceded free of cost and without any payment of compensation by the crown'*.

Public open space credit can be allocated for the wetland buffer in accordance with Liveable Neighbourhoods. Section R33 of Element 4 in Liveable Neighbourhoods allows the WAPC to include buffers to an Environmental Protection Policy / Conservation Category wetland in restricted open space provided the area is useable for recreational purposes and there is agreement on a management plan that enhances the wetland.

The accreditation of the foreshore as open space is reinforced by footnote (xi) of the approval which states *'the subdivider is required to revegetate the 3354m² of public open space to facilitate the use of the public open space for recreation and drainage. The works will be subject of a 2 year maintenance period.'*

The subdivider had to provide a foreshore management plan for the wetland (Condition 20 of WAPC 118210) and rehabilitate the wetland. In addition, a management plan for the wetland buffer was required as a footnote to this 2004 approval.

9.0 Reserves 127566 (J) and Reserve 48870 (K)

The Western Australian Planning Commission (WAPC) issued approval on the 5 May 2005 for 92 lots. The WAPC reference was 127566 - Attachment 12.

The subdivision plan showed two public open space reservations of 2.3695ha and 1451m². These were created as Reserves 127566 and Reserve 48870.

Condition 12 of the approval required *'10% of the subdivisible land, in a position to be agreed between the subdivider and the local government, being shown on the Diagram or Plan of Survey as a Reserve for recreation and vested in the crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the crown'*

The approval included footnotes recommending a public open space audit and advice that cash in lieu of open space was available subject to Commission approval. This report assumes no cash in lieu was paid.

The local government and WAPC have cleared Condition 12 therefore they have certified that this subdivision has met the 10 public open space requirement. Given that Condition 12 has been cleared the Commission must have been satisfied with the public open space provision.

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It is noted that there is a water body in Reserve 48933 (area J), however there is engineering advice indicating that the existing water body does not appear to receive stormwater from the drainage network of Parkridge Estate and has no drainage function – Attachment 4.

There is correspondence between TME and the Shire of Dardanup relating to clearance of the subdivision conditions, which also confirms that *'the POS area does not accept stormwater runoff from the surrounding roads or property connections. A high lake level control outlet (as detailed on drawing 04055E-03-C300) connects to the pipe infrastructure to ensure the lake does not rise above RL 4.10 during a major rainfall event. Therefore there is no drainage impediment on the central lake area.'* – Attachment 13.

It is reasonable to assume that the Shire and WAPC were satisfied that the no drainage detracted *'from the use of the public open space for passive recreational purposes'* in accordance with footnote (vii) of the approval.

10.0 Reserve 46255 (L)

The Western Australian Planning Commission (WAPC) issued approval on the 19 May 2005 for 13 lots. The WAPC reference was 127984 - Attachment 14.

The subdivision plan showed one public open space reservation of 275m². This was created as Reserve 46255 and was adjacent to other public open space parallel to Eaton Drive.

The Reserve is small however it has been landscaped and has visual aesthetic qualities.

The local government advised other subdividers have given up small areas of open space along Eaton Drive indicating that the Reserve forms part of the 10% public open space contribution - Attachment 6.

There is a Management Order for the Reserve to the Shire of Dardanup for the purpose of Public Recreation.

11.0 Reserve 43641 (M)

Reserve 43641 located adjacent to Collier River has a total area of 44.231 hectares.

Only a 42.37 hectare portion of Reserve 43641 was required to be ceded as a 'Reserve for Recreation, Foreshore Management and Drainage' in Condition 1 of a superlot subdivision approval issued on the 13 October 1993 by the WAPC - Attachment 15.

The excess area of 1.861 hectares can be accredited as open space as it was provided in addition to the required 42.37 hectares.

12.0 Lot 9000 – Formerly known as Lot 9501 (N)

The WAPC issued conditional approval for 14 lots on the 13 May 2010 (WAPC Reference: 141716) – Attachment 16.

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Condition 8 of the approval required 'An area(s) of land equal to 10% of the subject lot in area, in a position to be agreed with the WAPC, being shown on the Deposited Plan as a Reserve for Recreation and vested in the Crown under Section 152 of the Planning and Development Act 2005, such land to be ceded free of cost and without any payment of compensation by the Crown.'

Footnote iv) of the approval grants approval of a cash in lieu contribution with regard to condition 8.

As open space for Lot 9501 has already been provided in the form of a cash in lieu payment, 10% of area of Lot 9501 (4704m²) can be accredited as public open space.

Payment of \$150,000 as cash of lieu to meet condition 8 was recorded in the minutes of the Council meeting held by the Shire of Dardanup on the 23 November 2011 - Attachment 17.

13.0 Public Open Space Provision:

13.1 Department of Planning Position:

In 2009, the Department of Planning (DoP) has advised that based on their calculation the original Location 19 has a Gross Subdivisible Area of 132.5135 hectares with deductions for schools, the EPP wetland, floodways and drainage basins - Attachment 18. The required open space would be 13.2513ha.

If the DoP calculation of the Gross Subdivisible Area is accepted, then only a portion of the wetland and wetland foreshore can be considered as public open space. The table below is based on the DoP audit so represents the DoP's position. For the reasons noted, it is maintained that the DoP's position is flawed and not accepted by the landowner.

| Gross Subdivisible Area | | |
|---|-----------------------------------|---|
| | Current Audit | Notes: |
| Total Area of Parkridge estate | 234.1918 | Based on 2009 DoP audit – Attachment 18. |
| Deductions: | | |
| - High School | -8.7529ha | Based on 2009 DoP audit |
| - Primary School | -4.0010ha | Based on 2009 DoP audit |
| - Roads | -5.1 Eaton Drive | Based on 2009 DoP audit |
| Floodway / Regional Open Space | -79.7319ha | Based on 2009 DoP audit |
| Pump station | - 1025m ² | Based on 2009 DoP audit |
| EPP Wetland | - 2.5996ha | Based on 2009 DoP audit |
| Drainage basin Lot 438 Reserve 50572 (Area G) | - 0.0250ha | Based on 2009 DoP audit |
| Drainage basin Reserve 45531 (Area C) | -.3904ha See note ¹ | Based on 2009 DoP audit ¹ This water body was deducted from the gross subdivisible area in the DoP audit however engineering advice indicates drainage was installed after subdivision as required by a |

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| | | |
|--|-----------------------------------|---|
| | | Shire drainage report (Attachment 4). |
| Drainage basin Reserve 48933 (Area J) | -.7500ha See note ² | ² This water body was deducted from the gross subdivisible area in the DoP audit however engineering advice indicates it has no drainage function (Attachment 4 and 13). |
| Total deductions | - 101.4533 | The 2009 DoP audit calculated deductions = 101.6783 ha (included drainage in area C, G& J). The audit calculation was incorrect and is actually 101.4533. |
| Gross Subdivisible Area | 132.7385 ha | DoP audit = 132.5135ha The 2009 DoP audit calculated the GSA as 132.5135ha. The audit calculation was incorrect and is actually 132.7385 ha |
| 10% public open space required: | 13.27385 ha | DoP audit = 13.2513ha The 2009 DoP audit calculated the POS requirement as 132.5135ha. The audit calculation was incorrect and is actually 132.7385 ha |

The DoP audit excluded 0.3904ha for drainage within Reserve 45531, and 0.7500ha for drainage within Reserve 48933, so these areas are not included as open space in the table below.

| | WAPC: | Reserve No. | 2009 DoP Audit Area | Comment |
|---|--------------------------------------|--|--|--|
| A | 89548 | 45333 | 4169m ² | As per DoP audit |
| B | 89548 | 44580 | 1.6977ha | As per DoP audit |
| C | 95713 | 45531 | 5825m ² (total area 9729 m ² – 3904m ² drainage = 5825) | The DoP audit allocated 5524m ² as POS however the figure is incorrect and should be 5825m ² |
| D | 95713 | 45358 | 2.9057ha | As per DoP audit |
| E | 108130 | 46255 – Lot 6060 | 1664 m ² | As per DoP audit. |
| F | 118210 | 48392 – Lot 1028 (excluding EPP lake) | 4939 m ² | As per DoP audit. |
| G | 118006 | 50572 – Lot 437 | 2025m ² | As per DoP audit (used 0.20253) |
| G | 118006 | 50572 – Lot 438 | 1231m ² (total area 1481 m ² – 250m ² drainage = 1231) | The DoP audit allocated 0.12306m ² as POS (excluding 0.025ha drainage) however the figure is incorrect and should be 1231m ² |
| H | 125521 | 48364 | - | Not included by DoP |
| I | Included as F as per DoP calculation | - | - | |
| J | 127566 | 48933 | 1.6195 ha (total area 2.3695 ha – 7500) | As per DoP audit which excluded 7500m ² for drainage |
| K | 127566 | 48870 | 1451m ² | Agreed DoP audit |
| L | 46255 | 46225 – Lot 878 | 270m ² | Agreed DoP audit |
| M | 91326 | 43641 | - | Not included by DoP |
| N | 141716 | Cash in lieu of open space (\$150,000) | - | Not included by DoP |

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13.2 Parkridge Group Pty Ltd

Scenario 1:

Scenario 1 assumes that no open space has been approved for use as drainage by the subdivider and that no cash in lieu has been paid for any subdivision with the exception of WAPC 141716 (Attachment 16).

It assumes that the wetland and wetland buffer are open space so the Gross Subdivisible Area has been re-calculated using the DoP deduction table in Attachment 18 as a base.

This scenario concludes that there is already an over provision of POS by 8,500m² taking into account the entire subdivisible area. If this scenario is accepted no further provision of POS would technically be required for the subdivision of the balance land holding.

| Gross Subdivisible Area | | |
|--|----------------------|---|
| | Current Audit | Notes: |
| Total Area of Parkridge estate | 234.1918 | Based on DoP audit |
| Deductions: | | |
| - High School | -8.7529ha | Based on DoP audit and checked cadastra |
| - Primary School | -4.0010ha | Based on DoP audit |
| - Roads | -5.1 Eaton Drive | Based on DoP audit |
| Floodway / Regional Open Space | -79.7319 | Based on DoP audit |
| Pump station | - 1025m ² | Based on DoP audit and checked cadastra |
| Total deductions | - 97.68 | DoP deductions = 101.67ha (included drainage) |
| Gross Subdivisible Area | 136.51 ha | DoP audit = 132.5135ha |
| 10% public open space required: | 13.65 ha | DoP audit = 13.2513ha |

| Open Space Provision | | | |
|----------------------|--------|------------------|---------------------------------------|
| | WAPC: | Reserve No. | Area: |
| A | 89548 | 45333 | 4169m ² |
| B | 89548 | 44580 | 1.6977ha ^{Note 1} |
| C | 95713 | 45531 | 9729 m ² ^{Note 1} |
| D | 95713 | 45358 | 2.9057ha ^{Note 1} |
| E | 108130 | 46255 – Lot 6060 | 1664 m ² |
| F | 118210 | 48392 – Lot 1028 | 2.7625m ² |
| G | 118006 | 50572 – Lot 437 | 2025m ² |
| G | 118006 | 50572 – Lot 438 | 1481m ² |
| H | 125521 | 48364 | 739m ² |
| I | 126335 | 48392 – Lot 300 | 3310m ² |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | WAPC: | Reserve No. | Area: |
|------------------|--------------|--|---|
| J | 127566 | 48933 | 2.3695 ha |
| K | 127566 | 48870 | 1451m ² |
| L | 46255 | 46225 – Lot 878 | 270m ² |
| M | 91326 | 43641 | 1.81ha |
| N | 141716 | Cash in lieu of open space (\$150,000) | 4704m ² |
| Sub Total | | | 14.50 ha (overprovision 8500m²) |

Note 1 : The Shire of Dardanup agreed that Areas B and C form part of the public open space provisions for Parkridge Estate. The Shire accepted that a 2.6744ha portion of Area D formed part of POS. The Shire POS audit was conducted in 2002 therefore only examines early stages of subdivision – Attachment 6.

Scenario 2:

This scenario assumes that no open space has been approved for use as drainage by the subdivider and that no cash in lieu has been paid for any subdivision with the exception of WAPC 141716 (Attachment 16). It deducts the EPP wetland lake from the Gross Subdivisible Area and only includes a portion of the wetland and its buffer as open space. It credits all drainage basins as open space.

Under scenario 2, there is a shortfall of POS of 1.49ha. If scenario 2 is agreed, the 1.49ha shortfall in POS may be made up in the subdivision of the balance portion of the land holding.

| Gross Subdivisible Area | | |
|--|----------------------|---|
| | Current Audit | Notes: |
| Total Area of Location 19 | 234.1918 | Based on DoP audit |
| Deductions: | | |
| - Wetland Lake Lot 1028 | -2.5996ha | Based on DoP audit Note: Portion and wetland buffer credited as open space |
| - High School | -8.7529ha | Based on DoP audit and checked cadasta |
| - Primary School | -4.0010ha | Based on DoP audit |
| - Roads | -5.1 Eaton Drive | Based on DoP audit |
| Floodway / Regional Open Space | -79.7319 | Based on DoP audit |
| Pump station | - 1025m ² | Based on DoP audit and checked cadasta |
| Total deductions | - 100.28ha | DoP deductions = 101.42 ha (included drainage basins) |
| Gross Subdivisible Area | 133.91 ha | DoP = 132.7635ha |
| 10% public open space required: | 13.39 ha | DoP audit = 13.2763 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Open Space Provision | | | |
|----------------------|--------|--|--|
| | WAPC: | Reserve No. | Area: |
| A | 89548 | 45333 | 4169m ² |
| B | 89548 | 44580 | 1.6977ha ^{Note 1} |
| C | 95713 | 45531 | 9729 m ² ^{Note 1} |
| D | 95713 | 45358 | 2.9057ha ^{Note 1} |
| E | 108130 | 46255 – Lot 6060 | 1664 m ² |
| F | 118210 | 48392 – Lot 1028 (excluding EPP lake) | 4939 m ² (as per DoP audit) |
| G | 118006 | 50572 – Lot 437 | 2025m ² |
| G | 118006 | 50572 – Lot 438 | 1481m ² |
| H | 125521 | 48364 | 739m ² |
| I | 126335 | 48392 – included in F (wetland buffer) | - |
| J | 127566 | 48933 | 2.3695 ha |
| K | 127566 | 48870 | 1451m ² |
| L | 46255 | 46225 – Lot 878 | 270m ² |
| M | 91326 | 43641 | 1.81ha |
| N | 141716 | Cash in lieu of open space (\$150,000) | 4704m ² |
| Sub Total | | | 11.9 ha (shortfall 1.49ha) |

Note 1 - The Shire of Dardanup agreed that Areas B and C form part of the public open space provisions for Parkridge Estate. The Shire accepted that a 2.6744ha portion of Area D formed part of POS. The Shire POS audit was conducted in 2002 therefore only examines early stages of subdivision - Attachment 6.

14.0 Additional planned open space

The Western Australian Planning Commission issued approval on the 12 December 2011 for Lots 9501 and 9502 (WAPC Reference: 144999) - Attachment 19. The plan proposed two areas of public open space totalling 9380m². Following Review at SAT these two areas of POS and some lots were removed from the approval area.

15.0 Assessment – Liveable Neighbourhoods

The Department of Planning (DoP) audit conducted in 2007 has been outlined in this report. The DoP audit in 2007 was flawed as it did not have regard for Liveable Neighbourhoods.

The Department of Planning advised in correspondence dated 11 May 2009 that 'the POS was based on the WAPC Policy DC 2.3 and not the Liveable Neighbourhoods Policy as the subdivision applications were not requested to be determined under the Liveable Neighbourhoods Policy' – Attachment 18.

Any audit of open space has to have regard for Liveable Neighbourhoods which is an operational policy of the Western Australian Planning Commission used to assess structure plans and subdivision. The Department of planning website acknowledges that 'in general, Liveable Neighbourhoods replaces current WAPC development control policies. Where there is conflict with existing policies, liveable neighbourhoods will prevail...' - Attachment 20.

ATTACHMENT 1

(Appendix ORD: 12.2.2A Under E Separate Cover)

ATTACHMENT 1

PARKRIDGE ESTATE

CHRONOLOGY OF THE HISTORY OF THE STRUCTURE PLANNING, REZONING AND SUBDIVISION OF PARKRIDGE ESTATE

| Date | Event | Document Reference | Page | Ref |
|----------------|---|--|------|-------|
| December 1991 | Shire of Dardanup resolved to initiate Amendment 47 to TP3: Location 19 was rezoned to Residential, Residential Development Area and Recreation | WAPC Document (pages 98 -157) Report and Amendment to Shire of Dardanup Town Planning Scheme 3 Amendment 47 | 1 | W1 |
| February 1993 | Shire of Dardanup adopt final approval and Parkridge Estate rezoning residential R15 and Recreation | WAPC Document (pages 98 -157) Report and Amendment to Shire of Dardanup Town Planning Scheme 3 Amendment 47 | 1 | W1 |
| July 1992 | EPA Advice re: Amendment 47 of Shire of Dardanup Town Planning scheme 3 And Copy of Structure Plan 9 | WAPC Document (Arbitration) | 2 | ARB 1 |
| June 1993 | Shire of Dardanup Fax Correspondence to BSD Consultants And Plan of Subdivision | Parkridge Document Fax Correspondence dated 25 June 1993 | 3 | P1 |
| July 1993 | Final rezoning approval endorsed by the Minister of Planning | WAPC Document Shire of Dardanup Town Planning Scheme No3 amendment 47. (SSO Bundle item 13) | 1 | W1 |
| August 1993 | Department of Planning and Urban Development (DPUD) approval to subdivide land into four super lots DPUD approval 89547 | WAPC Document (Arbitration) DPUD approval 89547 Date: 27 August 1993 | 4 | ARB 2 |
| August 1993 | Plan of four Super Lot Sub - Division | Parkridge Document Prepared by John bullock and Ass. Consulting Land Surveyors | 5 | P2 |
| Jul - Aug 1993 | Parkridge (Penman Holdings Pty Ltd) appeal to Minister of Planning re conditions of | WAPC Document (Arbitration) Appeal Document. | 6 | ARB 3 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | | | | |
|----------------|--|--|----|-------|
| | WAPC 89547 | (Prepared by BSD Consultants.) The document assist in providing the historical background to the position of the parties in regards to the POS and other matters in 1993 | | |
| September 1993 | BSD Consultant's letter to Department of Planning and Urban Development | WAPC Document (Arbitration) Confirmation of meeting with Larry Gulse and reference to agreements to changes and deletions of Conditions to DPUD approval 89547 | 7 | ARB 4 |
| October 1993 | South West planning Committee resolved to endorse Department of Planning approving the agreements of September 1993 and modified super lot subdivision. Resolved and Recorded 21 October 1993 | WAPC Document (Arbitration) SW Planning Committee documents. Date Title: D11 200310 New condition approval. Job No : 1426 File No: 91326 | 8 | ARB 5 |
| October 1993 | Department of Planning and Urban Development (DPUD) approval to subdivide land into six super lots DPUD Approval 91326 | WAPC Document (Arbitration) DPUD Approval 91326 Date: October 1993 | 9 | ARB 6 |
| October 1993 | Completion of survey of super lots as per DPUD approval 91326 | Parkridge Document John Bullock & Ass. Surveyors Letter and attached surveyor Plan of Super lots | 10 | P2 |
| November 1993 | Eaton Developments Pty Ltd (Parkridge) Undertaking to Shire of Dardanup And Shire of Dardanup clearance Document | Parkridge Document Documents that satisfied "POS Undertaking" condition in DPUD Approval 91326 | 11 | P3 |
| August 1993 | Subdivision Approval of Super Lot 2 | WAPC Document (Arbitration) DPUD Approval: 89548. Date: 27 August 1993. | 12 | ARB 7 |
| August 1993 | Location of subdivision Approval 89548 in Parkridge Estate | Parkridge Document | 13 | P4 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | | | | |
|---------------|---|---|----|-----|
| August 1995 | Subdivision Approval Lot 7 (originally Super Lot 1) and Part Lot 2 Plus plan of proposed subdivision | WAPC Document WAPC Approval: 97513 Dated: 24 August 1995 | 14 | W 2 |
| August 1993 | <i>Location of Sub division Approval 97513 in Parkridge Estate</i> | <i>Parkridge Document</i> | 15 | P5 |
| August 1995 | Lots 1001 High School site created and sold to Education Dept. And Lot 1000 being an area of 2.5744 hectares created as vested as POS in accordance with WAPC Approval: 97513 | WAPC Document Office of Tittles Diagram 90100 | 16 | W 3 |
| October 1995 | Lots 1006 being 9729 square meters created as vested as POS in accordance with WAPC Approval: 97513 | WAPC Document Office of Tittles Diagram 91019 | 17 | W4 |
| November 1996 | Subdivision approval of part of land approved in DPUD approval 89548 | WAPC Document WAPC Approval 101406 Dated: November 1996 | 18 | W5 |
| November 1996 | <i>Location of Subdivision Approval 101406 in Parkridge Estate</i> | <i>Parkridge Document</i> | 18 | P6 |
| January 1997 | Dept of Planning advice to the Shire of Dardanup Requesting Eaton structure Plan review | WAPC Document Correspondence; Ministry of Planning to CEO Shire of Dardanup, Attention Mr Joe O'Keefe Dated: 24 January 1997. | 19 | W6 |
| November 1998 | Subdivision approval of portion of land approved in August 1995 WAPC 97513. Owner Nix Pty Ltd WAPC Approval 108130 with attached Sub division Plan | WAPC Document WAPC Approval 108130 Dated: November 1998 | 20 | W7 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | | | | |
|----------------|--|---|----|-----|
| November 1998 | <i>Location of Sub division Approval 101406 in Parkridge Estate</i> | <i>Parkridge Document</i> | 20 | P7 |
| March 1999 | Subdivision approval for approximately 200 lots. Being Lots 2, 3, 4 and 6. Together with Subdivision Plan WAPC Approval 108764 | WAPC Document WAPC Approval 108764 Dated: March 1999 | 21 | W8 |
| March 1999 | <i>Location of Sub division Approval 108764 in Parkridge Estate</i> | <i>Parkridge Document</i> | 21 | P8 |
| May 2002 | Subdivision Of Part Lot 3, 4 and 6. (Approval 108764 expired.) Advice Note: Public Open space audit be undertaken to determine the amount of POS vested to date. | WAPC Document WAPC Approval 118210 May 2002 | 22 | W9 |
| May 2002 | <i>Location of Sub division Approval 118210 in Parkridge Estate</i> | <i>Parkridge Document</i> | 22 | P9 |
| May 2002 | Shire of Dardanup Public Open Space Audit as requested by Parkridge in keeping with Advice note in WAPC Approval 118210 | Parkridge Document Facsimile Correspondence: Shire of Dardanup to Gray and Lewis (Parkridge Planners) together with relevant schedules. | 23 | P10 |
| September 2003 | Subdivision approval WAPC 118006 Together with plan of subdivision | WAPC Document WAPC Approval 118006 September 3003 | 24 | W10 |
| September 2003 | <i>Location of Sub division Approval 11806 in Parkridge Estate</i> | <i>Parkridge Document</i> | 24 | P11 |
| August 2004 | Subdivision approval of small portion of land and the approval to close access to Eaton Drive. Portion of land was included in WAPC approval 118210 | WAPC Document WAPC approval 125521 Date: August 2004 | 25 | W11 |
| August 2004 | <i>Location of Sub division Approval 118210 in Parkridge Estate</i> | <i>Parkridge Document</i> | 25 | P12 |
| December 2004 | Subdivision approval 126335 together with plan of proposed subdivision | WAPC Document WAPC Approval 126335 Date: December 2004 | 26 | W12 |

ATTACHMENT 2

12.

19

89548
O'Keefe J
27 August 1993



70

89548
O'Keefe J
27 August 1993

BSD Consultants Pty Ltd
PO Box 448
APPLECROSS WA 6163

*WHPG Approved
Recalculated as per
WHPG Report*

TOWN PLANNING AND DEVELOPMENT ACT. (AS AMENDED)

| | | |
|---------------|---|---|
| LOT | : | Crown Grant No. 155 |
| LOCATION | : | Laschehaus 19' |
| PLAN / DIA | : | - |
| VOL / FOL | : | - |
| LOCALITY | : | Esdon Drive, Esdon |
| DATE OF PLAN | : | 21 July 1993 |
| OWNER | : | Penman Holdings Pty Ltd C/- Stanton & Partners Pier Street PERTH WA 6000 |
| DECISION DATE | : | 27 August 1993 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The South West Region Planning Committee acting for and on behalf of the Commission under delegated power has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on July 21, 1993 provided that the conditions set out below are fulfilled within three years from the date of this advice.

In accordance with established procedures all conditions must be completed with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

CONDITION(S) :

1. Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 01/11/01 BY 60322/UC/STP



5

The applicant is further advised that the Local Authority requires a minimum width for road reserves of 16 metres, with a 6 metre carriageway, while laneways with a minimum road reserve of 10 metres and a 3 metre carriageway can be provided where such laneways serve a maximum of 4 lots.

The applicant & Council are further advised that the Environmental Protection Authority has recommended that stormwater drainage be contained on-site and has advised that it is not appropriate for the compensation/nutrient stripping basins to be placed within the flood prone areas.

Yours faithfully

CAROL ANDERSON
SECRETARY
SOUTH WEST REGION PLANNING COMMITTEE

FOOTNOTE TO COUNCIL:

Council is also advised to liaise with the Environmental Protection Authority regarding measures to be used for dust control during the development stage.

Council is further advised that the Committee is concerned with the potential visual impact of uninterrupted uniform fencing along the length of Hands Avenue. It is recommended that varying treatments be considered to ameliorate the impact.

6/11/01
6

12.

21

FOR THE
CITY OF
PERTH
CITY ENGINEER



68

67

- 18. The balloon access leg(s) being constructed and drained at the subdivider's cost to the specification and satisfaction of the Local Authority. (LA) ✓
- 20. Satisfactory arrangements being made with the Ministry of Education, to ensure the transfer of primary school sites to the Ministry in due course. (EDU) ✓
- 21. Such padmount sites as may be required by the State Energy Commission being transferred (free of cost) to the Commission, with the locations of the sites being to the satisfaction of the Local Authority. (SEC) (LA) ✓
- 22. Certification from the State Energy Commission that financial and other requirements have been satisfied for the provision of underground electricity to the lots approved under this application. (SEC) ✓
- 23. Certification from the State Energy Commission of WA that financial and other requirements have been satisfied for the removal and relocation of State Energy Commission plant or equipment located on or near the proposed subdivision. (SEC) ✓
- 24. Certification from the State Energy Commission that satisfactory arrangements have been made for the provision of assessments for State Energy Commission existing or future equipment. ✓
- 25. The subdivider making arrangements satisfactory to Council to undertake measures to control dust during site preparation and construction. (LA) ✓
- 26. Measures being taken to the satisfaction of the Local Authority to ensure identification and protection of any vegetation on the site which Council considers worthy of retention prior to commencement of site works. (LA) ✓

The applicant is advised that the Committee advises that Condition No.2 should not be interpreted to imply that it requires the construction to be at the subdivider's cost but this is a matter for negotiation between the subdivider and the Local Authority.

The applicant is also advised that no Diagrams of Survey will be endorsed until such time as the State Planning Commission has endorsed Diagrams of Survey for DPUD Ref:89547 and the Office of Titles has issued Certificates of Title for the approved lots accordingly.

13



Subdivision
Date: August 1993

DPUD Reference: 89548
(Refer item 4 SSO Bundle 4859 -11)

ATTACHMENT 3

14

W

Our Ref: 97513
Your Ref: CI/28/1343
Enquiries: Paula A



WESTERN AUSTRALIAN
PLANNING COMMISSION

52

24 August 1995

Civilis Pty Ltd
810 Warton Road
HUNTINGDALB WA 6110

TOWN PLANNING AND DEVELOPMENT ACT (AS AMENDED)

| | |
|---------------|--|
| LOT | 7 & 112 |
| LOCATION | D |
| PLAN/DIAGRAM | 10531/ |
| VOLUME/FOLIO | 2018/470, 2018/47B |
| LOCALITY | Edon Drv Edon |
| DATE OF PLAN | 09 August 1993 |
| OWNER | Edon Developments Pty Ltd, C/- Summit Realty, Woodvale Shop 25 Woodvale Shopping Centre, Woodvale Boulevard WOODVALE WA 6016 |
| DECISION DATE | 22 August 1995 |
| LGA | Shire of Dardanup |

Reviewed please 11/10/95

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on 9 August 1995 once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. The applicant should liaise with the nominated authority or the requirements necessary to satisfy the conditions and obtain advice from that authority that the conditions have been met, which should be filed with the Plan or Diagram of Survey.

It is noted that should the applicant be aggrieved by this decision there is a right of appeal pursuant to the provisions of Section 26 of the Town Planning and Development Act 1928 (as amended). Such an appeal must be submitted in accordance with Part V of the Act within 60 days of the date of this decision. When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of appeal. In the event the applicant considers the requirements are onerous.

Paula A
Tel (097) 91 0577 Fax (097) 91 0576

Copied Style Side

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WESTERN AUSTRALIAN
PLANNING COMMISSION

5/

CONDITION(S)

The road/way to be created as a public road, the whole length of which shall be located in the public area and the portion of natural road located in the public area (as shown on the approved plan) is the first Diagram of Survey lodged for the purpose.

The road/way crossing an existing road shall be provided and improved to a standard not less than that of the existing road (O) to the local road system and such additional works (O) shall be provided and drained at the applicant's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the applicant paying to the Local Authority the cost of such works as required by the Local Authority, subject to the Local Authority giving an assurance in writing that the works will be completed within a reasonable period approved by the Commission. (LA)

Any necessary arrangements shall be made with the Western Australian Planning Commission for the operation of Recreational Drive. (LA)

Satisfactory arrangements shall be made for the construction of full culverts or culverts, road drains, drainage, footpaths, fences and other specified works (O) required within the portion of Egan Drive subject to the application and plan. (LA)

The works to be done shall be done to the satisfaction of the Western Australian Planning Commission. (LA)

The plan being amended by incorporating pedestrian accessways between proposed lots numbered 7 and 8 to link with the pedestrian accessway provided in the adjacent subdivision.

The pedestrian accessway (a) within the subdivision being shown on the Diagram of Plan of Survey as such and vested in the Crown under Section 20A of the Town Planning and Development Act (43 amended) shall (b) be closed free of cost and without any payment of compensation by the Crown.

The pedestrian accessway (c) within the subdivision being restricted and drained at the applicant's cost to the satisfaction of the Western Australian Planning Commission. (LA)

A pedestrian accessway shall be provided along the boundary of all lots fronting Egan Drive in order to permit access into Egan Drive. Such road to be shown on the Diagram of Plan of Survey as a pedestrian accessway vested in the Crown under section 20A of the Town Planning and Development Act (43 amended) and closed free of cost and without any payment of compensation by the Crown.

Drainage paths being constructed in accordance with the approved plan to the satisfaction of the Western Australian Planning Commission. (LA)

The land being graded and stabilized at the applicant's cost to the satisfaction of the Western Australian Planning Commission. (LA)

The land being filled and/or drained at the applicant's cost to the satisfaction of the Western Australian Planning Commission, and any necessary other measures necessary for the implementation thereof being provided free of cost. (LA)



WESTERN AUSTRALIAN
PLANNING COMMISSION

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26. Efforts being taken to the satisfaction of the Western Australian Planning Commission to ensure identification and protection of any vegetation of the site worthy of retention prior to commencement of site works. (LA)

27. Measures being undertaken by the applicant to reduce spill over effects from dust caused during earthworks in accordance with the Department for Environmental Protection Guidelines. (LA)

The approved amended plan includes that area which lies within the Water Authority's 500m catchment area of the Eaton Water Treatment Plant. This treatment plant has been designated as a temporary facility and upon its removal the affected buffer land may then be redeveloped. For further information related to the Waste Water Treatment Plant please contact the Water Authority of WA Planning Office.

In respect to Condition 1 the applicant is advised that due to the lack of legal access to Lot 49, it is considered essential that provision be made to provide that property with frontage to a road reserve. The Commission will consider the dedication of alternative roads (i.e. sections of Recreation Drive within the approved area) as long as they provide frontage with that public road reserve.

It should be noted that if the applicant's driveway in stages two does not commence the continuation of Eaton Drive and if subdivision is approved on Lot 49, the balance of Eaton Drive could be constructed by the subdivision of Lot 49, under arrangement.

The Western Australian Planning Commission encourages both landowners to negotiate the continuation of Eaton Drive. It should be noted that the outer portion of Main Roads providing access to Lot 49 via a service road adjoining the Bypass is not a preferred but is still open as an option.

The Commission advises that Condition 3 should not be interpreted to imply that it requires the upgrading to be at the applicant's cost but that it is a matter for negotiation between the applicant and the Local Authority. Condition 3 only applies to that portion of Recreation Drive which adjoins the proposed public open space area and high school site adjacent to the southern boundary of the application area.

In respect to Condition 4 which appears to be a private agreement with the applicant, the applicant is advised to provide a copy of the Deed of Survey to the Commission when the subdivision is approved. The Commission will advise the applicant of any public open space area to be provided for the whole subdivision area.

The local authority has requested that road design plans (engineering detail including proposed roundabouts and traffic lights) be submitted to and approved by Council prior to the lots being forwarded.

The applicant is advised that the proposed commercial site does not comply with the Eaton Structure Plan and is not appropriately zoned. Should a commercial site be sought the landowners should seek an amendment to Council's Town Planning Scheme and the Commission and Council will be able to assess the merit of such proposal. The applicant is also advised to liaise with Council in respect to the rezoning of the church and school sites.

The applicant is advised that the proposed realignment of Recreation Drive is not in accordance with the Eaton Structure Plan and Committed Policy which seeks to achieve a service road adjoining major roads. As this road lies within the WAWA 'buffer' area this issue needs to be resolved prior to the lodgement of a further application for the affected area.

Planning Department



WESTERN AUSTRALIAN
PLANNING COMMISSION

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The owners of Lot 49 will be advised that the Western Australian Planning Commission intends to reserve legal easements for their property and that it encourages ongoing negotiations with the owner of Lot 7.

In respect to Condition No. 22 the Ministry for Education should take into account in its calculations the reserved area approved.

If there are matters arising from this decision which require discussion please contact the District Office of the Ministry for Planning on phone 097 916977 quoting the application reference number.

Yours faithfully,


BROD MEREDITH
FOR SECRETARY
WESTERN AUSTRALIAN PLANNING COMMISSION

Planning Commission Office

097 91 6977 2nd Floor, Treasury House, 61 Stirling St, Perth, Western Australia 6000 Fax 097 91 6976

ATTACHMENT 4

Gray Lewis

From: "Craig Pippin" <Craig@mpmdc.com.au>
To: "Gray Lewis" <perth@graylewis.com.au>
Sent: Tuesday, 12 November 2013 2:24 PM
Subject: RE: Parkridge estate - drainage and open space

Hi Liz,

In regards to Area C, I am unsure of the original purpose of this parcel of land or what designation it was given when it was given up by Parkridge. However, I do recall a drainage study that was completed by TME in about 2002/2003 for the Shire of Dardanup that showed this site for a drainage basin.

Subsequently when I designed the Bethanie Fields retirement village (the land parcel around Area C) Bethanie constructed the drainage basin for the Shire, in accordance with this drainage study. So yes the basin was constructed after the land around it was subdivided. It was constructed to compensate upstream flows from Murdoch Drive etc to the south, before they discharged down Eaton drive and eventually to the Collie river.

With regards to area J, again I am unsure I was not the engineer for the Estate at the time. However, I have noted previously that the existing water body within this area does not appear to receive stormwater from the drainage network of the Estate. There is an outlet pipe that is noted on the previous design drawings as being a high level outlet pipe. Unfortunately the Shire have never been able to provide me with a drainage study for this area so I cannot confirm if the water body was existing and had to be kept or was constructed. Based on just looking at the existing drainage pipework in the area it doesn't look like the water body performs a drainage function.

Regards

Craig Pippin
Senior Engineer / Director



MPM Development Consultants
107 Beach Road, Bunbury WA 6230
PO BOX 2035, Bunbury WA 6231
Ph: 08 9721 4777 / 0488 910 222
<mailto:craig@mpmdc.com.au>
www.mpmdc.com.au

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From: Gray Lewis [mailto:perth@graylewis.com.au]
Sent: Tuesday, 12 November 2013 1:48 PM
To: Craig Pippin
Subject: Parkridge estate - drainage and open space

Hi Craig,

We are looking at all of the POS provided in Parkridge Estate and part of that means looking at areas for drainage. The Department for Planning have excluded areas for drainage within Reserve 45531 (marked as

12/11/2013

ATTACHMENT 5

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N7

13
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WESTERN AUSTRALIAN
PLANNING COMMISSION

2PR 107 WA
80

Our Ref : 108130
Your Ref : I MC KELLAR
Equities : Kim Muste

30 November 1998

Civil Technology
PO Box 1504

CANNING VALE WA 6970

TOWN PLANNING AND DEVELOPMENT ACT (AS AMENDED)

LOT : 1003
 LOCATION : Wellington 19
 PLAN/DIAGRAM : 21399L
 VOLUME/FOLIO : 2077/279
 LOCALITY : Eaton Drive, Eaton
 DATE PLAN REC : 05 August 1998
 OWNER : Nix Estate Pty Ltd Cf- Chiltech P/L 11/22 Pary Avenue
 BATEMAN WA 6155.
 DECISION DATE : 27 November 1998
 LGA : Shire of Dardanup

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the plan submitted once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. The subdivider should liaise with the nominated authority on the requirements necessary to satisfy the condition and obtain advice from that authority that the conditions have been met, which should be submitted with the Plan or Diagram of Survey.

It is advised that should the applicant be aggrieved by this decision there is a right of appeal pursuant to the provisions of Section 26 of the Town Planning and Development Act 1928. Such an appeal must be submitted in accordance with Part V of the Act within 60 days of the date of this decision. When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of appeal in the event the applicant considers the requirements are onerous.

ATTACHMENT 3

Sealing District Office
 2nd Floor, Eglby Court 41 Venables St, Subiaco, Western Australia 6100
 Tel: (08) 9271 6577 Fax: (08) 9271 6578 TDD: (08) 9271 7555 Mailing: 1000 428 427
 Email: corporate@planning.wa.gov.au planning@planning.wa.gov.au

79²⁸

CONDITION(S):

1. Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG) X
2. Satisfactory arrangements being made for a proportionate contribution to the construction of full earthworks, one carriageway, dual use path(s), drainage facilities and grade separated pedestrian crossing(s) required within the portion of Eaton Drive adjacent to the application area. (LG) *deleted*
3. The cul-de-sac roads being designed to the satisfaction of the Western Australian Planning Commission. (LG) X
4. The pedestrian access-way(s) within the subdivision being shown on the Diagram or Plan of Survey as such and vested in the Crown under Section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown. *LG*
5. The pedestrian access-way(s) within the subdivision being constructed and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) X
6. A 0.1 metre wide pedestrian access-way being provided along the boundary of all lots fronting Eaton Drive in order to prevent access onto Eaton Drive. Such land to be shown on the Diagram or Plan of Survey as a pedestrian access-way, vested in the Crown under section 20A of the Town Planning and Development Act and ceded free of cost and without any payment of compensation by the Crown. *LG*
7. Dual-use path/cycleway being constructed by the subdivider to the satisfaction and satisfaction of the Western Australian Planning Commission. (LG) *LG*
8. The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) X
9. The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission, and any easements and/or reserves necessary for the implementation thereof, being provided free of cost. (LG) X
10. The land being connected to the comprehensive district drainage system at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) X
11. Satisfactory arrangements being made with the Western Australian Planning Commission for the provision of uniform fencing of all residential lots abutting Eaton Drive and Public Open Space. (LG) X
12. Certification from the Water Corporation that arrangements have been made with that body so that connection to a water supply service will be available to the lots proposed by this application. (WC) X

20

V

78
10/10/10

- 13. Certification from the Water Corporation that arrangements have been made with that body so that connection to sewerage supply service will be available to the lots proposed by this application. (W/C) X
- 14. The subdivider making arrangements satisfactory to the Western Australian Planning Commission to ensure that the prospective purchasers of the lots acknowledge in writing that they are aware that the lots are located within the Bunbury Groundwater Area where there is a need to obtain a licence before a bore or well can be constructed. The licence will contain a number of conditions including the quantity of water that can be pumped each year. (W/A/C) X
- 15. Certification by the Bush Fires Services that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (BFSWA) X

~~16. The proposed reserve(s) shown on the plan submitted by the applicant being shown on the plan as a road reserve for Retention and vested in the Crown under section 20 of the Public Works Administration Act 1901 and to be created free of cost and without payment of compensation by the Crown.~~

- 17. The subdivider making arrangements to the satisfaction of the Western Australian Planning Commission in respect to the provision of pick up / set down embayments within the road reserve for the school site. (ED, LG) (D.L.R.)
- 18. The subdivider transferring to the Education department the primary school site (dha) once payment has been received for the balance of land in excess of the developers pro rata contribution. (ED) (D.L.R.)
- 19. Certification from Western Power that financial and other requirements have been satisfied for the provision of underground electricity to the lots approved under this application. (Western Power) X
- 20. Certification from Western Power that financial and other requirements have been satisfied for the removal and relocation of Western Power plant or equipment located on or near the proposed subdivision. (Western Power) (D.L.R.)
- 21. Such padmount sites as may be required by Western Power being transferred free of cost to Western Power, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission. (Western Power) (D.L.R.) X
- 22. Measures being taken to the satisfaction of the Western Australian Planning Commission to ensure identification and protection of any vegetation on the site worthy of retention prior to commencement of site works. (EG) X
- 23. Measures being undertaken by the subdivider to the satisfaction of the Western Australian Planning Commission to reduce spill over effects from dust caused during earthworks in accordance with the Department of Environmental Protection guidelines. (EG) X
- 24. The applicant obtaining development approval for the development of a house(s) on the lots less than 350m² in accordance with Clause 2.5 of the Residential Planning Codes. (EG) (D.L.R.)
- 25. Such easements as may be required by the Water Corporation being granted free of cost to that Corporation. (Water Corporation) X

20

7/1/06
for

26. Satisfactory arrangements being made with the Western Australian Planning Commission to ensure "R30" lots proposed are consistent with that depicted in the Town Planning Scheme for the area. (LG) (Added)

ADVICE:

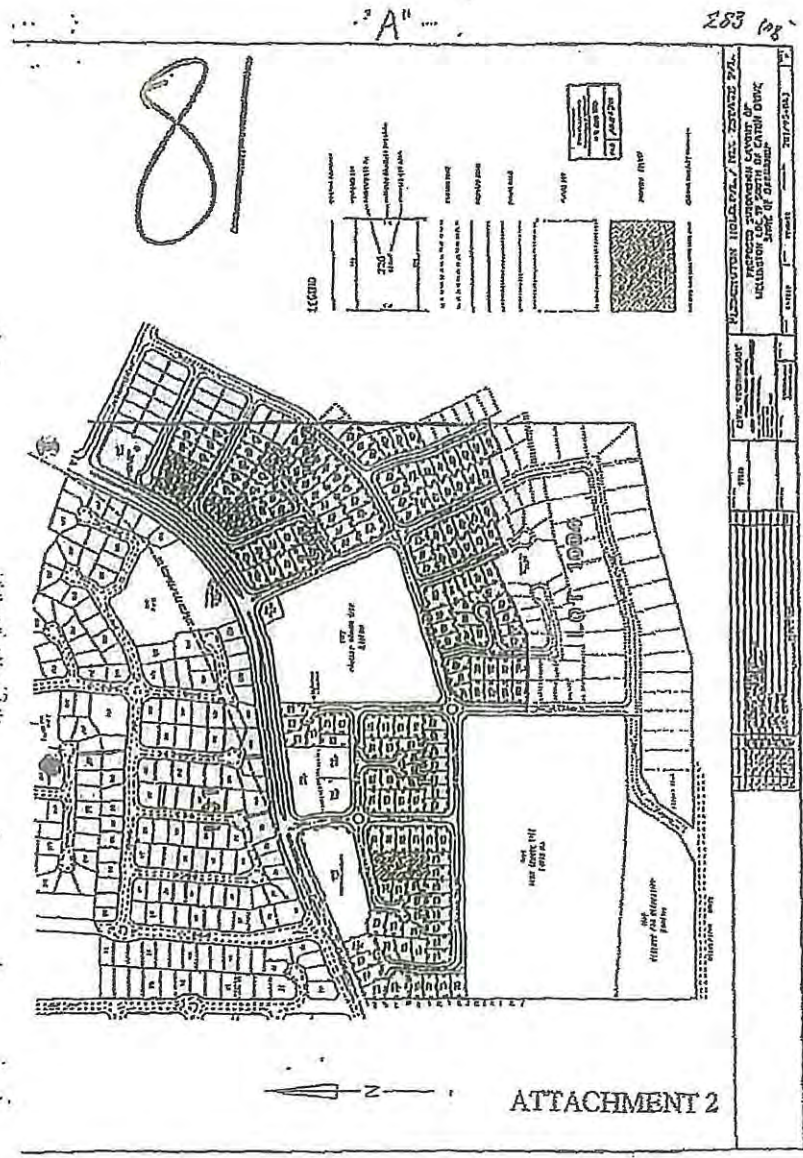
- i) In relation to Condition 1 it is suggested the subdivider discuss road reserve widths with the Shire of Dardanup and the Education Department. This is to ensure that drop-off and pick-up areas are appropriately located and the subdivider and landowner of the proposed school site provide equitable land areas.
- ii) The Shire of Dardanup advise that should proposed Lot 847 be proposed for a commercial site in accordance with previous subdivision approval MFP ref: 97513 it would not comply with the Esten Structure Plan and would not be appropriately zoned. In this regard the Council advises that it does not support the initiation of such an amendment.
- iii) The subdivider is also advised that the northern lots nominated as "proposed R30 Lots" on the submitted plan do not reflect the area of land zoned "Residential R30" under council's Town Planning Scheme. Proposed R30 lots need to reflect that depicted in the Scheme.
- iv) Telstra advise that if timely telephone services are to be provided on demand to future purchasers provision of benches should be as per Telstra Estate Policy.
- v) The Local Government advises the proposed roundabout adjoining the school site should be of a suitable design to accommodate bus movements.
- vi) The Local Government requests that road design plans (engineering detail including proposed roundabouts and traffic islands) be submitted and approved by Council prior to the lots being surveyed.

Yours faithfully



BROD MEREDITH
FOR SECRETARY
WESTERN AUSTRALIAN PLANNING COMMISSION

20



ATTACHMENT 6

(Appendix ORD: 12.2.2A Under E Separate Cover)

23

30-MAY-2002 14:35 FROM:GRAY & LEWIS PLANNIN 9474 1172

TO:97251010

P:2

30-MAY-2002 13:02

DARD.SHIRE TECH/DEV.SUCES

03 97240092 P.01



Shire of Dardanup

FACSIMILIE

PO Box 7016
1 Council Drive
Eaton WA 6232
ABN: 87 305 829 653

Phone: (08) 9724 0095
Fax: (08) 9724 0091
email: markj@dardanup.wa.gov.au

Our Ref:

Your Ref:

| | | |
|-------------------|------------------------|------------------------|
| To: Gray & Lewis. | Attention: Geoff Lawls | Fax No: 9474 1172 |
| CC: | | |
| From: Mark Jones | Date: 30 May 2002 | Pages: 4 (incl. cover) |

RE: PUBLIC OPEN SPACE AUDIT
EATON DEVELOPMENTS / PARKRIDGE ESTATE

As requested, please find attached a table indicating the provision of POS given up in previous stages.

The first stage of the NIK subdivision (Superlot 1003) gave up 1666m² for POS along Eaton Drive and also made contributions to existing POS (Shindi Park). The subdivision reference L08130 copy of conditions are attached.

Pat Luca purchased the remainder of Lot 1003. He was required to obtain a new approval for the stage 4 abutting Eaton Drive (WAPC Ref: 113765) and a 10% POS condition has been imposed. Copy of subdivision plan attached.

In regard to Lot 1004, I recommend that the revised design and supporting information be referred to the Council advisory committee for discussion and endorsement prior to formally lodging. I will call you to discuss further.

Regards

Mark Jones
Principal Town Planner

(Appendix ORD: 12.2.2A Under E Separate Cover)

23

10

30-MAY-2002 14:35 FROM: GRAY & LEWIS PLANNING 9474 1172

TO: 97251010

P:3

30-MAY-2002 13:02

DARD.SHIRE TECH/DEV.SUCES

00 97240002 P.02

EATON POS PROVISION FOR EATON DEVELOPMENTS / PARKSIDE ESTATES

Under Western Australian Planning Commission policy manual:

- 10% of the gross subdivisional area is required to be given up free of cost.
- This excludes area for schools, major regional roads, public utility sites.
- Foreshore reserves to be given up as a condition of subdivision are also deducted from the gross area and are not considered as part of the contribution ie 10% separate requirement exists also
- Up to 20% of the 10% provision may be allocated as cash-in-lieu

| Subdivision no | Previous lot no | Lot area (ha) | Subdivided into | Provision of POS (ha) | New streets | Title file ref |
|-----------------|-----------------------------|---------------|--------------------|-----------------------|--|----------------|
| 101406 | Pt lot 1009 of Well Loc 19 | 4.9520 | 43 lots, 2 PAW POS | 0.4169 | Lusitano Avenue Shelford place Breton Way Arabian Gardens | 8 |
| 101406 | Pt lot 1008 of Well Loc 19 | 1.0671 | 10 lots | Nil | Salers close Lusitano Avenue | 15 |
| 101406 | Pt lot 1008 of Well Loc 19 | 1.0184 | 9 lots | Nil | Sindhi Close Hereford Place | 16 |
| 101406 | Pt lot 1008 of Well Loc 19 | 1.1774 | 11 lots | Nil | Hereford Place | 17 |
| 101406 89548 | Pt lot 1008 of Well Loc 19 | 0.3369 | 3 lots | Nil | Lusitano Avenue | 18 |
| 89548 | Pt lot 2 of Well Loc 19 | 1.9096 | 18 lots 1 PAW | Nil | Pinta Close Clydesdale Drive | 19 |
| 89548 | Pt lot 2 of Well Loc 19 | 1.3419 | 15 lots | Nil | Jersey Place Leake Street | 20 |
| 89548 | Pt lot 2 of Well Loc 19 | 1.0490 | 13 lots | Nil | Morgan Court | 21 |
| 89548 | Pt lot 2 & 7 of Well Loc 19 | 1.7458 | 12 lots | Nil | Glenhuon boulevard | 22 |
| 89548 | Pt lot 2 of Well Loc 19 | 1.3061 | 13 lots | Nil | Glenhuon boulevard | 23 |
| 89548 | Pt lot 2 of Well Loc 19 | 1.2791 | 14 lots | Nil | Clydesdale drive Morgan court | 24 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

23

30-MAY-2002 14:35 FROM: GRAY & LEWIS FLANNIN 9474 1172

TO: 97251010

P: 4

30-MAY-2002 13:03

DARD. SHIRE TECH/DEV. SUCCES

08 97240892 P. 03

| Subdivision no | Previous lot no | Lot area (ha) | Subdivided into | Provision of POS (ha) | New streets | Title file ref |
|----------------|----------------------------|---------------|-------------------|-----------------------|---|----------------|
| 89548 | Pt lot 1008 of Well Loc 19 | 4.9173 | 25 lots, PAW, POS | 1.6976ha | Palomino Close Clydesdale drive Lusitano Avenue Sindhi Close | 25 |
| 89548 | Pt lot 1008 of Well Loc 19 | 0.2444 | 8 lots | Nil | Sindhi Close | 26 |
| 89548 | Pt lot 1008 of Well Loc 19 | 1.5104 | 13 lots | Nil | Appaloosa Scary Clydesdale Drive | 27 |
| 101406 | Pt lot 1016 of Well Loc 19 | 1.9132 | 15 lots | Nil | Cheviot Way, Glenhuan Boulevard | 60 |
| 101406 | Pt lot 1016 of Well Loc 19 | 2.4609 | 24 lots, ROW | Nil | Bradford Loop Cheviot Way | 69 |
| 101406 | Pt lot 1016 of Well Loc 19 | 2.3358 | 27 lots, one PAW | Nil | Bradford Loop | 70 |
| 101406 | Pt lot 1016 of Well Loc 19 | 1.3427 | 19 lots ROW | Nil | Lusitano Avenue | 76 |
| 101406 | Pt lot 150 of Well Loc 19 | 1.8107 | 18 lots one PAW | Nil | Mustang Loop Leake Street owned by NTC | 77 |
| 101406 | Pt lot 150 of Well Loc 19 | 0.0835 | 1 lot | Nil | Glenhuan Boulevard owned by NTC | 78 |
| 108764 | Pt lot 2 of Well Loc 19 | 0.2980 | 4 lots | Nil | Lusitano Avenue | 88 |
| 108764 | Pt lot 2 of Well Loc 19 | 4.1927 | 47 lots | Nil | Lusitano Avenue Perendale Loop Simford Avenue Limousin Turn | 89 |
| 101406 | Pt lot 150 of Well Loc 19 | 0.4224 | 8 lots | Nil | Mustang Loop Leake Street owned by NTC | 99 |
| 114700 | Pt lot 1016 of Well Loc 19 | 1.1537 | 10 lots | Nil | Glenhuan Boulevard | 129 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

23

110

30-MAY-2002 14:36 FROM:GRAY & LEWIS PLANNING 9474 1172

TO:97251010

P:5

30-MAY-2002 13:03

DARD.SHIRE TECH/DEV.SUCES

03 97240892 P.04

| Subdivision no | Previous lot no | Lot area (ha) | Subdivided into | Provision of POS (ha) | New streets | Title File ref |
|---------------------------------|--|---------------|-----------------|-----------------------|---|----------------|
| 108764 | Pt lot 1021 of Well Loc 19 | 4.7690 | 49 lots | Nil | Cleveland Bay Avenue Falabella Cres Cherbrey Way | 126 |
| 108764 | Pt lots 600 & 1019 of Well Loc 19 | 2.6471 | 26 lots | Nil | Leicester Ramble | 127 |
| 108764 | Pt lots 6, 600, 1014, 1016 & 1019 of Well Loc 19 | 1.9986 | 15 lots | Nil | Leicester Ramble Como Court Glenhuon Boulevard | 128 |
| 108764 | Pt lot 3 of Well Loc 19 | 0.1109 | 1 lot | Nil | Glenhuon Boulevard | 129 |
| 108764 | Pt lots 600 & 1019 of Well Loc 19 | 0.1404 | 2 lots | Nil | Glenhuon Boulevard Lumitono Avenue | 129 |
| 111155 | Pt lot 1008 of Well Loc 19 | 0.1970 | 2 lots | Nil | Appaloosa Court | 131 |
| 97513 | Pt lot 7 of Well Loc 19 | 3.0567 | 2 lots | 2.8714 | Recreation Drive 9.0846ha High School site | SL4 |
| 97513 | Pt lot 7 of Well Loc 19 | 23.2209 | 3 lots | Nil | Eaton Drive Recreation Drive 4.001ha Primary School site 11.04ha owned by Nix & Luca | SL6 |
| 97513 | Pt lot 7 of Well Loc 19 | 9.0144 | 3 lots | 0.9729 | Eaton Drive Lots 1005 & 1007 now owned by Churches of Christ Homes | SL7 |
| 108764 | Pt lots 2 & 7 of Well Loc 13 | 7.2834 | 2 lots | 2.7625 | Eaton Drive Lot 1027 now owned by Flemington Holdings | |
| TOTAL | | | | | | |
| | | 92.1084 | | 5.4242 | | |
| Represents POS provision 5.146% | | | | | | |

ATTACHMENT 7

(Appendix ORD: 12.2.2A Under E Separate Cover)

22

21-MAY-2002 11:20 FROM: GRAY & LEWIS PLANNING 9474 1172

TO: 97251010

P: 2

FAX
23/5/02

Our Ref : 118210
Your Ref : 97042
Enquiries : Shane Kirk



WESTERN AUSTRALIAN
PLANNING COMMISSION

PA
WA

RECEIVED
21 MAY 2002

20 May 2002

Gray & Lewis
Planning Consultants
Suite 5/2 Hardy Street
SOUTH PERTH WA 6151

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

LOT : Pt 3, 4 & 6
LOCATION : Wellington 19
PLAN/DIAGRAM : 19531/-
VOLUME/FOLIO : 1974/481, 482, 483
LOCALITY : Chenbuon Boulevard, Eaton
DATE PLAN REC : 02 January 2002
OWNER : Parkridge Group Pty Ltd C/- Suite 9, The Gateway Joondalup Drive
EDGEWATER WA 6027
DECISION DATE : 20 May 2002
LGA : Shire of Dardanup

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on 2 April, 2002 (attached) once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey within this period.

In accordance with established procedures all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey.

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval, make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



South West Office, Sixth Floor, Sunbury Tower, 61 Victoria Street, Sunbury, Western Australia 6230
Tel: (08) 9791 0577; Fax: (08) 9791 0576; TTY: (08) 9264 7535; Infoline: 1800 626 477
e-mail: corporate@planning.wa.gov.au; web address: <http://www.planning.wa.gov.au>
ABN 35 482 341 493

(Appendix ORD: 12.2.2A Under E Separate Cover)

22

Should the applicant be aggrieved by this decision there is a right of appeal under Section 26 of the Town Planning and Development Act 1928. The appeal must be submitted in accordance with Part V of the Act within 60 days of the date of this decision. When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of appeal in the event you consider the requirements are onerous.

CONDITION(S):

1. Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG)
2. Street corners within the subdivision being truncated to the standard truncation of 8.5 metres. (LG)
3. The battleaxe access leg(s) being constructed and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG)
4. A 0.1 metre wide pedestrian access-way being provided along Eaton Drive in order to prevent access onto Eaton Drive and Glenhuon Boulevard. Such land to be shown on the Diagram or Plan of Survey as a pedestrian access-way, vested in the Crown under section 20A of the Town Planning and Development Act and ceded free of cost and without any payment of compensation by the Crown. (LG)
5. A dual use path/cycleway system being constructed in accordance with the proposed cycle
6. The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG)
7. The land being filled and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission, and any easements and/or reserves necessary for the implementation thereof, being provided free of cost. (LG)
8. Certification from the Water Corporation that arrangements have been made with that body so that connection to a water supply service will be available to the lot/s proposed by this application. (WC)
9. Certification from the Water Corporation that arrangements have been made with that body so that connection to a sewerage supply service will be available to the lot/s proposed by this application. (WC)
10. Such easements as may be required by the Water Corporation being granted free of cost to that Corporation. (WC)

(Appendix ORD: 12.2.2A Under E Separate Cover)

22

P9

21-MAY-2002 11:20 FROM: GRAY & LEWIS PLANNING 9474 1172

TO: 97251010

P:4

11. The land being connected to the comprehensive district drainage system at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG)
12. 10% of the subdivisible land, in a position to be agreed between the subdivider and the Local Government, being shown on the Diagram or Plan of Survey as a "Reserve for Recreation" and vested in the Crown under section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown. (LG)
13. The applicant providing a pre and post geotechnical report certifying that the land is physically capable of development to the satisfaction of the Western Australian Planning Commission. (LG)
14. Arrangements being made for the provision of underground electricity to the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power)
15. The transfer free of cost of transformer and high voltage switchgear sites to the Western Power Corporation, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission on the advice of the local government and Western Power Corporation. (Western Power)(Local Government)
16. Arrangements for the removal and relocation of power supply plant or equipment located on or near the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power)
17. Certification by the Fire and Emergency Services Authority of WA that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (FESA)
- X 18. Uniform fencing to be constructed along proposed ^{722, 723} Lots 467 - 472, 817, 806, 794, 783, 771, 760, 743 and 733 to the specification of the Shire of Dardanup and to the satisfaction of the Western Australian Planning Commission. (LG)
19. Satisfactory arrangements being made with the Western Australian Planning Commission for assistance in the construction of Eaton Drive and the Collier River Bridge linking Eaton and Australind via Eaton Drive. (LG)
20. The subdivider making arrangements satisfactory to the Western Australian Planning Commission for the preparation and implementation of a Foreshore Management Plan. (LC, WRC)
21. The subdivider to prepare a drainage/public open space management plan to the specification of the Shire of Dardanup and to the satisfaction of the Western Australian Planning Commission. (LG)
22. The subdivider making satisfactory arrangements with the Western Australian Planning Commission and at the subdivider's expense for the rehabilitation of the portion of land immediately south, being the earthworks associated with Cleveland Bay Road which has impacted upon the EPP wetland to the specification of the Water and Rivers Commission. (WRC)

22 pg.

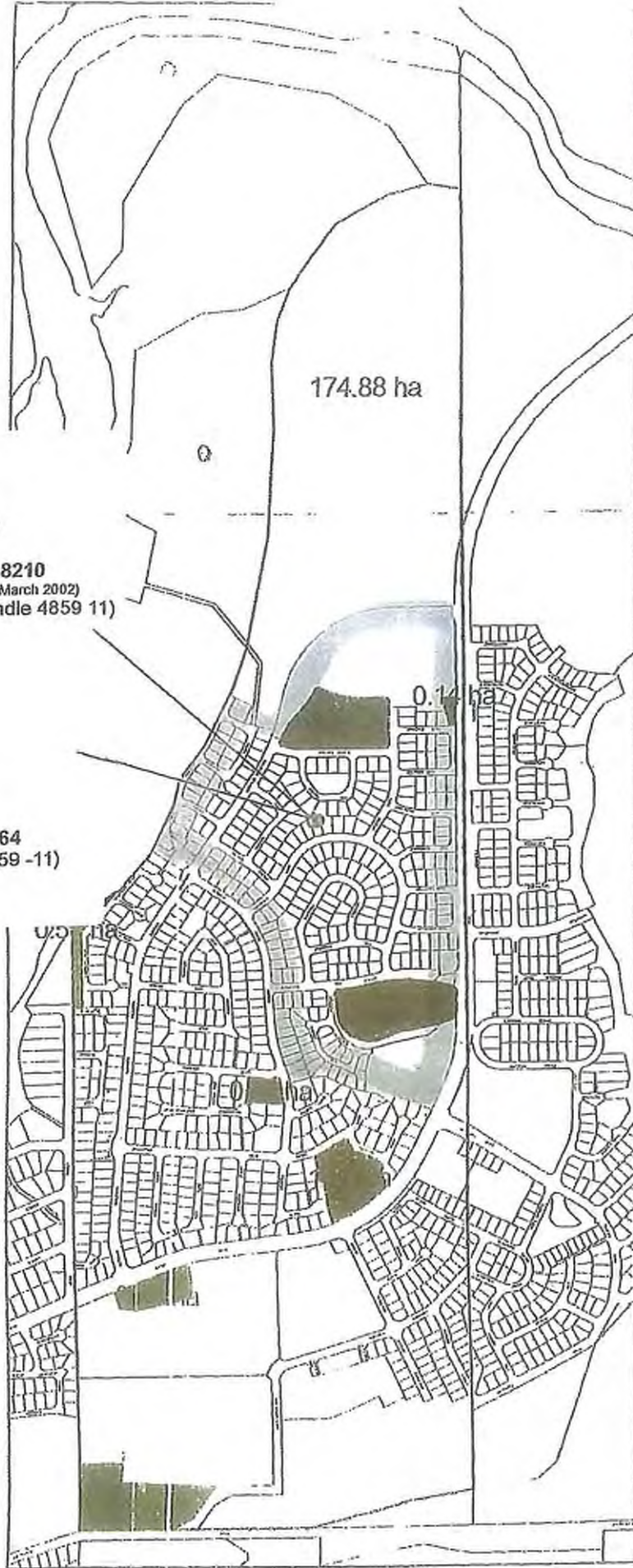
ADVICE:

- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction.
- ii) The Commission's approval should not be construed as an approval to development on any of the lots proposed.
- iii) In respect of Conditions 8 and 9, the service is to be consistent with the current policy and practice of the Water Corporation for the locality and may involve the provision of land (for plant and works) easements and the payment of financial contributions towards infrastructure. You are advised to contact the Water Corporation at 61 Victoria Street, Bunbury on Telephone (08) 9791 0400 for further information.
- iv) The applicant's attention is drawn to the provisions of Section 20C of the Town Planning and Development Act, 1928 whereby arrangements can be made, subject to further approval of the Commission, for a cash-in-lieu contribution by the applicant to the Local Government, in respect of Condition 12 of this approval.
- v) In relation to Condition 12, it is recommended that a public open space audit be undertaken to ascertain the amount of public open space provided by the subdivider for the Estate.
- vi) In regard to Condition 17, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.
- vii) In relation to Condition 19, the anticipated gazettal of the Draft Shire of Harvey/Dardanup Joint Guided Development Scheme is early 2002 and will provide guidance on any contributions for Eaton Drive and the Collie River Bridge construction. If clearance of Condition 19 is sought prior to the gazettal of the Draft Scheme, the subdivider is to liaise with the Shire of Dardanup in regard to entering into a Deed of Agreement where there should be arrangements to contribute additional costs if there is a shortfall or to receive a reimbursement if appropriate in accordance with the Shire of Harvey/Dardanup Joint Guided Development Scheme No. 1.
- viii) In relation to Condition 20, the Foreshore Management Plan is to address the following:
 - a) drainage;
 - b) drainage management and associated vegetation rehabilitation works;
 - c) weed management;
 - d) provision of a dual use path(s); and
 - e) uniform fencing.

The scope of the Management Plan, and works to be undertaken by the subdivider, are directly related to matters arising as a direct result of the subdivision of the subject land. In this regard, more comprehensive works beyond those specified above that have been indicated in previous management plans are not considered to be the responsibility of the subdivider. In order to ensure that there is no ambiguity in regard to the subdivider's responsibilities it is recommended that discussions be held with Water and Rivers Commission and the Shire of Dardanup to prepare an agreed schedule of works to be implemented. The works undertaken in the foreshore area will be subject to a 2 year maintenance period.

22.

p9.



Subdivision
Date: May 2002

WAPC Reference: 118210
(WAPC Approval 108764 lapsed in March 2002)
(This approval not in SSO Bundle 4859 11)

Subdivision
Date: March 1999
(expired)

WAPC Reference: 108764
(refer item 7 SSO Bundle 4859 -11)

ATTACHMENT 8



Department for Planning and Infrastructure
Government of Western Australia

81

South West Region

Your ref:

Our ref:

402/6/9/1PV2

Enquiries:

Mr Frank Scibilla

5 June 2007

Parkridge Group Pty Ltd
PO Box 1684
WANGARA WA 6947

Attention: Mr Thurston Saulsman

Dear Mr Saulsman

PUBLIC OPEN SPACE AUDIT - PARKRIDGE ESTATE, EATON

I refer to your letter dated 12 March 2007 and background information concerning whether Parkridge Estate has to provide the 10 percent public open space (POS) on the balance of land now under structure planning.

- According to the Department's calculations, the subject land (which includes previously subdivided land on Location 19, the undeveloped lots of Lot 9501, 9502 and 9504 and excludes the land provided for schools) requires 13.27 ha of POS. Approximately 8 ha of POS has been previously provided and this means there is a shortfall in POS of approximately 5.25 ha. The DPI's calculation is based on Commission Policy DC 2.3 'Public Open Space on Residential Land' in terms of the usability of areas for land-based recreational pursuits. This means that the provision of permanently inundated drainage basins and Environmental Protection Policy (EPP) Lakes on POS lots are excluded as POS areas. A table of calculations is attached for you information

Please be further advised that the Commission would consider the provision of open space for all-year round active recreational pursuits on land which lies above the Floodway line, such as on Lot 9502, which would be highly desirable, given a dearth of such facilities in the locality. The Commission has indicated an interest in purchasing Regional Open Space on Lot 9503 and issues which relate to flooding and the development of recreational activities will be addressed at that stage for district purposes as distinct from local purposes. The latter process will require consultation with the appropriate agencies on the merit of developing district fields.

(Appendix ORD: 12.2.2A Under E Separate Cover)

In your letter you place emphasis on previous calculations and previous agreements made with the Shire to justify adequate open space. It is not clear that the previous arrangements with the Shire comply with Commission Policy requirements and, furthermore, the Commission and the Department were not party to the aforesaid agreements.

It should be emphasised that the concept plans prepared at the rezoning stages did not conclusively address the suitability of the proposed open space areas for recreational pursuits. The Commission uses the structure plans to provide the framework for detailed planning to occur at the subdivision stage, in particular when noting that drainage and urban design standards change overtime.

Please do not hesitate to contact me or Mr Frank Scibilla of this office if you have any further queries.

Yours sincerely

A handwritten signature in black ink, appearing to be 'MS', with a long horizontal flourish extending to the right.

MICHAEL SCHRAMM
DIRECTOR, SOUTH WEST PLANNING

cc Mr Robert Quinn, Shire of Dardanup

enc POS Calculation

(Appendix ORD: 12.2.2A Under E Separate Cover)

POS AUDIT
PARKRIDGE ESTATE, EATON

16 APRIL 2007

DC.2.3 Formula

| 1. Total Area: | Area |
|--|---|
| i) The parent lot -. | 255.20 ha |
| ii) Lot 9504 - (Owned by a Parkridge company) | 2.2261 ha |
| iii) Lot 9509 (all Floodway) | 16.1388 ha ✓ |
| iv) Lot 9503 (All Floodway) | 17.16 ha ✓ |
| v) Lot 9502 (3.050 ha Floodway) | 33.6749 ha ✓ |
| vi) Lot 9501 | 4.7047 ha ✓ |
| vii) Lot 5679 (previously Lot 5) (43.3831 ha Floodway) | 44.2311 ha |
| viii) Lot 1004 (Not owned by Parkridge) | 9.864 ha |
| ix) Lot 7000 Retirement Village (Not owned by Parkridge) | 8.041 ha |
| x) Lot 999 (Was sold by Parkridge as a residential lot) | 0.2476 ha |
| ix) Lot 9002 (Not owned by Parkridge) | 2.2962 ha |
| x) Subdivided land | 116.069 ha |
| Total Area of Parkridge Estate: | 234.1918 ha |
| 2. Deductions from land owned by Parkridge Estate and Foreshore reserves | |
| i) Primary School Area | 4.001 ha ✓ |
| ii) High School Area | 8.7529 ha ✓ |
| iii) EPP wetland - Lot 1028 (Reserve 48392) | 2.5996 ha |
| iv) Floodways (Foreshore areas mentioned in iii) - vii) of Total Area which includes dedicated drainage areas but not POS areas) | 79.7319 ha |
| v) Drainage Basin - Lot 4 (Reserve 45531) | 0.3904 ha |
| vi) Drainage Basin - Lot 874 (Reserve 48933) | 0.7500 ha |
| vii) Pump Station - Lot 873 (Reserve 49042) | 0.1025 ha ✓ |
| viii) Eaton Drive | 5.1 ha ✓ |
| Total Deductions: | 101.4283 |
| 3. Gross Subdivisible Area: | 132.7635 ha |
| 4. 10 percent POS requirement | 13.2763 ha |
| | 8% as land contribution = 10.6210 ha 2% as cash-in-lieu contribution = 2.6553 ha |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | |
|--|------------------|
| 5. Public Open Space - Existing and Proposed on Structure Plan as agreed by the Shire and the Commission (Including agreed credits to non-gross subdivisible areas) | |
| i) Lot 874 (Reserve 48933) excluding drainage basin/lake | 1.6195 ha |
| ii) Lot 1028 (Reserve 48392) excluding EPP lake | 0.4939 ha |
| iii) Lot 4 (Reserve 45531) excluding drainage basin/lake | 0.5524 ha |
| iv) Lot 5820 (Reserve 45333) Shetland Place | 0.4169 ha |
| v) Lot 5786 (Reserve 44580) Sindhi Close | 1.6977 ha |
| vi) Lot 19 (Reserve 45358) Recreation Drive | 2.9057 ha |
| vii) Lot 875 (Reserve 48870) Peninsula Rd | 0.1451 ha |
| viii) Lot 6060 (Reserve 46255) Eaton Drive verge area | 0.1936 ha |
| 6. Total POS provided | 8.0248 ha |
| 7. Overall shortfall in POS | 5.2515 ha |

includes whole pasture.

ATTACHMENT 9

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WESTERN AUSTRALIAN
PLANNING COMMISSION

Our Ref : 118006
Your Ref :
Enquiries : Shane Kirk

18 September 2003

Thompson Mc Robert Edgeloe Pty Ltd
P O Box 733
BUNBURY WA 6231

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

| | | |
|---------------|---|--|
| LOT | : | Pt 6 & 1014 |
| LOCATION | : | Wellington 19 |
| PLAN/DIAGRAM | : | 19531, 95181/- |
| VOLUME/FOLIO | : | 1974/483, 2212/391 |
| LOCALITY | : | Glenhuon Boulevard, Eaton |
| DATE PLAN REC | : | 30 August 2003 |
| OWNER | : | Parkridge Group Pty Ltd C/- Suite 9-The Gateway Joondalup Drive EDGEWATER WA 6027 |
| DECISION DATE | : | 17 September 2003 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on 30 August 2003 (copy attached) once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey within this period.

In accordance with established procedures all conditions must be complied with before-submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey.

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval, make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



South West Office, Sixth Floor, Bunbury Tower, 61 Victoria Street, Bunbury, Western Australia 6230
Tel: (08) 9791 0577; Fax: (08) 9791 0576; TTY: (08) 9264 7535; Infoline: 1800 626 477
e-mail: corporate@wapc.wa.gov.au; web address: http://www.wapc.wa.gov.au
ABN 35 482 341 493

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11. Satisfactory arrangement being made with the Western Australian Planning Commission for assistance in the construction of Eaton Drive and the Collie River Bridge linking Eaton and Australind via Eaton Drive. (LG) ✓
12. The proposed public open space shown on the plans submitted by the applicant, being shown on the Diagram or Plan of Survey as a Reserve for Recreation and vested in the Crown under section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown.
13. Uniform fencing along the boundaries of all the proposed lots abutting Glenhuon Boulevard, Dare Cove, Collie River Foreshore Reserve, public open space and the pedestrian access way to be constructed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
14. The battleaxe access leg(s) being constructed and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
15. The applicant providing a pre and post geotechnical report certifying that the land is physically capable of development to the satisfaction of the Western Australian Planning Commission. (LG) ✓
16. The subdivider making arrangements to the satisfaction of the Western Australian Planning Commission for the preparation and implementation of a Foreshore Management Plan. (LG, WRC) ✓
17. Certification by the Fire and Emergency Services Authority of WA that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (FESA) ✓
18. A restrictive covenant being registered on the certificate of title, to the benefit of the Shire of Dardanup at the subdividers expense, prohibiting vehicular access onto Glenhuon Boulevard and Dare Cove from the respective proposed lots which abut those road reserves, pursuant to Section 129BA of the Transfer of Land Act (as amended). (LG) ✓
19. Satisfactory arrangements being made with the Western Australian Planning Commission to ensure that the proposed 2001m² public open space lot is of sufficient size and shape to encompass the large Marri Tree 'Glenhuon Tree' so that no branches overhang adjacent lots. (LG) ✓
20. The subdivider shall prepare a horticultural assessment of the 'Glenhuon Tree' within the proposed public open space and implement any recommendations to minimise any risk to the community and the Shire of Dardanup to the satisfaction of the Western Australian Planning Commission. (LG) ✓
21. Arrangements being made for the provision of underground electricity to the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
22. The transfer free of cost of transformer and high voltage switchgear sites to the Western Power Corporation, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission on the advice of the local government and Western Power Corporation. ✓

- 24
- (124)
(W119)
23. The provision of easements for existing or future power supply infrastructure to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
 24. Reciprocal rights of access over the two 3m wide battleaxe legs or else battleaxe legs being widened to 4m as per Commission policy

ADVICE:

- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction.
- ii) In relation to Condition 6, the Shire of Dardanup advise that retaining walls in various locations will be required and are to be designed to the satisfaction of Council. All retaining walls are to be designed as load bearing in accordance with Council Policy.
- iii) In respect of Conditions 7 and 8, the service is to be consistent with the current policy and practice of the Water Corporation for the locality and may involve the provision of land (for plant and works) easements and the payment of financial contributions towards infrastructure. You are advised to contact the Water Corporation at 61 Victoria Street, Bunbury on Telephone (08) 9791 0400 for further information.
- iv) In relation to Condition 11, the Shire of Dardanup advise that the anticipated gazettal of the Draft Shire of Harvey/Dardanup Joint Guided Development Scheme is late 2003 and will provide guidance on any contributions for Eaton Drive and the Collie Rive Bridge Construction. If clearance of Condition 11 is sought prior to the gazettal of the Draft Scheme, the subdivider is advised to liaise with the Shire of Dardanup in regard to entering into a Deed of Agreement where there should be arrangements to contribute additional costs if there is a shortfall or to receive a reimbursement if appropriate in accordance with the Shire of Harvey/Dardanup Joint Guide Development Scheme No. 1.
- v) The Shire of Dardanup advise that the pre and post geotechnical report required by Condition 15 has been imposed as cut and fill is required on the site and high ground water is common within Eaton.
- vi) In relation to Condition 16, the Foreshore Management Plan shall include the design and schedule of works by the subdivider for provision of community access, walk trails, fencing, removal of declared weeds and revegetation.
- vii) In regard to Condition 17, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.
- viii) In relation to Condition 20, the Shire of Dardanup advise a qualified horticulturalist shall determine if any branches of the large Marri Tree should be lopped and if the area surrounding the tree should be fenced to restrict public access. The cubby house shall also be removed from the tree.

(123)

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ix) The Water and Rivers Commission advise of the following:

- * weed control is to be undertaken within the foreshore areas prior to the commencement of any works.
- * all large woody debris from the felled trees to be placed on the open upper slope areas of the foreshore as brushing to provide habitat and weed suppression value. This debris should not be allowed to fall down to the lower slopes or adverse existing native vegetation. As a consequence, trees should not be felled directly into the foreshore, and may require to be cut to size.
- * that access to the areas nominated as 'Conservation' wetland and foreshore be restricted.
- * during construction the foreshore reserve should not be damaged by any works including placement of fill, rubble, rubbish or any other material on the reserve, or the removal, clearing or damage of any vegetation within the foreshore reserve.
- * the proposed development to incorporate the principles and best management practices detailed in the *Planning and Management Guidelines for Water Sensitive Urban Design* (State Planning Commission, 1994) and the *Manual for Managing Urban Stormwater Quality in Western Australia* (Water and Rivers Commission, 1998).

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Yours faithfully



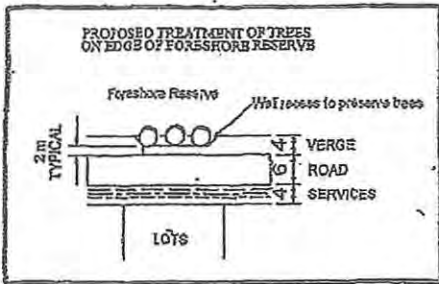
for P M Melbin
Secretary
Western Australian Planning Commission

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(W10)

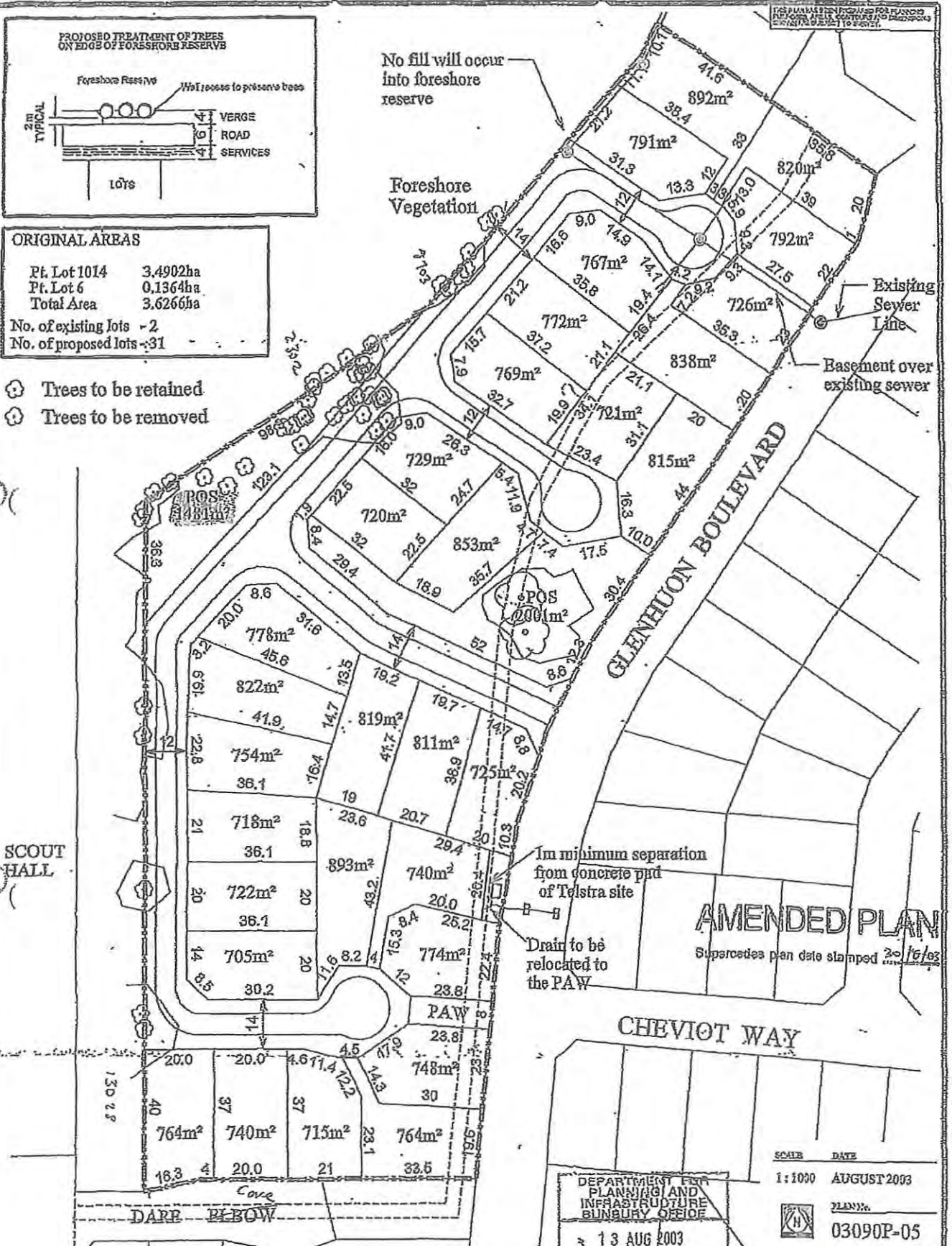


ORIGINAL AREAS

| | |
|-------------------|-----------------|
| Pt. Lot 1014 | 3.4902ha |
| Pt. Lot 6 | 0.1364ha |
| Total Area | 3.6266ha |

No. of existing lots - 2
No. of proposed lots - 31

- ⊗ Trees to be retained
- ⊙ Trees to be removed



SCOUT HALL

AMENDED PLAN
Supersedes plan date stamped 20/10/03

DEPARTMENT FOR PLANNING AND INFRASTRUCTURE BUNBURY OFFICE
13 AUG 2003
FILE 118006

SCALE DATE
1:1000 AUGUST 2003

PLAN No. 03090P-05



**PROPOSED SUBDIVISION
PART LOT 1014 AND 6
GLENHUON BOULEVARD, EATON**

ATTACHMENT 10

(Appendix ORD: 12.2.2A Under E Separate Cover)

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WESTERN AUSTRALIAN
PLANNING COMMISSION

W11

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Our Ref : 125521
Your Ref : 04129P
Enquiries : Shane Kirk

30 August 2004

Thompson Mc Robert Edgelos Pty Ltd
P O Box 733
BUNBURY WA 6231

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

| | | |
|---------------|---|--|
| LOT | : | 9001 |
| LOCATION | : | - |
| PLAN/DIAGRAM | : | 32495/- |
| VOLUME/FOLIO | : | 2529/617 |
| LOCALITY | : | Eaton Drive, Eaton |
| DATE PLAN REC | : | 27 August 2004 |
| OWNER | : | Parkridge Group Pty Ltd C/- P O Box 1684 WANGARA WA 6947 |
| DECISION DATE | : | 27 August 2004 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey (Deposited Plan) in accordance with the amended plan received on 27 August 2004 (attached) once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey (Deposited Plan) within this period.

In accordance with established procedures all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey (Deposited Plan).

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval; make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



South West Office, Sixth Floor, Bunbury Tower, 61 Victoria Street, Bunbury, Western Australia 6230
Tel: (08) 9791 0577; Fax: (08) 9791 0576; TTY: (08) 9791 0577
e-mail: corporate@wapc.wa.gov.au; web address: www.wapc.wa.gov.au



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(Appendix ORD: 12.2.2A Under E Separate Cover)

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Should the applicant be aggrieved by this decision there is a right of appeal under Section 26 of the Town Planning and Development Act 1928. The appeal must be submitted in accordance with Part V of the Act within 60 days of the date of this decision to the Town Planning Appeal Tribunal, 12 St George's Terrace, Perth. When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of appeal in the event you consider the requirements are onerous.

CONDITION(S):

1. Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG)
2. Street corners within the subdivision being truncated to the standard truncation of 8.5 metres. (LG)
3. The cul-de-sac heads being designed to the satisfaction of the Western Australian Planning Commission. (LG)
4. The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG)
5. The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission, and any easements and/or reserves necessary for the implementation thereof, being provided free of cost. (LG)
6. The subdivider to prepare an overall drainage plan for the subject land to the satisfaction of the Western Australian Planning Commission. (LG)
7. The applicant providing a pre and post geotechnical report certifying that the land is physically capable of development to the satisfaction of the Western Australian Planning Commission. (LG)
8. Certification from the Water Corporation that arrangements have been made with that body so that connection to a water supply service will be available to the lot/s proposed by this application. (WC)
9. Certification from the Water Corporation that arrangements have been made with that body so that connection to a sewerage supply service will be available to the lot/s proposed by this application. (WC)
10. Such easements as may be required by the Water Corporation being granted free of cost to that Corporation. (WC)

(Appendix ORD: 12.2.2A Under E Separate Cover)

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~~11. The proposed reserve(s) shown on the plan submitted by the applicant, being shown on the Distinction Plan of Survey (deposited plan) as a "Reserve for Recreation" and vested in the Crown under section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown.~~

12. Uniform fencing along the boundaries of all the proposed lots abutting Eaton Drive and proposed public open space to be constructed to the satisfaction of the Western Australian Planning Commission. (LG)
13. A restrictive covenant being registered on the certificate of title, to the benefit of the Shire of Dardanup and at the subdivider's expense, prohibiting vehicular access onto Eaton Drive from proposed Lots 6 and 7, pursuant to section 129BA of the Transfer of Land Act (as amended). (LG)
14. The transfer free of cost of transformer and high voltage switchgear sites to the Western Power Corporation, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission on the advice of the local government and Western Power Corporation. (Western Power)(Local Government)
15. Arrangements being made for the provision of underground electricity to the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power)
16. Dual use path(s) being provided at the subdivider's cost as per the Shire of Dardanup Bike Plan to the satisfaction of the Western Australian Planning Commission. (LG)
17. Bollards or barriers being installed across the proposed area of public open space to prevent vehicle access onto the public open space and wetland to the south to the satisfaction of the Western Australian Planning Commission. (LG)
18. The subdivider making arrangements to the satisfaction of the Western Australian Planning Commission to contribute towards works associated with the proposed Collie River Bridge, Eaton Drive (district distributor road reserve) and associated administrative costs in accordance with the Shires of Dardanup and Harvey Joint Town Planning Scheme No. 1. (LG)
19. Certification by the Fire and Emergency Services Authority of WA that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (FBESA)
20. The battleaxe access leg(s) being constructed and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG)
21. The subdivider making satisfactory arrangements with the Western Australian Planning Commission at the subdivider's expense for the rehabilitation of the portion of land immediately south, being the earthworks associated with Cleveland Bay Road which has impacted upon the EPP wetland. (DoE)

(Appendix ORD: 12.2.2A Under E Separate Cover)

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ADVICE:

- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction.
- ii) In relation to Condition 3, Shire of Dardanup advise that the head of the proposed cul-de-sac is to be constructed at a distance close enough to Lot 7 to avoid a shared crossover with Lot 8.
- iii) In relation to Condition 5, the Shire of Dardanup advise that any retaining walls are to be designed and constructed as load bearing in accordance with Council Policy.
- iv) In relation to Condition 7, the Shire of Dardanup advise that a pre and post geotechnical report is required as high ground water is common within Eaton.
- v) In relation to Condition 15, Western Power advise that it provides only one point of supply per green title lot and any existing overhead service must be converted to underground.
- vi) In relation to Condition 16, the Shire of Dardanup advise that a dual use path is required along Cleveland Bay Avenue through the proposed public open space and connect with the existing dual use path on Eaton Drive.
- vii) In regard to Condition 19, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.
- viii) In relation to Condition 20, the construction of the battleaxe access leg(s) is to include the vehicle crossover. The subdivider is also advised that the construction of the vehicle crossover to proposed Lot 8 is also required.
- ix) In relation to Condition 21, the Department of Environment advise that a rehabilitation management plan demonstrating the revegetation program shall be submitted to and approved by the Department of Environment. Advice on species local to the wetland and its buffer can be sought from local native nurseries, local Regional Herbaria, the Western Australian Herbarium (Department of Conservation and Land Management), or environmental consultants with experience in rehabilitation. For further information, contact Mike McKenna from the Bunbury Office of the Department of Environment on (08) 9726 4111.
- x) The Department of Environment advise that:
 - a) The proposed development is to incorporate the principles and best management practices detailed in the *Planning and Management Guidelines for Water Sensitive Urban Design* (State Planning Commission, 1994) and the *Manual for Managing Urban Stormwater Quality in Western Australia* (Water and Rivers Commission, 1998). The subdivider is to liaise with the Department of Environment in relation to this.
 - b) The subject land is within an area that has been recognised as posing a low risk acid sulfate soils risk at depths less than 3 metres and moderate to high risk at depths greater than 3 metres. Proposals that may lead to the disturbance of acid sulfate soils should be planned and managed to avoid adverse affects on the natural and built environment, including human health and activities. Therefore, the Department of

(Appendix ORD: 12.2.2A Under E Separate Cover)

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Environment and Environmental Protection Authority guidance on managing acid sulfate soils including its supporting documents should be adhered to. These documents can be found at www.environment.wa.gov.au under Contaminated Sites.

- c) The developer is to inform all contractors working on this subdivision that it is an offence to dewater without a dewatering licence from the Department of Environment under the Rights in Water and Irrigation Act 1914.
- d) The proposed subdivision is located within the proclaimed Bunbury Groundwater Area where there is a requirement to obtain a Groundwater licence for the use of groundwater (including soak excavations). The issue of a licence is not guaranteed but if issued will contain a number of conditions including the quantity of water that can be pumped each year.
- e) The Department of Environment recommends that to prevent the contamination of water resources, the emergency overflow from reticulated sewerage systems should not be connected to stormwater drainage pathways, if applicable. Connection to a bunded swale arrangement is more appropriate for retention and disposal of sewerage overflows.
- f) The subject land lies adjacent to lakes that are protected under the Environment Protection (Swan Coastal Plain Lakes) Policy 1992. Wetlands identified under this Policy are protected from land uses that will impact on their environmental values. The lakes EPP prohibits the filling, excavation and mining; discharging or disposal of effluent; alterations to water levels of drainage of additional water into or out of these lakes. It is expected that any development should provide for the protection of these lakes. No use or development of the proposed lots, which may have adverse effect on the lake should be permitted or undertaken.

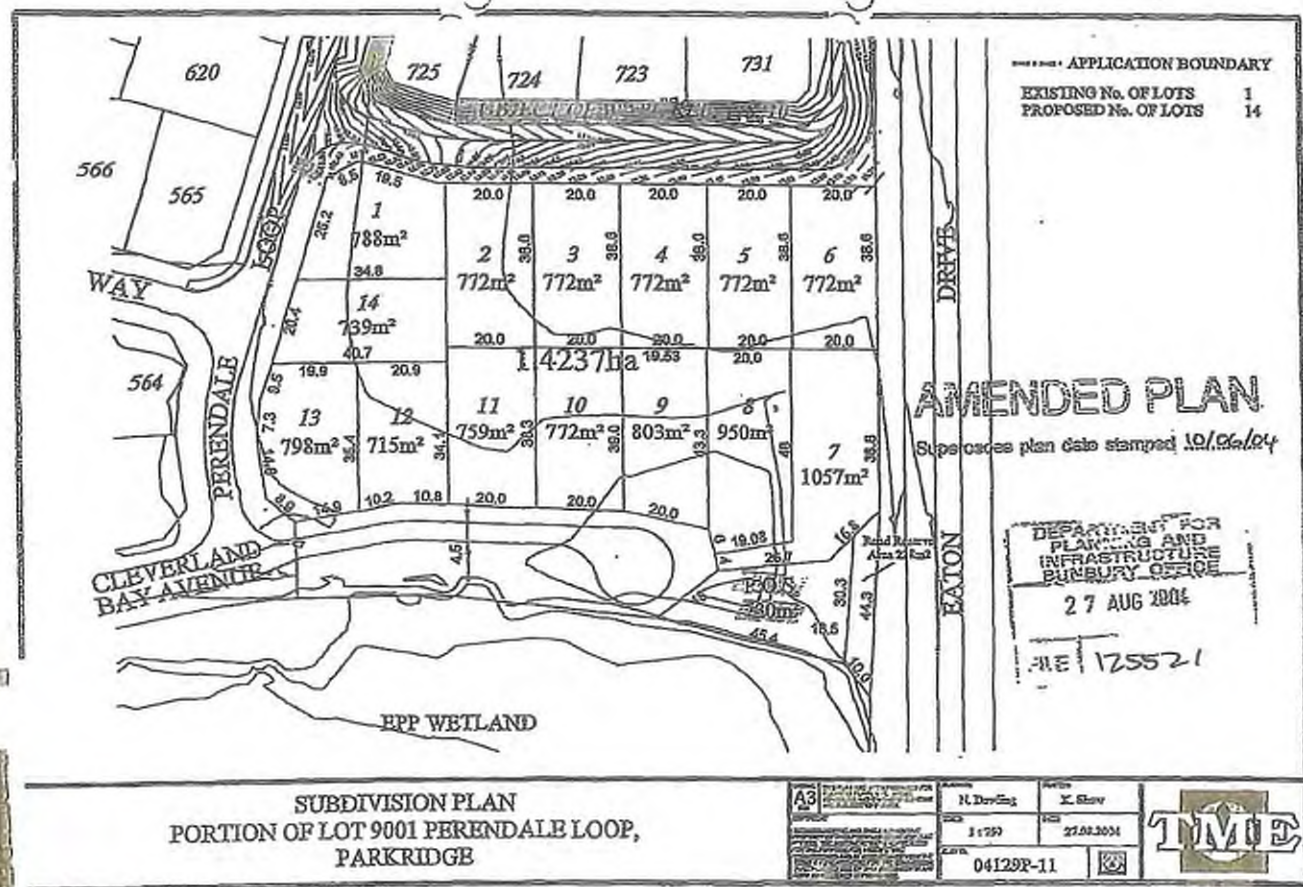
Yours faithfully



for Ian Patterson
Secretary
Western Australian Planning Commission

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SUBDIVISION PLAN
PORTION OF LOT 9001 PERENDALE LOOP,
PARKRIDGE

| | | | |
|-----------|------------|---------|--|
| A3 | N. Dowling | K. Shaw | |
| 1:1250 | 27/08/2004 | | |
| 04129P-11 | | | |

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ATTACHMENT 11

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W12 69 79



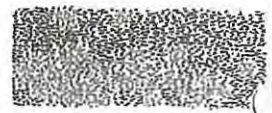
WESTERN AUSTRALIAN
PLANNING COMMISSION

Our Ref : 126335
Your Ref :
Enquiries : Peter Malavisi

03 December 2004

Civil Technology Pty Ltd
P O Box 1504
CANNING VALE WA 6970

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)



LOT : 1027
 LOCATION : -
 PLAN/DIAGRAM : 24719/-
 VOLUME/FOLIO : 2212/321
 LOCALITY : Eaton Drive, Eaton
 DATE PLAN REC : 12 November 2004
 OWNER : Flemmington Holdings Pty Ltd P O Box 1319 BUNBURY WA 6230
 DECISION DATE : 02 December 2004
 LGA : Shire of Dardamup

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on 12 November 2004 (attached) once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey within this period.

In accordance with established procedures all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey.

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval, make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



(Appendix ORD: 12.2.2A Under E Separate Cover)

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4880

Should the applicant be aggrieved by this decision there is a right of appeal under Section 26 of the Town Planning and Development Act 1928. The appeal must be submitted in accordance with Part V of the Act within 60 days of the date of this decision to the Town Planning Appeal Tribunal, 12 St George's Terrace, Perth. When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of appeal in the event you consider the requirements are onerous.

CONDITION(S):

DP 51577

- 1/ Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG) ✓
- 2/ Street corners within the subdivision being truncated to the standard truncation of 8.5 metres. (LG) ✓
- 3/ The cul-de-sac heads being designed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 4/ Satisfactory arrangements being made with the Western Australian Planning Commission to ensure that a footpath/dual use path is provided through the portion of Public Open Space abutting proposed Lots 551, 545, 543 and 542 to enable pedestrian access around the public open space from Cleveland Bay Avenue to Eaton Drive. (LG) ✓
- 5/ A restrictive covenant being registered on the certificate of title of proposed Lots 534-542 (inc), to the benefit of the Shire of Dardanup and at the subdivider's expense, restricting vehicular access onto Eaton Drive from Lots 531-539, pursuant to section 129BA of the Transfer of Land Act (as amended). (LG) ✓
- 6/ The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 7/ The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission, and any easements and/or reserves necessary for the implementation thereof, being provided free of cost. (LG) ✓
- 8/ Certification from the Water Corporation that arrangements have been made with that body so that connection to a water supply service will be available to the lot/s proposed by this application. (WC) ✓
- 9/ Certification from the Water Corporation that arrangements have been made with that body so that connection to a sewerage supply service will be available to the lot/s proposed by this application. (WC) ✓
- 10/ Such easements as may be required by the Water Corporation being granted free of cost to that Corporation. (WC) ✓

(Appendix ORD: 12.2.2A Under E Separate Cover)

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- 11.// The subdivider to prepare an overall drainage plan for the subject land to the satisfaction of Western Australian Planning Commission. (LG, DOE) ✓✓
- 12.// The land being connected to the comprehensive district drainage system at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. If stormwater from the subject land cannot be discharged into an existing system, it will be required to be treated within the confines of the subdivision. (LG, DOE) ✓✓
- 13.// Satisfactory arrangements being made with the Western Australian Planning Commission for contribution towards the construction of the Eaton Drive and the Collie River Bridge linking Eaton and Australind via Eaton Drive. (LG) ✓
- 14.// Certification by the Fire and Emergency Services Authority of WA that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (FESA) ✓
- 15.// The applicant providing a geotechnical report certifying that the land is physically capable of development, to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 16.// Uniform fencing to be constructed at all proposed Lots abutting Eaton Drive (Lots 534 to 542 inc) and the rear boundary of Lots 552 to 556 (inc) to constructed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 17.// Uniform permeable fencing to be constructed to the satisfaction of the Western Australian Planning Commission to delineate the boundary between proposed Lots 551, 545, 543, and 542 and the Public Open Space. (LG) ✓
- 18.// The battleaxe access leg(s) being constructed and drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 19.// Arrangements being made for the provision of underground electricity to the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
- 20.// The transfer free of cost of transformer and high voltage switchgear sites to the Western Power Corporation, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission on the advice of the Local Government and Western Power Corporation. (Western Power, LG) ✓
- 21.// Arrangements for the removal and relocation of power supply plant or equipment located on or near the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
- 22.// The provision of easements for existing or future power supply infrastructure to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
- 23.// Satisfactory arrangements being made with the Western Australian Planning Commission to ensure that any trees overhanging the roadway and lot boundaries are made safe. (LG & DOE) ✓✓

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- vii) In relation to Condition 13, the Shire of Dardanup advise that the Draft Shire of Harvey/Dardanup Joint Guided Development Scheme will provide guidance on any contributions for Baton Drive and the Collie River Bridge construction. If clearance of Condition 13 is sought prior to the gazettal of the Draft Scheme, the subdivider is advised to liaise with the Shire of Dardanup in regard to entering into a Deed of Agreement where there should be arrangements to contribute additional costs if there is a shortfall or to receive reimbursement if appropriate in accordance with the Shire of Harvey/Dardanup Joint Guided Development Scheme No.1.
- viii) In regard to Condition 14, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.
- ix) In relation to Condition 23, the Shire of Dardanup advise that Council will require certification from a qualified horticulturalist.
- x) Further to Condition 23, the Water and Rivers Commission advise that the pruning of trees will only be supported to include limbs that are determined to have no habitat or ecological value.
- xi) In relation to Condition 25, the Wetland/Foreshore Management Plan in respect of the proposed 3354m² of public open space is to include, but not be limited to, weed control, rubbish removal, revegetation and rehabilitation of the proposed 3354m² of public open space. The subdivider is required to revegetate the 3354m² of public open space to facilitate the use of the public open space for recreation and drainage. The works undertaken will be subject of a 2 year maintenance period.
- In respect of the adjoining Lot 1028, the subdivider is required to undertake foreshore works where the subdivision directly impacts upon the wetland through construction works or through drainage. The works will be subject of a 2 year maintenance period. It is recommended that you liaise with the subdivider to the north of Lot 1028 with regard to the joint preparation and implementation of the plan as a similar condition has been imposed on their subdivision.
- xii) You are advised that no discharge of drainage is to occur into the adjoining wetland. The wetland is listed under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. The Water and Rivers Commission advise that all stormwater drainage from the subdivision is to be connected to the existing drainage system along Cleveland Bay Avenue.
- xiii) The applicant is advised that the Department of Environmental Protection has prepared dust control guidelines for development sites, which inter alia, outline the procedures for the preparation of Dust Management Plans for development sites. Further information on the guidelines can be obtained from the Department or the Local Government.
- xiv) Telstra advise that if timely telephone services are to be provided on demand to future purchasers provision of trenches should be as per Telstra Estate Policy.
- xv) The proposed development is to incorporate the principles and best management practices detailed in the *Planning and Management Guidelines for Water Sensitive Urban Design* (State Planning Commission, 1994) and the *Manual for Managing Urban Stormwater Quality in Western Australia* (Water and Rivers Commission, 1998).

(Appendix ORD: 12.2.2A Under E Separate Cover)

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- xvi) You are advised to advise all subdivision contractors of their legal obligations with respect to the Aboriginal Heritage Act of WA (1972) during construction work. The subdivider is advised to contact the Aboriginal Affairs Department (Bunbury Office) for further information.
- xvii) In relation to Condition 24, the ceding of this land does not exclude the subdivider from responsibilities associated with a Foreshore Management Plan for the subdivision. This boundary has been previously negotiated with the proponents representative with the consent of Gary Williams of the former Department of Environmental Protection. (LG)

Yours faithfully



for Ian Patterson
Secretary
Western Australian Planning Commission

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- 24 ✓ The proposed foreshore reserve(s) shown on the plan submitted by the applicant being shown on the Diagram or Plan of Survey as a "Public Open Space" and vested in the Crown under section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown. (LA)
- 25 ✓ The subdivider to prepare and implement a Wetland/Foreshore Management Plan to the satisfaction of the Western Australian Planning Commission for the proposed 3354m² of public open space and for adjoining lot 1028. (LG/DOE)
- 26 ✓ The proposed 0.1m wide Pedestrian Access Ways abutting Baton Drive and on the southern boundary of proposed lots 552-556 being deleted. (LG)

ADVICE :

- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction.

Approved plans are those which have been considered by Council and duly amended to meet its requirements and approval.

Council may, subject to satisfactory planning, design and specifications having taken place, approve early commencement of works for a stage of the subdivision, following application in writing to do so.
- ii) In relation to Condition 1, the Water and Rivers Commission advise that no further development or associated works is to impinge further toward the wetland than the inner edge of the existing dirt track that exists on site, which represents the furthest extent of the road batter or reserve towards the wetland. The inner track edge represents the margin of the batter associated with the proposed road.
- iii) In relation to Condition 1, the Shire of Dardanup advise that the bends in Polwarth Circuit and Romney Way are to be treated to the satisfaction of the Shire of Dardanup.
- iv) In relation to Condition 4, the Shire of Dardanup advise that the footpath may be of a limestone standard that is sensitive to the EPP wetland and buffer requirements.
- v) In relation to Condition 6, the Shire of Dardanup advise that Council will require engineering certificates for the construction of land retaining walls and construction levels are to be provided upon completion.
- vi) In relation to Conditions 11 and 12, the Department of Environment strongly advise that Stormwater should not be connected to 'Conservation' Category or Environmental Protection Policy (EPP) Wetlands. Low/flow bypass is strongly recommended for implementation if connected to existing infrastructure. If connected to the existing Parkridge infrastructure, a contribution to stormwater basin maintenance and works may need to be negotiated.



DEPARTMENT FOR
PLANNING AND
INFRASTRUCTURE
BUNBURY OFFICE
12 NOV 2004
FILES 126535-

| | | |
|-----|----------|----------------------|
| NO. | DATE | DESCRIPTION |
| 1 | 12/11/04 | ISSUED FOR COMMENT |
| 2 | 12/11/04 | RECEIVED FOR COMMENT |
| 3 | 12/11/04 | RECEIVED FOR COMMENT |
| 4 | 12/11/04 | RECEIVED FOR COMMENT |
| 5 | 12/11/04 | RECEIVED FOR COMMENT |
| 6 | 12/11/04 | RECEIVED FOR COMMENT |
| 7 | 12/11/04 | RECEIVED FOR COMMENT |
| 8 | 12/11/04 | RECEIVED FOR COMMENT |
| 9 | 12/11/04 | RECEIVED FOR COMMENT |
| 10 | 12/11/04 | RECEIVED FOR COMMENT |

PROPOSED SUBDIVISION OF
LOT 1027 EATON DRIVE, EATON
SHIRE OF PAROUBI
S272/03-000

RESERVE
ATTENTION AND
CENTRE
STATION

RESERVE
ATTENTION AND
CENTRE
STATION

AMENDED PLAN

Supersedes plan date stamped 11/09/04

W12

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ATTACHMENT 12

20

W/13

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WESTERN AUSTRALIAN
PLANNING COMMISSION

Our Ref : 127566
Your Ref : 05027P
Enquiries : Peter Malavisi

05 May 2005

Thompson Mc Robert Edgeloe Pty Ltd
P O Box 733
BUNBURY WA 6231

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

| | | |
|---------------|---|--|
| LOT | : | 9001 & 9003 |
| LOCATION | : | - |
| PLAN/DIAGRAM | : | 32495/-, 41718/- |
| VOLUME/FOLIO | : | 2529/617, 2573/948 |
| LOCALITY | : | Eaton Drive, Eaton |
| DATE PLAN REC | : | 08 February 2005 |
| OWNER | : | Parkridge Group Pty Ltd P O Box 1684 WANGARA WA 6030 |
| DECISION DATE | : | 03 May 2005 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the amended plan received on 8 February 2005 once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey within this period.

In accordance with established procedures all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey.

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval, make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



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Should the applicant be aggrieved by this decision there is a right for a review under Section 26 of the Town Planning and Development Act 1928. The application for review must be submitted in accordance with Part V of the Act and should be lodged within 28 days of the date of this decision to the State Administrative Appeal Tribunal (SAT), 12 St George's Terrace, Perth. It is recommended that you contact the SAT for further details (telephone 9219 3111), or go to its website: <http://www.sat.justice.wa.gov.au/>.

When an application is approved subject to condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition and in order to retain a right of review in the event you consider the requirements are onerous.

4888

CONDITIONS 50198

- 1. ✓ Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG) ✓
- 2. ✓ Street corners within the subdivision being truncated to the standard truncation of 8.5 metres. (LG) ✓
- 3. ✓ The cul-de-sac heads being designed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 4. ✓ A dual use path/cycleway system being constructed in accordance with the dual use path on the attached plan, to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 5. ✓ N/A Notification in the form of a restrictive covenant to be placed on the Certificates of Title of all lots which abut the Eaton Drive Road Reserve advising the existence of a restriction on the use of the land, in accordance with section 129BA of the Transfer of Land Act 1893, and notice of this restriction to be included on the Diagram or Plan of Survey (Deposit Plan), to the satisfaction of the Commission at the applicant's cost. (WAPC) N/A 48838 see email 3/1/06.

The restrictive covenant to state as follows:

All vehicular access to Eaton Drive is restricted.

- 6. ✓ The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 7. ✓ The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
- 8. ✓ Certification from the Water Corporation that arrangements have been made with that body so that connection to a water supply service will be available to the lot/s proposed by this application. (WC) ✓

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9. ✓ Certification from the Water Corporation that arrangements have been made with that body so that connection to a sewerage supply service will be available to the lot/s proposed by this application. (WC) ✓
10. ✓ Such easements as may be required by the Water Corporation being granted free of cost to that Corporation. (WC) ✓
11. ✓ The land being connected to the comprehensive district drainage system at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG, DoB) ✓
12. ✓ 10% of the subdivisible land, in a position to be agreed between the subdivider and the Local Government, being shown on the Diagram or Plan of Survey as a "Reserve for Recreation" and vested in the Crown under section 20A of the Town Planning and Development Act, such land to be ceded free of cost and without any payment of compensation by the Crown. (LG) ✓
13. ✓ The applicant providing a pre and post geotechnical report certifying that the land is physically capable of development to the satisfaction of the Western Australian Planning Commission. (LG) ✓
14. ✓ Arrangements being made for the provision of underground electricity to the lots approved under this application to the satisfaction of the Western Australian Planning Commission. (Western Power) ✓
15. ✓ The transfer free of cost of transformer and high voltage switchgear sites to the Western Power Corporation, with the locations of the sites being to the satisfaction of the Western Australian Planning Commission on the advice of the local government and Western Power Corporation. (Western Power)(Local Government) ✓
16. ✓ Certification by the Fire and Emergency Services Authority of WA that subdivision reticulation plans meet specifications and that hydrant fire fighting services will be installed to the satisfaction of the Western Australian Planning Commission. (FBESA) ✓
17. ✓ Uniform fencing to be constructed along the boundaries of lots 838 and 835 where abutting POS and for all lots abutting Eaton Drive to the specification of the Shire of Dardanup and to the satisfaction of the Western Australian Planning Commission. (LG) ✓
18. ✓ Satisfactory arrangements being made with the Western Australian Planning Commission for assistance in the construction of Eaton Drive and the Collie River Bridge linking Eaton and Australind via Eaton Drive. (LG) ✓
19. ✓ The subdivider making arrangements satisfactory to the Western Australian Planning Commission for the preparation and implementation of a Foreshore Management Plan prepared for the Collie River Foreshore Reserve. (LG, DoB) ✓
20. ✓ The subdivider to prepare a drainage/public open space management plan to the specification of the Shire of Dardanup and to the satisfaction of the Western Australian Planning Commission. (LG) ✓
21. ✓ Lot 873, shown on the plan submitted as a 'pump station site' and the adjoining 188m² area of public open space, being shown on the Diagram or Plan of Survey as a "Reserve for Public Utilities" and vested in the Crown under Section 20A of the Town Planning and Development

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Act, 1928 such land to be ceded free of cost and without any payment of compensation by the Crown. (LG) ✓

✓ 22. Satisfactory arrangements being made with the Western Australian Planning Commission whereby the subdivider makes pro-rata contributions to a school site within the subdivision locality. (Department of Education & Training) ✓

✓ 23. Notification in the form of a memorial to be placed on the Certificates of Title of all lots within the area advising the existence of a hazard or other factor, in accordance with section 12A of the Town Planning and Development Act 1928 to the satisfaction of the Commission and at the applicant's cost. (WAPC) ✓

The memorial to state as follows:

"This lot is within close proximity of areas which are subject to mosquito activity at various times of the year. In consequence it is within the flight range of adult mosquitos and there may be some potential for transmission of Ross River Virus and other mosquito borne viral diseases. Further information in this regard can be obtained from the Shire of Busselton and the Department of Health."

ADVICE:

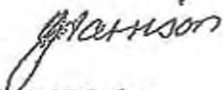
- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction.
- ii) In relation to Condition 11, the Department of Environment advise that an integrated urban water management plan for the entirety of the 'The Peninsula' Estate should be prepared and implemented. The integrated urban water management plan should be consistent with the catchment/precinct stormwater management plan and Draft Liveable Neighbourhoods, Edition 3, 2004. The stormwater management plan or strategy for the area/subdivisional stage to be prepared and implemented incorporating the principles and best management practices detailed in the 'Planning and Management Guidelines for Water Sensitive Urban Design' (State Planning Commission, 1994) and the 'Stormwater Management Manual for Western Australia' (Department of Environment, 2004). The application of these principles is designed to protect the water quality and ecology of the downstream surface and groundwater-receiving environment. Stormwater should not be connected to 'Conservation' Category or Environmental Protection Policy (EPP) Wetlands.
- iii) The applicant's attention is drawn to the provisions of Section 20C of the Town Planning and Development Act, 1928 whereby arrangements can be made, subject to further approval of the Commission, for a cash-in-lieu contribution by the applicant to the Local Government, in respect of Condition 12 of this approval.
- iv) In relation to Condition 12, it is recommended that a public open space audit be undertaken to ascertain the amount of public open space provided by the subdivider for the Estate.
- v) In regard to Condition 16, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.

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- b) that where reticulated sewerage be implemented, to prevent the contamination of water resources, the standard Water Corporation emergency 6hr overflow from reticulated sewerage systems is considered insufficient and should not be connected to stormwater drainage pathways. Connection to a bunded swale arrangement is more appropriate for retention and disposal of sewerage overflows as it provides a contained storage overflow that can be easily managed by pumping out. All new pump station proposals must be submitted in writing to EPA for approval prior to commencing works.
- c) that the developer informs all contractors working on the subdivision that it is an offence to dewater without a dewatering licence from the Department of Environment under the *Rights in Water and Irrigation Act 1914*. All contractors working on the development are requested to recycle wastewater on site by dewatering into a nominated swale or conical pit, which promotes infiltration of water into the soil to groundwater. All dewatering must have regard for the presence of Acid Sulphate Soils as per WAPC Planning Bulletin # 64.
- d) that no activity being undertaken that will interfere, alter or pollute any wetland, watercourse, surface water expression or ground water in the area, or alter the water quality of such waters.
- e) Portions of the subject land are contained within land identified as flood prone under a 1:100 flood event. The minimum habitable floor level of all subject lots within this area should be at least 0.5m above the 1:100 flood level of 3.56m AHD.

Yours faithfully


for R N Stokes
Acting Secretary
Western Australian Planning Commission

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vi) In relation to Condition 19, the Foreshore Management Plan is to address the following:

- a) drainage;
- b) drainage management and associated vegetation rehabilitation works;
- c) weed management;
- d) provision of a dual use path(s); and
- e) uniform fencing.

The scope of the Management Plan, and works to be undertaken by the subdivider, are directly related to matters arising as a direct result of the subdivision of the subject land. In this regard, more comprehensive works beyond these specified above that have been indicated in previous management plans are not considered to be the responsibility of the subdivider. In order to ensure that there is no ambiguity in regard to the subdivider's responsibilities it is recommended that discussions be held with Water and Rivers Commission and the Shire of Dardanup to prepare an agreed schedule of works to be implemented. The works undertaken in the foreshore area will be subject to a 2 year maintenance period.

vii)

The Shire of Dardanup advises that Condition 20 has been imposed to ensure that drainage works form an integral part of the public open space, but do not detract from the use of the public open space for passive recreational purposes.

viii) The subdivider is advised that Condition 21 has been imposed to ensure that Lot 873 is not sold and developed for residential purposes at a later date.

ix) AlintaGas advises that:

- a) all work carried out on AlintaGas's existing network to accommodate the proposed subdivision will be at the proponent's expense; and
- b) one month's notice is required with that body prior to the commencement of site works. Notice should be given to the Project Coordinator at AlintaGas Networks on Telephone (08) 9486 3766.

x) The applicant is advised that the Department of Environmental Protection has prepared dust control guidelines for development sites, which inter alia, outline the procedures for the preparation of Dust Management Plans for development sites. Further information on the guidelines can be obtained from the Department or the local government.

xi) The Department of Environment advises that:

- a) the subject property is located within the Bunbury Groundwater Area as proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater abstraction in this proclaimed area is subject to licensing by the Department of Environment. The issuing of a groundwater licence is not guaranteed but if issued will contain a number of conditions that are binding upon the landowners. The proponent should contact the Department of Environment to ensure that sustainable groundwater allocation limits have not been reached for the area. While there is no guarantee of supply, where the groundwater area is found to be fully allocated, the proponent will need to attain water from alternative sources and make prospective purchases aware of any such restriction.

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AMENDED PLAN
 Supercedes plan date stamped 11 Feb 05

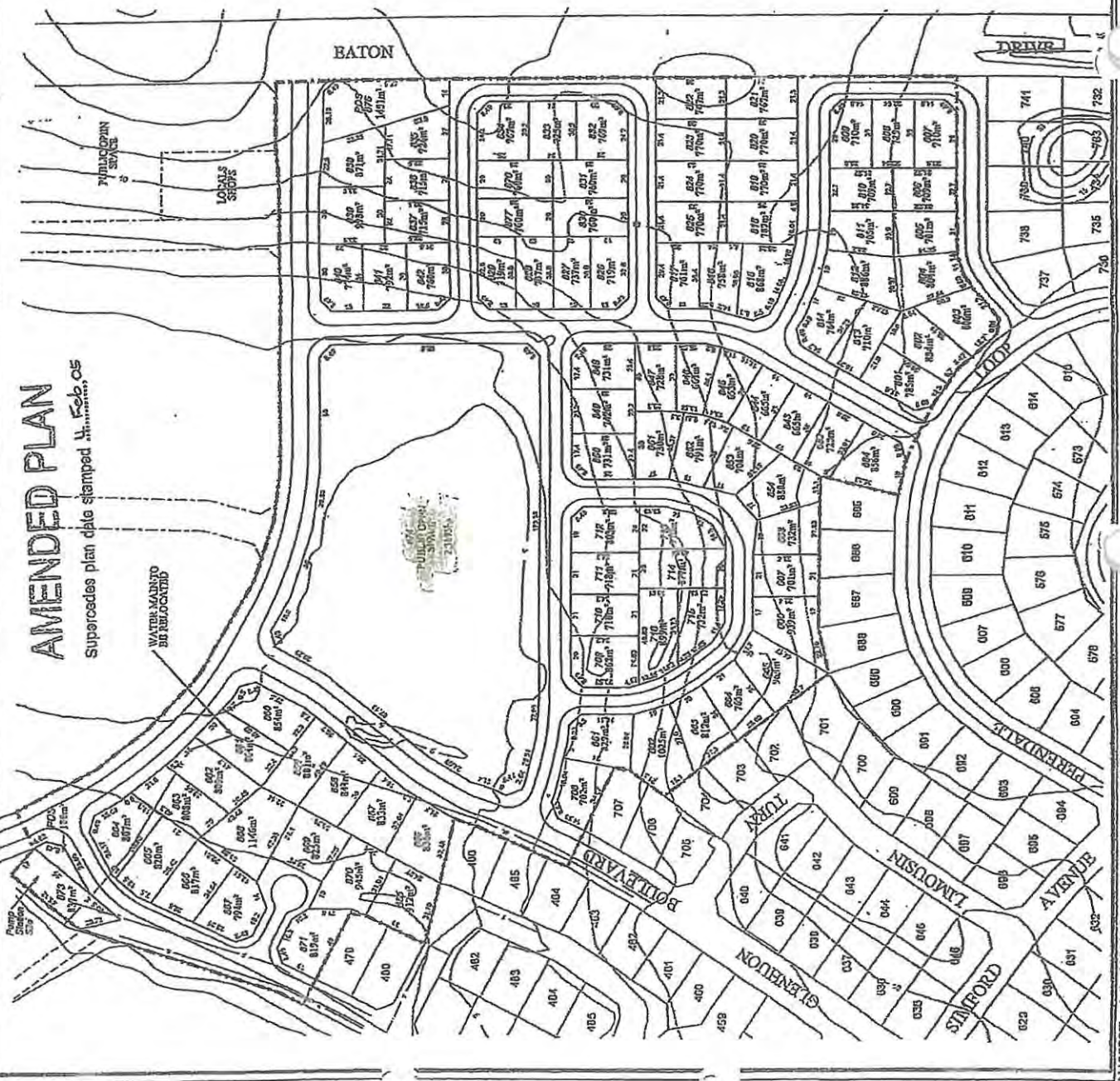
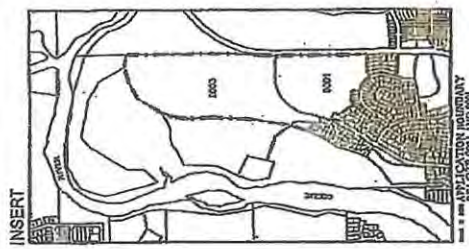
The Peninsula
 SUBDIVISION OF
 LOT 9003 & 9001

| | |
|------------------------|--------------------|
| No. OF EXISTING LOTS | 1 |
| No. OF PROPOSED LOTS | 92 |
| TOTAL AREA OF POS | 2.5234ha |
| MINIMUM LOT SIZE | 653m ² |
| MAXIMUM LOT SIZE | 1146m ² |
| AVERAGE LOT SIZE | 768m ² |
| TOTAL APPLICATION AREA | 13.5692ha |

- EXISTING WATER
- EXISTING DRAINAGE
- EXISTING SEWER
- APPLICATION AREA

DEPARTMENT OF
 PLANNING AND
 INFRASTRUCTURE
 BURBURY
 8 FEB 2006
 FILE

SCALE DATE
 1:2000 FEBRUARY 2005
 PLAN No.
 05027P-02



ATTACHMENT 13

THOMPSON McROBERT EDGELOE
A.B.N. 60 064 199 015

Our Ref: 04055E

Shire of Dardanup
1 Council Drive
Eaton W.A. 6232

Attention: Laurie Blurton

Dear Laurie

RE: The Peninsula Stage 1
WAPC No: 127566

The following meetings and correspondence refer:

- The meeting of 4 November 2005 at the Dardanup Shire Offices (present: Laurie Blurton, Domenic Vener, Mark Jones and Ian Cocker)
- Practical Completion Inspection held on 16 November 2005 (present were Domenic Vener, Ian Cocker, Shane Farrell (APH) and Dwayne Day (APH))
- Emails (copies attached) dated 16 and 17 November 2005.

Practical Completion has now been achieved and comment is offered on the Planning Conditions in order to effect clearance for Peninsula Stage 1 as follows:

- Condition 1. Refer to minor works list below.
- Condition 4. (refer to attached plan 05027P-02). Dual Use Paths for Stage 1 are currently under construction and will be completed within 1 week (see minor items list below). These works consist of Eaton Drive to Road 2; Road 2 to Lot 74 (lake POS); Holstein Drive to Lot 74 (including 20m of DUP from Stage 2). It is therefore considered unnecessary to bond these works. The DUP on Glen Huon Bvd (61m in length as detailed on dwg 04055E-01-C300) will be constructed as part of Stage 4 works as Glen Huon Bvd is currently under construction. Also attached please find a plan detailing proposed DUPs

BUNBURY OFFICE:
26 WITTENOOM STREET,
BUNBURY.
POSTAL ADDRESS:
P.O. BOX 733,
BUNBURY, W.A. 6231
PHONE: (08) 9791 4411
FAX: (08) 9791 4412
EMAIL:
tmebunbury@tme.net.au

MARGARET RIVER OFFICE:
UNIT 1/ 34 STATION ROAD,
MARGARET RIVER.
POSTAL ADDRESS:
P.O. BOX 875,
MARGARET RIVER, W.A. 6285
PHONE: (08) 9757 3255
FAX: (08) 9757 3932
EMAIL:
tmemargriver@tme.net.au

GREAT SOUTHERN OFFICE:
POSTAL ADDRESS:
P.O. BOX 114,
WOODANILLING, W.A. 6316
PHONE: 0418 954 873
FAX: (08) 9823 1009
EMAIL:
geoffrey@tme.net.au



(Appendix ORD: 12.2.2A Under E Separate Cover)

23/11 05 WED 10:20 FAX 0897914412

TME BUNBURY

003

within the POS (Lot 874) to replace DUPs on Glen Huon Bvd (north of Ryeland Avenue, Ryeland Avenue, Holstein Dve north of Ryeland Avenue and Road 2. These proposed DUPs provide not only connectivity as intended in the DUP plan, but also integration with the POS. The Developer has requested that the proposed POS DUP be bonded (as set out below).

- Condition 6. No hydromulching is required as topsoil was placed early enough to provide germination and reasonable vegetation cover.
- Condition 13. APH are currently preparing a geotechnical report on the lots. This will be forwarded to you shortly.
- Condition 17. Uniform fencing for lots abutting POS (Lot 835), Eaton Drive (Lot 822) and bollards between Eaton Drive and Galloway Bend are outstanding and will be bonded (as set out below).
- Condition 18. As part of Stage 1 works the western carriageway of Eaton Drive was constructed up to Road 2. The Developer will contact you directly regarding the associated costs.
- Condition 19. The Foreshore Management Plan for the Collie River Foreshore Reserve was previously submitted, approved and bonded. This Plan does however not pertain to Stage 1.
- Condition 20. Drainage/public Open Space Management Plan. Advice note seven (vii) states that this condition was imposed to ensure that drainage works form an integral part of the public open space, but does not detract from the use of the public open space for recreational purposes.

Comment

The POS area does not accept stormwater runoff from the surrounding roads or property connections. A high lake level control outlet (as detailed on dwg 04055E-03-C300) connects to the pipe infrastructure to ensure the lake does not rise above RL 4.10 during a major rainfall event. Therefore there is no drainage impediment on the central lake area and we request that the proposed Management Plan be deleted from clearance requirements.

Minor Works List

The following items were noted for repair/completion:

1. Street signs (Currently being installed)
2. CSEP 21 (Ryeland Road) requires step Irons
3. Fill behind kerbs to be completed (awaiting Western Power jointing)
4. Dual Use Paths to be completed by 25.11.05.
5. Intersection at Road 2 – paving repairs to loose bricks (to be relayed)
6. Paving to Road 2 intersection median (awaiting installation of street lighting).
7. Road 2 median planting (TME to discuss with Client)

(Appendix ORD: 12.2.2A Under E Separate Cover)

23/11 05 WED 10:20 FAX 0897914412

TME BUNBURY

004

Bond Amounts

| | |
|--------------------------------------|-----------------|
| Dual Use Paths (within POS 874) 690m | \$48,300 |
| Uniform fencing to Lots 835 and 838 | \$ 8,755 |
| Bollards | <u>\$ 3,675</u> |
| Subtotal: | \$60,730 |
| 30% loading | <u>\$18,219</u> |
| Total bond (Excl GST) | \$78,949 |

We look forward to receiving clearance on Peninsula Stage 1 at your earliest convenience.

Should you have any queries please contact Ian Cocker on 9791 4411.

Yours faithfully
THOMPSON MICROBERT EDGELOE



IAN COCKER TMIEAust
SENIOR PROFESSIONAL

23 November 2006

Copy emailed to Parkridge Group

Ian Cocker

From: Laurie Blurton [laurie@dardanup.wa.gov.au]
Sent: Thursday, 17 November 2005 10:57 AM
To: "Mark Jones"@dardanup.wa.gov.au
Cc: Ian Cocker
Subject: RE: Parkridge Clearances

Mark,

The land does not need hydromulching as the grass has taken on the top soil and there is no evidence of sand blow.

I will forward this to Ian Cocker at TME

Laurie

-----Original Message-----

From: Mark Jones
Sent: Thursday, 17 November 2005 8:51 AM
To: Laurie Blurton
Cc: Ian (E-mail); Thurston Saulsman (realexec@servcom.net.au)
Subject: RE: Parkridge Clearances

Laurie,

Some other conditions for the subdivision at 'The Peninsula' (WAPC Ref: 127566) that need to be satisfied include:

6. Land being graded and stabilised. Is the land going to be hydro mulched?
 12. Public Open Space. Advice note recommends a public open space audit be undertaken.
 17. Uniform fencing required for lot boundaries that abut Eaton Drive and POS. Bollards also required for road reserves that abut Eaton Drive as part of road condition 1.
 18. Eaton Drive and Collie River Bridge. Eaton Drive to be calculated as a credit, but contribution for bridge and administration fee to be paid. Require deposited plan to calculate areas and contribution / credit.
 19. Foreshore Management Plan. How is the implementation of the adopted plan progressing?
 20. Drainage / Public Open Space management plan to be prepared.
- Other:
- a) Need written request to name the new road off Eaton Drive. Thurston called me a few weeks ago wanting it named Peninsula Lakes Drive. The name needs to be approved by Council and the Geographic Names Committee.
 - b) Clearance fee when deposited plan lodged. \$50 per lot for first 5 lots and \$25 per lot thereafter.

Regards
Mark Jones
Principal Town Planner
Shire of Dardanup
Ph: 9724 0086
Fax: 9724 0091

23/11 05 WED 10:20 FAX 0897014412

THE BUNBURY

Page 2 of 2

006

From: Laurie Blurton
Sent: Wednesday, 16 November 2005 4:01 PM
To: Mark Jones
Cc: Ian (E-mail)
Subject: Parkridge Clearances

Mark,

Thurston wants to clear the lots and the only outstanding items that i can see are

Payment of Engineering Fees and the 12 months Maintenance Bond

Bond the unfinished works as in footpaths, signs and Ian will supply figure for this plus 30%

Geotechnical Report

We need to calculate the credits for Eaton Drive

Laurie

Thurston Saulsman

From: "Angela Jones" <realexec@servcom.net.au>
To: "Thurston Saulsman" <tjs@bigpond.net.au>
Sent: Thursday, November 17, 2005 10:06 AM
Subject: Fw: Parkridge Clearances

— Original Message —

From: Mark Jones
To: "Laurie Blurton" <dardanup.wa.gov.au>
Cc: 'Ian (E-mail)'; Thurston Saulsman
Sent: Thursday, November 17, 2005 8:51 AM
Subject: RE: Parkridge Clearances

Laurie,

Some other conditions for the subdivision at 'The Peninsula' (WAPC Ref: 127566) that need to be satisfied include:

6. Land being graded and stabilised. Is the land going to be hydro mulched?

This was done in 2002 and Council approved this.

12. Public Open Space. Advice note recommends a public open space audit be undertaken.

17. Uniform fencing required for lot boundaries that abut Eaton Drive and POS. Bollards also required for road reserves that abut Eaton Drive as part of road condition 1.

18. Eaton Drive and Collie River Bridge. Eaton Drive to be calculated as a credit, but contribution for bridge and administration fee to be paid. Require deposited plan to calculate areas and contribution / credit.

19. Foreshore Management Plan. How is the implementation of the adopted plan progressing?

20. Drainage / Public Open Space management plan to be prepared.

Other:

a) Need written request to name the new road off Eaton Drive. Thurston called me a few weeks ago wanting it named Peninsula Lakes Drive. The name needs to be approved by Council and the Geographic Names Committee.

b) Clearance fee when deposited plan lodged. \$50 per lot for first 5 lots and \$25 per lot thereafter.

Regards
Mark Jones
Principal Town Planner
Shire of Dardanup
Ph: 9724 0086
Fax: 9724 0091

From: Laurie Blurton
Sent: Wednesday, 16 November 2005 4:01 PM
To: Mark Jones
Cc: Ian (E-mail)
Subject: Parkridge Clearances

11/22/2005

(Appendix ORD: 12.2.2A Under E Separate Cover)

Mark,

Thurston wants to clear the lots and the only outstanding items that i can see are

Payment of Engineering Fees and the 12 months Maintenance Bond

Bond the unfinished works as in footpaths, signs and Ian will supply figure for this plus 30%

Geotechnical Report

We need to calculate the credits for Eaton Drive

Laurie

ATTACHMENT 14

29



WESTERN AUSTRALIAN
PLANNING COMMISSION

W/14

Our Ref : 127984
Your Ref :
Enquiries : Matthew Cuthbert

B W Garvey
P O Box 7006
BATON WA 6232

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

LOT : 9000
 LOCATION : -
 PLAN/DIAGRAM : 39882/-
 VOLUMB/FOLIO : 2226/610
 LOCALITY : Murdoch Crescent/Eaton Drive, Eaton
 DATE PLAN REC : 01 April 2005
 OWNER : Luca Investments Pty Ltd 18 Jardine Street STIRLING WA. 6021
 and New Style Constructions Pty Ltd C/- 18 Jardine Street
 STIRLING WA. 6021
 DECISION DATE : 19 May 2005
 LGA : Shire of Dardanup

Dear Sir/Madam

The Commission has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the plan submitted once the conditions set out below have been fulfilled. This decision is valid for three years from the date of this advice, which includes the lodgement of the Diagram or Plan of Survey within this period.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

The abbreviations in brackets identify the authority or agency responsible for advising the Commission on clearance of conditions. If there are no abbreviations, the Commission will clear the condition. Prior to the commencement on site of any works or the implementation of any condition in any other way the subdivider should liaise with the nominated authority on the requirements it considers necessary to satisfy the condition. Advice should be obtained from the relevant authorities that the conditions have been met and a copy of that advice should be submitted with the Plan or Diagram of Survey.

The applicant is further advised that under s24(5) of the Town Planning and Development Act, the applicant may, within 28 days of being notified of a decision of the Commission to impose a condition(s) on a subdivision approval, make a written request to the Commission to reconsider its condition(s). One of the matters which the Commission will have regard to in reconsidering a condition(s) is whether there is compelling evidence by way of additional information or justification from the applicant to warrant a reconsideration of a condition(s).



South West Office, Sixth Floor, Bunbury Tower, 61 Victoria Street, Bunbury, Western Australia 6230
Tel: (08) 9791 0577; Fax: (08) 9791 0576; TTY: (08) 9264 7535; Infoline: 1800 626 477
e-mail: corporate@wapc.wa.gov.au; web address: http://www.wapc.wa.gov.au
ABN 35 482 341 493

W14

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Should the applicant be aggrieved by this decision there is a right for a review under Section 26 of the Town Planning and Development Act 1928. The application for review must be submitted in accordance with Part V of the Act and should be lodged within 28 days of the date of this decision to the State Administrative Appeal Tribunal (SAT), 12 St George's Terrace, Perth. It is recommended that you contact the SAT for further details (telephone 9219 3111), or go to its website: <http://www.sat.justice.wa.gov.au/>.

When an application is approved subject to a condition(s), the applicant should liaise with a nominated authority(s) responsible for advising the Commission on the clearance of the condition as soon as possible to establish any detailed requirements of the condition and in order to retain a right of review in the event you consider the requirements are onerous.

CONDITION(S): DP 52 369

1. Those lots not fronting an existing road being provided with frontage to a constructed subdivisional road connected by a constructed subdivisional road(s) to the local road system and such subdivisional road(s) being constructed and drained at the subdivider's cost. As an alternative, the Western Australian Planning Commission is prepared to accept the subdivider paying to the Local Government the cost of such works as estimated by the Local Government subject to the Local Government giving an assurance to the Commission that the works will be completed within a reasonable period acceptable to the Commission. (LG) ✓
2. Street corners within the subdivision being truncated to the standard truncation of 8.5 metres. (LG) ✓
3. A cul-de-sac head being provided at the end of Oswego Way, designed and constructed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
4. The subdivider making arrangements satisfactory to the Western Australian Planning Commission to contribute towards works associated with the proposed Collie River Bridge, Eaton Drive (district distributor road reserve) and associated administrative costs in accordance with the Shires of Dardanup and Harvey Joint Town Planning Scheme No. 1. (LG) ✓
5. The land being graded and stabilised at the subdivider's cost to the satisfaction of the Western Australian Planning Commission. (LG) ✓
6. The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission, and any easements and/or reserves necessary for the implementation thereof, being provided free of cost. (LG) ✓
7. The subdivider to prepare an overall drainage plan for the subject land to the satisfaction of the Western Australian Planning Commission. (LG) ✓
8. Uniform fencing along the boundaries of all the proposed lots abutting Eaton Drive and on the boundary of Lot 878 where it abuts the proposed public open space, to be constructed to the satisfaction of the Western Australian Planning Commission. (LG) ✓
9. A restrictive covenant being registered on the certificate of title, to the benefit of the Shire of Dardanup and at the subdivider's expense, prohibiting vehicular access onto Eaton Drive from the proposed lots which abut this road, pursuant to section 129BA of the Transfer of Land Act (as amended). (LG) ✓

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W14

The memorial to state as follows:

"This lot is within close proximity of areas which are subject to mosquito activity at various times of the year. In consequence it is within the flight range of adult mosquitos and there may be some potential for transmission of Ross River Virus and other mosquito borne viral diseases. Further information in this regard can be obtained from the Shire of Dardanup and the Department of Health."

21. Prior to the commencement of any site works:
- a) a site assessment shall be undertaken to determine whether acid sulphate soils are present on the land, if present their extent and severity;
 - b) if the site is found to contain acid sulphate soils, an acid sulphate soil management plan shall be submitted to and approved; and
 - c) all site works shall be carried out in accordance with the provisions of the approved management plan to the satisfaction of the Western Australian Planning Commission. (DoE)

ADVICE:

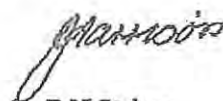
- i) Construction should not commence until Council has approved detailed engineering plans and specifications of the works, including earthworks, roads and paths, drainage, clearing, landscaping/rehabilitation and soil stabilisation measures, both during and after construction. Approved plans are those which have been considered by Council and duly amended to meet its requirements and approval
- ii) In respect of Condition 10, the Shire of Dardanup advise that a pre and post geotechnical report is required as high groundwater is common within Eaton.
- iii) In respect to Condition 11 of this approval, the Commission hereby approves of a cash-in-lieu contribution in accordance with section 20C of the Town Planning and Development Act, 1928.
- iv) The subdivider is advised that the subdivision is to be integrated with the adjoining subdivision with respect to drainage, traffic flow and pedestrian links. The subdivider is to coordinate discussions between the Shire of Dardanup Engineer (Manager, Technical Services) and the engineers for the adjoining landowner.
- v) In relation to Conditions 6 and 7, the Shire of Dardanup advise that a contribution of \$250 per lot for is currently required for drainage headworks costs, however the fee is upgraded in line with the consumer price index for Perth on 30 June and 30 December each year. The fee applicable will be determined at the time of payment and may therefore vary from the quoted figure.
- vi) In relation to Condition 16 the provision of underground power includes land for transformer sites, easements and standard street lighting. It is requested that the subdivider provide the Shire of Dardanup with engineering drawings detailing the location and type of street lighting proposed.

29

W14

- vii) In regard to Condition 18, FESA advise that hydrants will need to be installed along all water mains at a ratio of one per 200m and are to be identified by standard road and pole markings.
- viii) The Department of Environment advise that:
 - a) The proposed development is to incorporate the principles and best management practices detailed in the *Planning and Management Guidelines for Water Sensitive Urban Design* (State Planning Commission, 1994) and the *Manual for Managing Urban Stormwater Quality in Western Australia* (Water and Rivers Commission, 1998). The subdivider is to liaise with the Department of Environment in relation to this.
 - b) The subject land is within an area that has been recognised as posing Class 2 acid sulfate soils risk. Proposals that may lead to the disturbance of acid sulfate soils should be planned and managed to avoid adverse affects on the natural and built environment, including human health and activities. Therefore, the Department of Environment and Environmental Protection Authority guidance on managing acid sulfate soils including its supporting documents should be adhered to. These documents can be found at www.environ.wa.gov.au under Contaminated Sites.
 - c) The proposed subdivision is located within the proclaimed Bunbury Goundwater Area where there is a requirement to obtain a Groundwater licence for the use of groundwater (including soak excavations). The issue of a licence is not guaranteed but if issued will contain a number of conditions including the quantity of water that can be pumped each year.
- ix) The subdivider is advised to advise all subdivision contractors of their legal obligations with respect to the Aboriginal Heritage Act of WA (1972) during construction work. The subdivider is advised to contact the Department of Indigenous Affairs (Albany Office) for further information, including the means to undertake on-going monitoring during excavation works.

Yours faithfully



for R N Stokes
Acting Secretary
Western Australian Planning Commission

ATTACHMENT 15

DO NOT SIGN OR
RE-ADJUSTED TO
THIS DATE
IN REPLY PLEASE QUOTE
YOUR REF
OUR REF

RECEIVED 15 OCT 1993

DEPARTMENT OF
PLANNING AND URBAN DEVELOPMENT

91326

Marlin K

13 October 1993

BSD Consultants Pty Ltd
P O Box 446
APPLECROSS WA 6153

15

TOWN PLANNING AND DEVELOPMENT ACT (AS AMENDED)

| | | |
|---------------|---|---|
| LOT | : | Crown Grant No.155 |
| LOCATION | : | Leschenault 19 |
| PLAN / DIA | : | - |
| VOL / FOL | : | - |
| LOCALITY | : | Eaton Drive |
| DATE OF PLAN | : | 08 October 1993 |
| OWNER | : | Penman Holdings Pty Ltd C/- Stanton & Partners Pier Street PERTH WA 6000 |
| DECISION DATE | : | 13 October 1993 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The South West Region Planning Committee acting for and on behalf of the Commission under delegated power has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the plan submitted provided that the conditions set out below are fulfilled within three years from the date of this advice.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

CONDITION(S) :

1. ✓ The foreshore and recreation area shown on the subdivision plan, measuring 42.37 hectares, being shown on the Diagram or Plan of Survey as a 'Reserve for Recreation, Foreshore Management and Drainage' and vested in the Crown under Section 20A of the Town Planning and Development Act, 1928; such land to be ceded free of cost without any payment of compensation by the Crown.

ALL CONDITIONS
OF THIS ORDER TO
BE FULLY COMPLIED WITH
BY THE SUBDIVIDER



2. The central and northern portions of Lot 4 being set aside as a separate lot on a Diagram or Plan of Survey for future acquisition for the purpose of a Reserve for Recreation, Foreshore Management and Drainage.
3. The whole of the Foreshore Reserve being fenced with an appropriate stock proof fence to the specification and satisfaction of the Local Authority.
4. The subdivider making arrangements satisfactory to the Local Authority to ensure that potential purchasers of Lot 4 are advised that subdivision approval does not imply development approval and that the central and northern portions are:
 - reserved for recreation under the Local Authority Town Planning Scheme
 - located within the Collie River flood plain and are susceptible to inundation. (LA)
5. The subdivider making arrangements satisfactory to the Local Authority to ensure that potential purchasers of Lots 1, 2, 3 and 4 are advised of their obligation to provide a 10% Public Open Space contribution in accordance with the approved Structure Plan.
6. The subdivider making arrangements satisfactory to the Water Authority to ensure that the prospective purchasers in the transfer of the lot(s) acknowledge in writing that they are aware that the lots are located within the Bunbury Groundwater Area where there is a need to obtain a licence before a bore or well can be constructed. The licence will contain a number of conditions including the quantity of water that can be pumped each year. (WA)
7. Certification from the State Energy Commission that satisfactory arrangements have been made for the provision of easements for the two existing power lines traversing the property. (SECWA)

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The applicant is advised that the Local Authority has advised that future subdivision of proposed Lots 1, 2, and 3 will require pro-rata contributions for the primary school sites in the locality, for the construction of the Collie River Bridge linking Eaton and Australind, and for the construction of Hands Avenue as the major arterial distributor road.

ALL CORRESPONDENCE
SHOULD BE ADDRESSED TO
THIS ADDRESS
BY POST OR BY FAX
YOUR FILE
OUR FILE

DEPARTMENT OF
PLANNING AND URBAN DEVELOPMENT



The applicant is further advised that the majority of Lot 5 is currently reserved for Recreation and that an approach should be made to the Local Authority as soon as possible to initiate a Scheme Amendment to rezone that area appropriately.

Yours faithfully

CAROL ANDERSON
SECRETARY
SOUTH WEST REGION PLANNING COMMITTEE

13

012238

ATTACHMENT 16

(Appendix ORD: 12.2.2A Under E Separate Cover)



Your Ref :
Enquiries : Matthew Cuthbert (Ph 9791 0577)



Plancheck
P O Box 289
MOUNT LAWLEY WA 6929

Approval Subject To Condition(s) Freehold (Green Title) Subdivision

Application No : 141716

Planning and Development Act 2005

| | |
|---------------------|--|
| Applicant | : Plancheck P O Box 289 MOUNT LAWLEY WA 6929 |
| Owner | : Parkridge Group Ply Ltd 8357 Angelo Street SOUTH PERTH WA 6151 |
| Application Receipt | : 22 March 2010 |

| | |
|------------------|--|
| Lot number | : 9501 |
| Location | : |
| Diagram/Plan | : 50198 |
| C/T Volume/Folio | : 2632/552 |
| Street Address | : Lot 9501 No Street Address Available , Eaton |
| Local Government | : Shire of Dardanup |

The Western Australian Planning Commission has considered the application referred to and is prepared to endorse a deposited plan in accordance with the plan date-stamped 22 March 2010 once the condition(s) set out have been fulfilled.

This decision is valid for four years from the date of this advice, which includes the lodgement of the deposited plan within this period.

The deposited plan for this approval and all required written advice confirming that the requirement(s) outlined in the condition(s) have been fulfilled must be submitted by 13 May 2014 or this approval no longer will remain valid.

(Appendix ORD: 12.2.2A Under E Separate Cover)



Reconsideration - 28 days

Under section 151(1) of the *Planning and Development Act 2005*, the applicant/owner may, within 28 days from the date of this decision, make a written request to the WAPC to reconsider any condition(s) imposed in its decision. One of the matters to which the WAPC will have regard in reconsideration of its decision is whether there is compelling evidence by way of additional information or justification from the applicant/owner to warrant a reconsideration of the decision. A request for reconsideration is to be submitted to the WAPC on a Form 3A with appropriate fees. An application for reconsideration may be submitted to the WAPC prior to submission of an application for review. Form 3A and a schedule of fees are available on the WAPC website: <http://www.wapc.wa.gov.au>

Right to apply for a review - 28 days

Should the applicant/owner be aggrieved by this decision, there is a right to apply for a review under Part 14 of the *Planning and Development Act 2005*. The application for review must be submitted in accordance with part 2 of the *State Administrative Tribunal Rules 2004* and should be lodged within 28 days of the date of this decision to: the State Administrative Tribunal, 12 St Georges Terrace, Perth, WA 6000. It is recommended that you contact the tribunal for further details: telephone 9219 3111 or go to its website: <http://www.sat.justice.wa.gov.au>

Deposited plan

The deposited plan is to be submitted to the Western Australian Land Information Authority (Landgate) for certification. Once certified, Landgate will forward it to the WAPC. In addition, the applicant/owner is responsible for submission of a Form 1C with appropriate fees to the WAPC requesting endorsement of the deposited plan. A copy of the deposited plan with confirmation of submission to Landgate is to be submitted with all required written advice confirming compliance with any condition(s) from the nominated agency/authority or Local Government. Form 1C and a schedule of fees are available on the WAPC website: <http://www.wapc.wa.gov.au>

Condition(s)

The WAPC is prepared to endorse a deposited plan in accordance with the plan submitted once the condition(s) set out have been fulfilled.

The condition(s) of this approval are to be fulfilled to the satisfaction of the WAPC.

The condition(s) must be fulfilled before submission of a copy of the deposited plan for endorsement.

The agency/authority or Local Government noted in brackets at the end of the condition(s) identify the body responsible for providing written advice confirming that the WAPC's requirement(s) outlined in the condition(s) have been fulfilled. The written advice of the agency/authority or Local Government is to be obtained by the applicant/owner. When the written advice of each identified agency/authority or Local Government has been obtained, it should be submitted to the WAPC with a Form 1C and appropriate fees and a copy of the deposited plan.

(Appendix ORD: 12.2.2A Under E Separate Cover)



If there is no agency/authority or Local Government noted in brackets at the end of the condition(s), a written request for confirmation that the requirement(s) outlined in the condition(s) have been fulfilled should be submitted to the WAPC, prior to lodgement of the deposited plan for endorsement.

Prior to the commencement of any site works or the implementation of any condition(s) in any other way, the applicant/owner is to liaise with the nominated agency/authority or Local Government on the requirement(s) it considers necessary to fulfil the condition(s).

The applicant/owner is to make reasonable enquiry to the nominated agency/authority or Local Government to obtain confirmation that the requirement(s) of the condition(s) have been fulfilled. This may include the provision of supplementary information. In the event that the nominated agency/authority or Local Government will not provide its written confirmation following reasonable enquiry, the applicant/owner then may approach the WAPC for confirmation that the condition(s) have been fulfilled.

In approaching the WAPC, the applicant/owner is to provide all necessary information, including proof of reasonable enquiry to the nominated agency/authority or Local Government.

The condition(s) of this approval, with accompanying advice, are:

CONDITION(S):

1. Suitable arrangements being made with Water Corporation so that provision of a suitable water supply service will be available to lot(s) shown on the approved plan of subdivision. (Water Corporation)
2. Suitable arrangements being made with the Water Corporation so that provision of a sewerage service will be available to the lot/s shown on the approved plan of subdivision. (Water Corporation)
3. Arrangements being made to the satisfaction of the Western Australian Planning Commission and to the specification of Western Power for the provision of an underground electricity supply service to the lot(s) shown on the approved plan of subdivision. (Western Power)
4. The transfer of land as a Crown Reserve, free of cost to Western Power for the provision of electricity supply infrastructure. (Western Power)
5. A detailed plan demonstrating the location and capacity of fire emergency infrastructure, including hydrants, is to be prepared and implemented to the specifications of the Water Corporation and the Fire and Emergency Services Authority. (FESA)
6. The proposed 15m wide road reserve to be widened to 20m to be consistent with the existing road reserve width of Glenhuon Boulevard. (Local Government)
7. The proposed roundabout of Glenhuon Boulevard and Peninsula Lakes Drive intersection to be constructed to Local Government specifications. (Local Government)

South West Office, Sixth Floor, Bunbury Tower, 61 Victoria Street, Bunbury, Western Australia 6230
Tel: (08) 9791 0577; Fax: (08) 9791 0576; TTY: (08) 9264 7535; Infoline: 1800 626 477
e-mail: corporate@wapc.wa.gov.au; web address: <http://www.planning.wa.gov.au>
ABN 35 482 341 493

(Appendix ORD: 12.2.2A Under E Separate Cover)



8. An area(s) of land equal to at least 10% of the subject lot in area, in a position to be agreed with the WAPC, being shown on the Deposited Plan as a "Reserve for Recreation" and vested in the Crown under Section 152 of the *Planning and Development Act 2005*, such land to be ceded free of cost and without any payment of compensation by the Crown. (Local Government)
9. Footpaths to be constructed along Peninsula Lakes Drive to Local Government specifications. (Local Government)
10. The applicant/owner making satisfactory arrangements with the Western Australian Planning Commission for developer cost contributions applicable under the Joint Shire of Harvey-Dardanup TPS No.1 (Local Government)

ADVICE:

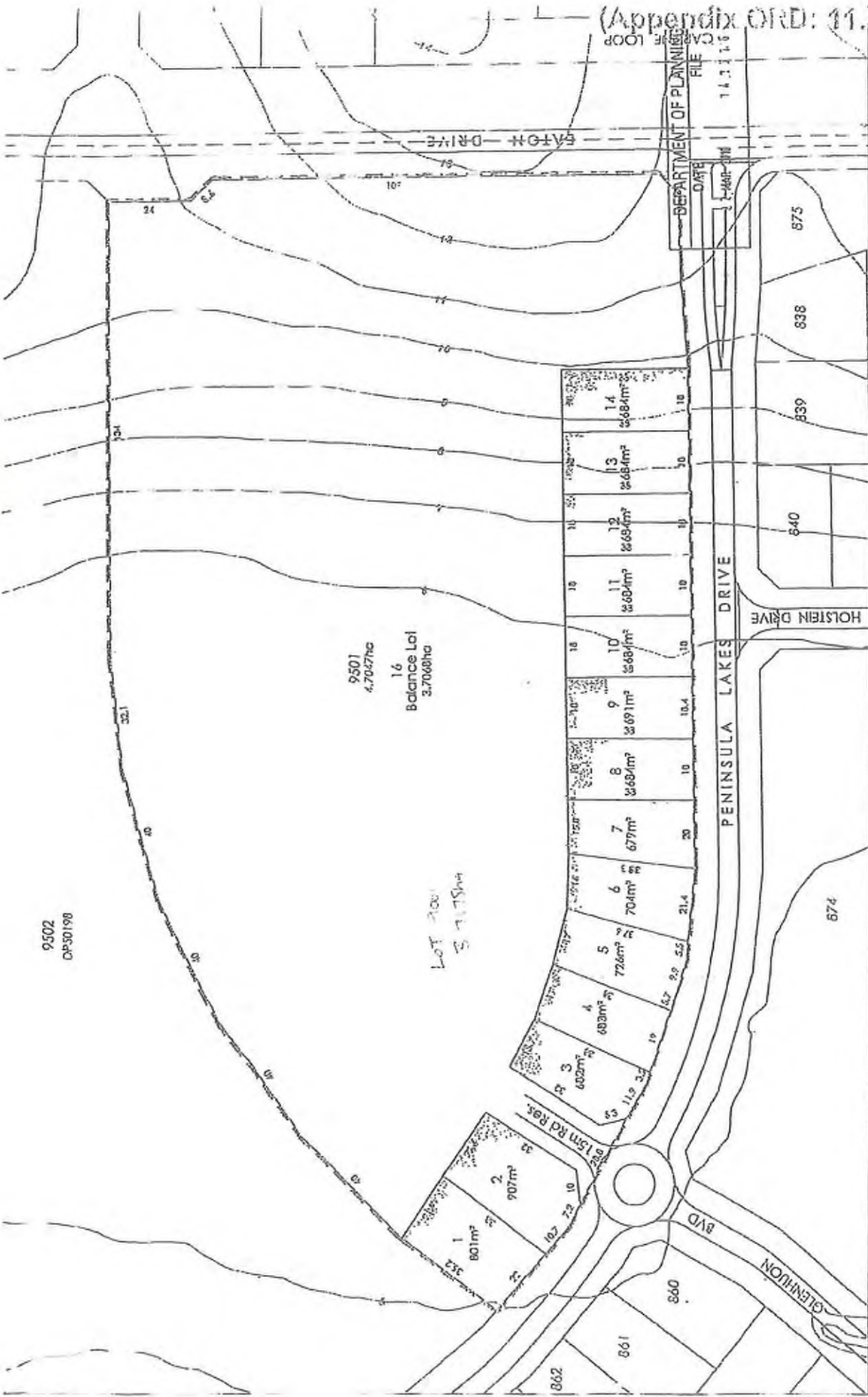
- i) Western Power provides only one point of electricity supply per freehold (green title) lot and requires that any existing overhead consumer service is required to be converted to underground from the lot boundary.
- ii) If an existing aerial electricity cable servicing the land the subject of this approval crosses over a proposed lot boundary as denoted on the approved plan of subdivision satisfactory arrangements will need to be made for the removal and relocation of that cable.
- iii) With regard to Condition 4, the specific location and area of land required is to be to the satisfaction of the WAPC on the advice of the Local Government and Western Power.
- iv) With regard to Condition 8, the WAPC hereby approves of a cash-in-lieu contribution in accordance with Section 153 of the *Planning and Development Act, 2005*,

A handwritten signature in black ink, appearing to read "Tony Evans".

Tony Evans
Secretary
Western Australian Planning Commission
13 May 2010

(Appendix ORD: 12.2.2A Under E Separate Cover)

(Appendix ORD: 11.3.1A)



DEPARTMENT OF PLANNING
DATE: 14 MAR 2018
FILE: 14.3.1.6

PROPOSED SUBDIVISION
LOT 9501 EATON DRIVE, EATON
SHIRE OF DARDANUP

Drawn: DE
Checked: MT
Date: 10 February 2018
Scale: 1:11000 (A3)
Plan No: 075418



All dimensions and areas related to survey

| LOT YIELD | |
|--------------|----------------|
| Single Res. | 14 Lots |
| Balance | 1 Lot |
| TOTAL | 15 LOTS |

NOTES:
 Lot 9501
 Application Area
 Balance Lot

Lot 9501: 4.7047 ha
 Application Area: 0.9777 ha
 Balance Lot: 3.7068 ha

PLAN
CHECK

ATTACHMENT 17

OFFICER RECOMMENDED RESOLUTION & COUNCIL RESOLUTION

347/11 MOVED - Cr. C N Boyce SECONDED - Cr. M T Bennett

THAT Council:

1. Refers the Pathway Asset Management Plan 2012-2022 as prepared by the Manager Technical Services to the Strategic Financial Plan for a funding program to be developed.
2. Nominates the following pathway projects for possible funding under the 2012-2013 Round of the Regional Bicycle Network Local Government Grants Program and any other eligible pathway funding schemes:

| PROJECT | SECTION | LENGTH |
|---------------------|---------------------------|--------|
| Crampton Avenue | Millard St - Lofthouse St | 610m |
| Charterhouse Street | Hamilton Rd - Hale Rd | 510m |

Note: If the funding applications are successful, Council will be required to allocate \$73,500 in the 2012/13 budget.

CARRIED
9/0

11.3 MANAGER PLANNING SERVICES REPORT

11.3.1 Title: Request for Clearance of Subdivision WAPC Approval # 141716 (Parkridge Group Pty Ltd)

Reporting Department: Planning Services
 Reporting Officer: Mr Robert Quinn - Manager Planning Services
 Legislation: Planning and Development Act 2005
 File Number: PL141716

Background

A request has been received to clear conditions of subdivision for WAPC approval #141716. Based on long standing practice, all Parkridge Group subdivision clearances are presented to Council for their endorsement.

WAPC approval # 141716 is for 14 lots on Peninsula Lakes Drive. The parent lot being lot 9501 is 4.7047ha in area (Appendix ORD: 11.3.1A). The request is to clear conditions for the creation of ten lots, being lots 4 - 10 inclusive (Appendix Ord: 11.3.1B).

(Appendix ORD: 12.2.2A Under E Separate Cover)

Legal Implications - None.

Strategic Plan - None

Environment - No adverse environmental impacts foreseen.

Precedents - None.

Budget Implications - None.

Budget – Whole of Life Cost - None.

Council Policy Compliance - None

Officer Comment

In order to clear the conditions of WAPC approval # 141716 the following conditions are required to be cleared by Council. The following comments are presented to Council for consideration:

| Condition | Comment | Requirement |
|--|--|--|
| 6. The proposed 15m wide road reserve to be widened to 20m to be consistent with the existing road reserve width of Glenhuon Boulevard. (Local Government). | Not required at this stage | Nil |
| 7. The proposed roundabout of Glenhuon Boulevard and Peninsula Lakes Drive intersection to be constructed to Local Government specifications. (Local Government). | A pro rata contribution towards the construction of the proposed roundabout is required at this stage. Total estimated cost of roundabout is \$80,000. Pro-rata cost based on land area of 10 lots equates to 16% of lots 9501 and 9502 which totals to \$13,024. A 5% administration fee of \$651 is applied also. | Contribution-\$13,024 (No GST required) Administration Fee-\$651 (plus GST) |
| 8. An area(s) of land equal to at least 10% of the subject lot in area, in a position to be agreed with the WAPC, being shown on the Deposited Plan as a "Reserve for Recreation" and vested in the Crown under Section 152 of | A cash in lieu contribution is required to satisfy this condition. The Planning and Development Act 2005 provides provisions to deal with cash-in-lieu payments and POS calculations. Firstly, Council need to be satisfied that the valuation is acceptable and secondly payment needs to be within ninety days of the valuation. | \$ 150,000 (No GST required) |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Condition | Comment | Requirement |
|---|---|---|
| the Planning and Development Act 2005, such land to be ceded free of cost and without payment or compensation by the Crown. (Local Government). | A valuation dated 20/10/2011 has been provided by the subdivider which indicates the land is worth \$1,500,000. Therefore a cash in lieu payment of \$150,000 is required to satisfy this condition. (Appendix ORD: 11.3.1C) | |
| 9. Footpaths to be constructed along Peninsula Lakes Drive to Local Government specifications. (Local Government). | Not required. | Nil |
| 10. The applicant/owner making satisfactory arrangements with the Western Australian Planning Commission for developer cost contributions applicable under the Joint Shire of Harvey-Dardanup TPS No. 1 (Local Government). | A contribution towards the Joint Town Planning Scheme Schedule of Shared Costs is required. The adopted 2011/2012 contribution rate is \$62,342 ha. Parkridge Estate has a pre-funding credit of \$36,788.61 for the first carriageway, therefore a deduction of \$5,852.15 has been made on the calculation. Once this clearance has occurred a pre-funding credit of \$30,936.46 for the first carriageway will remain. As soon as funds permit this pre-funding credit will be extinguished. | First carriageway \$Nil Second carriageway \$6,780.40 (No GST required) Collie River Bridge \$35,114.42 (No GST required) |
| Contribution required (GST exclusive) | GST | \$205,569.82 |
| | Total(GST inclusive) | \$205,634.92 |

Council Role - Quasi-Judicial

Voting Requirements - Simple Majority

Discussion:

Chief Executive Officer, Mr Mark Chester advised of a correction to the sum in the first paragraph of the recommendation. Please alter to read \$205,634.92.

Manager Planning Services, Mr Robert Quinn advised that the current valuation provided is dated 20/10/11. Council does have the opportunity to query it if they are not happy. Valuation is from a sworn valuer. A private valuation would cost between \$3,000 to \$4,000.

(Appendix ORD: 12.2.2A Under E Separate Cover)

OFFICER RECOMMENDED RESOLUTION & COUNCIL RESOLUTION

348/11 MOVED - Cr. M T Bennett SECONDED - Cr. C N Boyce

THAT Council advise Parkridge Group Pty Ltd to satisfy conditions 6-10 inclusive of WAPC subdivision approval No. 141716 the total amount of \$205,634.92 with \$65.10 being GST will need to be submitted to the Shire of Dardanup Administration Office, Eaton prior to the Chief Executive Officer endorsing deposited plan 71122 for lots 4-14 inclusive, Peninsula Lakes Drive Eaton, the contribution components being:

| | |
|--------------------------------|----------------------|
| Contribution to roundabout | 13,024.00 |
| Administration fee | 651.00 |
| Administration GST | 65.10 |
| Public Open Space Cash In Lieu | 150,000.00 |
| Bridge Contribution | 35,114.42 |
| Eaton Drive Contribution | 6,780.40 |
| TOTAL | \$ 205,634.92 |

CARRIED
9/0

11.4 TOWN PLANNING OFFICER REPORT

11.4.1 Title: Public Open Space Management Requirement - Lot 152 Recreation Drive, Eaton (Coastline Building Group Pty Ltd)

Reporting Department: Planning Services
Reporting Officer: Elizabeth Edwards – Senior Planning Officer
Legislation: Planning and Development Act 2005
Town Planning Scheme No. 3
File Number: A10382, A10381

Background

Lot 1 Recreation Drive was rezoned under TPS No. 3 in 2007 for the development of residential lots at R20 and R10 densities and a large lot (now Lot 151) was zoned as a "Restricted Use" for the development of aged person dwellings. TPS No. 3 contains the following condition (f) of the "Restricted Use Zone" R9:

ATTACHMENT 18



Department for Planning and Infrastructure
Government of Western Australia

South West Region

Your ref:

Our ref: 807/6/9/3PV3

Enquiries: Mr Frank Scibilia

11 May 2009

Parkridge Group Pty Ltd
PO Box 8357
SOUTH PERTH WA 6151

Attention: Mr Thurston Saulsman

Dear Mr Saulsman

Parkridge Estate, Eaton, Shire of Dardanup - Provision of Public Open Space

I refer to your letter dated 3 February 2009 seeking clarification on the subdivider's provision for public open space at Parkridge Estate in response to the DPI's method of calculating the POS requirements which was attached to the DPI's letter dated 5 June 2007.

It is noted that you disagree with the DPI's POS audit where it was revealed that there is a shortfall of 5.2515 ha in POS (i.e. a total of 13.2763 ha of POS is required and only 8.0248 ha of usable land has been provided for active recreational pursuits).

In response to your concerns I propose:

- a) the structure plan, accompanying the Scheme Amendment provided overall guidance for subdivision, land use (including open space) and access. The structure plan provided a framework for more detailed planning (e.g. POS Audits) which is to occur at the subdivision stage;
- b) The POS Audit was based on accurate figures, accurate survey plans, up-to-date cadastre details and policy plans so as to determine which areas are classified as gross subdivisible (i.e. capable of being subdivided and developed). POS Audits can also include requests to the WAPC from the applicant requesting that drainage areas be credited as POS by demonstration through engineering reports which indicate the ability to safely use drainage areas for public recreation for a considerable period within the year;
- c) As an audit was not provided by you as proponent, DPI determined an audit was necessary due to concerns being expressed by yourself and the Shire Council, and prepared one to ascertain the status of open space within Parkridge estate;

(Appendix ORD: 12.2.2A Under E Separate Cover)

- d) Prior to the gazettal of the Planning and Development Act 2005, all local urban parks, including those containing wetlands and drainage basins, could only be vested for 'Recreation' purposes under Section 20A of the Town Planning and Development Act. The title may have caused confusion as it assumed that 100 percent of the Reserve, including the wetland/drainage area, is useable for recreation and the whole reserve can be dedicated as part of the 10 percent POS requirement. The current statutory framework allows multi-purpose reserves to be vested for a wide range of uses ranging from active recreation to drainage. POS Audits can now be prepared separately based on actual land use and usability for recreational pursuits;
- e) WAPC records indicate that no POS was provided under WAPC Ref: 105506. However, POS was provided by a latter application WAPC Ref:118006 which consisted of Lot 437 (2025.3 m²) and Lot 438 (1480.6 m²) of which the latter included a 250 m² drainage basin and an embankment on one side. The lots were not included in the POS audit as they were not reclassified as Crown reserves on the cadastre database. The POS Audit has been modified accordingly which now shows a reduced shortfall of 4.9 ha in POS;
- f) The final arbiter of a POS Audit is the WAPC, not the Shire. However, it should be noted that the Shire now supports the DPI's version of the POS Audit; and
- g) The POS audit focuses on the land owned by Parkridge or where Parkridge previously provided Crown reserves or POS lots.

Please be advised that the POS was based on the WAPC Policy DC 2.3 and not the Liveable Neighbourhoods Policy as the subdivision applications were not requested to be determined under the Liveable Neighbourhoods Policy.

While I believe you will still be concerned I maintain the Audit was done as accurately as possible. If you wish to submit your own audit it will be compared to the one done by DPI to see where discrepancies are and why.

Notwithstanding the above I recommend that a structure plan be progressed for the balance of the site. This will provide a good guide for further subdivision and it will also be able to determine the open space (active and passive) required and relationships with areas required for drainage and conservation.

If you want to discuss draft structure plan designs I would be happy to take a look and provide comment.

Please do not hesitate to contact me or Frank Scibilia of this office if you have any further questions.

Yours sincerely



Michael Schramm
Director, South West Planning

(Appendix ORD: 12.2.2A Under E Separate Cover)



Department for Planning and Infrastructure
Government of Western Australia

POS AUDIT PARKRIDGE ESTATE, EATON

REVISED 20 APRIL 2009

DC.2.3 Formula

| 1. Total Area: | Area |
|--|--|
| i) The parent lot - | 255.20 ha |
| ii) Lot 9504 - (Owned by a Parkridge company) | 2.2261 ha |
| iii) Lot 9509 (all Floodway) | 16,1388 ha |
| iv) Lot 9503 (All Floodway) | 17.16 ha |
| v) Lot 9502 (3.050 ha Floodway) | 33.6749 ha |
| vi) Lot 9501 | 4.7047 ha |
| vii) Lot 5679 (previously Lot 5) (43.3831 ha Floodway) | 44.2311 ha |
| viii) Lot 1004 (Not owned by Parkridge) | 9.864 ha |
| ix) Lot 7000 Retirement Village (Not owned by Parkridge) | 8.041 ha |
| x) Lot 999 (Was sold by Parkridge as a residential lot) | 0.2476 ha |
| ix) Lot 9002 (Not owned by Parkridge) | 2.2962 ha |
| x) Subdivided land | 116.069 ha |
| Total Area of Parkridge Estate: | 234.1918 ha |
| 2. Deductions from land owned by Parkridge Estate and Foreshore reserves | |
| i) Primary School Area | 4.001 ha |
| ii) High School Area | 8.7529 ha |
| iii) EPP wetland - Lot 1028 (Reserve 48392) | 2.5996 ha |
| iv) Floodways (Foreshore areas mentioned in iii) - vii) of Total Area which includes dedicated drainage areas but not POS areas) | 79.7319 ha |
| v) Drainage Basin - Lot 4 (Reserve 45531) | 0.3904 ha |
| vi) Drainage Basin - Lot 874 (Reserve 48933) | 0.7500 ha |
| vii) Pump Station - Lot 873 (Reserve 49042) | 0.1025 ha |
| viii) Eaton Drive | 5.1 ha |
| ix) Drainage Basin - Lot 438 Charolals Mews and 50% embankment | 0.0250 ha |
| Total Deductions: | 101.6783 |
| 3. Gross Subdivisible Area: | 132.5135 ha |
| 4. 10 percent POS requirement | 13.2513 ha |
| | 8% as land contribution = 10.601 ha 2% as cash-in-lieu contribution = 2.6503 ha |

(Appendix ORD: 12.2.2A Under E Separate Cover)



Department for Planning and Infrastructure
Government of Western Australia

| | |
|--|-------------------|
| | |
| 6. Public Open Space - Existing and Proposed on Structure Plan as agreed by the Shire and the Commission (Including agreed credits to non-gross subdivisible areas) | |
| i) Lot 874 (Reserve 48933) excluding drainage basin/lake | 1.6195 ha |
| ii) Lot 1028 (Reserve 48392) excluding EPP lake | 0.4939 ha |
| iii) Lot 4 (Reserve 45531) excluding drainage basin/lake | 0.5524 ha |
| iv) Lot 5820 (Reserve 45333) Shelland Place | 0.4169 ha |
| v) Lot 5786 (Reserve 44580) Sindh Close | 1.6977 ha |
| vi) Lot 19 (Reserve 45358) Recreation Drive | 2.9057 ha |
| vii) Lot 875 (Reserve 48870) Peninsula Rd | 0.1451 ha |
| viii) Lot 6060 (Reserve 46255) Eaton Drive verge area | 0.1936 ha |
| ix) Lot 437 Gromark Gate | 0.20253 ha |
| x) Lot 438 Charolaise Mews excluding the drainage basin and 50 % embankment | 0.12306 ha |
| 6. Total POS provided | 8.35039 ha |
| 7. Overall shortfall in POS | 4.9009 ha |

ATTACHMENT 19

(Appendix ORD: 12.2.2A Under E Separate Cover)



Your Ref : 100818
Enquiries : Andrew Blee (Ph 9791 0577)

Gray & Lewis Land Use Planners
Suite 5, 2 Hardy Street
SOUTH PERTH WA 6151

Approval Subject To Condition(s) Freehold (Green Title) Subdivision

Application No : 144999

Planning and Development Act 2005

| | | |
|---------------------|---|--|
| Applicant | : | Gray & Lewis Land Use Planners Suite 5, 2 Hardy Street SOUTH PERTH WA 6151 |
| Owner | : | Parkridge Group Pty Ltd P O Box 8357 Angelo Street SOUTH PERTH WA 6151 |
| Application Receipt | : | 30 September 2011 |

| | | |
|------------------|---|---------------------------------------|
| Lot Number | : | |
| Diagram / Plan | : | 50198 |
| Location | : | |
| C/T Volume/Folio | : | 2632/552, 2632/553 |
| Street Address | : | Lot 9501 Peninsula Lakes Drive, Eaton |
| Local Government | : | Shire of Dardanup |

The Western Australian Planning Commission has considered the application referred to and is prepared to endorse a deposited plan in accordance with the plan date-stamped 30 September 2011 once the condition(s) set out have been fulfilled.

This decision is valid for four years from the date of this advice, which includes the lodgement of the deposited plan within this period.

The deposited plan for this approval and all required written advice confirming that the requirement(s) outlined in the condition(s) have been fulfilled must be submitted by 12 December 2015 or this approval no longer will remain valid.

(Appendix ORD: 12.2.2A Under E Separate Cover)



Reconsideration - 28 days

Under section 151(1) of the *Planning and Development Act 2005*, the applicant/owner may, within 28 days from the date of this decision, make a written request to the WAPC to reconsider any condition(s) imposed in its decision. One of the matters to which the WAPC will have regard in reconsideration of its decision is whether there is compelling evidence by way of additional information or justification from the applicant/owner to warrant a reconsideration of the decision. A request for reconsideration is to be submitted to the WAPC on a Form 3A with appropriate fees. An application for reconsideration may be submitted to the WAPC prior to submission of an application for review. Form 3A and a schedule of fees, are available on the WAPC website: <http://www.wapc.wa.gov.au>

Right to apply for a review - 28 days

Should the applicant/owner be aggrieved by this decision, there is a right to apply for a review under Part 14 of the *Planning and Development Act 2005*. The application for review must be submitted in accordance with part 2 of the *State Administrative Tribunal Rules 2004* and should be lodged within 28 days of the date of this decision to: the State Administrative Tribunal, 12 St Georges Terrace, Perth, WA 6000. It is recommended that you contact the tribunal for further details: telephone 9219 3111 or go to its website: <http://www.sat.justice.wa.gov.au>

Deposited plan

The deposited plan is to be submitted to the Western Australian Land Information Authority (Landgate) for certification. Once certified, Landgate will forward it to the WAPC. In addition, the applicant/owner is responsible for submission of a Form 1C with appropriate fees to the WAPC requesting endorsement of the deposited plan. A copy of the deposited plan with confirmation of submission to Landgate is to be submitted with all required written advice confirming compliance with any condition(s) from the nominated agency/authority or local government. Form 1C and a schedule of fees are available on the WAPC website: <http://www.wapc.wa.gov.au>

Condition(s)

The WAPC is prepared to endorse a deposited plan in accordance with the plan submitted once the condition(s) set out have been fulfilled.

The condition(s) of this approval are to be fulfilled to the satisfaction of the WAPC.

The condition(s) must be fulfilled before submission of a copy of the deposited plan for endorsement.

The agency/authority or local government noted in brackets at the end of the condition(s) identify the body responsible for providing written advice confirming that the WAPC's requirement(s) outlined in the condition(s) have been fulfilled. The written advice of the agency/authority or local government is to be obtained by the applicant/owner. When the written advice of each identified agency/authority or local government has been obtained, it should be submitted to the WAPC with a Form 1C and appropriate fees and a copy of the deposited plan.

(Appendix ORD: 12.2.2A Under E Separate Cover)



If there is no agency/authority or local government noted in brackets at the end of the condition(s), a written request for confirmation that the requirement(s) outlined in the condition(s) have been fulfilled should be submitted to the WAPC, prior to lodgement of the deposited plan for endorsement.

Prior to the commencement of any site works or the implementation of any condition(s) in any other way, the applicant/owner is to liaise with the nominated agency/authority or local government on the requirement(s) it considers necessary to fulfil the condition(s).

The applicant/owner is to make reasonable enquiry to the nominated agency/authority or local government to obtain confirmation that the requirement(s) of the condition(s) have been fulfilled. This may include the provision of supplementary information. In the event that the nominated agency/authority or local government will not provide its written confirmation following reasonable enquiry, the applicant/owner then may approach the WAPC for confirmation that the condition(s) have been fulfilled.

In approaching the WAPC, the applicant/owner is to provide all necessary information, including proof of reasonable enquiry to the nominated agency/authority or local government.

The condition(s) of this approval, with accompanying advice, are:

CONDITION(S)

1. Suitable arrangements being made with the Water Corporation so that provision of a suitable water supply service will be available to lot(s) shown on the approved plan of subdivision. (Water Corporation)
2. Suitable arrangements being made with the Water Corporation so that provision of a sewerage service will be available to the lot/s shown on the approved plan of subdivision. (Water Corporation)
3. Arrangements being made to the satisfaction of the Western Australian Planning Commission and to the specification of Western Power for the provision of an underground electricity supply service to the lot(s) shown on the approved plan of subdivision. (Western Power)
4. The transfer of land as a Crown Reserve, free of cost to Western Power for the provision of electricity supply infrastructure. (Western Power)
5. Those lots not fronting an existing road being provided with frontage to a constructed road(s) connected by a constructed road(s) to the local road system and such road(s) being constructed and drained at the applicant/owner's cost. As an alternative the WAPC is prepared to accept the applicant/owner paying to the local government the cost of such road works as estimated by the local government subject to the local government providing formal assurance to the WAPC confirming that the works will be completed within a reasonable period as agreed by the WAPC. (Local Government)

(Appendix ORD: 12.2.2A Under E Separate Cover)



6. Street corners within the subdivision are to be truncated to the satisfaction of the local government. (Local Government)
7. The dual use path/cycleway as shown on the approved plan being constructed by the applicant/owner. (Local Government)
8. On-street car parking adjacent to the Public Open Space is to be designed and constructed to the satisfaction of the local government. (Local Government)
9. Street lighting is to be provided to the satisfaction of the local government. (Local Government)
10. The land is to be provided with an adequate outlet drainage system at the applicant/owner's cost. (Local Government)
11. The applicant/owner is to provide a geotechnical report certifying that the land is physically capable of development prior to the commencement of site works. (Local Government)
12. The land being filled and/or drained at the subdivider's cost to the satisfaction of the Western Australian Planning Commission and any easements and/or reserves necessary for the implementation thereof, being granted free of cost. (Local Government)
13. An Urban Water Management Plan being prepared to the satisfaction of the Department of Water and local government. (Department of Water)
14. The approved Urban Water Management Plan being implemented to the satisfaction of the Department of Water and local government. (Local Government)
15. The proposed reserve being 7744m² and lots 113-118 being removed from the plan and amalgamated into the balance of title (lot 9502). (Local Government)
16. The proposed reserve(s) being 1636m² in area shown on the approved plan of subdivision being shown on the Deposited Plan as a "Reserve for Drainage" and vested in the Crown under Section 152 of the *Planning and Development Act 2005*, such land to be ceded free of cost and without any payment of compensation by the Crown. (Local Government)
17. An area(s) of land at least 10% of the subject lot (Lot 9502), in a position to be agreed with the WAPC, being shown on the Deposited Plan as a "Reserve for Recreation" and vested in the Crown under Section 152 of the *Planning and Development Act 2005*, such land to be ceded free of cost and without any payment of compensation by the Crown. (Local Government)
18. A detailed plan demonstrating the location and capacity of fire emergency infrastructure, including hydrants, is to be prepared and implemented to the specifications of the Water Corporation and the Fire and Emergency Services Authority. (FESA)

(Appendix ORD: 12.2.2A Under E Separate Cover)



19. Pursuant to section 150 of the Planning and Development Act 2005 (as amended), a restrictive covenant preventing motor vehicle access onto Eaton Drive benefiting the local government being lodged on the Certificates of Title of the proposed Lot 50, at the full expense of the applicant. (Local Government)
20. The subdivider paying to the Shire of Dardanup, prior to the endorsement of final approval by the Commission, a proportion of the Shared Costs determined in accordance to the then current Schedule of Shared Costs maintained in accordance with Clause 18 of the Shire of Harvey and Shire of Dardanup Joint Town Planning Scheme No. 1 ('the Scheme'), the proportion being calculated as the net subdividable area of the subdivision divided by the applicable total net subdividable area specified in Schedules 3 or 4 of the Scheme and so that the amount so calculated does not have the effect of requiring payment of any shortfall claimed to relate to any earlier subdivision. (Local Government)
21. A Notification, pursuant to Section 165 of the Planning and Development Act 2005 is to be placed on the Certificates of Title of the proposed lot(s) advising of the existence of a hazard or other factor. Notice of this notification is to be included on the Deposited Plan. The notification to state as follows:

"This lot is in close proximity to known mosquito breeding areas. The predominant mosquito species is known to carry Ross River Virus and other diseases." (DoP Bunbury)
22. Measures being taken to the satisfaction of the Western Australian Planning Commission to ensure the identification and protection of any vegetation on the site worthy of retention prior to commencement of site works. (Local Government)

ADVICE

- i. Where the Water Corporation is the designated Utility Services Provider for the proposed subdivision relating to water, sewerage and/or drainage, the subdivider shall make satisfactory arrangements with the Corporation for the provision of the requisite services.
- ii. Where required, the subdivider shall provide service connections, make financial arrangements, set aside land, grant easements, apply notices or other requirements, to protect existing and proposed Corporation assets to the satisfaction of the Water Corporation.
- iii. Upon receipt of a request from the subdivider, a Land Development Agreement under Section 67 of the Water Agencies (Powers) Act 1984, will be prepared by the Water Corporation which will document specific requirements for the proposed subdivision.
- iv. With regard to Condition 3, Western Power provides only one point of electricity supply per freehold (green title) lot and requires that any existing overhead consumer service is required to be converted to underground.

(Appendix ORD: 12.2.2A Under E Separate Cover)



- v. If an existing aerial electricity cable servicing the land the subject of this approval crosses over a proposed lot boundary as denoted on the approved plan of subdivision, satisfactory arrangements will need to be made for the removal and relocation of that cable.
- vi. With regard to Condition 4, the specific location and area of land required is to be to the satisfaction of the WAPC on the advice of the Local Government and Western Power
- vii. All rubbish and vegetation cleared from or created on the land is to be disposed of by means other than burning, to avoid an offence under the Environmental Protection Act 1986.
- viii. Prior to the commencement of site works, construction drawings for such are to be submitted to the local government for approval.

A handwritten signature in black ink, appearing to read 'Neil Thomson'.

Neil Thomson
Acting Secretary
Western Australian Planning Commission
12 December 2011



DR

Figure 12
 Suite 5, 2 Hardy Street
 South Perth, WA 6151
 T (08) 9474 1722
 F (08) 9474 1172
 perth@grayandlewis.com.au

GRAY & LEWIS
 LAND USE PLANNERS

NOTE:
 Areas and dimensions subject to survey.

LEGEND
 [Symbol] SUBJECT LAND
 [Symbol] DENOTES DRAINAGE SWALE

0 50m
 SCALE 1:1000 @ A3

NOTE:
 1. The subject land is zoned R15. The average lot size excluding corner duplex sites and Group Housing Sites is 674m² (minimum lot size 574m²).
 2. Under clause 3.4.1 for the Shire of Dardanup TPS corner sites of 1000m² may be developed as duplex lots.

POS CALCULATIONS:
 Area of subdivision - 6,313ha (within red border) - Stage 1 area (1,054ha) - Total 9,38ha
 Area of POS at 10% - 0,938ha

PROPOSED SUBDIVISION PLAN
Peninsula Precinct - Parkridge Estate - Stage 2
LOTS 9501 & 9502
EATON

JOB REFERENCE: 10010 DATE: 14h-30PTDISEM2011
 THE DOCUMENT MAY ONLY BE USED FOR THE PURPOSES FOR WHICH IT WAS COMMISSIONED AND IN ACCORDANCE WITH THE TERMS OF ENGAGEMENT FOR THE COMMISSIONED WORK. UNAUTHORIZED USE OF THIS DOCUMENT IN ANY FORM WHATSOEVER IS PROHIBITED.

ATTACHMENT 20



Government of Western Australia
Department of Planning

Liveable neighbourhoods

You Are Here: [Home](#) > [The planning system](#) > [Liveable neighbourhoods](#)

[Liveable Neighbourhoods update page - January 2009](#) (34.34 KB)

[Liveable Neighbourhoods](#) (7673.01 KB)

[Residential Density and Housing Examples - Perth, WA](#) (3173.17 KB)

Liveable Neighbourhoods has been adopted by the WAPC as operational policy, and is to be followed in the design and approval of urban development. Liveable Neighbourhoods applies to structure planning and subdivision for greenfield sites and for the redevelopment of large brownfield and urban infill sites.

In general, Liveable Neighbourhoods replaces the current WAPC development control policies. Where there is conflict with existing policies, Liveable Neighbourhoods will prevail unless an applicant can demonstrate why the relevant Liveable Neighbourhoods policies cannot or should not apply.

Overlaps between development control policies and Liveable Neighbourhoods will be progressively removed through a mixture of incorporation into Liveable Neighbourhoods and rescission of redundant policies. Development control policies will of course be retained for those matters not covered by Liveable Neighbourhoods.

Liveable Neighbourhoods

Liveable Neighbourhoods Review

The Department of Planning has initiated the review of the Western Australian Planning Commission's (WAPC) Liveable Neighbourhoods ("LN") and related planning policies. Your input is sought to help identify issues to inform the review.

LN contains information on a wide range of land development matters not limited to planning. The wide range of matters addressed in LN are complex and technical in nature. Many LN issues are known and have been captured, others are yet to be documented.

A staged review of LN will be undertaken. The first stage commences with the identification

and capture of all broad LN review matters/issues. To help capture the issues, a table has been prepared which focuses upon:

What works? – aspects of LN that has performed well to date.

What can be improved? – areas that need to be improved to enhance performance.

What hasn't worked? – areas that have failed and need comprehensive review & re-work.

What's missing? – matters & issues which are currently not included in LN and should be.

Several key stakeholders have been requested to review the issues table and identify any broad review issues not listed. This exercise solely focuses on the identification and capture of all broad matters/issues to inform the LN review. Further consultation and input on specific detailed matters/issues will be sought from stakeholders in future LN review stages.

Once responses are received and reviewed, the table will be consolidated and finalised to form a final list of LN review matters/issues. The information gathered will assist to refine the scope and scale of the LN review, including resource allocation, staging and timing.

The final list of LN review matters/issues will then be used as a starting point to undertake the review of LN on a staged basis, generally aligned to the topics within existing LN 'elements'.

To ensure the wide range of complex, technical and competing matters and issues are appropriately managed and considered throughout the LN review, a technical advisory group will be established comprising members from state and local government, planning and development industry sectors.

LN Review Stakeholder Database

A stakeholder database will be established for communications purposes. Interested persons wishing to be placed on this database should email their name, address, email and telephone contact details to LNReview@planning.wa.gov.au

Further LN review progress updates and additional information will be posted on this page on the Planning WA Website.

This is a printer friendly version of the web page available at
<http://planning.wa.gov.au/650.asp>

APPENDIX 4

Engineering Servicing Report -
MPM Development Consultants

(Appendix ORD: 12.2.2A Under E Separate Cover)

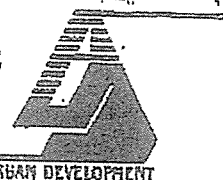
APPENDIX F | ORIGINAL SUPERLOT SUBDIVISION

AG 6 A

66

COMPONENTS
BE REFERRED TO
IN ORDER PLEASE QUOTE
THIS REF
CODE NO

RECEIVED 15 OCT 1993



DEPARTMENT OF
PLANNING AND URBAN DEVELOPMENT

91326

Martin K

13 October 1993

BSD Consultants Pty Ltd
P O Box 446
APPLECROSS WA 6153

15

TOWN PLANNING AND DEVELOPMENT ACT (AS AMENDED)

| | | |
|---------------|---|---|
| LOT | : | Crown Grant No.155 |
| LOCATION | : | Leschenault 19 |
| PLAN / DIA | : | - |
| VOL / FOL | : | - |
| LOCALITY | : | Eaton Drive |
| DATE OF PLAN | : | 08 October 1993 |
| OWNER | : | Penman Holdings Pty Ltd C/- Stanton & Partners Pier Street PERTH WA 6000 |
| DECISION DATE | : | 13 October 1993 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The South West Region Planning Committee acting for and on behalf of the Commission under delegated power has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the plan submitted provided that the conditions set out below are fulfilled within three years from the date of this advice.

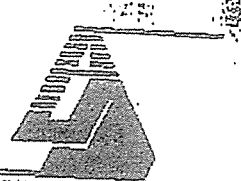
In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

CONDITION(S) :

1. ✓ The foreshore and recreation area shown on the subdivision plan, measuring 42.37 hectares, being shown on the Diagram or Plan of Survey as a 'Reserve for Recreation, Foreshore Management and Drainage' and vested in the Crown under Section 20A of the Town Planning and Development Act, 1928; such land to be ceded free of cost without any payment of compensation by the Crown.

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 01/11/2011 BY 60322 UCBAW

DEPARTMENT OF
PLANNING AND URBAN DEVELOPMENT



14

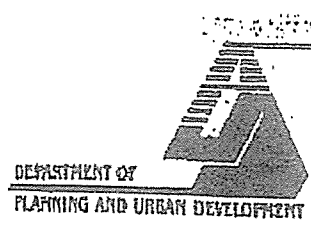
2. The central and northern portions of Lot 4 being set aside as a separate lot on a Diagram or Plan of Survey for future acquisition for the purpose of a Reserve for Recreation, Foreshore Management and Drainage.
3. The whole of the Foreshore Reserve being fenced with an appropriate stock proof fence to the specification and satisfaction of the Local Authority.
4. The subdivider making arrangements satisfactory to the Local Authority to ensure that potential purchasers of Lot 4 are advised that subdivision approval does not imply development approval and that the central and northern portions are:
 - reserved for recreation under the Local Authority Town Planning Scheme
 - located within the Collic River flood plain and are susceptible to inundation. (LA)
5. The subdivider making arrangements satisfactory to the Local Authority to ensure that potential purchasers of Lots 1, 2, 3 and 4 are advised of their obligation to provide a 10% Public Open Space contribution in accordance with the approved Structure Plan.
6. The subdivider making arrangements satisfactory to the Water Authority to ensure that the prospective purchasers in the transfer of the lot(s) acknowledge in writing that they are aware that the lots are located within the Bunbury Groundwater Area where there is a need to obtain a licence before a bore or well can be constructed. The licence will contain a number of conditions including the quantity of water that can be pumped each year. (WA)
7. Certification from the State Energy Commission that satisfactory arrangements have been made for the provision of easements for the two existing power lines traversing the property. (SECWA)

The applicant is advised that the Local Authority has advised that future subdivision of proposed Lots 1, 2, and 3 will require pro-rata contributions for the primary school sites in the locality, for the construction of the Collic River Bridge linking Eaton and Australind, and for the construction of Hands Avenue as the major arterial distributor road.

A96 83
C

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 01/11/01 BY 60322
UCB/ML

3



The applicant is further advised that the majority of Lot 5 is currently reserved for Recreation and that an approach should be made to the Local Authority as soon as possible to initiate a Scheme Amendment to rezone that area appropriately.

Yours faithfully

Carol Anderson

CAROL ANDERSON
SECRETARY
SOUTH WEST REGION PLANNING COMMITTEE

13

01230

(Appendix ORD: 12.2.2A Under E Separate Cover)

APR A 75

| | |
|-------------|------------------------------|
| CLIENT I.D. | 13 P01600 |
| DATE/TITLE | D11 200310 NEW COND APPROVAL |
| CLASSIFY | JOBLO |
| DATE REC'D | 5/4/12 |

Job No: 1426

64

56

SOUTH WEST REGION PLANNING COMMITTEE

AGENDA ITEM: C
 FILE NO.: 91326
 REPT OFFR: KEVIN MARTIN
 AUTH OFFR: KEVIN MARTIN *MB*

PROPOSED SUPER LOT SUBDIVISION
LESCHENAULT LOCATION 19, EATON

1.0 BACKGROUND

- 1.1 The subject land is located between the Collie River and the Australind By Pass Road, to the north of the existing Eaton residential area (see attached locality plan). Along with adjoining farm land it formed the basis of a Structure Plan and a rezoning recently endorsed by the Committee and approved by the Minister.
- 1.2 The Structure Plan set out road patterns, residential densities, school sites, commercial sites, open space layout and river foreshore reserves. The foreshore area was determined as being the whole of the land falling within the Collie River flood plain, including fringing vegetation, wetlands and salt marshes. It was indicated that the foreshore area would be required to be given up for reservation as a condition of subdivision.
- 1.3 The applicant has proposed to subdivide the land into four super lots to facilitate financing and subsequent development. This involved the creation of three large lots over the future urban area, a 30 metres wide foreshore reserve and a fourth lot being the remainder of the Collie River flood plain, which was set aside as a separate lot for future acquisition by a relevant Government authority.
- 1.4 The subdivision was approved under delegated authority subject to various conditions. One of the conditions required the whole of the foreshore reserve, as outlined on the Structure Plan to be given up free of cost. This was necessary at the super lot subdivision stage, otherwise it would not have been possible to have that foreshore reserve surrendered as it would not have been part of any of the lots subsequently being subdivided.
- 1.5 The proponent has appealed to the Minister, arguing that the requirement is grossly inequitable, given the large size of the proposed foreshore reserve in relation to the overall land area and the very limited nature of the superlot subdivision. The appellant also contended that some other conditions imposed were more relevant to the subsequent residential lot subdivision.

2.0 REPORT

- 2.1 After submitting an appeal against the conditions the appellant (proponent's consultant) arranged several discussions with Departmental officers. It was conceded by the Department that it was inequitable to require the full

SCANNED

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foreshore reserve to be ceded free of cost in this instance. This would have involved about 85ha out of a total land area of about 250ha. (ie approx 35%).

2.2 Of the two properties forming the Structure Plan area the eastern most lot has only relatively limited river frontage and a narrow flood plain. However the western lot has river frontage on two sides, plus a much wider flood plain, containing two large wetlands and a salt marsh.

2.3 The appellant also agreed that a mere 30 metres wide foreshore reserve was inadequate under the circumstances. Following discussions it was agreed that the thirty metres wide foreshore reserve, plus the two large wetlands/salt marshes, would be given up free of cost, and the remaining low lying cleared grazing area would be set aside as a separate lot for future acquisition. This would involve about 40ha being given up free of cost and about 45ha being for future purchase.

2.4 It was also agreed that the existing historic homestead on the knoll adjacent to the river would require rezoning from the current recreation reserve to residential, but the rezoning need not proceed the subdivision.

2.5 The conditions imposed on the original super lot subdivision are attached hereto. In discussions with the applicant it was agreed that:

- Condition 1 be deleted.
- Condition 2 be revised to refer to the lesser area.
- Condition 3 be deleted and replaced by a condition requiring fencing of the foreshore and two wetland areas.
- Condition 4 be deleted as it is more relevant to subsequent subdivision.
- Condition 5 be retained as is.
- Conditions 6 & 7 be deleted as they are more relevant to subsequent subdivision.
- Condition 8 be modified to refer only to the two existing power lines traversing the property.
- First footnote be retained.
- Second footnote be deleted and instead a condition be imposed requiring an undertaking for future purchasers to be advised of the obligation to provide a 10% POS contribution in accordance with the approved Structure Plan.
- Third footnote be deleted.

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- A further condition be added regarding the setting aside of the foreshore lot for future acquisition.
- 2.6 It was also considered that a condition should be added requiring the developer to give an undertaking to the Local Authority to advise any potential purchasers of the proposed foreshore lot:
- Of the current reservation of the land.
 - That the land is within a flood plain and is susceptible to inundation.
 - That subdivision approval does not imply development approval.
- 2.7 Given the circumstances attached to this subdivision an approval has been given to a fresh application in accordance with abovementioned changes in conditions. The appellant has now agreed to withdraw the appeal. It is requested that the Committee endorse that action. A copy of the approval notice, conditions and footnotes is attached hereto.
- 2.8 The whole issue of foreshore reserves along the Collie and Brunswick Rivers is to be the subject of a detailed site inspection and a joint meeting with the Shire of Dardanup and Harvey, prior to the Committee meeting.

RECOMMENDATION

The South West Region Planning Committee acting on behalf of the Commission under delegated power resolved to endorse the Departmental action of approving the modified super lot subdivision application subject to conditions which allow for portion of the proposed foreshore reserve to be set aside as a separate lot for future acquisition and which delete those conditions that are more appropriate to subsequent subdivision.

KEVIN MARTIN
A/MANAGER STRATEGIC PLANNING
SOUTH WEST BRANCH

October 11, 1993

RESOLVED & RECORDED
IN MINUTES OF THE SOUTH
WEST REGION PLANNING
COMMITTEE MEETING

21 OCT 1993

SCANNED

A41 A 45

ALL INFORMATION
IS TO BE KEPT
CONFIDENTIAL
UNLESS
OTHERWISE
STATED

89547

O'Keefe J

27 August 1993

BSD Consultants Pty Ltd
PO Box 446
APPLECROSS WA 6153

DEPARTMENT OF
PLANNING AND URBAN DEVELOPMENT

44

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

| | | |
|---------------|---|---|
| LOT | : | Crown Grant No. 155 |
| LOCATION | : | Leschenault 19 |
| PLAN / DIA | : | - |
| VOL / FOL | : | - |
| LOCALITY | : | Eaton Drive, Eaton |
| DATE OF PLAN | : | 05 April 1993 |
| OWNER | : | Penman Holdings Pty Ltd C/- Stanton & Partners Pier Street PERTH WA 6000 |
| DECISION DATE | : | 27 August 1993 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The South West Region Planning Committee acting for and on behalf of the Commission under delegated power has considered the application relating to the above described land and is prepared to approve a Diagram of Plan of Survey in accordance with the plan submitted provided that the conditions set out below are fulfilled within three years from the date of this advice.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

CONDITION(S) :

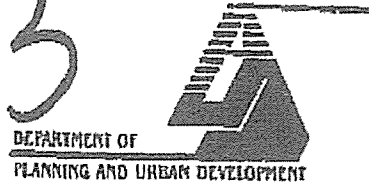
1. The boundary alignment of proposed Lot 4 being amended to include only the area identified as 'Recreation' in both the Eaton Structure Plan and Shire of Dardanup Town Planning Scheme No.3, Amendment No.47, with access to the reserve to be provided by means of a batleaxe access leg, to extend from Leake Street along the western lot boundary (LA)

ORIGINAL APPROVAL

(A91) B

ALL CORRESPONDENCE TO BE ADDRESSED TO CHIEF EXECUTIVE OFFICER
IN WRITING PLEASE ENCLOSE
FOUR REPLY SLIPS

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2. Proposed Lot 4 being shown on the Diagram or Plan of Survey as a "Reserve for Recreation, Foreshore Management and Drainage" and vested in the Crown under Section 20A of the Town Planning and Development Act, 1928; such land to be ceded free of cost without any payment of compensation by the Crown. (LAL/IMA)
3. The subdivider preparing a detailed management plan for proposed Lot 4, to the satisfaction of the Leschenault Inlet Management Authority and the Local Authority, fully at the cost of the developer. (LAL/IMA)
4. The subdivider preparing a comprehensive Drainage Plan for the entire Eaton Structure Plan area, to the specifications and satisfaction of the Local Authority. (LA)
5. The subdivider making arrangements satisfactory to the Water Authority to ensure that the prospective purchasers in the transfer of the lot(s) acknowledge in writing that they are aware that the lots are located within the Bunbury Ground Water Area where there is a need to obtain a licence before a bore or well can be constructed. The licence will contain a number of conditions including the quantity of water that can be pumped each year. (WA)
6. Such padmount sites as may be required by the State Energy Commission being transferred free of cost to the Commission, with the locations of the sites being to the satisfaction of the Local Authority. (SEC) (LA)
7. Certification from the State Energy Commission that financial and other requirements have been satisfied for the provision of a suitable electricity supply to the lot/s proposed by this application.
8. Certification from the State Energy Commission that satisfactory arrangements have been made for the provision of easements for State Energy Commission existing or future equipment.

The applicant is advised that the Local Authority has advised that future subdivision of proposed Lots 1, 2, and 3 will require pro-rata contributions for the primary school sites in the locality, for the construction of the Collier River Bridge linking Eaton and Australind, and for the construction of Hands Avenue as the major arterial distributor road.

Council and the applicant are advised that unless otherwise agreed to by the Commission, the first Diagram or Plan of Survey lodged for the Commission's endorsement shall include the Public Open Space required by

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13)

ALL CORRESPONDENCE
TO BE ADDRESSED TO
THIS OFFICE
IN WRITING PLEASE QUOTE
YOUR REF
OR FILE



89547
O'Keefe J

27 August 1993

BSD Consultants Pty Ltd
PO Box 446
APPLECROSS WA 6153

44

TOWN PLANNING AND DEVELOPMENT ACT, (AS AMENDED)

| | | |
|---------------|---|---|
| LOT | : | Crown Grant No. 155 |
| LOCATION | : | Leschenault 19 |
| PLAN / DIA | : | - |
| VOL / FOL | : | - |
| LOCALITY | : | Eaton Drive, Eaton |
| DATE OF PLAN | : | 05 April 1993 |
| OWNER | : | Penman Holdings Pty Ltd C/- Stanton & Partners Pier Street PERTH WA 6000 |
| DECISION DATE | : | 27 August 1993 |
| LGA | : | Shire of Dardanup |

Dear Sir/Madam

The South West Region Planning Committee acting for and on behalf of the Commission under delegated power has considered the application relating to the above described land and is prepared to approve a Diagram or Plan of Survey in accordance with the plan submitted provided that the conditions set out below are fulfilled within three years from the date of this advice.

In accordance with established procedures, all conditions must be complied with before submission of survey documents for endorsement. Surveyors should attach certificates clearing conditions to the survey documents when they are submitted.

CONDITION(S) :

1. The boundary alignment of proposed Lot 4 being amended to include only the area identified as 'Recreation' in both the Eaton Structure Plan and Shire of Dardanup Town Planning Scheme No.3, Amendment No.47, with access to the reserve to be provided by means of a batleaxe access leg, to extend from Leake Street along the western lot boundary (LA)

ORIGINAL APPROVAL

State Floor, Bunbury Tower, 61 Victoria St., Bunbury 6250 Western Australia Tel (097) 910 577 Fax (097) 910 576

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ALL INFORMATION
ON THIS DOCUMENT IS
CLASSIFIED
IN ACCORDANCE WITH
THE
CLASSIFICATION
AND CONTROL
REGULATIONS



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Condition 2 of this approval, identified as a Reserve for Recreation, and shall include the creation of other lots within the subdivision to ensure that the Public Open Space land is properly vested under Section 20A on transfer of those lots.

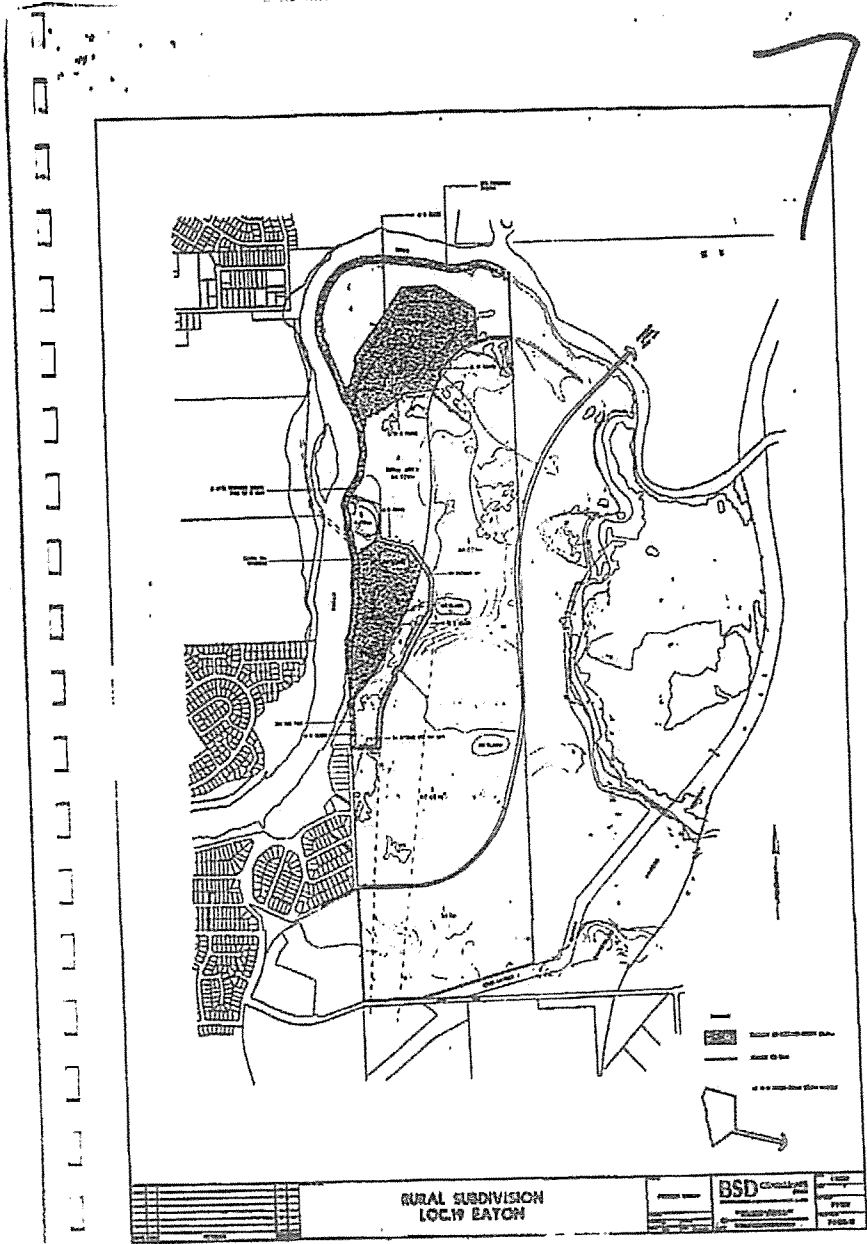
The applicant is further advised that the EPA and LIMA should be consulted regarding drainage requirements and wetlands management provisions, in the preparation of detailed management plans for proposed Lot 4.

Yours faithfully

CA
CAROL ANDERSON
SECRETARY
SOUTH WEST REGION PLANNING COMMITTEE

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81 9 368 1999

01 9 368 1999

04-11-93 10:04

04.11.93 09:14

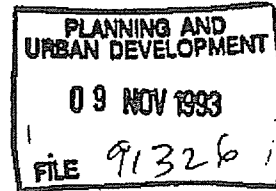
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UNDERTAKING

64

EATON DEVELOPMENTS PTY LTD
C/- Stanton Partners
Pier Street
PERTH W.A. 6000

The Shire Clerk,
Dardanup Shire Council,
Little Street,
DARDANUP WA 6236



WHEREAS:

EATON DEVELOPMENTS PTY LTD have made application for approval from the Department of Planning and Urban Development to subdivide Leschenault Location 19 and has obtained preliminary approval from the Department of Planning & Urban development subject to, inter alia, the execution of this Undertaking by Eaton Developments Pty Ltd.

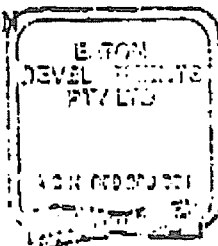
NOW THEREFORE EATON DEVELOPMENTS PTY LTD HEREBY UNDERATKES to the DARDANUP SHIRE COUNCIL as follows:-

- (a) to ensure that any potential purchaser of Lot 4 is aware that subdivision approval does not imply development approval and that the central and northern portions of Lot 4 are:
 - (i) reserved for recreation under the Local Authority Town Planning Scheme; and
 - (ii) located within the Collie River Flood Plain and are susceptible to inundation; and
- (b) to ensure that potential purchasers of Lots 1, 2, 3 and 4 are aware of the obligation to provide a 10% public open space contribution in accordance with the approved structure plan.

Any contract of sale of the properties in question from EATON DEVELOPMENTS PTY LTD will include acknowledgements from the purchasers of the matters contained within this undertaking.

DATED this *3rd* day of *November* 1993

THE COMMON SEAL OF EATON DEVELOPMENTS PTY LTD (ACN 009 200 891) was hereunto affixed by authority of the Directors in the presence of:



DIRECTOR: *[Signature]*
SECRETARY: *[Signature]*

01-11-93

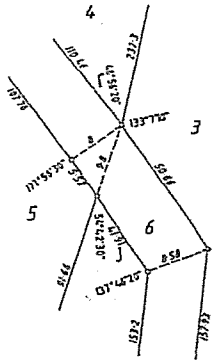
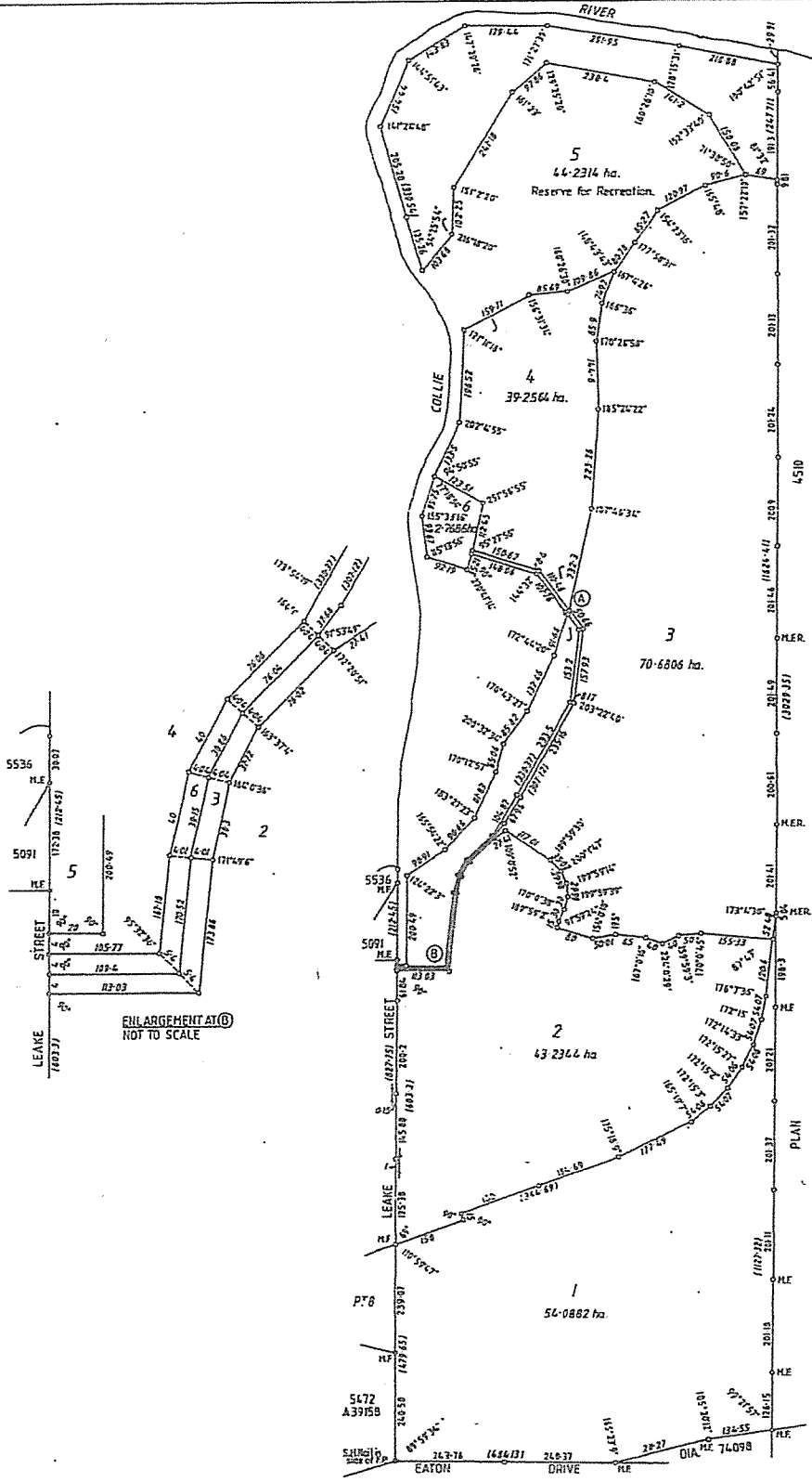
LAND DESCRIPTION (Appendix ORD: 12.2.2A Under E Separate Cover)

PT LESCHENAUT LOC. 19

| | | | |
|----------------------------------|-----------------------------------|------------------------|------------|
| PLAN | CERTIFICATE OF TITLE VOLUME FOLIO | FIELD BOOK 65082 65084 | TOTAL AREA |
| DIAGRAM . 85130 | | | |
| INDEX B6301210633,0634,0635,0636 | | | |
| PUBLIC | | | |

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COPY



ENLARGEMENT AT (A)
NOT TO SCALE

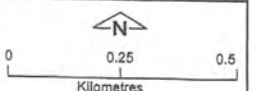
ENLARGEMENT AT (B)
NOT TO SCALE

LOT 5 (RESERVE FOR RECREATION) TO VEST IN CROWN UNDER SEC. 20A T.P. & D. ACT

JOHN BULLOCK & ASSOCIATES
CONSULTING LAND SURVEYORS
80 Thomas Street, West Perth
Phone: 321 3765 Fax: 321 3940

| | | | | | |
|---|--|---|--|--|--|
| <p>SURVEYOR'S CERTIFICATE</p> <p>K. M. DUFFY W. G. BRITAIN</p> <p>I, the said K. M. DUFFY, hereby certify that this plan of survey is a correct and accurate representation of the survey carried out by me personally / under my own personal supervision, inspection and field check, and recorded in field books lodged for the purposes of this plan of survey; the measurements are in strict accordance with the Licensed Surveyors (Guidance of Surveyors) Regulations 1951 and in particular regulations 23 and 34 of those regulations; and this survey and this plan of survey are in strict accordance with the requirements of the Licensed Surveyors (Guidance of Surveyors) Regulations 1951 and the relevant law in relation to which it is lodged.</p> <p>Licensed Surveyor <i>K. M. Duffy</i> Date 25-10-53</p> | | <p>APPROVED BY STATE PLANNING COMMISSION</p> <p>FILE 91326</p> <p>FOR CHAIRMAN</p> <p>DATE</p> | | <p>SCALE 1: 7500</p> <p>ALL DISTANCES ARE IN METRES</p> | |
| <p>I, the said W. G. BRITAIN, hereby certify that this plan is correct and was prepared under my supervision and is the result of calculations from measurements made by me personally / under my own personal supervision, inspection and field check as recorded in the field books lodged for the purposes of this plan; the measurements are in strict accordance with the Licensed Surveyors (Guidance of Surveyors) Regulations 1951 and in particular regulations 23 and 34 of those regulations; and this plan of survey conforms with the relevant law in relation to which it is lodged.</p> <p>Licensed Surveyor _____ Date _____</p> | | <p>LODGED</p> <p>DATE</p> <p>FEE PAID</p> <p>ASSESSMENT No.</p> | | <p>IN ORDER FOR DEALINGS</p> <p>SUBJECT TO</p> <p>FOR INSPECTION BY PLANNING SURVEYS DATE</p> <p>APPROVED DATE</p> <p>INSPECTOR OF PLANS & SURVEYS</p> | |
| | | <p>EXAMINED</p> <p>DOCKET</p> <p>PLAN/DIAGRAM</p> <p>CERTIFIED</p> <p>CORRECT</p> <p>F.S.C. No.</p> | | <p>DOLA Department of LAND ADMINISTRATION</p> <p>OFFICE OF TITLES PLAN</p> <p>19531</p> | |

- Legend**
- Local Government Area
 - Cadastre (View 1)
 - Road Names



1: 11,000
at A3

Projection:
WGS 1984 Web Mercator Auxiliary Spheroid

Notes:
The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. This information is stored in the relevant layers metadata. For these reasons the map should not be distributed outside of the Department.
Map was produced using DoP's PlanViewWA.

Produced by: FUNCTIONALITY TO COME
Date produced: 02-Jun-2017

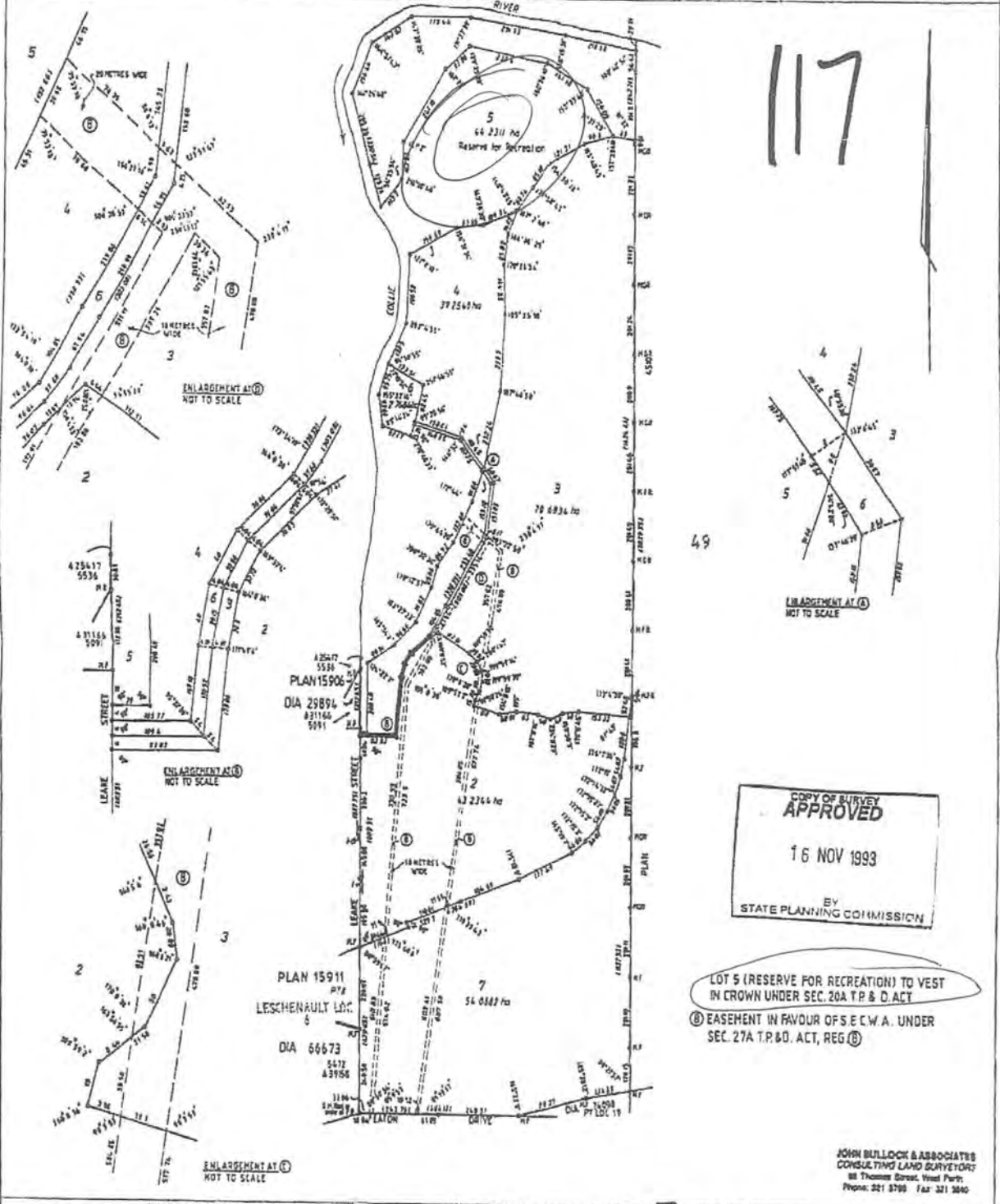


Location 19 - Reserves for Recreation

INTERNAL USE ONLY

PlanViewWA
Link to viewer

| LAND DESCRIPTION | ON | CERTIFICATE OF TITLE | FIELD BOOK | TOTAL AREA |
|------------------------------------|------------------------------------|----------------------|------------|-------------|
| LOT 1 OF WELLINGTON LOCATION 19 | PLAN | VOLUME | FOLIO | 254.2595 ha |
| | DIAGRAM 85138 | 1973 | 263 | |
| | INDEX 9020110613,0624,0635 0634 | | | |
| | PUBLIC | | | |



COPY OF SURVEY
APPROVED
16 NOV 1993
BY
STATE PLANNING COMMISSION

LOT 5 (RESERVE FOR RECREATION) TO VEST
IN CROWN UNDER SEC. 20A T.P. & D. ACT
EASEMENT IN FAVOUR OF S.E.C.W.A. UNDER
SEC. 27A T.P. & D. ACT, REG 2

JOHN BULLOCK & ASSOCIATES
CONSULTING LAND SURVEYORS
88 Thames Street, West Perth
Phone: 321 9790 Fax: 321 5840

| | | |
|--|--|--|
| <p>SURVEYOR'S CERTIFICATE</p> <p>K. N. DUFFY W. G. BRITTAIN</p> <p>REG 54 I hereby certify that the plan of survey is a correct and accurate representation of the survey carried out by me personally or under my personal supervision, inspection and field check, and reported in field books lodged for the purpose of the plan of survey.</p> <p>REG 54 O I certify that the plan of survey is a correct and accurate representation of the survey carried out by me personally or under my personal supervision, inspection and field check, as recorded in the field books lodged for the purpose of the plan of survey.</p> | <p>APPROVED BY</p> <p>FILE 91326</p> <p>FOR CUMULATIVE</p> <p>DATE 15 NOV 1993</p> <p>FILE 91326</p> | <p>SCALE 1:7500</p> <p>ALLOTTANCE IN METRES</p> <p>IN ORDER FOR DEALINGS</p> <p>DATE TO</p> |
| | <p>LODGED</p> <p>DATE 26 10 93</p> <p>ALL PAGES</p> <p>FILE 37147</p> | <p>EXAMINED & VALIDATED</p> <p>DATE 26 10 93</p> <p>FILE 91326</p> <p>APPROVED</p> <p>DATE</p> |

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX G | CORRESPONDENCE SEPT 2014

80

Thurston

Subject: FW: Parkridge Public Open Space Calculations

Sent from my iPad

On 11 Sep 2014, at 5:02 pm, "Brash, David" <David.Brash@planning.wa.gov.au> wrote:

Hi Liz and Thurston,

Thank you for sending through the two spreadsheets with the total reserve land included for the Parkridge Public Open Space Calculations. This much appreciated. It has helped me to understand the areas of agreement and disagreement. This will help with the process from this point forward.

The purpose of this email is to obtain agreement for the process moving forward so we can narrow down the scope of the issues in dispute and the matters to be addressed in reaching agreement on the POS obligations for WAPC 150241 Lot 9502 and Ptn of Lot 9002 Peninsula Lakes Drive, Eaton.

Firstly the Department agrees on the following:

1. The total 10% POS required the overall for subdivision of loc. 19 (the land) = **13.2513** ha – that is the total pos obligation for the Gross Subdivisible Area of the whole of the original land parcel Location 19 (the land) is **13.2513** ha.

I understand that this is not in dispute and it would be good if we could both agree on that before we progress further. If I could receive a response in the affirmative to this it would be appreciated.

2. The total area of the Gross Subdivisible Area ceded under subdivision approvals, issued for the subdivision of the land up to but not including subdivision application WAPC 141716, is **11.8879** ha.

Again I understand that this is not in dispute and it would be good if we could both agree on that before we progress further. If I could receive a response in the affirmative to this it would be appreciated.

In terms of the process, if we can agree I intend to send through to you tomorrow or Monday:

- A spreadsheet highlighting those parcels, ceded through the subdivision process to date, that the Department agrees with the subdivider on in terms of a 10% credit for public open space. We will call this spreadsheet A.

1

(Appendix ORD: 12.2.2A Under E Separate Cover)

289

- A spreadsheet highlighting those parcels ceded through the subdivision process to date that the Department does not agree with the subdivider in terms of a 10% credit for public open space and holds the position that these parcels would not qualify as pos and therefore should not contribute toward meeting the 13.2513 ha pos requirement. We will call this spreadsheet C.

I am hopeful that we can reach agreement on spreadsheet A and spreadsheet C and if we can then we can proceed together to reach agreement on the % of each of the agreed ceded parcels which can be attributable to the credit of the subdivider in meeting the 10 % pos obligation for the land. This will become spreadsheet B.

Before I send through the spreadsheet A and C can we agree on the two points above and the process for moving forward.

Looking forward to your feedback.

Kind Regards

David Brash | Senior Planning Officer | South West Statutory Planning | Regional Planning And Strategy
Department of Planning | 6th Floor, 61 Victoria Street | Bunbury WA 6000
T (08) 9791 0591 | F (08) 9791 0576
E David.Brash@planning.wa.gov.au | W www.planning.wa.gov.au

<image001.png>

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Thurston

Subject: FW: Parkridge Public Open Space Calculations

From: Thurston Saulsman [<mailto:tjs@bigpond.net.au>]
Sent: Friday, 12 September 2014 7:33 AM
To: Brash, David
Cc: Liz; Geoff Lewis (geoff@graylewis.com.au); Fraser, Neil
Subject: Re: Parkridge Public Open Space Calculations

Hi David,
Thank you for your email. It's a very constructive approach in, hopefully, resolving the POS issue.
However, before responding to your email would you mind clarifying item 2. We assume you mean public open space and not Gross Subdivisible Area. On your clarification we will rend accordingly.

Thank you
Regards
Thurston Saulsman

Sent from my iPad

COPY

3

Thurston

Subject: FW: Parkridge Public Open Space Calculations

From: Brash, David [<mailto:David.Brash@planning.wa.gov.au>]
Sent: Friday, September 12, 2014 8:38 AM
To: 'Thurston Saulsman'
Cc: 'Liz'; 'Geoff Lewis (geoff@graylewis.com.au)'; Fraser, Neil
Subject: RE: Parkridge Public Open Space Calculations

Hi Thurston,
Thanks for responding.
Point 2 is simply stating that the total land cede from the gross subdivisible area to date is 11.7988 ha. I didn't think that was in doubt. The question of how much of that 11.7988 ha is attributable to pos is what we are setting out to determine through the next stage of the process.

David Brash | Senior Planning Officer | South West Statutory Planning | Regional Planning And Strategy
Department of Planning | 6th Floor, 61 Victoria Street | Bunbury WA 6000
T (08) 9791 0591 | F (08) 9791 0576
E David.Brash@planning.wa.gov.au | W www.planning.wa.gov.au



COPY 4

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Thurston

Subject: FW: Parkridge Public Open Space Calculations

Expires: Thursday, 16 October 2014 12:00 AM

From: Thurston [<mailto:tjs@bigpond.net.au>]
Sent: Tuesday, September 16, 2014 1:19 PM
To: 'Brash, David'
Cc: Fraser, Neil; Geoff Lewis; THouweling@cornerstonelegal.com.au
Subject: RE: Parkridge Public Open Space Calculations

Hi David,

It appears to us that we might be moving more into argument rather than negotiations. We are of the view we are not qualified to comment on planning law. We may have a view in regards to what we believe are, or are not, statement of facts in **Parkridge Group Pty Ltd and WAPC [2011] WASAT 113**. However, we prefer to refer such matters to our consultants for advice and we believe the appropriate place for these arguments will be at SAT if, this is where this matter finds itself.

In saying that we take this opportunity to clarify our position.

- 1) In our current application for subdivision we are happy to provide all POS in keeping with good planning principles, and believe that we have.
- 2) POS provided over and above the agreed amount of public open space to be provided is not provided free of cost.
- 3) We have agreed with the Department that the total area of POS to be provided is 13.2513 hectares.
- 4) We are advised that the WAPC do not have legal authority to retrospectively review WAPC conditions of subdivision approvals.
- 5) We have provided an audit indicating how much POS has been ceded free of cost by Parkridge Group Pty Ltd and other owners of Parkridge Estate land previously known as location 19.

We remind the Department that POS is still to come from land in the Parkridge Estate which is not owned by Parkridge Group Pty Ltd. This land is yet to be subdivided. This land, to the best of our knowledge, is owned by Lucca Investments Pty Ltd. The POS requirement for this land is identified in the Shire of Dardanup audit of May 2002 conducted by the then Chief Planning Officer, Mr Mark Jones. A copy of this audit is available in the WAPC documents provided by the Commission in **Parkridge Group Pty Ltd and WAPC [2011] WASAT 113**. Our question is, will the Department or the Commission be requesting the owner of that land to also contribute to any shortfall of POS in Parkridge Estate if so determined by the Commission or the Department?

Notwithstanding our stated position comments and question, we are open and prepared to discuss a resolution to this matter. Should you wish to meet, we, unfortunately, are only available, Monday Tuesday and Wednesday of next week.

Kind Regards
Thurston

COPY (5)

(Appendix ORD: 12.2.2A Under E Separate Cover)

Thurston

Subject: FW: Parkridge Public Open Space Calculations

From: Brash, David [<mailto:David.Brash@planning.wa.gov.au>]
Sent: Friday, September 12, 2014 8:38 AM
To: 'Thurston Saulsman'
Cc: 'Liz'; 'Geoff Lewis (geoff@graylewis.com.au)'; Fraser, Neil
Subject: RE: Parkridge Public Open Space Calculations

Hi Thurston,

Thanks for responding.

Point 2 is simply stating that the total land cede from the gross subdivisible area to date is 11.7988 ha. I didn't think that was in doubt. The question of how much of that 11.7988 ha is attributable to pos is what we are setting out to determine through the next stage of the process.

David Brash | Senior Planning Officer | South West Statutory Planning | Regional Planning And Strategy
Department of Planning | 6th Floor, 61 Victoria Street | Bunbury WA 6000
T (08) 9791 0591 | F (08) 9791 0576
E David.Brash@planning.wa.gov.au | W www.planning.wa.gov.au



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4

Thurston

Subject: FW: Parkridge Public Open Space Calculations
Expires: Sunday, 12 October 2014 12:00 AM

From: Thurston [<mailto:tjs@bigpond.net.au>]
Sent: Friday, September 12, 2014 11:42 AM
To: 'Brash, David'
Cc: Geoff Lewis; Liz (Liz@graylewis.com.au); Fraser, Neil; THouweling@cornerstonelegal.com.au
Subject: RE: Parkridge Public Open Space Calculations

Hi David
Thank you for the clarification.

Firstly we agree with point one. That is ;

1. The total 10% POS required the overall for subdivision of loc. 19 (the land) = **13.2513 ha** – that is the total POS obligation for the Gross Subdivisible Area of the whole of the original land parcel Location 19 (the land) is **13.2513 ha**.

Unfortunately, we are unable to agree with your point 2 being;

1. The total area of the Gross Subdivisible Area ceded under subdivision approvals, issued for the subdivision of the land up to but not including subdivision application WAPC 141716, is **11.8879 ha**

We say this because we are assuming that the total area of POS being 11.8879 hectares that you refer to is from Scenario 2 of the POS Audit prepared by Geoff Lewis. If so, we take this opportunity to clarify that the audit provides two scenarios; Scenario 1 which is Parkridge Position and Scenario 2 which is the Department's position as understood by our planners. The audit does not state which scenario is correct.

In regards to Parkridge position we say that all subdivisions in location 19 have been subdivided, since 1993, by the relevant owners of the lots (not all lots being owned Parkridge) is in accordance with the Planning and Development Act 2005 and in accordance with all WAPC's conditions of subdivision.

Scenario 2 is the WAPC's position. We understand the WAPC's position however we are unable to make comment. The retrospective review of WAPC approved conditions by the WAPC is a position of law which we are unfamiliar with and we are not qualified to comment. However, in the spirit of cooperation and as discussed in your email, we look forward to the departments comments, finding common ground and hopefully an agreement to the POS issue.

Regards
Thurston

COPY

7

(Appendix ORD: 12.2.2A Under E Separate Cover)

Thurston

Subject: FW: Parkridge Public Open Space Calculations

From: Brash, David [<mailto:David.Brash@planning.wa.gov.au>]
Sent: Friday, September 12, 2014 1:25 PM
To: 'Thurston'
Cc: 'Geoff Lewis'; 'Liz'; Fraser, Neil; 'THouweling@cornerstonelegal.com.au'
Subject: RE: Parkridge Public Open Space Calculations

Hi Thurston,

With respect, the 11.8879 ha is drawn from The Tribunals assessment of fact at [22] and [23] of Parkridge Group Pty Ltd and WAPC [2011] WASAT 113 and not from any information provide by your consultant.

ould you respond to confirm your position on the 11.8879ha of ceded land please.

Regards

David Brash | Senior Planning Officer | South West Statutory Planning | Regional Planning And Strategy
Department of Planning | 6th Floor, 61 Victoria Street | Bunbury WA 6000
T (08) 9791 0591 | F (08) 9791 0576
E David.Brash@planning.wa.gov.au | W www.planning.wa.gov.au



COE

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Thurston

Subject: FW: Parkridge Public Open Space Calculations

Expires: Sunday, 12 October 2014 12:00 AM

From: Thurston [<mailto:tjs@bigpond.net.au>]

Sent: Friday, September 12, 2014 5:41 PM

To: 'Brash, David'

Subject: RE: Parkridge Public Open Space Calculations

Hi David,

So that it is perfectly clear and we totally understand what we may or may not be agreeing to can you please confirm that it is the WAPC 's position that all matters stated in [22] and [23] of Parkridge Group Pty Ltd and WAPC [2011] WASAT 113 are accepted by the WAPC as matters of fact.

Regards

Thurston

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(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX C | ENVIRONMENTAL ASSESSMENT

(Appendix ORD: 12.2.2A Under E Separate Cover)



ENVIRONMENTAL ASSESSMENT REPORT

LOT 9008 ROBUSTA ROAD, EATON

DECEMBER 2022

(Appendix ORD: 12.2.2A Under E Separate Cover)



Telephone +618 9755 7217
info@accendoaustralia.com.au
PO Box 5178 West Busselton WA 6280
ABN 11 160 028 642
www.accendoaustralia.com.au

Telephone +61 418 950 852
info@accendoaustralia.com.au
PO Box 5178 West Busselton WA 6280
ABN 11 160 028 642
www.accendoaustralia.com.au

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| V3 | 28/11/2022 | KMT | KS |
| Filename | 1818_Parkridge Estate EAR_v3 | | |

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EXECUTIVE SUMMARY

Parkridge Group Pty Ltd (the proponent) is proposing to subdivide and develop Lot 9008 Robusta Road, Eaton (herein referred to as the subject site). The subject site has a combined area of approximately 32 hectares (ha). It is located 2.5 km north of the Eaton town centre and 8 km east-north-east of Bunbury and is situated adjacent to the Collie River.

A Structure Plan (Harley Dykstra 2022) has been prepared for the subject site to enable urban development with residential cells ranging from R20-40 and R5, also incorporating areas of Regional Open Space.

This report provides a synthesis of a range of information regarding the environmental attributes and values of the subject site. Where environmental values have been identified, suitable management measures have been proposed. In consideration of these management measures, an assessment of the overall environmental impact of the proposed development has been provided.

The environmental attributes and values identified within the site have been outlined in **Section 4** and include:

- Surface elevations range from 10.50 m AHD in the south-eastern corner to 1.30 m AHD along the northern boundary within the Collie River floodplain.
- The subject site has been classified as having a 'moderate to low risk' of ASS occurring within three metres of the natural soil surface.
- The subject area sits within the Leschenault Estuary Catchment and as such is covered by the Leschenault Estuary WQIP.
- The majority of vegetation has been cleared as a result of the historical and current land use (livestock grazing).
- The subject site is mapped as containing a portion of a CC wetland. As identified within the *Wetland Buffer Determination* study (Bioscience 2012) for the subject site, this mapping appears to be incorrect as a site analysis revealed that the wetland function area associated with the CC wetland does not extend into the subject site. Furthermore, an examination of this specific area during the fauna assessment (Harewood 2018) revealed it to be comprised of only two native species (*Eucalyptus rudis* and *Melaleuca raphiophylla*) over introduced pasture grasses, which is not consistent with the definition of a CC wetland.
- As a result of the fauna assessment it was determined that the fauna habitat values at the subject site have been severely compromised by the removal of most of the original native vegetation and the degradation of the main remnant patches.
- There is no evidence of WRPs utilising vegetation with the subject site as habitat and overall, habitat quality in areas to be developed are low/very low.
- Some areas of vegetation represent black cockatoo habitat, but the degree of use appears to be low with no breeding or roosting activity detected and only a very limited amount of foraging habitat being present.
- There exist no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development.

In consideration of the abovementioned key environmental features, the following management measures have been proposed to minimise potential impacts associated with the subdivision of the subject site:

- Prepare and implement an ASS and Dewatering Management Plan if necessary.
- Implement the approved LWMS during subdivision works.

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Based on this assessment, Accendo considers that there are no fatal flaws or key environmental values that cannot be accommodated to enable development of the subject site for its intended purpose.

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1 INTRODUCTION

1.1 Background

Parkridge Group Pty Ltd (the proponent) is proposing to subdivide and develop Lot 9008 Robusta Road, Eaton (herein referred to as the subject site). The subject site has an area of approximately 32 hectares (ha). It is located 2.5 km north of the Eaton town centre and 8 km east-north-east of Bunbury and is situated adjacent to the Collie River (refer to **Figure 1** and **2**).

A Structure Plan (Harley Dykstra 2022) has been prepared for the subject site to enable urban development with residential cells ranging from R20-40 and R5, also incorporating areas of Regional Open Space.

This Environment Assessment Report has been prepared to support the proposed subdivision of the subject site. It investigates the existing environment and the opportunities and constraints associated with the development of the site, including recommended management measures to mitigate impacts.

The subject site presents a unique opportunity for residential development within the locality in consideration of its proximity to existing town centres and transport routes.

1.2 Purpose and Scope

This report provides a synthesis of a range of information regarding the environmental attributes and values of the subject site. Where environmental values have been identified, suitable management measures have been proposed. In consideration of these management measures, an assessment of the overall environmental impact of the proposed development has been provided.

In addition to the above, this Environmental Assessment Report also addresses a submission received from the Department of Biodiversity, Conservation and Attractions (DBCA) regarding the Structure Plan.

1.3 Associated Reports

Previous reports produced for the subject site (and adjacent landholdings) include:

- Structure Plan – Parkridge Estate (Calibre 2018a);
- Lot 9004 Eaton Drive, Eaton - Local Water Management Strategy (Calibre 2018b);
- Fauna and Habitat Assessment – Lot 9004 Eaton Drive, Eaton (Harewood 2018);
- Black Cockatoo Habitat Tree Review - Lot 9004 Eaton Drive, Eaton (Harewood 2022);
- Desktop Environmental Assessment Report – Stage 3 - Lot 9004 Peninsula Lakes Drive, Eaton (Accendo 2017);
- Environmental Impact Assessment, Lot 9502 Peninsula Lakes Drive, Eaton (Bioscience 2012).

2 STRUCTURE PLAN

2.1 Description

The Structure Plan has been developed to guide the subdivision and development of 32 ha of undeveloped land within the remaining portion of Parkridge Estate. The Structure Plan for the site is provided in **Appendix A**.

The Structure Plan provides for 1.01 ha of Regional Open Space (ROS) and landscaped common property at the rear of the strata lots.

2.2 Environmental Features of the Structure Plan

The subject site does not have a high level of ecological value. This can be attributed to the historical and current land use which has resulted in clearing of native vegetation for agricultural purposes, e.g. livestock farming.

From an environmental perspective the key influences of the Structure Plan are:

- The Conservation Category (CC) wetland and its associated buffer; and
- Water management.

3 LEGISLATION, POLICY AND GUIDELINES

The following legislation, policy and guidelines have been considered and will guide the required and expected management outcome from Federal, State and local government agencies.

3.1 Commonwealth Legislation

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation.

The EPBC Act aims to protect Matters of National Environmental Significance. Under the EPBC Act, the Commonwealth Department of the Environment and Energy (DotEE) lists Threatened species, Migratory species and Threatened Ecological Communities (TECs) in certain categories determined by criteria provided within the EPBC Act.

Under the EPBC Act, a significant impact is determined by the sensitivity, value and quality of the environment which is to be impacted and the intensity, duration, magnitude and geographic extent of the impacts (DEWHA 2008). If a proposed action is deemed to have a significant impact, this action should be referred to the Minister.

3.2 Western Australian Legislation

This desktop assessment has been undertaken in consideration of the relevant Western Australian state legislation which includes the following.

Biodiversity and Conservation Act 2016 (BC Act)

The Department of Biodiversity, Conservation and Attractions (DBCA) lists flora and fauna taxa under the provisions of the BC Act as protected according to their need for protection. Flora is given Declared Rare status when their populations are geographically restricted or are threatened by local processes. In addition, under the BC Act, by Notice in the Western Australian Government Gazette of 9 October 1987, all native flora and fauna is protected throughout the State.

Environmental Protection Act 1986 (EP Act)

This EP Act is administered by the Department of Water and Environmental Regulation (DWER) and the DBCA. The EP Act provides for conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with it. The Act establishes head powers to provide mechanisms for the development of Environmental Protection Policies (EPP), the referral and assessment of proposals (Environmental Impact Assessment), the control of pollution and enforcement. The Act also provides for an Environmental Protection Authority (EPA) that is a statutory authority and is the primary provider of independent environmental advice to Government. The EPA is assisted by the EPA Service Unit comprising the Environmental Impact Assessment and Policy Divisions of the DWER.

3.3 State Policy and Guidelines

Shire of Dardanup Biodiversity Policy

The objective of the *Biodiversity Policy* is to preserve significant areas of remnant vegetation, significant wetlands and waterways as well as key biodiversity corridors for future generations.

For the Eaton locality, the following is stated:

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- Ensure buffers for ROS in new residential areas are based on ecological requirements of vegetation complexes and separation of wetlands from proposed residences (mosquito management zones). These should be achieved through the structure planning process.
- Ensure existing ROS is reserved for recreation and conservation where there are natural areas.
- Maximize protection of tree stands and understorey in POS, local schools and wider road reserves and road islands.
- Consider providing proponents with incentives to change road layouts to accommodate tree and understorey retention – e.g. Increased densities adjacent to protected natural areas.

Shire of Dardanup Town Planning Scheme No. 3

The general objectives of this Scheme as related to this report include:

- To zone the Scheme Area for the purposes in the Scheme described;
- To secure the amenity, health and convenience of the Scheme Area and the inhabitants;
- To make provisions as to the nature and location of buildings and the size of lots when used for certain purposes;
- The preservation of places of natural beauty, of historic buildings and objects of historical and scientific interest; and
- To make provision for other matters necessary or incidental to town planning and housing.

In relation to this report the Scheme provides for the zoning of 'Local Reserves' which restricts the use of and development on land zoned as a local reserve.

Wetland Management

The EPA administers the *Environmental Protection of Wetlands – Position Statement No. 4 (2004)* to outline their principles for the protection of wetlands. The EPA's broad objectives are:

- To protect the environmental values and functions of wetlands in Western Australia.
- To protect, sustain and, where possible, restore the biological diversity of wetland habitats in Western Australia.
- To protect the environmental quality of the wetland ecosystems of Western Australia through sound management in accordance with the concept of 'wise use', as described in the Ramsar Convention, and ecologically sustainable development principles.
- To have as an aspirational goal, no net loss of wetland values and functions.

The identification and delineation of a wetland is described within the *Protocol for Proposing Modifications to the Geomorphic Wetlands Swan Coastal Plain Dataset (DPaW 2007)*, whereby three key factors are considered:

- Hydrology – is dynamic and varies annually, seasonally and between wetlands. Long term groundwater data over differing seasons is required to accurately assess wetland hydrology.
- Hydric Soils – are soils formed in response to prevailing inundation or waterlogging, and are a long term wetland determining characteristic.
- Wetland Vegetation – reflects hydrology and hydric soils, in particular, obligate wetland species are considered reliable wetland indicators.

4 BIOPHYSICAL ENVIRONMENT

4.1 Land Use

Historically, the subject site has been used for broad acre agriculture. Accordingly, the subject site is largely devoid of remnant vegetation and consists of paddock grasses. There is a small area on the central western boundary of the site consisting of a stand of trees and a strip of vegetation which runs along the bank of the Collie River and joins into the densely vegetated area to the northwest of the subject site. Currently, the subject site is used for livestock grazing.

4.2 Topography, Soils and Geology

4.2.1 Topography

The subject site is comprised of undulating sand dunes and swampy low-lying areas that are consistent with the geomorphology of the Collie River. Surface elevations range from 10.50 m Australian Height Datum (AHD) in the south-eastern corner to 1.30 m AHD along the northern boundary within the Collie River floodplain.

4.2.2 Geology

The Bunbury-Burekup Sheet of the 1:50,000 Urban Geology Series maps published by the Geological Survey of Western Australia indicates that the subject site comprises two geological units. The Pleistocene Age Bassendean Sand (low rounded dunes) is mapped within the south-east corner of the subject site, while the remainder is underlain by Pleistocene Age Guildford Formation (primarily alluvial sandy clay).

4.2.3 Acid Sulfate Soils

Based on DWER's regional ASS risk mapping, the site has been identified as having a "moderate to low" risk of ASS occurring within 3 m of the natural soil surface (refer to **Figure 3**).

Golder Associates carried out a geotechnical and preliminary ASS investigation across the subject site in 2005. Based upon the results of this investigation it was concluded that the risk of encountering ASS above the action criteria (SCR 0.03%) is high within 3 m of the existing surface.

4.3 Groundwater

Groundwater was also found in 27 of the 35 test pits as part of the geotechnical investigation (Golder Associates, 2005). Groundwater depth ranged between 0.3 and 2.0 m below natural surface (BNS).

In addition, to determine the likely seasonal maximum groundwater levels across the subject site, onsite groundwater level monitoring was undertaken by Calibre between May 2009 and October 2010. The investigation included the installation of 23 monitoring bores across the site, to a depth of approximately 2.1m BNS. Results indicated that groundwater levels generally fall towards the low lying areas of the Collie River floodplain, from east to west with depth to groundwater ranging from above surface to 5.6 m BNS.

4.4 Surface Water

The Collie River is located approximately 330 m west of the subject site. The Collie River discharges south into the Leschenault Estuary and ultimately into the Indian Ocean. The subject site sits within the Leschenault Estuary Catchment and as such is covered by the Leschenault Estuary Water Quality Improvement Plan (WQIP). The Estuary and its tributaries are also a Management Area proclaimed under the *Waterways Conservation Act 1976* and a catchment included in the state government's Regional

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Estuary initiative. The subject site discharges west towards the Collie River and ultimately the Leschenault Estuary (Calibre 2018b).

The subject site contains two manmade permanent freshwater dams which provide a water source for grazing stock.

4.5 Wetlands

Wetlands within Western Australia are classified on the basis of landform and water permanence pursuant to the Semeniuk (1995) classification system (refer to **Table 1**).

Table 1. Wetland classifications (Semeniuk 1995).

| Water Longevity | Landform | | | | |
|-------------------------|----------|---------|------------|-----------|-----------|
| | Basin | Channel | Flat | Slope | Highland |
| Permanent Inundation | Lake | River | - | - | - |
| Seasonal Inundation | Sumpland | Creek | Floodplain | - | - |
| Intermittent Inundation | Playa | Wadi | Barlkarra | - | - |
| Seasonal Waterlogging | Dampland | Trough | Palusplain | Paluslope | Palusmont |

Areas of wetlands have been mapped previously by Semeniuk (1995) across the entire Swan Coastal Plain. This mapping has been converted into a digital dataset that is maintained by the DBCA and is referred to as the '*Geomorphic Wetland of the Swan Coastal Plain*' dataset. This dataset contains information on geomorphic wetland types and assigns management categories that guide the recommended management approach for each wetland area. The wetland management categories and management objectives are listed in **Table 2**.

Table 2. DBCA wetland management categories (Semeniuk 1995).

| Category | Description | Management Objectives |
|----------------------|---|--|
| Conservation | Wetlands support a high level of ecological attributes and functions. | Highest priority wetlands. Objective is to preserve and protect the existing conservation values of the wetlands through various mechanisms including: <ul style="list-style-type: none"> • Reservation in national parks, crown reserves and State owned land, • Protection under Environmental Protection Policies, and • Wetland covenanting by landowners. No development or clearing is considered appropriate. These are the most valuable wetlands and any activity that may lead to further loss or degradation is inappropriate. |
| Resource Enhancement | Wetlands which may have been partially modified but still support substantial ecological attributes and functions | Priority wetlands. Ultimate objective is to manage, restore and protect towards improving their conservation value. These wetlands have the potential to be restored to Conservation category. This can be achieved by restoring wetland function, structure and biodiversity. |
| Multiple Use | Wetlands with few remaining attributes and functions | Use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare. |

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The *Geomorphic Wetlands of the Swan Coastal Plain* dataset indicates that the majority of the subject site is mapped as a Multiple Use (MU) wetland. A CC wetland is mapped as marginally intersecting the north-western extent of the subject site (refer to **Figure 4**). However, a *Wetland Buffer Determination* study (Bioscience 2012) undertaken within the subject site determined that the CC wetland mapping is incorrect, as the function area associated with this wetland does not extend into the subject site. Notwithstanding, the area mapped as a CC wetland will be reserved as ROS and will be preserved for conservation purposes.

4.6 Vegetation and Flora

The balance of the subject site is completely cleared of native vegetation, with just a small number of scattered trees of various types. The small areas of remnant native vegetation are predominately comprised of a flooded gum/paperbark woodland in the north, and a grove of peppermint low woodland on higher ground in the south east of the subject site. All the vegetation present can be regarded as being in a 'Degraded' or 'Completely Degraded' condition.

4.6.1 Flora

A search on DBCA's *NatureMap* online indicated that one Declared Rare Flora (DRF) (*Diuris drummondii*) and two Priority Flora (PF) (*Lasiopetalum membranaceum* (Priority 3) and *Caladenia speciosa* (Priority 4)) exist within 2 km radius of the of the subject site. Previous site inspections have not resulted in the identification of any conservation significant flora (Bioscience 2012). Furthermore, given the highly disturbed nature of the subject site and the current land use (livestock grazing), the presence of flora of conservation significance is considered very unlikely.

4.6.2 Vegetation

Regional vegetation has been mapped by Heddle *et al.* (1980) at a scale of 1:250,000 based on major geomorphic units on the Swan Coastal Plain. The subject site traverses the Swan vegetation complex as defined by Heddle *et al.* (1980) which can be described as:

- Fringing woodland of *Eucalyptus rudis* – *Melaleuca raphiophylla* with localised occurrence of low open forest of *Casuarina obesa* and *Melaleuca cuticularis*.

The mapped Heddle *et al.* (1980) vegetation complex can be used to determine vegetation extent and status on the Swan Coastal Plain. The DBCA records show that approximately 13% of the pre- European extent remains across the Swan Coastal Plain. 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. However, the subject site is located within the 'constrained area' of the Perth Metropolitan Region (EPA 2006). Within this area the EPA (2006) provides for the reduction of vegetation complexes to a minimum of 10% of their pre – European extent remaining. The Swan vegetation complex has in excess of 10% of its pre-European extent remaining.

In addition, given that the vegetation structure and species diversity associated with Swan complex is largely absent, the vegetation within the subject site is not representative of this vegetation complex.

In consideration of the above, the vegetation within the subject site is not considered significant as a remnant.

Threatened Ecological Communities

Threatened Ecological Communities (TECs) are defined by the DBCA and are assigned to a category of Priority 1 to Priority 5. While they are not afforded direct statutory protection at a State level their

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significance is acknowledged through other State environmental approval processes (i.e. the Environmental Impact Assessment pursuant to Part IV of the EP Act).

Selected TECs are also afforded statutory protection at a Federal level pursuant to the EPBC Act. The EPBC Act provides for the protection of TECs that are listed under section 181 of the Act, and are defined as “Critically Endangered”, “Endangered” or “Vulnerable”.

A search was undertaken of the DBCA’s TEC database and the EPBC Act Protected Matters database and it was found that the *Banksia Woodlands of the Swan Coastal Plain ecological community*, listed under the EPBC Act as a TEC in the ‘Endangered’ category is ‘likely to occur within the area’. The Banksia Woodlands of the Swan Coastal Plain ecological community is a woodland associated with the Swan Coastal Plain of south western, Western Australia. A key diagnostic feature of this TEC is a prominent tree layer of Banksia, with scattered eucalypts and other tree species often present among or emerging above the Banksia canopy. The understorey is a species rich mix of sclerophyllous shrubs, graminoids and forbs (Threatened Species Scientific Committee 2016). Although the ecological community is characterised by high endemism and considerable localised variation in species composition across its range, the absence of Banksia species and lack of vegetation structure, denotes that the TEC does not occur within the subject site.

4.6.3 Regional Ecological Linkages

Ecological linkages can be described as any area of remaining remnant vegetation that can provide a corridor or linkage between larger patches of vegetation, to allow movement of flora, fauna and their genetic material through the landscape.

A Strategy was developed for the EPA to identify regionally significant natural areas in its consideration of the Greater Bunbury Region Scheme. These areas were identified using the reports and studies listed below:

- System reports – System 1 and System 6 (DEC 1976 - 1983);
- Areas of threatened and poorly reserved plant communities: EPA (1994, derived from Gibson *et al.* 1994);
- Areas of threatened ecological communities: as defined by English and Blyth (1997); and
- The Kemerton Buffer Link (EPA 1999).

This resulted in the identification of 16 ecological linkages which are recognised in the Greater Bunbury Region Scheme. The subject site is not located within an ecological linkage which can be attributed to the lack of remnant vegetation.

4.6.4 Environmentally Sensitive Areas

Section 51B of the EP Act allows the Minister to declare an Environmentally Sensitive Area (ESA). Once declared, the exemptions to clear native vegetation under the regulations do not apply in these areas. TECs, areas within 50 m of any Declared Rare Flora and defined wetland areas constitute ESAs. However, a number of other areas of environmental significance are also listed. Current declared ESAs are listed in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*.

An ESA marginally intersects the north-western extent of the subject site, which is associated with the CC wetland (refer to **Figure 4**). Under the Structure Plan this area is reserved as ROS and will be preserved for conservation purposes.

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4.7 Fauna

4.7.1 Fauna of Conservation Significance

A search of the DBCA Threatened Fauna database was undertaken to establish whether species declared as 'Rare or likely to become extinct' (Schedule 1), 'Birds protected under an international agreement' (Schedule 3) and 'Other Specially protected fauna' (Schedule 4) as listed under the WC Act have been recorded in proximity to the subject site. One species each listed as Schedule one, Priority one and Priority four were recorded within a 1km radius of the subject site. (refer to **Table 3**).

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 three species classified as Critically Endangered, ten Endangered species, 18 Vulnerable species and 11 Migratory bird species (**Table 3**).

Table 3. Significant fauna potentially occurring within the subject site as identified by State and Commonwealth database searches.

| Species | DPaw Status | EPBC Act Status | Likelihood of Occurrence |
|---|-------------|-----------------------|--------------------------|
| <i>Actitis hypoleucos</i> (Common Sandpiper) | | Migratory | Unlikely |
| <i>Anous stolidus</i> (Common Noddy) | | Migratory | Unlikely |
| <i>Anous tenuirostris metanops</i> (Australian Lesser Noddy) | | Vulnerable | Unlikely |
| <i>Apus pacificus</i> (Fork-tailed Swift) | | Migratory | Unlikely |
| <i>Ardenna carneipes</i> (Flesh-footed Shearwater) | | Migratory | Unlikely |
| <i>Botaurus poiciloptilus</i> (Australasian Bittern) | | Endangered | Unlikely |
| <i>Calidris acuminata</i> (Sharp-tailed Sandpiper) | | Migratory | Unlikely |
| <i>Calidris ferruginea</i> (Curlew Sandpiper) | | Critically Endangered | Unlikely |
| <i>Calidris melanotos</i> (Pectoral Sandpiper) | | Migratory | Unlikely |
| <i>Calyptorhynchus banksii subsp. naso</i> (Forest Red-tailed Black-Cockatoo) | | Vulnerable | Possible |
| <i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo) | | Endangered | Possible |
| <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo) | | Endangered | Possible |
| <i>Caretta caretta</i> (Loggerhead Turtle) | | Endangered | Unlikely |
| <i>Chelonia mydas</i> (Green Turtle) | | Vulnerable | Unlikely |
| <i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll) | | Vulnerable | Unlikely |
| <i>Dermochelys coriacea</i> (Leatherback Turtle) | | Endangered | Unlikely |
| <i>Diomedea amsterdamensis</i> (Amsterdam Albatross) | | Endangered | Unlikely |
| <i>Diomedea dabbenena</i> (Tristan Albatross) | | Endangered | Unlikely |
| <i>Diomedea epomophora</i> (Southern Royal Albatross) | | Vulnerable | Unlikely |
| <i>Diomedea exulans</i> (Wandering Albatross) | | Vulnerable | Unlikely |
| <i>Diomedea sanfordi</i> (Northern Royal Albatross) | | Endangered | Unlikely |
| <i>Geotria australis</i> (Pouched Lampray) | P1 | | Unlikely |
| <i>Hydromys chrysogaster</i> (Water-rat) | P4 | | Unlikely |

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| Species | DPaw Status | EPBC Act Status | Likelihood of Occurrence |
|---|-------------|-----------------------|--------------------------|
| <i>Macronectes giganteus</i> (Southern Giant-Petrel) | | Endangered | Unlikely |
| <i>Macronectes halli</i> (Northern Giant Petrel) | | Vulnerable | Unlikely |
| <i>Manta alfredi</i> (Reef Manta Ray) | | Migratory | Unlikely |
| <i>Manta birostris</i> (Manta Ray) | | Migratory | Unlikely |
| <i>Motacilla cinera</i> (Grey Wagtail) | | Migratory | Unlikely |
| <i>Nannatherina balstoni</i> (Baltson's Pygmy Perch) | | Vulnerable | Unlikely |
| <i>Natator depressus</i> (Flatback Turtle) | | Vulnerable | Unlikely |
| <i>Neophoca cinera</i> (Australian Sea-Lion) | | Vulnerable | Unlikely |
| <i>Numenius madagascariensis</i> (Eastern Curlew) | | Critically Endangered | Unlikely |
| <i>Pachyptila turtur subantarctica</i> (Fairy Prion (southern)) | | Vulnerable | Unlikely |
| <i>Pandion haliaetus i</i> | | Migratory | Unlikely |
| <i>Pseudocheirus occidentalis</i> (Western Ringtail Possum) | S1 | Critically Endangered | Possible |
| <i>Thalassarche cauta</i> (Tasmanian Shy Albatross) | | Vulnerable | Unlikely |
| <i>Thalassarche cauta cauta</i> (Shy Albatross) | | Vulnerable | Unlikely |
| <i>Thalassarche cauta steadi</i> (White-capped Albatross) | | Vulnerable | Unlikely |
| <i>Thalassarche impavida</i> (Campbell Albatross) | | Vulnerable | Unlikely |
| <i>Thalassarche melanophris</i> (Black-browed Albatross) | | Vulnerable | Unlikely |
| <i>Thalassarche steadi</i> (White-capped Albatross) | | Vulnerable | Unlikely |
| <i>Tringa nebularia</i> (Common Greenshank) | | Migratory | Unlikely |
| <i>Westralunio carteri</i> (Carter's Freshwater Mussel) | | Vulnerable | Unlikely |

In order to determine the ecological values of the subject site, Harewood undertook a targeted fauna and habitat assessment in September 2018 (refer to **Appendix B**).

Wetland Habitat

Of the abovementioned conservation significant species (excluding black cockatoos and Western Ringtail Possums), many have preferred habitat types associated with the Collie River and foreshore area. Accordingly, a Fauna Habitat Assessment (Harewood 2018) was undertaken to determine the quality and composition of wetland habitat within the subject site.

An examination of the CC wetland area mapped within the subject site revealed it to be comprised of a section of the open/low woodland of flooded gum (*Eucalyptus rudis*), paperbark (*Melaleuca raphiophylla*) and grassland habitat unit which is 'Completely Degraded' and unlikely to fulfil the criteria of a CC wetland.

The vegetation present is comprised of only two native species (*Eucalyptus rudis* and *Melaleuca raphiophylla*) over introduced pasture grasses. The area is currently open to livestock grazing and there is unlikely to be any recruitment of new trees and it can therefore be expected that its quality will further deteriorate over time. The fauna habitat values of the mapped wetland area within the subject site can be considered to be very low. The subject site is not expected to support any wetland species of conservation significance (Harewood 2018).

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Black Cockatoos

The black cockatoo (including Baudin's black cockatoo *Calyptorhynchus baudinii*, Carnaby's black cockatoo *Calyptorhynchus latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso*) breeding habitat assessment involved the identification of all suitable breeding tree species, including marri, jarrah, flooded gum and any other endemic *Corymbia*/*Eucalyptus* species within the subject site, that had a diameter at breast height (DBH) of equal to or over 50 cm (Harewood 2018). The number and size of any hollows present and their suitability for black cockatoos was then recorded. Peppermints, banksia, sheoak and melaleuca tree species were not assessed as they typically do not develop hollows that are used by black cockatoos.

The assessment identified 112 trees within the subject site with a DBH of equal to or over 50 cm. Hollows or possible hollows of some type were identified in 21 of these trees. An updated black cockatoo habitat tree review (Harewood 2022) was undertaken whereby only 13 trees with hollows were identified. Utilising a drone, these hollows were viewed to determine their characteristics. None of the hollows within these trees were considered suitable for black cockatoo breeding purposes given their size and shape (Harewood 2022).

Trees that are known to be or are potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more of the species of black cockatoo were recorded within the subject site and include the following:

- Flooded Gum – *Eucalyptus rudis*;
- Marri – *Corymbia calophylla*;
- Jarrah – *Eucalyptus marginata*; and
- Peppermint - *Agonis flexuosa*.

Species such as flooded gum and peppermint while foraged upon on occasions are only likely to contribute a small proportion to any one bird's diet relative to more favoured species such as marri and therefore areas of these species are not generally regarded as representing quality foraging habitat. The only actual evidence of foraging left by black cockatoos was in the form of chewed marri fruits in the central section of the subject site. This evidence was attributed to either the Forest red-tailed black cockatoo or the Baudin's cockatoo. The extent of what would be regarded as quality black cockatoo foraging habitat within the subject site is very small, being comprised of approximately 0.2 ha of marri forest supported to a small degree by a limited number of scattered marri and jarrah trees. Therefore, black cockatoo species are very unlikely to rely on the subject site for its persistence and development within this area is not likely to be considered significant (Harewood 2018).

No evidence of black cockatoos roosting within trees located inside the subject site was observed during the fauna assessment (Harewood 2018).

Western Ringtail Possum (WRP) Assessment

During the fauna assessment, no evidence of WRP being present or utilising the subject site was found during the day or night surveys (Harewood 2018).

The vegetation in the northern portion of the subject site has been mapped by Shedley *et. al.* 2014, as being High Quality habitat suitability (Category Class B) for WRP. However, the low plant species diversity and lack of favoured foraging species present would indicate that the area provides very low quality habitat for WRPs, at best. While WRPs may occur occasionally as transients they would not permanently reside in this vegetation type (Harewood 2018).

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The area of remnant vegetation consisting of low woodlands of peppermint adjacent to a small area of marri forest in the centre of the subject site has been mapped as being Medium and High Quality WRP habitat, respectively.

However, the value of this area as WRP habitat is greatly diminished by its small size and isolated nature, with the closest other continuous vegetation being over 300 m away. The absence of WRP observations in these areas during the fauna assessment suggests that the species cannot persist in this remnant or that they have not been able to populate it from other areas due to the distance of separation (Harewood 2018).

5 POTENTIAL IMPACTS AND MANAGEMENT

During the process of undertaking this investigation, a range of specific environmental issues were explored in relation to the subject site and the proposed development. These issues arise from the proposed development, the existing environment of the subject site, its surrounds and the prevailing state and federal environment policy and legislation. The implications associated with the issues in the context of the intended development of the subject site are discussed in this Section.

5.1 Acid Sulfate Soils

The ASS objectives as prescribed by the EPA are to:

- Maintain the integrity, ecological function and environmental values of the soil and landform.
- Ensure that emissions do not adversely affect environmental values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards.
- Ensure that rehabilitation achieves an acceptable standard compatible with the intended land use, and consistent with appropriate criteria.

The DWER has published a number of guidelines relating to the identification, reporting and management of contaminated sites and ASS in WA, including the Contaminated Site Management Series report and *Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes* (DWER 2015).

5.1.1 Potential Impacts

According to existing DWER mapping, the risk of ASS occurring within 3 m of the surface is moderate to low.

In an undisturbed state below the water table, these soils remain benign and non-acidic. However, if these soils are exposed to the atmosphere through drainage, excavation or dewatering, the sulfides may react with oxygen and form sulfuric acid.

While identification of possible ASS hotspots is important, the occurrence of ASS is rarely a 'fatal flaw' issue and in most circumstances can be appropriately addressed at the subdivision/development stages through design or management mechanisms. As a result, if required, detailed ASS investigations would not be necessary until detailed engineering design drawings have been prepared for the subject site.

5.1.2 Environmental Management and Mitigation

It is expected that any deep excavations within the subject site requiring dewatering, such as installing deep sewerage, may trigger the need for a detailed ASS investigation and management plan. Any such investigation is best done after the location and depths of deep excavations are determined, in order to reduce the field work required. This is not expected to be a constraint to the proposed development of the subject site, but may result in a slightly extended approval programme for site works and a relatively minor increase in investigation and reporting fees.

A DWER guideline compliant ASS and Dewatering Management Plan will, if required, then be developed and implemented to manage:

- All proposed dewatering proposed in association with residential development (in accordance with subdivision and servicing layout); and
- Any excavation in actual or potential ASS areas.

The excavation of ASS and dewatering for the project will be managed in accordance with DWER guidelines to result in no adverse impacts to the environment.

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5.2 Water Management

The EPA water management objectives include:

- Maintain the quantity of water (surface and ground) so that existing and potential environmental values are protected.
- Ensure that the quality of water emissions (surface and ground) do not adversely affect environmental values or the health, welfare and amenity of people and land uses, and meets statutory requirements and acceptable standards.

5.2.1 Potential Impacts

Development of the subject site is associated with the following potential impacts:

- Groundwater and surface water at the subject site flows west towards the Collie River, which is an environmentally sensitive receptor. Impacts to groundwater and/or surface water quality on site may also impact sensitive receptors downstream.
- The use of subsoil drainage to control pre-development groundwater levels may impact the CC wetland adjacent to the subject site.

5.2.2 Environmental Management and Mitigation

A LWMS has been prepared to support the Structure Plan associated with the subject site. The LWMS details the best management practices approach to water management that will be undertaken for this development, in accordance with *Better Urban Water Management* (WAPC 2008). The LWMS will achieve integrated water management through the following design objectives:

- Effectively manage the risk to human life, property damage and environmental degradation from water contamination, flooding and waterlogging.
- Maintain and if possible, improve water quality (surface and groundwater) within the development in relation to pre-development water quality.
- Reduce potable water consumption within both public and private spaces using practical and cost-effective measures.
- Promote infiltration of surface water on site to minimise the risk of further water quality degradation in the Leschenault Estuary Catchment.
- Implement best management practices in regard to stormwater management, including structural and non-structural controls.
- Incorporate where possible, low maintenance, cost-effective landscaping and stormwater treatment systems.

It is expected that development of the subject site will have a positive impact on groundwater quality through Best Management Practices and the treatment of stormwater prior to infiltration as discussed below:

- The stormwater structural controls will improve infiltrating stormwater water quality through reducing water velocities, biological uptake and increasing infiltration areas.
- Water quality will be improved through minimising and controlling the levels of fertilisers and pesticides applied to the site through appropriate plant selection and operation and maintenance.
- The management of stormwater and nutrients will be in accordance with the Leschenault Estuary WQIP and Better Urban Water Management practices.

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Based on the investigations undertaken and the management measures proposed, it is not expected that any changes to groundwater flows, levels or quality will have an adverse impact on the function and environmental values of the subject site.

5.3 Wetlands

The EPA wetland objective is to maintain and where possible enhance the integrity, ecological function and environmental values of wetlands.

5.3.1 Potential Impacts

A portion of the subject site is mapped as containing a MU wetland. MU wetlands have few remaining functions, values and typically their attributes have been considerably degraded such that they provide limited ecological value. On this basis, MU wetlands do not usually preclude development. The impacts to the MU wetlands within the subject site are minimal as these wetlands are in a “Completely Degraded” condition and are considered suitable for development.

A site-specific study (Bioscience 2012) has determined that the CC wetland located adjacent to the subject site does not extend into the subject site. Nonetheless, the area (incorrectly) mapped as a CC wetland within the subject site along with a 50 m buffer, will be excluded from development and retained within ROS. Accordingly, there will be no direct impacts to the CC wetland as result of the proposed development. Indirect potential impacts as a result of the proposed development may include:

- ASS impacts resulting from earthworks or dewatering.
- Changes to hydrology through changes in surface water flows and subsoil drains.

5.3.2 Environmental Management and Mitigation

It is envisaged that by maintaining pre-development surface and groundwater flows to the buffer area, the vegetation will be provided with similar water needs after development, whilst experiencing improved water quality through the use of constructed vegetated bioretention areas (swales) and other suitably designed and best practice water sensitive urban design techniques.

It is important to acknowledge the current surface water flow through the CC wetland, which includes the nutrient run-off from the surrounding paddocks, is not treated. The proposed water management strategy seeks to improve significantly this outcome through incorporating best stormwater quality management practice consistent with Better Urban Water Management principles.

It is anticipated that the above management mechanisms will improve the current condition of the wetland as well as providing suitable waterbird habitat.

5.4 Vegetation and Flora

The EPA flora and vegetation objective is to maintain the abundance, diversity, geographic distribution and productivity of flora at the species and ecosystem levels through the avoidance or management of adverse impacts and through improvement in knowledge.

5.4.1 Potential Impacts

As a result of historical and current anthropogenic disturbances, the vegetation within the subject site is in a ‘Degraded’ to ‘Completely Degraded’ condition. It is very unlikely to contain any flora or vegetation of conservation significance and it does not provide any ecological connectivity to surrounding environmental features (i.e. the Collie River).

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Consequently, it is anticipated that the proposed development will have very little impact on native vegetation.

5.4.2 Environmental Management and Mitigation

Within the development footprint, there are no vegetation or flora values within the subject site that preclude development or require protection. Accordingly, no specific management measures pertaining to remnant vegetation are deemed necessary.

Any potential impacts will be reduced through the following:

- Retention and replanting of areas ROS in accordance with the Shire of Dardanup's objectives for this area.
- Road reserves will be landscaped, which will involve planting species native to the local area.

5.5 Fauna

The EPA fauna objective is to maintain the abundance, diversity, geographic distribution and productivity of native fauna at the species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.

5.5.1 Potential Impacts

No evidence of WRPs being present or utilising the subject site has been identified (Harewood 2018). This is likely to be attributed to the composition of the majority of vegetation onsite (flooded gum and paperbark), which represents low quality habitat for WRPs. While WRPs may occur occasionally as transients they would not permanently reside in this vegetation type given the low plant species diversity and a complete lack of some of their favoured foraging species (e.g. peppermint, sheoak).

The value of the peppermint and marri dominated vegetation to WRPs is greatly diminished by the fact that it is a relatively small area (<2 ha) and is isolated, being over 300 metres from the closest other continuous area of vegetation. The absence of WRP observations in this area also suggests that the species cannot persist in this remnant or that they have not been able to populate it from other areas due to the distance of separation (Harewood 2018). Accordingly, there are not expected to be any impacts to WRPs as a result of the proposed development.

The peppermint and marri dominated vegetation unit represents black cockatoo habitat, but the degree of use appears to be low with no breeding or roosting activity detected and only a very limited amount (<2ha) of foraging habitat being present.

Based on the results of the assessment and the scale of the proposed development, likely impacts on WRPs and black cockatoos and/or their preferred habitat are limited (Harewood 2018 and Harewood 2022).

In consideration of their 'Completely Degraded' condition, the fauna habitat values of the CC wetland and MU wetland mapped within the subject site are very low. Accordingly, there are not expected to be any impacts to wetland fauna of conservation significance as a result of the proposed development

5.5.2 Environmental Management and Mitigation

The following management measures have been developed and incorporated to reduce the likelihood of impacts to native fauna:

- Fauna corridors will be created through the revegetation of the ROS.
- Utilise a licensed fauna spotter for all vegetation clearing.

6 CONSULTATION

The proposed Structure Plan was advertised in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*. In response to the advertising, 12 submissions (including five public submissions) were received. In the context of environmental issues, the DBCA provided a set of comments which are addressed below in **Table 4**.

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Table 4. Response to DBCA’s Comments

| DBCA | Shire | Accendo Response |
|---|---------------|---|
| <p>The northern portion of Lot 9004 contains native vegetation associated with the adjacent Conservation Category Wetlands (CCW) on the Collie River floodplain.</p> | <p>Noted.</p> | <p>An examination of this specific area during the fauna survey (Harewood 2018) revealed it to be comprised of only two native species (<i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>) over introduced pasture grasses. It is considered highly degraded and unlikely to fulfil the criteria of a CC wetland. The area is currently open to livestock grazing and there is unlikely to be any recruitment of new trees and it can therefore be expected that its quality will further deteriorate over time. The fauna habitat values of this area can be considered to be very low. It should be noted that other sections of this same vegetation unit located within the subject site, is in identical condition and has been mapped as a MU wetland which is consistent with its highly degraded condition (Harewood 2018).</p> <p>Based on the site-specific survey results (Harewood 2018 and Bioscience 2012), it is considered that the CC wetland does not actually occur within the subject site.</p> |
| <p>Shelley et al, 2014 mapped the northern Lot 9004 vegetation as being High Quality habitat suitability (Category Class B) for western ringtail possums (WRP) High Quality habitat suitability is important in maintaining the integrity of WRP habitat, which is required to increase the reproductive output of the species and to counter declining populations and losses due to habitat loss and predation.</p> | <p>Noted.</p> | <p>The open woodland of flooded gum and paperbark present in the north of the subject site has been mapped by Shelley <i>et al.</i> (2014) as being within the “high” habitat suitability class for WRPs. Observations made during the field survey (Harewood 2018) suggest that this area should in fact be rated as having a “very low” habitat suitability (i.e. able to support <0.5 WRPs per ha) at best. Apart from the absence of any WRP observations in this area, this conclusion is justified by the fact the vegetation is comprised of only flooded gum and paperbark, a combination which represents low quality habitat for WRPs. While WRPs may occur occasionally as transients they would not permanently reside in this vegetation type given the low plant species diversity and a complete lack of some of their favoured foraging species (e.g. peppermint, sheoak) (Harewood 2018).</p> |

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|---|---|--|
| <p>WRP (Schedule 1) is listed as critically endangered species under the Commonwealth of Australia's Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and Western Australia's Wildlife Conservation Act 1950.</p> | <p>Noted.</p> | <p>Noted. A targeted survey for WRPs was undertaken within the subject site. This included a daytime survey and two-night time survey. No WRPs were identified and no evidence of WRPs utilising the subject site was identified. An assessment of the fauna habitat types within the subject site identified that the habitat quality for WRPs within the development footprint ranged from low to very low.</p> <p>In consideration of the above, there are not anticipated to be any impacts to WRP as a result of the proposed development.</p> |
| <p>It appears that 2 to 3ha of this high quality WRP habitat will be cleared if the current structure plan is implemented. These areas are also very close, if not overlapping, the environmentally sensitive area associated with the CCW.</p> | <p>The map contained in (Appendix ORD:12.2C) identifies the Conservation Category Wetland (CCW) referred to which is outside of the PESP area and not impacted by the proposal. The vegetated area in the northern part of the site that will be subject to clearing is estimated by staff to be approximately 1.7ha.</p> | <p>Based on the targeted WRP survey, vegetation subject to clearing represents low to very low-quality habitat for WRPs. Furthermore, no evidence of WRPs utilising any of the vegetation within the subject site was identified. In the expert opinion of a highly qualified zoologist, there will be negligible impacts to WRP as a result of the proposed development (Harewood 2018).</p> |
| <p>The central portion of the structure plan shows that about 1ha of mapped medium quality WRP habitat is to be cleared and the rest retained in Public Open Space (POS).</p> | <p>Noted</p> | <p>The value of the peppermint and marri dominated vegetation to WRPs is greatly diminished by the fact that it encompasses a small area (<2 ha) and is isolated, being over 300m from the closest other continuous area of vegetation. The absence of WRPs in this area also suggests that the species cannot persist in this remnant or that they have not been able to populate it from other areas due to the distance of separation (Harewood 2018).</p> <p>As discussed above, the impacts to WRPs as a result of the proposed development are considered negligible (Harewood 2018).</p> |

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| <p>While the application provided some vegetation classification information, it did not include any flora or fauna survey information.</p> | <p>The structure plan report (Page 10) states that the PESP area has previously been assessed by the EPA during the preparation of the Greater Bunbury Region Scheme, and subsequent amendments to the Local Planning Scheme when the land was re-zoned to 'Development' zone (Amendment 187).</p> <p>It also states that the site has previously been subject to an approved subdivision design that proposed to clear the remnant vegetation, however officers are unclear as to what this is referring to as the most recent subdivision was refused.</p> <p>Notwithstanding, it is recommended that Council requests a modification to the Structure Plan to include the following notation:</p> <p>"At subdivision the applicant/landowner shall be required to undertake a flora and fauna study to identify the presence of threatened flora and fauna within the site being regarded as being of biodiversity and conservation value."</p> | <p>A Fauna and Habitat Assessment of the subject site was undertaken by a qualified zoologist in September 2018 (Harewood 2018). Based on the results of the assessment it was concluded that there exist no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development.</p> <p>The Fauna and Habitat Assessment identified the vegetation types within the subject site. Given the historical and current land use (livestock grazing), all the vegetation present can be regarded as being in a Degraded or Completely Degraded condition. Most of the vegetation present is comprised of only two native species (<i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>) over introduced pasture grasses. Accordingly, it is very unlikely that any flora or vegetation of conservation significance would occur within the subject site. Therefore, undertaking a flora and vegetation survey will provide no further environmental value.</p> |
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(Appendix ORD: 12.2.2A Under E Separate Cover)

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| <p>DBCA advises that the proposed clearing should be referred to the Department of Water and Environmental Regulation specifically for consideration under the Environmental Protection Act, Native, Vegetation Clearing regulations.</p> | <p>Council’s consideration of the proposal does not remove the responsibility of the landowner to comply with the Environment Protection Act 1986 regarding the clearing of vegetation.</p> <p>The Structure Plan was referred to DWER for comment as required.</p> | <p>A clearing exemption pursuant Schedule 6 of the <i>Environmental Protection Act 1986</i> applies to the application area associated with a WAPC subdivision approval.</p> |
| <p>The proposed structure plan depicts an area of Local Open Space which retains some bushland and a small strip of Regional Open Space (ROS) along the northern and western Lot 9004 boundary. However, it would be desirable to also retain the northern Lot 9004 treed vegetation, to retain the High Quality WRP habitat within Public Open Space. Amongst these areas, the highest priority for protection would be the lines of mature trees immediately inside the northern structure plan boundary, just outside the proposed ROS, associated with the GBR floodway and flood fringe boundary. This will also retain valuable established trees for the CCW buffer.</p> | <p>It is recommended that Council requests a modification to the Structure Plan to include the following note:</p> <p>“At subdivision the applicant/landowner shall be required to undertake a flora and fauna study to identify the presence of threatened flora and fauna within the site being regarded as being of biodiversity and conservation value.”</p> | <p>This area has been assessed and was determined to be in a Completely Degraded condition. It is predominately comprised of only two native species (<i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>) over introduced pasture grasses. The area is currently open to livestock grazing and there is unlikely to be any recruitment of new trees and it can therefore be expected that its quality will further deteriorate over time. The fauna habitat values of this area of the CC wetland can be considered to be very low. It should be noted that other sections of this same vegetation unit located within the subject site, is in identical condition and has been mapped as a MU wetland which is consistent with its highly degraded condition (Harewood 2018).</p> |
| <p>The proponent should consider referral requirements to the Federal Department of the Environment and Energy under the EPBC Act in terms of significant impacts on WRP habitat.</p> | <p>Council’s consideration of the proposal does not remove the responsibility of the landowner to comply with the EPBC Act regarding the clearing of vegetation.</p> | <p>Based on a targeted WRP assessment, it was determined that impacts to WRP from the proposed development will be negligible (Harewood 2018). The subject site does not appear to support any WRPs and provides low to very low habitat quality for the species. Accordingly, referral to the DotEE pursuant to the EPBC Act is not considered necessary.</p> |

(Appendix ORD: 12.2.2A Under E Separate Cover)

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| <p>DBCA supports the use of a fauna spotter during clearing and recommends that the fauna spotter is used during all clearing works associated with the development footprint. A wildlife protection management plan could be prepared and implemented to manage threatened species during approved clearing works.</p> | <p>Noted. The flora and fauna study will identify the presence of any native animals within the areas identified for clearing.</p> <p>If determined appropriate DWER may place conditions regarding the requirement for a fauna spotter and/or a wildlife protection management plan on the clearing permit.</p> | <p>Noted.</p> |
|---|--|---------------|

(Appendix ORD: 12.2.2A Under E Separate Cover)

7 SUMMARY

Accendo was engaged by the proponent to prepare an environmental assessment to support the preparation of a Structure Plan for the subject site. This has included a site-specific fauna assessment to identify and assess the environmental attributes and values within the subject site. The environmental attributes and values identified within the site have been outlined in **Section 4** and include:

- Surface elevations range from 10.50 m AHD in the south-eastern corner to 1.30 m AHD along the northern boundary within the Collie River floodplain.
- The subject site has been classified as having a 'moderate to low risk' of ASS occurring within three metres of the natural soil surface.
- The subject area sits within the Leschenault Estuary Catchment and as such is covered by the Leschenault Estuary WQIP.
- The majority of vegetation has been cleared as a result of the historical and current land use (livestock grazing).
- The subject site is mapped as containing a portion of a CC wetland. As identified within the *Wetland Buffer Determination* study (Bioscience 2012) for the subject site, this mapping appears to be incorrect as a site analysis revealed that the wetland function area associated with the CC wetland does not extend into the subject site. Furthermore, an examination of this specific area during the fauna assessment (Harewood 2018) revealed it to be comprised of only two native species (*Eucalyptus rudis* and *Melaleuca raphiophylla*) over introduced pasture grasses, which is not consistent with the definition of a CC wetland.
- As a result of the fauna assessment it was determined that the fauna habitat values at the subject site have been severely compromised by the removal of most of the original native vegetation and the degradation of the main remnant patches.
- There is no evidence of WRPs utilising vegetation with the subject site as habitat and overall, habitat quality in areas to be developed are low/very low.
- Some areas of vegetation represent black cockatoo habitat, but the degree of use appears to be low with no breeding or roosting activity detected and only a very limited amount of foraging habitat being present.
- There exist no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development.

In consideration of the abovementioned key environmental features, the following management measures have been proposed to minimise potential impacts associated with the subdivision of the subject site:

- Prepare and implement an ASS and Dewatering Management Plan if necessary.
- Implement the approved LWMS during subdivision works.

Based on this assessment, Accendo considers that there are no fatal flaws or key environmental values that cannot be accommodated to enable development of the subject site for its intended purpose.

(Appendix ORD: 12.2.2A Under E Separate Cover)

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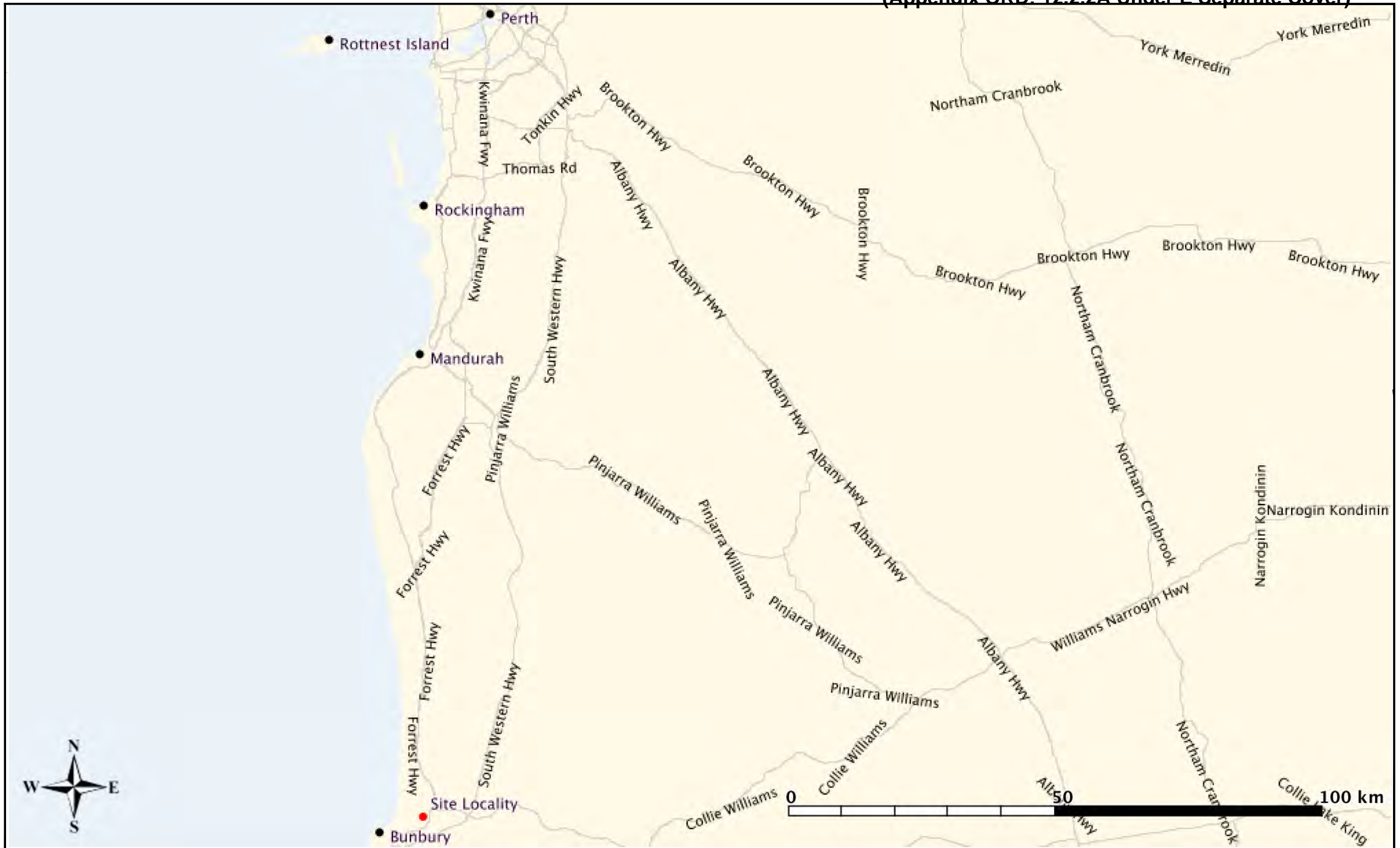
(Appendix ORD: 12.2.2A Under E Separate Cover)

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FIGURES



PROJECT **Lots 9004 & 9503 Eaton Drive, Eaton (Parkridge Estate)**
DRAWING TITLE **FIGURE 1 -Site Locality**
CLIENT **Parkridge Group Pty Ltd**



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West Busselton
Western Australia 6280
Mobile 0418 950 852

| | | |
|-----------------|-------------------|-----------------|
| Project Number | Drawing Number | Revision |
| | FIG 1 | A |
| Designed KMT | Checked | Date 19.11.2018 |
| Drawn PN | Approved | Sheet 1 of 1 |
| Local Authority | Shire of Dardanup | |



PROJECT **Lots 9004 & 9503 Eaton Drive, Eaton (Parkridge Estate)**

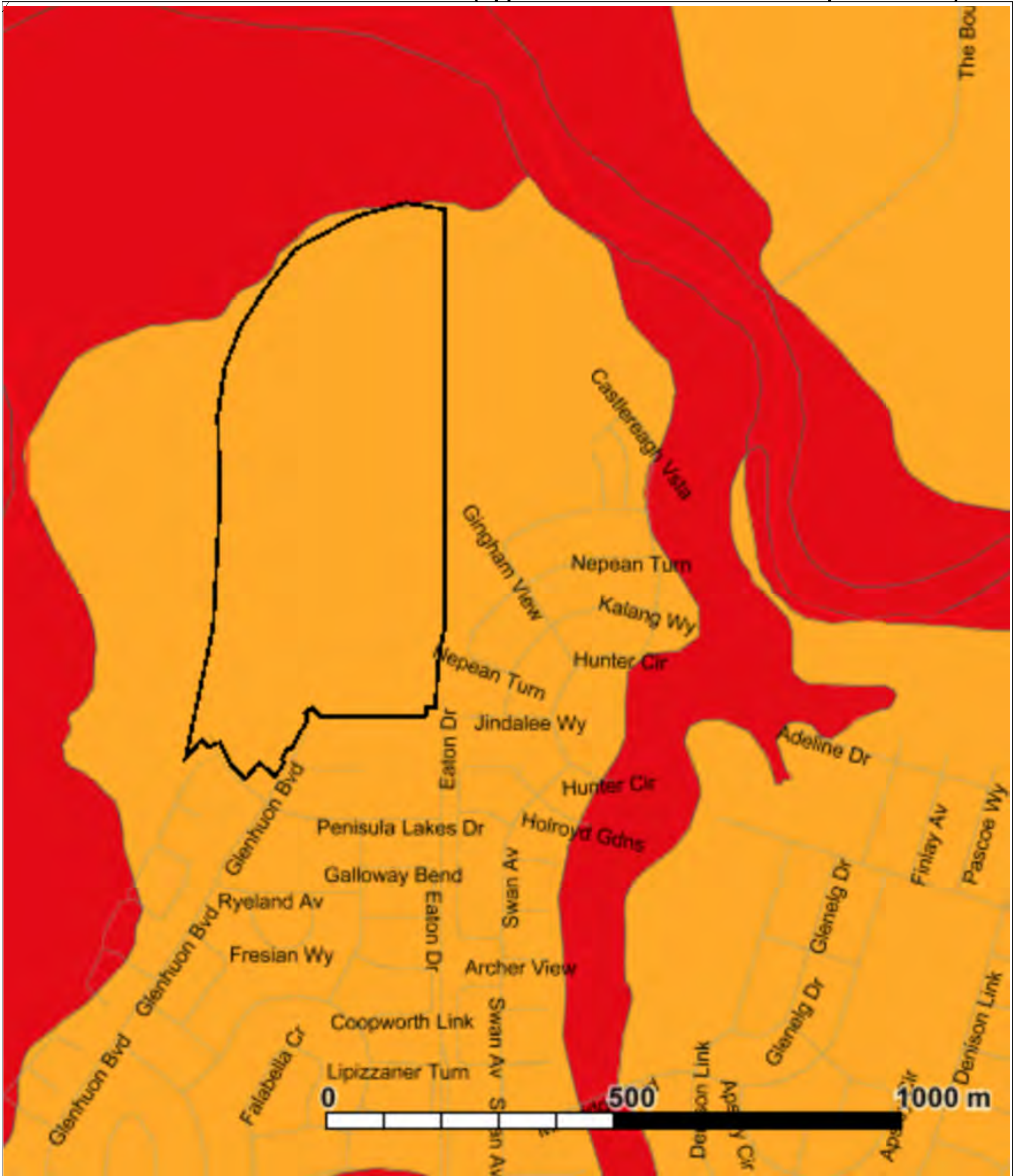
DRAWING TITLE **FIGURE 2 - Extent of Site**

CLIENT **Parkridge Group Pty Ltd**



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| | | |
|-----------------|-------------------|-----------------|
| Project Number | Drawing Number | Revision |
| | FIG 2 | A |
| Designed KMT | Checked | Date 19.11.2018 |
| Drawn PN | Approved | Sheet 1 of 1 |
| Local Authority | Shire of Dardanup | |



Legend

- High to moderate risk of ASS occurring within 3m of natural soil surface. (or deeper)
- Moderate to low risk of ASS occurring within 3m of natural soil surface.

PROJECT Lot **9004 & 9503 Eaton Drive, Eaton (Parkridge Estate)**

DRAWING TITLE **FIGURE 3 - Acid Sulphate Soil Mapping**

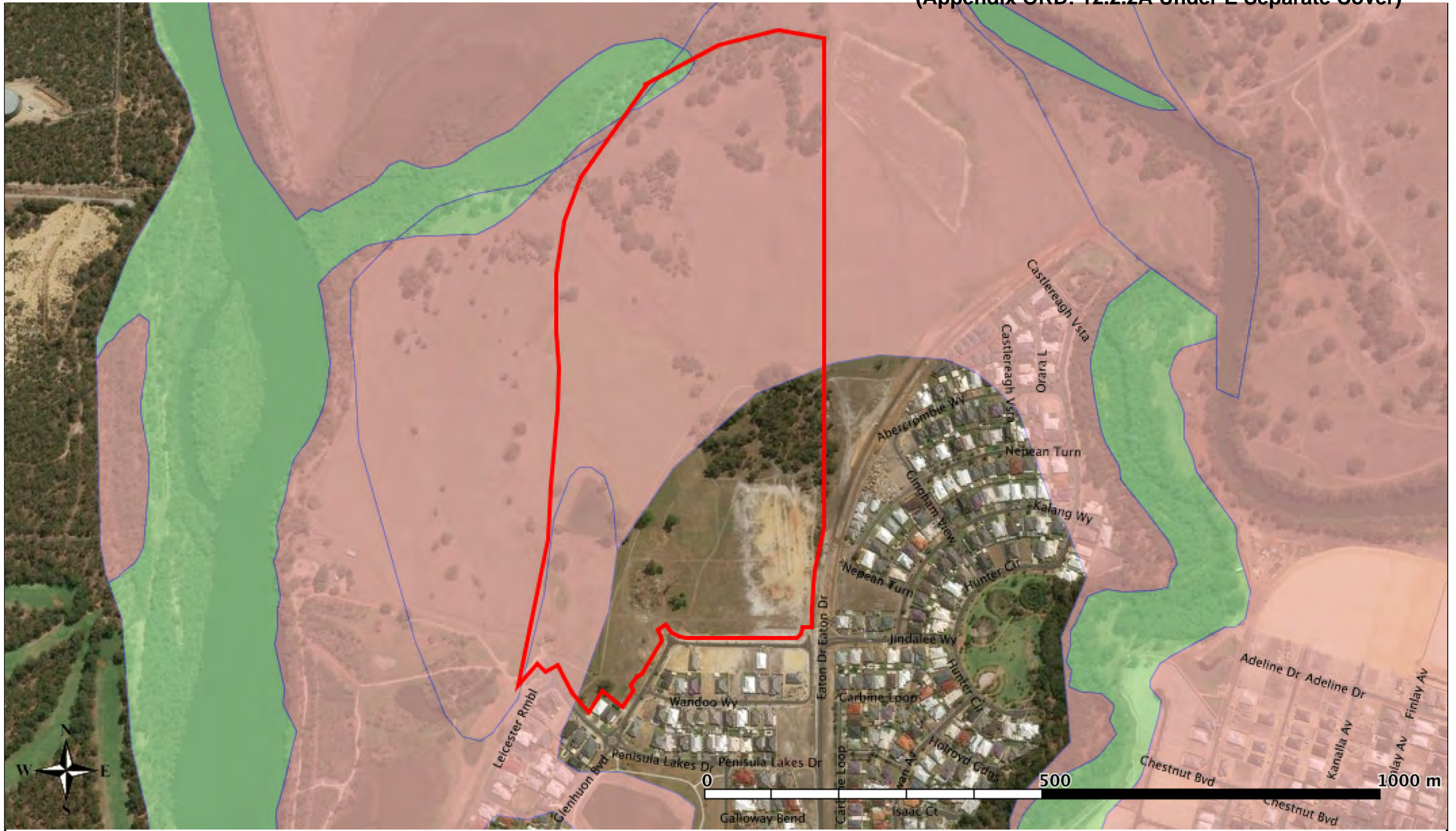
CLIENT **Parkridge Group Pty Ltd**

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| | | |
|-----------------|-------------------|---------------|
| Project Number | Drawing Number | Revision |
| | FIG 3 | A |
| Designed KMT | Checked | Date 19.11.18 |
| Drawn PN | Approved | Sheet 1 of 1 |
| Local Authority | Shire of Dardanup | |



| Legend | |
|--------------------------------------|-------------------------------|
| — | Lot Boundary |
| — | Conservation Category Wetland |
| — | Multiple Use Wetland |

PROJECT Lot **9004 & 9503 Eaton Drive, Eaton (Parkridge Estate)**
 DRAWING TITLE **FIGURE 4 -Mapped Wetlands**
 CLIENT **Parkridge Group Pty Ltd**



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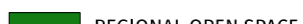




Project Number Drawing Number
 Revision
 A
 Designed KMT Checked
 Drawn PN Approved
 Local Authority Shire of Dardanup

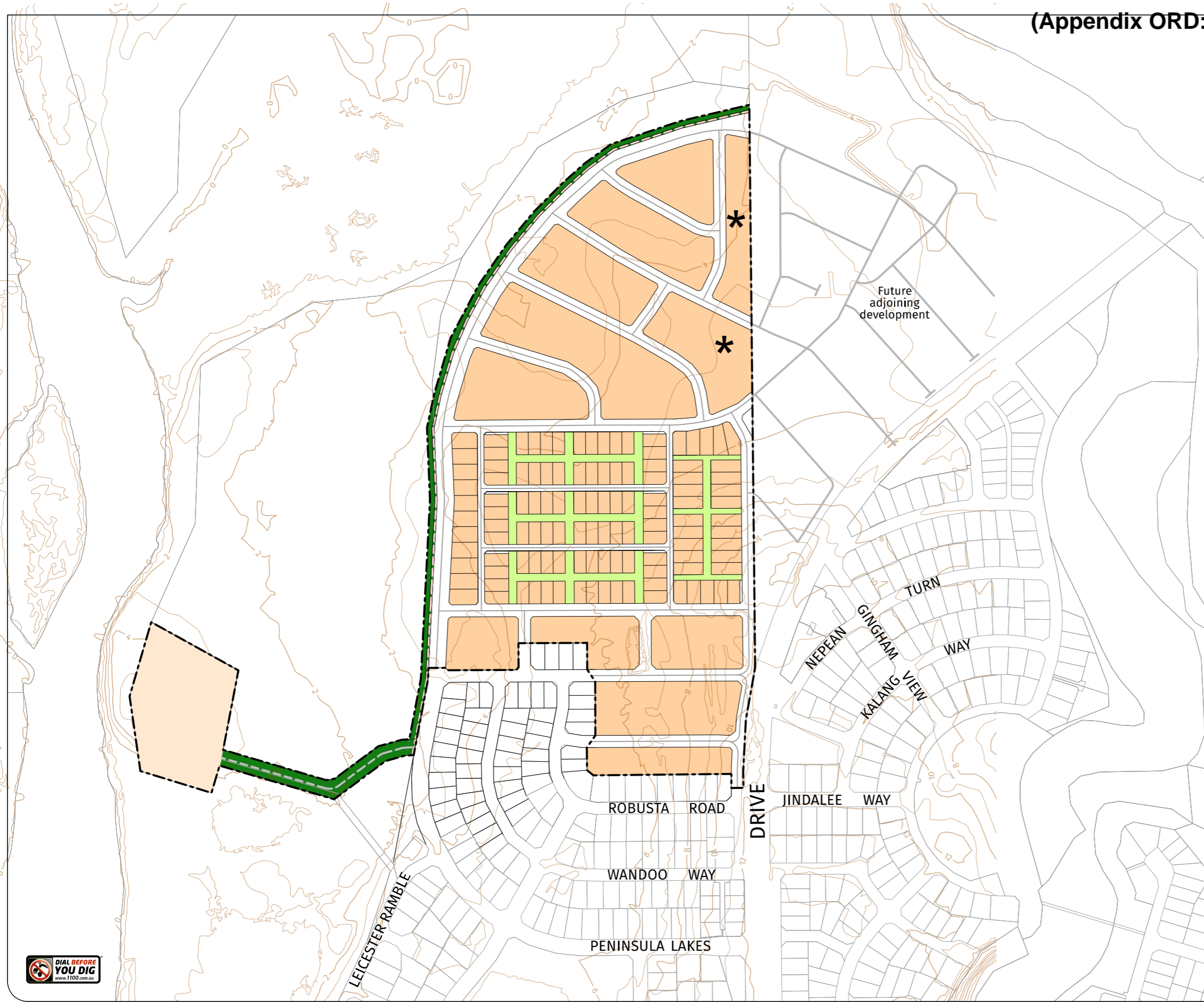
Date 19.11.2018
 Sheet 1 of 1

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX A. STRUCTURE PLAN

LEGEND

-  EXISTING CADASTRE
-  STRUCTURE PLAN BOUNDARY
-  PROPOSED CADASTRE
-  RESIDENTIAL: R20 - R40
-  RESIDENTIAL: R5
-  PUBLIC OPEN SPACE
-  REGIONAL OPEN SPACE
-  LOCAL ROADS
-  PRIVATE ACCESSWAY
-  PROPOSED MANAGED LOW FUEL ZONE (3m WIDTH)
-  RESIDENTIAL DENSITY TO BE CONSISTENT WITH ADJOINING STRUCTURE PLAN



STRUCTURE PLAN MODIFICATION

Robusta Road, Eaton
PARKRIDGE

Plan No. | 22294-18
Date | 30/11/22
Drawn | NP
Checked |
Revision | F

BUNBURY OFFICE:
21 Spencer Street,
BUNBURY WA 6230
T: 08 9792 6000
E: bunbury@harleydykstra.com.au
W: www.harleydykstra.com.au

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Scale | 1:1000@A3



NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey



Harley Dykstra

PLANNING & SURVEY SOLUTIONS

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX B. FAUNA ASSESSMENTS (HAREWOOD)

Fauna and Habitat Assessment



Lot 9004 and Lot 9503 Eaton Drive Eaton

November 2018

V2

On behalf of:

Accendo Australia
PO Box 5178
WEST BUSSELTON WA 6280
M: 0418 950 852
T: (08) 9755 7217
E: kirsten@accendoaustralia.com.au

Prepared by:

Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
M: 0402 141 197
E: gharewood@iinet.net.au

(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

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FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

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SUMMARY

This report details the results of a targeted fauna and habitat assessment over Lot 9004 and Lot 9503 Eaton Drive, Eaton (subject site). Lot 9004 and Lot 9503 have a combined area of about 34 hectares, most of which is cleared farmland used for or previously used for livestock grazing (Figure 1 and 2)

The scope of works was to carry out a habitat assessment including that of a Conservation Category Wetland, part of which extends into the subject site. A targeted survey for western ringtail possums and black cockatoo habitat was also completed.

The small areas (<4.4 ha) of remnant native vegetation onsite are mainly comprised of a flooded gum/paperbark woodland in the low lying areas in the north of the property and a grove of peppermint low woodland on higher ground in the south east (Figure 3). The balance of the site is totally cleared with just a small number of scattered trees of various types (mainly flooded gum and paperbark). All the vegetation present can be regarded as being in a degraded or highly degraded condition.

Overall fauna habitat values at the subject site have been severely compromised by the removal of most of the original native vegetation and the degradation of the main remnant patches. Most areas lack any natural attributes and are now only utilised by generally common and widespread fauna species with non-specific requirements which allow them to persist in disturbed/highly disturbed habitats. As a consequence, the fauna biodiversity of the subject site is well below levels present prior to historical and ongoing disturbances taking place.

The assessment of part of a Conservation Category Wetland (Figure 4) which extends into the subject site suggests that it should be considered for re-classification as a Multiple Use Wetland given it is highly degraded and of an identical character to adjoining areas that are mapped as such.

No evidence of western ringtail possum being present or utilising the subject site was found during the day or night surveys. Given the relatively small extent of the remnant vegetation remaining on site (~4.4 ha excluding scattered trees) and the fact that it was relatively easy to survey for evidence of the species, it is the Authors opinion that at the time of the surveys western ringtail possums were not present within the subject site. The lack of use of the area by this species can be attributed to the low quality habitat present in some areas and the small extent and isolation of other remnant patches.

The habitat tree assessment identified 112 trees within the subject site with a DBH of ≥ 50 cm. Twenty one of these trees were observed to contain hollows or possible hollows of some type with four being assessed at the time to possibly have hollows suitable for black cockatoos to use for nesting (i.e. large enough entrance into a suitably sized and orientated branch/trunk). No actual evidence (e.g. chew marks) of any hollows being used by black cockatoos for nesting (currently or previously) was seen. Common brushtail possums were

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FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

observed in close proximity to some of these hollow trees during the nocturnal surveys and these animals may be occupying at least some of the potential hollows recorded.

The extent of what would be regarded as quality black cockatoo foraging habitat within the subject site is very small, being comprised of about 0.2 ha of marri forest supported to a small degree by a limited number of scattered marri and jarrah trees.

No existing roosting trees (trees used at night by black cockatoos to rest) were positively identified during the survey.

The results of the assessment suggest that if the proposed development were to be referred to the Department of the Environment and Energy (DotEE) for review under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) that it would be regarded as “not a controlled action” given impacts on listed species or their habitat are not likely to be significant.

It is therefore concluded that there exists no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development.

It is recommended that a fauna relocation program be implemented prior to and during clearing works to ensure direct impact on fauna (e.g. common brushtail possums) most likely to be encountered, are minimised.

1. INTRODUCTION

This report details the results of a targeted fauna and habitat assessment over Lot 9004 and Lot 9503 Eaton Drive, Eaton (subject site). The subject site is situated about nine kilometres east of Bunbury in the south west of Western Australia and is centred at approximately 33.296748°S and 115.727755°E. Lot 9004 and Lot 9503 have a combined area of about 34 hectares, most of which is cleared farmland used for or previously used for livestock grazing (Figure 1 and 2).

2. SCOPE OF WORKS

The scope of works, as defined by Accendo Australia, was to

- Carry out a wetland habitat assessment of the native vegetation associated with a nearby Conservation Category Wetland;
- Carry out a preliminary survey of western ringtail possums (WRP)(*Pseudocheirus occidentalis*) with the aim of obtaining an estimate of the distribution, abundance and habitat extent of the species within the subject site;
- Carry out a black cockatoo habitat assessment with the aim of determining the status, extent and quality of habitat within the subject site; and
- Prepare a report summarising all results.

Note: For the purposes of this report the term black cockatoo is in reference to Baudin's black cockatoo *Calyptorhynchus baudinii*, Carnaby's black cockatoo *Calyptorhynchus latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso*.

3. METHODS

Daytime field survey work at the site was carried out on the 9 and 10 September 2018. The nocturnal WRP surveys were carried out on the 29 and 31 September 2018. All survey work and reporting has been completed by Greg Harewood (Zoologist).

3.1 HABITAT ASSESSMENT

3.1.1 Fauna Habitat Assessment

The vegetation communities, soils and landforms identified during the site reconnaissance survey have been used as the basis for a classification of areas into broad fauna habitat types.

3.1.2 Wetland Habitat Assessment

The northern portion of Lot 9004 contains native vegetation mapped as part of a Conservation Category Wetland (CCW) which extends westwards outside of the subject site. The onsite wetland vegetation making up part of this habitat was examined to determine its quality and composition in relation to the overall CCW classification.

3.2 WESTERN RINGTAIL POSSUM ASSESSMENT

To determine if western ringtail possums were utilising the subject site the following was carried out:

- Daytime survey of the site along closed spaced traverses searching for dreys, obvious tree hollows (and other potential daytime refuge habitat), scats and individual WRPs. The day time survey was carried out using a GPS equipped PDA for guidance and as a data recorder;
- Two night time surveys were undertaken to provide information on the approximate distribution and abundance of WRPs. The nocturnal counts involved the systematic searching of potential WRP habitats within the subject site along close spaced transects, on foot using a head torch. The nocturnal counts were carried out using a GPS equipped PDA for guidance and as a data recorder; and
- An estimation of the amount and quality of WRP habitat present within the subject site based on field observations and available air photography has also been made. This information has been compared to mapping and classifications of habitat suitability provided by Shelley *et al.* (2014).

3.3 BLACK COCKATOO HABITAT ASSESSMENT

The following methods were employed to comply with the defined scope of works and are based on guidelines published by the federal DotEE (Commonwealth of Australia 2012) which states that surveys for Carnaby's, Baudin's and forest red-tailed black cockatoo habitat should:

- be done by a suitably qualified person with experience in vegetation or cockatoo surveys, depending on the type of survey being undertaken;
- maximise the chance of detecting the species' habitat and/or signs of use;
- determine the context of the site within the broader landscape—for example, the amount and quality of habitat nearby and in the local region (for example, within 10 km);
- account for uncertainty and error (false presence and absences); and

(Appendix ORD: 12.2.2A Under E Separate Cover)

- include collation of existing data on known locations of breeding and feeding birds and night roost locations.

Habitat used by black cockatoos have been placed into three categories by the DotE (Commonwealth of Australia 2012) these being:

- Breeding Habitat;
- Foraging Habitat; and
- Night Roosting Habitat.

So as to comply with the requested scope of works and in line with the published guidelines the following was carried out.

3.3.1 Black Cockatoo Breeding Habitat

The black cockatoo breeding habitat assessment involved the identification of all suitable breeding tree species within the subject site that had a diameter at breast height (DBH) of equal to or over 50cm. The DBH of each tree was estimated using a pre-made 50 cm “caliper”.

The location of each tree identified as being over the threshold DBH was recorded with a GPS and details on tree species, number and size of hollows (if any) noted. Trees observed to contain hollows (of any size/type) were marked with “H” using spray paint for easy future reference.

Target tree species included marri, jarrah and flooded gum or any other endemic *Corymbia/Eucalyptus* species of a suitable size that was present. Peppermints, *banksia*, sheoak and *melaleuca* tree species (for example) were not assessed as they typically do not develop hollows that are used by black cockatoos.

For the purposes of this study a tree containing a potential cockatoo nest hollow was defined as:

Generally, any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) or possible hollows considered potentially suitable for occupation by black cockatoos for the purpose of nesting/breeding. Hollows or possible hollows that had an entrance greater than about 10cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk, were recorded as “potential nest hollows”.

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches).

A review of available literature was carried out to determine the location/extent of any known/likely black cockatoo breeding habitat areas in the vicinity of the subject site.

3.3.2 Black Cockatoo Foraging Habitat

The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around the base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present was also documented irrespective of the presence of any actual foraging evidence.

A review of available literature was also carried out to determine the location/extent of any known/likely black cockatoo foraging habitat areas in the vicinity of the subject site.

3.3.3 Black Cockatoo Roosting Habitat

Direct and indirect evidence of black cockatoos roosting within trees was with the subject site was noted if observed (e.g. branch clippings, droppings or moulted feathers). Two dusk surveys were also carried out immediately prior to the nocturnal WRP surveys

A review of available literature was also carried out to determine the location/extent of any known/likely black cockatoo roosting habitat areas in the vicinity of the subject site.

3.4 OPPORTUNISTIC FAUNA OBSERVATIONS

Opportunistic observations of fauna species were made during all field survey work which primarily involved a series of transects across the subject site during the day while searching microhabitats such as logs, rocks, leaf litter and observations of bird species with binoculars. Secondary evidence of a species presence such as tracks, scats, skeletal remains, foraging evidence or calls were also noted if observed/heard.

4. SURVEY CONSTRAINTS

No seasonal sampling has been carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the subject site at the time of the field assessments. It should also be recognised that site conditions can change with time.

During the black cockatoo habitat survey a search for trees containing hollows was completed. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level.

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The location of observations was recorded using a handheld GPS. The accuracy of the GPS cannot be guaranteed above a level of about 5 to 10 metres, though it should be noted that in some circumstance the accuracy can increase or decrease beyond this range.

5. RESULTS

5.1 HABITAT ASSESSMENT


5.1.1 Fauna Habitat Assessment

The subject site is situated on the western margin of the Swan Coastal Plain and mainly overlaps a low-lying section of the Guildford Formation which is characterised by alluvial sandy clays. The higher ground in the south east section of the subject site represents a subdued section of the Bassendean Dune System which consists of a relatively thin layer of leached, grey sands. The general area has largely been cleared of vegetation in the past, primarily for livestock grazing and more recently for residential developments.

The small areas of remnant native vegetation onsite are mainly comprised of a flooded gum/paperbark woodland in the low lying areas in the north of the property and a grove of peppermint low woodland on higher ground in the south east. The balance of the site is totally cleared with just a small number of scattered trees of various types (mainly flooded gum and paperbark). All the vegetation present can be regarded as being in a degraded or highly degraded condition.




Descriptions and examples images of the main fauna habitats/dominant vegetation present within the subject site are provided in Table 1. The location and extent of the identified habitat units is shown in Figure 3.

Table 1: Main Fauna Habitats within the Subject Site


| Unit | Fauna Habitat Description | Example Image |
|------|---|--|
| 1 | <p>Cleared paddocks comprised of grassland introduced pasture species with occasional sedges and widely scattered remnant trees (flooded gum (<i>Eucalyptus rudis</i>), peppermint (<i>Agonis flexuosa</i>), jarrah (<i>Eucalyptus marginata</i>), marri (<i>Corymbia calophylla</i>) and paperbark (<i>Melaleuca raphiophylla</i>).</p> <p>Area = ~ 29.1 ha (~86%)</p> |  |

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FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

| Unit | Fauna Habitat Description | Example Image |
|------|---|--|
| 2 | <p>Open woodland of flooded gum (<i>Eucalyptus rudis</i>) over low woodland of paperback (<i>Melaleuca raphiophylla</i>) over a grassland of introduced pasture species.</p> <p>Area = ~ 2.7 ha (~8%)</p> |  A photograph showing a landscape with several large, mature trees with thick, gnarled trunks and dense green foliage. The ground is covered in a lush green grassland. The trees are scattered across the field, creating an open woodland appearance. |
| 3 | <p>Low woodland/low open woodland of peppermint (<i>Agonis flexuosa</i>) with emergent jarrah (<i>Eucalyptus marginata</i>) and marri (<i>Corymbia calophylla</i>) over a grassland of introduced pasture species.</p> <p>Area = ~ 1.5 ha (~4%)</p> |  A photograph showing a landscape with several trees, including some with thick, gnarled trunks and others with more delicate, branching structures. The ground is covered in a lush green grassland. The trees are scattered across the field, creating a low woodland appearance. |
| 4 | <p>Tall open forest of marri (<i>Corymbia calophylla</i>) over grassland of introduced pasture species.</p> <p>Area = ~ 0.2 ha (~1%)</p> |  A photograph showing a landscape with a large, dense forest of tall trees in the background. The foreground is a wide, open grassland. The sky is blue with some light clouds. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Unit | Fauna Habitat Description | Example Image |
|------|---|--|
| 5 | Manmade permanent freshwater dam with occasional fringing sedges, flooded gum (<i>Eucalyptus rudis</i>) and paperback (<i>Melaleuca raphiophylla</i>). Area = ~ 0.5 ha (~1%) |  |

Overall fauna habitat values at the subject site have been severely compromised by the removal of most of the original native vegetation and the degradation of the main remnant patches. Most areas lack any natural attributes and are now only utilised by generally common and widespread fauna species with non-specific requirements which allow them to persist in disturbed/highly disturbed habitats. As a consequence the fauna biodiversity of the subject site is well below levels present prior to historical and ongoing disturbances taking place.

5.1.2 Wetland Habitat Assessment

Figure 4 shows the relative extent of mapped wetland classification units within the subject site. As can be seen in Figure 4 a small section (~2,000 m²) of a Conservation Category Wetland is mapped as extending into the subject site. An examination of this specific area during the field survey revealed it to be comprised of a section of the open/low woodland of flooded gum (*Eucalyptus rudis*), paperback (*Melaleuca raphiophylla*) and grassland habitat unit which is clearly highly degraded and unlikely to fulfil the criteria of a Conservation Category Wetland. An example image is provided in Plate 1 below.

Plate 1: Example image of the Conservation Category Wetland within the Subject Site



(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

The vegetation present is comprised of only two native species (*Eucalyptus rudis* and *Melaleuca raphiophylla*) over introduce pasture grasses. The area is currently open to livestock grazing and there is unlikely to be any recruitment of new trees and it can therefore be expected that its quality will further deteriorate over time. The fauna habitat values of this area of the CCW can be considered to be very low. It should be noted that other sections of this same vegetation unit located within the subject site, is in identical condition and has been mapped as a Multiple Use Wetland which is consistent with its highly degraded condition.

That section of the CCW that occurs outside of the subject site to the west is significantly different in its character and is in a much higher level of condition. An example image is provided below.

Plate 2: Example image of the Conservation Category Wetland outside of the Subject Site



This area of the CCW is likely to have relatively good fauna habitat values given most of the original vegetation structure and composition still persists.

5.2 WESTERN RINGTAIL POSSUM ASSESSMENT

The locations of various possum observations made during the site surveys are shown in Figure 5.

No evidence of western ringtail possum being present or utilising the subject site was found during the day or night surveys. Given the relatively small extent of the remnant vegetation remaining on site (~4.4 ha excluding scattered trees) and the fact that it was relatively easy to survey for evidence of the species it is the Author's opinion that at the time of the surveys WRP were not present within the subject site.

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Eight common brushtail possums (*Trichosurus vulpecula*) were observed on the first night survey and seven on the second night. This distribution of observations suggest that nine individual possums were involved.

The open woodland of flooded gum and paperbark present in the north of the subject site has been mapped by Shelley *et al.* (2014) as being within the “high” habitat suitability class for WRPs (i.e. able to support 5-10 WRPs per ha). Observations made during the field survey suggest that in reality this area should in fact be rated as having a “very low” habitat suitability (i.e. able to support <0.5 WRPs per ha) at best. Apart from the lack of WRP observations in this area, this conclusion is justified by the fact the vegetation is comprised of only flooded gum and paperbark, a combination which represents low quality habitat for WRPs. While WRPs may occur occasionally as transients they would not permanently reside in this vegetation type given the low plant species diversity and a complete lack of some of their favoured foraging species (e.g. peppermint, sheoak).

The other main area of vegetation within the subject site is dominated by a low open woodland of peppermint. This area has been mapped by Shelley *et al.* (2014) as being within the “medium” habitat suitability class for WRPs (i.e. able to support 2-5 WRPs per ha). This classification is probably justified given the dominance of peppermint, a food source often favoured by WRPs. The small area of marri forest which adjoins the peppermint has been mapped as being within the “high” habitat suitability class for WRPs (i.e. able to support 5-10 WRPs per ha). This vegetation unit is however unlikely to have the capacity to support this density of WRPs and should in fact be mapped as having the same or slightly less value as the adjoining peppermint woodland given a lack of midstorey species (including peppermint) which WRPs generally favour.

The value of the peppermint and marri dominated vegetation to WRPs is however greatly diminished by the fact that they cover a relatively small area (<2 ha) and are isolated, being over 300 metres from the closest other continuous area of vegetation. The lack of WRP observations in these areas also suggests that the species cannot persist in this remnant or that they have not been able to populate it from other areas due to the distance of separation.

5.3 BLACK COCKATOO HABITAT ASSESSMENT

5.3.1 Black Cockatoo Breeding Habitat

Trees considered potentially suitable for black cockatoos to use as nesting habitat (using DotEE criteria – Commonwealth of Australia 2012, but ultimately subject to a suitable hollow being present or developing and a range of other factors) which were found within the subject site comprised the following species:

- Flooded Gum – *Eucalyptus rudis*
- Marri – *Corymbia calophylla*;

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- Jarrah - *Eucalyptus marginata*; and
- Dead unidentified species.

It should be noted that the likelihood of particular tree species developing hollows suitable for black cockatoos to use for breeding varies considerably. On the Swan Coastal Plain tuart is most commonly used by Carnaby's black cockatoos for breeding (Johnstone & Kirkby 2011). Available data also suggests that jarrah (*Eucalyptus marginata*) rarely produces suitable hollows. Kirkby (2009) reports that from a database of 109 confirmed black cockatoo nest trees throughout an area of jarrah forest only six were located in jarrah trees.

A summary of the potential black cockatoo habitat trees observed within the subject site is provided in Table 2 below and their location shown in Figure 6.

The assessment identified 112 trees within the subject site with a DBH of ≥ 50 cm. Twenty one of these trees were observed to contain hollows or possible hollows of some type with four being assessed at the time to possibly have hollows suitable for black cockatoos to use for nesting (i.e. large enough entrance into a suitably sized and orientated branch/trunk).

No actual evidence (e.g. chew marks) of any hollows being used by black cockatoos for nesting (currently or previously) was seen. Common brushtail possums were observed in close proximity to some of these hollow trees during the nocturnal surveys and these animals may be occupying at least some of the potential hollows recorded.

Table 2: Summary of Potential Black Cockatoo Habitat Trees (DBH ≥ 50 cm) within the Subject Site

| Tree species | Total Number of Habitat Trees Recorded | Number of Trees with <u>No Hollows</u> Observed | Number of Trees with Hollows Considered <u>Unsuitable</u> for Nesting Black Cockatoos | Number of Trees with Hollows Considered <u>Possibly Suitable</u> for Nesting Black Cockatoos |
|-------------------------------------|--|---|---|--|
| Flooded Gum | 73 | 65 | 8 | 0 |
| Marri | 22 | 22 | 0 | 0 |
| Jarrah | 8 | 4 | 4 | 0 |
| Dead Unidentified <i>Eucalyptus</i> | 9 | 0 | 5 | 4 |
| Total | 117 | 91 | 17 | 4 |

Additional details on each habitat tree observed can be found in Appendix D.

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A review of publicly available data showed no previous black cockatoo breeding records in or near the subject site (DoP 2011). The closest breeding records shown in the DoP document are located 20 km south east of the subject site in Dalyellup.

Based on available mapping there is about 5,300 ha of remnant native vegetation within 10 kilometres of the subject site. Some of this vegetation is also likely to contain “potential” breeding habitat as defined by DotEE.

5.3.2 Black Cockatoo Foraging Habitat

Following is a list of the main flora species recorded within the subject site survey that are known to be or are potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo:



- Flooded Gum – *Eucalyptus rudis*
- Marri – *Corymbia calophylla*;
- Jarrah - *Eucalyptus marginata*; and
- Peppermint – *Agonis flexuosa*.

It should be noted that some of the above-mentioned species (e.g., flooded gum and peppermint) while foraged upon on occasions are only likely to contribute a small proportion to any one birds diet relative to more favoured plant species such as marri. Areas of flooded gum and peppermint are therefore not generally regarded as representing quality foraging habitat. In addition, some tree species are also only represented by a small number of specimens (i.e. jarrah) and therefore do not contribute to the overall foraging resource to a significant degree.

The only actual evidence of foraging left by black cockatoos was in the form of chewed marri fruits at a few locations in the area of marri located in the central section of the subject site. This evidence was attributed to the forest red-tailed black-cockatoo or Baudin’s black-cockatoo depending on the nature of the marks left on the fruit debris in each instance, examples of which is provided in Table 3.

The extent of what would be regarded as quality black cockatoo foraging habitat within the subject site is very small being comprised of about 0.2 ha of marri forest supported to a small degree by a limited number of scattered marri and jarrah trees.

Table 3: Foraging Evidence Examples

| Foraging Evidence Description | Example Image |
|--|---|
| Marri Fruits – foraging activity attributed to the forest red-tailed black-cockatoo. |  A close-up photograph of a person's hand holding a single, dark brown, textured Marri fruit. The fruit is partially eaten, with a hole in the center. The background is a blurred outdoor setting with dry leaves and twigs. |
| Marri fruits – foraging activity attributed to Baudin's black cockatoo. |  A close-up photograph of a person's hand holding three Marri fruits. The fruits are dark brown and textured, with some showing signs of being eaten. The background is a blurred outdoor setting with green foliage. |

Based on available mapping there is about 5,300 ha of remnant native vegetation within 10 kilometres of the subject site. Much of this is likely to also represent black cockatoo foraging habitat of some type.

5.3.3 Black Cockatoo Roosting Habitat

No evidence of black cockatoos roosting within trees located inside the subject site was observed during the survey period.

A review of the 2017 Great Cockey Count database shows no documented roost sites within the subject site, the closest active roost (2017) being about 3 km south. This site was in use by 20 white-tailed black cockatoos during the 2017 Great Cockey Count. Another nine documented roost sites (but not necessarily in current use) occur within 10 km of the subject site.

5.4 OPPORTUNISTIC FAUNA OBSERVATIONS

Opportunistic fauna observations are listed in Appendix B. A total of 37 native fauna species were observed (or positively identified from foraging evidence, scats, tracks,

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skeletons or calls) within the subject site during the course of site visits. Five introduced species were also confirmed as being present. Most of the fauna species recorded are common, widespread bird species.

Evidence of two listed threatened black cockatoo species was observed (forest red-tailed black cockatoo and Baudin's black cockatoo – foraging evidence (chewed marri fruits) (see section 5.2.4.2). No evidence of any listed migratory or DBCA priority fauna species using the area was found.

6. CONCLUSION

The fauna assessment within the subject site was undertaken for the purposes of delineating and characterising the fauna and wetland habitats present and to identify potential impacts of the proposed development. Targeted searches for western ringtail possums and black cockatoo individuals and their habitat were also carried out.

An assessment of part of a Conservation Category Wetland which extends into the subject site suggests that it should be considered for re-classification as a Multiple Use Wetland given it is highly degraded and of an identical character to adjoining areas that are mapped as such.

Based on the results of the assessment and the scale of the proposed development, likely impacts on western ringtail possums and black cockatoos and/or their preferred habitat are considered to be non-existent/negligible.

Western ringtail possums appear not to be utilising vegetation with the subject site as habitat and overall, habitat quality in areas to be developed are low/very low.

Some areas of vegetation represent black cockatoo habitat, but the degree of use appears to be low with no breeding or roosting activity detected and only a very limited amount of quality foraging habitat being present.

The results of the assessment suggest that if the proposed development were to be referred to the DotEE for review under the *EPBC Act* that it would be regarded as “not a controlled action” given impacts on listed species or their habitat are not likely to be significant.

It is therefore concluded that there exists no major constraints relating to fauna, and in particular fauna of conservation significance with respect to the proposed development.

It is recommended that a fauna relocation program be implemented prior to and during clearing works to ensure direct impact on fauna (e.g. common brushtail possums) most likely to be encountered, are minimised.

7. REFERENCES

Commonwealth of Australia (2012). *EPBC Act Referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest red-tailed black cockatoo (vulnerable) *Calyptorhynchus banksii naso*.*

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Johnstone, R. E. & Kirkby, T. (2011). Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on the Swan Coastal Plain (Lancelin–Dunsborough), Western Australia. Studies on distribution, status, breeding, food, movements and historical changes. Report for the Department of Planning, Western Australia.

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Shedley E. and Williams K. (2014). An assessment of habitat for western ringtail possum (*Pseudocheirus occidentalis*) on the southern Swan Coastal Plain. Unpublished report for the Department of Parks and Wildlife, Bunbury, Western Australia.

(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

FIGURES



Legend

 Subject Site



Fauna
Assessment
Drawn: G Harewood
Date: Oct 2018
Scale: 1:50,000

Lot 9004 and Lot 9503
Eaton Drive - Eaton


**Subject Site
&
Surrounds**

Projection/Coordinate System: UTM/MGA Zone 50

Figure: 1



Legend

 Subject Site



0 50 100 150 200
Metres



Fauna
Assessment

Drawn: G. Harewood

Date: Nov 2018






Scale: 1:4,275

Projection/Coordinate System: UTM/MGA Zone 50

Lot 9004 and Lot 9503
Eaton Drive - Eaton

Air Photo

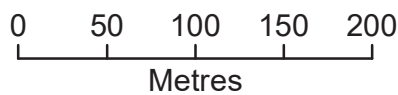
Fauna Habitats

-  Cleared paddocks with scattered sedges and widely scattered trees
-  Open woodland of flooded gum over low woodland of paperback
-  Low woodland/low open woodland of peppermint with emergent jarrah and marri
-  Tall open forest of marri
-  Manmade permanent freshwater dam



Legend

 Subject Site



Fauna Assessment

Drawn: G. Harewood

Date: Nov 2018

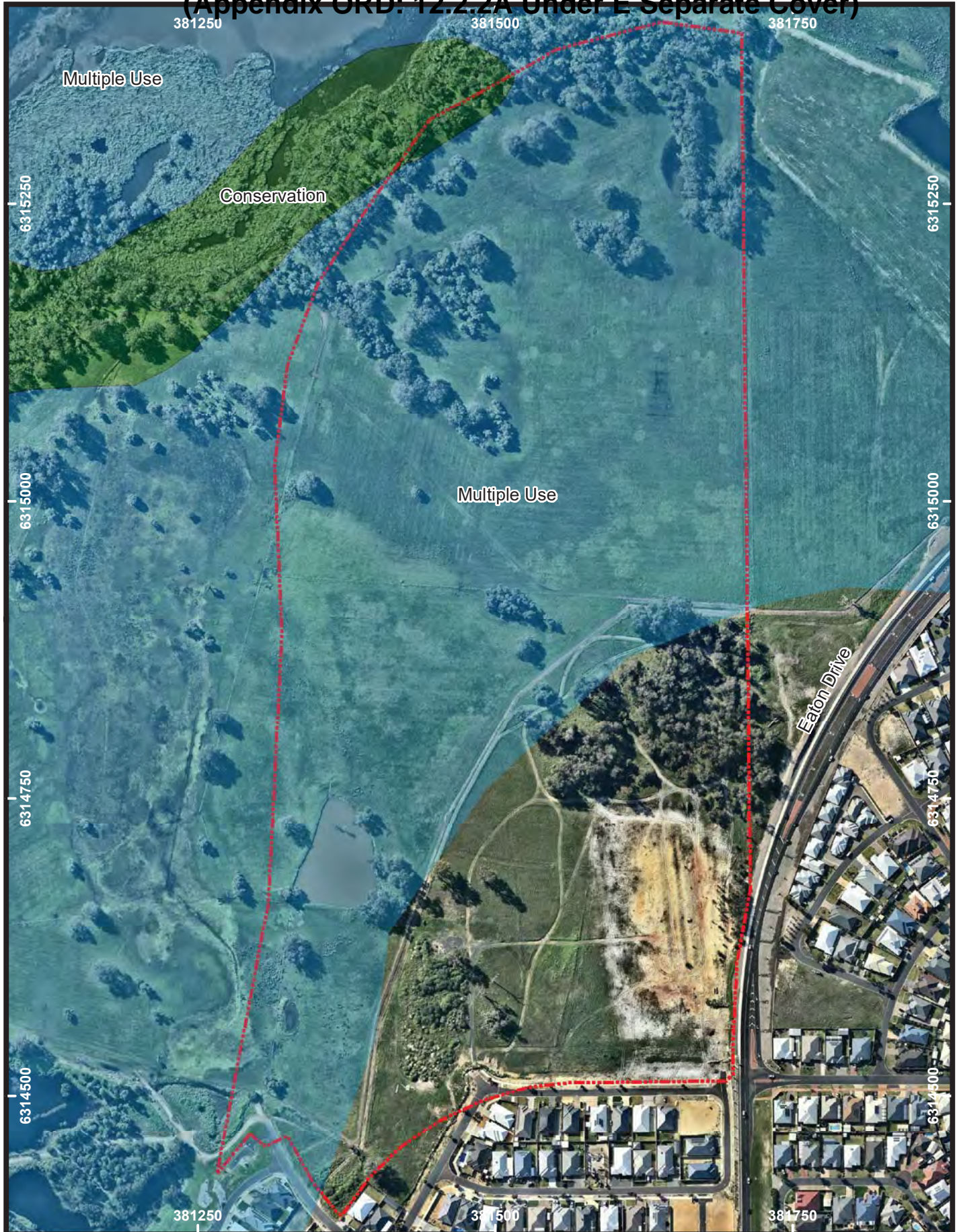
Scale: 1:4,275

Projection/Coordinate System: UTM/MGA Zone 50


Figure: 3

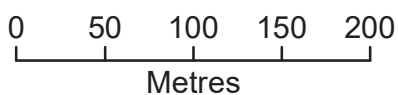
Lot 9004 and Lot 9503
Eaton Drive - Eaton

Fauna Habitats



Legend

 Subject Site



Fauna Assessment

Drawn: G. Harewood

Date: Nov 2018

Scale: 1:4,275

Projection/Coordinate System: UTM/MGA Zone 50




Figure: 4

Lot 9004 and Lot 9503
Eaton Drive - Eaton

Wetland Classifications



Legend

-  Subject Site
-  Night 1 - Common Brushtail Possum (8)
-  Night 2 - Common Brushtail Possum (7)

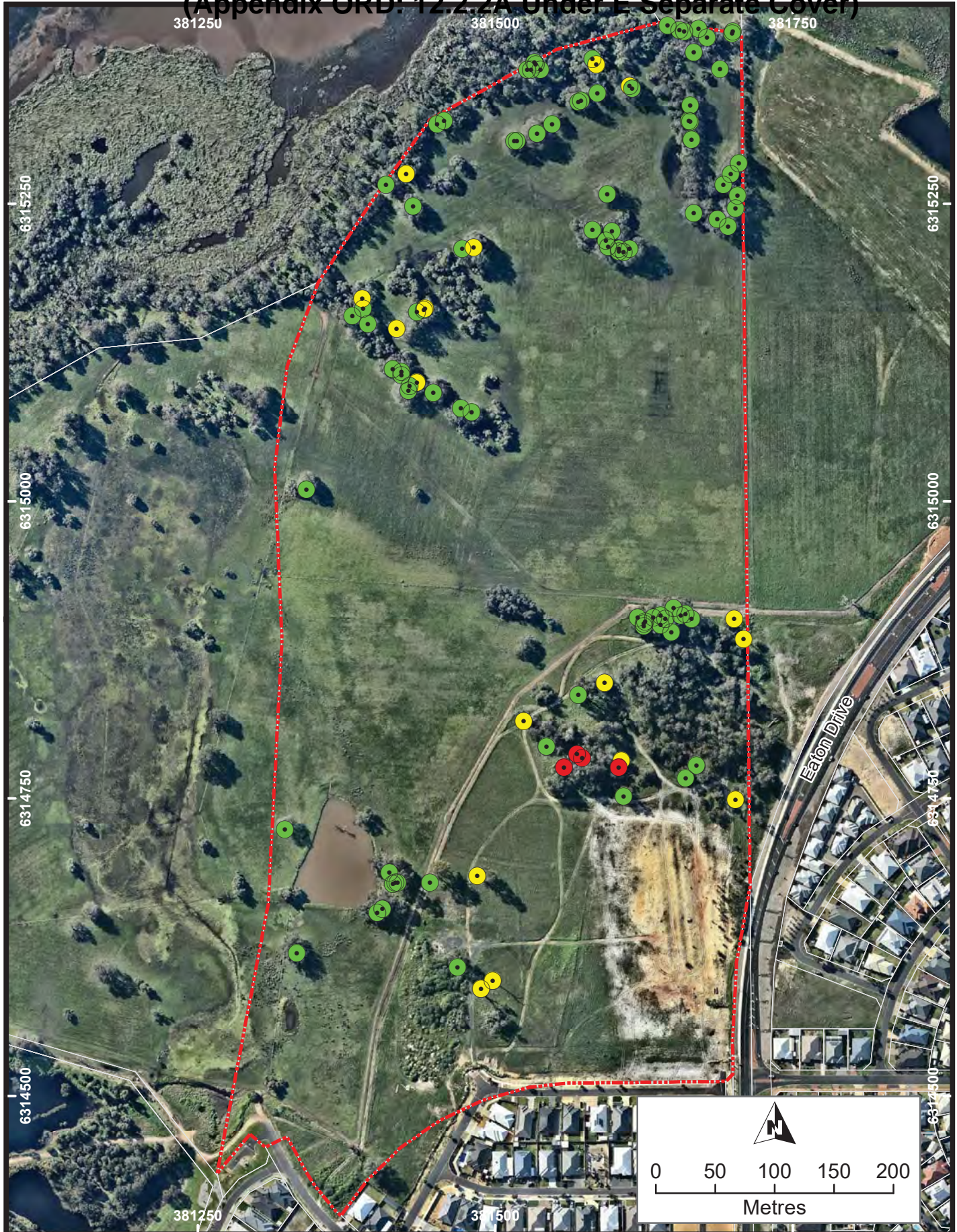


Drawn: G. Harewood
Date: Nov 2018
Scale: 1:4,275


Lot 9004 and Lot 9503
Eaton Drive - Eaton




**Possum
Observations**

(Appendix ORD: 12.2.2A Under E Separate Cover)



Legend

 Subject Site

-  Habitat Tree - One or more hollows possibly suitable for black cockatoos
-  Habitat Tree - One or more hollows unsuitable for black cockatoos
-  Habitat Tree - No hollows seen



Fauna Assessment
 Drawn: G. Harewood
 Date: Nov 2018
 Scale: 1:4,275

Lot 9004 and Lot 9503
 Eaton Drive - Eaton

**Habitat Trees
 (DBH > 50cm)**

(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

APPENDIX A

BLACK COCKATOO HABITAT TREE DETAILS

(Appendix ORD: 12.2.2A Under E Separate Cover)

Habitat Trees

DBH >50cm

Datum - GDA94

Entrance Size Ranges - Small = >5cm, Medium = 5 to 10cm, Large = >10cm

| Waypoint Number | Zone | mE | mN | Tree Species | Tree Height (m) | DBH (cm) | Number of Hollows | Estimated Hollow Entrance Size | Occupancy | Chew Marks | Potential Cockatoo Nest Hollow | Comments |
|-----------------|------|--------|---------|--------------|-----------------|----------|-------------------|--------------------------------|-----------|------------|--------------------------------|--|
| wpt001 | 50H | 381709 | 6314884 | Dead Unknown | 15-20 | >50 | 2+ | Small & Medium | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt002 | 50H | 381701 | 6314901 | Dead Unknown | 15-20 | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt003 | 50H | 381665 | 6314901 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt004 | 50H | 381660 | 6314905 | Marri | 20+ | >50 | 0 | | | | | |
| wpt005 | 50H | 381656 | 6314904 | Marri | 20+ | >50 | 0 | | | | | |
| wpt006 | 50H | 381650 | 6314910 | Marri | 20+ | >50 | 0 | | | | | |
| wpt007 | 50H | 381643 | 6314901 | Marri | 20+ | >50 | 0 | | | | | |
| wpt008 | 50H | 381639 | 6314904 | Marri | 20+ | >50 | 0 | | | | | |
| wpt009 | 50H | 381620 | 6314902 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt010 | 50H | 381626 | 6314899 | Marri | 20+ | >50 | 0 | | | | | |
| wpt011 | 50H | 381625 | 6314897 | Marri | 20+ | >50 | 0 | | | | | |
| wpt012 | 50H | 381625 | 6314895 | Marri | 20+ | >50 | 0 | | | | | |
| wpt013 | 50H | 381639 | 6314896 | Marri | 20+ | >50 | 0 | | | | | |
| wpt014 | 50H | 381633 | 6314902 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt015 | 50H | 381648 | 6314890 | Marri | 20+ | >50 | 0 | | | | | |
| wpt016 | 50H | 381592 | 6314847 | Jarrah | 15-20 | >50 | 2+ | Small, Medium & Large | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt017 | 50H | 381570 | 6314837 | Marri | 20+ | >50 | 0 | | | | | |
| wpt018 | 50H | 381524 | 6314815 | Jarrah | 20+ | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt019 | 50H | 381543 | 6314794 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt020 | 50H | 381558 | 6314776 | Dead Unknown | 10-15 | >50 | 2+ | Medium & Large (Cockatoo) | No signs | No signs | Yes | Internal dimensions of hollows unknown |
| wpt021 | 50H | 381573 | 6314784 | Dead Unknown | 10-15 | >50 | 2+ | Medium & Large (Cockatoo) | No signs | No signs | Yes | Internal dimensions of hollows unknown |
| wpt022 | 50H | 381569 | 6314787 | Dead Unknown | 15-20 | >50 | 2+ | Medium & Large (Cockatoo) | No signs | No signs | Yes | Internal dimensions of hollows unknown |
| wpt023 | 50H | 381604 | 6314776 | Dead Unknown | 10-15 | >50 | 2+ | Medium & Large (Cockatoo) | No signs | No signs | Yes | Internal dimensions of hollows unknown |
| wpt024 | 50H | 381606 | 6314782 | Dead Unknown | 5-10 | >50 | 2+ | Medium & Large | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt025 | 50H | 381608 | 6314752 | Jarrah | 10-15 | >50 | 0 | | | | | |
| wpt026 | 50H | 381660 | 6314767 | Jarrah | 10-15 | >50 | 0 | | | | | |
| wpt027 | 50H | 381669 | 6314778 | Jarrah | 15-20 | >50 | 0 | | | | | |
| wpt028 | 50H | 381702 | 6314749 | Dead Unknown | 10-15 | >50 | 2+ | Small & Medium | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt029 | 50H | 381488 | 6314590 | Dead Jarrah | 15-20 | >50 | 2+ | Small, Medium & Large | No signs | No signs | No | Tree Martins nesting |
| wpt030 | 50H | 381498 | 6314597 | Dead Unknown | 15-20 | >50 | 2+ | Small, Medium & Large | No signs | No signs | No | Kestrel nesting ? |
| wpt031 | 50H | 381468 | 6314608 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt032 | 50H | 381485 | 6314685 | Jarrah | 15-20 | >50 | 2+ | Small, Medium & Large | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt033 | 50H | 381445 | 6314679 | Jarrah | 20+ | >50 | 0 | | | | | |
| wpt034 | 50H | 381414 | 6314678 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt035 | 50H | 381418 | 6314679 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt036 | 50H | 381416 | 6314679 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt037 | 50H | 381411 | 6314688 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt038 | 50H | 381401 | 6314654 | Flooded Gum | 15-20 | >50 | 0 | | | | | |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Waypoint Number | Zone | mE | mN | Tree Species | Tree Height (m) | DBH (cm) | Number of Hollows | Estimated Hollow Entrance Size | Occupancy | Chew Marks | Potential Cockatoo Nest Hollow | Comments |
|-----------------|------|--------|---------|--------------|-----------------|----------|-------------------|--------------------------------|-----------|------------|--------------------------------|--|
| wpt039 | 50H | 381405 | 6314657 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt040 | 50H | 381333 | 6314620 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt041 | 50H | 381323 | 6314724 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt042 | 50H | 381341 | 6315010 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt043 | 50H | 381480 | 6315075 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt044 | 50H | 381471 | 6315078 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt045 | 50H | 381448 | 6315091 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt046 | 50H | 381434 | 6315100 | Flooded Gum | 15-20 | >50 | 2+ | Small & Medium | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt047 | 50H | 381427 | 6315093 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt048 | 50H | 381428 | 6315097 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt049 | 50H | 381421 | 6315106 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt050 | 50H | 381421 | 6315109 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt051 | 50H | 381414 | 6315111 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt052 | 50H | 381393 | 6315149 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt053 | 50H | 381380 | 6315156 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt054 | 50H | 381389 | 6315162 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt055 | 50H | 381388 | 6315170 | Flooded Gum | 15-20 | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt056 | 50H | 381417 | 6315145 | Flooded Gum | 15-20 | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt057 | 50H | 381434 | 6315159 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt058 | 50H | 381440 | 6315161 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt059 | 50H | 381441 | 6315162 | Flooded Gum | 15-20 | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt060 | 50H | 381472 | 6315212 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt061 | 50H | 381482 | 6315213 | Flooded Gum | 15-20 | >50 | 2+ | Small & Medium | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt062 | 50H | 381431 | 6315248 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt063 | 50H | 381408 | 6315266 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt064 | 50H | 381425 | 6315275 | Flooded Gum | 15-20 | >50 | 2+ | Small, Medium & Large | No signs | No signs | No | Large hollows too low - Internal dimensions of hollows unknown |
| wpt065 | 50H | 381451 | 6315317 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt066 | 50H | 381457 | 6315320 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt067 | 50H | 381516 | 6315303 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt068 | 50H | 381518 | 6315303 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt069 | 50H | 381535 | 6315309 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt070 | 50H | 381548 | 6315317 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt071 | 50H | 381572 | 6315337 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt072 | 50H | 381570 | 6315336 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt073 | 50H | 381586 | 6315343 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt074 | 50H | 381527 | 6315363 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt075 | 50H | 381530 | 6315363 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt076 | 50H | 381534 | 6315367 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt077 | 50H | 381533 | 6315369 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt078 | 50H | 381538 | 6315363 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt079 | 50H | 381582 | 6315372 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt080 | 50H | 381585 | 6315367 | Flooded Gum | 15-20 | >50 | 1 | Small | No signs | No signs | No | Internal dimensions of hollows unknown |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Waypoint Number | Zone | mE | mN | Tree Species | Tree Height (m) | DBH (cm) | Number of Hollows | Estimated Hollow Entrance Size | Occupancy | Chew Marks | Potential Cockatoo Nest Hollow | Comments |
|-----------------|------|--------|---------|--------------|-----------------|----------|-------------------|--------------------------------|-----------|------------|--------------------------------|--|
| wpt081 | 50H | 381613 | 6315349 | Flooded Gum | 15-20 | >50 | 2+ | Small | No signs | No signs | No | Internal dimensions of hollows unknown |
| wpt082 | 50H | 381615 | 6315347 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt083 | 50H | 381645 | 6315400 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt084 | 50H | 381655 | 6315396 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt085 | 50H | 381659 | 6315395 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt086 | 50H | 381671 | 6315397 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt087 | 50H | 381678 | 6315390 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt088 | 50H | 381699 | 6315393 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt089 | 50H | 381700 | 6315395 | Marri | 15-20 | >50 | 0 | | | | | |
| wpt090 | 50H | 381689 | 6315363 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt091 | 50H | 381667 | 6315377 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt092 | 50H | 381664 | 6315333 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt093 | 50H | 381663 | 6315320 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt094 | 50H | 381664 | 6315319 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt095 | 50H | 381665 | 6315304 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt096 | 50H | 381705 | 6315284 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt097 | 50H | 381698 | 6315275 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt098 | 50H | 381692 | 6315266 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt099 | 50H | 381704 | 6315257 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt100 | 50H | 381702 | 6315246 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt101 | 50H | 381696 | 6315231 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt102 | 50H | 381687 | 6315237 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt103 | 50H | 381667 | 6315242 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt104 | 50H | 381594 | 6315258 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt105 | 50H | 381582 | 6315228 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt106 | 50H | 381598 | 6315227 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt107 | 50H | 381593 | 6315219 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt108 | 50H | 381595 | 6315214 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt109 | 50H | 381604 | 6315210 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt110 | 50H | 381604 | 6315212 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt111 | 50H | 381608 | 6315209 | Flooded Gum | 15-20 | >50 | 0 | | | | | |
| wpt112 | 50H | 381613 | 6315212 | Flooded Gum | 15-20 | >50 | 0 | | | | | |

(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

APPENDIX B

LIST OF FAUNA OBSERVED

(Appendix ORD: 12.2.2A Under E Separate Cover)

List of Fauna Observed

LOT 9004 9503 EATON DRIVE - EATON

Compiled by Greg Harewood - Nov 2018

| Class Family Species | Common Name | Conservation Status |
|--|-----------------------|------------------------|
| Reptilia | | |
| Scincidae Skinks | | |
| <i>Cryptoblepharus buchananii</i> | Fence Skink | |
| <i>Tiliqua rugosa</i> | Bobtail | |
| Aves | | |
| Anatidae Geese, Swans, Ducks | | |
| <i>Anas gracilis</i> | Grey Teal | LC |
| <i>Anas superciliosa</i> | Pacific Black Duck | LC |
| <i>Aythya australis</i> | Hardhead | Bh LC |
| <i>Chenonetta jubata</i> | Australian Wood Duck | LC |
| <i>Tadorna tadornoides</i> | Australian Shelduck | LC |
| Podicipedidae Grebes | | |
| <i>Tachybaptus novaehollandiae</i> | Australasian Grebe | LC |
| Ardeidae Herons, Egrets, Bitterns | | |
| <i>Ardea ibis</i> | Cattle Egret | CA JA |
| <i>Ardea novaehollandiae</i> | White-faced Heron | LC |
| Threskiornithidae Ibises, Spoonbills | | |
| <i>Threskiornis molucca</i> | Australian White Ibis | LC |
| <i>Threskiornis spinicollis</i> | Straw-necked Ibis | LC |

WC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

(Appendix ORD: 12.2.2A Under E Separate Cover)

| Class Family Species | Common Name | Conservation Status |
|--|----------------------------------|------------------------|
| Accipitridae Kites, Goshawks, Eagles, Harriers | | |
| <i>Haliastur sphenurus</i> | Whistling Kite | Bp LC |
| Falconidae Falcons | | |
| <i>Falco cenchroides</i> | Australian Kestrel | LC |
| Rallidae Rails, Crakes, Swampheens, Coots | | |
| <i>Fulica atra</i> | Eurasian Coot | LC |
| Columbidae Pigeons, Doves | | |
| <i>Ocyphaps lophotes</i> | Crested Pigeon | LC |
| <i>Streptopelia senegalensis</i> | Laughing Turtle-Dove | Introduced |
| Psittacidae Parrots | | |
| <i>Cacatua roseicapilla</i> | Galah | LC |
| <i>Cacatua sanguinea</i> | Little Corella | Introduced |
| <i>Calyptorhynchus banksii naso</i> | Forest Red-tailed Black-Cockatoo | S3 VU Bp LC |
| <i>Calyptorhynchus baudinii</i> | Baudin's Black Cockatoo | S2 EN Bp EN A3cde |
| <i>Platycercus spurius</i> | Red-capped Parrot | LC |
| <i>Platycercus zonarius</i> | Australian Ringneck | LC |
| Halcyonidae Tree Kingfishers | | |
| <i>Dacelo novaeguineae</i> | Laughing Kookaburra | Introduced |
| Acanthizidae Thornbills, Geryones, Fieldwrens & Whitefaces | | |
| <i>Acanthiza chrysorrhoa</i> | Yellow-rumped Thornbill | Bh LC |
| <i>Gerygone fusca</i> | Western Gerygone | LC |
| <i>Smicrornis brevirostris</i> | Weebill | Bh LC |

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(Appendix ORD: 12.2.2A Under E Separate Cover)

| Class Family Species | Common Name | Conservation Status |
|---|---------------------------|------------------------|
| Pardalotidae Pardalotes | | |
| <i>Pardalotus striatus</i> | Striated Pardalote | LC |
| Meliphagidae Honeyeaters, Chats | | |
| <i>Anthochaera carunculata</i> | Red Wattlebird | LC |
| Dicruridae Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo | | |
| <i>Grallina cyanoleuca</i> | Magpie-lark | LC |
| <i>Rhipidura fuliginosa</i> | Grey Fantail | LC |
| <i>Rhipidura leucophrys</i> | Willie Wagtail | LC |
| Campephagidae Cuckoo-shrikes, Trillers | | |
| <i>Coracina novaehollandiae</i> | Black-faced Cuckoo-shrike | LC |
| Cracticidae Currawongs, Magpies & Butcherbirds | | |
| <i>Cracticus tibicen</i> | Australian Magpie | LC |
| <i>Cracticus torquatus</i> | Grey Butcherbird | LC |
| Corvidae Ravens, Crows | | |
| <i>Corvus coronoides</i> | Australian Raven | LC |
| Hirundinidae Swallows, Martins | | |
| <i>Hirundo nigricans</i> | Tree Martin | LC |
| Mammalia | | |
| Phalangeridae Brushtail Possums, Cuscuses | | |
| <i>Trichosurus vulpecula vulpecula</i> | Common Brushtail Possum | LC |
| Macropodidae Kangaroos, Wallabies | | |
| <i>Macropus fuliginosus</i> | Western Grey Kangaroo | LC |

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(Appendix ORD: 12.2.2A Under E Separate Cover)

| Class Family Species | Common Name | Conservation Status |
|------------------------------------|-----------------|------------------------|
| Canidae Dogs, Foxes | | |
| <i>Vulpes vulpes</i> | Red Fox | Introduced |
| Bovidae Horned Ruminants | | |
| <i>Bos taurus</i> | European Cattle | Introduced |
| Leporidae Rabbits, Hares | | |
| <i>Oryctolagus cuniculus</i> | Rabbit | Introduced |

WC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

(Appendix ORD: 12.2.2A Under E Separate Cover)

FAUNA AND HABITAT ASSESSMENT – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2018 – V2

DISCLAIMER

This fauna assessment report (“the report”) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood (“the Author”). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

In preparing the report, the Author has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise stated in the report, the Author has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Author will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to the Author.

The report has been prepared for the benefit of the Client and no other party. The Author assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of the Author or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

The Author will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

Black Cockatoo Habitat Tree Review



Lot 9004 and Lot 9503

Eaton Drive

Eaton

November 2022

Version 1

On behalf of:

Accendo Australia
PO Box 5178
WEST BUSSELTON WA 6280
M: 0418 950 852
T: (08) 9755 7217
E: kirsten@accendoaustralia.com.au

Prepared by:

Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
M: 0402 141 197
E: gharewood@iinet.net.au

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HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

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TABLES

TABLE 1: Summary of Habitat Trees Inspected

FIGURES

FIGURE 1: Habitat Trees (DBH >50cm) Reviewed 2022

APPENDICES

APPENDIX A: Habitat Tree Details (trees with possible larger hollows only)

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

1. INTRODUCTION

This report details the results of a black cockatoo habitat tree review carried out over Lot 9004 and Lot 9503 Eaton Drive, Eaton (subject site). The subject site is situated about nine kilometres east of Bunbury in the south west of Western Australia. Lot 9004 and Lot 9503 have a combined area of about 34 hectares, most of which is cleared farmland used for or previously used for livestock grazing.

As part of an overall environmental assessment a black cockatoo breeding habitat survey was undertaken by Greg Harewood in 2018 (Harewood 2018). One hundred and twelve habitat trees (i.e. trees with a diameter at breast height ≥ 50 cm) were identified within the subject site. Twenty one of these trees were observed to contain hollows or possible hollows of some type with four being assessed at the time to possibly have hollows suitable for black cockatoos to use for nesting (i.e. large enough entrance into a suitably sized and orientated branch/trunk). No actual evidence (e.g. chew marks) of any hollows being used by black cockatoos for nesting (currently or previously) was seen.

To obtain up to date information on the current status of the previously identified habitat trees, the Shire of Dardanup have requested a review of the trees be undertaken. The results of this survey work are presented here.

2. SCOPE OF WORKS

The scope of works was to reinspect the 21 habitat trees containing potential hollows so as to obtain current information on their potential suitability as actual black cockatoo breeding trees.

3. METHODS

The review was carried out by Greg Harewood (Zoologist) on the 22 November 2022. The assessment involved the inspection of 21 trees previously identified as containing hollows or apparent hollows.

The assessment of hollow suitability was initially carried out from ground level, however trees assessed as containing large hollows suspected of being possibly suitable for black cockatoos were also examine and photograph at close range using a drone (DJI Mavic Mini) or a pole mounted “GoPro” camera. The photographs obtained were subsequently examined to assist in determining suitability and to aid in identifying any signs of current or previous use by black cockatoos.

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

Identified hollows have initially been placed into one of three categories based on the type of hollow entry:

- Chimney: the hollow entry faces directly upwards in the end of the main trunk;
- Spout: hollow entry which is at the end of a broken branch; or
- Side: the entry is directly into the side of the trunk or a branch with no protrusions.

For the purpose of this review, hollows have then been placed into one of five categories based on the observable characteristics of each hollow. The categories used were:

- Confirmed Hollow: Black cockatoos observed utilising the hollow for breeding purposes;
- Chewed Hollow: The hollow shows signs of chewing (“chipping” around or near entrance and/or internally) attributed to black cockatoo activity (in most cases indicating nesting activity, but in some cases possibly marks left by black cockatoos investigating (“prospecting”) hollows);
- Unused Hollow: The hollow appears to be of a suitable size for black cockatoos to use for nesting, but no conclusive evidence of this activity seen. It should be noted that chew marks/chipping are not always evident or present on some hollows that have been used for nesting. Hollows classified as “unused” may therefore have been used for nesting but cannot be specifically classified as such. Alternatively, some “unused” hollows may not be suitable for black cockatoos as a range of characteristics, not all of which can be seen or measured, ultimately determined if a hollow will ever actually be used;
- Unsuitable Hollow: The hollow has been assessed, based on information obtained, as being unlikely to be suitable for black cockatoos (generally because of the entrance appearing to be too small or because the actual hollow or accommodating branch/tree trunk appears to be too small or as having an unfavourable orientation);
- No Hollow: A possible hollow was found upon closer inspection not to be present.
- Fallen Tree/No Tree: The tree has fallen over or been removed since the original survey.

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

4. SURVEY CONSTRAINTS

No seasonal sampling has been carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should also be recognised that site conditions can change with time.

5. RESULTS

A summary of the black cockatoo “habitat trees” assessed is provided in Table 1 below. The location of the trees inspected are shown in Figure 1.

Photographs and additional details of eight trees suspected of possibly containing larger hollows and assessed in more detail can be found in Appendix A.

Table 1: Summary of Habitat Trees Inspected

| Tree Id | Number of Hollows | Reviewed Status | Justification |
|----------------|--------------------------|------------------------|--|
| Wpt001 | N/A | No tree | 2018 assessment identified a dead habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt002 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt016 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium/large sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt018 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt020 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| Tree Id | Number of Hollows | Reviewed Status | Justification |
|----------------|--------------------------|------------------------|---|
| Wpt021 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |
| Wpt022 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |
| Wpt023 | 2+ | No hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not actually present and status therefore changed to “No hollows”. |
| Wpt024 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium/large sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt028 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. Additional large shallow hollow identified, but unsuitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt029 | N/A | No tree | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed during subdivision development. |
| Wpt030 | N/A | No tree | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt032 | N/A | No tree | 2018 assessment identified a jarrah habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt046 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt055 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| Tree Id | Number of Hollows | Reviewed Status | Justification |
|---------|-------------------|----------------------|--|
| Wpt056 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt059 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt061 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt064 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium/large sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt080 | 1 | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt081 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |

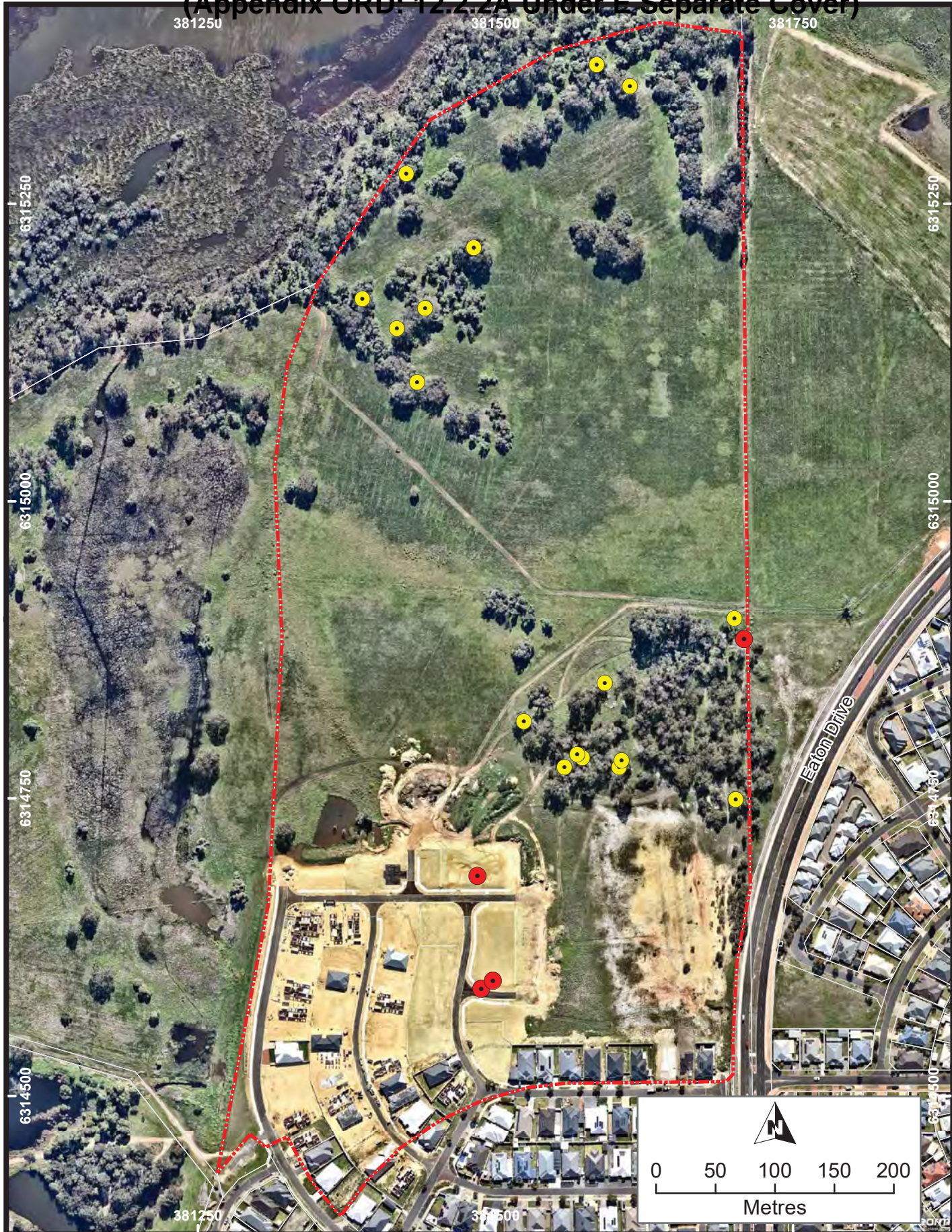
6. CONCLUSION

The assessment reported on here was undertaken to provide up to date information on the likely suitability of hollows for black cockatoos within 21 previously identified habitat trees.


Four of the 21 trees were found to no longer be present. Three of these trees appear to have been removed as part of ongoing subdivision activities. The fourth tree appears to have been removed for firewood.



Four habitat trees previously assessed as potentially containing hollows suitable for black cockatoos have been re-assessed as not containing suitable hollows a conclusion generally based on the fact that the possible hollows were found to be too small internally or non-existent when examined/photographed with a drone.

The status of the remaining 13 habitat trees was assessed as having not changed since the previous assessment in 2018 given that upon re-inspection none contained hollows suitable for black cockatoos to use for nesting purposes. In most cases these hollows appear to be too small or shallow with inadequate internal dimensions.



Legend

 Subject Site

-  Habitat Tree - One or more hollows unsuitable for black cockatoos
-  Previously identified Habitat Tree no longer present



Drawn: G. Harewood
Date: Nov 2022
Scale: 1:4,275

Lot 9004 and Lot 9503
Eaton Drive - Eaton
**Habitat Trees
(DBH >50cm)
Reviewed 2022**

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

7. REFERENCES

Harewood, G. (2018). Fauna and Habitat Assessment - Lot 9004 and Lot 9503, Eaton Drive, Eaton. Unpublished report prepared for Accendo Australia.

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

APPENDIX A

Habitat Tree Details
(trees with possible larger hollows only)

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381592 mE | 6314846 mN | Tree Species | Dead (Jarrah) | Review Date | 22/11/2022 |
|-----------|--------------------------|--|------------|--------------|---------------|-------------------------------|------------------------|
| 16 | Comments | Recently dead jarrah tree with a number of potential hollows in branches and trunk. When examined with a drone the various hollows appeared to be either too small internally and/or wrong orientation or non-existent. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

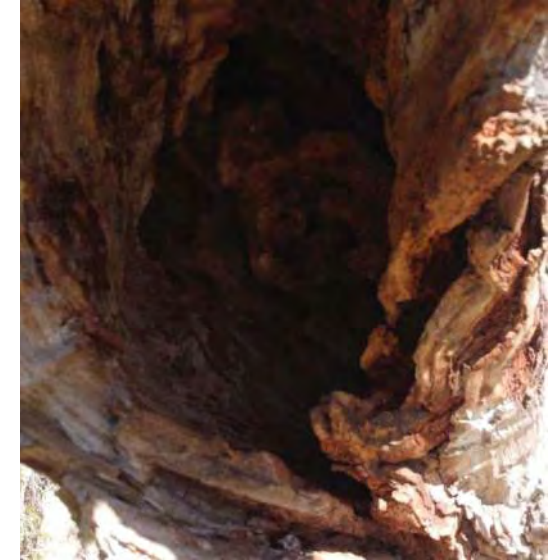
| ID | Coordinates (MGA 94/Z50) | 381557 mE | 6314775 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 20 | Comments | Dead tree with a number of potential hollows in branches. When examined with a drone the various hollows appeared to be either too small internally or non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381573 mE | 6314784 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|---------------------|
| 21 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable Hollows. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

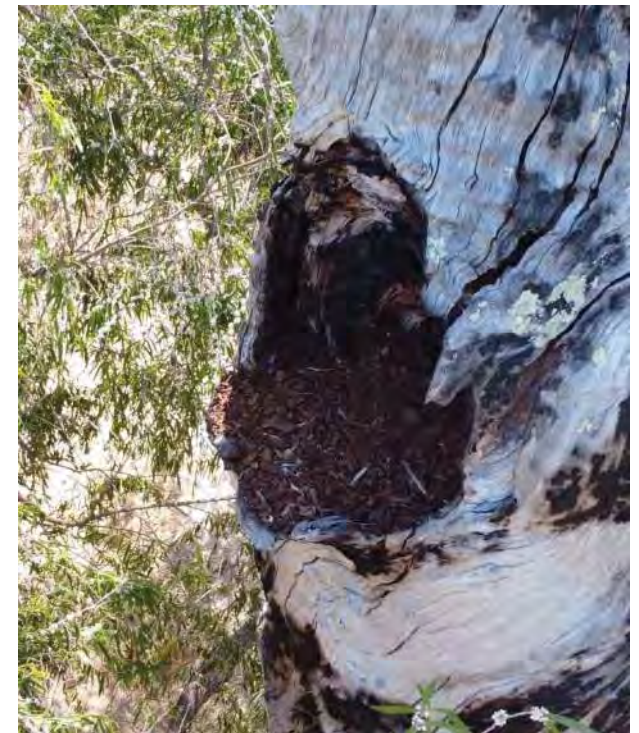
HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381568 mE | 6314786 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 22 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally or non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |

341°NW (M) 50S 381566 6314780 ±4 m



ZOOTOPIA 22 Nov 2022 09:52:36



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| | | | | | | | |
|----|--------------------------|---|------------|--------------|------------------------|-------------|------------|
| ID | Coordinates (MGA 94/Z50) | 381604 mE | 6314776 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
| 23 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | Revised Classification | No Hollows. | |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381606 mE | 6314781 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 24 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally or non-existent. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |

📍 198°S (M) 📍 50S 381612 6314773 ±6 m



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381702 mE | 6314749 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|--------------------|
| 28 | Comments | Dead tree with a number of potential hollows in branches and trunk. When examined with a drone the single large hollow was found to be relatively shallow and has been assessed as unsuitable for black cockatoos. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable Hollow. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381424 mE | 6315275 mN | Tree Species | Flooded Gum | Review Date | 22/11/2022 |
|----|--------------------------|--|------------|--------------|------------------------|--------------------|------------|
| 64 | Comments | Flooded gum with very large side entry type hollow located low on main trunk. This hollow was examined using a pole mounted camera. The pictures obtained show that the hollow unsuitable for black cockatoos as it has no base and continues downwards to another opening in the main truck at about ground level. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | Revised Classification | Unsuitable Hollow. | |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

DISCLAIMER

This fauna assessment report (“the report”) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood (“the Author”). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

In preparing the report, the Author has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise stated in the report, the Author has not verified the accuracy of completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Author will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to the Author.

The report has been prepared for the benefit of the Client and no other party. The Author assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of the Author or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

The Author will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

Black Cockatoo Habitat Tree Review



Lot 9004 and Lot 9503

Eaton Drive

Eaton

November 2022

Version 1

On behalf of:

Accendo Australia
PO Box 5178
WEST BUSSELTON WA 6280
M: 0418 950 852
T: (08) 9755 7217
E: kirsten@accendoaustralia.com.au

Prepared by:

Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
M: 0402 141 197
E: gharewood@iinet.net.au

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

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TABLE 1: Summary of Habitat Trees Inspected

FIGURES

FIGURE 1: Habitat Trees (DBH >50cm) Reviewed 2022

APPENDICES

APPENDIX A: Habitat Tree Details (trees with possible larger hollows only)

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

1. INTRODUCTION

This report details the results of a black cockatoo habitat tree review carried out over Lot 9004 and Lot 9503 Eaton Drive, Eaton (subject site). The subject site is situated about nine kilometres east of Bunbury in the south west of Western Australia. Lot 9004 and Lot 9503 have a combined area of about 34 hectares, most of which is cleared farmland used for or previously used for livestock grazing.

As part of an overall environmental assessment a black cockatoo breeding habitat survey was undertaken by Greg Harewood in 2018 (Harewood 2018). One hundred and twelve habitat trees (i.e. trees with a diameter at breast height ≥ 50 cm) were identified within the subject site. Twenty one of these trees were observed to contain hollows or possible hollows of some type with four being assessed at the time to possibly have hollows suitable for black cockatoos to use for nesting (i.e. large enough entrance into a suitably sized and orientated branch/trunk). No actual evidence (e.g. chew marks) of any hollows being used by black cockatoos for nesting (currently or previously) was seen.

To obtain up to date information on the current status of the previously identified habitat trees, the Shire of Dardanup have requested a review of the trees be undertaken. The results of this survey work are presented here.

2. SCOPE OF WORKS

The scope of works was to reinspect the 21 habitat trees containing potential hollows so as to obtain current information on their potential suitability as actual black cockatoo breeding trees.

3. METHODS

The review was carried out by Greg Harewood (Zoologist) on the 22 November 2022. The assessment involved the inspection of 21 trees previously identified as containing hollows or apparent hollows.

The assessment of hollow suitability was initially carried out from ground level, however trees assessed as containing large hollows suspected of being possibly suitable for black cockatoos were also examine and photograph at close range using a drone (DJI Mavic Mini) or a pole mounted “GoPro” camera. The photographs obtained were subsequently examined to assist in determining suitability and to aid in identifying any signs of current or previous use by black cockatoos.

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

Identified hollows have initially been placed into one of three categories based on the type of hollow entry:

- Chimney: the hollow entry faces directly upwards in the end of the main trunk;
- Spout: hollow entry which is at the end of a broken branch; or
- Side: the entry is directly into the side of the trunk or a branch with no protrusions.

For the purpose of this review, hollows have then been placed into one of five categories based on the observable characteristics of each hollow. The categories used were:

- Confirmed Hollow: Black cockatoos observed utilising the hollow for breeding purposes;
- Chewed Hollow: The hollow shows signs of chewing (“chipping” around or near entrance and/or internally) attributed to black cockatoo activity (in most cases indicating nesting activity, but in some cases possibly marks left by black cockatoos investigating (“prospecting”) hollows);
- Unused Hollow: The hollow appears to be of a suitable size for black cockatoos to use for nesting, but no conclusive evidence of this activity seen. It should be noted that chew marks/chipping are not always evident or present on some hollows that have been used for nesting. Hollows classified as “unused” may therefore have been used for nesting but cannot be specifically classified as such. Alternatively, some “unused” hollows may not be suitable for black cockatoos as a range of characteristics, not all of which can be seen or measured, ultimately determined if a hollow will ever actually be used;
- Unsuitable Hollow: The hollow has been assessed, based on information obtained, as being unlikely to be suitable for black cockatoos (generally because of the entrance appearing to be too small or because the actual hollow or accommodating branch/tree trunk appears to be too small or as having an unfavourable orientation);
- No Hollow: A possible hollow was found upon closer inspection not to be present.
- Fallen Tree/No Tree: The tree has fallen over or been removed since the original survey.

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

4. SURVEY CONSTRAINTS

No seasonal sampling has been carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should also be recognised that site conditions can change with time.

5. RESULTS

A summary of the black cockatoo “habitat trees” assessed is provided in Table 1 below. The location of the trees inspected are shown in Figure 1.

Photographs and additional details of eight trees suspected of possibly containing larger hollows and assessed in more detail can be found in Appendix A.

Table 1: Summary of Habitat Trees Inspected

| Tree Id | Number of Hollows | Reviewed Status | Justification |
|---------|-------------------|----------------------|--|
| Wpt001 | N/A | No tree | 2018 assessment identified a dead habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt002 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt016 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium/large sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt018 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with possible small sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt020 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| Tree Id | Number of Hollows | Reviewed Status | Justification |
|----------------|--------------------------|------------------------|---|
| Wpt021 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |
| Wpt022 | 2+ | No suitable hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not suitable and status therefore changed to “No suitable hollows”. |
| Wpt023 | 2+ | No hollows. | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, some possibly suitable for black cockatoos. 2022 review suggests hollows are not actually present and status therefore changed to “No hollows”. |
| Wpt024 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium/large sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review. |
| Wpt028 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. Additional large shallow hollow identified, but unsuitable for black cockatoos. No change in this status considered warranted based on 2022 review |
| Wpt029 | N/A | No tree | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed during subdivision development. |
| Wpt030 | N/A | No tree | 2018 assessment identified a dead habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt032 | N/A | No tree | 2018 assessment identified a jarrah habitat tree with small/medium/large sized hollows, none suitable for black cockatoos. Appears to have been removed, possibly for firewood. |
| Wpt046 | 2+ | No suitable hollows. | 2018 assessment identified a habitat tree with possible small/medium sized hollows, none suitable for black cockatoos. No change in this status considered warranted based on 2022 review |
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HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

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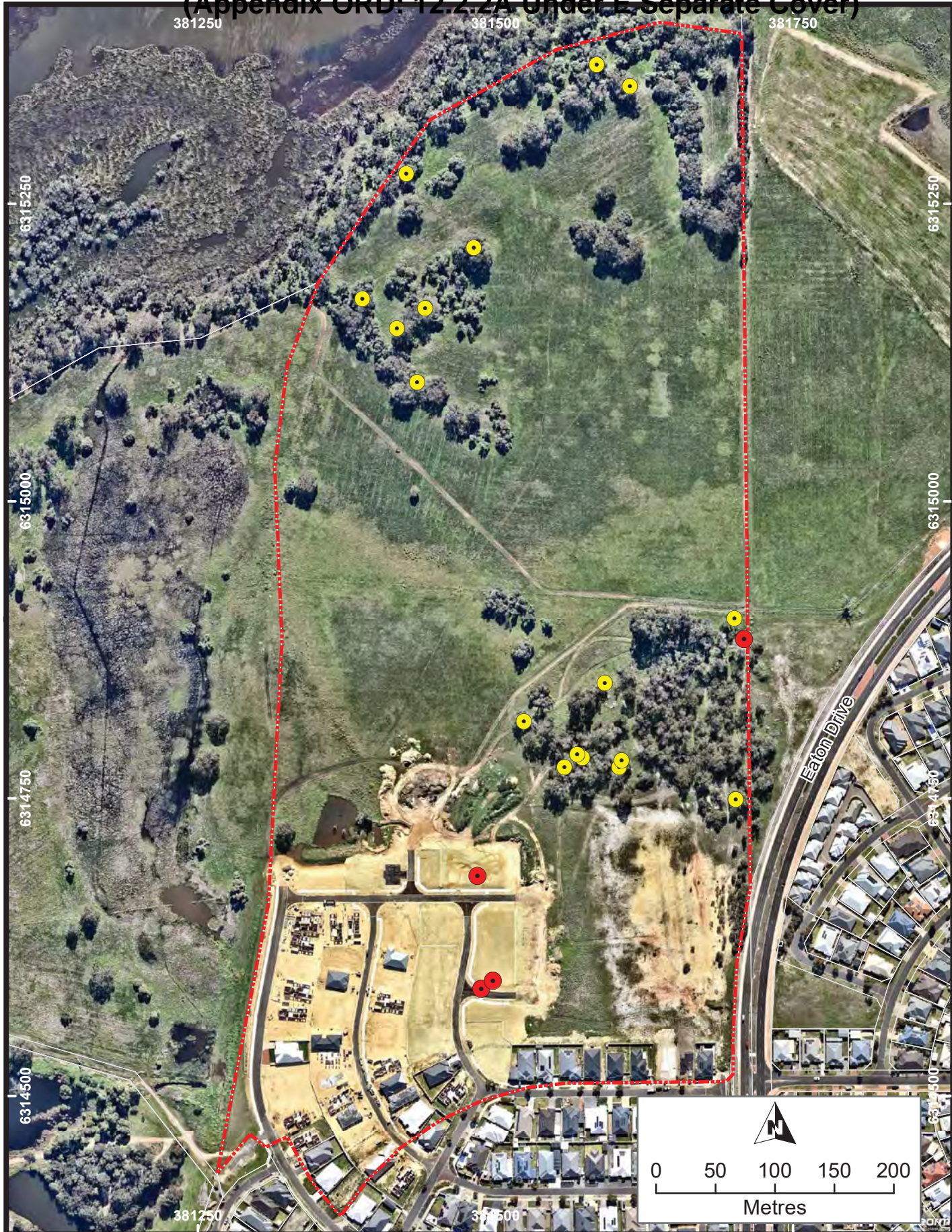
6. CONCLUSION

The assessment reported on here was undertaken to provide up to date information on the likely suitability of hollows for black cockatoos within 21 previously identified habitat trees.


Four of the 21 trees were found to no longer be present. Three of these trees appear to have been removed as part of ongoing subdivision activities. The fourth tree appears to have been removed for firewood.



Four habitat trees previously assessed as potentially containing hollows suitable for black cockatoos have been re-assessed as not containing suitable hollows a conclusion generally based on the fact that the possible hollows were found to be too small internally or non-existent when examined/photographed with a drone.

The status of the remaining 13 habitat trees was assessed as having not changed since the previous assessment in 2018 given that upon re-inspection none contained hollows suitable for black cockatoos to use for nesting purposes. In most cases these hollows appear to be too small or shallow with inadequate internal dimensions.



Legend

 Subject Site

-  Habitat Tree - One or more hollows unsuitable for black cockatoos
-  Previously identified Habitat Tree no longer present



Drawn: G. Harewood
Date: Nov 2022
Scale: 1:4,275

Lot 9004 and Lot 9503
Eaton Drive - Eaton
**Habitat Trees
(DBH >50cm)
Reviewed 2022**

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

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HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

APPENDIX A

Habitat Tree Details
(trees with possible larger hollows only)

(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381592 mE | 6314846 mN | Tree Species | Dead (Jarrah) | Review Date | 22/11/2022 |
|-----------|--------------------------|--|------------|--------------|---------------|-------------------------------|------------------------|
| 16 | Comments | Recently dead jarrah tree with a number of potential hollows in branches and trunk. When examined with a drone the various hollows appeared to be either too small internally and/or wrong orientation or non-existent. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |



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HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

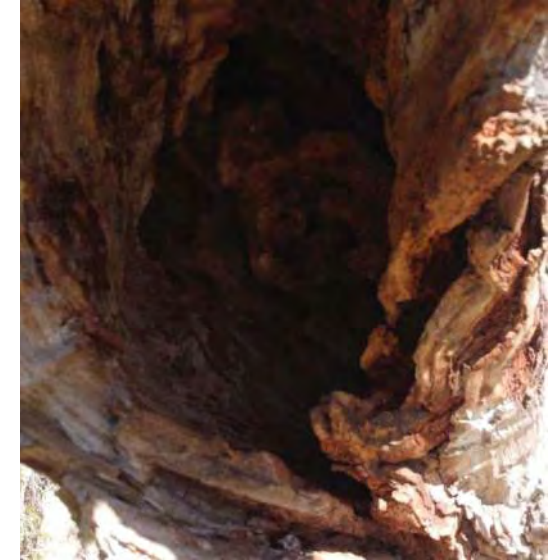
| ID | Coordinates (MGA 94/Z50) | 381557 mE | 6314775 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 20 | Comments | Dead tree with a number of potential hollows in branches. When examined with a drone the various hollows appeared to be either too small internally or non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381573 mE | 6314784 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|---------------------|
| 21 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable Hollows. |

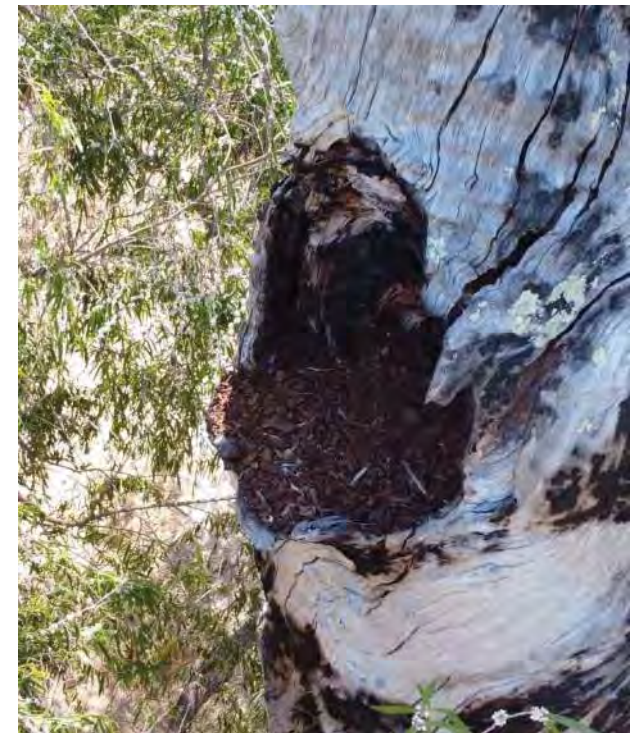


(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381568 mE | 6314786 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 22 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally or non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |

341°NW (M) 50S 381566 6314780 ±4 m



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| | | | | | | | |
|----|--------------------------|---|------------|--------------|------------------------|-------------|------------|
| ID | Coordinates (MGA 94/Z50) | 381604 mE | 6314776 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
| 23 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be non-existent. The original classification (Harewood 2018) has therefore been changed from potential hollows suitable for black cockatoos to no suitable hollows. No conclusive evidence of use by other fauna evident. | | | Revised Classification | No Hollows. | |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381606 mE | 6314781 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|------------------------|
| 24 | Comments | Dead tree with a number of potential hollows in branches and main trunk. When examined with a drone the various hollows appeared to be too small internally or non-existent. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable/No Hollows. |

📍 198°S (M) 📍 50S 381612 6314773 ±6 m



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381702 mE | 6314749 mN | Tree Species | Dead (unknown) | Review Date | 22/11/2022 |
|-----------|--------------------------|---|------------|--------------|----------------|-------------------------------|--------------------|
| 28 | Comments | Dead tree with a number of potential hollows in branches and trunk. When examined with a drone the single large hollow was found to be relatively shallow and has been assessed as unsuitable for black cockatoos. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | | Revised Classification | Unsuitable Hollow. |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

| ID | Coordinates (MGA 94/Z50) | 381424 mE | 6315275 mN | Tree Species | Flooded Gum | Review Date | 22/11/2022 |
|----|--------------------------|--|------------|--------------|------------------------|--------------------|------------|
| 64 | Comments | Flooded gum with very large side entry type hollow located low on main trunk. This hollow was examined using a pole mounted camera. The pictures obtained show that the hollow unsuitable for black cockatoos as it has no base and continues downwards to another opening in the main trunk at about ground level. This is consistent with the original classification (Harewood 2018) where no hollows suitable for black cockatoos were identified. No conclusive evidence of use by other fauna evident. | | | Revised Classification | Unsuitable Hollow. | |



(Appendix ORD: 12.2.2A Under E Separate Cover)

HABITAT TREE REVIEW – LOT 9004 & 9503 EATON DRIVE - EATON – NOVEMBER 2022 – V1

DISCLAIMER

This fauna assessment report (“the report”) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood (“the Author”). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

In preparing the report, the Author has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise stated in the report, the Author has not verified the accuracy of completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Author will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to the Author.

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The Author will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX D | LOCAL WATER MANAGEMENT PLAN



Robusta Road, Eaton

REVISED LOCAL WATER MANAGEMENT STRATEGY

DOCUMENT QUALITY CONTROL

| | | |
|-------------------|-------------------------|----------|
| Project Reference | | B22049 |
| Ver No. | Purpose | Date |
| V1 | Client Review | May 2023 |
| V2 | Submission for approval | May 2023 |
| | | |
| | | |
| | | |

Oversby Consulting

Water and Environmental Management

Brendan Oversby
Director

☐ 0447 614 411
✉ brendan@oversbyconsulting.com.au
🌐 www.oversbyconsulting.com.au
📍 PO Box 369 DARDANUP WA 6236



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1 EXECUTIVE SUMMARY

The Robusta Road Revised Local Water Management Strategy (LWMS) has been developed to accompany the updating of the Structure Planning for the subject land. It provides an update to the approved Lot 9004 Eaton Drive Local Water Management Strategy and highlights how water is to be managed in response to the revised layout.

The current subject land is shown in Figure 2 is located west of Eaton Drive and east of Collie River. A location plan for the site is provided in Figure 1. This updated LWMS also considered the larger foreshore area that was analysed as part of the original structure planning and approved LWMS. This is identified as the Study area in Figure 1.

The majority of the undeveloped subject land is cleared and seeded with grass and pasture species with minimal to sparse tree and understorey species. The landform of the site consists of undulating sand dunes with a low lying swampy area in the centre of the site within the Collie River floodplain. A high point exists in the south western corner adjacent to the Collie River which will be developed at a later date.

Winter groundwater levels at the site are approximately 3 m from the surface at the eastern boundary sloping steeply towards the Collie River, in line with surface topography. The objective of this LWMS is to detail the updated best management practices approach to water management that will be undertaken for this development, in accordance with Better Urban Water Management (WAPC, 2008). This will include managing, protecting and conserving the total water cycle of the local environment and the greater catchment. The practices will involve:

- Stormwater management that incorporates the latest's water sensitive urban design practices;
- Groundwater resource management;
- Protection and enhancement of ecosystems dependent on water resources from the subject land;
- Sustainable water servicing.

The effectiveness, efficiency and benefits provided by the best management practices require a collaborative effort between local governments, developers and relevant regulatory authorities. Further summary of the practices to be undertaken for the subject land can be found in the Key Elements section.

1.1 PLANNING SUMMARY

Under the Greater Bunbury Region Scheme the developable portion of the subject land is zoned 'Urban', with the balance zoned 'Regional Open Space'. This corresponds with the 'Development' and 'Regional Open Space' land zonings mapped in the Shire of Dardanup's Town Planning Scheme No.3.

Land zoned 'Development' requires that a Local Structure Plan (LSP) be prepared and endorsed by both the Local Authority and the Western Australian Planning Commission (WAPC) prior to subdivision and development. This LWMS is prepared in support of the LSP for the Subject Land, in accordance with overarching planning requirements.

The subject land is currently zoned Rural under the Greater Bunbury Region Scheme (GBRS) and identified within the GBRS Floodplain Management Policy area.

The subject land is identified for land use intensification within the City of Bunbury Local Planning Scheme No. 8 (gazetted in March 2018), being that the land is contained within a Development Areas Special Control Area.

The southern portion of the original subject land has since been develop and as such has been removed from the current Structure Plan area.

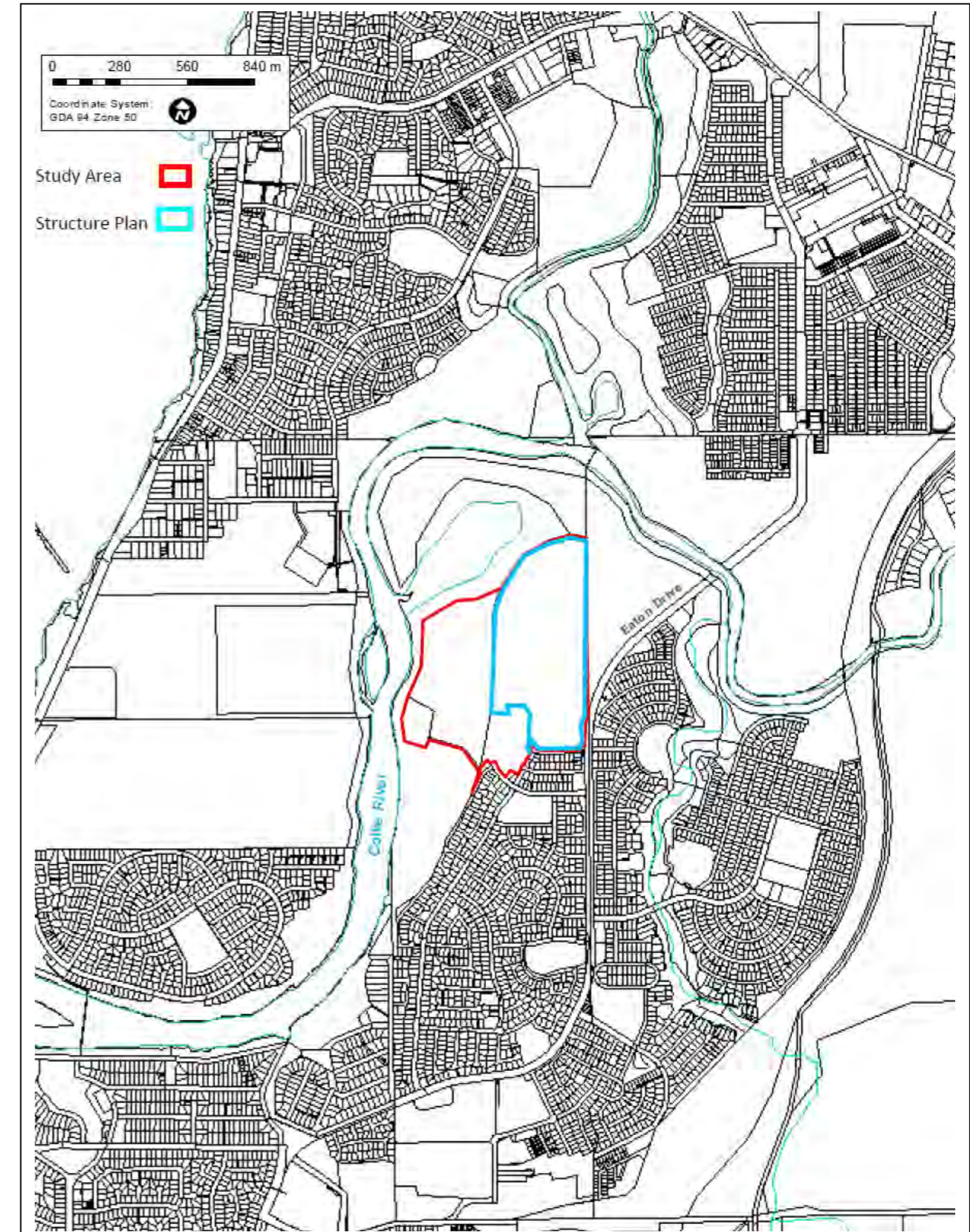


Figure 1 Location Plan and study area identifier

2 KEY ELEMENTS PLAN

Water management strategies for the subject land are based on best practice water sensitive urban designs that integrate sustainability and the provision of attractive communities. The strategies will be achieved through the synthesis of planning and designs to manage, protect and conserve the total water cycle. The plans and designs for the development are appropriate for the subject land's residential development, surrounding environment and local drainage characteristics.

A summary of the WSUD elements that will be implemented within the development to achieve best management practices are outlined below:

Water Conservation and Servicing

All houses are to be provided with a mains potable water (through Water Corporation).

Each lot is to be connected to a gravity sewer system, managed by the Water Corporation.

Stormwater Management

- Stormwater detention systems, combined with treatment systems such as bioretention gardens and wetlands will capture and treat stormwater flows. All flows leaving the site up to the 20% AEP event are generally to match or be below the pre development rate.
- Consistent with Shire policy CP060, soakage devices will be provided on lots where the aggregate impervious area including roofs, carparks, driveways, carports and patio's exceeds 250m² or where the lot size is less than 400m². Modelling assumes 1 m³ of storage for every 65 m² of connected impervious area

Flood Protection

All finished floor levels will be designed to maintain a clear separation of 300mm between the habitable floor level and the 1% Average Event Period (AEP) event flood level, generated on site;

All finished floor levels will be designed to maintain a clear separation of 500mm between the habitable floor levels and the 1% Average Event Period (AEP) event flood level of the Collie River of 3.61mAHD.

Ecosystem Protection

- New habitat will be created within the treatment wetlands through the use of locally native plant species;
- The WSUD elements used on site will treat stormwater and groundwater, improving the water quality prior to it entering downstream ecosystems of Collie River
- Flows to the Collie River will be managed to predevelopment rates for all events up to and including the 20% AEP, minimising changes to the current flows to this ecosystem.
- Existing habitat within the Collie River foreshore area will be retained as Regional Open Space (ROS) and is subject to future planning. Any land use in this area will take into account the Collie River flood regime and need for ecological management.
- The landscaping will utilise nutrient and waterwise practices to minimise contamination of the groundwater.

Groundwater Management

- Filling of building pads and roads will be used to manage groundwater so that adequate clearance is maintained between maximum estimated groundwater level and finished surface level.
- A subsoil drainage system is to be used in areas where clearance to groundwater is minimal.
- Inflows to the groundwater system will be treated through the wetland systems.
- A change in land use from livestock grazing to sewer residential will reduce nutrient loading to groundwater.

Monitoring And Maintenance

- Monitoring is to be undertaken through the construction phase of each stage for surface water and potential groundwater in relation to possible contamination;
- Post development monitoring is to consider surface and groundwater quality, ecosystem enhancement and WSUD structural performance

Implementation And Governance

- Developers are to undertake detailed UWMP's to provide the necessary information for management of water across the site;
- Developers are to undertake detailed Foreshore Management Plans to provide guidance on land management within the Collie River foreshore area.
- The Shire of Dardanup and Department of Water and Environmental Regulation are to continue to provide guidance, direction and assistance so that the targets outlined in this report are able to be realised.

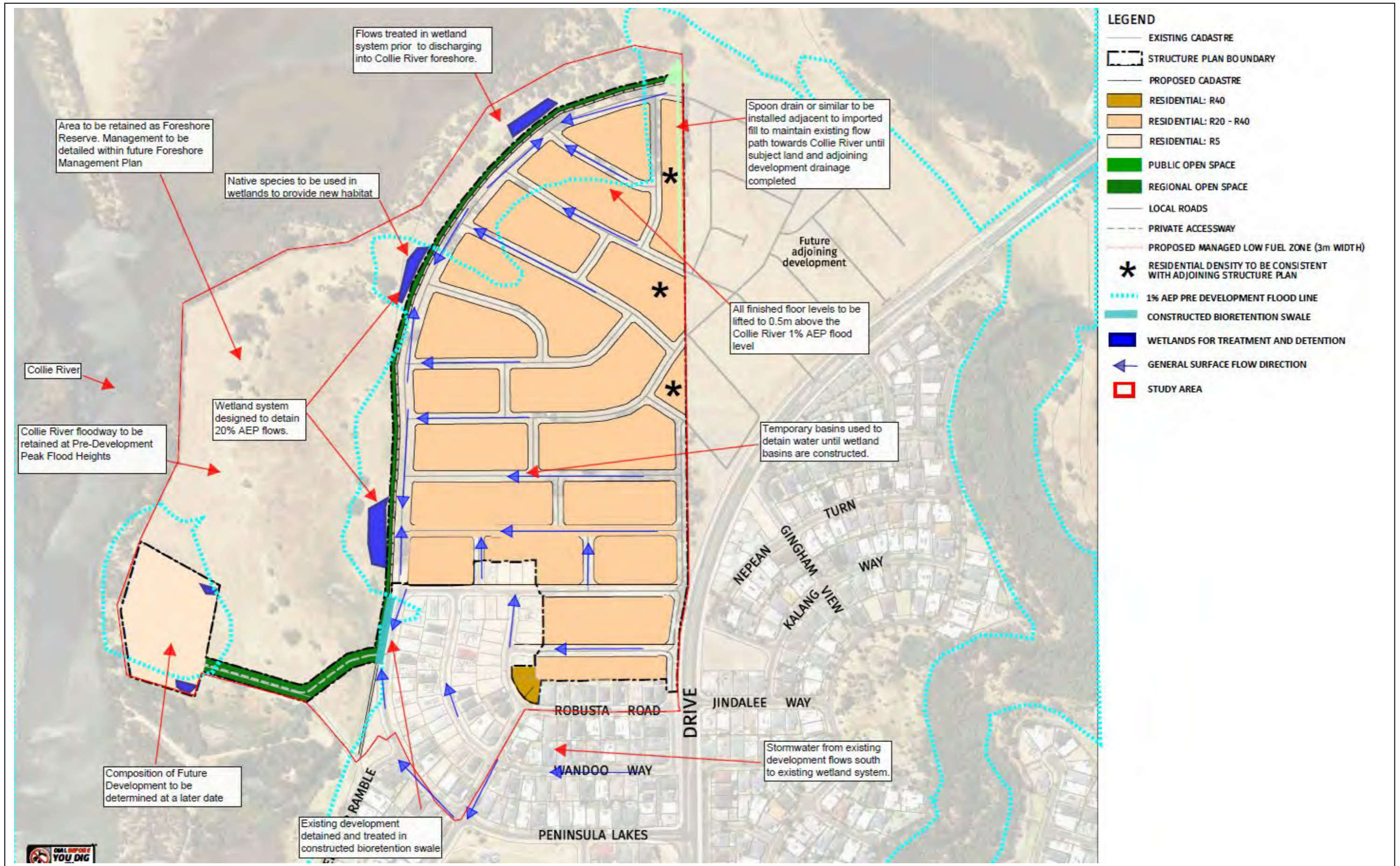


Figure 2 Key Elements Plan

3 **GEOTECHNICAL**

Golders completed a geotechnical investigation and preliminary acid sulphate soils investigation of the subject land in December 2005. The investigation included the installation of ten boreholes (BH01 to BH10) to a depth of 4m and the

excavation of 35 soil investigation pits (TP01 to TP35) to approximately 2.5m deep (Figure 5).

Shortly after the investigation, a small area in the south-eastern corner of the site labelled the 'Borrow Area' was used for fill material. TME Brown completed an additional Geotechnical investigation in 2010 which focused on the Borrow Area and the extension to Peninsular Drive in the west. The investigation included 12 test holes in the Borrow Area and 3 test holes excavated within the future Peninsula Drive extension.

Test locations are shown on Figure 3.

3.1 **GEOLOGY**

The Bunbury-Burekup Sheet of the 1:50,000 Urban Geology Series maps (GSWA, 1986) indicates the surface geology across the site is characterised by Bassendean Sands (Qpb) overlying fine sandy clays of the Guildford Formation (Qpa). Alluvium sediments associated with river terraces are located adjacent to the subject land within the Collie River flood plain (Figure 4). Surface geology mapping is generally consistent with both geotechnical studies (Golders, 2005 and TME Brown, 2010).

3.2 **SUBSURFACE CONDITIONS**

As part of Golders geotechnical investigation for the site, subsurface conditions have been separated into 3 groups:

Group 1 (BH03, BH04, BH05 and BH06): A top layer of silty sand overlying fine to medium grained orange/grey sand to a depth of 3m.

Group 2 (BH01, BH02 and BH07) Sand overlying fine to medium grained clayey sand overlying medium grained brownish yellow sand to a depth of 1.7m to 4.0m.

Group 3 (BH08, BH09 and BH10) Silty sand top layer overlying medium to high plasticity mottled clayey sand to a depth of 1m to 3.7m.

Subsurface conditions noted in the TME Brown investigation were generally silty topsoil, overlying sand and sandy clay/ clayey sand to a depth of 2.30m. This agrees with the descriptions provided by Golders.

3.3 **SOIL PERMEABILITY**

As part of Golders geotechnical investigation, double ring infiltrometer testing was undertaken at two locations (TP05 and TP17). Results indicated soil infiltration rates in this area range between 0.43 to 0.50 m/day. The low permeability is likely due to the underlying clay layer found across the site.

No infiltration testing was completed as part of the TME Brown investigation.

3.4 **ACID SULFATE SOILS**

Acid Sulfate Soil (ASS) risk mapping of the Swan Coastal Plain shows the majority of the site has moderate to low risk of ASS occurring within 3 m of soil surface. A small section in the south-west corner has been mapped as having high to moderate risk of ASS forming in the first 3m of soil surface. This can be seen in Figure 3.

Results of the preliminary acid sulfate soils assessments from both Golders and TME Brown (2005 and 2010) indicate actual acid sulfate soils can generally be expected to be encountered at depths of 3m or greater across the site and in soil material that has a high clay content.

Towards the northern section of the site, actual acid sulphate soils were encountered by Golders in BH08 to a depth of 1.25m with expected depths in this area even closer to surface. Iron floccing was also observed in ponded surface water in the area of BH08, BH09 and BH10, which is a field indicator of ASS.

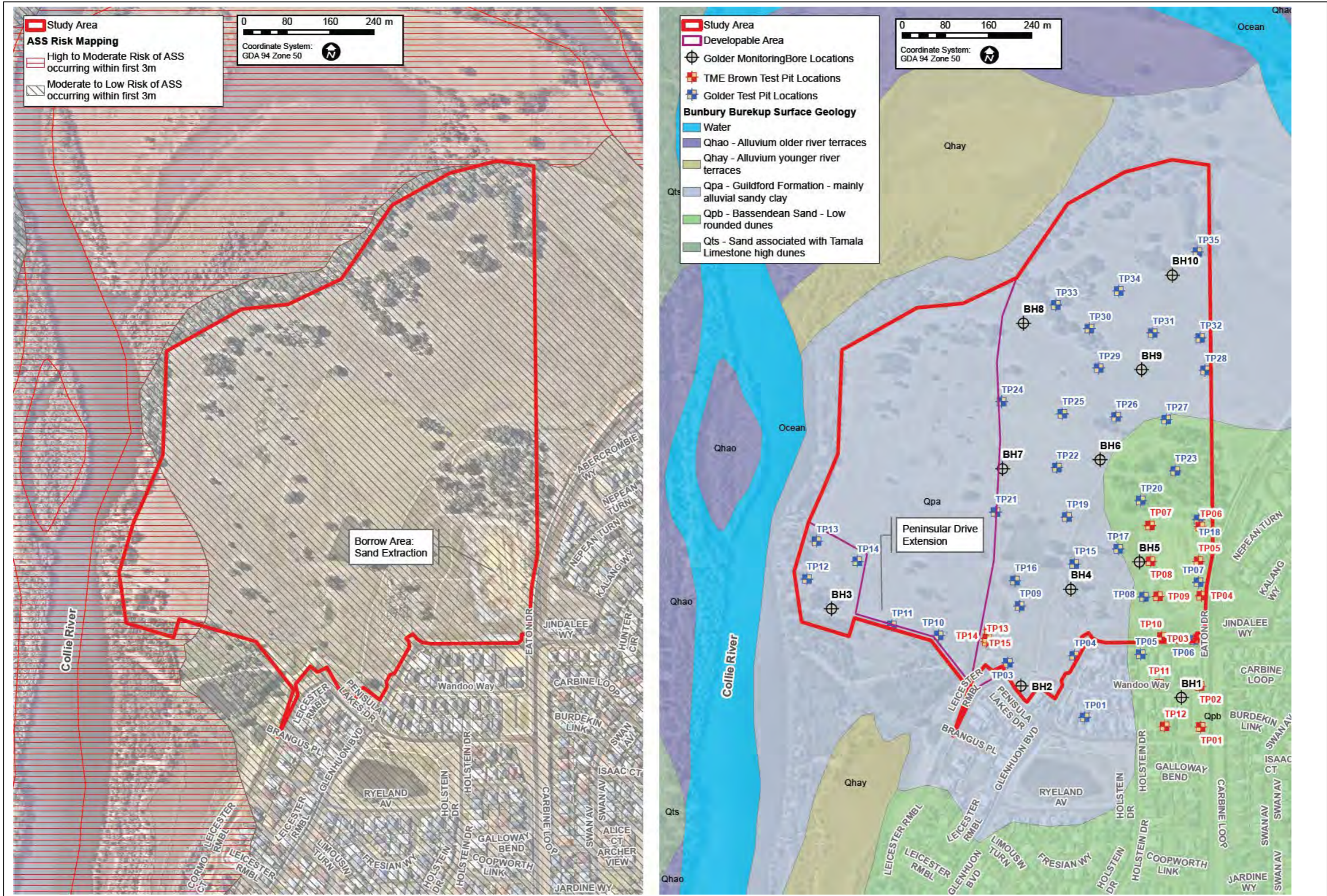


Figure 3 Surface Geology, ASS and Test Locations

4 LANDFORM AND ENVIRONMENTAL CONDITIONS

4.1 LANDFORM

The landform of the subject land slopes east to west towards the Collie River at an average gradient of 1:100 (v:h). Undulating sand dunes and swampy low lying areas are evident across the site consistent with the geomorphology of the Collie River. Surface elevations range from 10.50 mAHD in the south-eastern corner to 1.30 mAHD along the northern boundary within the Collie River floodplain.

4.2 WETLANDS & VEGETATION

A large portion of the subject land has been classified as Multiple Use wetland (UFI 1542 and 1383), which does not preclude urban development. Two Conservation Category wetlands (CCW) exist along the northern boundary of the subject land (UFI 1543, 1545). A 50m buffer has been applied to the CCW areas with all development, associated with the subject land, located outside the buffer area. .

Vegetation within the subject land has predominately been cleared and seeded with grass for pasture. There are sparse stands of riparian natives, including *Juncus* spp, *Melaleuca raphiophylla*, *Eucalyptus rudis* and *Casuarina obesa*. A large area of degraded *Corymbia callophylla* and *Agonis flexuosa* was noted on the eastern boundary of the site, which will be retained within the future POS.

There has been some riparian revegetation, outside of the western boundary, along the Collie River.

4.3 WATERWAYS

The subject land is presently serviced by the Collie River on the western boundary. The Collie River discharges south into the Leschenault Estuary and ultimately into the Indian Ocean (Figure 4).

4.4 CONTAMINATED SITES

A review of the Department of Water and Environmental Regulation's (DWER) Contaminated Sites Database (DWER, 2018) was undertaken with no known sites found within or in the vicinity of the subject land.



Undulating pasture looking westward towards Collie River

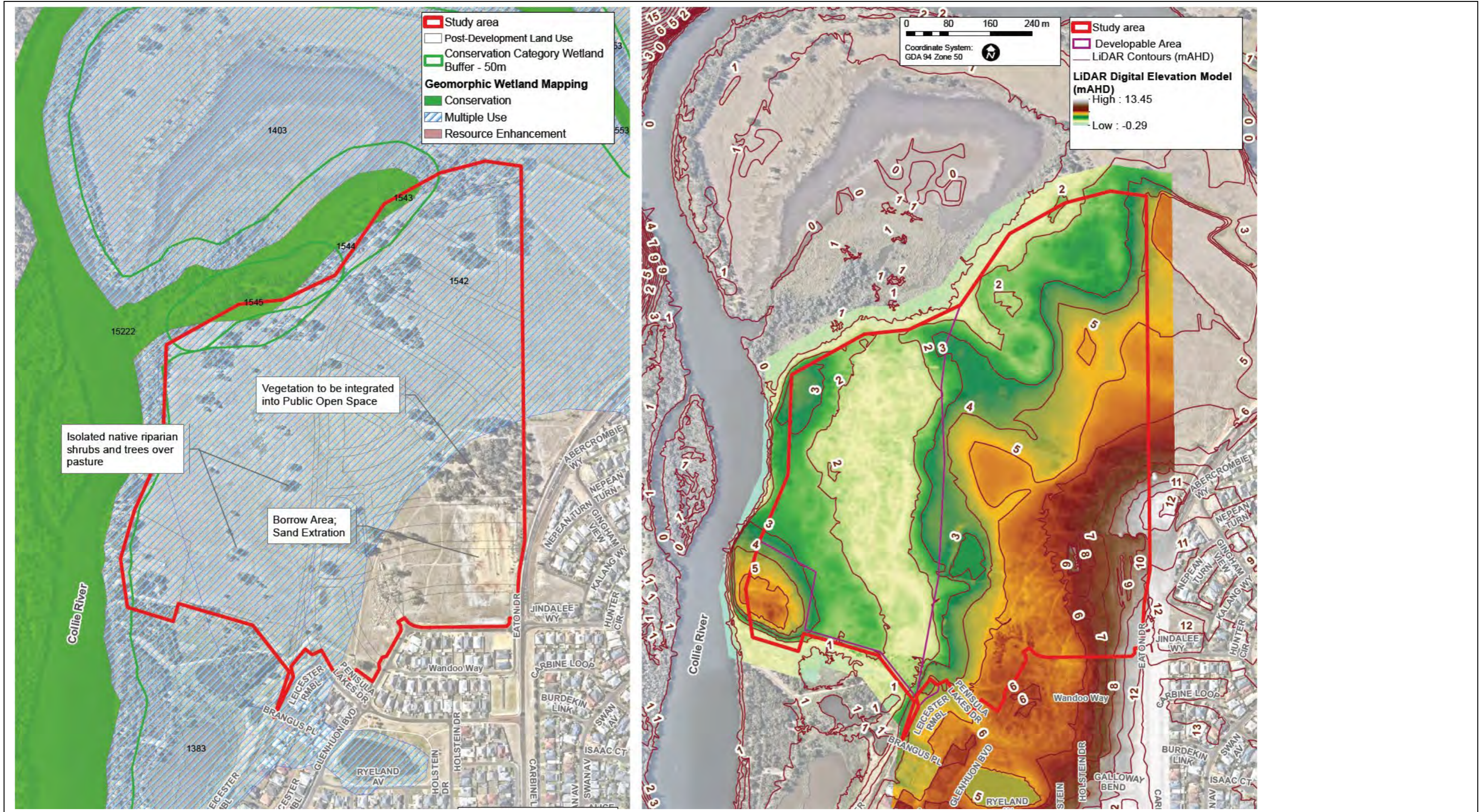


Figure 4 Landform and Wetlands

5 PRE DEVELOPMENT SURFACE WATER SITUATION

5.1 COLLIE RIVER FLOOD SUMMARY

Mapping of the 1% AEP Collie River floodplain and flood height contours was provided to Calibre by the Department of Water and Environmental Regulation. Inundation extents and flood levels are shown on Figure 5

The peak flood elevation adjacent to the subject land is 2.75mAHD which has been used as a constant backwater condition in the pre-development modelling for the subject land, summarised below.

5.2 INTERNAL CATCHMENT ASSESSMENT

Pre-development modelling involved the division of the site and hydrologically connected areas into 8 pre-development catchments, A through H, ranging in size from 0.75 ha to 16.10 ha. The catchment extents focused on the developable areas within the site and excluded the low lying floodplain area in the western portion of the subject land. The catchments can be seen in Figure 5.

An analysis of the surrounding development area found Eaton Rd currently acts as a catchment boundary with internal drainage within the road discharging north via an extensive pit and pipe network, towards Collie River. East of Eaton Drive, the existing development discharges towards Millbridge Creek, a tributary of the Collie River.

A small portion of existing development south of the subject land has its own treatment network of roadside bioretention gardens and is noted as Cat-F (Figure 6). Runoff coefficients for Cat-F are based on average lot size, with residential lots assumed to infiltrate the 1 in 1 storm event on site and overflow into the road reserve in larger storm events. A small grouped housing site in the south-east corner of CAT-F is assumed to have a direct lot connection to the Wandoo Way road drainage network. This water is directed to the south west and away from the future development areas.

Roughness coefficients and corresponding runoff coefficients were then assigned to each catchment based on the breakdown of land uses (digitally identified from aerial imagery), surface geology and surface slope towards Collie River. Peak flood elevations within the Collie River were utilised as constant backwater conditions within the model.

Table 1 provides a summary of these catchments, their corresponding land usages by area and peak flow rates for critical storm durations. Table 2 provides a summary of the roughness values used in the modelling of pre-development catchment conditions.

| Catchment | Area (ha) | Peak Flow (m ³ /s) | | |
|--------------|--------------|-------------------------------|------------------------|-----------------------|
| | | 63% AEP 1 hour | 20% AEP Critical Storm | 1% AEP Critical Storm |
| A | 16.10 | 0.074 | 0.170 | 0.305 |
| B | 12.40 | 0.070 | 0.146 | 0.273 |
| C | 1.35 | 0.013 | 0.025 | 0.047 |
| D | 12.55 | 0.075 | 0.152 | 0.281 |
| E | 2.20 | 0.020 | 0.038 | 0.074 |
| F | 3.55 | 0.067 | 0.090 | 0.168 |
| G | 5.00 | 0.037 | 0.073 | 0.141 |
| H | 0.75 | 0.004 | 0.008 | 0.016 |
| TOTAL | 53.90 | 0.360 | 0.702 | 1.305 |

Table 1 Pre-Development Internal Catchment Areas and Peak Flows

| Land Use | Runoff Assumptions | | Mannings n | |
|-------------------|--------------------|-----------------------|----------------------|--------------------|
| | Initial Loss (mm) | Runoff Percentage (%) | Impervious Roughness | Pervious Roughness |
| Cleared (Pasture) | - | 25 | 0.020 | 0.035 |
| Vegetation | - | 20 | 0.020 | 0.040 |
| Open Water | - | 90 | 0.014 | 0.030 |
| Residential (R2) | 11 | 70 | 0.014 | 0.030 |
| Grouped Housing | - | 80 | 0.014 | 0.030 |
| Road Reserve | - | 80 | 0.014 | 0.030 |

Table 2 Pre-Development Manning's Roughness N' and Runoff Assumptions by Land Use

5.3 SURFACE WATER QUALITY

The subject area sits within the Leschenault Estuary Catchment and as such is covered by the Leschenault Estuary Water Quality Improvement Plan (WQIP). The Estuary and its tributaries are also a Management Area proclaimed under the Waterways Conservation Act 1976 and a catchment included in the state government's Regional Estuary initiative.

The subject area discharges west towards the Collie River and ultimately the Leschenault Estuary.

No surface water quality monitoring has been undertaken specifically for this project. There has been some water quality monitoring results recorded as part of the Leschenault Estuary WQIP. The average winter water quality for Total Nitrogen and Total Phosphorus within the Lower Collie River 1 catchment is 1.5 mg/L and 0.18 mg/L, respectively.

In general the elevated nutrient levels, for the waterways linked to the site, are due to current farming practices (beef and dairy). The Lower Collie River 1 catchment is considered a recovery catchment in the WQIP, due to elevated nutrient levels. This classification specifies a target Total Nitrogen and Total Phosphorus concentration of 1.0 mg/L and 0.1 mg/L, respectively.

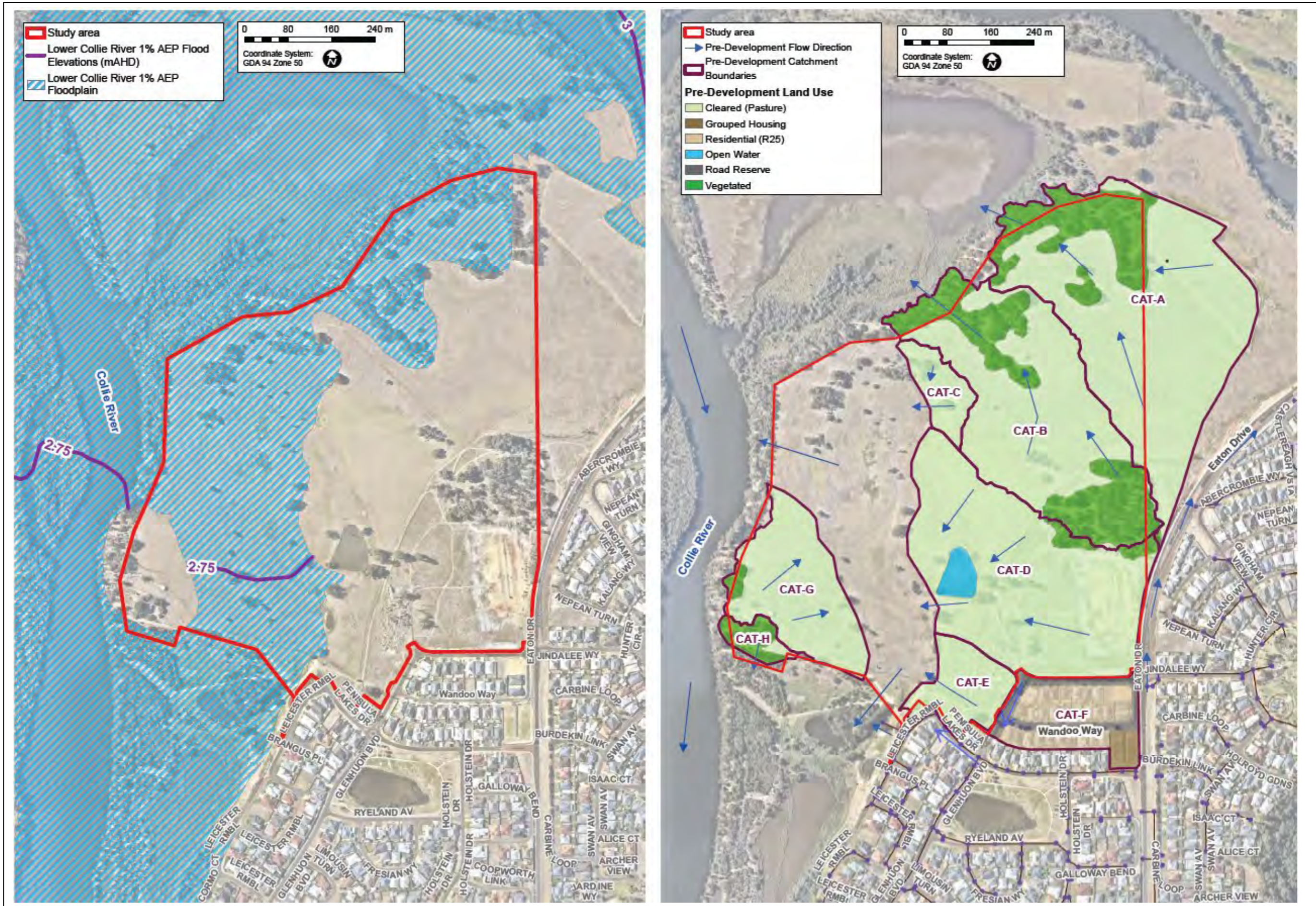


Figure 5 Pre development catchments and Collie River flood extents

6 GROUNDWATER (PRE DEVELOPMENT)

6.1 Groundwater levels

To determine likely seasonal maximum groundwater levels across the subject land, onsite groundwater level monitoring was undertaken by Calibre (as TME) between May 2009 and October 2010. The investigation included the installation of 23 monitoring bores across the site, to a depth of approximately 2.1m Below Natural Surface (BNS).

As required by DWER groundwater levels were measured across two winter periods, with a total of 10 monitoring events for each bore. The maximum recorded groundwater level occurred in 2009, which coincides with an above average rainfall year (1975 to 2017, Rainfall Station No. 009657).

Maximum groundwater levels, estimated maximum groundwater contours and depth to groundwater is shown on Figure 8. Groundwater levels generally fall towards the low lying areas of the Collie River floodplain, from east to west with depth to groundwater ranging from above surface to 5.6m BNS.

Groundwater level hydrographs, taken from the monitoring report, are included in Figures 6 and 7. Further detailed information can be found in the CD of Attachments.

Groundwater was also found in 27 of the 35 test pits as part of the Geotechnical Investigation (Golder Associates, 2005). Groundwater depth ranged between 0.3 and 2.0 m BNS, consistent with Calibre monitoring results. The rate of groundwater inflow into the test pits was generally observed to be very slow or slow in areas with clayey material at

shallow depth. This was considered to be related to perched groundwater sitting above semi-impermeable clayey material and the associated low permeability of the clayey material.

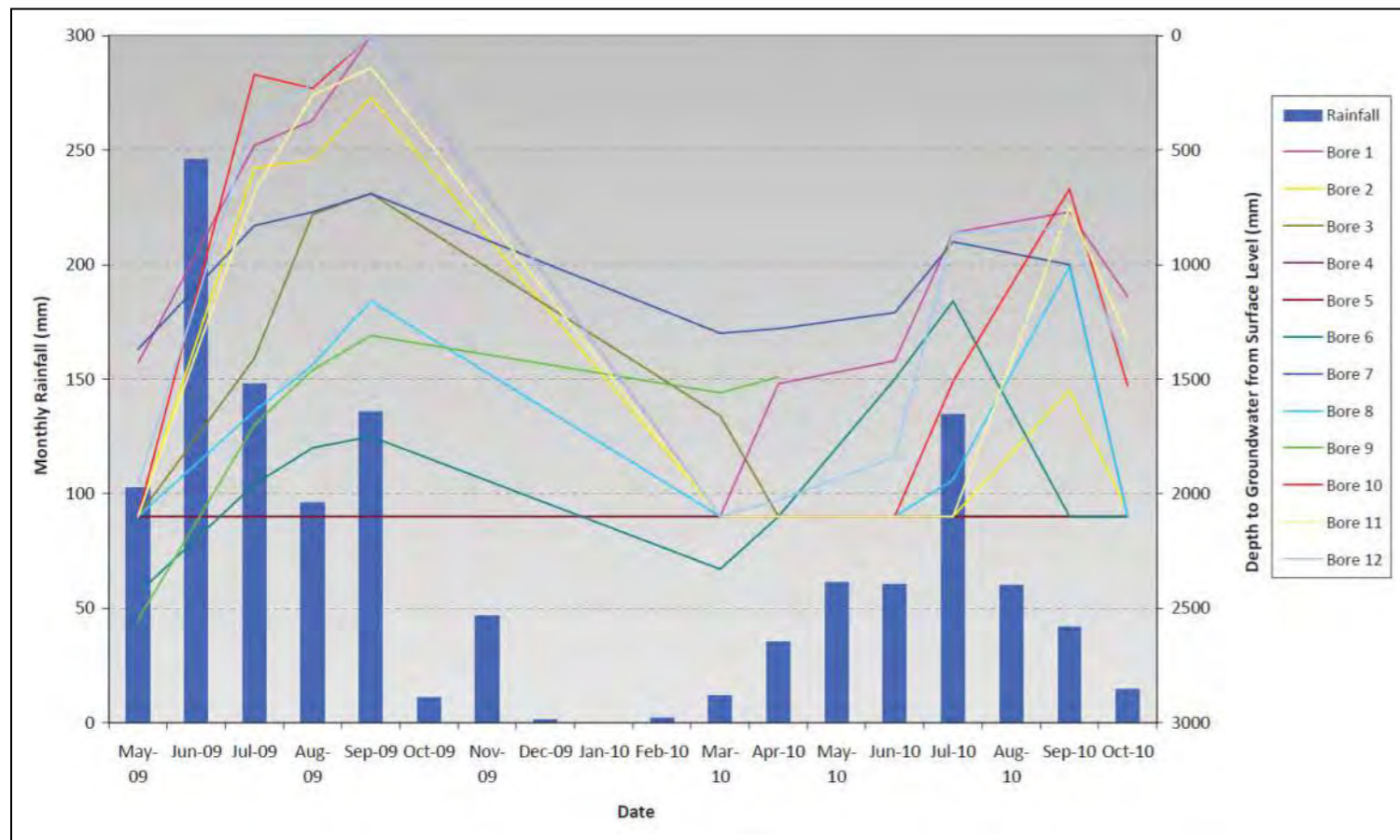


Figure 6 Groundwater Level Hydrographs: Monitoring Bores 1 to 12

6.2 Groundwater Quality

Groundwater quality sampling has not been undertaken to date. It is likely that the groundwater will be typical of Swan Coastal Plain Bassendean sand farmland. As such it is likely to have elevated levels of nutrients, be high in Iron and Aluminium and slightly acidic.

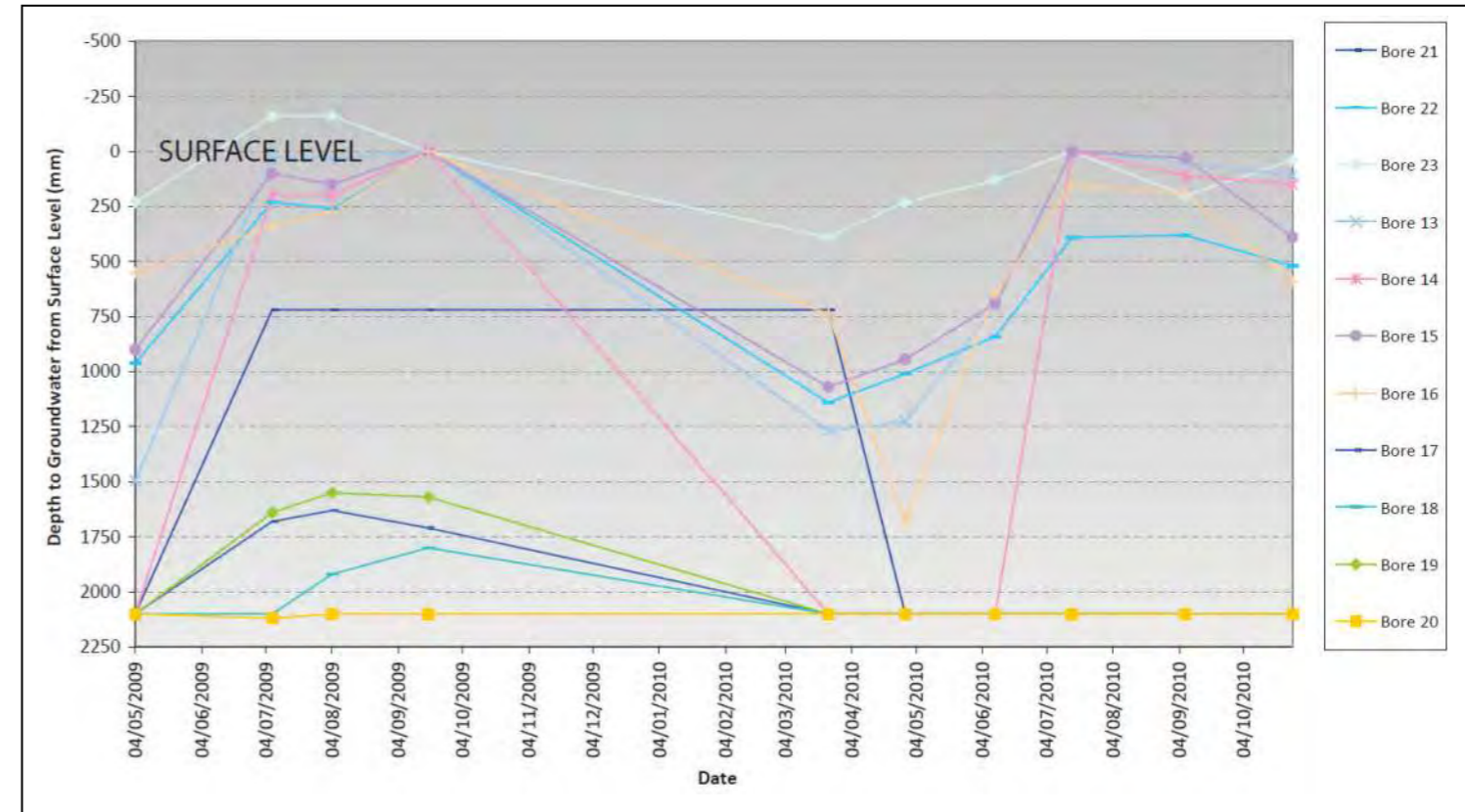


Figure 7 Groundwater level hydrographs: Monitoring Bores 13 to 23

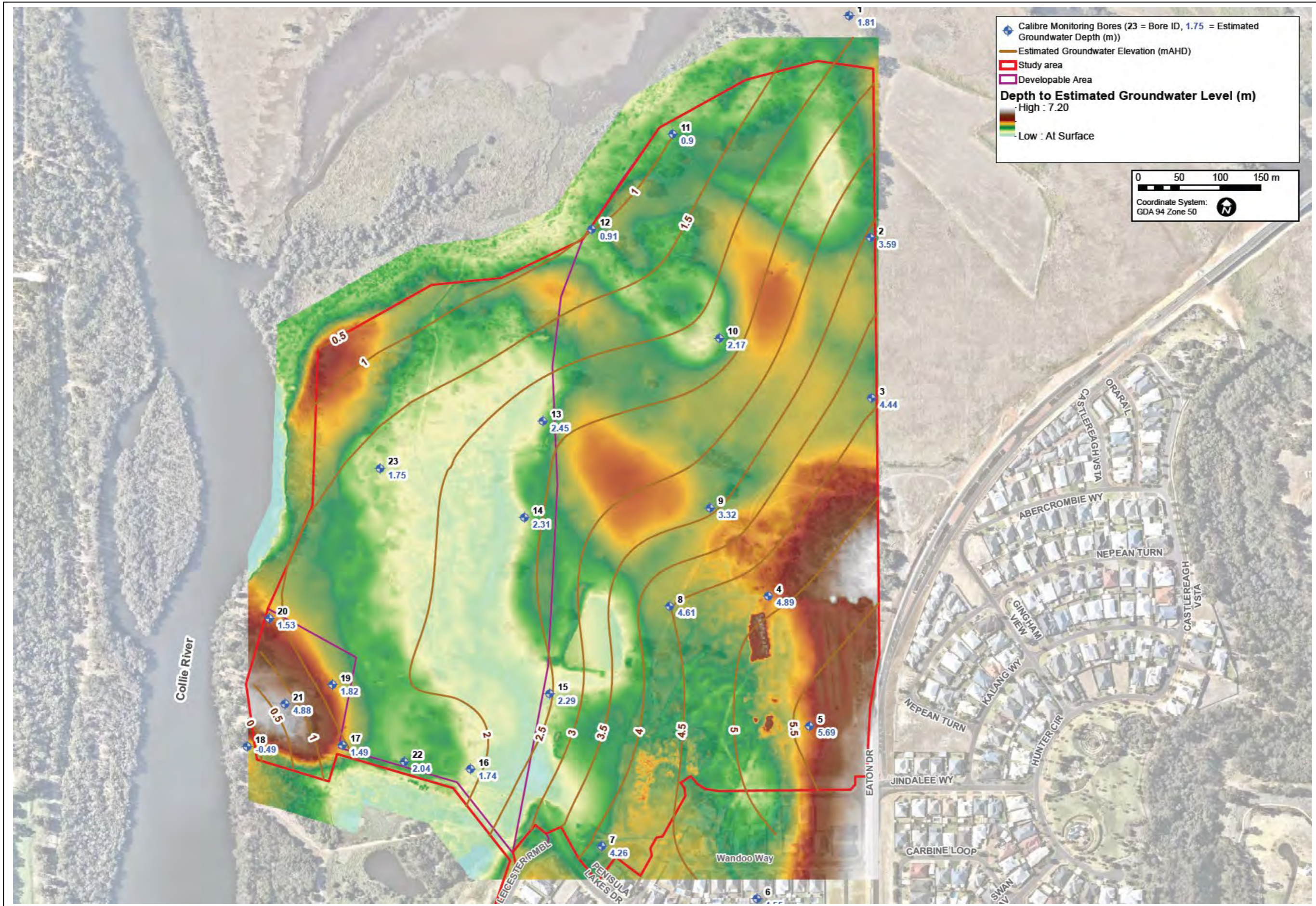


Figure 8 Groundwater depths and monitoring bore locations

7 DRAINAGE MANAGEMENT STRATEGY OVERVIEW

7.1 SUMMARY

The aim of Drainage Management for the subject land is to generally manage the water flows so that water treatment is achieved and that the major storms are controlled prior to release.

All flows up to the 1EY are to be treated to reduce nutrients, sediments and other contaminant prior to discharge offsite. Above the 1EY, the main function is to control the flow of drainage water throughout the subject land and its release from the subdivision. This water will predominately be captured and infiltrated while protecting lots from internally generated flooding and regional floods from the Collie River.

Figure 9 shows the catchment boundaries.

The following sections show in more detail how water is treated and conveyed in three different AEP scenarios;

- 7.3 – 1EY
- 7.4 – 20%AEP
- 7.5 – 1% AEP

This builds on the previous assessment undertaken as part of the approved LWMS and takes into account the changed catchment boundaries and road layout. It also considers the works approved as part of the Parkridge Estate Stages 3 & 4 Urban Water Management Plan. Any areas remaining the same as the approved LWMS or dealt with in the UWMP in detail were not remodelled. The original LWMS also showed Catchment F flows going into Catchment C, however this water is now directed to the south west, bypassing the Structure Pan area. Figure XX shows its general flow direction.

7.2 MODELLING

The proposed development is designed to achieve a water sensitive design outcome for the 1EY, 20% AEP and 1% AEP. The system has been designed so that it achieves these outcomes while also controlling groundwater rise via subsoils.

The post development modelling has been updated from the approved LWMS to take into account the revised catchment areas due to the new layout (where relevant). The outflow rates have been designed to match the previously approved outflow rates. The perimeter bioretention swale has been retained for the area developed as part of the approved UWMP. The remaining area has been modified so that flows are treated and retained in 3 wetland systems. The original catchments A-D have been refined into 3 catchments A1-C1. The catchment boundaries and indicative locations for the wetlands and future bioretention gardens are shown in Figure 9. The constructed bioretention swale can also be seen. Catchment F has now been diverted so that it flows southward after being treated in roadside bioretention gardens and does not enter the areas still to be developed.

Each catchment has been further divided in the model to reflect the roads and lots as different entities. This allows for modelling of the lots for onsite detention.

The key modelling assumptions and characteristics are as follows:

- Catchments were designed to be logical areas of stormwater capture and discharge.
- Areas remaining the same or previously developed were not remodelled.
- Lots were assumed to be 70% impervious, of which 10% flowed to pervious areas as overland flow.
- Road areas were assumed to be 80% impervious (road and footpath).
- Impervious areas had an assumed retardance coefficient of 0.013, while pervious surfaces (eg areas of grass or landscaping) were assumed to have a retardance coefficient of 0.13.
- Lots are assumed to detain the stormwater in soakwells at 1m³ of storage for every 65m² of impervious area. Above this they are assumed to discharge to the roadside gutter as overland flow.

- On lot infiltration was assumed to be 4m/day.
- The bioretention media is assumed to have a hydraulic conductivity of 200mm/hour in keeping with FAWB guidelines.
- The final storms modelled were the 5min, 10min, 15min, 20min, 25min, 30min, 1 hr, 2hr, 3hr, 4.5hr, 6 hr, 9hr and 12hr. Longer events were not modelled as the peak events were generally between 3 and 4.5 hours. These were modelled for the 1EY, 20% AEP and 1% AEP.
- Earlier runs looked at 48hr and 72hr scenarios but due to the small catchment sizes these were never close to critical events. The modelling used ARR rainfall figures for Bunbury.
- The wetlands have been modelled with the following characteristics:
 - 0.5m deep from standing water invert to top (can be designed with no standing water)
 - Overflow weir at 0.4m.
 - Controlled orifice outlet at base of wetland to allow for draining to base (or standing water level as agreed at detailed design)
 - No infiltration
 - The base area is 3% of the total road catchment.
 - Sides were assumed to be sloped at 1:6.
-

7.3 1EY STORM EVENT AND WATER QUALITY

The 1EY detention and treatment will use a combination of on lot infiltration and road WSUD devices. These include bioretention gardens/swales in catchments E, F and G, with wetlands in Catchments A1, B1 and C1 (noting C1 replaces the previous C and D catchments) gardens within the road network. The design parameters for treatment and attenuation of minor storms (up to the 1EY event), will be to provide treatment area within the bioretention gardens (minimum 2% or the effective road impervious area and wetlands (minimum 3% of the effective road impervious area).

The treatment areas have been maximised and generally exceed the 2% minimum area for bioretention areas per effective impervious catchment due to also being the base of the basins for the 20% AEP.

The outlet pipe for each wetland is set at the effective base. The treatment is predominately achieved by moving the water through the wetland vegetation. The base of each wetland will include low bunds (0.15m high) to force water through a sinuous path across the wetland base. Peak performance would be achieved by having some deeper water zones, but due to the mosquito risk, these have not been modelled at this point in time. The wetlands are to be planted with a mix of suitable locally native wetland plants including sedges, rushes and medium shrubs, predominately melaleucas. The outlet pipes will have a rock spreader and then discharge to a densely planted area to assist with erosion, while also improving habitat and water quality.

For bioretention basins will be layered with bioretention media and planted with appropriate species to assist with treatment of low flows. These species will be composed of *Ficinia nodosa* and *Juncus subsecundus* under a range of Melaleuca species.

The bioretention areas are designed according to the latest FAWB Adoption Guidelines for Filter Media in Biofiltration Systems and the Stormwater Management Manual for WA design guidelines. The design for the gardens is composed of a filter media of amended soils to 500mm below the surface, with an average particle size of 0.5mm. The plants will also assist with nutrient absorption because of the surface area provided by their roots for the formation of bio-films and nutrient uptake.

In summary the media will:

- have a hydraulic conductivity of 100-300mm/hr
- have the top 100mm to be ameliorated with appropriate organic matter and trace elements to assist plant establishment (see table 1 in the attachment)
- have a transition layer to be a washed sand (100mm deep)

- have impermeable side barriers eg plastic to stop water flowing sideways preferentially and not being treated.

The bioretention areas should only require sporadic tankering irrigation during the initial 2 to 3 years of establishment when there is extended dry weather. They should require no fertiliser application and irrigation demands should be met by stormwater alone, after this initial establishment period. The gardens will be designed to assist in the removal of nutrients, sediments and other potential contaminants from stormwater as the water infiltrates through to the groundwater.

A subsoil line is to be laid below the bioretention gardens to assist with taking treated water away and controlling localised mounding.

7.4 DRAINAGE MANAGEMENT PLAN – 20%AEP

Key points for the design of the major drainage system are as follows:

The wetland systems will discharge via pipes into the Collie River foreshore. Rock pitched spreader swales are to be used to manage the flow so that there is no point erosion.

Peak outflow discharging into the Collie River floodplain will equal or be less than pre-development 20% AEP flows. In events greater than the 20% AEP, up to the 1% AEP stormwater runoff will discharge into the Collie River floodplain several spillways, set at the 20% AEP top water level in each catchment.

The retained rural area adjacent to the north-eastern boundary is currently hydrologically connected to Catchment A1. In the post-development scenario, flow generated within the retained rural area will discharge towards the Catchment A1 development boundary where a spoon drain adjacent to the imported fill will guide flows towards the Collie River.

The wetlands have been modelled with no overtopping during the 20% AEP event. All flows leave via the pipe outlets.

Details of the 20% AEP stormwater storage requirements are provided Table 4.

Quality

It is not an objective of managing the 20% AEP events to treat for water quality, but the bioretention and wetland systems, combined with the on lot soakwells will allow for some trapping and settling of suspended sediments, especially after the flood peak has passed. This is primarily due to the residence time in the storage structures. All water infiltrating through the soil profile during the 20%AEP event will receive treatment as it moves through the bioretention media or soil profile.

Table 3 Details for Structure plan area and surrounds

| Parameter | Catchment | | | | | |
|---|-----------|-------|--------|-----------|-------|-------|
| | A1 | B1 | C1 | E | G | H |
| Structure Type | Wetland | Swale | Basin | Bio Swale | Basin | Basin |
| Side Slope (v:h) | 1:6 | 1:6 | 1:6 | 1:3 | 1:6 | 1:6 |
| Catchment Area (ha) | 5.55 | 7.40 | 11.95 | 3.50 | 1.35 | 0.80 |
| 20% AEP | | | | | | |
| Critical Storm Duration (hrs) | 4.5-6 | 4.5-6 | 4.5-6 | 6 | 12 | 6 |
| Required Storage Volume (m ³) # | 180 | 175 | 368 | 205 | 115 | 135 |
| Peak Outflow Rate (m ³ /s) | 0.080 | 0.125 | 0.165* | 0.126 | 0.025 | 0.010 |

Notes storage over and above lot storage

Table 4 20% AEP storage outflow details for undeveloped catchments

| Catchment | Road area (m2) | Lot area (m2) | Total (m2) | 3% wetland base area (m2) | top area at 0.5m deep (m2) | Outflow pipe size | Outflow rate 20% AEP m3/s | Approximate Volume stored (m3) |
|--------------|----------------|---------------|------------|---------------------------|----------------------------|-------------------|---------------------------|--------------------------------|
| A1 | 16693 | 36090 | 52783 | 500.79 | 896 | 450mm | 0.080 | 180 |
| B1 | 19170 | 47040 | 66210 | 575.1 | 1061 | 2 x 450mm | 0.125 | 175 |
| C1 | 34090 | 85090 | 119180 | 1022.7 | 1731 | 2 x 450mm | 0.165 | 368 |
| Total | 69953 | 168220 | 238173 | 2098.59 | 3688 | | 0.26 | 723 |

Table 5 Pre vs Post development flow summary for undeveloped catchment areas

| Scenario | 20% AEP (m ³ /sec) | Area |
|------------------|-------------------------------|------|
| Pre development | 0.493 | 28ha |
| Post Development | 0.370 | 24ha |

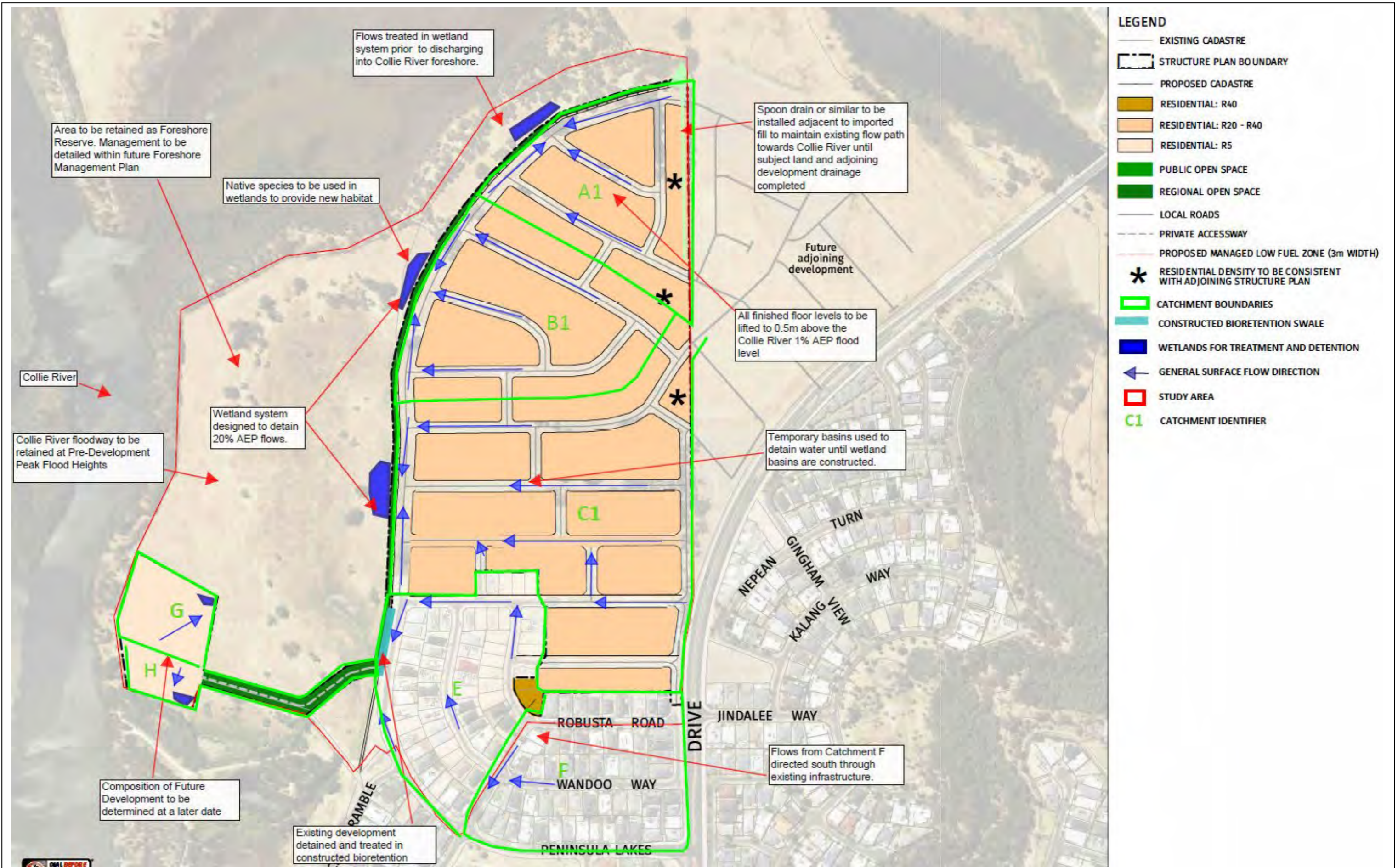


Figure 9 Post Development Drainage Plan

7.5 DRAINAGE MANAGEMENT PLAN – 1%AEP

7.5.1 Regional flood modelling

The proposed development currently lies within the Collie River 1% AEP flood extent. To determine how filling and development within the floodplain affects the hydrology of the Collie River, a flood impact assessment was completed by SKM (SKM, 2007). The assessment included a 2 dimensional hydraulic model of the site, which was calibrated against existing flood extents provided by DWER. The model was created within the MIKE-21 flood modelling package, utilising channel cross-sections used in the Public Works Department (1981) flood study.

The model replicated three development scenarios with each measured in relation to the change in water level at key locations downstream and upstream of the site (Figure 8). This LWMS represents development Scenario 1, which is currently approved. Results of Scenario 1 indicates no change in the 1% AEP top water level upstream or downstream of the site and a 1cm rise in the river channel adjacent to the site.

The area of fill has not changed since the original LWMS was approved, so there has been no change in flood impacts.

7.5.2 On site flood modelling

The Subject area has been designed to safely manage the 1% AEP flood event so that impacts on the subject land and downstream infrastructure, the environment and people's safety are minimised.

All floor levels will be set a minimum of 500mm above the relevant adjoining 1% AEP flood level of the Collie River and 300mm above internally generated flows.

Finished floor levels will approximately be a minimum of 3.60mAHD to 5.15mAHD, based on the peak flood level of the internal stormwater system.

In the 1% AEP event, the 1EY system and 20%AEP systems will fill to overflowing. Water will then flow along the roads to the Collie River foreshore. Spillways will be treated with rock pitching to prevent erosion.

8 GROUNDWATER MANAGEMENT STRATEGY

Groundwater management for the subject land has been prepared in line with the Stormwater Management Manual for Western Australia (DWER, 2007).

Groundwater management objectives are to:

- Where subsoils are installed, subsoils will discharge directly into the internal drainage network to be treated prior to discharging into the Collie River.
- Manage groundwater levels to protect infrastructure and assets.
- Maintain groundwater regimes for the protection of groundwater dependant ecosystems.
- Protect the value of groundwater resources.
- Adopt nutrient load reduction design objectives for discharges to groundwater.

8.1 GROUNDWATER LEVEL MANAGEMENT

Key points for the management of groundwater levels are as follows:

- A minimum separation of 1.5m to the estimated pre-development groundwater levels or impermeable clay layer will be maintained post-development. Where this separation does not already exist, imported fill and a subsoil pipe network will be utilised. Areas where groundwater is within 2m of pre-development surface is shown on Figure 12. Extents shown are generally consistent with areas containing an underlying impermeable layer.
- Subsoils will be set predominately at the estimated pre-development groundwater level. Subsoil pipes will be laid at a minimum 1:400 grade and will be located within the road reserve. They are to have a free flowing outlet.
- Mounding will occur between the subsoil pipes, with a maximum of 500mm below houses after a 20% AEP event in the wettest month of the year. Mounded groundwater will rapidly drain to the subsoil system, reducing the mounding elevation below residential lots. The use of free draining fill and the distance between subsoil pipes throughout the development will assist in reducing mounding of groundwater. The permeability of all sand fill is to be a minimum of 5m/day with this to be tested insitu.
- Road levels and building floor levels are to be set so that they are not negatively impacted by the recorded maximum groundwater elevation within the area in which they are located.
- All swales have been located at or above the natural ground surface to eliminate any potential impacts from rising groundwater and to ensure the function of the swale system.
- All lot soak wells are to be shallow in nature (e.g. 900mm), so that their infiltration rate is not influenced by high groundwater levels.
- Wherever possible water will be infiltrated on site to maintain similar overall infiltration volumes to the pre-development scenario. This is to be achieved through the use of pervious surfaces, bioretention gardens and soakwells, which are designed to infiltrate water.

8.2 GROUNDWATER QUALITY

Key points for the management of groundwater quality are as follows:

- Due to the removal of stock and the use of a main sewer system and smaller lots, nutrients and other potential pollutants will mainly be restricted to uses associated with house gardens. Information on nutrient wise gardening is to be provided to lot purchasers to assist with minimising nutrient inputs. This will include information currently available through the Shire.
- POS areas will be vegetated using mainly native vegetation with limited nutrient application used.
- All stormwater up to the 1EY storm event will be treated in bio-retention gardens or wetlands. This means that water entering the subsoil system from the filtered stormwater should be treated to DWER guidelines. The bioretention gardens and wetlands will be designed and constructed according to the latest FAWB Adoption Guidelines for Filter Media in Biofiltration Systems and the Stormwater Management Manual for WA design guidelines.
- Roof runoff directed to soakwells is another major source of groundwater. This water is relatively clean, which will assist with keeping groundwater pollutant concentrations within acceptable limits.
- Suitable soil amelioration products will be laid within gardens and turf areas in POS, to assist with binding nutrients in the soil profile. This will reduce potential movement of nutrients to the groundwater.

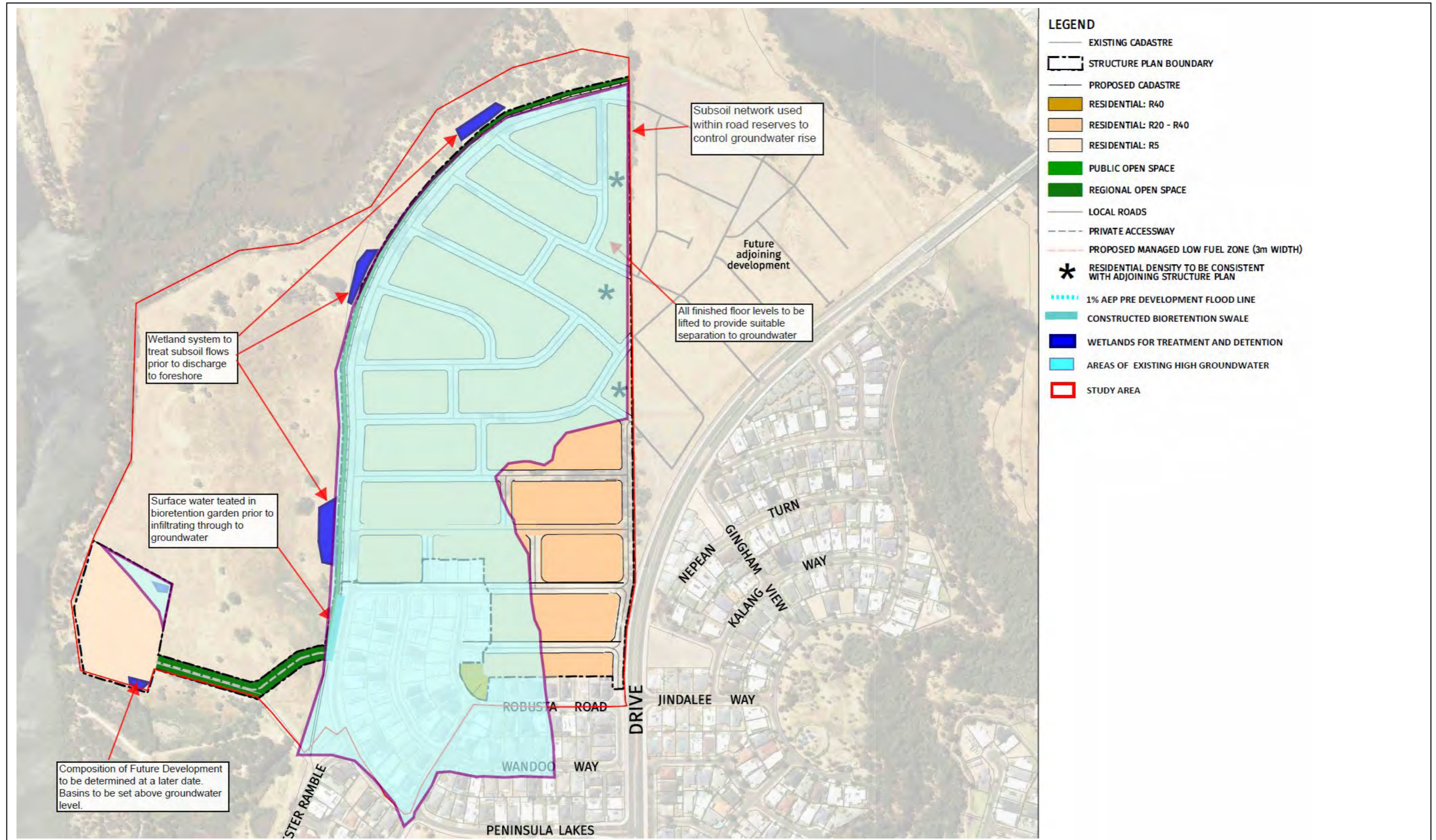


Figure 10 Post development groundwater management

9 WATER SERVICING AND SUSTAINABLE USAGE STRATEGY

9.1 LANDSCAPING

Landscaping will use suitable native species and other waterwise species throughout consistent with the Shire's landscaping requirements. The objective of the landscaping is to implement strategies that minimise the quantity of irrigation required including mulching, low use of slow-release fertilisers, retention of native trees where possible and new plantings of native species. The landscaping is predominately associated with the vegetated stormwater systems and as such will not be irrigated, except for temporary irrigation during establishment. This water will be applied by a water tanker.

The landscaping has been incorporated into the stormwater management, with a focus on shedding stormwater to planted bioretention swale and wetlands. This will provide a significant portion of the irrigation requirement for the landscaping. Top up water will be provided as required during establishment, with this water applied via a water tanker. No permanent irrigation is proposed.

9.2 FIREFIGHTING WATER SUPPLY

Firefighting water supply will be provided by way of hydrants designed and installed to Australian Standard AS 2419.1-2005.

9.1 POTABLE WATER

The proposed subdivision will connect to existing adjacent Water Corporation water mains.

Water Corporation have previously confirmed that adequate water capacity exists to serve the proposed development.

9.2 WASTEWATER MANAGEMENT

The Site is currently serviced by a surrounding 150mm PVC sewer from Peninsula Lakes Drive at varying invert levels. This southern part of the proposed development will be directed to the existing sewer reticulation network via the gravity sewer. This part of the catchment will be directed to the existing wastewater pump station located in the south-western area of the Site.

The remainder of the Site will be directed to the vacuum sewer that services this part of the Site via Millbridge. The Water Corporation has confirmed that this strategy is the intention. The Water Corporation has confirmed that no prefundable infrastructure is required for the vacuum sewer area.

10 WATER DEPENDENT ECOSYSTEMS MANAGEMENT STRATEGY

There are two main focuses for the management of water dependent ecosystem (WDE) as part of the subject land's future development: firstly protection and enhancement of the adjoining Collie River ecological system and secondly to treat water prior to discharge into this system and other downstream systems. There will also be the creation of new WDE habitat across the site. This includes the bioretention gardens in the road reserve and the wetland basins within the POS and ROS areas.

10.1 ON SITE ECOSYSTEMS

The detention wetlands and bioretention gardens constructed as part of this development will provide some ephemeral and seasonal wetland type habitat to generalist wetland and riparian species. The construction and planting of these basins, will maximise this effect through shaping to create various zones and the use of locally native plants. This can be complemented by utilising native plantings in surrounding streetscape areas.

As such, these areas can act as areas for future colonisation by a variety of small fauna and assist with fauna movement between larger natural system that are being retained in the surrounding reserves. The basin and bioretention garden areas are to include both an understorey of sedges and rushes as well as an overstorey of wetland shrubs. In larger systems, trees may also be incorporated. Species should be chosen from the Vegetation guidelines for stormwater biofilters in the south west of Western Australia (Monash University, 2015), or similar publications related to wetlands.

10.2 COLLIE RIVER ECOSYSTEM PROTECTION AND ENHANCEMENT

The River itself is contained within a foreshore reserve separate to the subject land. To complement this protected area, the Regional Open Space areas are to be placed along the western boundary of the subject area. This provides a larger buffer and habitat zone to the River. These areas are to be managed so that they complement and enhance the ecological functioning of the River. This will include weed control, planting of native species and management of stormwater within the ROS areas and road reserves, with associated creation of new riparian habitat.

Revegetation and regeneration of the foreshore area is expected to be slow and non-uniform with some areas over time likely to establish into low open forest. As a precautionary approach and in line with the bushfire management plan the foreshore area and adjacent ROS are classified as a Class A forest. The ROS will form the interface between fronting lots and the foreshore area, as such landscaping should include low threat vegetation to reduce fuel loading within the interface.

To further guide management and ecological principles to be implemented within the foreshore reserve, a Foreshore Management Plan will be developed at detailed design stage. The foreshore management plan will be consistent with the bushfire management strategy for the subject land.

11 MONITORING & MAINTENANCE

Monitoring within the subject land and the contingency actions to address any related problems are shown in Table 6. The following is a summary of the monitoring that has been and will be undertaken in relation to water management.

11.1 PRE-DEVELOPMENT

11.1.1 Groundwater

Pre-development monitoring of groundwater levels was undertaken between 2009 and 2010 by Calibre. The full details can be seen in the previous groundwater sections.

11.1.2 Surface Water

Surface water monitoring for water quality is not considered necessary, given there are no natural flowing water systems or expressed groundwater, associated with wetlands, found within the site.

11.2 CONSTRUCTION PHASE

Installation of drainage control structures ahead of the construction phase of the development will be utilised. This will include the use of Water Sensitive Urban Design techniques such as sediment curtains, hydro mulching and temporary detention basins to maintain the quality of the water leaving the development area during construction. The bioretention gardens and basins will be monitored for any damage, including compaction, sediment build up, oils, and litter during and at the completion of construction to ensure the structure's effectiveness is not diminished. Sediment and litter on roads will be monitored, with removal completed as necessary with street sweeping.

To minimise issues with degradation of vegetated treatment systems, it is recommended that planting should be delayed until the risk of high sediment loads has passed. The systems should be stabilised with geofabric or similar in the interim. Once the risk has passed, the accumulated sediment and geofabric should be removed and the system vegetated.

Construction monitoring and maintenance regimes are to be developed and finalised within the relevant UWMP.

11.3 POST- DEVELOPMENT

11.3.1 Groundwater

Post-development groundwater monitoring is to be undertaken for a further 2 years after 80% completion of subdivisional works. Monitoring is to be monthly for levels and quarterly for quality.

Trigger values set at 10% above the pre-development rates will be set in place. Should these trigger values be reached, contingency actions will be undertaken to rectify the issue.

Indicative monitoring locations are shown on Figure 11. Pre-development bores located within the Collie River floodplain will be utilised in the post-development monitoring program.

11.3.2 WSUD and other infrastructure

Performance monitoring of WSUD elements will be completed to ensure the system is working effectively. Indicators will be used as a cost effective method to evaluate the adequacies of WSUD performance. It can be assumed that if the WSUD elements operate in accordance to design then the desired management objectives are being met.

The key WSUD elements to be monitored will include:

- Ensuring the inlet and outlet structures are free of debris through regular removal of material and control of catchment generated debris eg. street sweeping, leaf removal, appropriate locating of rubbish bins to reduce rubbish;
- Vegetative cover of the systems is maintained;
- Sediment build up is not impeding the functionality (note, design vegetated systems so that excessive short term sediment in early stages is not an issue eg do not plant until high risk sediment movement has passed);
- Erosion is not present;
- Soils are not compacted;
- Litter is removed;
- Excessive hydrocarbons are not present in the system;
- Weeds controlled;
- Infiltration of stormwater is maintained to reduce standing water (in non-wetland systems);
- Flows are not excessively detained;
- Stormwater pipes are flowing freely;
- Gross Pollutant Traps are functioning and are not blocked; and
- Subsoil pipes are flowing freely (should they be required in localised areas).

Compared to traditional engineered structures for stormwater runoff management, the WSUD elements require different

routine maintenance and these are generally of a landscape maintenance nature. The most common maintenance is the removal of weeds, debris and siltation. The most time intensive period of maintenance for a vegetated WSUD system is during plant establishment (which typically includes two growing seasons), when supplementary watering,

plant replacement and weeding may be required. The WSUD elements will be constructed and utilised in different stages so that the functions of the WSUD elements are protected from elevated pollutant loads generated from a developing catchment.

It is recommended that vegetated WSUD elements are monitored by personnel with floristic knowledge and/ or qualifications and be capable of identifying evasive species within the natively vegetated WSUD systems. Furthermore, personnel in charge of monitoring should have a good understanding of principles and the functional design of the WSUD elements and the treatment system. The maintenance activities prompted through monitoring activities will generally require coordination between landscape and civil services.

The pit and piped network will also require maintenance to ensure they continue to function as designed. This will include rodding, removal of sediments and other debris, as well as the replacement of broken components due to general longterm corrosion and wear.

Maintenance inspections should be conducted after significant storm events (mobilised sediments and coarse material). Inspections should focus on ponding time for the different systems, unequal surface flow distribution and scouring.

A key focus should also be on the control of litter and sediment that is often generated during the house/building construction phase. This is the most common time when systems are degraded or fail, due to large volumes of pollutants such as nonbiodegradable litter, cement fines, direct vehicle compaction, sand movement and other sedimentation issues. Compliance aspects will need to be discussed with the Local Authority, so that rectification of the source problems can be achieved.

11.4 REPORTING

All information collected from the monitoring programs should be recorded and provided in a report, prepared by the developer, to the Department of Water and Environmental Regulation and Local Government. The report will compare monitoring results with target design and performance criteria to ascertain what, if any, actions may be required, and will provide ongoing assessment of the suitability of monitoring and reporting strategies. If a trigger value for a contingency action is reached, a more detailed report on the occurrence, its impact and proposed action to prevent recurrence is to be compiled by the developer and submitted to the Local Authority and Department of Water and Environmental Regulation. After 2 years of monitoring for the relevant Stage by the developer, the local authority will become responsible for any further monitoring they wish to undertake.

Figure 11 Post development Monitoring

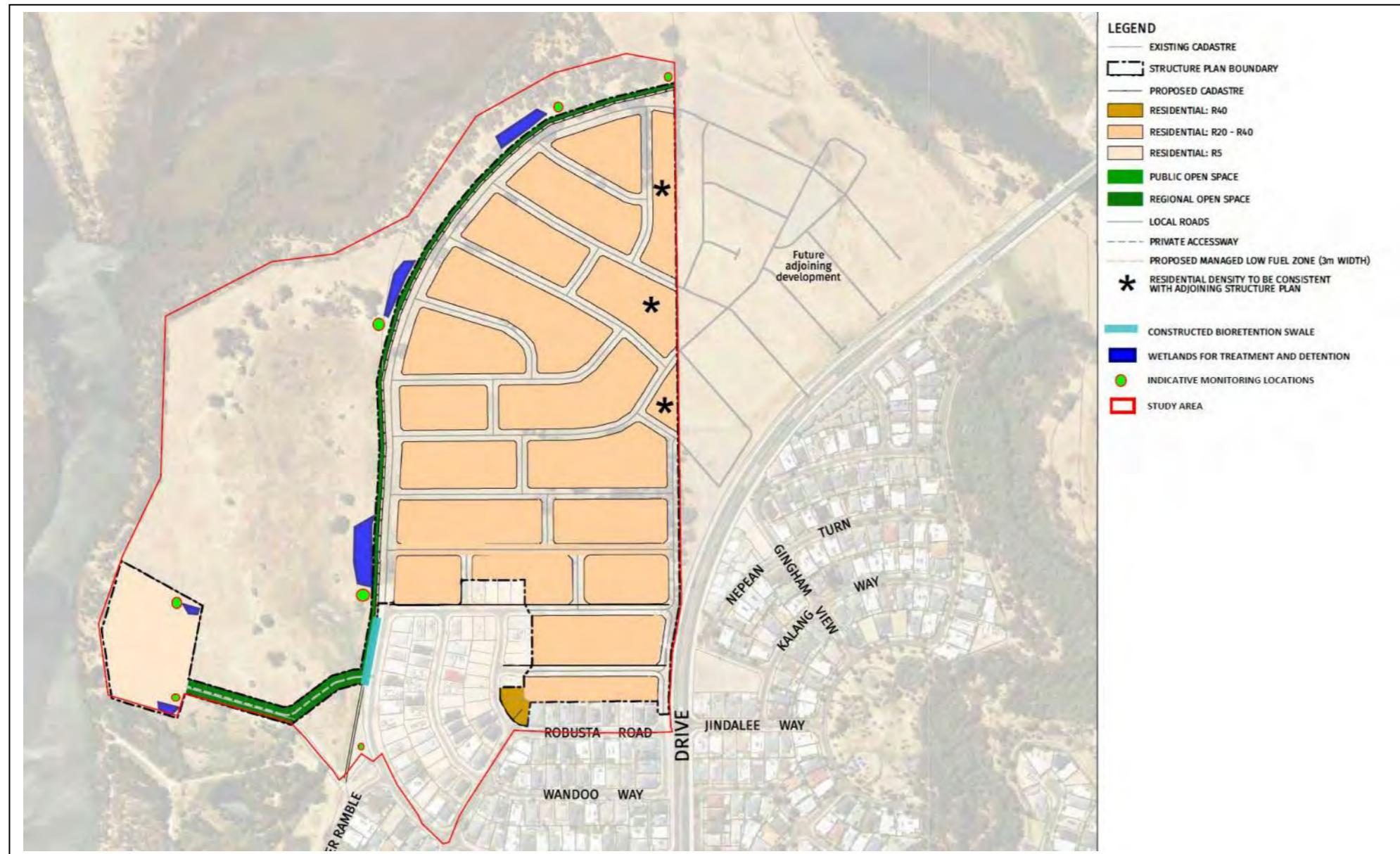


Table 6 Monitoring and Maintenance Schedule

| Function | Item to Monitor | Purpose of Monitoring | Trigger for Immediate Action | Maintenance Action Required | Monitoring Frequency | Responsibility |
|-----------------------------|--|---|--|--|---|---|
| Drainage Management Systems | Structural Effectiveness (inlets, traps and outlets) | Inspection for debris, litter and sediments surrounding structural components. | Debris, litter or sediments causing blockages or impairing functions. | Remove any debris or blockages. Inspect system for any erosion related issues. | Every 3 months | Developer until handover to Council |
| | Erosion | Inspection for erosion. | Presence of severe erosion or erosion impairing functions. | Investigate, identify and rectify the cause of the erosion. Replace filter media as required. | Every 3 months | Developer until handover to Council |
| | Sediment Build Up | A) Inspection for sediment accumulation within pits, on the surface of swale systems and within soakwells. B) Inspection of sediment build up on roadways. | A) Accumulation of large volumes of sediments in swale or on the surface or greater than 50% of the swale/basin's depth. B) Accumulation of sediment on roadway | A) Investigate, identify and stabilise cause of sediment source. Remove accumulated sediments and replace filter media or plants removed. B) Street sweeping to remove sediment | Every 3 months | A) Developer until handover to Council |
| | Weeds | Inspection for the presence of weeds. | Weeds are noxious or highly invasive or if weeds cover more than 25% of area. | Manual removal or targeting herbicide application, with waterway approved products. | Monthly | Developer until handover to Council |
| | Plant Condition | Inspection of vegetation health and cover, and presence of dead plants. | Plants dying or a pattern of plant deaths. | Investigate cause of plant deaths and rectify. Infill plantings may be required. | Monthly | Developer until handover to Council |
| | Organic Litter | Inspection for the presence of organic litter (e.g. leaves) on surface. | Litter coverage is thick or extensive, or detracting from the visual appearance of the system. | Investigate source of litter and undertake appropriate response, e.g. alter landscaping maintenance practices, community education). Remove litter. | Monthly | Developer until handover to Council |
| | Rubbish/Litter | Inspection for the presence of litter. | Litter is blocking structures or detracting from the visual appearance of the system. | Identify source of litter and undertake appropriate responses. Remove litter. | Monthly | Developer until handover to Council |
| Groundwater | Pre development levels(Pre development) | To acquire baseline for wetland protection and to allow for effective post development management strategies. Eg fill levels | NA | NA as pre development base line. | Monitoring has been completed to DWER requirements already. | Developer (has already undertaken monitoring)). |
| Surface Water/Wetlands | Wetland revegetation work | Determine if revegetation has been successful. | A) Death of plants above 20%. B) Weed invasion at a level where it hinders native regeneration, species composition maintained. | A) Replanting of native vegetation, irrigation if necessary. B) Removal of weeds, | Every 3 months (for 2 years after practical completion) | Developer until handover to Council |
| | Levels pre development | Provides baseline for wetland and drain water levels | Extreme levels of flooding | Investigate and identify source of flooding. Undertake appropriate responses to rectify the flooding if not due to extreme rainfall. | Monthly for at least 1 year | Developer |
| | Levels post development | Allows for assessment of wetland and drain levels in comparison to predevelopment state | Results above agreed upon standards and or 10% variation from pre development monitoring results.. | Investigate and identify source of change. Undertake appropriate responses to rectify the level change if not due to extreme weather conditions. | Quarterly for two year after final stage of construction. | Developer until handover to the Council |

12 IMPLEMENTATION PLAN

The developer is committed to undertaking the water management strategies outlined in this report. Implementation of the strategies outline in this report will be undertaken prior to developmental works, as part of subdivisional works and into the post development phase. To assist with this implementation, an Urban Water Management Plan (UWMP) will be completed as part of subdivisional works. The UWMP will provide more detailed information on the relevant implementation of the water management aspects. This is to include:

- Detailed WSUD treatment design, including full calculations to rationalise water quality treatment sizing and location.
- Clearly identify geotechnical requirements for imported fill to meet assumptions of groundwater modelling.
- Prepare detailed lot stormwater management requirements for the proposed residential and commercial lots.
- Identify interim management measures for stormwater and groundwater if necessary.
- Should a groundwater licence not be secured prior to construction, a water efficiency and conservation strategy will be required, in consultation with Local Government, to secure an irrigation source for POS areas in the subject land.

The following is a summary of activities and responsibilities that are to happen as part of the remaining development process.

COMMITMENTS BY DEVELOPER

- Construction of the bioretention gardens and wetland basins.
- Construction of overall drainage system.
- The maintenance of the plants within the gardens and wetland basins until handover to the Council.
- Appropriate fill used across the site.
- Provide lot owners with information regarding Waterwise practices inside and outside the house.
- Provide lot owners with information regarding nutrient wise practices and designs for gardens.
- Produce and implement a landscaping plan based on Waterwise and Nutrient wise principles.
- Undertake more detailed drainage analysis of the site as a part of subdivisional work.
- The preparation of Urban Water Management Plans as part of subdivision conditions.
- Monitoring of the sites water as outlined in the monitoring regime.
- Sediment control during construction.
- Preparation and implementation of Foreshore Management Plan for adjacent Collie River foreshore reserve.

COMMITMENTS BY THE SHIRE OF DARDANUP

- Responsibility for the maintenance of the stormwater system installed, after a mutually agreed upon time period after construction. The Shire will monitor and maintain the system as per their asset management programs and legal requirements.
- Ongoing encouragement of Waterwise and nutrient wise practices for residents.
- Approval of drainage design and other water management works.
- Approval of building licences including appropriate finished floor levels.

COMMITMENTS BY DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION

- Assist the Shire of Dardanup in relation to assessing the UWMP as required.

COMMITMENTS BY THE WATER CORPORATION

- Responsibility for the management of the sewer system.
- Responsibility for the management of the potable water supply to residents.

LOT OWNERS

- The lot owners will need to implement on lot water management in keeping with the guidelines set out in the UWMP.

13 REFERENCES

- Australian and New Zealand Environment and Conservation Council (ANZECC), 2000, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 1: The Guidelines
- Standards Australia, 2005, AS 2419.1-2005 Fire Hydrant Installations
- Department of Water and Environmental Regulation, 2007, Stormwater Management Manual for Western Australia, Perth
- Department of Water and Environmental Regulation, 2009, Identification and Investigation of Acid Sulfate Soils and Acidic
- Landscapes, Perth
- Department of Water and Environmental Regulation, 2015, Geomorphic Wetland Mapping of the Swan Coastal Plain Department of Water and Environmental Regulation, 2010, Leschenault Estuary Water Quality Improvement Plan, Bunbury Draft Country Sewerage Policy (2003). WA State Government.
- Geological Society of Western Australia (1986) Bunbury-Burekup Urban Geology Mapping Golders, 2005, Lot 9004 Geotechnical Investigation and Preliminary Acid Sulfate Soil Study
- Loh, M. and Coghlan, P (2003) Domestic Water Use Study In Perth, WA 1998 – 2001. Water Corporation. SKM (2007) Parkridge Estate Flood Assessment
- TME - Calibre (2010) Parkridge Estate Further Geotechnical Investigation
- Western Australian Planning Commission, 2008, Better Urban Water Management, Perth

App

CONTACT US

Oversby Consulting

Water and Environmental Management

Brendan Oversby
Director

☎ 0447 614 411
✉ brendan@oversbyconsulting.com.au
🌐 www.oversbyconsulting.com.au
📍 PO Box 369 DARDANUP WA 6236



(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX E | BUSHFIRE MANAGEMENT PLANS

(Appendix ORD: 12.2.2A Under E Separate Cover)

Bushfire Management Plan Coversheet

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

Bushfire Management Plan and Site Details

| | | | | | |
|---------------------------------------|---|----------|----|----------------|-------------|
| Site Address / Plan Reference: | Lot 9504 P050198 Leicester Ramble | | | | |
| Suburb: | Eaton | State: | WA | P/code: | 6232 |
| Local government area: | Dardanup | | | | |
| Description of the planning proposal: | Scheme amendment for re-zoning & residential subdivision. | | | | |
| BMP Plan / Reference Number: | 211105 | Version: | A | Date of Issue: | 22 Dec 2021 |
| Client / Business Name: | Parkridge Group Pty Ltd | | | | |

| Reason for referral to DFES | Yes | No |
|-----------------------------|-----|----|
|-----------------------------|-----|----|

Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?

Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)?

Is the proposal any of the following special development types (see SPP 3.7 for definitions)?

| | | |
|---|-------------------------------------|-------------------------------------|
| Unavoidable development (in BAL-40 or BAL-FZ) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Strategic planning proposal (including rezoning applications) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Minor development (in BAL-40 or BAL-FZ) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| High risk land-use | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vulnerable land-use | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

Re-zoning

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

BPAD Accredited Practitioner Details and Declaration

| | | | |
|-----------------------|---------------------|-------------------|----------------------|
| Name | Accreditation Level | Accreditation No. | Accreditation Expiry |
| Jeremy Durston | Level 3 | BPAD-36525 | April 2022 |
| Company | Contact No. | | |
| Bushfire West Pty Ltd | 0403 328 835 | | |

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

Signature of Practitioner

Date

22 Dec 2021

(Appendix ORD: 12.2.2A Under E Separate Cover)



BushfireWest

Bushfire Management Plan

Scheme Amendment & Residential Subdivision

Lot 9504 Leicester Ramble, Eaton



Ref: 211105
Version: A
Dec 2021

(Appendix ORD: 12.2.2A Under E Separate Cover)

REPORT DETAILS

Subject Land

| | | |
|----------------------|--|------------------|
| Lot No. | Plan | Address |
| 9504 | P050198 | Leicester Ramble |
| Locality | Eaton (6232) | |
| Zoning | Development | |
| Local Government | Dardanup | |
| Proposal description | Scheme amendment [rezoning], and residential subdivision | |
| Site assessment date | 23 Nov 2021 | |

Document Reference

| | | |
|--------------------|-------------|---|
| Project ref.211105 | Date | Purpose |
| Draft1 | 10 Dec 2021 | Consultation, pre-application. |
| A | 22 Dec 2021 | Planning application & update to the Guidelines v1.4. |

Author

| | | |
|----------------|---------------------|-------------------|
| Practitioner | Accreditation Level | Accreditation No. |
| Jeremy Durston | Level 3 | BPAD-36525 |

Report Limitations

Bushfire and weather conditions can be extremely dangerous and unpredictable. The management of bushfire risk will depend on, among other things, the actions of property owners and/or occupiers over which the author has no control.

All surveys, forecasts, projections and recommendations made in this report are made in good faith on the basis of information available at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.

Notwithstanding anything contained therein, the author will not, except as the law may require, be liable for any loss or other consequences arising out of the services provided.

Jeremy Durston
jeremy@Bushfire West.com.au
Bushfire West Pty Ltd



(Appendix ORD: 12.2.2A Under E Separate Cover)

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Appendix 1 – Guidelines Schedule 1: Standards for Asset Protection Zones.

Appendix 2 – Guidelines Battle-axe Standards

Appendix 3 – Shire of Dardanup Fire Prevention Order

Appendix 4 – Vegetation Assessment

(Appendix ORD: 12.2.2A Under E Separate Cover)

1. Proposal Details

Background & Purpose of Report

This Bushfire Management Plan (BMP) is for the proposed rezoning and subsequent subdivision of Lot 9504 Leicester Ramble, Eaton. The BMP assesses the proposal against *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7)* and the associated *Guidelines for Planning in Bushfire Prone Areas v1.4* (the Guidelines). The primary purpose of this report is to provide the required bushfire planning information to inform the assessment process for the subdivision. The bushfire protection measures required to manage the bushfire risk are specified in accordance with the Guidelines.

Subject Site & Existing Conditions

The subject land (Figure 1) is currently zoned 'Development' and comprises pasture with a section of retained vegetation and a historical homestead, now derelict. The land is a battle-axe configuration with an access section to Leicester Ramble near the intersection with Peninsular Lakes Drive. The site is surrounded by open space of the Kalgulup Regional Park associated with the Collie River environment. The open space comprises areas of native vegetation, wetlands and historical pasture areas. The Leicester Reserve, adjacent to the south of the site, contains significant areas of native vegetation traversed by dual overhead power lines with access tracks.

The land to the east of Leicester Ramble and Peninsular Lakes Drive is residential, mostly developed to the south and undergoing subdivision and development to the north. The northern section of Peninsular Lakes Drive and interconnecting roads remain under construction and are designed to provide multiple access and egress alternatives. A reticulated water supply is installed with hydrant connections. The subject land is within a bushfire prone area, as designated by the *Western Australia State Map of Bush Fire Prone Areas*.

Proposal Description

The proposal comprises a scheme amendment to rezone the land to 'Residential' with subsequent survey strata subdivision (Figure 2). The existing battle-axe access section is to be modified to provide 20m wide Common Property access via Peninsular Lakes Drive.

Table 1 Subdivision proposal:

| Parent Lot | Lot Area m ² |
|---------------|-------------------------|
| Lot 9504 | 22,251 |
| Proposed Lots | Lot Area m ² |
| Lot A | 6,000 |
| Lot B | 6,004 |
| Lot C | 6,030 |
| CP* | 6,819 |

* The proposed common property access includes 4,041m² incorporated from neighbouring Lot 9503.

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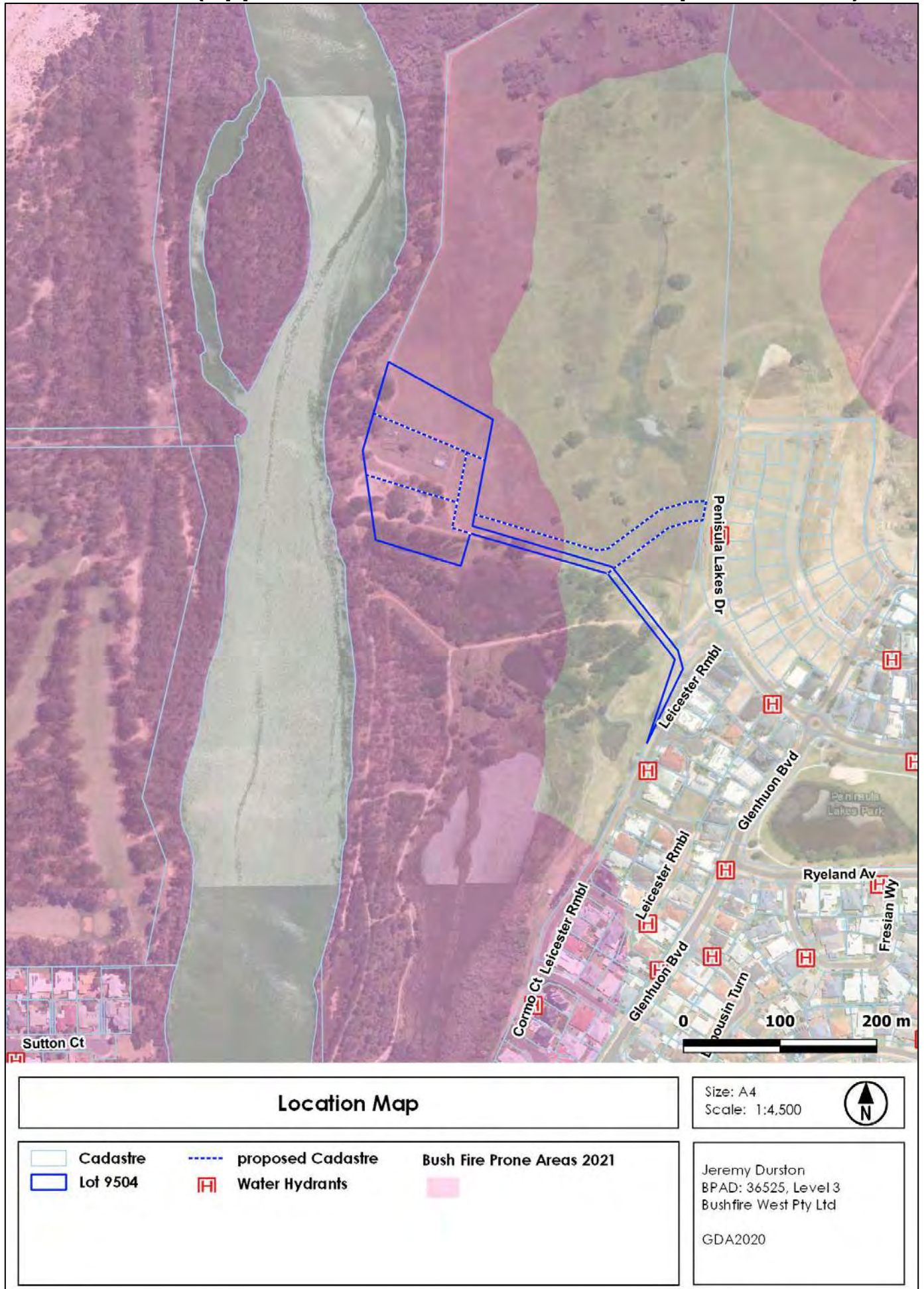


Figure 1: Site Location

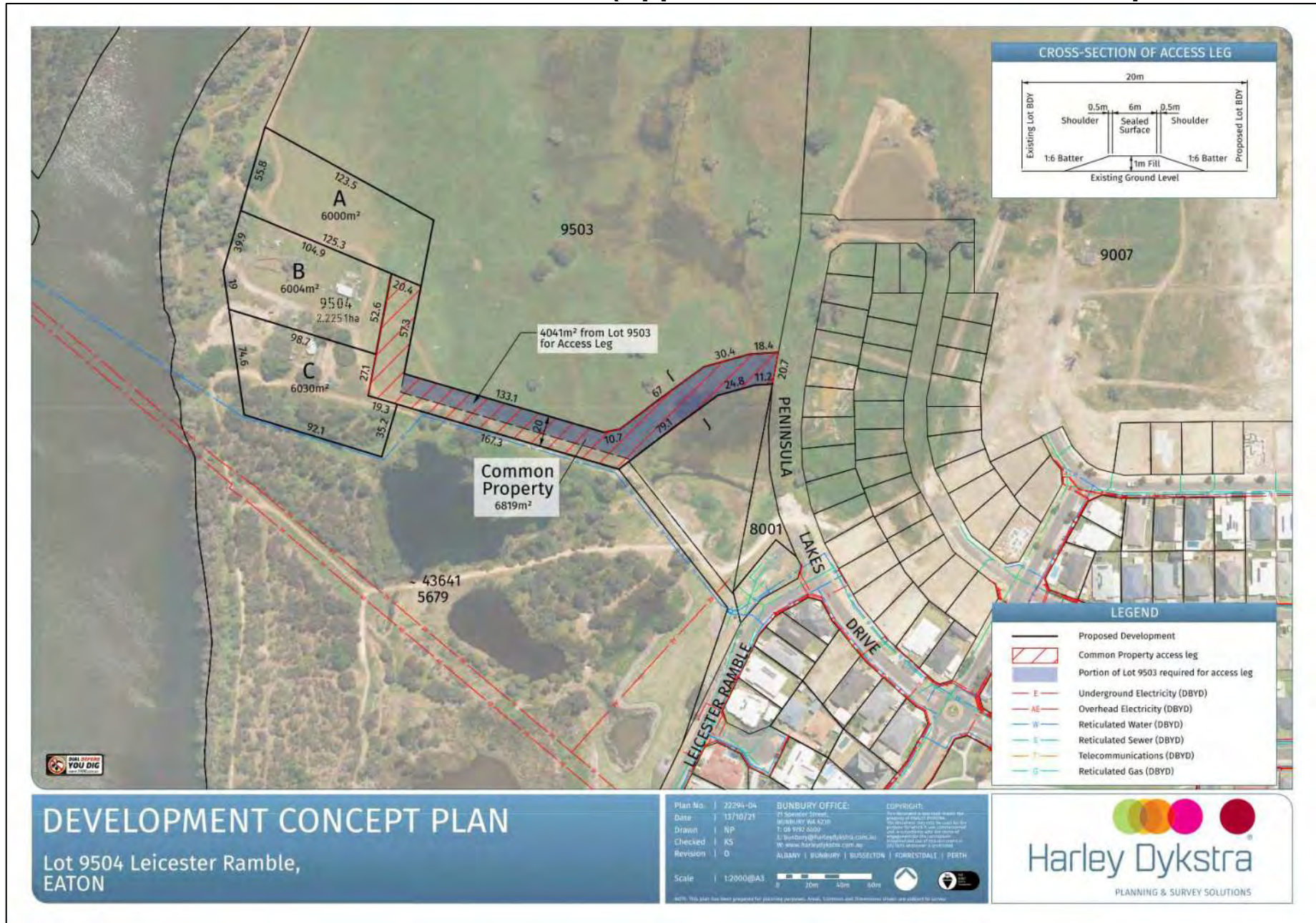


Figure 2: Subdivision Plan

(Appendix ORD: 12.2.2A Under E Separate Cover)

2. Environmental Considerations & Landscaping

Environmental Constraints

State environmental databases (SLIP) identify the subject land is within a Geomorphic Wetland (DBCA-019). The 'multiple use' management category recognises few important wetland attributes and functions, however development should nevertheless consider sustainability and best management practice.

A section of the subject land inside the northern boundary (Figure 3) adjacent to the Collie River is also an environmentally sensitive area subject to clearing regulations (DWER-046). Within this area the general exemptions under the Clearing Regulations do not apply and a clearing permit is required to remove any native vegetation.

Revegetation

In accordance with the adopted Bushfire Management Plan for the Parkridge Estate Structure Plan [Lush Fire & Planning ref: 17-076C dated 25 June 2019], there is a presumption against any future revegetation that may potentially obstruct the Collie River floodway within the open space located to the north and east of the subject land. However, the partially cleared riparian vegetation on the riverbank to the west of the subject land may naturally regenerate over time.

Asset Protection Zones

Siting of future dwellings will be required to incorporate Asset Protection Zones with any vegetation modified and managed to comply with Schedule 1: Standards for Asset Protection Zones from the Guidelines, summarised as follows:

Table 2 Vegetation Retained within the Asset Protection Zone:

| Vegetation Category | APZ Standards |
|-----------------------|---|
| Trees (>6m) | <ul style="list-style-type: none">- Trunks at maturity should be a minimum distance of six metres from all elevations of the building.- Branches at maturity should not touch or overhang a building or powerline.- Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation.- Canopy cover within the APZ should be <15 per cent of the total APZ area.- Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. |
| Shrubs (0.5m to <6m) | <ul style="list-style-type: none">- Should not be located under trees or within three metres of buildings.- Should not be planted in clumps >5 square metres in area.- Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground Covers (<0.5m) | <ul style="list-style-type: none">- Can be planted under trees but must be maintained to remove dead plant material.- Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. |

Schedule 1: Standards for Asset Protection Zones from the Guidelines is included in Appendix 1.

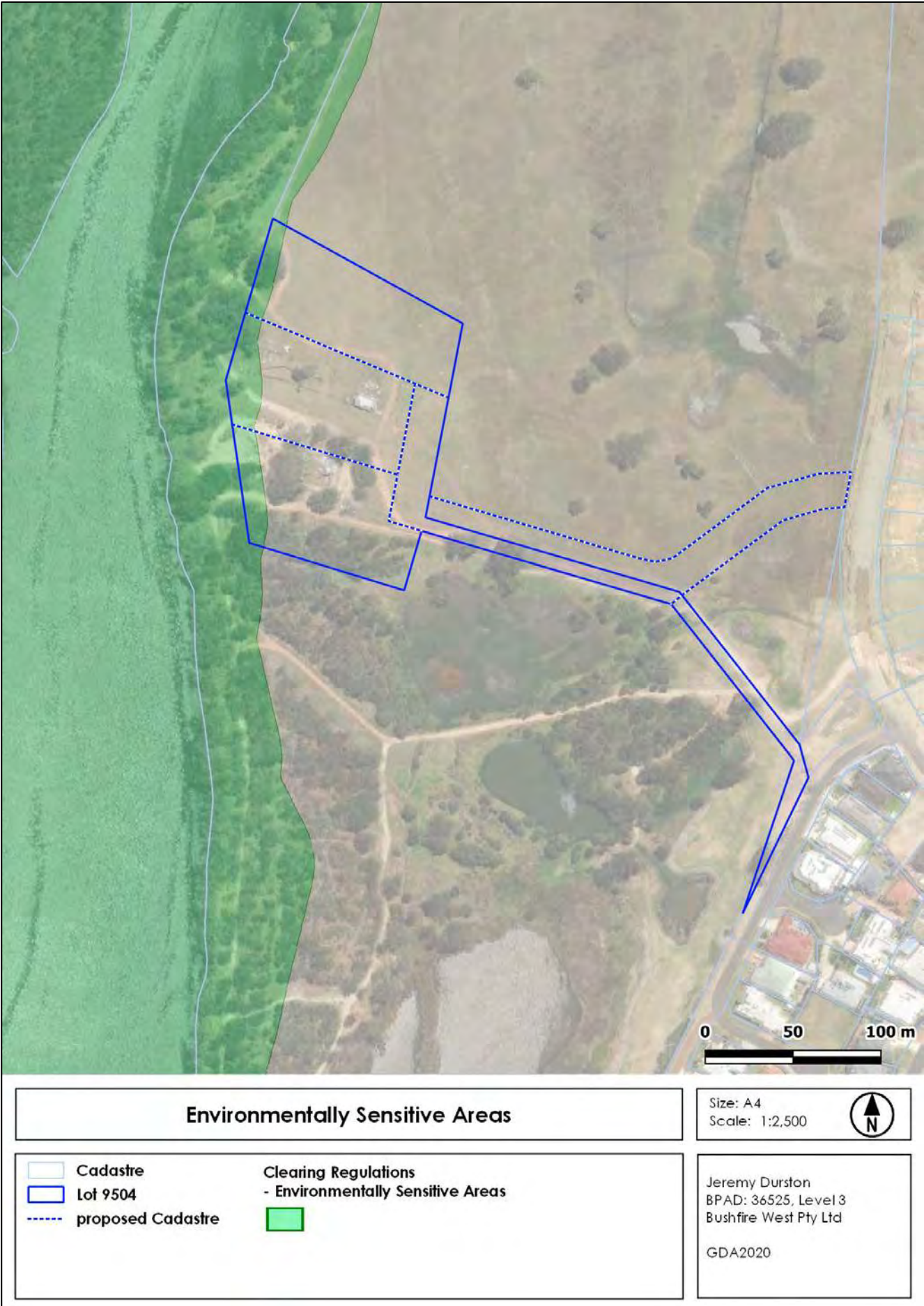


Figure 3: Environmentally Sensitive Areas

(Appendix ORD: 12.2.2A Under E Separate Cover)

3. Bushfire Assessment Inputs

Effective Slope

Effective slopes were assessed in accordance with AS3959-2018 *Construction of buildings in bushfire prone areas* (AS3959). Slope data was measured on site and cross referenced with Landgate elevation data. The effective slopes beneath applicable vegetation areas are recorded in Table 3.

Bushfire Fuels

The location and extent of classified vegetation structures, including low-threat exclusions, within 150 metres of the site were assessed in accordance with AS3959 and mapped in Figure 4. The areas of classified vegetation and low-threat exclusions are detailed in Appendix 4 and summarised below.

Table 3 Areas of classified vegetation and exclusions, post-development:

| Vegetation Area | Vegetation Classification | Effective Slope |
|--------------------------------------|---|-----------------|
| Area 1 | Class A Forest | Downslope 3 deg |
| Area 2 | Class A Forest | Downslope 2 deg |
| Area 3 | Class A Forest | Upslope |
| Area 4 | Class A Forest | Downslope 8 deg |
| Area 5 | Class G Grassland | Downslope 1 deg |
| Area 6 | Class D Scrub | Flat |
| Area 7 Public open space | Exclusion 2.2.3.2 (f) | n/a |
| Area 8 Residential area | Exclusion 2.2.3.2 (e)&(f) | n/a |
| Area 9 (section of subject land) | Class A Forest | Downslope 2 deg |
| Area 10 (section of subject land) | To be modified for low threat Exclusions 2.2.3.2 (e)&(f) | n/a |

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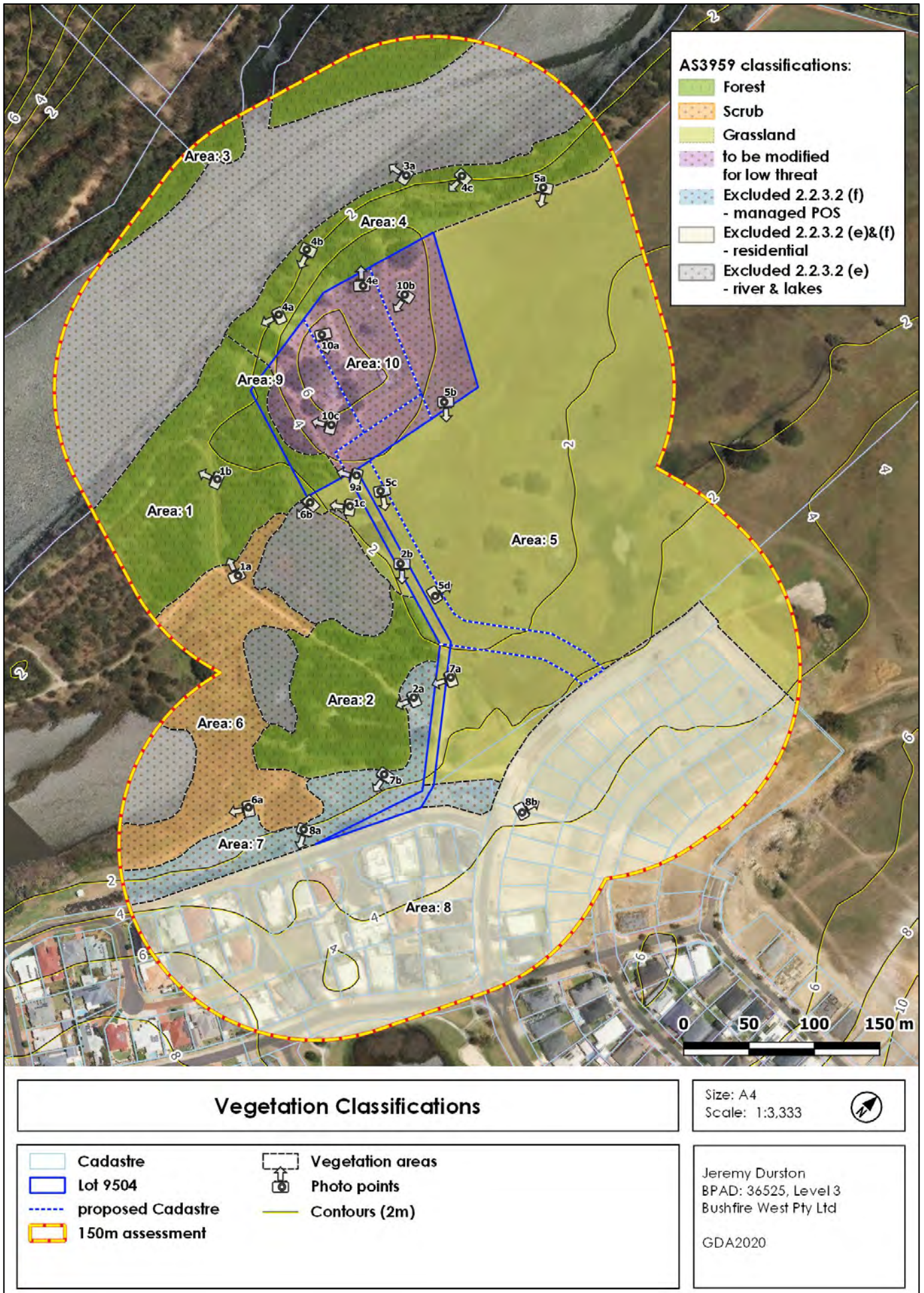


Figure 4: Vegetation Classifications, post-development

(Appendix ORD: 12.2.2A Under E Separate Cover)

4. Bushfire Assessment Outputs

Potential Bushfire Impact

The potential, post-development radiant heat impacts to the site in accordance with AS3959-2018 (Method 1) are summarised as follows:

Table 4: BAL rating variables (AS3959 Method 1)

| Vegetation Classification | Slope | BAL-FZ | BAL-40 | BAL-29 | BAL-19 | BAL-12.5 |
|---------------------------|--------------|--------|-----------|-----------|-----------|------------|
| Class A Forest | >5 to 10 deg | <26m | 26 to<33m | 33 to<46m | 46 to<61m | 61 to<100m |
| Class A Forest | >0 to 5 deg | <20m | 20 to<27m | 27 to<37m | 37 to<50m | 50 to<100m |
| Class A Forest | Upslope | <16m | 16 to<21m | 21 to<31m | 31 to<42m | 42 to<100m |
| Class D Scrub | Upslope | <10m | 10 to<13m | 13 to<19m | 19 to<27m | 27 to<100m |
| Class G Grassland | >0 to 5 deg | <7m | 7 to<9m | 9 to<14m | 14 to<20m | 20 to<50m |

BAL Contour Map

BAL Contour Mapping has been prepared in accordance with the Guidelines to determine the post-development BAL ratings across the proposed subdivision (Figure 5). The resulting BAL ratings are summarised as follows:

Table 5: Post-development BAL ratings (AS3959 Method 1)

| Proposed Lot | Highest BAL Rating of Proposed Lot | BAL Rating for indicative 300m ² development site |
|--------------|------------------------------------|--|
| Lot A | BAL-FZ | BAL-19 |
| Lot B | BAL-FZ | BAL-19 |
| Lot C | BAL-FZ | BAL-29 |

Figure 6 depicts the indicative 300m² development sites used to illustrate the acceptable BAL ratings of BAL-29 or lower that can be achieved on each proposed lot.

5. Bushfire Hazard Issues

The following hazard issues are identified:

- o The major bushfire hazards are from the vegetation located immediately to the south and west of the subject land, which require development setbacks to achieve BAL-29.
- o A small section of Forest is assumed to be retained within proposed Lot C. Siting to achieve minimum 27m hazard separation is required for a future dwelling with an Asset Protection Zone.
- o The grassland within the surrounding area represents additional hazards that may contribute to the spread and intensity of a bushfire. Siting to achieve minimum 9m hazard separation is required for future dwellings.
- o Grassland internal to the site is to be maintained for low threat below 100mm in height.
- o Peninsular Lakes Drive is designed to be a through-road. Prior to the full construction of Peninsular Lakes Drive, multiple access alternatives are available from the intersection of Peninsula Lakes Drive and Leicester Ramble.
- o Power line access tracks provide firefighting access through the adjacent Leicester Reserve.
- o A reticulated water supply is available with hydrant connections.

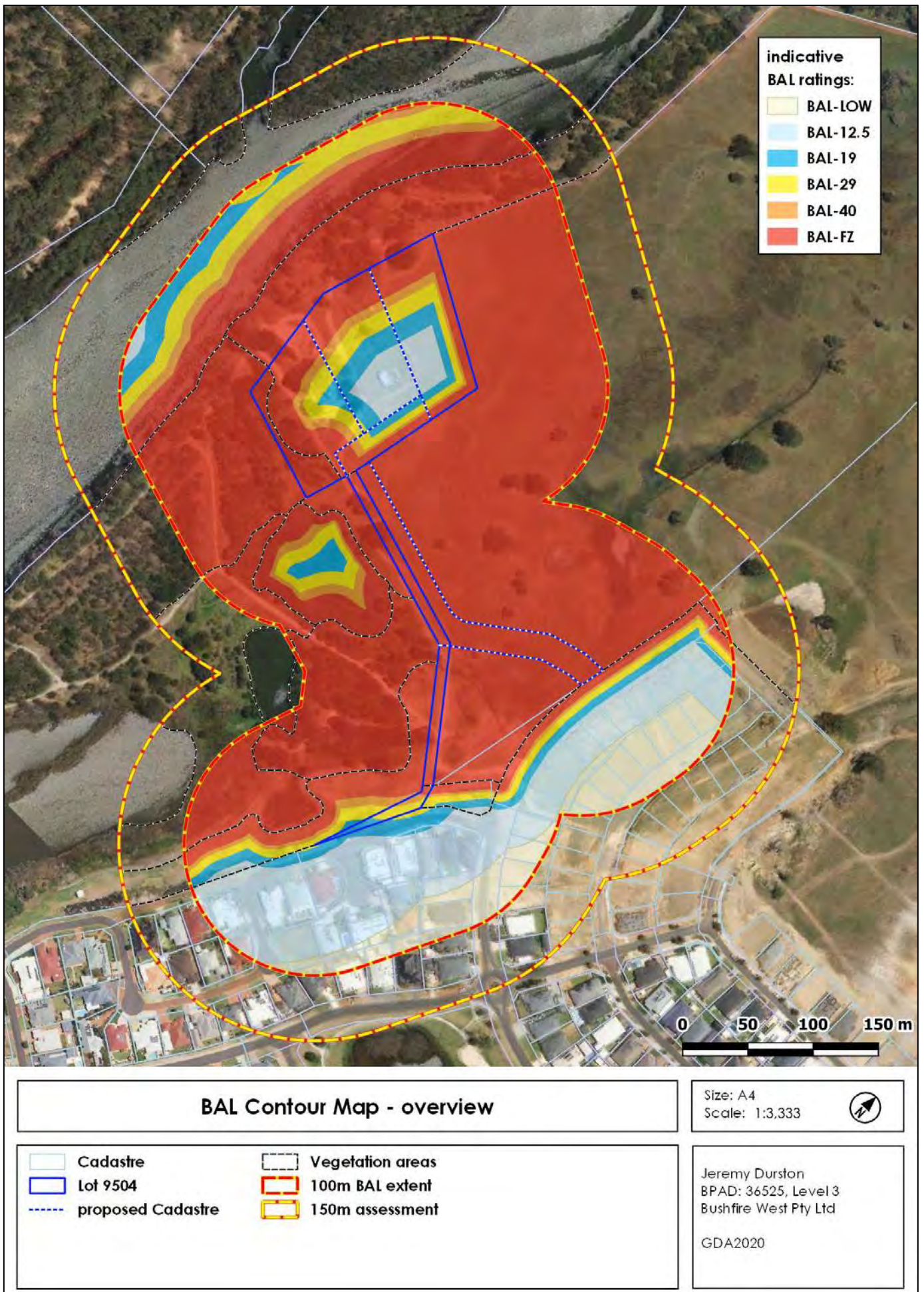


Figure 5: BAL Contour Map - overview

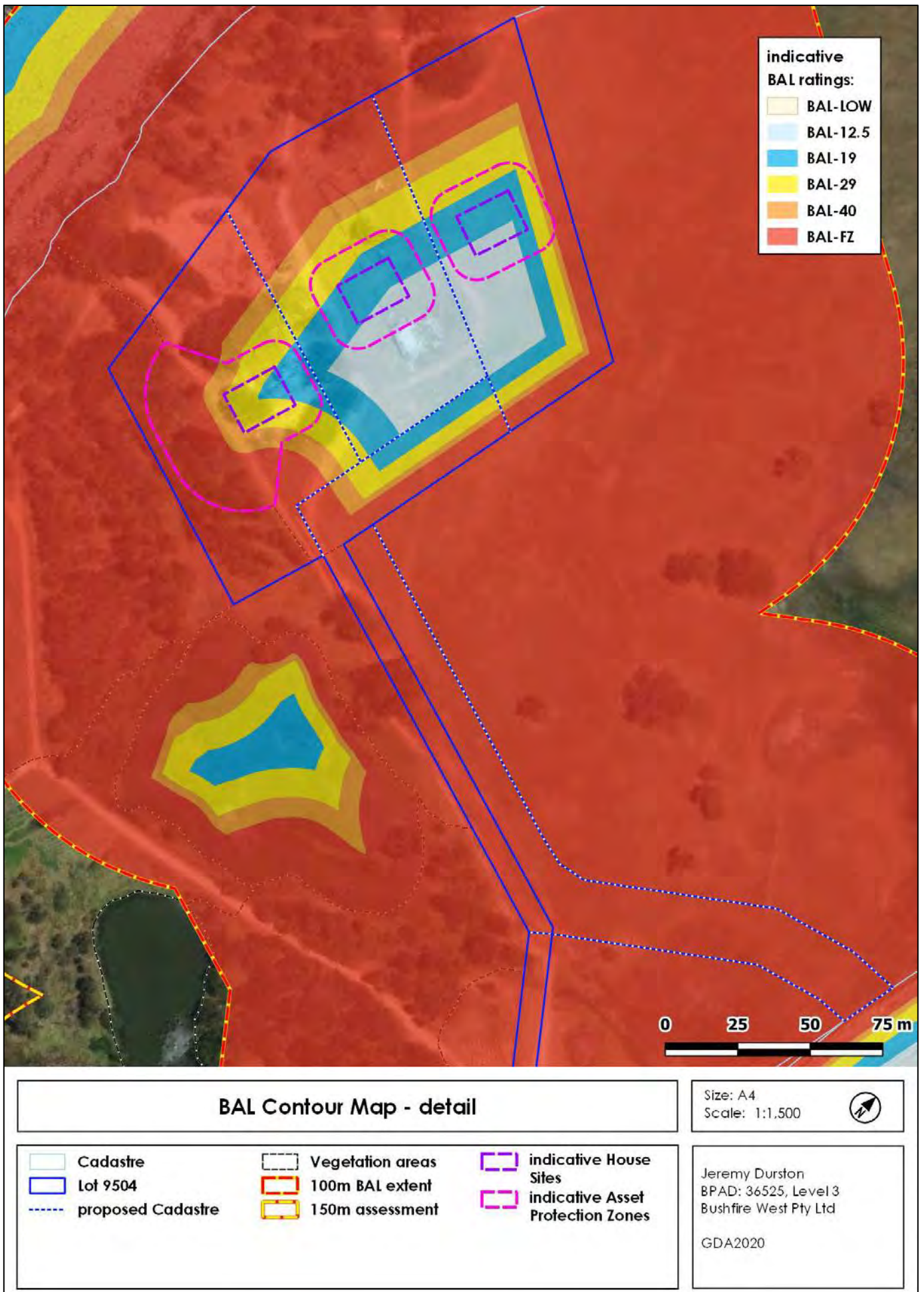


Figure 6: BAL Contour Map - detail

(Appendix ORD: 12.2.2A Under E Separate Cover)

6. Assessment against the Bushfire Protection Criteria

Table 6 provides an assessment against the bushfire protection criteria detailed in Appendix 4 of the Guidelines version 1.4, including the applicable Acceptable Solutions for each element.

Table 6: Assessment against the bushfire protection criteria of the Guidelines

| Element | Acceptable Solution (A) | Compliance | Notes |
|--------------------------|---|-----------------------|--|
| 1. Location | A1.1 Development location | Yes | The proposed residential lot sizes are sufficient to accommodate a building with an APZ to achieve an acceptable rating of BAL-29 or lower. |
| 2. Siting of Development | A2.1 Asset Protection Zone | Yes | Future dwellings will be required to be sited with Asset Protection Zones in accordance with Schedule 1: Standards for Asset Protection Zones from the Guidelines (refer to Appendix 1), to be contained within the lot boundaries. |
| 3. Vehicular Access | A3.1 Public roads | Yes | Existing public roads comply with the Guidelines Table 6, Column 1 with trafficable width as per the IPWEA Subdivision Guidelines. |
| | A3.2a Multiple access routes | Yes | Public roads are designed to provide access in two different directions. Until the northern section of Peninsular Lakes Drive is constructed with interconnecting roads, the existing road network provides multiple access alternatives at the intersection of Peninsular Lakes Drive and Leicester Ramble at an acceptable travel distance of approximately 140m. |
| | A3.2b Emergency access way | n/a | Not applicable, A3.2a is achieved. |
| | A3.3 Through-roads | Yes | Peninsular Lakes Drive is designed to be constructed as a through-road. |
| | A3.4a Perimeter roads | n/a | Not applicable to subdivisions where less than 10 lots are proposed. |
| | A3.4b Fire service access route | n/a | Not applicable. Firefighting access is available to Leicester Reserve via existing access tracks. |
| | A3.5 Battle-axe | Yes, to comply | The parent lot has a pre-existing battle-axe design. Access is to comply with the Guidelines Table 6 Column 4 and is to include a 20m long, 6m total width passing bay at a travel distance no greater than 200m (refer to Appendix 2). |
| | A3.6 Private driveways longer than 50m | n/a | Applicable to later stages of planning. |
| 4. Water | A4.1 Identification of future water supply | Yes | Existing reticulated water supply is available. |
| | A4.2 Provision of water for firefighting purposes | Yes | Hydrant connections are installed on Peninsular Lakes Drive. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

7. Additional Management Measures

In addition to the bushfire protection measures required by the Guidelines, the Shire of Dardanup Fire Prevention Order [refer to Appendix 3] currently requires the subject to land to be maintained with the following measures:

- o All flammable material/vegetation (except living trees) must be slashed or grazed to a height that does not exceed 100 millimetres.
- o Isolated flammable material (dead tree and tree branches) must be removed.

8. Spatial Representation of Bushfire Protection Measures

The required bushfire protection measures are depicted below.

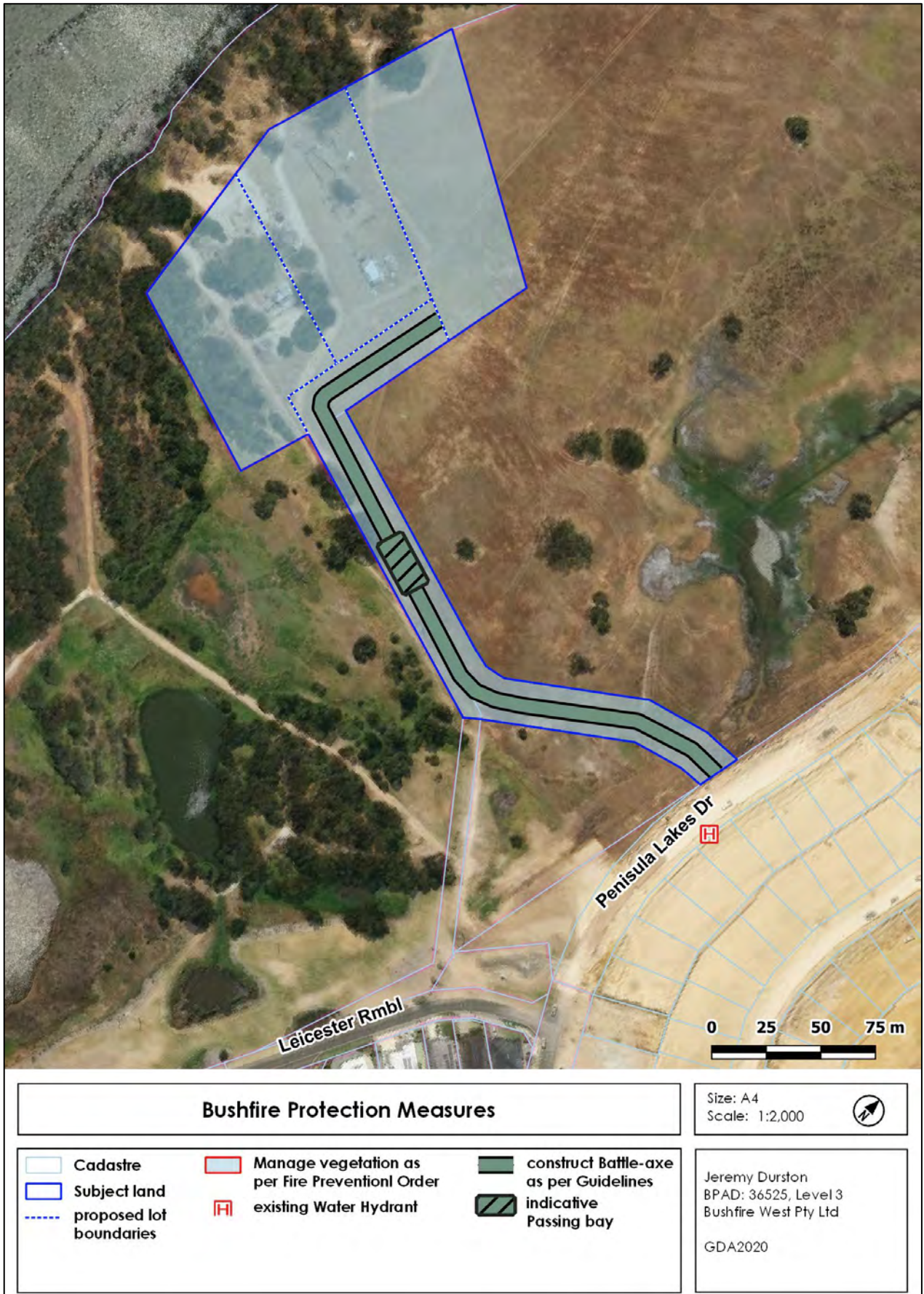


Figure 7: Bushfire Protection Measures

(Appendix ORD: 12.2.2A Under E Separate Cover)

9. Implementation and Management

The responsibilities for implementing and maintaining the required bushfire protection measures through to the subdivision stage are summarised in Table 7.

Table 7: Implementation & Management Schedule – through to Subdivision

| | Subdivider responsibilities - prior to certificates of title |
|---|--|
| A | Prepare a notification to be included on the certificates of title, advising the lots are in a designated bushfire prone area and subject to a Bushfire Management Plan. |
| B | Construct the battle-axe access in accordance with the Guidelines. |
| C | Maintain the land in accordance with the Shire of Dardanup Fire Prevention Order. |

The responsibilities for bushfire protection measures that may apply at later planning stages are summarised in Table 8.

Table 8: Implementation & Management Schedule – later planning stages

| | Developer/Landowner responsibilities |
|---|---|
| A | Any application for a building permit for a habitable building to include a Bushfire Attack Level assessment with a determined rating no higher than BAL-29. |
| B | Install and maintain an Asset Protection Zone around any habitable building in accordance with the Guidelines Schedule 1: Standards for Asset Protection Zones. |
| C | Maintain the battle-axe access in accordance with the Guidelines. |
| D | Construct and maintain driveways in accordance with the Guidelines. |
| E | Maintain the land in accordance with the Shire of Dardanup Fire Prevention Order. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

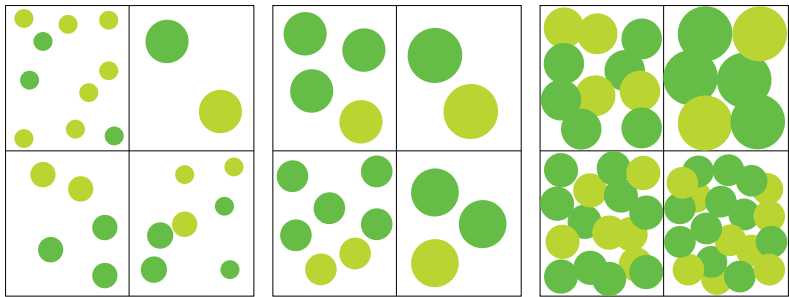
Appendix 1

Guidelines Schedule 1:

Standards for Asset Protection Zones

ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

| OBJECT | REQUIREMENT |
|---|---|
| Fences within the APZ | <ul style="list-style-type: none"> Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959). |
| Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness) | <ul style="list-style-type: none"> Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness. |
| Trees* (>6 metres in height) | <ul style="list-style-type: none"> Trunks at maturity should be a minimum distance of six metres from all elevations of the building. Branches at maturity should not touch or overhang a building or powerline. Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. Canopy cover within the APZ should be <15 per cent of the total APZ area. Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. |
| <p>Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity</p> | |
|  | |
| Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees. | <ul style="list-style-type: none"> Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs) | <ul style="list-style-type: none"> Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. |

ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

| OBJECT | REQUIREMENT |
|------------------|--|
| Grass | <ul style="list-style-type: none">• Grass should be maintained at a height of 100 millimetres or less, at all times.• Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation. |
| Defendable space | <ul style="list-style-type: none">• Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above. |
| LP Gas Cylinders | <ul style="list-style-type: none">• Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building.• The pressure relief valve should point away from the house.• No flammable material within six metres from the front of the valve.• Must sit on a firm, level and non-combustible base and be secured to a solid structure. |

* Plant flammability, landscaping design and maintenance should be considered – refer to explanatory notes

(Appendix ORD: 12.2.2A Under E Separate Cover)

Appendix 2

Guidelines Battle-axe Standards

ELEMENT 3: VEHICULAR ACCESS

PERFORMANCE PRINCIPLE

P3iv

Vehicular access is provided which allows emergency service vehicles to directly access all habitable buildings and water supplies and exit the lot without entrapment.

ACCEPTABLE SOLUTIONS

A3.5 Battle-axe access legs

Where it is demonstrated that a battle-axe cannot be avoided due to site constraints, it can be considered as an acceptable solution.

There are no battle-axe technical requirements where the point the battle-axe access leg joins the effective area of the lot, is less than 50 metres from a public road in a reticulated area.

In circumstances where the above condition is not met, or the battle-axe is in a non-reticulated water area, the battle-axe is to meet all the following requirements:

- requirements in Table 6, Column 4; and
- passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres).

Table 6: Vehicular access technical requirements

| TECHNICAL REQUIREMENTS | 1 Public roads | 2 Emergency access way ¹ | 3 Fire service access route ¹ | 4 Battle-axe and private driveways ² |
|--|---|--|---|--|
| Minimum trafficable surface (metres) | In accordance with A3.1 | 6 | 6 | 4 |
| Minimum horizontal clearance (metres) | N/A | 6 | 6 | 6 |
| Minimum vertical clearance (metres) | 4.5 | | | |
| Minimum weight capacity (tonnes) | 15 | | | |
| Maximum grade unsealed road ³ | As outlined in the IPWEA Subdivision Guidelines | 1:10 (10%) | | |
| Maximum grade sealed road ³ | | 1:7 (14.3%) | | |
| Maximum average grade sealed road | | 1:10 (10%) | | |
| Minimum inner radius of road curves (metres) | | 8.5 | | |

Notes:

¹ To have crossfalls between 3 and 6%.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Appendix 3

Shire of Dardanup Fire Prevention Order

FIRE PREVENTION ORDER

FIRST AND FINAL NOTICE

With reference to Section 33 of the Bush Fires Act 1954, you are required to carry out fire prevention work on land owned or occupied by you, in accordance with the provisions of this order.

This order is valid for the period 1 July – 30 June annually.

Work must be completed by the 30 November annually and maintained until the close of the entire Restricted and Prohibited Burning Periods.

PLEASE READ THIS NOTICE CAREFULLY

If you do not fully understand this notice, please contact Emergency & Ranger Services during office hours on 9724 0000 or your local Fire Control Officer to discuss.

PERSONS WHO FAIL TO COMPLY WITH THE REQUIREMENTS OF THE ORDER MAY BE ISSUED WITH AN INFRINGEMENT NOTICE PENALTY (\$250.00) OR PROSECUTED WITH AN INCREASED PENALTY (MAXIMUM PENALTY \$5,000). ADDITIONALLY THE SHIRE OF DARDANUP MAY CARRY OUT THE REQUIRED WORK AT COST TO THE OWNER/OCCUPIER.

RESTRICTED BURNING PERIOD

Burning Permits Required

2 November
to
14 December
annually

PROHIBITED BURNING PERIOD

NO FIRES PERMITTED

15 December
to
14 March
annually (*subject to extension*)

RESTRICTED BURNING PERIOD

Burning Permits Required

15 March
to
26 April
annually (*subject to extension*)

RESIDENTIAL, INDUSTRIAL, DEVELOPMENT, RESTRICTED USE, MIXED BUSINESS AND COMMERCIAL ZONES*

- All flammable material/vegetation (except living trees) **MUST** be slashed or grazed to a height that does not exceed 100 millimetres.
- Removal of isolated flammable material (dead tree and tree branches) **MUST** be removed.

SMALL HOLDINGS ZONE*

- A firebreak (as defined), must be installed immediately inside and along all property boundaries, 2 metres in width and 4 metres in height. The firebreak may only deviate from a boundary up to 6 metres, to avoid established trees and /or other natural features that would make it impractical to be installed on the boundary.
- A 20 metre Asset Protection Zone (as defined) **MUST** be slashed to a height that does not exceed 100 millimetres surrounding dwellings, sheds and all haystacks.
- All flammable material/vegetation (dead trees and branches) **MUST** be removed from the 20 metre Asset Protection Zone.
- Where slashing is not possible, material/vegetation must be burnt back or sprayed with a suitable herbicide to prevent growth throughout the entire restricted and prohibited burning periods.
- Burn piles can be kept and are approved under the following conditions:
 - a burn pile is to be no closer than 20 metres from any structure.
- All fire wood piles must be stored away from a dwelling during the restricted and prohibited burning periods.



[Minimum clearance for fire break in small holdings](#)

GENERAL FARMING, RESTRICTED USE AND TOURIST ZONES*

- **Non Irrigated lots** – a vehicle access track, 4 metre in width and 4 metre in height that **MUST** include a 2 metre wide firebreak (as defined), must be installed immediately inside and along the lot boundary where it adjoins a road and/or rail reserve. The firebreak may only deviate from the boundary, up to 6 metres, to avoid established trees/or other natural features, that would make it impractical to install a firebreak at that location.



[Minimum clearance for fire break in general farming, restricted use and tourist zones](#)

- **Irrigated land** (as defined) is to be maintained in a non-flammable state for the whole of the restricted and prohibited burning periods.
- Firebreaks are **NOT** required on irrigated land that is being **actively and regularly irrigated throughout the entire restricted and prohibited burning periods.**
- Irrigation channels that are situated **inside and along** a lot boundary will be accepted as a firebreak provided the irrigation channel is utilised on that property throughout the **entire restricted and prohibited burning periods.**
- Burn piles can be kept and are approved under the following conditions:
 - a burn pile is to be no closer than 20 metres to any structure; and
 - a 2 metre wide and 4 metre in height firebreak is to be placed around the perimeter of any burn pile.
- All fire wood piles must be stored away from a dwelling during the restricted and prohibited burning periods.

PLANTATIONS

- **BARE EARTH** firebreaks of 15 metres in width and 4 metres in height must be maintained inside and along all boundaries of a plantation with 6-10 metre wide internal firebreaks between compartments.
- Where power lines pass through plantation areas, firebreaks must be in accordance with Western Power specifications.

** Zones defined by the Shire of Dardanup Town Planning Scheme No.3.*

WHERE AND HOW TO OBTAIN BURNING PERMITS

Applications for burning permits are available from your local Bush Fire Control Officer at no cost. The local Bush Fire Control Officer will note the relevant conditions you must comply with on your burning permit.

You are advised that Burning Permits are automatically invalidated on days of “very high” “severe”, “extreme” or “catastrophic” fire danger.

To minimise the use of resources on unnecessary call outs, burns conducted outside the restricted burning period are encouraged to be registered with the Department of Fire & Emergency Service (DFES) Communications Centre on 9395 9209, immediately prior to commencing the burn.

Garden Refuse Urban Areas (town sites): No garden refuse is permitted to be burnt on the ground, in the open air or in an outdoor incinerator within the urban areas of Dardanup, Eaton and Burekup town sites **at any time of the year unless a permit to burn has first been obtained** from a Fire Control Officer for special circumstances such as a large block that needs hazard reduction.

All Other Areas in Shire of Dardanup: Pursuant to section 24G(2) and section 25(1a) of the Bush Fires Act 1954, the burning of garden refuse and camp and cooking fires is prohibited in all areas within the Shire of Dardanup during the **Prohibited Burning Period**. Furthermore, pursuant to section 24G(2) the burning of garden refuse and camp and cooking fires are prohibited within the Shire of Dardanup during the **Restricted Burning Period unless a permit to burn has first been obtained** from a Fire Control Officer.

Solid Fuel Cooking Appliances (e.g.: pizza oven/outdoor barbeque, outdoor stove and fire pits): The use of solid fuel cooking appliances is prohibited in all areas within the Shire of Dardanup during the **Prohibited and Restricted Burning Period UNLESS;**

- the fire rating is below VERY HIGH;
- is fitted with an effective spark arrestor to pizza oven & outdoor stove;
- an area of 2m surrounding the appliance is cleared from flammable materials;
- running water is on site and is accessible;
- a responsible able body adult is in attendance throughout; and
- the fire is completely extinguished when cooking is complete.

FIREBREAK VARIATIONS/EXEMPTIONS

If it is considered impractical for any reason to install a firebreaks or remove flammable materials from any land as required by this Order, you are required to make written application to the Shire of Dardanup **no later than 30 September each year**. **This application shall** include a plan detailing the alternative fire prevention measures taken on the land. Prescribed Firebreak Variation/Exemption Forms are available from the Shire of Dardanup offices or by visiting the Shire of Dardanup website. If your request for a variation/exemption is not granted, you **must** comply with the requirements of this Order.

DEFINITIONS

For the purpose of this notice the following definitions apply:

ASSET PROTECTION ZONE (APZ)

Asset protection zones must be a minimum of 20 metres. An asset protection zone is a low fuel area immediately surround a building and is designed to minimise the likelihood of flame contact with buildings and the effect of radiant heat. It is important to maintain the asset protection zones and from flammable material. If there are large trees in the asset protection zone, consideration of having the trees pruned by a professional contactor. There should be no trees overhanging buildings or assess within the asset protection zone.

BUSH FIRE MANAGEMENT PLANS

A “Bush Fire Management Plan” means a plan that has been developed and approved by the Shire of Dardanup to reduce and mitigate fire hazards within a subdivision, lot or other area of land within the district. Where the property has an approved Bush Fire Management Plan, compliance **MUST** be achieved in accordance with the conditions stipulated in the Bush Fire Management Plan, in addition to the requirement of this notice.

IRRIGATED LAND

Irrigated land is defined as agriculture land that is watered, kept fully watered and is maintained in a non-flammable state for the whole of the restricted and prohibited burning periods.

FIREBREAK

A firebreak is an area of land that has been cleared of all trees, bushes, grasses and any other object or thing which may be flammable, leaving a surface of bare mineral earth. Firebreaks must be constructed immediately inside and along all property boundaries. Firebreaks provide safer access for land owners and fire appliances to conduct fire suppression activities.

PLANTATION

Means a stand of trees of 10 hectare or larger, that has been established by sowing or planting of either native or exotic tree species and managed intensively for their commercial and/or environmental value. A plantation includes roads, tracks, firebreaks and small areas of native vegetation surrounded by plantations. Implicit in this definition is the recognition that plantations will be harvested.

AUTHORISED OFFICER

A person appointed by the Shire of Dardanup as a Bush Fire Control Officer.

For further information please call the Shire of Dardanup 9724 0000 or your local Fire Control Officer.

For all fire emergencies, please dial



Would you like to become involved in a volunteer bush fire brigade?

Why not join a Shire of Dardanup Volunteer Bush Fire Brigade and learn how to prevent fires and be trained in firefighting!



Male and Female volunteers are very welcome.

There are many dimensions to being a volunteer bush fire brigade member and cadets (11-16 years of age), as all are encouraged to choose the type of activities that best suit their capabilities and interest.

Being a volunteer is a rewarding experience. It is an opportunity to meet new people, learn new skills and provide assistance in protecting your community. Respecting others, working together as a team and acting with honesty and integrity are the values embraced by members.

If you are interested in being a volunteer bush fire fighter please contact the Shire of Dardanup Emergency Management Officer 9724 0347 or email brigade@dardanup.wa.gov.au

(Appendix ORD: 12.2.2A Under E Separate Cover)
Appendix 4 – Vegetation Assessment

| Area 1 | |
|-----------------|--|
| Classification | Class A Forest |
| Effective Slope | Downslope 3 deg |
| Notes | Trees with foliage cover greater than 30% with understorey vegetation. |
| |  <p>Photo ID: 1a</p> |
| |  <p>Photo ID: 1b</p> |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 2



Photo ID: 2b

Area 3

| | |
|-----------------|--|
| Classification | Class A Forest |
| Effective Slope | Upslope |
| Notes | Trees with foliage cover greater than 30% with understorey vegetation. |



Photo ID: 3a

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 4

| | |
|-----------------|--|
| Classification | Class A Forest |
| Effective Slope | Downslope 8 deg |
| Notes | Trees with foliage cover potentially greater than 30% with understorey vegetation [allowing for regeneration]. |



Photo ID: 4a



Photo ID: 4b



Photo ID: 4c

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 4



Photo ID: 4e

Area 5

| | |
|-----------------|---|
| Classification | Class G Grassland |
| Effective Slope | Downslope 1 deg |
| Notes | Collie River floodway comprising grass with isolated trees. |



Photo ID: 5a

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 6

| | |
|-----------------|--|
| Classification | Class D Scrub |
| Effective Slope | Flat |
| Notes | Wetland vegetation comprising predominately shrubs below 4m in height and grass. |



Photo ID: 6a



Photo ID: 6b

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 7

| | |
|-----------------|--|
| Classification | Exclusion 2.2.3.2(f) |
| Effective Slope | n/a |
| Notes | Section of POS managed for low threat. |



Photo ID: 7a



Photo ID: 7b

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 8

| | |
|-----------------|---|
| Classification | Exclusions 2.2.3.2 (e)&(f) |
| Effective Slope | n/a |
| Notes | Residential area including existing development and recent subdivision. |



Photo ID: 8a



Photo ID: 8b

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 9

| | |
|-----------------|--|
| Classification | Class A Forest |
| Effective Slope | Downslope 2 deg |
| Notes | Section of Forest assumed to be retained within Lot C. |



Photo ID: 9a

Area 10

| | |
|-----------------|--|
| Classification | Exclusions 2.2.3.2 (e)&(f) |
| Effective Slope | n/a |
| Notes | Internal areas to be modified and maintained for low threat and/or incorporated into APZs. This includes grassland and open woodland vegetation that requires grass to be maintained below 100mm in height, and a section of forest that may require modification for inclusion within an APZ depending on siting of a future dwelling on Lot C. |



Photo ID: 10a

(Appendix ORD: 12.2.2A Under E Separate Cover)

Area 10



Photo ID: 10b



Photo ID: 10c



Bushfire Management Plan (Structure Plan)

PARKRIDGE ESTATE

Lot 9004, 9503 & 9504

Peninsula Lakes Drive, Eaton



LUSH FIRE & PLANNING

3 Paterson Rd

Pinjarra WA 6208

0418 954 873

ABN 74 232 678 543



Ref 17-076

Ver C

June 2019

(Appendix ORD: 12.2.2A Under E Separate Cover)

Bushfire Management Plan Coversheet

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

Bushfire Management Plan and Site Details

| | | | | | |
|---------------------------------------|--------------------------------|----------|----|----------------|------------|
| Site Address / Plan Reference: | Lot 9004 Peninsula Lakes Drive | | | | |
| Suburb: | Eaton | State: | WA | P/code: | 6232 |
| Local government area: | Dardanup | | | | |
| Description of the planning proposal: | Structure Plan Modifications | | | | |
| BMP Plan / Reference Number: | 17-076 | Version: | C | Date of Issue: | 25/06/2019 |
| Client / Business Name: | Parkridge Group Pty Ltd | | | | |

| Reason for referral to DFES | Yes | No |
|-----------------------------|-----|----|
|-----------------------------|-----|----|

| | | |
|--|--------------------------|-------------------------------------|
| Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|-------------------------------------|

| | | |
|---|--------------------------|-------------------------------------|
| Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|-------------------------------------|

Is the proposal any of the following special development types (see SPP 3.7 for definitions)?

| | | |
|---|-------------------------------------|-------------------------------------|
| Unavoidable development (in BAL-40 or BAL-FZ) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Strategic planning proposal (including rezoning applications) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Minor development (in BAL-40 or BAL-FZ) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| High risk land-use | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vulnerable land-use | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

| |
|--|
| |
|--|

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

BPAD Accredited Practitioner Details and Declaration

| | | | |
|----------------------|---------------------|-------------------|----------------------|
| Name | Accreditation Level | Accreditation No. | Accreditation Expiry |
| Geoffrey Lush | Level 2 | BPAD 27682 | 28/02/2020 |
| Company | | Contact No. | |
| Lush Fire & Planning | | 0418 954 873 | |

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

Signature of Practitioner



Date

25/06/2019

(Appendix ORD: 12.2.2A Under E Separate Cover)

This bushfire management plan is prepared for the proposed subdivision and development of the Parkridge Estate at Eaton.

The aim of this Report is to reduce the threat to the residents in the proposed subdivision in the event of a bushfire within or adjacent to the development. It demonstrates:

- How the hazard level will be reduced and maintained for the life of the development.
- That compliance with the Bushfire Protection Criteria in the Guidelines can be achieved.

The subject land is located approximately 8km east-north-east of the Bunbury CBD adjacent to the Collie River. It is situated between Eaton Drive and the river. It has an area of an area of 53 hectares and its main topographical feature is the flood plain associated with the Collie River. The principal area of remnant vegetation is located along the river corridor with some small areas extending into the subject land. The site is gently undulating with low gradients of less than 5 degrees.

The development site is approximately 30 hectares in size and situated on the eastern portion of the subject land. There is an additional area of 1.5 hectares immediately adjacent to the Collie River which is elevated and not flood prone.

There are potentially three stages of development with an overall yield of 527 lots with a combination of R20 and R40 densities.

- North stage - 316 lots; and
- South stage - 211 lots.

A local open space reserve being approximately 3.3 hectares will be provided centrally within the Estate and a portion of this will retain the existing vegetation.

The north eastern portion of the development adjacent to the boundary of Lot 3001 will be left as part of the balance lot pending the development of Lot 3001. This is because there will be some common lots crossing the property boundary and is also allows this land to be used as an asset protection zone pending completion of the final subdivision.

An emergency access way will be created through Lot 3001 along the alignment of proposed subdivision road giving secondary access to Eaton Drive.

All of the proposed lots will have a Bushfire Attack Level of BAL-29 rating or less. Two residential cells have a 3m encroachment of BAL-40/FZ on their front boundary. This equates to the minimum development setback under the R-Codes and will be reinforced by the use of a restrictive covenant. The majority of lots in the Estate will have a BAL-12.5 or BAL-Low rating.

The proposed subdivision complies with the objectives of State Planning Policy 3.7 as:

1. It avoids any increase in the threat of bushfire to people, property and infrastructure.
Development with a maximum BAL-29 rating it does not increase the threat of bushfire. The proposed subdivision design does not increase the bushfire threat as it complies with the Bushfire Protection Criteria and provides for the management of vegetation hazards, suitable road access and appropriate separation distances with all proposed lots having a BAL-29 rating or lower.
2. It reduces vulnerability to bushfire through the identification and consideration of bushfire risks in the design of the development and the decision-making process.
The bushfire hazard and risks have been identified and assessed in this report.

(Appendix ORD: 12.2.2A Under E Separate Cover)

3. The design of the subdivision and the development takes into account bushfire protection requirements and includes specific bushfire protection measures.

The proposed development complies with the Bushfire Protection Criteria.

4. Achieves an appropriate balance between bushfire risk management measures and biodiversity, conservation values, and environmental protection.

The vegetation on the site which is to be cleared for any development does not have any significant conservation value. The river foreshore and wetlands will be rehabilitated and provision for this has been included in the design and assessment.

The recommendations in this report should not be construed to assure total bush fire protection and do not guarantee that a building will not be damaged in a bush fire. The severity of a bush fire will depend upon the vegetation fuel loadings; the prevailing weather conditions and the implementation of appropriate fire management measures.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Document Reference

Property Details

| Street No | Lot No's | Plan | Street Name |
|---|-------------------------|--------------------------|-----------------------|
| | 9004 9503 9504 | 404217 50198 50198 | Peninsula Lakes Drive |
| Locality | Eaton | State WA | Postcode 6232 |
| Local Government Area | Dardanup | | |
| Description of the building or works | Residential subdivision | | |

Report Details

| Revision | Date | Job No |
|----------|------------|------------------------|
| A | 29/01/2018 | 17-076 Preliminary |
| B | 14/03/2018 | Revised Structure Plan |
| C | 25/06/2019 | WAPC Modifications |

Practitioner Details

| | | | |
|-------------|----------------------|-------------------------|-------|
| BPAD | Level 2 Practitioner | Accreditation No | 27682 |
|-------------|----------------------|-------------------------|-------|

Disclaimer

The measures contained in this report do not guarantee that a building will not be damaged in a bushfire. The ultimate level of protection will be dependent upon the design and construction of the dwelling and the level of fire preparedness and maintenance under taken by the landowner. The severity of a bushfire will depend upon the vegetation fuel loadings; the prevailing weather conditions and the implementation of appropriate fire management measures.



Geoffrey Lush
25 June 2019
geoffrey@lushfire.com.au



(Appendix ORD: 12.2.2A Under E Separate Cover)

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APPENDICES

Appendix 1 Floodway Advice

(Appendix ORD: 12.2.2A Under E Separate Cover)

1.0 PROPOSAL DETAILS

1.1 Introduction

This bushfire management plan is prepared for the proposed subdivision and development of the Parkridge Estate located at Eaton.

The subject land is located approximately 8km east-north-east of the Bunbury CBD adjacent to the Collie River as shown in Figure 1.

The aim of this Report is to reduce the likelihood and consequences of a bushfire within the proposed development. The Report also demonstrates:

- 1) How the hazard level will be reduced and maintained for the life of the development. This will enable the decision-maker to ensure that appropriate bushfire risk management measures are in place to achieve and maintain a low or moderate hazard level.
- 2) That compliance with the Bushfire Protection Criteria in the Guidelines can be achieved.

1.2 Existing Conditions

The subject land has an area of 53 hectares and contains three lots as documented in Table 1. It is irregular in shape with a depth varying between 600 and 880m with a width of approximately 880m.

The site has frontages to multiple roads including Leicester Ramble, Peninsula Lakes Drive, Robusta Road and Eaton Drive. Lot 9504 is a battle axe lot with a 260m long access leg.

External access to the site is provided from Eaton Drive which connects to the Eaton district centre and Forrest Highway. It is also in the process of being extended over the Collie River and connecting into The Boulevard in Treendale.

The existing conditions are shown in Figure 2.

Table 1 Land Details

| Lot | Plan | Vol | Folio | Proprietor | Area (ha) |
|------|--------|------|-------|-------------------------|-----------|
| 9004 | 404217 | 2880 | 400 | Parkridge Group Pty Ltd | 33.7650 |
| 9503 | 50198 | 2632 | 554 | Parkridge Group Pty Ltd | 17.1610 |
| 9504 | 50198 | 2632 | 555 | Lancett Court Pty Ltd | 2.2251 |
| | | | | | 53.1511 |

The site is vacant and has been used for broad acre farming/grazing with improved pasture. There are remains of several buildings and stock yards in Lot 9504.

The Collie River is situated on the western boundary and portions of the site are flood prone. The land is gently undulating and slopes upwards towards Eaton Drive. Lot 9504 is more elevated than the immediately surrounding area.

The land to the north is also vacant and contains a large wetland and freehold lot. Lot 3001 to the east is vacant but designated for future residential development. The Millbridge residential area is located to the east and Eaton to the south with regional open space areas along the river.



LEGEND

- SUBJECT LAND —
- MAIN ROAD
- UNDER CONSTRUCTION

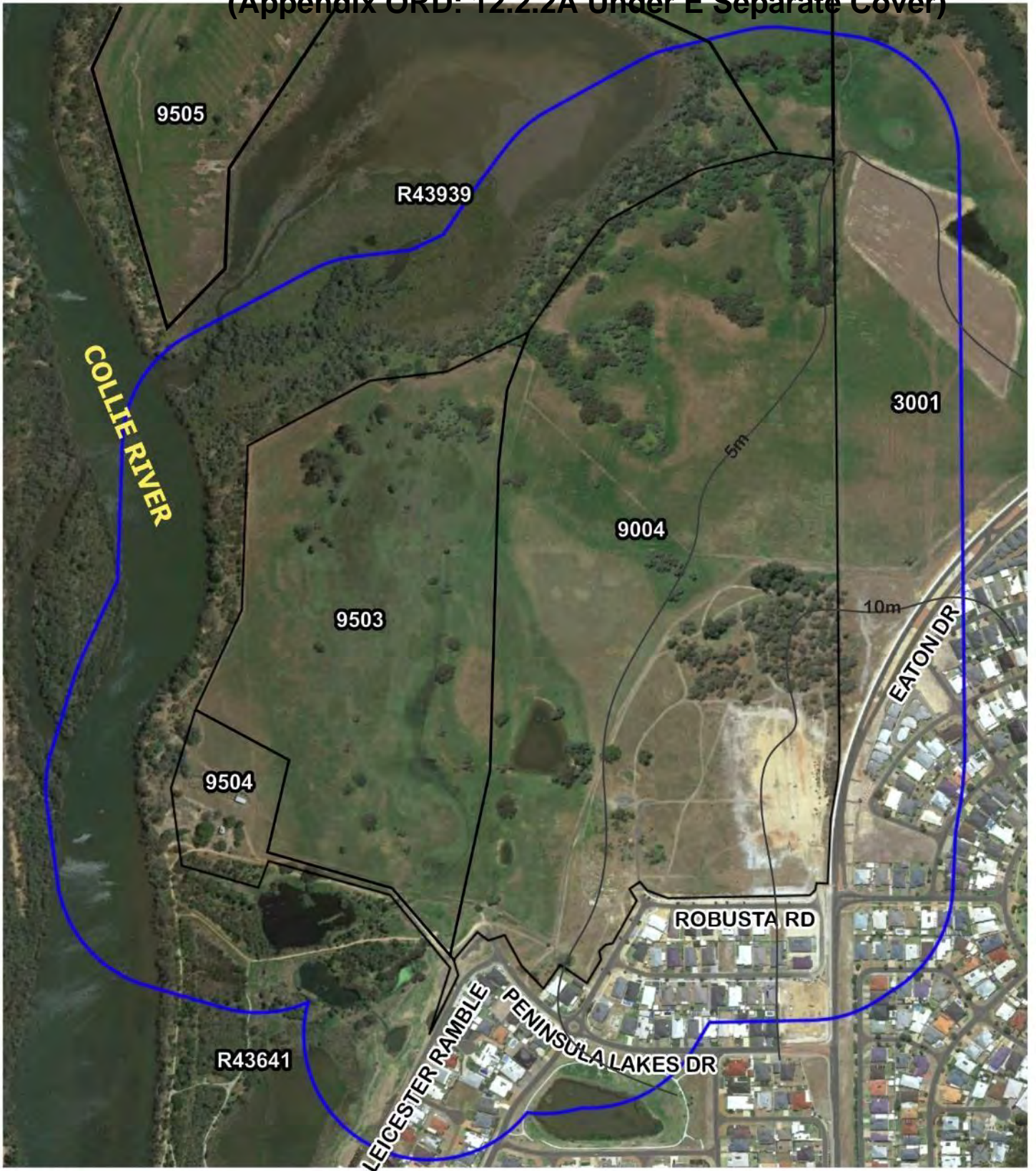
FIGURE 1
LOCATION AND CONTEXT



Job No 17-076

Rev Description
A Preliminary

Date
18/01/2018



LEGEND



- SUBJECT LAND 
- 150m BUFFER 
- CONTOUR 

FIGURE 2
EXISTING CONDITIONS



Job No 17-076

Rev Description
A Preliminary

Date
18/01/2018

(Appendix ORD: 12.2.2A Under E Separate Cover)

1.3 Bushfire Prone Land

Portions of the subject land are shown on the Map of Bush Fire Prone Areas (Figure 3) as being bushfire prone. Bushfire prone areas are comprised of (1):

- Bushfire prone vegetation; and
- A 100m wide bushfire prone buffer.

The designation of bushfire prone areas triggers:

- The application of Australian Standard AS3959 Construction of Buildings in Bushfire Prone Areas under the Building Code of Australia;
- The provisions of the Planning and Development (Local Planning Schemes) Amendment Regulations 2015; and
- The application of SPP3.7 Planning in Bushfire Prone Areas.

1.4 Fire Prevention Notice

Council's Fire Prevention Notice stipulates that in all residential zoned land that all flammable material/vegetation (except living trees) must be slashed or grazed to a height that does not exceed 50 millimetres and flammable material must be removed.

In the General Farming zone non irrigated lots are to have bare earth firebreaks of 2 metres width and 4 metres in height which must be maintained within and adjacent to the lot boundary where it adjoins a road and/or rail reserve.

1.5 Proposed Development

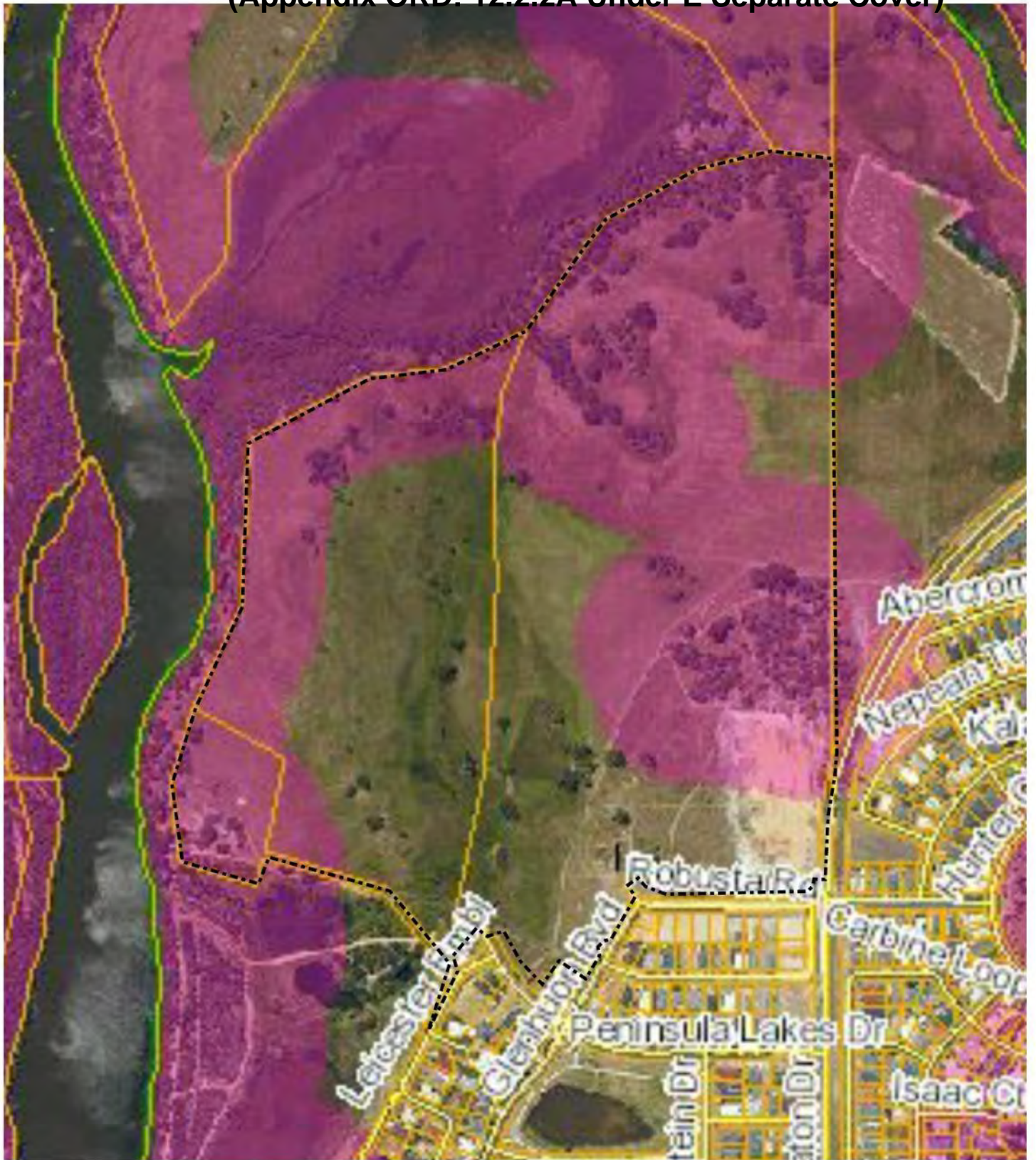
The proposed subdivision / development plan is shown in Figure 4 and the development portion of the site is primarily located on the eastern portion of the site and also on lot 9504.

There are potentially three stages of development with an overall yield of 527 lots with a combination of R20 and R40 densities.

- North stage - 316 lots; and
- South stage - 211 lots.

A local open space reserve being approximately 3.3 hectares will be provided centrally within the Estate and a portion of this will retain the existing vegetation. The second area of local open space will be provided around the River Stage lots and will function as a low fuel zone in conjunction with the subdivision road. This reserve will be between 6 and 18m wide.

The north eastern portion of the development adjacent to the boundary of Lot 3001 will be left as part of the balance lot pending the development of Lot 3001. This is because there will be some common lots crossing the property boundary and is also allows this land to be used as an asset protection zone pending completion of the final subdivision.



LEGEND

- SUBJECT LAND
- BUSHFIRE PRONE LAND

FIGURE 3
BUSHFIRE PRONE LAND



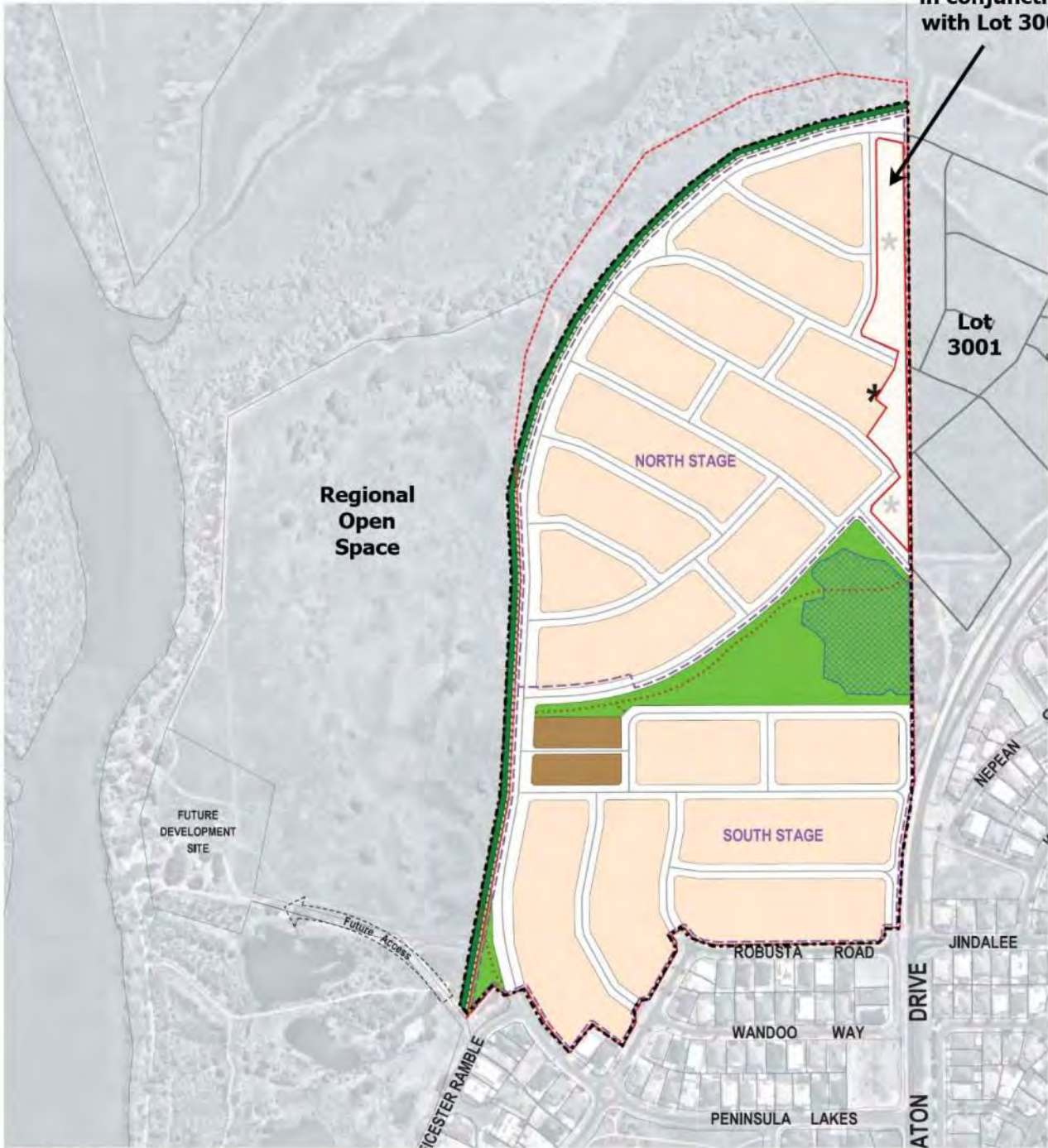
Job No 17-076

Rev A Description Preliminary

Date 01/02/2018

(Appendix ORD: 12.2.2A Under E Separate Cover)

BALANCE LOT
To be developed
in conjunction
with Lot 3001



LEGEND

- | | | | |
|--|-------------------------|--|---------------------------|
| | EXISTING CADASTRE | | PUBLIC OPEN SPACE |
| | LOT BOUNDARY | | REGIONAL OPEN SPACE |
| | STRUCTURE PLAN BOUNDARY | | LOCAL ROADS |
| | PROPOSED CADASTRE | | PATHWAY - SHARED PATHS |
| | STAGE BOUNDARY | | PROPOSED PLAYING FIELD |
| | RESIDENTIAL - R20 | | VEGETATION TO BE RETAINED |
| | RESIDENTIAL - R40 | | |

FIGURE 4
PROPOSED STRUCTURE PLAN



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |



(Appendix ORD: 12.2.2A Under E Separate Cover)

2.0 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation Modification and Clearing

Clearing within parts of the development area will occur for the construction of the subdivision as shown in Figure 5.

2.2 Re-vegetation / Landscape Plans

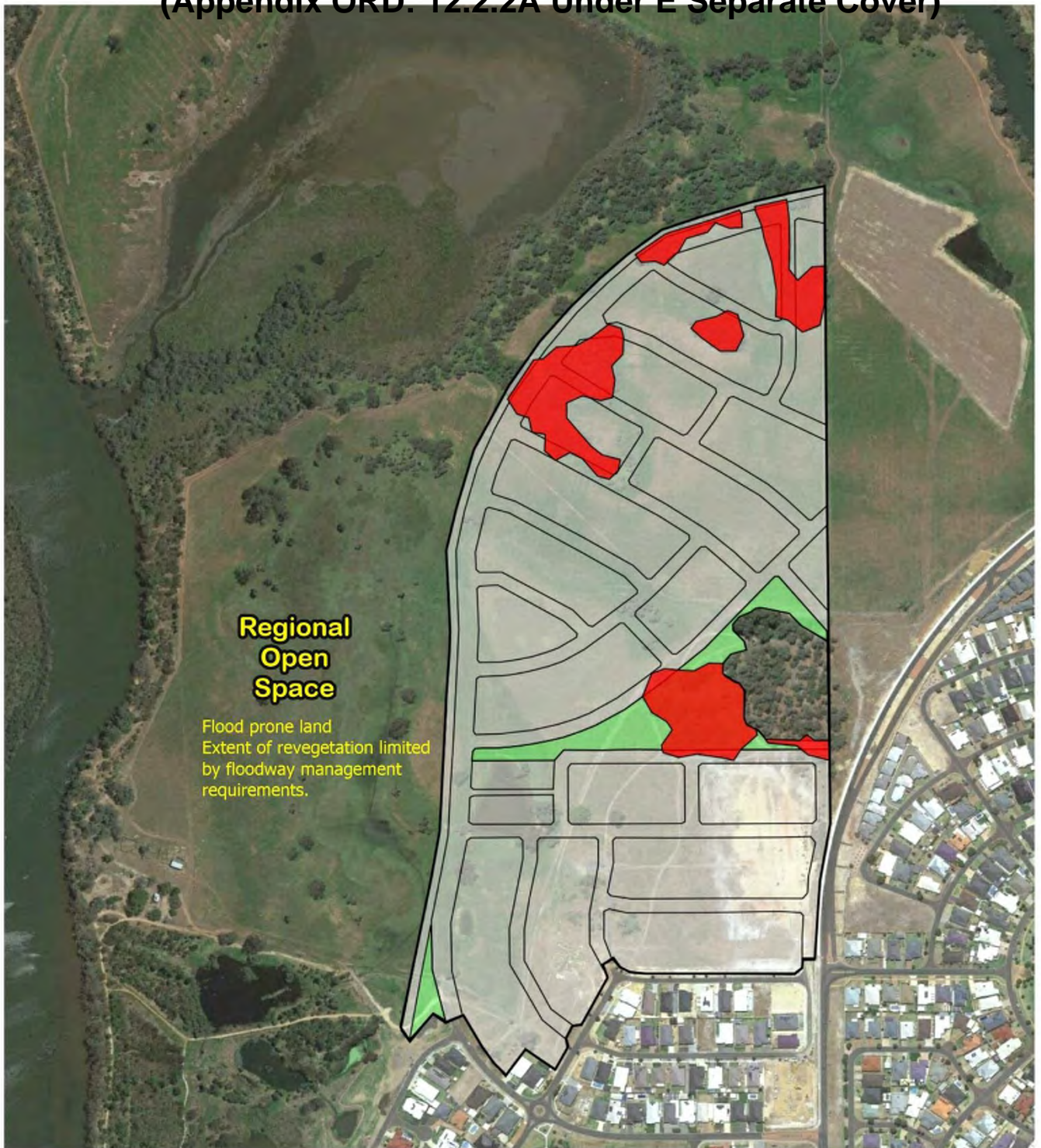
The Local Open Space Areas is proposed to be developed and maintained as a managed reserve. Except for the retained vegetation shown in Figure 4 the balance of the reserve will be landscaped as Excluded Low Threat Vegetation. Further information regarding this is provided in Section 4.3.

The Regional Open Space is expected to be subject to a foreshore management plan which will address and potential revegetation. The extent and nature of this revegetation and its management have not been determined. However, this is likely to be restricted as the Regional Open Space contains the active floodway for the Collie River. Advice from the Department of Environment (2004) and The Department of Water (2011) is contained in Appendix 1 and confirms that there cannot be any obstruction within the floodway.

At present time the majority of the Regional Open Space is improved pasture with some relatively small areas of remnant trees as shown in Figures 2 and 6. Naturally occurring revegetation especially from eucalyptus suckers, will be slow to occur due to the established grassland.

The proposed subdivision design includes a boundary road adjacent to the ROS that is 21m wide. This will ensure that no matter vegetation is within the Regional Open Space the nearby lots will still have a maximum BAL-29 rating as shown in Figures 8 and 9.

The central Local Open Space Area is proposed to be developed and managed as Low Threat Vegetation by the Shire of Dardanup. This will be subject to the approval of a landscaping and management plan.



LEGEND

- SUBJECT LAND 
- PROPOSED VEGETATION CLEARING 
- LOCAL POS SUBJECT TO LANDSCAPE AND MANAGEMENT PLAN 

FIGURE 5
VEGETATION MODIFICATION



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |



(Appendix ORD: 12.2.2A Under E Separate Cover)

3.0 BUSHFIRE ASSESSMENT RESULTS

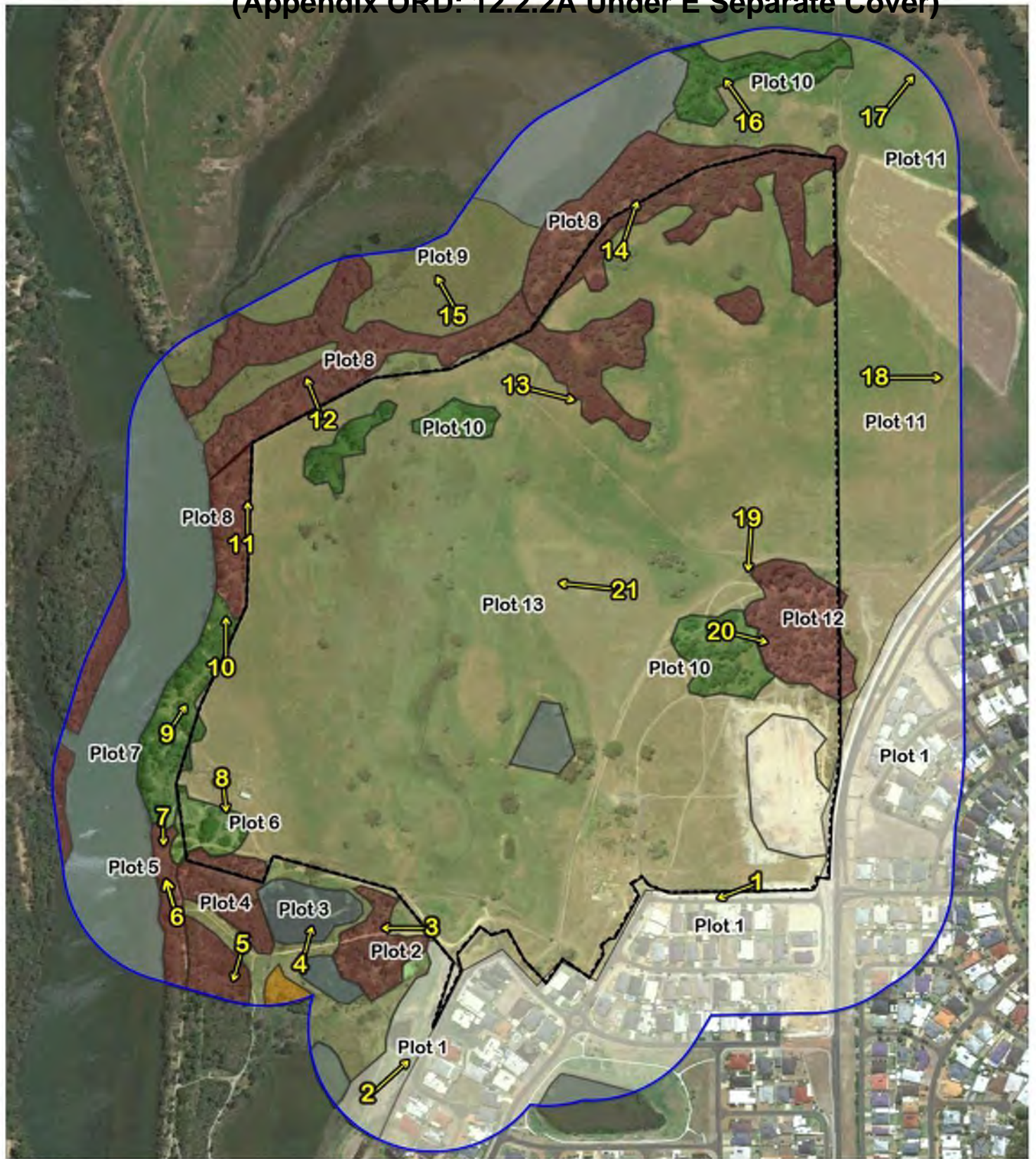
3.1 Assessment Inputs

3.1.1 Existing Vegetation Classifications

The classification of the vegetation on and adjacent to the site is shown in Figure 6 and the photographs on the following pages. The classification is based upon AS3959 and also takes into account The Visual Guide for Bushfire Risk Assessment in Western Australia (WAPC 2016). The details of the vegetation plots are summarised in Table 2.

Table 2 Existing Vegetation Classifications

| Plot No | Applied Vegetation Classification | Slope Under Vegetation | Comment |
|---------|---|------------------------|--|
| 1 | Excludable - 2.2.3.2(e) Non Vegetated Areas | Flat | Adjacent subdivision and residential development. This includes the managed public open space reserve adjacent to the development. |
| 2 | Class A Forest - Low open forest A-04 | Flat | Wetland revegetation predominantly Melaleuca |
| 3 | Excludable - 2.2.3.2(e) Non Vegetated Areas | Flat | Wetland with standing water. |
| 4 | Class A Forest - Open forest A-03 | Flat | Eucalyptus revegetation on regional open space |
| 5 | Class A Forest - Open forest A-03 | 5 - 8 deg | Linear vegetation along the riverbank foreshore. |
| 6 | Class B Woodland - Woodland B-05 | 0 - 3 deg | Old homestead site with introduced species. |
| 7 | Class B Woodland - Woodland B-05 | 0 -5 deg | Linear vegetation along the riverbank foreshore. Will potentially become forest. |
| 8 | Class A Forest - Open forest A-03 | 0-5 deg | Linear vegetation along the riverbank and wetland foreshore areas. |
| 9 | Class G Grassland - Tussock Moorland | Flat | Wetland vegetation. |
| 10 | Class B Woodland - Woodland B-05 | 0-5 deg | Woodland areas within the site with grazed understorey. |
| 11 | Class G Grassland – Tussock grassland G-22 | 0-5 deg | Grassland in adjacent land used for grazing. |
| 12 | Class A Forest - Open forest A-03 | Upslope | Peppermint and Eucalyptus forest between 10 and 20m in height. |
| 13 | Class G Grassland – Sown pasture G-26 | Undulating | Grassland, pasture within the development site. |



LEGEND

SUBJECT LAND
 ASSESSMENT AREA
 (150m from the
 external boundary
 of the subject land)
 VEGETATION PLOTS
 PHOTO POINT



VEGETATION CLASS

A FOREST
 B WOODLAND
 D SCRUB
 G GRASSLAND
 WATER
 EXCLUDED
 2.2.3.2 (e) & (f)



Location Details:

Lots 9004, 9503, 9504
 Peninsula Lakes Dr
 Eaton

Assessment Date:

11/01/2018

Prepared by:

G Lush

Accreditation Level:

Level 2

Accreditation Number:

BPAD 27682

Accreditation Expiry Date:

February 2019

Date of Aerial

Nov 2017

FIGURE 6
VEGETATION CLASSIFICATIONS



Job No 17-076

Rev Description
 A Preliminary
 B Rev Design

Date
 01/02/2018
 14/03/2018



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 1 **Plot No 1**

Vegetation Classification

Excludable - 2.2.3.2(e) Non
Vegetated Areas

Description

Residential development adjacent
to the site.



Photo No 2 **Plot No 1**

Vegetation Classification

Excludable - 2.2.3.2(f) Low Threat
Vegetation

Description

Managed parkland POS adjacent to
the site



Photo No 3 **Plot No 2**

Vegetation Classification

Class A Forest - Low open forest A-
04

Description

Predominantly Melaleuca to 10m
with heavy understorey, grass and
some shrubland. Foliage cover
greater than 50%



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 4 **Plot No 3**

Vegetation Classification

Excludable - 2.2.3.2(e) Non Vegetated Areas

Description

Wetland adjacent to the site.



Photo No 5 **Plot No 4**

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed species with predominantly juvenile Eucalypts to 10m and will be taller when mature. Dense foliage and understorey with heavy fuel load.



Photo No 6 **Plot No 5**

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed species along the riverbank with Melaleuca, Peppermints and Eucalypts. Some open patches but generally more than 30% foliage coverage. Thick grass understorey, scrub and heavy fuel loads greater than 15tpa.



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 7 **Plot No 5**

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed species along the riverbank with Melaleuca, Peppermints and Eucalypts. Some open patches but generally more than 30% foliage coverage. Thick grass understorey, scrub and heavy fuel loads greater than 15tpa.



Photo No 8 **Plot No 6**

Vegetation Classification

Class B Woodland - Woodland B-05

Description

Mixed introduced species and some native around the old homestead site.



Photo No 9 **Plot No 7**

Vegetation Classification

Class B Woodland - Woodland B-05

Description

Mixed species, Eucalypts and Acacia with less than 30% foliage coverage and open understorey predominantly grassland with moderate fuel load. With revegetation this area is likely to continue to regenerate as forest.



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 10 Plot No 7

Vegetation Classification

Class B Woodland - Woodland B-05

Description

Mixed species, Eucalypts and Acacia with less than 30% foliage coverage and open understorey predominantly grassland with moderate fuel load. With revegetation this area is likely to continue to regenerate as forest.



Photo No 11 Plot No 8

Vegetation Classification

Class A Forest - Open forest A-03

Description

Revegetation along foreshore area. Mixed vegetation being Eucalypts on elevated areas and Melaleuca in the lower areas. Heavy grass understorey.



Photo No 12 Plot No 8

Vegetation Classification

Class A Forest - Open forest A-03

Description

Eucalypts on the foreshore slope. Trees to 18m height with more than 30% foliage coverage. Heavy grass understorey with fallen timber.



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 13 **Plot No 8**

Vegetation Classification

Class A Forest - Low open forest A-04

Description

Eucalypts on the foreshore slope. Trees to 18m height with more than 30% foliage coverage. Heavy grass understorey with fallen timber.



Photo No 14 **Plot No 8**

Vegetation Classification

Class A Forest - Open forest A-03

Description

Eucalypts on the foreshore slope. Trees to 18m height with more than 30% foliage coverage. Heavy grass understorey with fallen timber.



Photo No 15 **Plot No 9**

Vegetation Classification

Class G Grassland - Tussock Moorland

Description

Tussock grassland to 0.75m associated with the wetland areas



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 16 **Plot No 10**

Vegetation Classification

Class B Woodland - Woodland B-05

Description

Woodland areas associated with grazing land. Trees to 18m height with less than 30% foliage coverage, open canopy and understorey.



Photo No 17 **Plot No 11**

Vegetation Classification

Class G Grassland – Tussock grassland G-22

Description

Unmanaged grassland previously used for grazing adjacent to the site.



Photo No 18 **Plot No 11**

Vegetation Classification

Class G Grassland – Tussock grassland G-22

Description

Unmanaged grassland previously used for grazing adjacent to the site.



(Appendix ORD: 12.2.2A Under E Separate Cover)

Photo No 19 Plot No 12

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed Eucalypts and Peppermints to 20m in height with foliage coverage of 60%. Peppermints have continuous foliage from ground. Some scrub understorey but generally heavy weeds and fuel loads.



Photo No 20 Plot No 12

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed Eucalypts and Peppermints to 20m in height with foliage coverage of 60%. Peppermints have continuous foliage from ground. Some scrub understorey but generally heavy weeds and fuel loads.



Photo No 20 Plot No 13

Vegetation Classification

Class G Grassland – Sown pasture G-26

Description

Grazing land within the site, pasture less than 300mm.



(Appendix ORD: 12.2.2A Under E Separate Cover)

3.2 Assessment Outputs

3.2.1 BAL Contour Map

Figure 7 shows the proposed modified vegetation plots with the associated vegetation plots being documented in Table 3. The modifications include a 3m wide firebreak being located on the boundary of the Regional Open Space.

A BAL Contour Map is shown in Figure 8 and this is a plan of the subject lot/s illustrating the potential radiant heat impacts and associated indicative BAL ratings in reference to any classified vegetation remaining within 100 metres of the assessment area after the development is completed.

Figure 9 shows the proposed cross sections and associated BAL setbacks for each major development interface.

Table 3 Modified Vegetation Plots

| Plot No | Applied Vegetation Classification | Effective Slope | Comment |
|---------|-----------------------------------|-----------------|---|
| A | Managed land | Flat & Upslope | Adjacent subdivision and residential development. |
| B | Class G Grassland | Flat & Upslope | Grassland area associated with tracks and cleared portions of the foreshore reserve. |
| C | Class A Forest | Flat | Predominantly Melaleuca to 10m with heavy understorey, grass and some shrubland. |
| D | Class G Grassland | >0-5 | Grassland, pasture within the Regional Open Space. Any revegetation is likely to be restricted as this is the active floodway for the Collie River. |
| E | Class B Woodland | >0-5 | Woodland areas within the site with grazed understorey. |
| F | Class A Forest | >0-5 | Trees to 18m height with more than 30% foliage coverage. |
| G | Class B Woodland | >0-5 | Woodland areas within the site with grazed understorey. |
| H | Class G Grassland | >0-5 | Grassland in adjacent vacant undeveloped land used for grazing. |
| I | Class A Forest | Upslope | Peppermint and Eucalyptus forest between 10 and 20m in height. |
| J | Managed land | >0 - 5 | Developed parkland to be managed by the Council. |

(Appendix ORD: 12.2.2A Under E Separate Cover)

The BAL ratings for the individual lots are documented in Table 4. As there is no detailed lot design the subdivision has been divided into residential cells based upon the proposed road network. It is also noted that Cell 11 is part of the balance lot which will be the final stage and developed in conjunction with the adjacent Lot 3001.

Cells 1 & 4 have a 3m encroachment of BAL-40 which corresponds to the minimum development setback. This would also apply to any of the cells adjacent to the Regional Open Space where any revegetation might occur and is classified as Class A Forest; notwithstanding the presumption against revegetation obstructing the floodway.

Table 4 Lot BAL Classifications

| Cell Number (Face) | Plot No (1) | Vegetation Classification | Effective Slope | Separation Distance (2) | BAL Rating at Boundary | BAL 29 Setback (3) |
|--------------------|---|---------------------------|-----------------|-------------------------|------------------------|--------------------|
| 1 (N) | F | A Forest | >0-5m | 24m | BAL-40 | 3m |
| 2 (W) | F | A Forest | >0-5m | 30m | BAL-29 | |
| 3 (W) | F | A Forest | >0-5m | 27m | BAL-29 | |
| 4 (W) | F | A Forest | >0-5m | 24m | BAL-40 | 3m |
| 5 (NW) | F | A Forest | >0-5m | 27m | BAL-19 | |
| 6 (W) | D | G Grassland | >0-5m | 27m | BAL-12.5 | |
| 7 (W) | D | G Grassland | >0-5m | 27m | BAL-12.5 | |
| 8 (W) | D | G Grassland | >0-5m | 27m | BAL-12.5 | |
| 9 (W) | D | G Grassland | >0-5m | 27m | BAL-12.5 | |
| 10 (W) | D | G Grassland | >0-5m | 27m | BAL-12.5 | |
| 11 | Part of the balance lot acting as low fuel zone. | | | | | |
| 12 (E) | E | G Grassland | Upslope | 12m | BAL-19 | |
| 13 (E) | E | G Grassland | Upslope | 17m | BAL-12.5 | |
| 14 (SE) | I | A Forest | Upslope | 21m | BAL-29 | |
| 15 (NE) | I | A Forest | Upslope | 80m | BAL-12.5 | |
| 16 (NE) | E | G Grassland | >0-5m | >100m | BAL-Low | |
| 17 (W) | I | A Forest | Upslope | 25m | BAL-29 | |
| 18 (NE) | H | G Grassland | Upslope | 26m | BAL-12.5 | |
| 19 (NW) | H | G Grassland | Upslope | >50m | BAL-Low | |
| Notes | (1) The selected vegetation plot is the plot with the highest BAL rating. (2) The separation distance is measured to the nearest point on the lot boundary. (3) Refers to the setback within the relevant cell where a BAL-29 | | | | | |

(Appendix ORD: 12.2.2A Under E Separate Cover)

NOTE:
CELL 11 FORMS PART OF THE
BALANCE LOT AND WILL BE
DEVELOPED IN CONJUNCTION
WITH LOT 3001.



LEGEND

- DEVELOPMENT AREA
- ASSESSMENT AREA (150m from the external Boundary of the subject land)
- VEGETATION PLOTS
- PROPOSED CADASTRE

- VEGETATION CLASS**
- A FOREST
 - G GRASSLAND
 - AREA TO BE MODIFIED TO LOW THREAT STATE
 - EXCLUDED AS PER 2.2.3.2(e)

Location Details: Lots 9004, 9503, 9504 Peninsula Lakes Dr Eaton
 Assessment Date: 11/01/2018
 Prepared by: G Lush
 Accreditation Level: Level 2
 Accreditation Number: BPAD 27682
 Accreditation Expiry Date: February 2020
 Date of Aerial: Nov 2017

NOTE CELL 11 FORMS PART OF THE BALANCE LOT

FIGURE 7
MODIFIED VEGETATION CLASSIFICATIONS

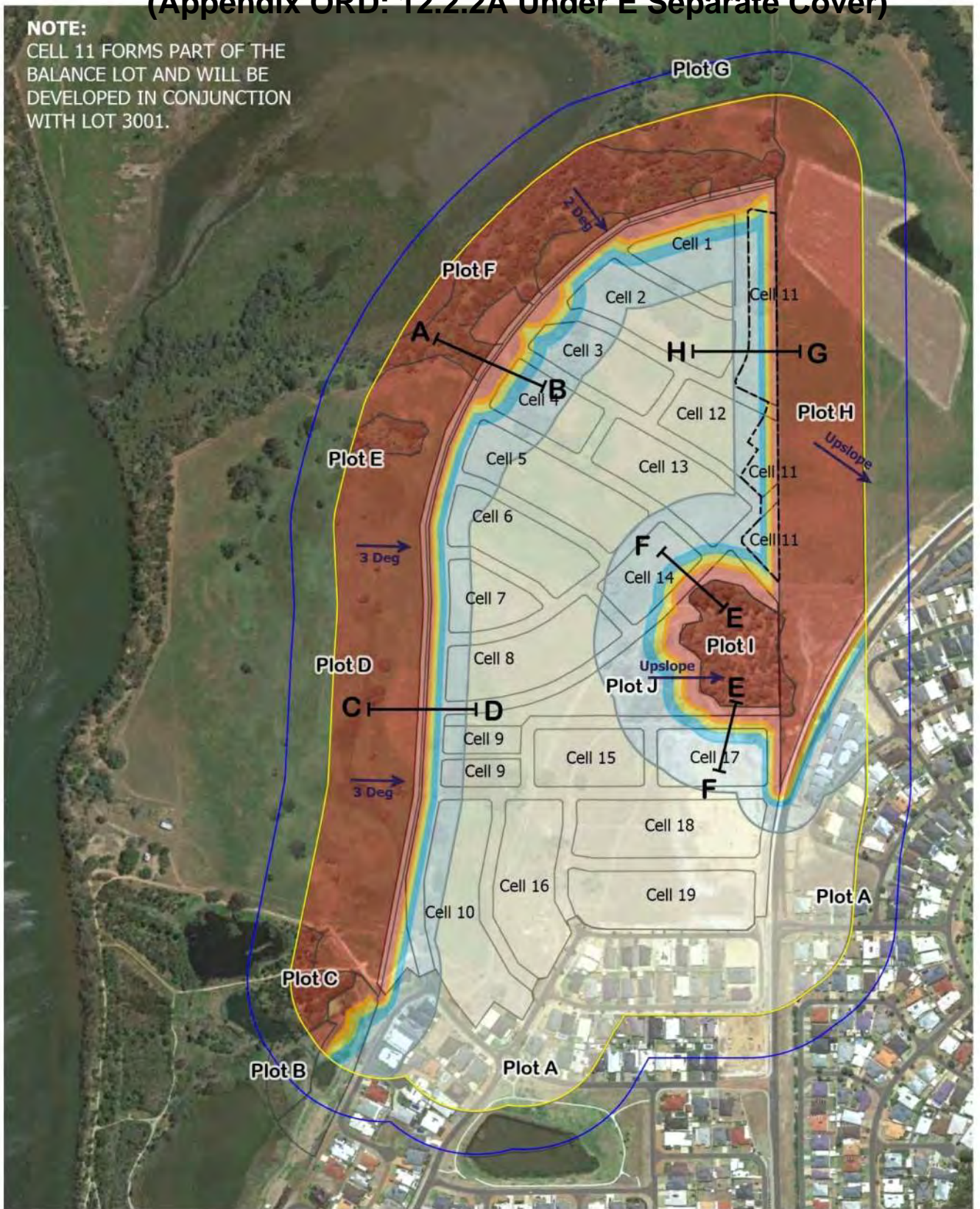


| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |



(Appendix ORD: 12.2.2A Under E Separate Cover)

NOTE:
CELL 11 FORMS PART OF THE
BALANCE LOT AND WILL BE
DEVELOPED IN CONJUNCTION
WITH LOT 3001.



LEGEND

DEVELOPMENT AREA



PROPOSED CADASTRE



VEGETATION ASSESSMENT AREA (150m from the external boundary of the subject site)



VEGETATION PLOT



BAL CONTOUR ASSESSMENT AREA (100m from the external boundary of the subject site)



CROSS SECTIONS (See Figure 9)



INDICATIVE BUSHFIRE ATTACK LEVELS

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

Location Details:

Lots 9004, 9503, 9504
Peninsula Lakes Dr
Eaton

Assessment Date:

11/01/2018

Prepared by:

G Lush

Accreditation Level:

Level 2

Accreditation Number:

BPAD 27682

Accreditation Expiry Date:

February 2020

Date of Aerial

Nov 2017

FIGURE 8
BAL CONTOUR MAP



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |



(Appendix ORD: 12.2.2A Under E Separate Cover)

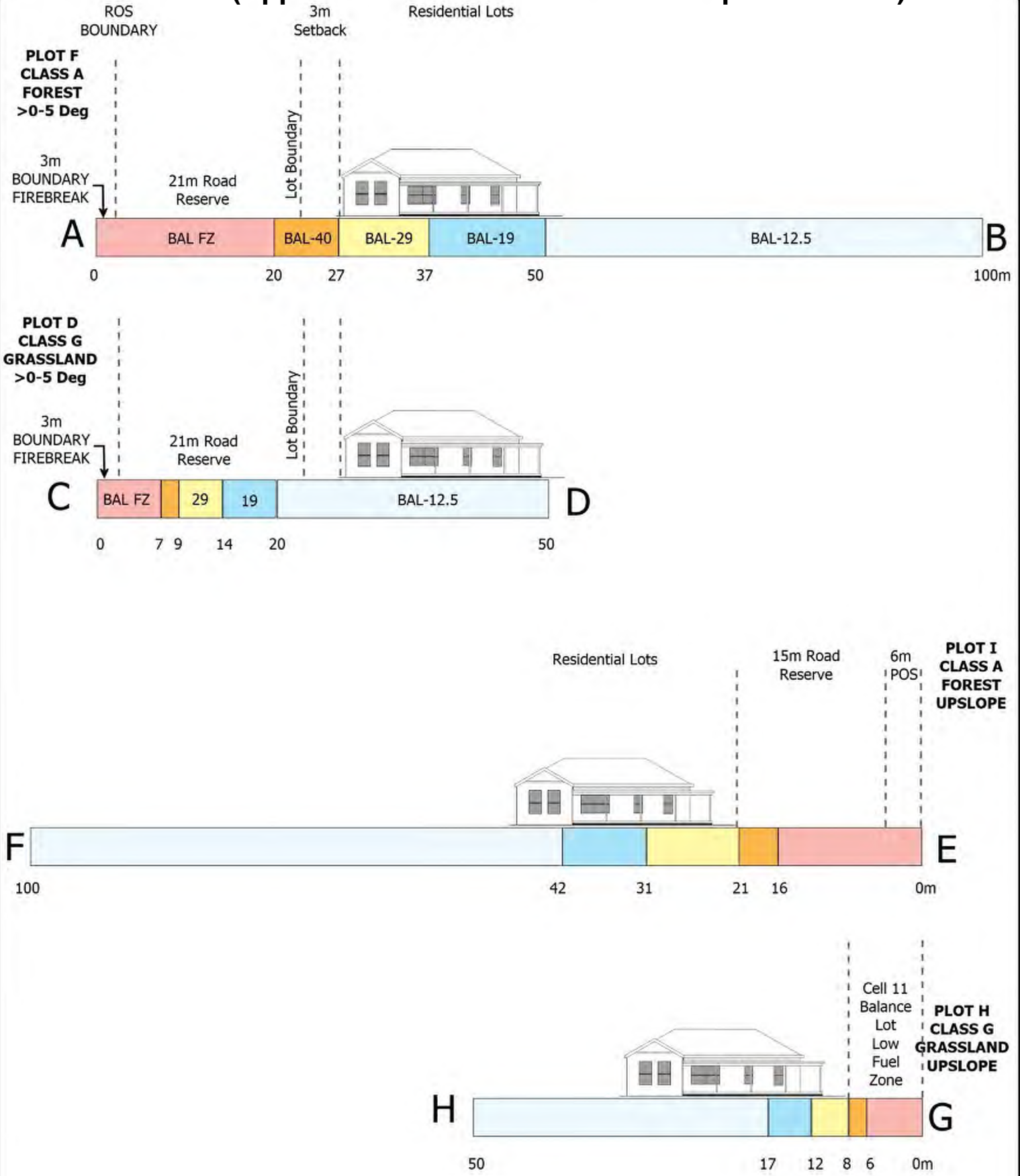


FIGURE 9
BAL CONTOUR CROSS SECTIONS



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |

LUSHfire
and planning
geoffrey@lushfire.com.au
0418 954873

(Appendix ORD: 12.2.2A Under E Separate Cover)

4.0 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

4.1 Locality

Figure 1 shows the existing conditions for the locality around the subject land. The most significant bushfire hazard will be the Regional Open Space. The proposed road network and the bridge over the Collie River provide excellent district access in multiple directions.

The bushfire hazard issues are shown in Figure 10 and the issue numbers are referenced as follows:

1. Development interface with the Regional Open Space. There is a presumption against any substantial revegetation which might affect the function of the floodway. It is unknown if this would prevent small areas of vegetation, of any classification, occurring in selected areas. Even if these are less than 2,500sqm in size they would still be classified where they adjoin the balance of the grassland vegetation in the balance of the ROS. This interface will be managed by providing an 21m wide boundary subdivision road, noting that there will also be a 3m boundary firebreak within the POS.
2. Grassland interface with Lot 3001. This affects the north eastern portion of the site and once Lot 3001 is developed then there not be any adjacent vegetation hazard. At present there is grassland vegetation on Lot 3001 and the setback for a BAL-29 rating of the lots is 8m. This interface will be managed by leaving this area as part of the balance lot pending the development of Lot 3001. This area will then be maintained as an asset protection zone so that no portion of the adjoining lots have a BAL-40 or BAL-FZ rating.
3. The proposed local open space will contain an area of remnant vegetation. As this is greater than 1 hectare in size it is classified as being a bushfire hazard. The management plan for the reserve will include some minor clearing to ensure that there are appropriate development setbacks.
4. Eaton Drive provides district road access in two different directions. The bridge over the Collie River links into The Boulevard in the Treendale Estate.
5. The principal local access to the subject land is from Peninsula Lakes Drive with secondary access from Leichester Ramble.
6. There is restricted access to Eaton Drive from Robusta Road the area north of this.
7. In order to provide two access roads, it will be necessary to have a temporary emergency access way connecting through Lot 3001 to Eaton Drive pending the development of Lot 3001.

4.2 Local Open Space

As indicated in Section 2.2 the Local Open Space Area reserve is proposed to be partially developed and managed as low threat vegetation by the Shire of Dardanup.

This would be subject to a landscaping plan approved by Council with the landscaping established by the developer and maintained for two years as prescribed by Model Subdivision Condition R4 which states that:

Arrangements being made for the proposed public open space to be developed by the landowner/ applicant to a minimum standard and maintained for two summers through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and to the specifications of the local government. (Local Government)

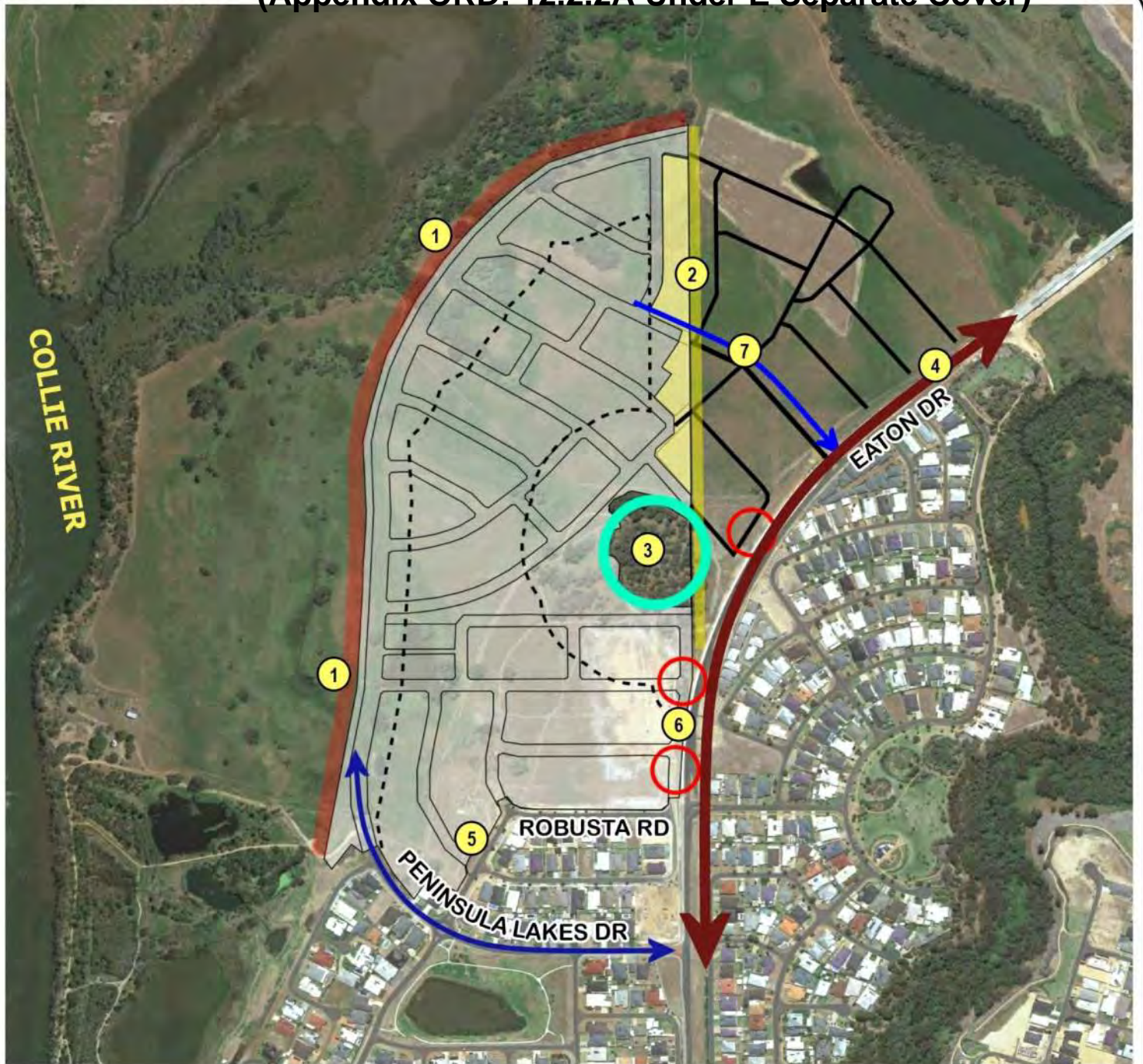
This condition is imposed in accordance with the requirements of Liveable Neighbourhoods Element 4. It is further reinforced in Section 6.3.3.2 of the Local Government Guidelines for

(Appendix ORD: 12.2.2A Under E Separate Cover)

Subdivisional Development (2) which set out the standard requirements for the development of public open space including:

- a) The preparation of a management plan;
- b) A long-term maintenance agreement based on the management plan being entered into by the developer with the Local Government as part of the approval.
- c) A landscape maintenance and watering period of at least two summer periods to ensure full establishment, which includes a maintenance bond.

Further justification of this assumption can be provided by including the approval of the landscape and maintenance plans by Council as part of the requirements for clearance of the subdivision conditions associated with this bushfire management plan.



LEGEND

| | | | |
|----------------------------------|--|----------------------------|--|
| DEVELOPMENT AREA | | DISTRICT ACCESS | |
| REGIONAL OPEN SPACE INTERFACE | | PRINCIPAL SITE ACCESS | |
| GRASSLAND INTERFACE LOT 3001 | | TEMPORARY SECONDARY ACCESS | |
| BALANCE LOT BUFFER | | ACCESS RESTRICTION | |
| REGIONAL OPEN SPACE REVEGETATION | | ISSUE NO (REFER TO TEXT) | |
| LOCAL OPEN SPACE VEGETATION | | | |
| BAL LOW SETBACK | | | |

FIGURE 10
BUSHFIRE HAZARD ISSUES



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Parkridge Estate Eaton

5.0 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

5.1 Compliance Table

In formulating the proposed mitigation measures regard has been given to the objectives, general principles, guidance statements and performance criteria contained in the Guidelines for Planning in Bushfire Prone Areas and specifically the Bushfire Protection Criteria. The requirements in the Bushfire Protection Criteria and the proposed mitigation strategies are summarised in Table 4 and shown spatially in Figure 11.

Table 5 Bushfire Protection Criteria

| Bushfire protection criteria | Method of Compliance Acceptable solutions / Performance based solution | Compliance | Proposed bushfire management strategies |
|------------------------------------|---|----------------|---|
| Element 1: Location | A1.1 Development location | Yes | The proposed lots will have a BAL-29 or lower rating. This is subject to lots opposite the ROS having a 3m front development setback. This will be reinforced by the use of a restrictive covenant to prevent development within any area with a BAL-40/FZ rating. Based upon the existing vegetation this will only apply to Cells 1 and 4. It may apply to other cells in the event of any revegetation being classified as Forest. |
| Element 2: Siting and design | A2.1 Asset protection zone (APZ) | Yes | The lots are not large enough to contain the APZ within their own boundaries. Generally, for the "first row" of dwellings adjacent to the hazard areas the APZ will be provided within the development setback from the front boundary combined with the 18m wide road reserve and in some instance portions of the Local Open Space. This complies with the Guidelines which state on page 63 of the BPC that the APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context. |
| Element 3: Vehicular access | A3.1 Two access routes A3.2 Public road | Yes Yes | A temporary access connection to Eaton Drive will be required. The subdivision roads will be constructed in accordance with the Local Government Guidelines (3) for Subdivisional Development |

3 Department of Planning Lands and Heritage (2017) Local Government Guidelines for Subdivisional Development

(Appendix ORD: 12.2.2A Under E Separate Cover)

Parkridge Estate Eaton

| Bushfire protection criteria | Method of Compliance Acceptable solutions / Performance based solution | Compliance | Proposed bushfire management strategies |
|------------------------------|---|------------|---|
| | | | which meet required specifications for bushfire access. |
| | A3.3 Cul-de-sac (including a dead-end-road) | N/A | There are no cul-de-sacs in the development. |
| | A3.4 Battle-axe | N/A | There are no battle axe lots. |
| | A3.5 Private driveway longer than 50m is to meet detailed requirements contained within the Guidelines. | N/A | There are no lots more than 50m deep. |
| | A3.6 Emergency access way (EAW) | Yes | The proposed EAW will be approximately 200m in length and located on the alignment of a future subdivision road. The agreement of the owner of Lot 3001. |
| | A3.7 Fire service access routes (FSAR) | N/A | There are no proposed FSARs |
| | A3.8 Firebreak width | N/A | All lots are less than 0.5ha in size. |
| Element 4: Water | A4.1 Reticulated areas | Yes | The subdivision will be serviced with fire hydrants in accordance with the required specification. A plan of the hydrants will be submitted to Council and DFES as part of the subdivision clearance. |
| | A4.2 Non-reticulated areas | N/A | Not applicable |
| | A4.3 Individual lots within non-reticulated areas. | Yes | Not applicable |



LEGEND

| | | | |
|--|-----------|-----------------------|-------|
| DEVELOPMENT AREA | ——— | REGIONAL OPEN SPACE | ——— |
| BUSHFIRE PRONE LOTS | - - - - - | 3m FIREBREAK | |
| RETAINED BUSHLAND | ■ | LOW THREAT VEGETATION | ■ |
| EMERGENCY ACCESS WAY, 6m WIDE WITH GATES AT EACH END & SIGNAGE | - - - - - | ASSET PROTECTION ZONE | ■ |
| | | LOCAL OPEN SPACE | ■ |
| | | BALANCE LOT | ■ |

NOTES

- Vegetation in the Asset Protection Zone and designated Regional Open Spacer is to comply with Schedule 1 Element 2 of the Guidelines noting that:
- Trees >5m in height are to be setback a minimum distance of 6m from the building with no branches overhanging the roof;
 - Shrubs <5m in height are to be setback a minimum distance of 3m from the building and not planted in clumps greater than 5sqm; and
 - Grass is to be maintained at less than 100mm in height.

FIGURE 11
SPATIAL MITIGATION MEASURES



Job No 17-076

| Rev | Description | Date |
|-----|-------------|------------|
| A | Preliminary | 01/02/2018 |
| B | Rev Design | 14/03/2018 |
| C | WAPC Mods | 10/06/2019 |



(Appendix ORD: 12.2.2A Under E Separate Cover)

5.2 Additional Management Strategies

5.2.1 Purchaser Advice

All prospective purchasers must be made aware of the fire management issues, measures and responsibilities associated with the subdivision. This can be a notification placed upon the Certificate of Title of all lots pursuant to Section 70A of the Transfer of Land Act advising landowners of this Bushfire Management Plan and BAL requirements.

5.2.2 Staging

The development of the estate will have staged construction. In the event that the subdivision is staged then it is necessary to ensure that appropriate interim measures are provided. These may include:

- Interim access or emergency access ways;
- Creation of additional low fuel zones to ensure that the intended BAL ratings can be applied; or
- The provision of boundary firebreaks especially on any balance lot.

For any proposed stage of the subdivision a statement and plan of the proposed interim fire management measures will be submitted and approved by the Shire as an adjunct to Figure 11.

(Appendix ORD: 12.2.2A Under E Separate Cover)

6.0 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

The management of the risk posed by bushfires is a shared responsibility between landowners, government and industry. These responsibilities are summarised in Table 6.

Table 6 Implementation

| No | MANAGEMENT ACTION | TIMING |
|--|--|-------------|
| 1.0 Developer Prior to Issue of Titles | | |
| 1.1 | Construction of subdivision roads to standards outlined in the BMP to ensure safe access and egress. | Subdivision |
| 1.2 | A restrictive covenant to the benefit of the local government, pursuant to section 129BA of the Transfer of Land Act 1893, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of the land within areas that have been assessed as BAL-40 or BAL-Flame Zone. | Subdivision |
| 1.3 | Maintaining the balance area Cell 11 as low threat vegetation pending the development of Lot 3001. | Subdivision |
| 1.4 | Obtaining the agreement of the owner of Lot 3001 for the proposed emergency access way. | Subdivision |
| 1.5 | Construction of the emergency access way with associated gates and signage. | Subdivision |
| 1.6 | A plan demonstrating the location and capacity of fire the fire hydrants shall be submitted to the Shire of Dardanup and DFES. | Subdivision |
| 1.7 | Preparation and approval of the landscape and maintenance plans by Council for the areas of Local Open Space. These are to address the proposed vegetation modification, separation areas, fuel loads and weed management and specifications contained in Schedule 1 Standards for Asset Protection Zones. | Subdivision |
| 1.8 | Preparing a notification be included on the certificate of titles for the lots shown on Figure 11 as being bushfire prone advising that the land is subject to a Bushfire Management Plan. | Subdivision |
| 2.0 Developer Prior to Sale | | |
| 2.1 | Providing prospective residents with a summary of this BMP. | |
| 3.0 Landowner Prior to Occupancy | | |
| 3.1 | Ensuring that any application for a building permit for a dwelling is to include an individual BAL assessment to confirm that sufficient land has been cleared to provide for BAL-29 setbacks. | Development |
| 4.0 Landowners Ongoing | | |
| 4.1 | Undertaking regular maintenance of their property in preparation for the annual fire season. | Ongoing |
| 4.2 | Ensuring that all fire mitigation measures shall be completed by the date prescribed in Council's Firebreak Order . | Ongoing |

(Appendix ORD: 12.2.2A Under E Separate Cover)

| | | |
|---|--|---------|
| 5.0 Local Government Ongoing Management | | |
| 5.1 | Ensuring Building Permit Applications and Development Applications are compliant with the building and land use planning provisions. | Ongoing |
| 5.2 | Maintenance of the designated areas of Local Open Space as low threat vegetation in accordance with the approved management plans. | Ongoing |
| 5.3 | Enforce compliance with its annual firebreak notice. | Ongoing |
| 6.0 Lot 9503 | | |
| 6.1 | Provision and maintenance of the 3.0m boundary firebreak | Ongoing |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Appendix 1 Floodway Advice

SPARE PART 68

(Appendix ORD: 12.2.2A Under E Separate Cover)



Department of Environment

Your ref:

Our ref: 2373

Enquiries: Rick Bretnall

Direct tel: 9278 0542

Mr Sean Wilson
WAPC - Land Asset Management
Albert Facey House
469 Wellington Street
PERTH WA 6000

| | |
|--------------------|----------|
| CLIENT I.D. | 15P00200 |
| DATE/TITLE | 2004 09. |
| CLASSIFY | |

Dear Sean

LOT 4 EATON DRIVE EATON

I refer to your enquiry dated 23 September 2004.

The Department of Environment in carrying out its role in floodplain management provides advice and recommends guidelines for development on floodplains with the object of minimising flood risk and damage. The following guiding principles are used in assessing proposed development on the floodplain:

- Proposed development should not detrimentally impact on flooding.
- Proposed development has adequate flood protection from a 100 year ARI flow.

The Collie River Flood Study shows that the area is affected by flooding during major river flows with the 100 year ARI flood level estimated to be 3.70 m AHD. Our floodplain management strategy for the area is:

- Proposed development (ie, filling, building, etc) that is located outside of the floodway is considered acceptable with respect to major flooding. However, a minimum habitable floor level of 4.20 m AHD is recommended to ensure adequate flood protection.
- Proposed development (ie, filling, building, etc) that is located within the floodway and is considered obstructive to major flows is not acceptable as it would increase flood levels upstream. No new dwellings are acceptable in the floodway.

Please note that a failure to properly adhere to these recommendations will result in a greater exposure to risks of flood damage.

Yours faithfully

Rick Bretnall

Rick Bretnall
A/SUPERVISING ENGINEER, SURFACE WATER HYDROLOGY
24 September 2004

rbre959

Westralia Square
Level 8 141 St Georges Terrace
Perth Western Australia 6000
PO Box K822 Perth Western Australia 6842
Telephone (08) 9222 7000 Facsimile (08) 9322 1598
E-mail info@environ.wa.gov.au
www.environ.wa.gov.au



Hyatt Centre
Level 2 3 Plain Street
East Perth Western Australia 6004
PO Box 6740 Hay Street East Perth Western Australia 6892
Telephone (08) 9278 0300 Facsimile (08) 9278 0301
National Relay Service (Australian
Communication Exchange) 132 544
E-mail correspondence@wrc.wa.gov.au
www.wrc.wa.gov.au



Government of Western Australia
Department of Water



looking after all our water needs

Your ref:

Our ref: WT8751

Parkridge_floodway.docx

Enquiries: Simon Rodgers (ph:6364 6923)

Mr Thurston Saulsman
Director, Parkridge Group Pty Ltd
PO Box 8357
Angelo Street
SOUTH PERTH 6151

Dear Thurston

Collie River Floodway : Parkridge Estate Eaton

I refer to your letter dated 26 October 2011 and our meeting at the Department of Water on 23 September.

Our records indicate that we provided floodplain management advice on 14 August 2007 to your consultant (Ian Cocker at TME, refer to attachment) that stated:

"Scenario 3A, minor island extension was the preferred choice but the hydraulic modelling should also include what may be proposed in the floodway (ie, possible oval, golf course, etc) so that a master plan is developed for the entire area."

As discussed at our meeting, perimeter security fencing surrounding a proposed oval would not be considered acceptable with regard to major flooding. An alternative fencing option that includes only fencing aligned parallel to the flow may be considered as part of the master plan for the area.

For further information please contact me on 6364 6923.

Yours sincerely

Simon Rodgers
Supervising Engineer, Floodplain Management
10 November 2011

(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX F | TRAFFIC MANAGEMENT REPORT

(Appendix ORD: 12.2.2A Under E Separate Cover)

Parkridge

Structure Plan Modification

Traffic Impact Assessment

PREPARED FOR Parkridge Group Pty Ltd | March 2023

CW1200576 / 304900925

(Appendix ORD: 12.2.2A Under E Separate Cover)

Revision schedule

| Rev No | Date | Description | Signature of Typed Name (documentation on file) | | | |
|--------|------------|-------------|---|------------|-------------|-------------|
| | | | Prepared by | Checked by | Reviewed by | Approved by |
| A | 20/03/2023 | Final | SLA | DH | RJC | RJC |
| | | | | | | |

(Appendix ORD: 12.2.2A Under E Separate Cover)

This document was prepared by Stantec Australia ("Stantec") for the account of Parkridge Group Pty Ltd (the "Client"). The conclusions in the Report titled *Parkridge Structure Plan Modification TIA* are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Quality statement

| Project manager | Project technical lead |
|-----------------|------------------------|
| Desmond Ho | Sam Laybutt |

PREPARED BY

Sedrik Aralar



20 / 03 / 2023

CHECKED BY

Desmond Ho



20 / 03 / 2023

REVIEWED BY

Ray Cook



20 / 03 / 2023

APPROVED FOR ISSUE BY

Ray Cook



20 / 03 / 2023

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1 Introduction

1.1 Background

Stantec has been commissioned by Parkridge Group Pty Ltd to prepare a Transport Impact Assessment for the modification of the proposed Parkridge Structure Plan located in Eaton, within the Shire of Dardanup.

The original structure plan was approved in 2019. Since then, the development of 71 lots located on the southern end of the structure plan has been completed. Modification of the remaining structure plan area to the north is proposed which includes 600 (R20-R40) lots, 9 (R5) lots, and 6 (R40) lots.

This Traffic Impact Assessment report was prepared in accordance with the *WAPC TIA Guidelines Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans*, with the checklist attached in Appendix A.

2 Structure Plan Proposal

2.1 Regional Context

The proposed structure plan is located in Eaton, Shire of Dardanup. It is located approximately 9km east-northeast of Bunbury (see **Figure 1**), and about 150km south of Perth.

Figure 1 - Regional Context



Source: MetroMap

2.2 Proposed Land Uses

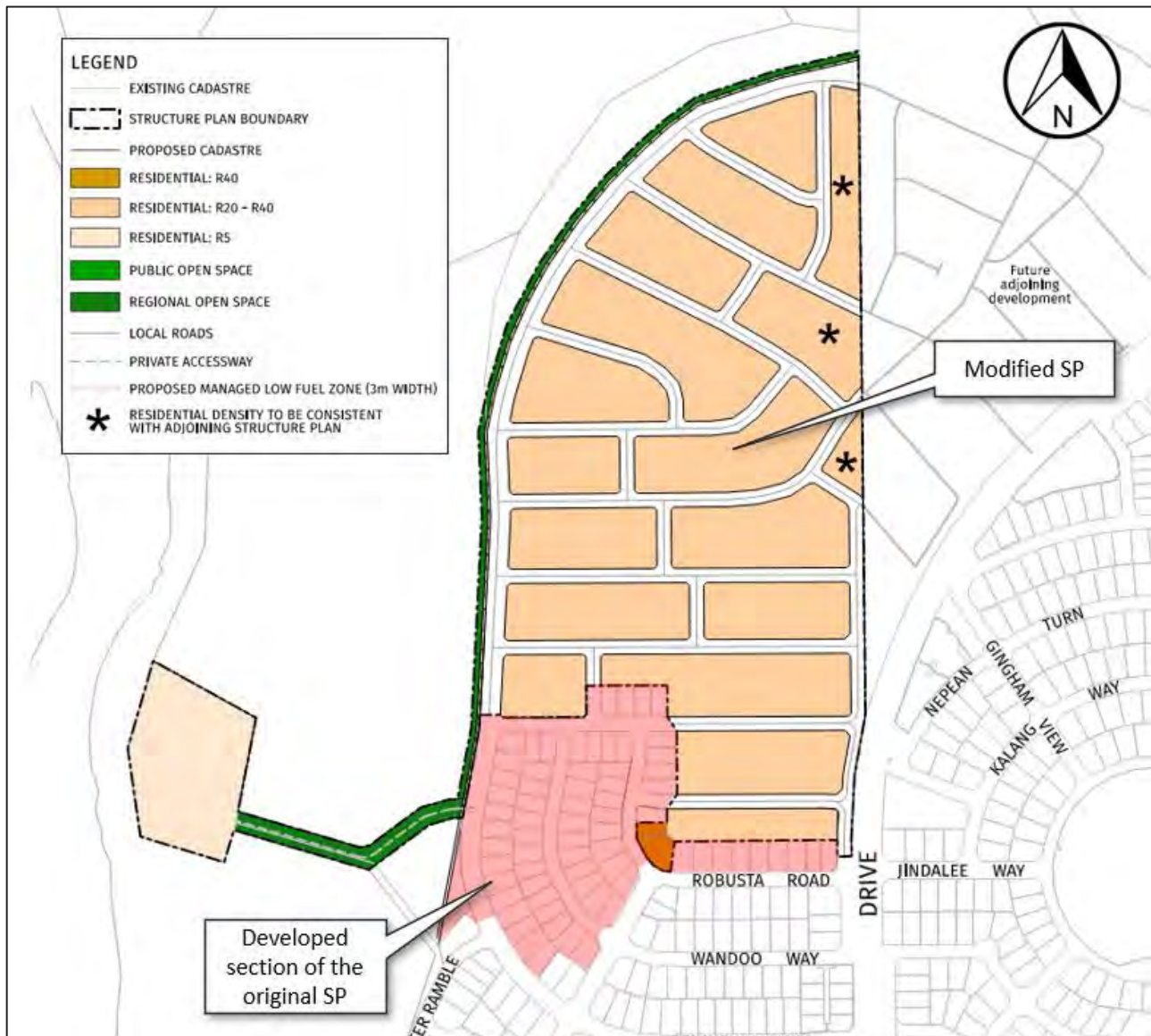
The modified structure plan is illustrated in **Figure 2**. It shows that the modification excludes the southern parts of the original structure plan as these are already developed. The structure plan originally approved in 2019 includes a total area of 32.1533ha, with a total yield of 436 lots and an estimated population of 1090 persons. From the approved structure plan, 71 lots have already been developed (as shown in pink in **Figure 2**).

The proposed structure plan includes the following:

- Residential R5 – 9 lots
- Residential R20-R40 – 600 lots
- Residential R40 - 6 lots
- Public and Regional open spaces

Table 1 shows the table of land use and quantities proposed within the modified structure plan compared with the original. The total area covered by the LSP modification is 28.7215ha which is equivalent to a total of 615 lots. In the modified structure plan, there is an increase of **250 lots** from the original structure plan. This is approximately equivalent to an additional **626 persons** in terms of the total population of the area.

Figure 2 - Proposed Structure Plan Modification



(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 1 - Table of Land Use and Quantities

| ITEM | Units | ORIGINAL | | MODIFIED | | Difference from the original SP |
|-----------------------|--------|----------|-----------|-----------------------|---|---------------------------------|
| | | Total | Developed | Updated sections only | Including 'Developed' sections from the original SP | |
| Area | ha | 32.1533 | 3.4318 | 28.7215 | 32.1533 | 0 |
| Number of Lots | lots | 436 | 71 | 615 | 686 | +250 |
| Population | people | 1090 | 178* | 1538* | 1716 | +626 |

* Approximate based ABS 2021 Eaton Data of 2.5 persons per household

Figure 3 shows the developed lots on the south section of the original SP.

Figure 3 - Developed Lots



2.3 Crash Data

Figure 4 shows the recorded crashes in the vicinity of the Parkridge Structure Plan Site from January 2017 to December 2021 extracted from the Main Roads WA Reporting Centre.

Figure 4 - Recorded Crashes near the Site



Details of the crashes are presented in Table 2, Table 3, and Table 4.

Table 2 - Total Crashes

| Type of Crash (RUM Code) | Fatal | Hospital | Medical | Major Property Damage | Minor Property Damage | Total Crashes |
|--------------------------|-------|----------|----------|-----------------------|-----------------------|---------------|
| Sideswipe Same Direction | - | - | - | 3 | - | 3 |
| Rear End | - | 1 | - | 3 | - | 4 |
| Hit Object | - | - | - | 2 | - | 2 |
| Hit Pedestrian | - | - | 1 | - | - | 1 |
| Right Angle | - | - | - | 1 | - | 1 |
| Unspecified | - | - | - | 2 | - | 2 |
| Total | - | 1 | 1 | 11 | - | 13 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 3 - Intersection Crashes

| Intersection Name | Fatal | Hospital | Medical | Major Property Damage | Minor Property Damage | Total Crashes |
|-------------------------------|-------|----------|---------|-----------------------|-----------------------|---------------|
| Eaton Dr - Peninsula Lakes Dr | - | 1 | - | 2 | - | 3 |
| Wandoo Wy - Robusta Rd | - | - | - | 1 | - | 1 |
| Total | - | 1 | - | 3 | - | 4 |

Table 4 - Midblock Crashes

| Road Name | Fatal | Hospital | Medical | Major Property Damage | Minor Property Damage | Total Crashes |
|----------------|-------|----------|---------|-----------------------|-----------------------|---------------|
| Eaton Dr | - | - | - | 6 | - | 6 |
| Carbine Loop | - | - | - | 1 | - | 1 |
| Holstein Dr | - | - | 1 | - | - | 1 |
| Abercrombie Wy | - | - | - | 1 | - | 1 |
| Total | - | - | 1 | 8 | - | 9 |

The results are summarised below:

- A total of 13 crashes were recorded;
- 11 *PDO major* crashes were recorded;
- One Hospital and one Medical crash was recorded; and
- Nine crashes occurred in midblock sections while 4 crashes occurred at intersections.

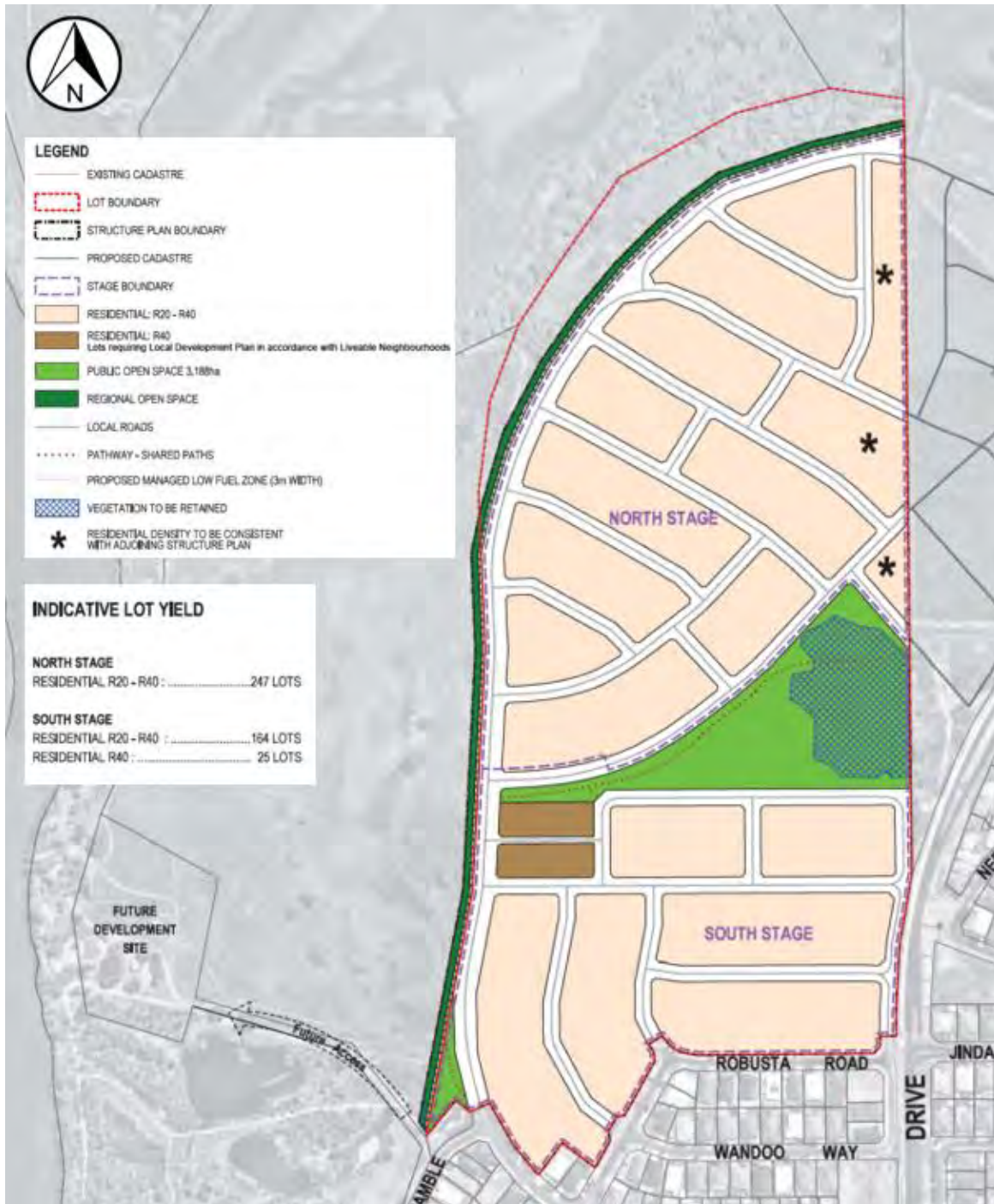
The low number of crashes within the surrounding area suggests that safety concerns are minimal. Overall, the proposed Parkridge Structure Plan is not anticipated to have significant impact on traffic safety within the surrounding area.

3 Existing Situation

3.1 Existing Land Uses within Structure Plan

The approved Structure Plan Report illustrated in **Figure 5** shows the existing land uses within the proposed Parkridge Structure Plan area. The land uses within the proposed Parkridge Structure Plan Site are 'Residential', 'Public Open Space', and 'Regional Open Space'. This report details the proposed modification of the original structure plan.

Figure 5 - Original Structure Plan

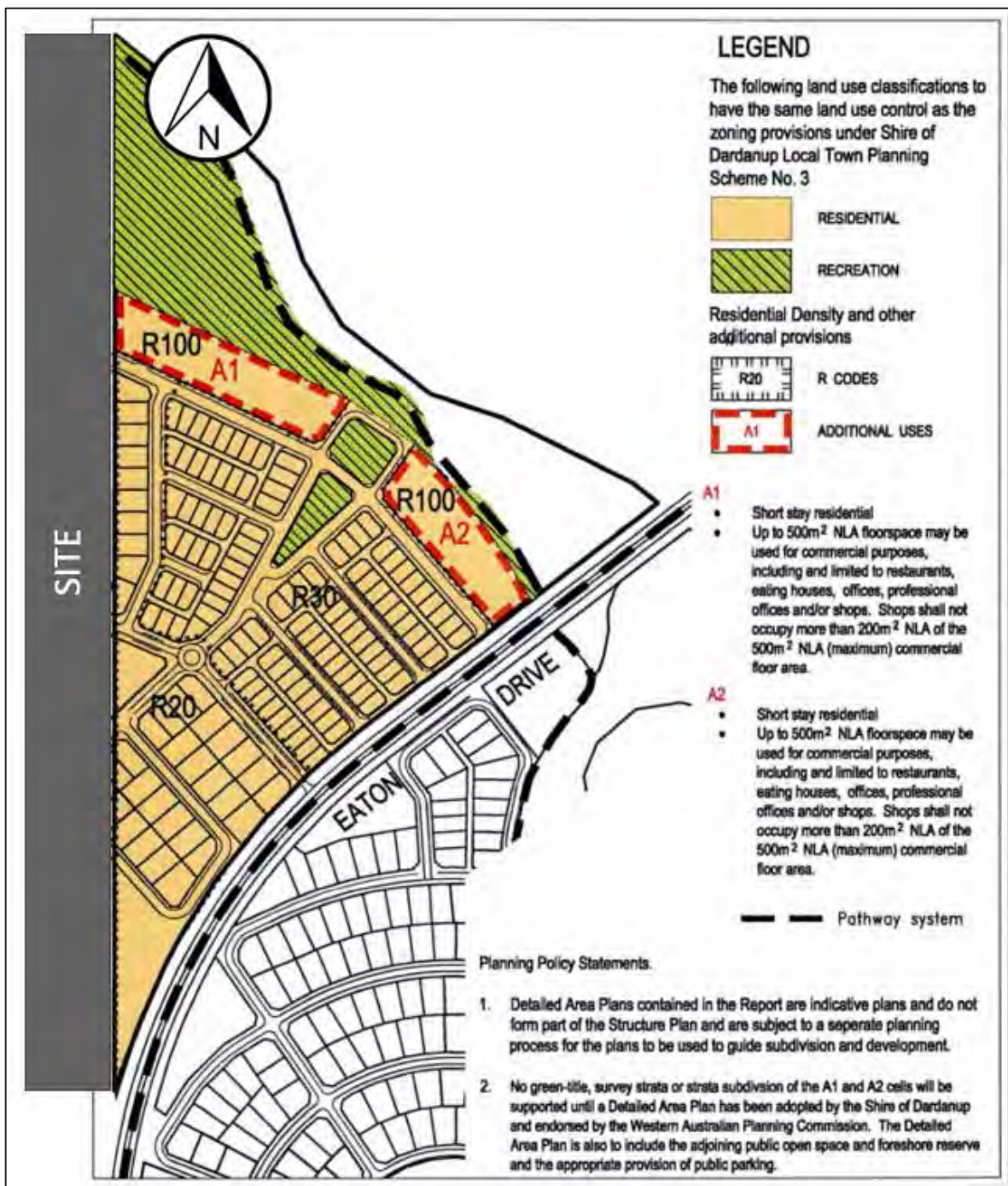


Source: Parkridge Estate Structure Plan (2019)

3.2 Existing Land Uses within 800m of Structure Plan Area

The land uses to the Southbank @ Eaton development ('Southbank') located east of the proposed Parkridge Structure Plan area are shown in **Figure 6**. Only 'Residential' and 'Recreation' land uses are proposed in the area which is complimentary with the land uses within the proposed Parkridge Structure Plan. Due to the proximity of this future development to the proposed Parkridge Structure Plan Site and the potential shared access between the two developments, the Southbank development was considered in the traffic analysis.

Figure 6 - Proposed Land Use to the East of the proposed Parkridge Structure Plan



Source: Southbank @ Eaton East Millbridge Structure Plan (2008)

3.3 Existing Road Network within Structure Plan Area

In the most recent aerial image of the Site, the extensions of Robusta Road, Wandoo Way (Tukidale Street), and Peninsula Lakes Drive within the South Stage of the original structure plan are already laid out. Other roads including Guernsey Street, Shiraz Street, and Camargue Street as shown in **Figure 7** have also been constructed.

Figure 7 - Existing Roads within the Structure Plan



Source: Metromap

The proposed Parkridge Structure Plan area is easily accessed from the south via Eaton Drive. The newly constructed bridge on Collie River also provides good connectivity from the north. Trips heading in the east/west direction are anticipated to utilise Forrest Highway. Therefore, the proposed Parkridge Structure Plan area is considered to be adequately connected to the surrounding transport networks.

3.4 Existing Road Network within 2 (or 5) km of Structure Plan Area

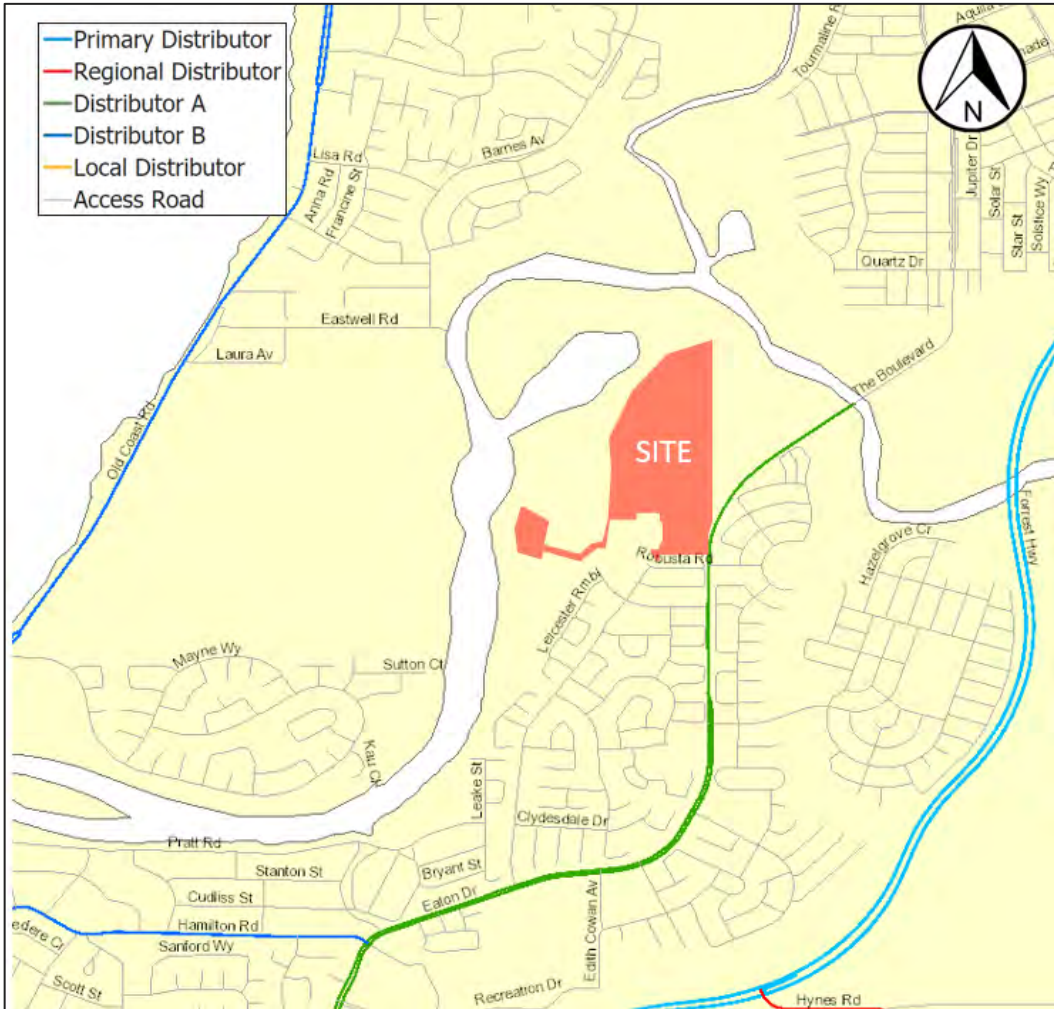
Road classifications are defined in the Main Roads Functional Hierarchy as follows:

- **Primary Distributors (light blue):** Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes and all are National or State roads which are managed by Main Roads WA.
- **Regional Distributors (red):** Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas which are managed by Local Government.
- **District Distributor A (green):** These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining properties. They are managed by Local Government.
- **District Distributor B (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside the adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local Government.
- **Access Roads (grey):** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local Government.

The roads surrounding the proposed Parkridge Structure Plan area are illustrated in **Figure 8**. Eaton Drive to the east is classified as *Distributor A*, while all other roads in the immediate vicinity of the proposed Parkridge Structure Plan area are classified as *Access Road*. Eaton Drive becomes The Boulevard just before the bridge crossing Collie River to the east of the Site.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 8 – Main Roads WA Road Network



Source: MRWA Road Information Mapping System

Table 5 describes the characteristics of the roads in the vicinity of the Parkridge Structure Plan area.

Table 5 – Roads Surrounding the proposed Parkridge Structure Plan area

| Street Names | Road Hierarchy | Jurisdiction | No of Lanes | No of Footpaths | Width (m) | Posted Speed (km/h) |
|------------------------------|----------------|------------------|-------------|-----------------|-----------------------------|---------------------|
| Eaton Drive | Distributor A | Local Government | 4 | 2 | 20.0 (including 6.0 median) | 60 |
| Peninsula Lakes Drive | Access Road | Local Government | 2 | 1 | 7.42 | 50 |
| Glenhuon Boulevard | Access Road | Local Government | 2 | 1 | 7.2 | 50 |
| Wandoo Way | Access Road | Local Government | 2 | 1 | 6.2 | 50 |
| Robusta Road | Access Road | Local Government | 2 | 1 | 6.2 | 50 |

Source: Metromap, MRWA Road Information Mapping System

No traffic data is available for the newly constructed roads within the structure plan.

3.5 Traffic Volumes

The latest traffic volumes on Peninsula Lakes Drive are presented in **Table 6**. The traffic data was extracted from the Main Roads Traffic Map. The volumes are considered low, ranging from 137 to 148 vehicles during the weekday/weekend peak hour periods.

Table 6 - Traffic Volumes on Peninsula Lakes Drive

| Peninsula Lakes Drive | Thursday 9 June 2022 | | | Saturday 11 June 2022 | |
|-----------------------|-------------------------|-------------------|--------------------------|--------------------------|--------------------------|
| | AM 07:45-08:45 | PM 16:45-17:45 | 12hr Total 6AM to 6PM | Midday 11:00-12:00 | 12hr Total 6AM to 6PM |
| Eastbound | 102 | 56 | 600 | 73 | 638 |
| Westbound | 37 | 92 | 586 | 64 | 565 |
| Total | 139 | 148 | 1186 | 137 | 1203 |

Source: MRWA Traffic Map

3.6 Existing Pedestrian/Cycle Networks

Footpaths are present on both sides of Eaton Drive which are anticipated to be the primary walk/bike paths from the Site to surrounding areas.

It is also shown in **Figure 7** that footpaths are provided on the newly constructed roads on the south stage:

- Robusta Road – east side
- Tukidale Street – east side
- Peninsula Lakes – west side
- Guernsey Street – north side
- Camargue Street – south side
- Shiraz Street – east side

3.7 Existing Public Transport Services

The bus routes surrounding the proposed Parkride Structure Plan area are shown in **Figure 9**. Route 844 runs along Peninsula Lakes Drive to the south of the proposed Parkride Structure Plan area while Route 845 runs along Eaton Drive to the east. Both routes begin at the Bunbury Bus station. Route 844 terminates at Millbridge Boulevard/Braddon Way to the southeast of the proposed Parkride Structure Plan area, while Route 845 terminates at Kingston Drive/Holbrook Road to the northeast of the Site.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 9 - Surrounding Public Transport Network



Source: TransBunbury

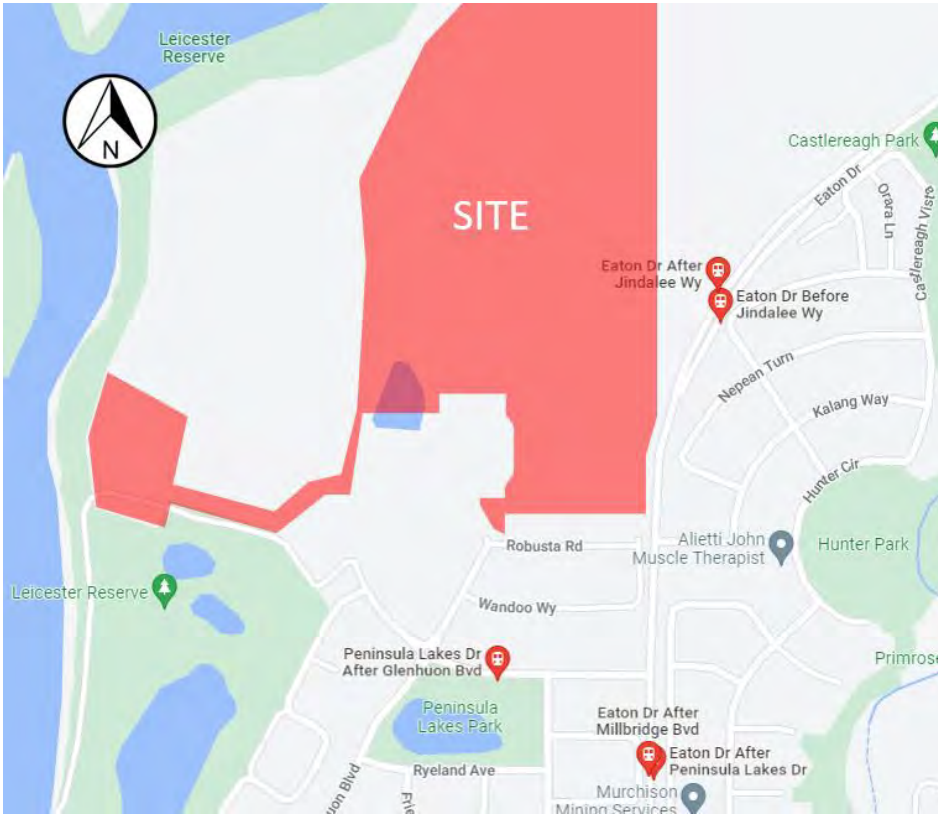
The frequency of service of the bus routes near the proposed Parkridge Structure Plan area is shown in **Table 7**.

Table 7 - Bus Frequency

| Route Number | Direction | Frequency | |
|--------------|-------------------------------------|------------|-------------|
| | | Weekday | Saturday |
| Route 844 | To Australind, Eaton and Millbridge | 60 minutes | 120 minutes |
| | To Bunbury Bus Station | 60 minutes | 120 minutes |
| Route 845 | To Australind, Eaton and Millbridge | 60 minutes | 120 minutes |
| | To Bunbury Bus Station | 60 minutes | 120 minutes |

The nearest bus stops are shown in **Figure 10** and includes two stops on Eaton Drive to the east and a stop on Peninsula Lakes Drive to the south. These stops are located approximately 200 metres from the nearest point of the proposed Parkridge Structure Plan area.

Figure 10 - Surrounding Bus Stops



Source: Google Maps

Despite the close proximity of the bus stops and bus routes that operate near the Site, the bus trips on these routes are long, ranging between 1 to 2 hours. It is anticipated that few patrons will use the public transport due to its limited flexibility. Therefore, the existing public transport near the proposed Parkridge Structure Plan area can be considered poor and inadequate.

No public transport networks and services currently operate within the Parkridge Structure plan area.

4 Proposed Internal Transport Networks

4.1 Changes/Additions to Existing Road Network or Proposed New Road Network

The proposed local roads within the Site are shown in **Figure 11**. These roads are anticipated to carry only local traffic.

Figure 11 - Internal Roads within the Structure Plan



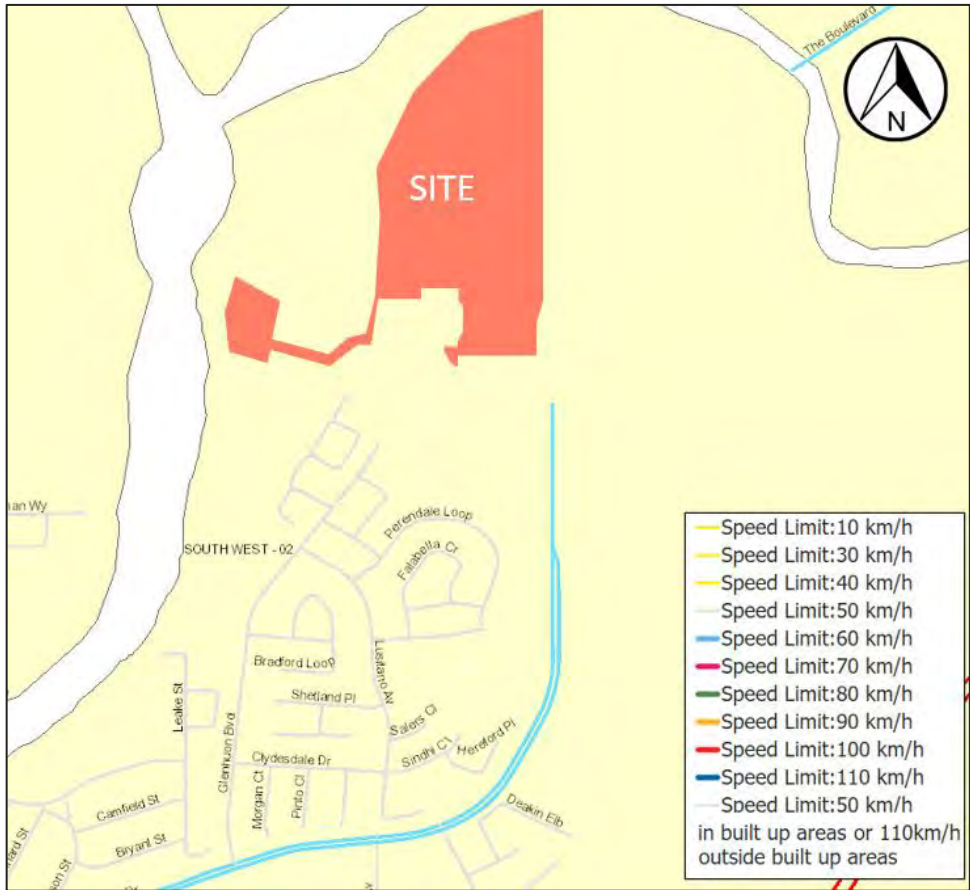
4.2 Road Reservation Widths

According to Liveable Neighbourhoods (2015), the road reserve width for all access streets (Access Street B, C, or D) within the Parkridge Structure Plan area may range between 15.5m to 20.1m. The projected maximum volume for these streets may range between 1,000 to 3,000 vehicles per day.

4.3 Road Cross-Sections & Speed Limits

According to Liveable Neighbourhoods (2015), the speed limits for Access Streets B, C, and D may range from 20 km/h to 50 km/h. It is anticipated that the speeds on the access roads within the Structure Plan area will be 50 km/h similar to the speed limits established on access roads to the south as shown in **Figure 12**.

Figure 12 - Speed Limits on Surrounding Roads



Source: MRWA Road Information Mapping System

The widths of the access roads within the proposed Parkridge Structure Plan area are anticipated to correlate with the widths in the developed areas of the original structure plan. Access roads in the developed section have widths of 6.0m, with a 2.2m-wide verge and a 2.0m-wide footpath on one side. Peninsula Lakes Drive is an exception and has a 7.2m-wide carriageway. The typical access road cross-section on the developed section of the original structure plan is shown in **Figure 13**.

Figure 13 - Typical Access Road Cross-section



Source: Streetmix

4.4 Intersection Controls

According to Liveable Neighbourhoods (2015), intersections of two access roads are anticipated to be controlled by either stop/give-way signs or roundabouts (for very limited cases). It is anticipated that sign controls will be sufficient for all intersections within the proposed Parkridge Structure Plan area since there are only three-way intersections and the traffic volume is anticipated to be low.

4.5 Pedestrian/Cycle Networks and Crossing Facilities

A 2.0m-wide footpath is provided on one side of all access roads on the developed section of the original structure plan. Designated crossing points are also provided in the form of kerb ramps as shown in **Figure 14**. The same pedestrian and cycling facilities are anticipated to be provided within the proposed Parkridge Structure Plan Site.

Figure 14 - Kerb Ramps at the intersection of Robusta Road and Glenhuon Boulevard



Source: MetroMap

4.6 Public Transport Routes

The Public Transport Authority has advised that there are no immediate plans to modify the TransBunbury network within the area.

5 Changes to External Transport Networks

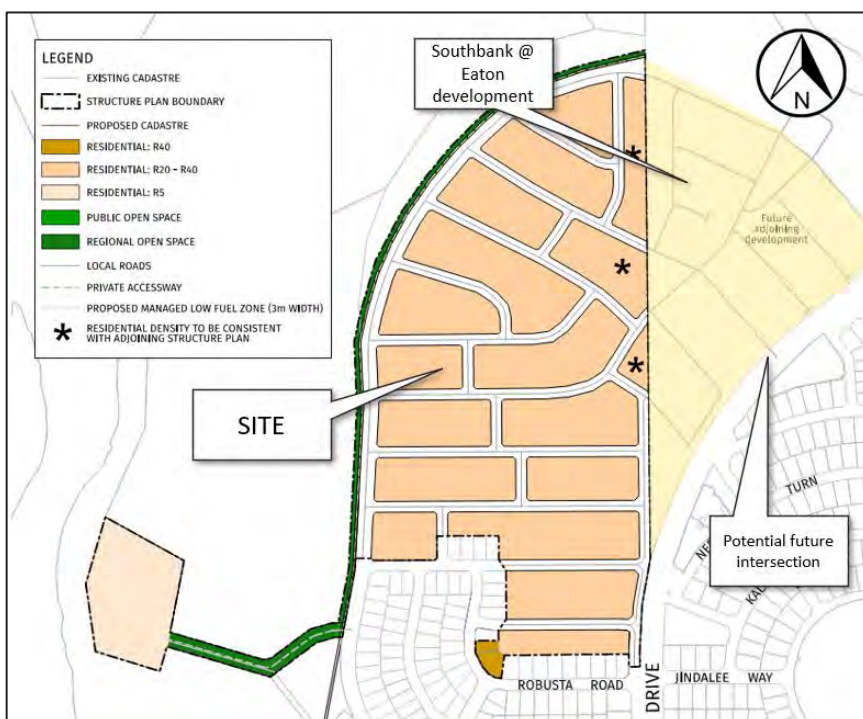
5.1 Road Network

Stantec has contacted the Shire of Dardanup and was informed that no proposed changes to the road network are planned.

Referring to **Section 3.2**, there appears to be a proposed intersection on Eaton Drive to the east of the proposed Parkridge Structure Plan area as part of the Southbank development. This access (location shown in **Figure 15**) may potentially be shared by residents within the Parkridge and Southbank developments.

The timeline for the construction of the Parkridge developments including the future intersection is unknown.

Figure 15 - Future Access to Southbank



5.2 Intersection Controls

Stantec has contacted the Shire of Dardanup and was informed that no proposed changes to the intersection controls are planned.

5.3 Pedestrian/Cycle Networks and Crossing Facilities

Stantec has contacted the Shire of Dardanup and was informed that no proposed changes to footpaths are planned.

5.4 Public Transport Services

Stantec has contacted the Public Transport Authority and was informed that no proposed changes to the Transbunbury network are planned.

6 Integration with Surrounding Area

6.1 Trip Attractors/Generators

Since the entire Parkridge Structure Plan Site is proposed to be residential, trips are anticipated to be from/to places of work, retail, and recreation. The main attractors/generators of traffic to/from the proposed Parkridge Structure Plan area are shown in **Figure 16**. These include the nearest commercial districts in the area: Treendale Shopping Centre and Eaton Fair Shopping Centre. It is also anticipated that several trips from the proposed Parkridge Structure Plan area will be arriving from or departing to the City of Bunbury which is situated approximately 9km to the west of the Proposed Parkridge Structure Plan area.

Figure 16 - Major Trip Attractors/Generators



Source: MetroMap

6.2 Proposed Changes to Land Uses within 800m

Stantec has contacted the Shire of Dardanup and was informed that no proposed changes to land use in the surrounding areas are planned.

7 Analysis of Transport Networks

To identify the impact of the proposed development on the surrounding road network, the performance of the following intersections was assessed:

- Eaton Drive/Peninsula Lakes Drive intersection
- Eaton Drive/Southbank Access intersection

Although the intersection of Eaton Drive and Jindalee Way is located between the two identified intersections to be assessed, the trips generated by the development will only affect the through movements at this intersection. This is envisaged to have a minimal affect on the intersection performance, therefore, the intersection of Eaton Drive and Jindalee Way has been excluded from the analysis.

7.1 Assessment Years and Time Periods

The following three scenarios were identified for assessment purposes:

- Scenario 1: 2023 Base Scenario;
- Scenario 2: 2028 future traffic with 50% Parkridge development (no Southbank); and
- Scenario 3: 2033 future traffic with 100% Parkridge development and 50% Southbank development
- Scenario 4: 2038 future traffic with 100% Parkridge development and 100% Southbank development

Note that the above years and percentage of development were assumed as the timeline of the implementation of the developments for the two structure plans are unknown.

The peak hour periods were derived from the traffic count data from the Main Roads Traffic Map. The peak periods are as follows:

- AM Peak: 7:45-8:45 AM
- PM Peak: 4:45-5:45 PM

7.2 Structure Plan Generated Traffic

The trip generation rate used for the proposed Parkridge Structure Plan Site was obtained from the Roads and Traffic Authority Trip Generation Surveys for Low-Density Residential Dwellings (2010). The rates used are from LDR10 – Glenfield Park, Wagga Wagga, New South Wales. This was selected due to its similarity to the Site in the following aspects:

- No traffic-generating developments within the area (e.g. childcare, etc.)
- Significantly distant from the CBD

The trip generation rates are presented in **Table 8**. It should be noted that 51 additional lots were added to the 615 lots proposed within the proposed Parkridge Structure Plan area. This is to take into consideration the 51 empty lots on the developed section of the original structure plan. The tables below also include the anticipated trips to be generated by the proposed Southbank development to the east.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 8 - Trip Generation Rates

| Land Use | Source | Yield | AM Peak | PM Peak | Daily |
|---|--|---------------------------|-------------------|-------------------|-------------------|
| Residential Dwelling - Parkridge | RTA Trip Gen for Low-Density Residential Dwelling LDR 10 | 666 dwellings (Parkridge) | 0.67 per dwelling | 0.83 per dwelling | 6.36 per dwelling |
| Residential Dwelling - Southbank | RTA Trip Gen for Low-Density Residential Dwelling LDR 10 | 285 dwellings (Parkridge) | 0.67 per dwelling | 0.83 per dwelling | 6.36 per dwelling |

Source: Roads and Traffic Authority Trip Generation Surveys for Low-Density Residential Dwellings (2010)

In the absence of directional distribution data in the RTA reference, ITE 210 directional distributions were used as illustrated in **Table 9** for estimating the inbound and outbound traffic.

Table 9 – Directional Distribution

| Land Use | AM Peak | | PM Peak | | Daily | |
|-----------------------------|---------|-----|---------|-----|-------|-----|
| | IN | OUT | IN | OUT | IN | OUT |
| Residential Dwelling | 26% | 74% | 64% | 36% | 50% | 50% |

Using the above trip generation rates and distribution, the total estimated trips to be generated for the full build-out of the proposed Parkridge Structure Plan and Southbank developments are shown in **Table 10**.

Table 10 – Total Trip Generation for 2033 Design Year

| Land Use | AM Peak | | PM Peak | | Daily | |
|---|------------|------------|------------|------------|-------------|-------------|
| | IN | OUT | IN | OUT | IN | OUT |
| Residential Dwelling - Parkridge | 116 | 331 | 354 | 199 | 2118 | 2118 |
| | 447 | | 553 | | 4236 | |
| Residential Dwelling - Southbank | 50 | 142 | 151 | 85 | 906 | 906 |
| | 192 | | 236 | | 1812 | |
| Sub Total | 129 | 366 | 391 | 220 | 2340 | 2340 |
| Total | 639 | | 789 | | 6048 | |

The estimated total traffic to be generated by the proposed Parkridge Structure Plan and Southbank development for the 2033 design year scenario is **639**, **789**, and **6048** vehicles during the AM peak hour, PM peak hour and daily respectively.

7.3 Extraneous (Through) Traffic

Through traffic at Eaton Drive/Peninsula Lakes Drive is already captured by the available traffic count at this intersection. No additional through traffic is anticipated within the proposed Parkridge Structure Plan area.

7.4 Design Traffic Flows

Based on the forecasted trip generation of the Proposed Parkridge Structure Plan in the ultimate scenario of 4200 vehicles daily as indicated in **Table 10** and the existing volumes on Peninsula Lakes Drive west of Eaton Drive of 1200 daily vehicles as indicated in **Table 6**, the approximate daily traffic volumes on Peninsula Lakes Drive and Glenhuon Boulevard are shown in **Figure 17**.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 17 - Approximate Traffic Flows



Source: MetroMap

The volumes on Glenhuon Boulevard (north of Peninsula Lakes Drive) and Peninsula Lakes Drive (west of Glenhuon Boulevard) are anticipated to remain under the maximum for an Access Street C from the *Liveable Neighbourhoods* which is 3000 vpd.

The volumes on Peninsula Lakes Drive east of Glenhuon Boulevard are anticipated to exceed the maximum Access Street volume. The next street type which can accommodate the volumes on Peninsula Lakes Drive is a Neighbourhood Connector A (7,000 vpd max) with its function and characteristics detailed in **Table 11** Table 11. The pavement width for a Neighbourhood Connector A is 2 x 7.2m, while the existing pavement on Peninsula Lakes Drive is a single carriageway approximately 7.6m wide. This indicates that the road may not be able to accommodate the ultimate scenario traffic.

The volume on Peninsula Lakes Drive is anticipated to exceed 3,000 vpd at about **42% completion** (equivalent to about **283 lots**) of the proposed Parkridge Structure Plan development,. Since the improvement of Peninsula Lakes Drive does not appear to be possible due to constraints in the road reserve, the proposed intersection for the proposed Southbank Access on Eaton Drive, which links to the proposed Parkridge development may be considered for construction to mitigate against the increase in traffic on Peninsula Lakes Drive.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 11 - Function and Characteristics of Local Streets (Excerpt from Liveable Neighbourhoods)

| Street type and function | Street name | Projected maximum volume (vehicles per day) | Indicative street reserve width (metres) | Maximum design/ target operating speed (km/hr) | Minimum street pavement width (metres) | Typical residential density |
|--|--|---|--|--|---|-----------------------------|
| Neighbourhood connectors Streets with mostly residential frontage that typically provide the lower order sub-arterial network. These streets service and link neighbourhoods and activity centres. | Neighbourhood connector A | 7,000 | 27.6 | 50 / 50 | 2 x 7.3 including parking, on-street bike lane, median plus shared path on one verge and footpath on the other side | R40 to R80 |
| | Neighbourhood connector B | 3,000 | 21.6 | 50 / 50 | 11.6 including parking, plus shared path on one verge. | R40 to R80 |
| Access streets Access streets are to accommodate shared pedestrian, bike and vehicular movements. The requirements of adjacent land uses should be supported through street design. | Access street A – avenue | 3,000 | Overall width depends on design and function of central median | 50 / 40 | 2 x 3.5 plus embayment parking. | Varies |
| | Access street B – wider street | 3,000 | 20.1 | 50 / 40 | 10 | Up to R40 |
| | Access street C – yield or give way street | 3,000 | 17.2 | 50 / 30 | 7.2 typical 7-7.5 range | Up to R35 |
| | Access street D – narrow yield or give way street | 1,000 | 15.5 | 50-20 | 5.5 typical 5.5-6 range | Less than R30 |

Source: WAPC Draft Liveable Neighbourhoods (2015)

7.5 Access Strategy

In the short term, the traffic generated by the proposed Parkridge Structure Plan area is anticipated to exclusively use the Peninsula Lakes Drive/Eaton Drive intersection to enter/exit the area. When the development of Southbank @ Eaton commences, an additional intersection with Eaton Drive is proposed to the east of the proposed Parkridge Structure Plan Site as discussed in **Section 5.1**. Although some traffic heading south may use Glenhuon Boulevard, this is considered unlikely due to the following:

- Lower speed limit on Glenhuon Boulevard;
- Presence of multiple roundabouts on the route, further increasing the travel time;
- Higher through volumes at the Eaton Drive/Glenhuon Boulevard intersection to the south, making right-turn movements from Glenhuon Drive more difficult.

As such, the analysis assumes that traffic from the proposed Parkridge Structure Plan area will only use Peninsula Lakes Drive and the future Southbank access in the longer term.

7.6 Safe Routes to Schools

The nearest school (Glen Huon Primary School) is located approximately 1.5km to the South of the proposed Parkridge Structure Plan area. Students are not anticipated to walk to school due to the long distance. Some students may ride their bikes to school and it is anticipated that they will use Glenhuon Boulevard as it has a lower posted speed and less vehicular traffic compared to Eaton Drive.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 18 - Route from the proposed Parkridge Structure Plan area to School



Source: MetroMap

8 Traffic Analysis of External Transport Network

8.1 Extent of Analysis

As illustrated in **Figure 19**, two intersections were assessed as part of the analysis:

- Eaton Drive/Peninsula Lakes Drive intersection
- Eaton Drive/Southbank Access intersection

Figure 19 - Assessed Intersections



Source: MetroMap

(Appendix ORD: 12.2.2A Under E Separate Cover)

8.2 Assumptions

Assumptions used in undertaking the SIDRA analysis are detailed below:

- 2023 base scenario and future scenario volumes were obtained by adding a background traffic growth rate to the 2022 volumes from the video survey at the intersection of Eaton Drive and Peninsula Lakes Drive obtained from the MRWA Traffic Map);
- Growth rates used for different scenarios were based on population forecast for the Shire of Dardanup; and
- Heavy vehicle percentage used in the analysis is based on the surveyed traffic data. It is assumed that the distribution of vehicle classes will not change in future scenarios. The existing counts indicated that no Class 10, 11, and 12 vehicles are using the existing intersections.

8.3 Growth Rate

The forecast population growth for Eaton East, Shire of Dardanup was used in estimating the traffic growth rate on the surrounding roads. The growth rate is faster within the short/medium term but steadily slows down for the future years. Hence different growth rates (from the base year) and associated with the future years as indicated in **Table 12** were used for the traffic analysis.

Table 12 - Growth Rates

| Analysis period (number of years from base year) | Growth Rate |
|--|-------------|
| 5 | 2.4% |
| 10 | 2.0% |
| 15 | 1.8% |
| 20 | 1.5% |

8.4 Trip Distribution

The trip distribution from the proposed structure plan was based on data from the Australian Bureau of Statistics (ABS) 2021 census. Data on the place of work of Eaton residents was extracted, and it was found that approximately 80% of the residents head south, primarily to Bunbury and Dardanup centres, and 20% of the residents head north, primarily to Harvey and Collie centres. This directional distribution was used in estimating the turn volumes at the identified key intersections to be assessed.

Although the Base Scenario traffic data indicates a higher percentage of traffic heading to or approaching from the north, the ABS data distribution was used since this is considered more conservative since right-turn movements from the minor road have a greater impact on the intersection performance when compared to left-turn movements.

8.5 Traffic Volumes

The traffic volumes for the assessed intersections under different scenarios are presented in the following figures.

Figure 20 shows the 2023 base scenario volumes for the Peninsula Lakes Drive/Eaton Drive intersection. This volume was obtained by applying a growth rate of 2.4% for 1 year from the 2022 data. This does not include any traffic from the proposed Parkridge Structure Plan developments.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 20 - Scenario 1 - 2023 Base Scenario

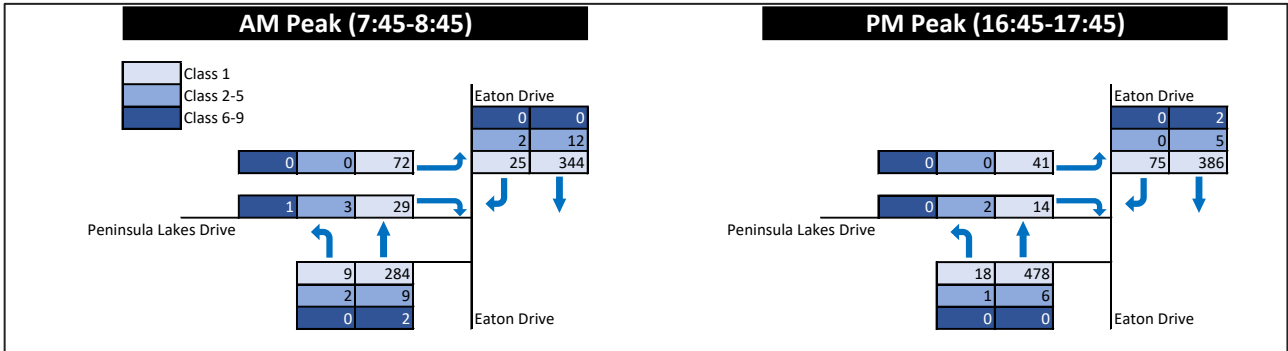


Figure 21 shows the Scenario 2 traffic volumes which assumes that 50% of the Parkridge development has been completed, while the Southbank development has not commenced. This assumes that the intersection of the new Southbank Access and Eaton Drive is still not constructed.

Figure 21 - Scenario 2 - 2028 50% Parkridge and no Southbank development

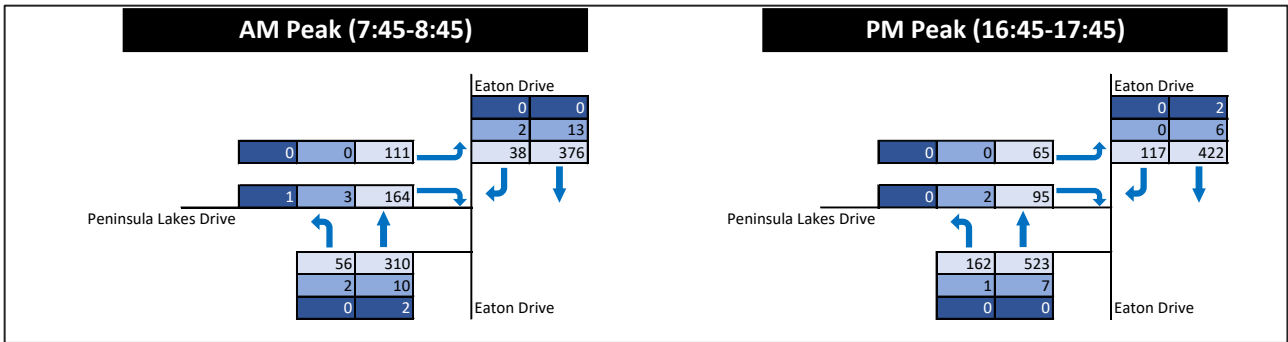
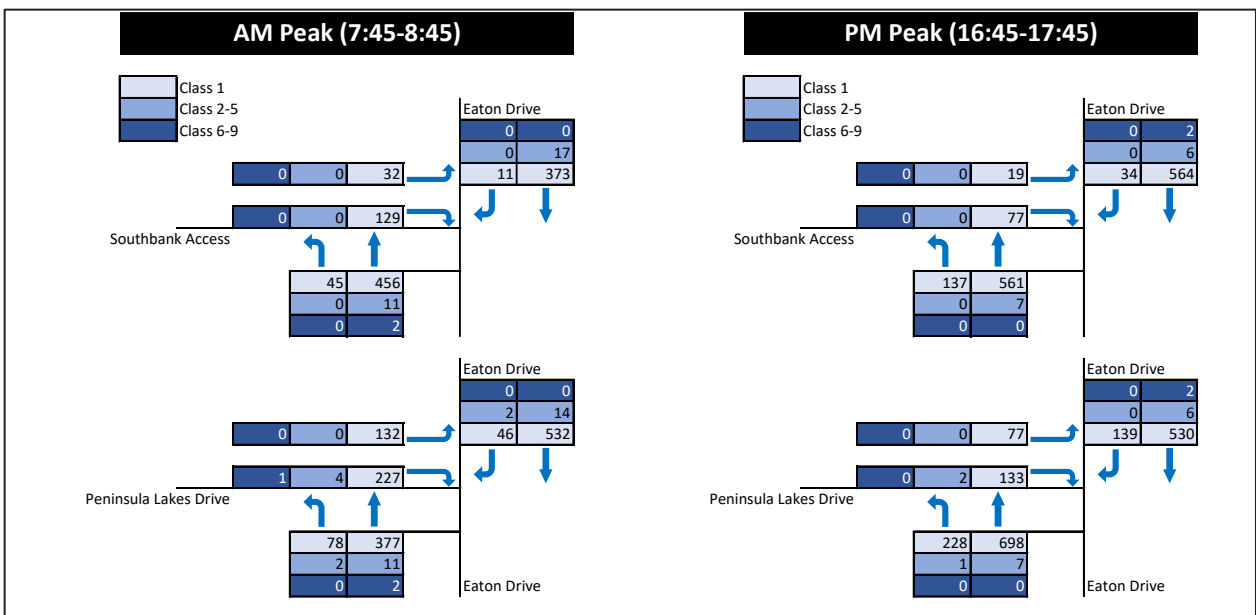


Figure 22 shows the Scenario 3 traffic volumes which assumes that the proposed Parkridge Structure Plan developments have been fully completed, while the Southbank development is at 50% completion. This assumes that the intersection of Southbank Access and Eaton Drive has been constructed. In this scenario, it is assumed that 40% of the combined traffic from the two structure plan areas will use the proposed Southbank Access while the remaining 60% will still use the Peninsula Lakes Drive intersection.

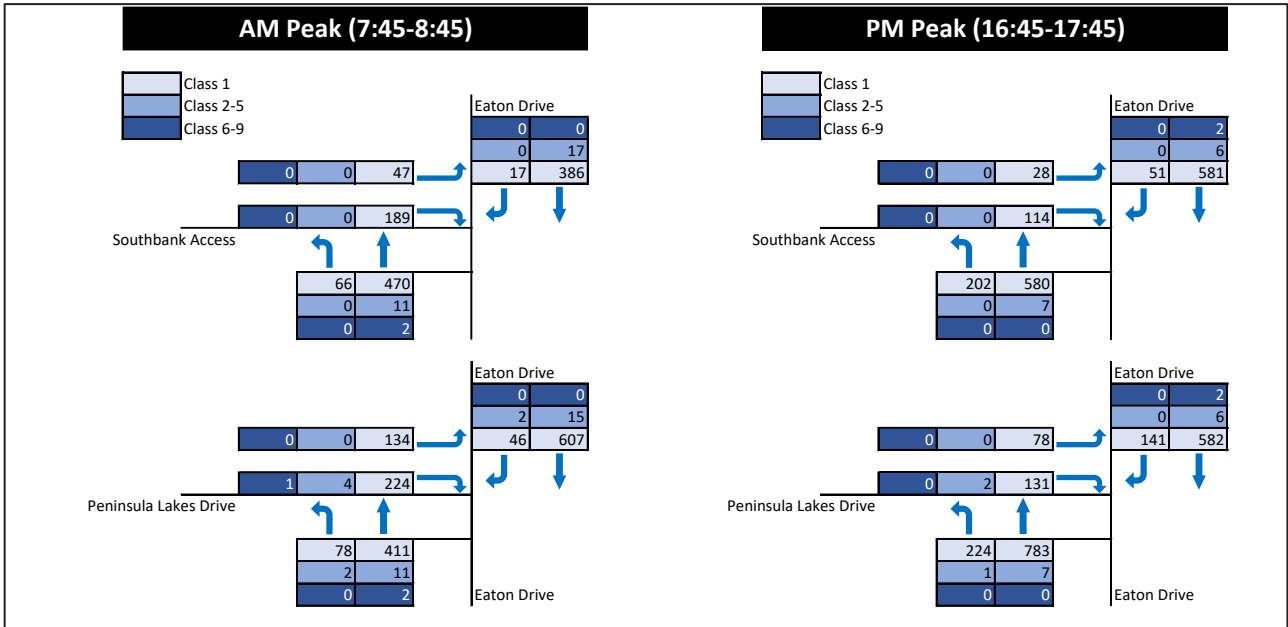
Figure 22 - Scenario 3 - 2033 Parkridge Structure Plan fully developed and Southbank only 50% developed



(Appendix ORD: 12.2.2A Under E Separate Cover)

Figure 23 shows the Scenario 4 traffic volumes which assumes that both the Parkridge and Southbank developments have been fully completed. This assumes that the intersection of Southbank Access and Eaton Drive has been constructed. In this scenario, it is assumed that 50% of the combined traffic from the two structure plan areas will use the proposed Southbank Access while the remaining 50% will still use the Peninsula Lakes Drive intersection. The shift in distribution between the two accesses is based on the likelihood that drivers will avoid Peninsula Lakes Drive as it becomes busier.

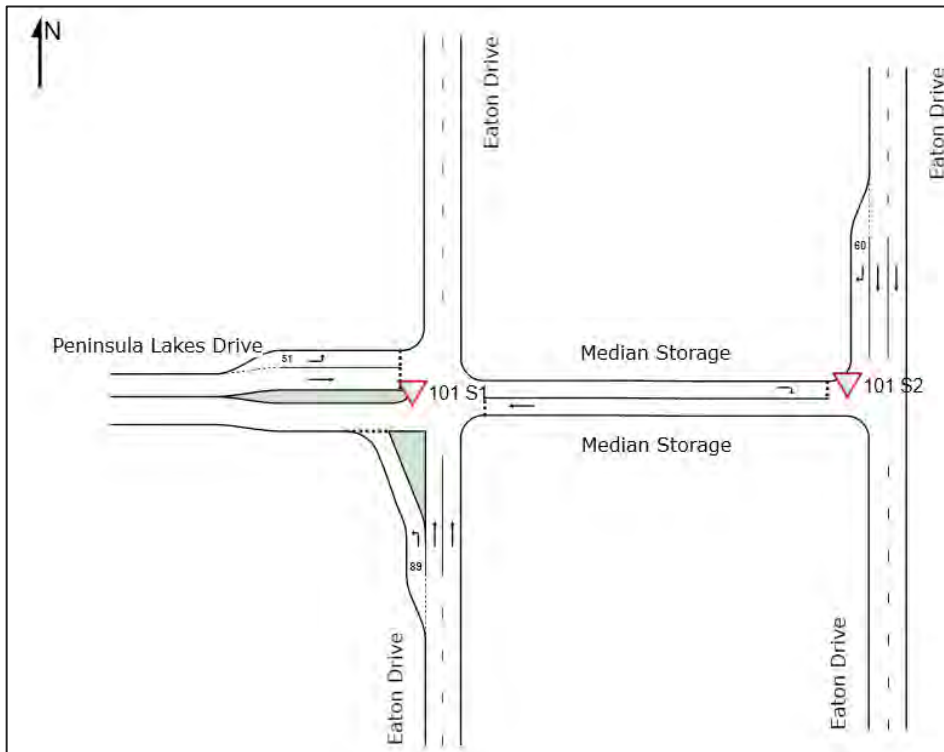
Figure 23 - Scenario 4 - 2038 Parkridge Structure Plan and Southbank fully developed



8.6 Intersection Layouts and Controls

The existing intersection of Peninsula Lakes Drive and Eaton Drive is a give-way sign-controlled intersection with a storage for one vehicle in the median area. The Main Roads WA Operational Modelling Guidelines prescribes that staged crossings are modelled as a network of two intersections to incorporate the effect of the median storage more accurately. The SIDRA model of the intersection is illustrated in **Figure 24**.

Figure 24 - Sidra Model - Peninsula Lakes Drive and Eaton Drive intersection



Based on the latest aerial image shown in **Figure 25**, the future layout of the Southbank Access and Eaton Drive intersection appears to be a seagull crossing. This intersection also has a median storage and was modelled as a staged crossing as per the Main Roads WA Operational Modelling Guidelines. Assumptions were made regarding the controls (give-way sign-controlled) and the number of lanes on the proposed new access since its layout is currently unknown.

(Appendix ORD: 12.2.2A Under E Separate Cover)

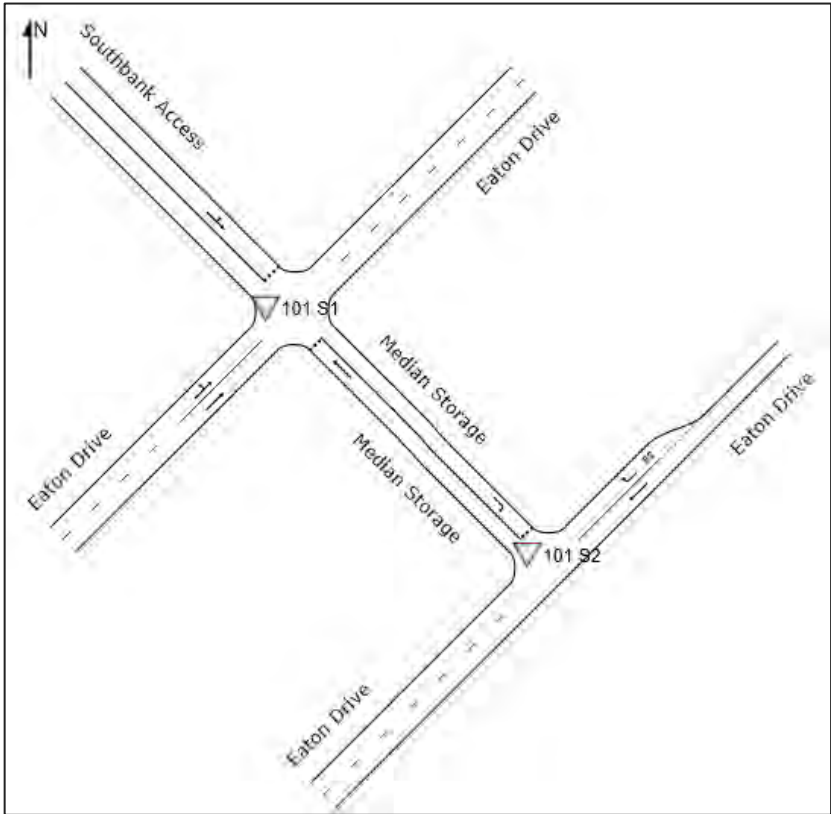
Figure 25 - Aerial Image of the future Southbank Access



Source: MetroMap

The SIDRA layout of the Eaton Drive/Southbank Access intersection is shown in **Figure 26**.

Figure 26 - Sidra Model – Southbank Access and Eaton Drive intersection



(Appendix ORD: 12.2.2A Under E Separate Cover)

8.7 SIDRA Analysis

SIDRA results for each approach are presented below in the form of Degree of Saturation (DOS), Average Delay, Level of Service (LOS) and 95th Percentile Queue. These characteristics are defined as follows:

- **Degree of Saturation (DOS):** the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded for an un-signalized intersection where $DOS > 0.80$;
- **95% Queue:** is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected;
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection. An un-signalized intersection can be considered to be operated at capacity where the average delay exceeds 40 seconds for any movement; and
- **Level of Service (LOS):** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. The different levels of service can generally be described as shown in **Table 13**.

Table 13 – Level of Service (LOS) Performance Criteria

| LOS | Description | Signalised Intersection | Unsignalised Intersection |
|-----|---|-------------------------|---------------------------|
| A | Free-flow operations (best condition) | ≤10 sec | ≤10 sec |
| B | Reasonable free-flow operations | 10-20 sec | 10-15 sec |
| C | At or near free-flow operations | 20-35 sec | 15-25 sec |
| D | Decreasing free-flow levels | 35-55 sec | 5-35 sec |
| E | Operations at capacity | 55-80 sec | 35-50 sec |
| F | A breakdown in vehicular flow (worst condition) | ≥80 sec | ≥50 sec |

The results of the SIDRA analysis are discussed in the following subsections.

8.7.1 Scenario 1 – 2023 Base Scenario

The performance of Eaton Drive/Peninsula Lakes Drive intersection under Scenario 1 (2023 base scenario) is summarised in **Table 14**. The analysis shows that the intersection performs at an excellent LOS with negligible delays and queues.

Table 14 - Sidra Results: Eaton Dr/Peninsula Lakes Dr Scenario 1

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| South: Eaton Drive | L | 0.008 | 6 | A | 0.3 | 0.013 | 5.9 | A | 0.4 |
| | T | 0.083 | 0 | A | 0 | 0.132 | 0 | A | 0 |
| North: Eaton Drive | T | 0.098 | 0 | A | 0 | 0.107 | 0 | A | 0 |
| | R | 0.016 | 6 | A | 0.3 | 0.042 | 6.1 | A | 0.8 |
| West: Peninsula Lakes Drive | L | 0.053 | 5 | A | 1.6 | 0.033 | 5.4 | A | 0.9 |
| | R | 0.020 | 5.8 | A | 0.7 | 0.010 | 6 | A | 0.4 |
| All Vehicles | | 0.098 | 1.9 | A | 1.6 | 0.132 | 1.6 | A | 0.9 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

8.7.2 Scenario 2 – 50% Parkridge development (no Southbank development)

The performance of Eaton Drive/Peninsula Lakes Drive intersection under Scenario 2 is summarised in **Table 15**. It is anticipated that the additional traffic generated by the proposed Parkridge Structure Plan will not significantly affect the performance of this intersection. The average delay of all vehicles is anticipated to increase by less than 2 seconds, while queues are expected to remain below 4m. The intersection is anticipated to perform at LOS A.

Table 15 - SIDRA Results: Eaton Dr/Peninsula Lakes Dr Scenario 2

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| South: Eaton Drive | L | 0.039 | 5.8 | A | 1.2 | 0.117 | 6 | A | 3.7 |
| | T | 0.090 | 0 | A | 0 | 0.145 | 0 | A | 0 |
| North: Eaton Drive | T | 0.107 | 0 | A | 0 | 0.118 | 0 | A | 0 |
| | R | 0.024 | 6 | A | 0.4 | 0.066 | 6.2 | A | 1.3 |
| West: Peninsula Lakes Drive | L | 0.083 | 5.1 | A | 2.5 | 0.054 | 5.5 | A | 1.6 |
| | R | 0.100 | 5.8 | A | 3.6 | 0.060 | 6.1 | A | 2.2 |
| All Vehicles | | 0.107 | 3.1 | A | 3.6 | 0.145 | 3.1 | A | 3.7 |

8.7.3 Scenario 3 – 100% Parkridge development and 50% Southbank development

The performance of Eaton Drive/Peninsula Lakes Drive intersection under Scenario 3 is summarised in **Table 16**. The table shows that at 100% development of the proposed Parkridge structure plan and 50% development of the Southbank @ Eaton, all movements at the intersection are still anticipated to operate at LOS A with minimal delays and queue lengths of approximately one car length.

Table 16 - SIDRA Results: Eaton Dr/Peninsula Lakes Dr Scenario 3

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| South: Eaton Drive | L | 0.054 | 5.8 | A | 1.7 | 0.167 | 6.1 | A | 5.5 |
| | T | 0.109 | 0 | A | 0 | 0.192 | 0 | A | 0 |
| North: Eaton Drive | T | 0.150 | 0 | A | 0 | 0.146 | 0 | A | 0 |
| | R | 0.028 | 6.1 | A | 0.5 | 0.078 | 6.4 | A | 1.7 |
| West: Peninsula Lakes Drive | L | 0.102 | 5.2 | A | 3.1 | 0.070 | 5.9 | A | 2 |
| | R | 0.147 | 6.1 | A | 5.3 | 0.088 | 6.6 | A | 3.3 |
| All Vehicles | | 0.150 | 3.3 | A | 5.3 | 0.192 | 3.3 | A | 5.5 |

(Appendix ORD: 12.2.2A Under E Separate Cover)

The performance of Eaton Drive/Southbank Access intersection under Scenario 3 is summarised in **Table 17**. The results show that the future intersection is anticipated to operate at excellent LOS with minimal delays and queues.

Table 17 - Sidra Results: Eaton Dr/Southbank Access Scenario 3

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| SouthWest: Eaton Drive | L | 0.142 | 5.6 | A | 0 | 0.193 | 5.6 | A | 0 |
| | T | 0.142 | 0 | A | 0 | 0.193 | 0 | A | 0 |
| NorthEast: Eaton Drive | T | 0.219 | 0.1 | A | 0 | 0.313 | 0.1 | A | 0 |
| | R | 0.006 | 6.1 | A | 0.1 | 0.019 | 6.3 | A | 0.4 |
| NorthWest: Southbank Access | L | 0.073 | 5.3 | A | 2.2 | 0.046 | 5.3 | A | 1.4 |
| | R | 0.073 | 5.2 | A | 2.2 | 0.046 | 5.3 | A | 1.4 |
| All Vehicles | | 0.219 | 1.8 | A | 2.2 | 0.313 | 1.9 | A | 1.4 |

8.7.4 Scenario 4 – 100% Parkridge development and 100% Southbank development

The performance of Eaton Drive/Peninsula Lakes Drive intersection under Scenario 4 is summarised in **Table 18**. The table shows that even at full buildout of the two developments, all movements at the intersection are still anticipated to operate at LOS A with minimal delays and queue lengths of approximately one car length.

Table 18 - SIDRA Results: Eaton Dr/Peninsula Lakes Dr Scenario 4

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| South: Eaton Drive | L | 0.054 | 5.8 | A | 1.7 | 0.165 | 6.1 | A | 5.4 |
| | T | 0.118 | 0 | A | 0 | 0.215 | 0.1 | A | 0 |
| North: Eaton Drive | T | 0.170 | 0 | A | 0 | 0.160 | 0 | A | 0 |
| | R | 0.028 | 6.1 | A | 0.5 | 0.079 | 6.5 | A | 1.8 |
| West: Peninsula Lakes Drive | L | 0.105 | 5.3 | A | 3.2 | 0.074 | 6.1 | A | 2.1 |
| | R | 0.150 | 6.2 | A | 5.4 | 0.089 | 6.7 | A | 3.4 |
| All Vehicles | | 0.170 | 3.2 | A | 5.4 | 0.215 | 3.2 | A | 5.4 |

The performance of Eaton Drive/Southbank Access intersection under Scenario 4 is summarised in **Table 19**. The results show that the future intersection is anticipated to operate at excellent LOS with minimal delays and queues.

(Appendix ORD: 12.2.2A Under E Separate Cover)

Table 19 - Sidra Results: Eaton Dr/Southbank Access Scenario 4

| Intersection Approach | | AM | | | | PM | | | |
|------------------------------------|---|-------|-----------|-----|---------------|-------|-----------|-----|---------------|
| | | DOS | Delay (s) | LOS | 95% Queue (m) | DOS | Delay (s) | LOS | 95% Queue (m) |
| SouthWest: Eaton Drive | L | 0.152 | 5.6 | A | 0 | 0.216 | 5.6 | A | 0 |
| | T | 0.152 | 0 | A | 0 | 0.216 | 0.1 | A | 0 |
| NorthEast: Eaton Drive | T | 0.226 | 0.1 | A | 0 | 0.322 | 0.1 | A | 0 |
| | R | 0.009 | 6.1 | A | 0.2 | 0.028 | 6.4 | A | 0.7 |
| NorthWest: Southbank Access | L | 0.109 | 5.3 | A | 3.4 | 0.070 | 5.2 | A | 2.1 |
| | R | 0.109 | 5.2 | A | 3.4 | 0.070 | 5.4 | A | 2.1 |
| All Vehicles | | 0.226 | 2.3 | A | 3.4 | 0.322 | 2.5 | A | 2.1 |

In summary, the trips generated by the proposed Parkridge Structure Plan will not significantly affect the performance of the existing intersection of Eaton Drive and Peninsula Lakes Drive. It is also anticipated that the future Eaton Drive/proposed Southbank Access will perform at satisfactory levels of service and capacity.

9 Conclusions

This report has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines Volume 2 – Planning Schemes, Structure Plans and Activity Centre Zones (2016)*.

The following conclusions have been made in regard to the proposed development:

- The proposed structure plan will generate the following yields:
 - Residential R5 – 9 lots
 - Residential R20-R40 – 600 lots
 - Residential R40 - 6 lots
 - Public and Regional open spaces
- The proposed Parkridge Structure Plan area currently has poor/inadequate connectivity to public transportation due to the limited infrastructure and services in the surrounding area and the absence of any plans to modify the TransBunbury network.
- The active transport network is considered to be well-connected since adequate walking and cycling facilities are provided within the proposed Parkridge Structure Plan area and in the surrounding areas.
- The proposed Parkridge Structure Plan area is considered to be adequately connected to the surrounding transport network (The Boulevard to the north, and Forrest Highway in the east-west direction via Eaton Drive to the south),
- In terms of traffic generation, the proposed Parkridge Structure Plan is anticipated to generate a daily total of **4236** trips, with **447** trips in the AM peak and **553** trips in the PM peak when the Site is fully developed.
- The midblock traffic flow on Peninsula Lakes Drive between Glenhuon Boulevard and Eaton Drive is anticipated to reach 5400 vpd east of Glenhuon Boulevard. This exceeds the projected maximum volume for Access Streets of 3000 vpd. Improvements on Peninsula Lakes Drive or construction of the Southbank Access should be considered when the daily traffic reaches 3000 vpd which is approximately at 40% completion of the Parkridge development.
- The intersections of Eaton Drive/Peninsula Lakes Drive and Eaton Drive/Southbank Access are anticipated to operate at LOS A with minimal queues and delays in the 2038 ultimate design year. Hence, it is anticipated that the estimated trips to be generated by the Parkridge Structure Plan will not significantly affect the surrounding road network.

(Appendix ORD: 12.2.2A Under E Separate Cover)

(Appendix ORD: 12.2.2A Under E Separate Cover)

Appendices

Appendix A WAPC Checklist













| Item | Provided | Section | Comments/Proposals |
|---|-------------------------------------|---------------|--------------------|
| Summary | <input checked="" type="checkbox"/> | Section 1 | |
| Introduction/Background | <input checked="" type="checkbox"/> | Section 1 | |
| Structure Plan proposal | <input checked="" type="checkbox"/> | | |
| Regional context | <input checked="" type="checkbox"/> | Section 2 | |
| Proposed land uses | <input checked="" type="checkbox"/> | Section 2 | |
| Table of land uses and quantities | <input checked="" type="checkbox"/> | Section 2 | |
| Major attractors/generators | <input checked="" type="checkbox"/> | Section 6 | |
| Any specific issues | <input checked="" type="checkbox"/> | NA | |
| Existing situation | <input checked="" type="checkbox"/> | | |
| Existing land uses within structure plan | <input checked="" type="checkbox"/> | Section 3 | |
| Existing land uses within 800m of Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Existing road network within Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Existing pedestrian/cycle networks within Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Existing public transport services within Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Existing road network within 2 (or 5) km of Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Traffic flows on roads within Structure Plan area (AM and PM Peak Hours) | <input checked="" type="checkbox"/> | Section 3 | |
| Traffic flows on roads within 2 (or 5) km of Structure Plan area (AM and PM Peak Hours) | <input checked="" type="checkbox"/> | Section 3 | |
| Existing pedestrian/cycle networks within 800m of the Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Existing public transport services within 800m of the Structure Plan area | <input checked="" type="checkbox"/> | Section 3 | |
| Proposed internal transport networks | <input checked="" type="checkbox"/> | | |
| Changes/additions to existing road network or proposed new road network | <input checked="" type="checkbox"/> | Section 4 | |
| Road reservation widths | <input checked="" type="checkbox"/> | Section 4 | |
| Road cross-sections & speed limits | <input checked="" type="checkbox"/> | Section 4 | |
| Intersection controls | <input checked="" type="checkbox"/> | Section 4 | |
| Pedestrian/cycle networks and crossing facilities | <input checked="" type="checkbox"/> | Section 4 | |
| Public transport routes | <input checked="" type="checkbox"/> | Section 4 | |
| Changes to external transport networks | <input checked="" type="checkbox"/> | | |
| Road network | <input checked="" type="checkbox"/> | Section 5 | |
| Intersection controls | <input checked="" type="checkbox"/> | Section 5 | |
| Pedestrian/cycle networks and crossing facilities | <input checked="" type="checkbox"/> | Section 5 | |
| Public transport services | <input checked="" type="checkbox"/> | Section 5 | |
| Integration with surrounding area | <input checked="" type="checkbox"/> | | |
| Trip attractors/generators within 800m | <input checked="" type="checkbox"/> | Section 6 | |
| Proposed changes to land uses within 800m | <input checked="" type="checkbox"/> | Section 6 | |
| Travel desire lines from Structure Plan to these attractors/generators | <input checked="" type="checkbox"/> | N/A | |
| Adequacy of existing transport networks | <input checked="" type="checkbox"/> | Section 7 & 8 | |
| Deficiencies in existing transport networks | <input checked="" type="checkbox"/> | Section 7 | |
| Remedial measures to address deficiencies | <input checked="" type="checkbox"/> | Section 7 | |
| Analysis of internal transport | <input checked="" type="checkbox"/> | | |
| Assessment years and time periods | <input checked="" type="checkbox"/> | Section 7 | |

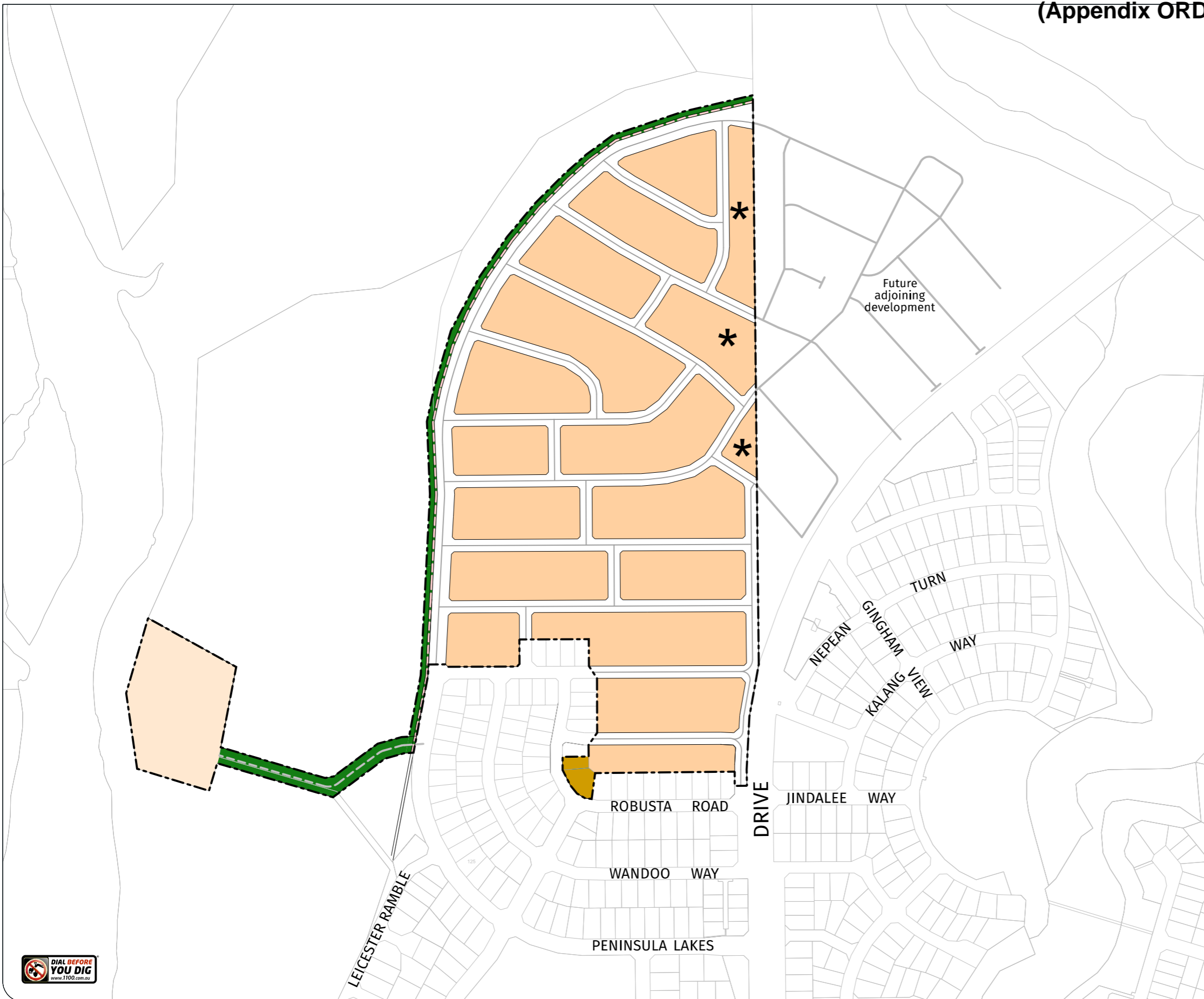
(Appendix ORD: 12.2.2A Under E Separate Cover)

| | | | |
|---|-------------------------------------|-----------|--|
| Structure Plan generated traffic | <input checked="" type="checkbox"/> | Section 7 | |
| Extraneous (through) traffic | <input checked="" type="checkbox"/> | Section 7 | |
| Design traffic flows | <input checked="" type="checkbox"/> | Section 7 | |
| Road cross-sections | <input checked="" type="checkbox"/> | Section 5 | |
| Intersection controls | <input checked="" type="checkbox"/> | Section 5 | |
| Access strategy | <input checked="" type="checkbox"/> | Section 7 | |
| Pedestrian/cycle networks | <input checked="" type="checkbox"/> | Section 4 | |
| Safe routes to schools | <input checked="" type="checkbox"/> | Section 7 | |
| Pedestrian permeability & efficiency | <input checked="" type="checkbox"/> | Section 4 | |
| Access to public transport | <input checked="" type="checkbox"/> | Section 4 | |
| Analysis of external transport networks | <input checked="" type="checkbox"/> | | |
| Extent of analysis | <input checked="" type="checkbox"/> | Section 8 | |
| Base flows for assessment years | <input checked="" type="checkbox"/> | Section 8 | |
| Total traffic flows | <input checked="" type="checkbox"/> | Section 8 | |
| Road cross-sections | <input checked="" type="checkbox"/> | Section 7 | |
| Intersection layouts & controls | <input checked="" type="checkbox"/> | Section 8 | |
| Pedestrian/cycle networks | <input checked="" type="checkbox"/> | Section 4 | |
| Conclusions | <input checked="" type="checkbox"/> | Section 9 | |

Appendix B Proposed Parkridge Structure Plan

LEGEND

-  EXISTING CADASTRE
-  STRUCTURE PLAN BOUNDARY
-  PROPOSED CADASTRE
-  RESIDENTIAL: R40
-  RESIDENTIAL: R20 - R40
-  RESIDENTIAL: R5
-  PUBLIC OPEN SPACE
-  REGIONAL OPEN SPACE
-  LOCAL ROADS
-  PRIVATE ACCESSWAY
-  PROPOSED MANAGED LOW FUEL ZONE (3m WIDTH)
-  RESIDENTIAL DENSITY TO BE CONSISTENT WITH ADJOINING STRUCTURE PLAN



STRUCTURE PLAN MODIFICATION

Robusta Road, Eaton
PARKRIDGE

Plan No. | 22294-07
 Date | 07/02/23
 Drawn | NP
 Checked |
 Revision | D

BUNBURY OFFICE:
 21 Spencer Street,
 BUNBURY WA 6230
 T: 08 9792 6000
 E: bunbury@harleydykstra.com.au
 W: www.harleydykstra.com.au

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Scale | 1:1000@A3



NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey



Harley Dykstra

PLANNING & SURVEY SOLUTIONS

Appendix C SIDRA Results

(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive AM S1 (Site Folder: S1 Base 2023)]

■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S1 Base 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 12 | 18.2 | 12 | 18.2 | 0.008 | 6.0 | LOS A | 0.0 | 0.3 | 0.09 | 0.51 | 0.09 | 49.5 |
| 2 | T1 | 311 | 3.7 | 311 | 3.7 | 0.083 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 322 | 4.2 | 322 | 4.2 | 0.083 | 0.2 | LOS A | 0.0 | 0.3 | 0.00 | 0.02 | 0.00 | 59.5 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 28 | 7.4 | 28 | 7.4 | 0.009 | 0.2 | LOS A | 0.0 | 0.3 | 0.26 | 0.07 | 0.26 | 44.6 |
| Approach | | 28 | 7.4 | 28 | 7.4 | 0.009 | 0.2 | LOS A | 0.0 | 0.3 | 0.26 | 0.07 | 0.26 | 44.6 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 76 | 0.0 | 76 | 0.0 | 0.053 | 5.0 | LOS A | 0.2 | 1.6 | 0.25 | 0.52 | 0.25 | 49.1 |
| 11 | T1 | 35 | 12.1 | 35 | 12.1 | 0.011 | 4.8 | LOS A | 0.0 | 0.4 | 0.26 | 0.49 | 0.26 | 43.6 |
| Approach | | 111 | 3.8 | 111 | 3.8 | 0.053 | 4.9 | LOS A | 0.2 | 1.6 | 0.25 | 0.51 | 0.25 | 48.0 |
| All Vehicles | | 461 | 4.3 | 461 | 4.3 | 0.083 | 1.4 | NA | 0.2 | 1.6 | 0.08 | 0.14 | 0.08 | 56.0 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive AM S2 (Site Folder: S1 Base 2023)]

 ■■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S1 Base 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 375 | 3.4 | 375 | 3.4 | 0.098 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 28 | 7.4 | 28 | 7.4 | 0.016 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 403 | 3.7 | 403 | 3.7 | 0.098 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.04 | 0.00 | 59.5 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 35 | 12.1 | 35 | 12.1 | 0.020 | 1.0 | LOS A | 0.0 | 0.3 | 0.18 | 0.29 | 0.18 | 44.4 |
| Approach | | 35 | 12.1 | 35 | 12.1 | 0.020 | 1.0 | LOS A | 0.0 | 0.3 | 0.18 | 0.29 | 0.18 | 44.4 |
| All Vehicles | | 438 | 4.3 | 438 | 4.3 | 0.098 | 0.5 | NA | 0.0 | 0.3 | 0.01 | 0.06 | 0.01 | 58.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive PM S1 (Site Folder: S1 Base 2023)]

■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S1 Base 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 20 | 5.3 | 20 | 5.3 | 0.013 | 5.9 | LOS A | 0.1 | 0.4 | 0.16 | 0.51 | 0.16 | 49.9 |
| 2 | T1 | 509 | 1.2 | 509 | 1.2 | 0.132 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 529 | 1.4 | 529 | 1.4 | 0.132 | 0.3 | LOS A | 0.1 | 0.4 | 0.01 | 0.02 | 0.01 | 59.5 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 79 | 0.0 | 79 | 0.0 | 0.028 | 0.4 | LOS A | 0.1 | 0.8 | 0.34 | 0.12 | 0.34 | 44.9 |
| Approach | | 79 | 0.0 | 79 | 0.0 | 0.028 | 0.4 | LOS A | 0.1 | 0.8 | 0.34 | 0.12 | 0.34 | 44.9 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 43 | 0.0 | 43 | 0.0 | 0.033 | 5.4 | LOS A | 0.1 | 0.9 | 0.32 | 0.54 | 0.32 | 48.9 |
| 11 | T1 | 17 | 12.5 | 17 | 12.5 | 0.006 | 4.9 | LOS A | 0.0 | 0.2 | 0.34 | 0.50 | 0.34 | 43.3 |
| Approach | | 60 | 3.5 | 60 | 3.5 | 0.033 | 5.2 | LOS A | 0.1 | 0.9 | 0.33 | 0.53 | 0.33 | 47.9 |
| All Vehicles | | 668 | 1.4 | 668 | 1.4 | 0.132 | 0.7 | NA | 0.1 | 0.9 | 0.07 | 0.08 | 0.07 | 57.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive PM S2 (Site Folder: S1 Base 2023)]

■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S1 Base 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 414 | 1.8 | 414 | 1.8 | 0.107 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 79 | 0.0 | 79 | 0.0 | 0.042 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 493 | 1.5 | 493 | 1.5 | 0.107 | 0.9 | NA | 0.0 | 0.0 | 0.00 | 0.10 | 0.00 | 59.0 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 17 | 12.5 | 17 | 12.5 | 0.010 | 1.1 | LOS A | 0.0 | 0.2 | 0.21 | 0.29 | 0.21 | 44.0 |
| Approach | | 17 | 12.5 | 17 | 12.5 | 0.010 | 1.1 | LOS A | 0.0 | 0.2 | 0.21 | 0.29 | 0.21 | 44.0 |
| All Vehicles | | 509 | 1.9 | 509 | 1.9 | 0.107 | 0.9 | NA | 0.0 | 0.2 | 0.01 | 0.11 | 0.01 | 58.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive AM S1 (Site Folder: S2 2028 50% Parkridge)] Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S2 2028 50% Parkridge)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 61 | 3.4 | 61 | 3.4 | 0.039 | 5.8 | LOS A | 0.2 | 1.2 | 0.12 | 0.52 | 0.12 | 50.1 |
| 2 | T1 | 339 | 3.7 | 339 | 3.7 | 0.090 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| Approach | | 400 | 3.7 | 400 | 3.7 | 0.090 | 0.9 | LOS A | 0.2 | 1.2 | 0.02 | 0.08 | 0.02 | 58.2 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 42 | 5.0 | 42 | 5.0 | 0.014 | 0.2 | LOS A | 0.1 | 0.4 | 0.27 | 0.07 | 0.27 | 44.7 |
| Approach | | 42 | 5.0 | 42 | 5.0 | 0.014 | 0.2 | LOS A | 0.1 | 0.4 | 0.27 | 0.07 | 0.27 | 44.7 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 117 | 0.0 | 117 | 0.0 | 0.083 | 5.1 | LOS A | 0.3 | 2.5 | 0.27 | 0.53 | 0.27 | 49.1 |
| 11 | T1 | 177 | 2.4 | 177 | 2.4 | 0.058 | 4.7 | LOS A | 0.3 | 1.9 | 0.29 | 0.51 | 0.29 | 43.5 |
| Approach | | 294 | 1.4 | 294 | 1.4 | 0.083 | 4.9 | LOS A | 0.3 | 2.5 | 0.28 | 0.52 | 0.28 | 46.5 |
| All Vehicles | | 736 | 2.9 | 736 | 2.9 | 0.090 | 2.4 | NA | 0.3 | 2.5 | 0.14 | 0.25 | 0.14 | 53.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive AM S2 (Site Folder: S2 2028 50% Parkridge)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S2 2028 50% Parkridge)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 409 | 3.3 | 409 | 3.3 | 0.107 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 60.0 |
| 9 | R2 | 42 | 5.0 | 42 | 5.0 | 0.024 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 452 | 3.5 | 452 | 3.5 | 0.107 | 0.6 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 59.4 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 177 | 2.4 | 177 | 2.4 | 0.100 | 1.1 | LOS A | 0.2 | 1.7 | 0.22 | 0.33 | 0.22 | 49.0 |
| Approach | | 177 | 2.4 | 177 | 2.4 | 0.100 | 1.1 | LOS A | 0.2 | 1.7 | 0.22 | 0.33 | 0.22 | 49.0 |
| All Vehicles | | 628 | 3.2 | 628 | 3.2 | 0.107 | 0.7 | NA | 0.2 | 1.7 | 0.06 | 0.13 | 0.06 | 57.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive PM S1 (Site Folder: S2 2028 50% Parkridge)] Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S2 2028 50% Parkridge)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 172 | 0.6 | 172 | 0.6 | 0.117 | 6.0 | LOS A | 0.5 | 3.7 | 0.23 | 0.53 | 0.23 | 49.9 |
| 2 | T1 | 558 | 1.3 | 558 | 1.3 | 0.145 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 729 | 1.2 | 729 | 1.2 | 0.145 | 1.4 | LOS A | 0.5 | 3.7 | 0.05 | 0.13 | 0.05 | 57.2 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 123 | 0.0 | 123 | 0.0 | 0.044 | 0.5 | LOS A | 0.2 | 1.3 | 0.36 | 0.14 | 0.36 | 44.8 |
| Approach | | 123 | 0.0 | 123 | 0.0 | 0.044 | 0.5 | LOS A | 0.2 | 1.3 | 0.36 | 0.14 | 0.36 | 44.8 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 68 | 0.0 | 68 | 0.0 | 0.054 | 5.5 | LOS A | 0.2 | 1.6 | 0.35 | 0.56 | 0.35 | 48.9 |
| 11 | T1 | 102 | 2.1 | 102 | 2.1 | 0.038 | 4.9 | LOS A | 0.2 | 1.2 | 0.39 | 0.55 | 0.39 | 43.1 |
| Approach | | 171 | 1.2 | 171 | 1.2 | 0.054 | 5.1 | LOS A | 0.2 | 1.6 | 0.37 | 0.55 | 0.37 | 46.2 |
| All Vehicles | | 1023 | 1.0 | 1023 | 1.0 | 0.145 | 1.9 | NA | 0.5 | 3.7 | 0.14 | 0.20 | 0.14 | 54.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive PM S2 (Site Folder: S2 2028 50% Parkridge)]

 ■■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S2 2028 50% Parkridge)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 453 | 1.9 | 453 | 1.9 | 0.118 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 123 | 0.0 | 123 | 0.0 | 0.066 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 576 | 1.5 | 576 | 1.5 | 0.118 | 1.2 | NA | 0.0 | 0.0 | 0.00 | 0.14 | 0.00 | 58.6 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 102 | 2.1 | 102 | 2.1 | 0.060 | 1.2 | LOS A | 0.1 | 1.0 | 0.25 | 0.35 | 0.25 | 49.1 |
| Approach | | 102 | 2.1 | 102 | 2.1 | 0.060 | 1.2 | LOS A | 0.1 | 1.0 | 0.25 | 0.35 | 0.25 | 49.1 |
| All Vehicles | | 678 | 1.6 | 678 | 1.6 | 0.118 | 1.2 | NA | 0.1 | 1.0 | 0.04 | 0.17 | 0.04 | 57.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive AM S1 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 84 | 2.5 | 84 | 2.5 | 0.054 | 5.8 | LOS A | 0.2 | 1.7 | 0.13 | 0.52 | 0.13 | 50.1 |
| 2 | T1 | 411 | 3.3 | 411 | 3.3 | 0.109 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 495 | 3.2 | 495 | 3.2 | 0.109 | 1.0 | LOS A | 0.2 | 1.7 | 0.02 | 0.09 | 0.02 | 58.0 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 51 | 4.2 | 51 | 4.2 | 0.017 | 0.3 | LOS A | 0.1 | 0.5 | 0.30 | 0.09 | 0.30 | 44.7 |
| Approach | | 51 | 4.2 | 51 | 4.2 | 0.017 | 0.3 | LOS A | 0.1 | 0.5 | 0.30 | 0.09 | 0.30 | 44.7 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 139 | 0.0 | 139 | 0.0 | 0.102 | 5.2 | LOS A | 0.4 | 3.1 | 0.30 | 0.54 | 0.30 | 49.0 |
| 11 | T1 | 244 | 2.2 | 244 | 2.2 | 0.083 | 4.8 | LOS A | 0.4 | 2.7 | 0.33 | 0.54 | 0.33 | 43.3 |
| Approach | | 383 | 1.4 | 383 | 1.4 | 0.102 | 4.9 | LOS A | 0.4 | 3.1 | 0.32 | 0.54 | 0.32 | 46.1 |
| All Vehicles | | 928 | 2.5 | 928 | 2.5 | 0.109 | 2.6 | NA | 0.4 | 3.1 | 0.16 | 0.27 | 0.16 | 52.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive AM S2 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 575 | 2.6 | 575 | 2.6 | 0.150 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 51 | 4.2 | 51 | 4.2 | 0.028 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 625 | 2.7 | 625 | 2.7 | 0.150 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.5 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 244 | 2.2 | 244 | 2.2 | 0.147 | 1.3 | LOS A | 0.3 | 2.6 | 0.28 | 0.39 | 0.28 | 49.0 |
| Approach | | 244 | 2.2 | 244 | 2.2 | 0.147 | 1.3 | LOS A | 0.3 | 2.6 | 0.28 | 0.39 | 0.28 | 49.0 |
| All Vehicles | | 869 | 2.5 | 869 | 2.5 | 0.150 | 0.7 | NA | 0.3 | 2.6 | 0.08 | 0.15 | 0.08 | 57.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive PM S1 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 241 | 0.4 | 241 | 0.4 | 0.167 | 6.1 | LOS A | 0.7 | 5.5 | 0.26 | 0.54 | 0.26 | 49.8 |
| 2 | T1 | 742 | 1.0 | 742 | 1.0 | 0.192 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 983 | 0.9 | 983 | 0.9 | 0.192 | 1.5 | LOS A | 0.7 | 5.5 | 0.06 | 0.13 | 0.06 | 57.0 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 146 | 0.0 | 146 | 0.0 | 0.058 | 0.7 | LOS A | 0.2 | 1.7 | 0.43 | 0.20 | 0.43 | 44.6 |
| Approach | | 146 | 0.0 | 146 | 0.0 | 0.058 | 0.7 | LOS A | 0.2 | 1.7 | 0.43 | 0.20 | 0.43 | 44.6 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 81 | 0.0 | 81 | 0.0 | 0.070 | 5.9 | LOS A | 0.3 | 2.0 | 0.41 | 0.60 | 0.41 | 48.7 |
| 11 | T1 | 142 | 1.5 | 142 | 1.5 | 0.060 | 5.2 | LOS A | 0.3 | 1.8 | 0.46 | 0.61 | 0.46 | 42.8 |
| Approach | | 223 | 0.9 | 223 | 0.9 | 0.070 | 5.4 | LOS A | 0.3 | 2.0 | 0.44 | 0.60 | 0.44 | 45.7 |
| All Vehicles | | 1353 | 0.8 | 1353 | 0.8 | 0.192 | 2.1 | NA | 0.7 | 5.5 | 0.17 | 0.22 | 0.17 | 54.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive PM S2 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 566 | 1.5 | 566 | 1.5 | 0.146 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 146 | 0.0 | 146 | 0.0 | 0.078 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 713 | 1.2 | 713 | 1.2 | 0.146 | 1.2 | NA | 0.0 | 0.0 | 0.00 | 0.13 | 0.00 | 58.7 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 142 | 1.5 | 142 | 1.5 | 0.088 | 1.4 | LOS A | 0.2 | 1.5 | 0.29 | 0.39 | 0.29 | 49.3 |
| Approach | | 142 | 1.5 | 142 | 1.5 | 0.088 | 1.4 | LOS A | 0.2 | 1.5 | 0.29 | 0.39 | 0.29 | 49.3 |
| All Vehicles | | 855 | 1.2 | 855 | 1.2 | 0.146 | 1.2 | NA | 0.2 | 1.5 | 0.05 | 0.17 | 0.05 | 57.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Southbank Access AM S1 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

Network: N101 [Eaton Drive - Southbank Access AM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| SouthEast: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 12 | 0.0 | 12 | 0.0 | 0.004 | 0.4 | LOS A | 0.0 | 0.1 | 0.35 | 0.13 | 0.35 | 45.1 |
| Approach | | 12 | 0.0 | 12 | 0.0 | 0.004 | 0.4 | LOS A | 0.0 | 0.1 | 0.35 | 0.13 | 0.35 | 45.1 |
| NorthWest: Southbank Access | | | | | | | | | | | | | | |
| 10 | L2 | 34 | 0.0 | 34 | 0.0 | 0.073 | 5.3 | LOS A | 0.3 | 2.2 | 0.34 | 0.54 | 0.34 | 49.2 |
| 11 | T1 | 136 | 0.0 | 136 | 0.0 | 0.073 | 4.5 | LOS A | 0.3 | 2.2 | 0.34 | 0.54 | 0.34 | 43.6 |
| Approach | | 169 | 0.0 | 169 | 0.0 | 0.073 | 4.6 | LOS A | 0.3 | 2.2 | 0.34 | 0.54 | 0.34 | 45.3 |
| SouthWest: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 47 | 0.0 | 47 | 0.0 | 0.142 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.10 | 0.00 | 57.4 |
| 2 | T1 | 494 | 2.8 | 494 | 2.8 | 0.142 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.5 |
| Approach | | 541 | 2.5 | 541 | 2.5 | 0.142 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.3 |
| All Vehicles | | 722 | 1.9 | 722 | 1.9 | 0.142 | 1.5 | NA | 0.3 | 2.2 | 0.09 | 0.17 | 0.09 | 56.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S2 [Eaton Drive - Southbank Access AM S2 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

Network: N101 [Eaton Drive - Southbank Access AM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| NorthEast: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 411 | 4.4 | 411 | 4.4 | 0.219 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 12 | 0.0 | 12 | 0.0 | 0.006 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 422 | 4.2 | 422 | 4.2 | 0.219 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 59.7 |
| NorthWest: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 136 | 0.0 | 136 | 0.0 | 0.073 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| Approach | | 136 | 0.0 | 136 | 0.0 | 0.073 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| All Vehicles | | 558 | 3.2 | 558 | 3.2 | 0.219 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.07 | 0.00 | 58.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Southbank Access PM S1 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

Network: N101 [Eaton Drive - Southbank Access PM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| SouthEast: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 36 | 0.0 | 36 | 0.0 | 0.014 | 0.6 | LOS A | 0.1 | 0.4 | 0.42 | 0.20 | 0.42 | 44.9 |
| Approach | | 36 | 0.0 | 36 | 0.0 | 0.014 | 0.6 | LOS A | 0.1 | 0.4 | 0.42 | 0.20 | 0.42 | 44.9 |
| NorthWest: Southbank Access | | | | | | | | | | | | | | |
| 10 | L2 | 20 | 0.0 | 20 | 0.0 | 0.046 | 5.3 | LOS A | 0.2 | 1.4 | 0.36 | 0.56 | 0.36 | 49.2 |
| 11 | T1 | 81 | 0.0 | 81 | 0.0 | 0.046 | 4.6 | LOS A | 0.2 | 1.4 | 0.36 | 0.56 | 0.36 | 43.5 |
| Approach | | 101 | 0.0 | 101 | 0.0 | 0.046 | 4.7 | LOS A | 0.2 | 1.4 | 0.36 | 0.56 | 0.36 | 45.2 |
| SouthWest: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 144 | 0.0 | 144 | 0.0 | 0.193 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.23 | 0.00 | 56.3 |
| 2 | T1 | 598 | 1.2 | 598 | 1.2 | 0.193 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.09 | 0.00 | 59.1 |
| Approach | | 742 | 1.0 | 742 | 1.0 | 0.193 | 1.1 | NA | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.5 |
| All Vehicles | | 879 | 0.8 | 879 | 0.8 | 0.193 | 1.5 | NA | 0.2 | 1.4 | 0.06 | 0.17 | 0.06 | 56.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S2 [Eaton Drive - Southbank Access PM S2 (Site Folder: S3 2033 100% Parkridge 50% Southbank)]

Network: N101 [Eaton Drive - Southbank Access PM (Network Folder: S3 2033 100% Parkridge 50% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| NorthEast: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 602 | 1.4 | 602 | 1.4 | 0.313 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.8 |
| 9 | R2 | 36 | 0.0 | 36 | 0.0 | 0.019 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 638 | 1.3 | 638 | 1.3 | 0.313 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.04 | 0.00 | 59.5 |
| NorthWest: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 81 | 0.0 | 81 | 0.0 | 0.044 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| Approach | | 81 | 0.0 | 81 | 0.0 | 0.044 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| All Vehicles | | 719 | 1.2 | 719 | 1.2 | 0.313 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 58.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Southbank Access AM S1 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

Network: N101 [Eaton Drive - Southbank Access AM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 18 | 0.0 | 18 | 0.0 | 0.007 | 0.4 | LOS A | 0.0 | 0.2 | 0.37 | 0.15 | 0.37 | 45.0 |
| Approach | | 18 | 0.0 | 18 | 0.0 | 0.007 | 0.4 | LOS A | 0.0 | 0.2 | 0.37 | 0.15 | 0.37 | 45.0 |
| NorthWest: Southbank Access | | | | | | | | | | | | | | |
| 10 | L2 | 49 | 0.0 | 49 | 0.0 | 0.109 | 5.3 | LOS A | 0.5 | 3.4 | 0.35 | 0.56 | 0.35 | 49.2 |
| 11 | T1 | 199 | 0.0 | 199 | 0.0 | 0.109 | 4.5 | LOS A | 0.5 | 3.4 | 0.35 | 0.56 | 0.35 | 43.5 |
| Approach | | 248 | 0.0 | 248 | 0.0 | 0.109 | 4.7 | LOS A | 0.5 | 3.4 | 0.35 | 0.56 | 0.35 | 45.3 |
| SouthWest: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 69 | 0.0 | 69 | 0.0 | 0.152 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.14 | 0.00 | 57.1 |
| 2 | T1 | 508 | 2.7 | 508 | 2.7 | 0.152 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 59.4 |
| Approach | | 578 | 2.4 | 578 | 2.4 | 0.152 | 0.7 | NA | 0.0 | 0.0 | 0.00 | 0.07 | 0.00 | 59.1 |
| All Vehicles | | 844 | 1.6 | 844 | 1.6 | 0.152 | 1.9 | NA | 0.5 | 3.4 | 0.11 | 0.22 | 0.11 | 55.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive AM S1 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 84 | 2.5 | 84 | 2.5 | 0.054 | 5.8 | LOS A | 0.2 | 1.7 | 0.13 | 0.52 | 0.13 | 50.1 |
| 2 | T1 | 446 | 3.1 | 446 | 3.1 | 0.118 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 531 | 3.0 | 531 | 3.0 | 0.118 | 0.9 | LOS A | 0.2 | 1.7 | 0.02 | 0.08 | 0.02 | 58.1 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 51 | 4.2 | 51 | 4.2 | 0.017 | 0.3 | LOS A | 0.1 | 0.5 | 0.32 | 0.10 | 0.32 | 44.6 |
| Approach | | 51 | 4.2 | 51 | 4.2 | 0.017 | 0.3 | LOS A | 0.1 | 0.5 | 0.32 | 0.10 | 0.32 | 44.6 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 141 | 0.0 | 141 | 0.0 | 0.105 | 5.3 | LOS A | 0.4 | 3.2 | 0.32 | 0.55 | 0.32 | 49.0 |
| 11 | T1 | 241 | 2.2 | 241 | 2.2 | 0.084 | 4.8 | LOS A | 0.4 | 2.7 | 0.35 | 0.54 | 0.35 | 43.2 |
| Approach | | 382 | 1.4 | 382 | 1.4 | 0.105 | 5.0 | LOS A | 0.4 | 3.2 | 0.34 | 0.55 | 0.34 | 46.1 |
| All Vehicles | | 963 | 2.4 | 963 | 2.4 | 0.118 | 2.5 | NA | 0.4 | 3.2 | 0.16 | 0.27 | 0.16 | 53.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive AM S2 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes AM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 655 | 2.4 | 655 | 2.4 | 0.170 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 51 | 4.2 | 51 | 4.2 | 0.028 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 705 | 2.5 | 705 | 2.5 | 0.170 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.5 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 241 | 2.2 | 241 | 2.2 | 0.150 | 1.4 | LOS A | 0.4 | 2.7 | 0.30 | 0.42 | 0.30 | 48.9 |
| Approach | | 241 | 2.2 | 241 | 2.2 | 0.150 | 1.4 | LOS A | 0.4 | 2.7 | 0.30 | 0.42 | 0.30 | 48.9 |
| All Vehicles | | 946 | 2.4 | 946 | 2.4 | 0.170 | 0.7 | NA | 0.4 | 2.7 | 0.08 | 0.14 | 0.08 | 57.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S1 [Eaton Drive - Peninsula Lakes Drive PM S1 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 237 | 0.4 | 237 | 0.4 | 0.165 | 6.1 | LOS A | 0.7 | 5.4 | 0.26 | 0.54 | 0.26 | 49.8 |
| 2 | T1 | 832 | 0.9 | 832 | 0.9 | 0.215 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| Approach | | 1068 | 0.8 | 1068 | 0.8 | 0.215 | 1.4 | LOS A | 0.7 | 5.4 | 0.06 | 0.12 | 0.06 | 57.3 |
| East: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 148 | 0.0 | 148 | 0.0 | 0.062 | 0.8 | LOS A | 0.3 | 1.8 | 0.46 | 0.23 | 0.46 | 44.5 |
| Approach | | 148 | 0.0 | 148 | 0.0 | 0.062 | 0.8 | LOS A | 0.3 | 1.8 | 0.46 | 0.23 | 0.46 | 44.5 |
| West: Peninsula Lakes Drive | | | | | | | | | | | | | | |
| 10 | L2 | 82 | 0.0 | 82 | 0.0 | 0.074 | 6.1 | LOS A | 0.3 | 2.1 | 0.43 | 0.62 | 0.43 | 48.6 |
| 11 | T1 | 140 | 1.5 | 140 | 1.5 | 0.062 | 5.3 | LOS A | 0.3 | 1.9 | 0.48 | 0.62 | 0.48 | 42.7 |
| Approach | | 222 | 0.9 | 222 | 0.9 | 0.074 | 5.6 | LOS A | 0.3 | 2.1 | 0.47 | 0.62 | 0.47 | 45.7 |
| All Vehicles | | 1439 | 0.7 | 1439 | 0.7 | 0.215 | 2.0 | NA | 0.7 | 5.4 | 0.16 | 0.21 | 0.16 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

▼ Site: 101 S2 [Eaton Drive - Peninsula Lakes Drive PM S2 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

 ■ Network: N101 [Eaton Drive - Peninsula Lakes PM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| North: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 621 | 1.4 | 621 | 1.4 | 0.160 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 148 | 0.0 | 148 | 0.0 | 0.079 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 769 | 1.1 | 769 | 1.1 | 0.160 | 1.1 | NA | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.7 |
| West: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 140 | 1.5 | 140 | 1.5 | 0.089 | 1.4 | LOS A | 0.2 | 1.5 | 0.31 | 0.41 | 0.31 | 49.2 |
| Approach | | 140 | 1.5 | 140 | 1.5 | 0.089 | 1.4 | LOS A | 0.2 | 1.5 | 0.31 | 0.41 | 0.31 | 49.2 |
| All Vehicles | | 909 | 1.2 | 909 | 1.2 | 0.160 | 1.2 | NA | 0.2 | 1.5 | 0.05 | 0.17 | 0.05 | 57.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S2 [Eaton Drive - Southbank Access AM S2 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

Network: N101 [Eaton Drive - Southbank Access AM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| NorthEast: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 424 | 4.2 | 424 | 4.2 | 0.226 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.9 |
| 9 | R2 | 18 | 0.0 | 18 | 0.0 | 0.009 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 442 | 4.0 | 442 | 4.0 | 0.226 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 59.6 |
| NorthWest: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 199 | 0.0 | 199 | 0.0 | 0.107 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| Approach | | 199 | 0.0 | 199 | 0.0 | 0.107 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| All Vehicles | | 641 | 2.8 | 641 | 2.8 | 0.226 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.09 | 0.00 | 57.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S1 [Eaton Drive - Southbank Access PM S1 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

Network: N101 [Eaton Drive - Southbank Access PM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| SouthEast: Median Storage | | | | | | | | | | | | | | |
| 5 | T1 | 54 | 0.0 | 54 | 0.0 | 0.022 | 0.7 | LOS A | 0.1 | 0.7 | 0.45 | 0.24 | 0.45 | 44.8 |
| Approach | | 54 | 0.0 | 54 | 0.0 | 0.022 | 0.7 | LOS A | 0.1 | 0.7 | 0.45 | 0.24 | 0.45 | 44.8 |
| NorthWest: Southbank Access | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 0.070 | 5.2 | LOS A | 0.3 | 2.1 | 0.36 | 0.57 | 0.36 | 49.2 |
| 11 | T1 | 120 | 0.0 | 120 | 0.0 | 0.070 | 4.7 | LOS A | 0.3 | 2.1 | 0.36 | 0.57 | 0.36 | 43.5 |
| Approach | | 149 | 0.0 | 149 | 0.0 | 0.070 | 4.8 | LOS A | 0.3 | 2.1 | 0.36 | 0.57 | 0.36 | 45.2 |
| SouthWest: Eaton Drive | | | | | | | | | | | | | | |
| 1 | L2 | 213 | 0.0 | 213 | 0.0 | 0.216 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.31 | 0.00 | 55.7 |
| 2 | T1 | 618 | 1.2 | 618 | 1.2 | 0.216 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.10 | 0.00 | 59.0 |
| Approach | | 831 | 0.9 | 831 | 0.9 | 0.216 | 1.5 | NA | 0.0 | 0.0 | 0.00 | 0.15 | 0.00 | 58.1 |
| All Vehicles | | 1034 | 0.7 | 1034 | 0.7 | 0.216 | 1.9 | NA | 0.3 | 2.1 | 0.08 | 0.22 | 0.08 | 56.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

MOVEMENT SUMMARY

Site: 101 S2 [Eaton Drive - Southbank Access PM S2 (Site Folder: S4 2038 100% Parkridge 100% Southbank)]

Network: N101 [Eaton Drive - Southbank Access PM (Network Folder: S4 2038 100% Parkridge 100% Southbank)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| NorthEast: Eaton Drive | | | | | | | | | | | | | | |
| 8 | T1 | 620 | 1.4 | 620 | 1.4 | 0.322 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 59.8 |
| 9 | R2 | 54 | 0.0 | 54 | 0.0 | 0.028 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 50.5 |
| Approach | | 674 | 1.3 | 674 | 1.3 | 0.322 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.4 |
| NorthWest: Median Storage | | | | | | | | | | | | | | |
| 12 | R2 | 120 | 0.0 | 120 | 0.0 | 0.065 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| Approach | | 120 | 0.0 | 120 | 0.0 | 0.065 | 0.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.22 | 0.00 | 51.2 |
| All Vehicles | | 794 | 1.1 | 794 | 1.1 | 0.322 | 0.6 | NA | 0.0 | 0.0 | 0.00 | 0.08 | 0.00 | 58.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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(Appendix ORD: 12.2.2A Under E Separate Cover)

APPENDIX G | SERVICING AND INFRASTRUCTURE

ENGINEERING SERVICING REPORT

Lot 9004 Eaton Drive,
Eaton



PREPARED FOR PARKRIDGE GROUP PTY LTD

(Appendix ORD: 12.2.2A Under E Separate Cover)

DOCUMENT CONTROL

| ISSUE | DATE | ISSUE DETAILS | AUTHOR | CHECKED | APPROVED |
|-------|-----------|--|---------------|--------------|----------|
| A | 13 Mar 18 | For Review | Natalie Adams | Gary Barbour | |
| B | 14 Mar 18 | For inclusion in Structure Plan Report | Natalie Adams | Gary Barbour | |
| | | | | | |

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1 Introduction

Parkridge Group Pty Ltd has engaged Calibre Professional Services Pty Ltd (Calibre) to undertake the initial investigations and reporting on servicing constraints for the potential redevelopment of Lot 9004 Eaton Drive, Eaton.

The site is a previously undeveloped site which consists of Lot 9004 subdivided into three stages of residential lots as shown in the Structure Plan extract in Figure 1 below. The proposed Structure Plan boundary sits within the Lot 9004 boundary with the intention to commence the Development in 2018.

This area of land sits approximately 2km upstream of the estuary along the Collie River flood plain.



Figure 1: Proposed Structure Plan, Lot 9004

An historical aerial photograph of the site is shown below to depict the extent of the surrounding developments.

The residential developments to the south and east represent the extent of services.



Figure 2: Aerial Imagery of Surrounding Area, Nearthmaps 2018

2 Topography and Vegetation

The Site is adjacent to the east side of the Collie River and is bounded by Leicester Reserve to the north. Wandoo Way to the south and Eaton Drive to the east have the roads that bound the extent of the existing residential developments.



Figure 3: Contours of Site, Esinet Data, Water Corporation 2018

3 Existing Site Conditions

Approximately 51,500m³ of fill has been accessed from the area between December 2004 and November 2005.

The existing contours (predevelopment) show that the Site grades from an RL of 10m AHD in the south-eastern area down to approximately 3m AHD on the western side of the development.

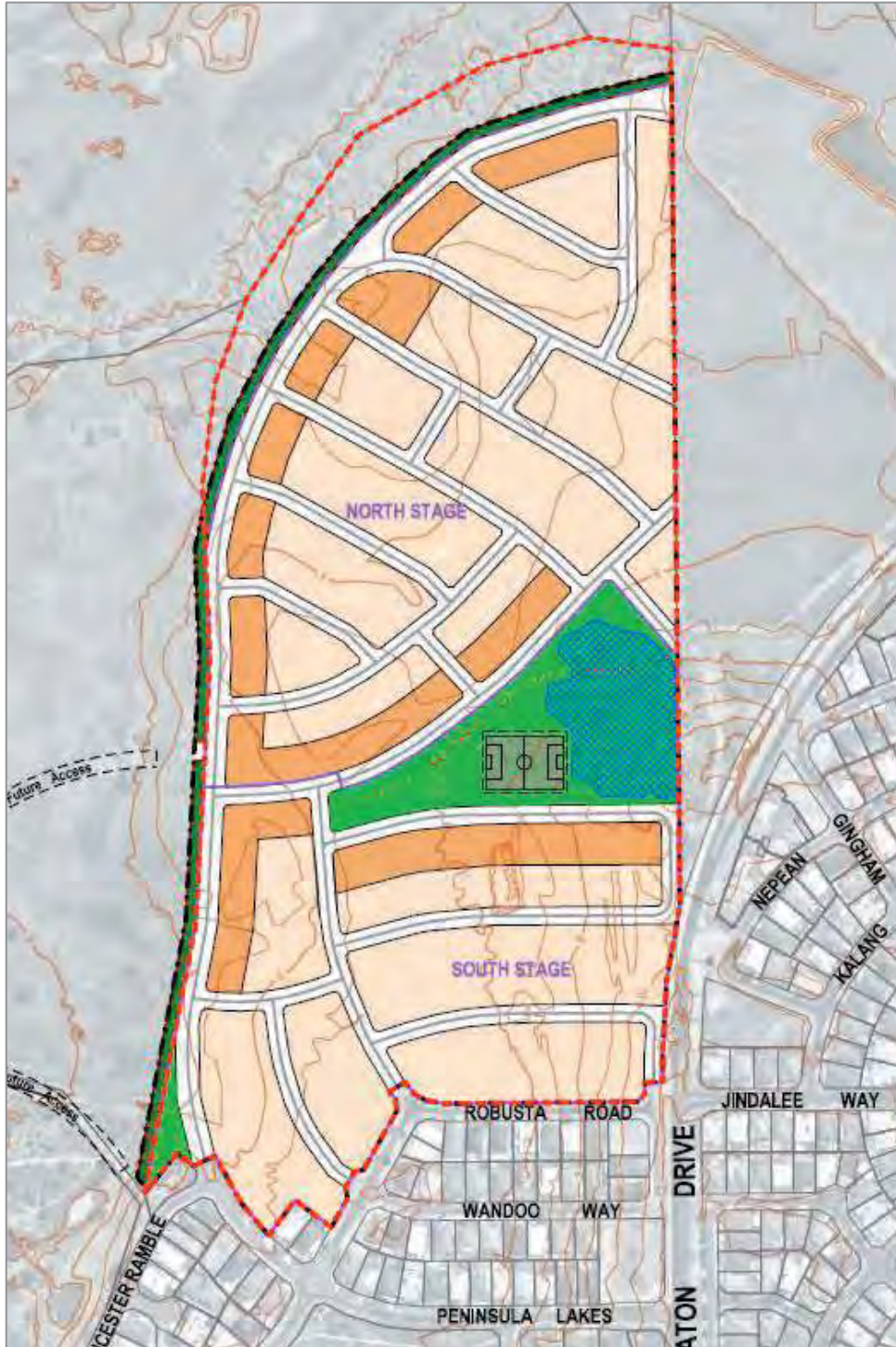


Figure 4: Proposed Subdivision Plan with Contours

4 Geotechnical Review

4.1 Site Classification

Assuming that recommended earthworks are implemented across the Site, site classifications of Class A and Class M can be expected to be achieved.

4.2 Groundwater Assessment

The geotechnical review advises that the groundwater level generally at and within 1m of the natural surface level should be allowed for in the design and during construction (excludes flood level requirements).

4.3 Acid Sulphate Soils

A preliminary assessment of acid sulphate soils (ASS) was conducted in December 2005 by Golder Associates. The results of this preliminary assessment showed that generally across the Site, actual ASS (AASS) can be expected to be encountered at depths of 3m or more. As shown in Figure 5, there is AASS at surface through to depths of 1.25m. Potential ASS has been encountered elsewhere throughout the geological profile.

Based on the geotechnical assessment, an Acid Sulphate Soils Management Plan will need to be prepared and implemented during any earthworks and construction.

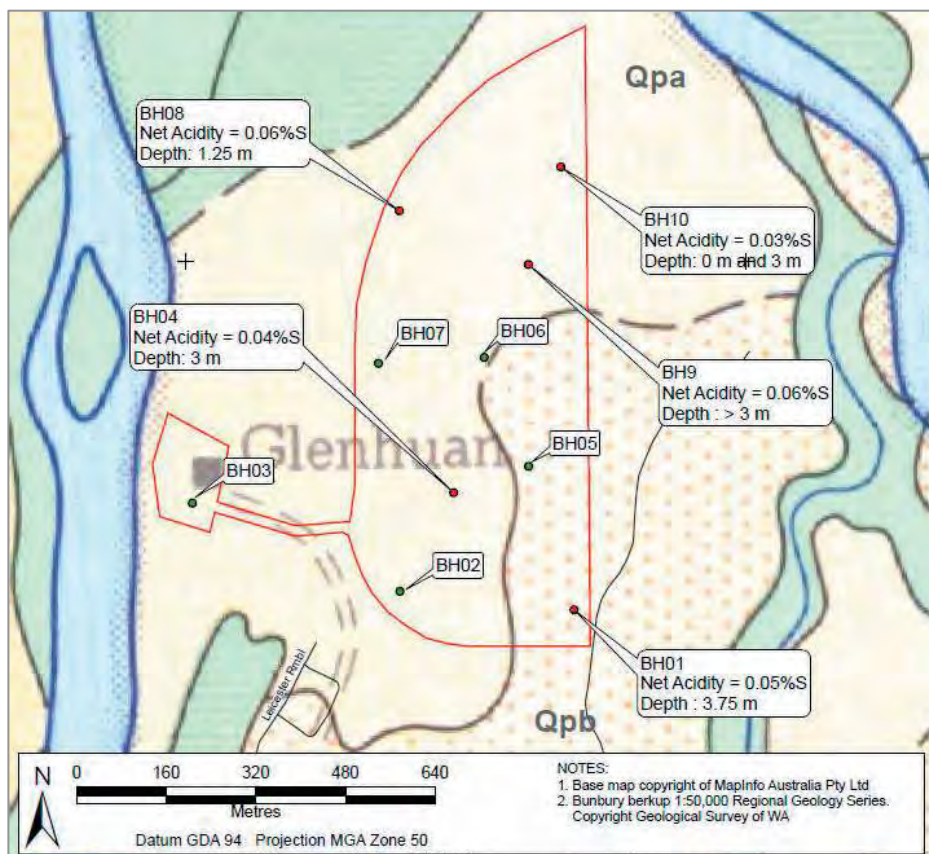


Figure 5: Results of ASS Testing, Golder Associates Report 2005

5 Roads and Pavement

The geotechnical assessment has advised that the pavement design should accommodate the relatively poor drainage conditions across the Site.

The existing pavement of Eaton Drive and the roads to the south are asphalted, kerbed roads. Major access to the southern stage of the proposed development will be via Robusta Road, Wandoo Way and Peninsula Lakes Road. There is currently no access shown off Eaton Drive for the north or southern stages.

The southern accesses are not expected to create any future traffic or safety issues. Should any future access points be required off Eaton Drive, a traffic study will be required to assess the safety and suitability of the access points.

There are back-of-kerb paths provided along Eaton Drive and Peninsula Lakes Drive and offset kerbs on the other residential streets. Additional paths would be expected as a result of development of the site.

6 Drainage Considerations

Stormwater disposal over the Site has been identified as a potential issue due to the low availability of free draining material and observed groundwater level.

Earthworked fill levels have been covered under Section

It is anticipated that a Drainage Management Plan will be requested for the site as a planning condition. This will require approval by Department of Water (DW).

6.1 Minor System

The minor drainage system is designed to cater for the 1 in 5 year rainfall event. Where possible, soakwells, rain gardens or shallow swales should be placed in road reserves to cater for this requirement. Road reserve widths should be designed to cater for this infrastructure.

The collection/storage nodes are to be connected by way of pipe (or swale in flatter areas) and discharged into compensation basins in the foreshore (adjacent lot - as in previous stages). These basins (as well as previously mentioned soakage structures) will not only ensure balance between pre and post development runoff volumes, but provide treatment chains to increase runoff water quality.

6.2 Major System

The 1 in 100 year rainfall event defines the major drainage system requirements. Road reserves and PAWs (in the event of trapped lows) will convey the major runoff events through to the foreshore. Adjacent lots and road gradients are to be designed to provide adequate capacity and freeboard for these events.

7 Hydraulic Modelling

A review of the hydraulic modelling was undertaken in April 2007 by SKM to investigate the impact of different development scenarios against a base line scenario as defined by the (WA) Department of Water. The concern that the development areas lie within the 1 in 100 year flood inundation area was shown to be unfounded and that there was no appreciable impact on the development/1 in 100 year event interface.

8 Earthworks Strategy and Considerations

All lot levels are to be above the 1 in 100 year flood level. Due to the presence of a clayey subgrade, the importation of additional fill is likely to be required to achieve the required separation between the AAMGL and the finished lot levels.

9 Sewer

The Site is currently serviced by a surrounding 150mm PVC sewer from Peninsula Lakes Drive at varying invert levels. This southern part of the proposed development will be directed to the existing sewer reticulation network via the gravity sewer. This part of the catchment will be directed to the existing wastewater pump station located in the south-western area of the Site.

The remainder of the Site will be directed to the vacuum sewer that services this part of the Site via Millbridge. The Water Corporation has confirmed that this strategy is the intention. The Water Corporation has confirmed that no prefundable infrastructure is required for the vacuum sewer area.

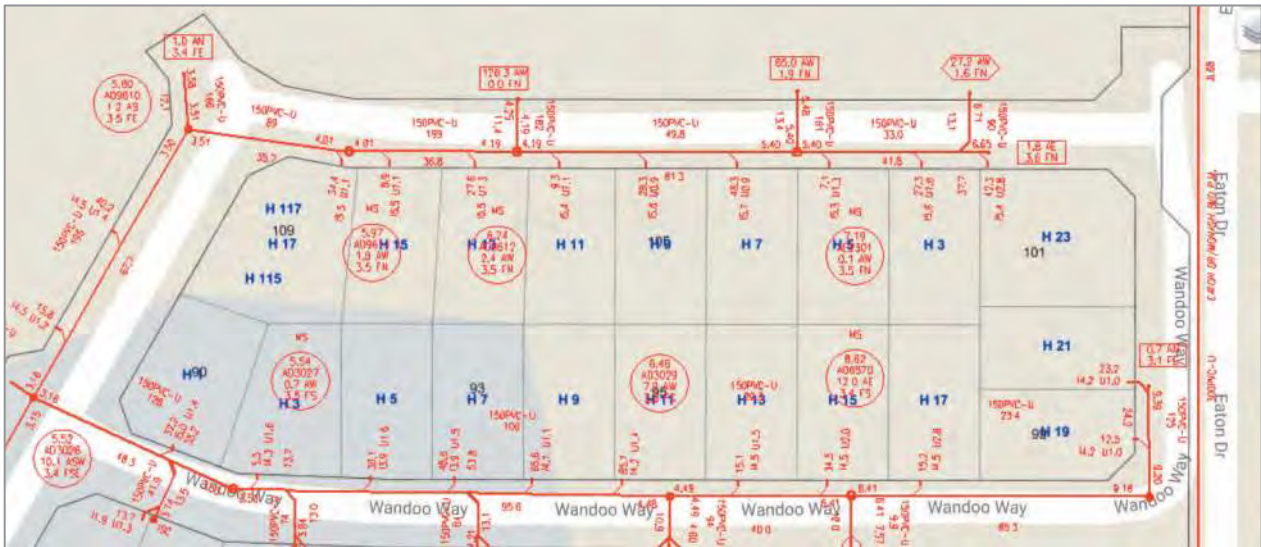


Figure 6: Existing Sewer Reticulation, Esinet Data, Water Corporation 2018

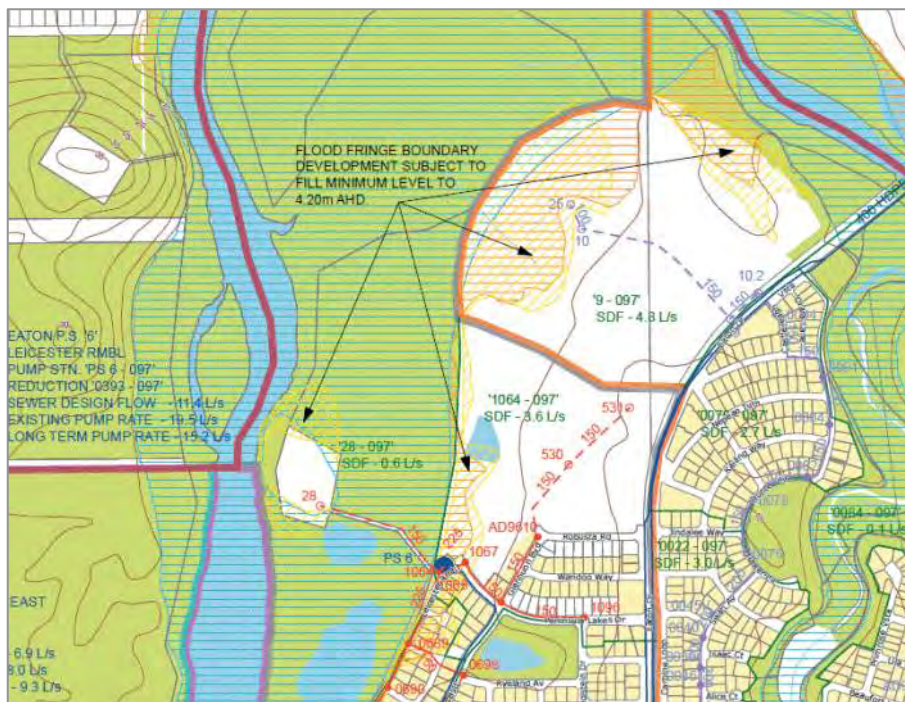


Figure 7: Sewer Plan, Water Corporation

12 Power

The HV concept plan will need to be revisited to ensure that alternative feeds are available and that the ringmain is maintained after every second transformer is installed. The HV concept plan will also be dependent on the stage sizes, location and timing to ensure compliance with WP requirements.

Underground power is to be provided to the development via the two High Voltage feeders available in Eaton Drive. No supply challenges are anticipated. All future developments are Option B (ie Western Power no longer supply cables and clearance can only be obtained on handover of infrastructure).

13 Telecommunications

It is expected that the telecommunications will be connected to the existing services available in Eaton Drive and to the south along Wandoo Way.

It is not expected that there will be a requirement for additional hubs or upgrades or backhaul to existing services for the telecommunications, but any backhaul requirements are unknown until a formal application is made.



(Appendix ORD: 12.2.2A Under E Separate Cover)



CONTACT US

GARY BARBOUR

Manager - South West

T 08 9791 4411

M +61 418 849 688

E Gary.Barbour@calibregroup.com

1st Floor, Unit 5, 53 Victoria Street,
Bunbury, WA 6230

WWW.CALIBREGROUP.COM