



Harley Dykstra

PLANNING & SURVEY SOLUTIONS

Note: This document represents an update to the Cardup Business Park Structure Plan compiled by RPS Australia East Pty Ltd. This update reflects the Schedule of Modifications (SPN / 0734) as issued by the Western Australian Planning Commission (WAPC).

Local Structure Plan

Cardup Business Park

Prepared by Harley Dykstra Pty Ltd for the Cardup Landowner Group

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ENDORSEMENT PAGE

This Structure Plan is prepared under the provisions of the
Shire of Serpentine-Jarrahdale, Town Planning Scheme No.4

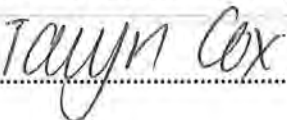
IT IS CERTIFIED THAT THIS STRUCTURE PLAN
WAS APPROVED BY RESOLUTION OF
THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

29 March 2019Date

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

29 March 2019Date

29 March 2029Date of Expiry

TABLE OF AMENDMENT(S)

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

Executive Summary

Local Structure Plan Cardup Business Park

The Local Structure Plan (LSP) area falls within the locality of Cardup in the Shire of Serpentine-Jarrahdale.

The subject land is situated immediately to the south of the Byford Townsite and is approximately 42 kilometres to the south east of the Perth CBD. The landholdings comprised within the subject land are held in multiple ownership.

The LSP area is generally bounded by Cardup Siding Road to the north, South Western Highway to the east, Norman Road to the south, and Robertson Road to the west.

The LSP area consists of industrial development providing the opportunity to develop the area into a high amenity industrial business park containing a wide variety of employment generating land uses.

The LSP includes a logical and robust road network, and linear drainage areas to respond to the natural hydrology of the subject land.

The provisions, standards and requirements specified under Part 1 of this LSP have the same force and effect as if it were a provision, standard or requirement of the Shire of Serpentine-Jarrahdale Town Planning Scheme No. 2 (TPS 2). Part 2 of this LSP is for explanatory purposes and to provide a descriptive analysis of the LSP.

In the event of there being any inconsistencies or conflict between the provisions, standards or requirements of TPS 2, and the provisions, standards or requirements of this LSP, then the provisions, standards or requirements of TPS 2 will prevail to the extent of any inconsistency.

The Structure Plan summary table below outlines the nature and key outcomes of the Structure Plan

ITEM	DATA
Total area covered by the Structure Plan	194.71 hectares
Area of each land use proposed: - General Industrial - Bush Forever	136.10 hectares 30.18 hectares
Total area of internal LSP reserves	18.12 hectares
Estimated lot yield	N/A
Estimated population	N/A
Total area of drainage	10.31 hectares

Part One - Implementation

1.0 Structure Plan Area

This Structure Plan shall apply to the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan map.

2.0 Operation

The date this Structure Plan shall come into operation is the date of approval by the Western Australian Planning Commission (WAPC).

3.0 Zones and Reserves

The Structure Plan delineates and depicts the zones and reserves applicable to the Structure Plan area according to the legend thereon.

The zones and reserves designated under this Structure Plan apply to the land in accordance with the corresponding zone or reserve under the Scheme.

4.0 Subdivision and Development Requirements

Subdivision and development shall generally be in accordance with the LSP or any variations as approved by the Shire of Serpentine-Jarrahdale and the Western Australian Planning Commission, and **Table A – General Subdivision and Development Requirements** of this LSP.

Table A – General Subdivision and Development Requirements

	Provision	Requirements
1	Subdivision	The minimum lot size prescribed within the Structure Plan area is 2,000m². Smaller lot sizes may be approved at the discretion of the Western Australian Planning Commission following consultation with the Shire of Serpentine-Jarrahdale. A lot size variation may be considered subject to the landowner providing justification that addresses site specific constraints and/or any other justification that clearly demonstrates prescribed minimum lots sizes are unnecessary or unachievable.
2	Industrial Buffers	Any impacts of development with respect to emissions (ie. Dust, gas, odour, light, fumes and noise) shall be managed in accordance with the Environmental Protection Authority <i>Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses</i> (EPA 2005). Notifications are to be placed on titles of all future lots within 1 kilometre of sensitive land uses to advise of the need to achieve separation distances in accordance with <i>Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses</i> (EPA 2005).
3	Noise Management	An Acoustic Assessment and Management Plan (where relevant) shall be undertaken as a condition of subdivision approval.
4	Dust Management	Any development contemplating dust generating activities shall be accompanied by a dust management plan to demonstrate dust is capable of being managed and monitored in accordance with EPA regulations.
5	On Site Effluent and Wastewater Management	At the development application stage, individual lots will be required to outline how industrial wastewater and onsite effluent disposal will be managed in accordance with the relevant guidelines. <u>Industrial wastewater management</u> The future management of industrial wastewater should be in accordance with the best practice recommendations outlined in <i>Water Quality Protection Note 51 Industrial Wastewater Management and Disposal</i> (DoW 2009b). The recommendations relating to the design and construction of industrial lots include, but are not limited to: • Manage stormwater runoff effectively, in accordance with an approved UWMP. • Industrial wastewater and the materials used for its treatment should be stored and used within weatherproof, chemically resistant or sealed

		containment compounds. Compounds should be built using low permeability materials, have chemically resistant or sealed surfaces, and be capable of storing at least 110% of the volume of the largest contained fluid storage vessel, plus 25% of the volume of all other containers within the compound. • Containment compounds should effectively capture leaking tank contents, contaminated stormwater, jetting fluids and residues from equipment misuse. • Contaminated fluids should be disposed of by draining into an internal collection sump for appropriate treatment, recovery or offsite disposal at an approved site. • Fueling facilities for vehicles, and machinery used for the treatment and disposal of wastewater should be constructed and operated to drain any spillage into holding tanks or well-maintained fuel recovery systems. • Fuels, solvents, explosives and dangerous goods should be controlled and stored in accordance with the Dangerous Goods Safety Act 2004. <u>On-site effluent disposal</u> Connection to a piped wastewater service is required where the service is within proximity and it is reasonable to require extension and connection. ATU's (or other similar methods of effluent disposal) may be considered as an alternative method of treatment where a piped wastewater service is not available. If this method is approved, the final treated effluent can then be disposed of within dedicated irrigation areas. The irrigation areas should: • Be sized appropriately depending upon the size of the ATU system and number of people serviced. • Include buffer areas (to be determined as a part of site-specific assessment) and fencing between the irrigation area and areas of human use. These buffer areas may be reduced by used subsurface dripper irrigation systems. • Include warning signs advising that effluent is being used and is not suitable for human contact or consumption. • Be accessible for maintenance. • Be planted out with salt and nutrient resistant plants to avoid pooling or run off of effluent. • Have a minimum clearance from maximum groundwater of 500 mm. In addition to the requirements for irrigation disposal areas, a number of factors must be considered prior to the
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		installation of ATUs on the site. These are outlined in the Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs) (Department of Health 2001). An ATU should be at least: • 1.2 m from any lot boundaries or buildings. • 1.8 m from the irrigation disposal area. • 6 m from any well, bore, dam or watercourse. Lot owners will be required to seek approval to install ATUs on lots from either the Shire of Serpentine-Jarrahdale or the Executive Director Public Health. The approval process will require a site-specific land capability assessment and site-specific design. The ATUs will require regular servicing at least every three months and this is required to be carried out by a person who has approval from the Executive Director Public Health.
6	Wetland Management Buffer	For the Conservation Category Wetland which occurs within the road reserve adjacent to the western boundary of the structure plan area, the following buffer management measures shall be implemented for the portion of the buffer which falls within the structure plan area: • Implementation of the LWMS and subsequent preparation and implementation of an UWMP. • Delineate the Conservation Category Wetland buffer boundary using fencing prior to clearing to ensure that no clearing is undertaken within the buffer. • Install a limestone access (or similar), for maintenance and fire management, along the length of the buffer on the development side with access gates provided at either end of the access track. Gates should be constructed in accordance with the specifications contained in the Shire of Serpentine-Jarrahdale LPP 43. This access track should connect with a track extending from the north of the buffer to the northern boundary of the site, along the interface between the development and Bush Forever Site 350. • Undertake weed removal and revegetation in the wetland buffer with local native species (preferably fire and dieback-resistant species). • Install permeable fencing along the Conservation Category Wetland boundary on the development side to enable passive surveillance of bushland from within the development.

Part One

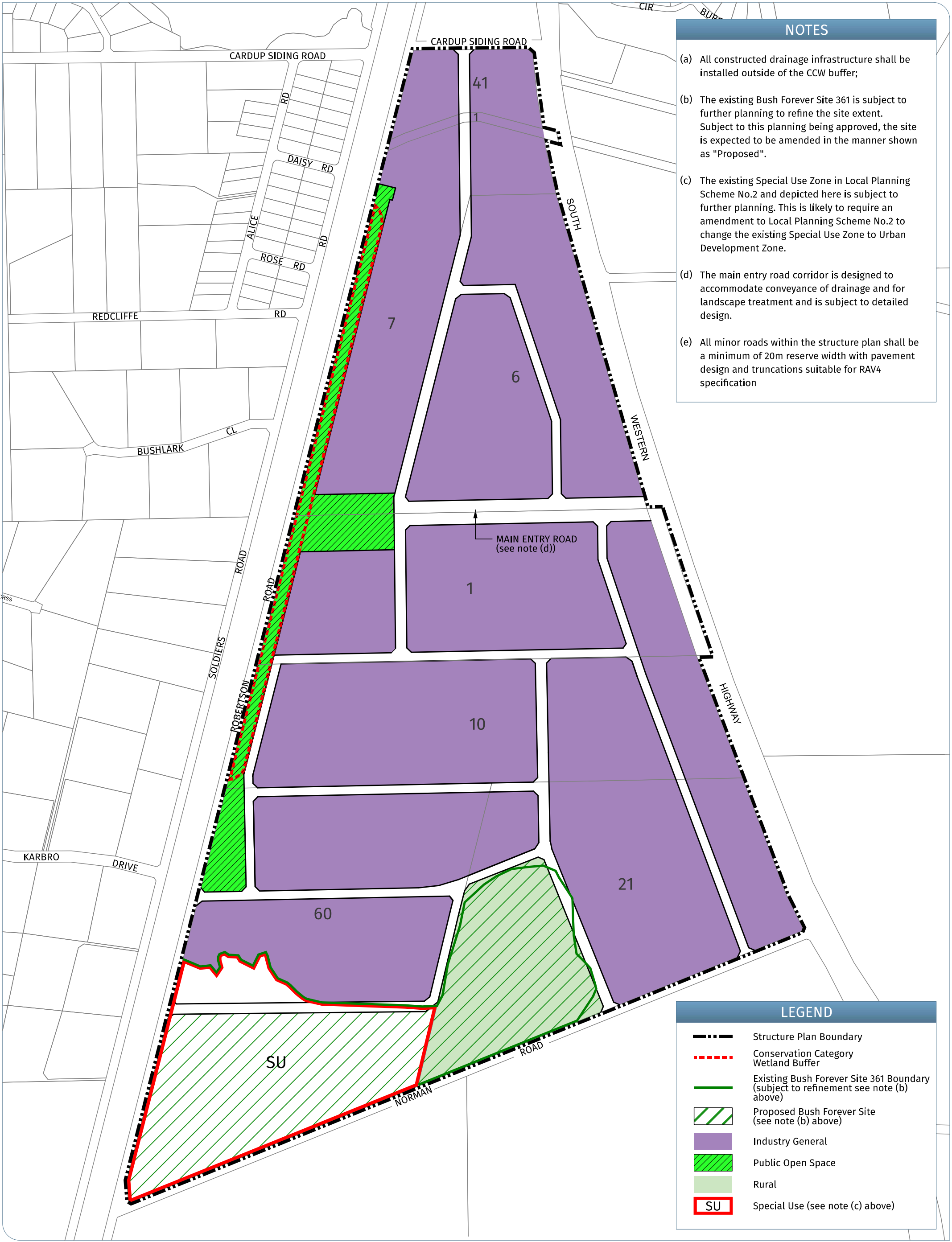
Implementation

Local Structure Plan Cardup Business Park

7	On Site Stormwater Drainage Management and Reuse	Stormwater drainage areas shall generally be provided in accordance with the Department of Water approved Local Water Management Strategy. An Urban Water Management Plan shall be approved as a condition of subdivision approval.
8	Fire Management	Development that falls in close proximity to areas containing remnant vegetation shall incorporate management measures as outlined in the Cardup Business Park Integrated Landscape Management Strategy in order to reduce the impacts of bushfire on life, property and the environment.
9	Bush Forever Interface	Appropriate interfaces/treatment that protect and maintain environmental values shall be provided along the boundaries of any Bush Forever sites. Subdivision and development applications shall provide details and illustrations of these treatments.
10	Waste and Refuse Management	Waste and refuse management measures shall be outlined to demonstrate that solid waste and putrescibles generated by development are appropriately captured and contained at the source, and are disposed of in a manner which does not adversely affect the environment. Recycling measures shall also be outlined to demonstrate environmental benefits.
11	Site Planning and Design	Site planning and design including site coverage, streetscape, fencing, landscaping, signage, car parking, vehicle access, building design and energy and water use efficiency shall have regard to the Cardup Business Park Design Guidelines to be approved by the Shire of Serpentine-Jarrahdale prior to subdivision and development being undertaken.
12	Landscape	The following investigations and management plans shall be undertaken as a condition of subdivision/development approval: <i>A landscape management plan shall be undertaken as a condition of subdivision approval to address the implementation of the management elements for the applicable management areas in accordance with the integrated Landscape Management Strategy.</i>

Plan 1

Structure Plan Map



- NOTES
- (a)

All constructed drainage infrastructure shall be installed outside of the CCW buffer;
- (b)

The existing Bush Forever Site 361 is subject to further planning to refine the site extent. Subject to this planning being approved, the site is expected to be amended in the manner shown as "Proposed".
- (c)

The existing Special Use Zone in Local Planning Scheme No.2 and depicted here is subject to further planning. This is likely to require an amendment to Local Planning Scheme No.2 to change the existing Special Use Zone to Urban Development Zone.
- (d)

The main entry road corridor is designed to accommodate conveyance of drainage and for landscape treatment and is subject to detailed design.
- (e)

All minor roads within the structure plan shall be a minimum of 20m reserve width with pavement design and truncations suitable for RAV4 specification

LEGEND

	Structure Plan Boundary
	Conservation Category Wetland Buffer
	Existing Bush Forever Site 361 Boundary (subject to refinement see note (b) above)
	Proposed Bush Forever Site (see note (b) above)
	Industry General
	Public Open Space
	Rural
	Special Use (see note (c) above)

LOCAL STRUCTURE PLAN

Cardup Business Park
CARDUP

Plan No. | 21228-01B

Date | 12/01/18

Drawn | BdR

Checked | RD

Revision | B

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Scale | 1:7500@A3

0 100m 200m

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

Harley Dykstra

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Part Two - Explanatory Report

DOCUMENT CONTROL

Control Version	DATE	Status	Distribution	Comment
Original Document as issued by RPS Australia East Pty Ltd This document as issued by Harley Dykstra is to comply with the Schedule of Modifications SPN/0734 required by the Western Australian Planning Commission in its review of the original document.				
A	7.10.2017	DRAFT	Internal	Review WAPC modifications
B	16.2.2018	DRAFT	Internal	Review Tech Report inputs
C	9.5.2018	FINAL	Landowner Group / WAPC/ Shire of SJ.	FINAL with inclusion of Bushfire Management Plan (BMP)

Prepared for: Cardup Business Park Landowner Group
 Prepared by: Harley Dykstra (update to RPS document)
 Job No: 21228
 Ref: 21228 LSP 9.4.2018

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This document has been exclusively drafted. No express or implied warranties are made by the Consultant regarding the research findings and data contained in this report. All of the information details included in this report are based upon the existent land area conditions and research provided and obtained at the time the Consultant conducted its analysis.

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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- Appendix 2: *Integrated Landscape and management Strategy*
- Appendix 3: *Local Water Management Strategy*
- Appendix 4: *Traffic Impact Assessment*
- Appendix 5: *Engineering Servicing Report*
- Appendix 6: *Bushfire Management Plan*

1. PLANNING BACKGROUND

1.1 Introduction and Purpose

This Local Structure Plan (LSP) has been prepared on behalf of the Cardup Landowner Group.

The purpose of this LSP is to facilitate the future subdivision and development of the subject land, and to provide flexibility to provide a range of different business and industries that will assist in facilitating employment generation and satisfying an unmet need for general industrial zoned land in the district.

In addition to the planning considerations canvassed within the LSP, the preparation of this LSP has been informed by a number of technical and design investigations, which are referred to in this report and the accompanying appendices.

The Structure Plan has been compiled by Harley Dykstra based primarily on an earlier document compiled by RPS Consultants and in collaboration with a project team who have provided input in relation to matters as follows:

Environmental Assessment and Management Strategy	Emerge Associates
Integrated Landscape Management Strategy	Emerge Associates
Local Water Management Strategy	Emerge Associates
Traffic Impact Assessment	Cardno
Engineering Servicing Report	JDSi

These technical reports are appended to Part Two of this LSP and key findings are reflected.

This document reflects the requested modifications of the WAPC in its approval dated 29 May 2017, subject to a Schedule of Modifications being completed. Technical reports annexed to this document similarly reflect required WAPC modifications.

1.2 Legal description and ownership

The subject land is comprised of eight (8) landholdings, with a total land area of 194 hectares. These landholdings are formally described as follows:

Table 4 – Land Title Particulars

Lot No.	Registered Proprietor	Certificate of Title Details	Lot Area
41	CC Wormall Pty Ltd	1455/96	4.7158ha
1	Bristile Holdings Ltd	1482/82	0.7869ha
7	Samantha Rachel Spillmann Brian John O'Neil Diane Shirley Bosveld Elizabeth Oetje Bosveld Intrepid Bay Pty Ltd Cooljade Pty Ltd	1763/506	20.01ha
6	Cardup Industrial Land Holdings Pty Ltd	1772/111	26.9374ha
1	Redire Pty Ltd	1421/503	29.9925ha
10	Silvagold Corporation Pty Ltd	1863/686	29.1968ha
21	Jetstar Enterprises Pty Ltd	1684/388	35.6438ha
60	Kandalee Pty Ltd/Mecca Holdings Pty Ltd	2672/275 & 2672/276	47.3903ha

A location and aerial plan illustrating the location of the subject land and surrounding context is provided in **Figure 1** and **Figure 2** respectively.



Figure 1

LOCATION PLAN

Cardup Business Park
CARDUP

Plan No. | 21228-02A
Date | 05/10/17
Drawn | JPW
Checked | RD
Revision | A

Scale | As noted

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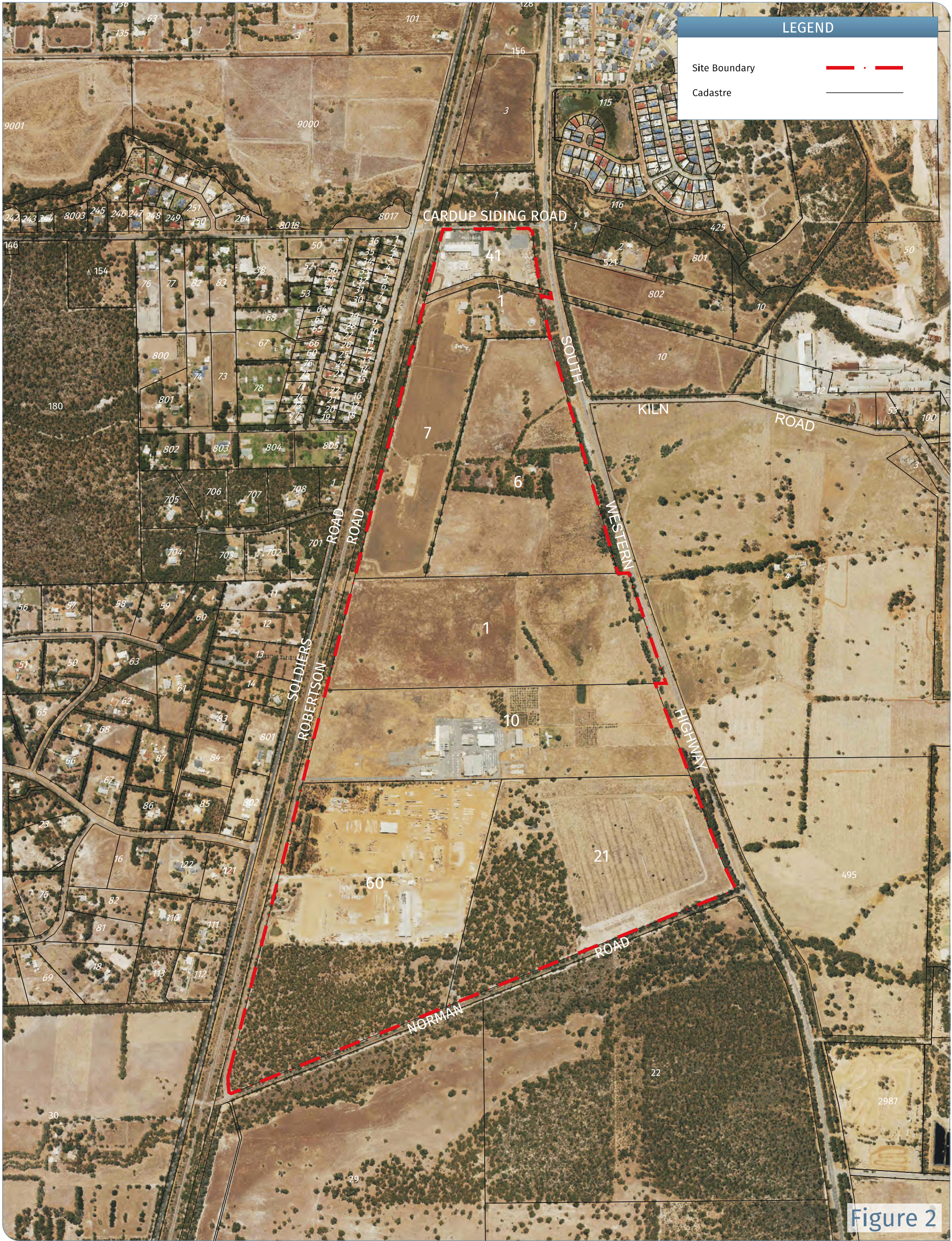


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AERIAL PLAN

Cardup Business Park
CARDUP

Plan No. | 21228-03B
Date | 05/10/17
Drawn | JPW
Checked | RD
Revision | A
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0 100m 200m 300m

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2.0 PLANNING FRAMEWORK

2.1 Metropolitan Region Scheme

The subject land is zoned 'Industrial' and 'Rural' in the Metropolitan Region Scheme (MRS).

2.2 Shire of Serpentine-Jarrahdale Town Planning Scheme No.2

The subject land is zoned 'Urban Development' and 'Rural' in the Shire of Serpentine-Jarrahdale Town Planning Scheme No.2 (TPS2). A portion of the land is zoned 'Special Use'.

The 'Rural' and 'Special Use' zoned land areas reflect the existing Bushforever Site 361. This is subject to future planning (boundary rationalisations) as noted in the WAPC's approval of this LSP and noted on the LSP Plan.

The Scheme provisions applicable to the Urban Development zone provide that subdivision and development is to be in accordance with a Structure Plan adopted pursuant to Section 5.18 of TPS2.

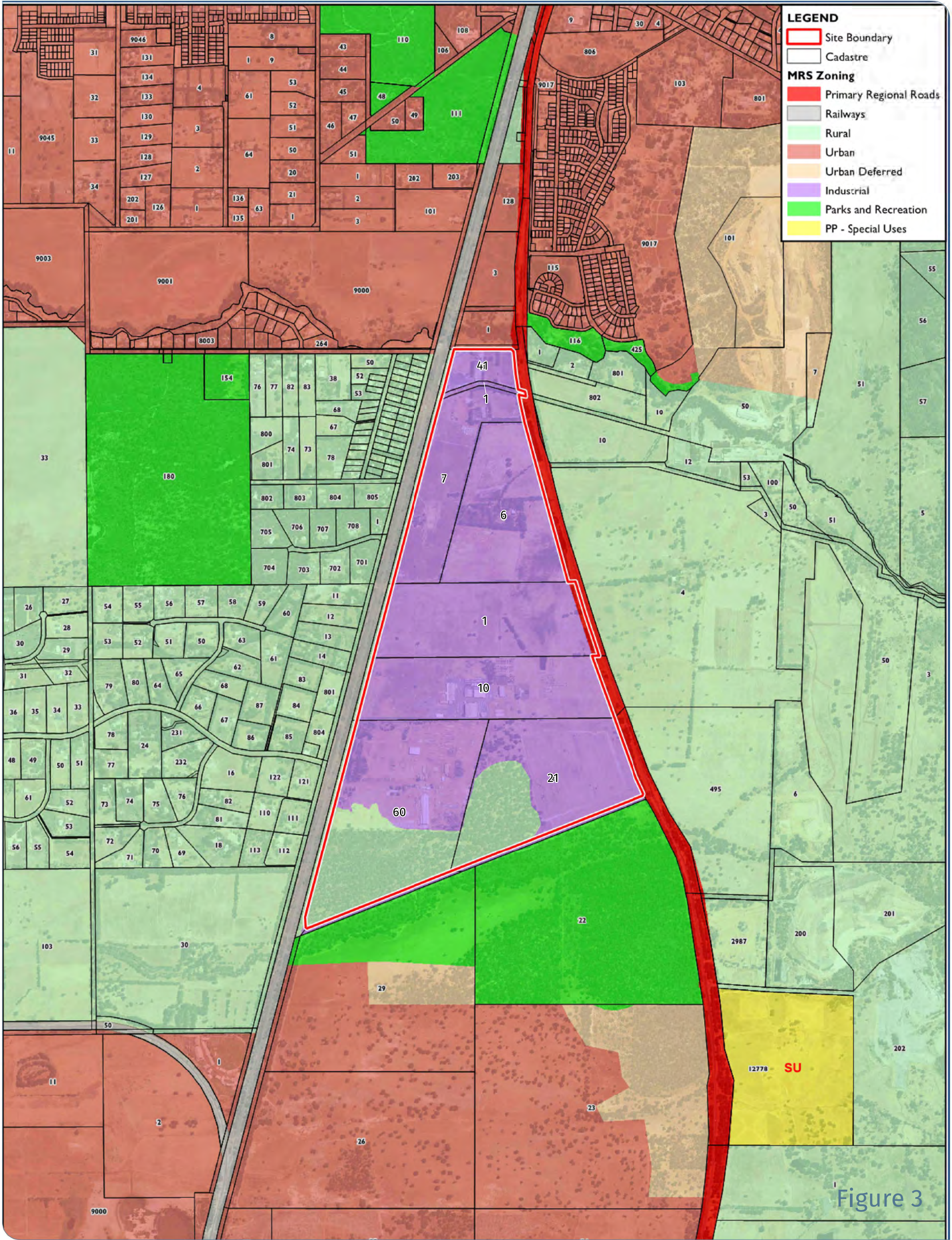
An MRS and TPS zoning plan are provided in **Figure 3** and **Figure 4** respectively.

2.3 Perth and Peel @ 3.5Million

The Perth and Peel land use planning and infrastructure frameworks are intended to guide urban development for the next 30 years. They were released by the WAPC in final form in March 2018 and show the Cardup Business Park as 'Industrial'.

2.4 Shire of Serpentine-Jarrahdale LPS and TPS3

The Shire is presently reviewing its TPS2 and at its December 2017 Council Meeting, considered the draft new Local Planning Strategy (LPS) and draft Town Planning Scheme No. 3 (TPS3). The draft LPS identifies the Cardup Business park land as 'Service Commercial'. The draft TPS3 zoning plans show the land as "Urban Development" zone.



MRS ZONING LOCATION PLAN

Cardup Business Park
CARDUP

Plan No. | 21228-04A
Date | 05/10/17
Drawn | JPW
Checked | RD
Revision | A

Scale | NTS

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3.0 SITE CONDITIONS AND CONSTRAINTS

All matters relating to the environmental attributes and values of the site have been identified and outlined in an Environmental Assessment and Management Strategy prepared by Emerge Associates, which is contained within **Appendix 1** of this report.

All matters relating to the management of the environmental attributes and values of the site in response to the design of the LSP have been identified and outlined in an Integrated Landscape and Management Strategy prepared by Emerge Associates, which is contained within **Appendix 2** of this report.

Many of the key environmental management measures that will need to be implemented at the subdivision and development stage have been provided for in Table A of Part One - Implementation. The inclusion of these environmental management measures as part of the statutory provisions will provide certainty for the local authority, and future developers in terms of the implementation and enforcement of critical measures to ensure the environmental attributes of the site are appropriately managed, including the control of off-site impacts.

3.1 Landform and Soils

3.1.1 Topography

The topography of the site is undulating, with a general slope to the west. The natural surface height ranges from its lowest elevation of 48 m Australian Height Datum (m AHD) in the south west corner to its highest elevation of approximately 80 m AHD in the south east corner, resulting in a generally western aspect. The slope of the land is relatively even across the site, with an average slope of 2%.

3.1.2 Landform and Soils

A geotechnical investigation was completed by Galt Geotechnics in 2013. The site was identified as being categorised into the following geological areas:

- A thick lateritic gravel horizon overlain by sand and clayey sand within the western and central portion of the site.
- Thick lateritic gravels overlying clayey sand / sandy clay within the southern portion of the site.
- Sand and clayey sand overlying clayey lateritic gravels within the eastern and northern portions of the site.

3.1.3 Acid Sulfate Soils

Acid sulfate soils (ASS) is the name commonly given to naturally occurring soils and sediment containing iron sulphide (iron pyrite) materials. Available information from the Department of Water and Environmental Regulation (DWER) indicates that the majority of the site has 'no known risk of ASS occurring within 3 m of the natural soil surface' (DWER 2018). A portion of the site, located along the south-eastern boundary is classified as having 'low to moderate risk' of ASS (DWER 2018).

ASS is only likely to be a potential risk where civil construction works extend below the seasonally dry soils (i.e. below the permanent groundwater table and is typically associated with the installation of deep sewer) and can be appropriately managed through the subdivision process.

3.2 Biodiversity and Natural Area Assets

3.2.1 Biodiversity and Natural Areas

The biodiversity values of the site have been determined based on a number of site specific investigations including:

- *Cardup Business Park Spring Flora and Vegetation Survey and Wetland Assessment*, (Cardno 2009).
- *Fauna Assessment of Cardup Business Park* (Harewood 2013)

The majority of the site has been historically cleared for agricultural uses, predominantly grazing, and is generally characterised by cleared paddocks with scattered paddock trees and therefore contains limited flora, vegetation and fauna values. An area of remnant vegetation is located within the southern portion of the site and contains conservation significant vegetation values, such as a threatened ecological community (TEC), namely '*Corymbia calophylla* – *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain', and black cockatoo foraging and potential breeding and roosting habitat. This vegetation forms part of Bush Forever Site 361 and is proposed to be retained as part of the proposed development.

In addition, a regional ecological linkage has been identified adjacent to the southern, western and northern boundaries of the site and is associated with the surrounding Bush Forever sites and link eastward to the Darling Range Regional Park. Ecological linkages are typically arbitrarily identified as 500 m wide corridors, with the intention to create interconnected networks of vegetation through the Perth metropolitan region. The proposed development does not prevent these linkages occurring and supports their provision through the retention of Bush Forever Site 361, and the provision of a green linkage through the central portion of the site.

3.2.2 Groundwater

Site specific groundwater monitoring has been undertaken for the site (Cardno 2009) and indicates that for the majority of the site, groundwater is located six metres or more below the natural ground surface. Within the central-eastern portion of the site, groundwater was identified between zero to four metres below the natural ground surface.

3.2.3 Surface Water

The site is located within the Peel-Harvey catchment, specifically the Serpentine sub-catchment. A constructed open drain runs east-west through the central portion of the site and conveys water from the land east of South Western Highway through the site, to the wetland within the rail reserve west of the site. Cardup Brook, a minor natural waterway, is located adjacent to Cardup Siding Road, found directly north of the site.

3.2.4 Wetlands

A review of the *Geomorphic Wetlands of the Swan Coastal Plan* dataset (DBCA 2018) indicates that the majority of the site is mapped as a number of multiple use wetland (MUW) (namely wetlands with the following unique feature identification number (UFI# 15382; UFI#12161, UFI#14543 and UFI#15383).

A conservation category wetland (CCW) (UFI#14505) is identified adjacent to the western boundary of the site, within the rail reserve and Bush Forever Site 350. As part of the proposed development within the site, the local structure plan includes provision of a portion of 50 m buffer to the CCW to be accommodated adjacent to the western boundary of the site. The wetland buffer will be revegetated and is discussed further within **Appendix 2 (Integrated Landscape Management Strategy)**.

3.3 Heritage

3.3.1 Indigenous heritage

The classification and general location of all known Aboriginal heritage sites is made publicly available through the Department of Planning, Lands and Heritage (DPLH) *Aboriginal Heritage Inquiry System* (AHIS) online database. Based on a review of the AHIS online database (DPLH 2018), no registered Aboriginal heritage sites were identified within the site, though one registered Aboriginal heritage site, Site 16108 Cardup Brook (classified as a 'Mythological' site), was identified adjacent to the northern boundary of the site.

3.3.2 Non-Indigenous Heritage

A search of the Shire of Serpentine Jarrahdale Municipal Heritage Directory (SoSJ 2018), the State Heritage Office database (Heritage Council 2018) and the Australian Heritage Database (Department of the Environment 2018) indicated that no registered heritage sites have been identified within the site.

One nationally listed place of significance, Cardup Bushland, occurs 900 m to the west of the site (DoEE 2018). It is described as part of the remnant bushland of the eastern Swan Coastal Plain and is found close to the foot of the Darling Scarp. A stand of redgum trees located approximately 260 m to the west of the site is listed on the Shire of Serpentine Jarrahdale's municipal inventory as a significant vegetation historic site.

3.4 Existing Land Uses

Historically and at present the majority of the site has been used for rural purposes, grazing of livestock or uses associated with growing and treating timber, wood chips and saw dust. Specific uses include:

- Lot 7 South Western Highway historically contained an airstrip and was used for the purposes of building and flying ultra-light aircraft.
- Lot 10 Soldiers Road currently has an industrial land use and is primarily used for timber distribution and roofing truss manufacture. In the past this lot was used as a timber mill, however no milling is currently undertaken.
- Lot 60 Soldiers Road contains two operating businesses. One business manufactures and chemically treats a range of plantation pine log products for use in fencing, landscaping and horticultural applications. The operation consists of significant infrastructure, including a large storage yard, several sheds, large storage tanks and workshops. The other manufactures prefabricated cement walls for the building industry. The facility contains a large workshop, a small sealed and an unsealed storage yard. The southern portion of this lot is fenced and consists of remnant and regrowth native vegetation.
- Lot 21 Norman Road is predominantly remnant vegetation, with a portion of the lot used historically as a tree plantation.

3.5 Nearby Land Uses

The site is located nearby to:

- Areas of proposed conservation, associated with a number of Bush Forever Sites located adjacent to the northern, western and southern boundaries of the site.
- Urban development, with development to the south and south-west part of the large Whitby-Mundijong District Structure Plan area, which is a large urban cell proposed to support residential development in the area. To the north, the land is associated with the future Byford Town Centre, which will include commercial and urban land uses.
- A freight and passenger rail, located adjacent to the western boundary of the site. Rural residential development is located further to the west of the rail and includes a number of lifestyle lots used for a range of different pursuits.
- South Western Highway, located adjacent to the eastern boundary of the site and is a major arterial road for the Perth metropolitan region. Further east of South Western Highway are rural land uses, largely associated with grazing, as well as basic raw material extraction (predominantly for clay and hard rock) and land fill activities.

3.6 Bushfire Risk

A Bushfire Management Plan (BMP) has been prepared for the site (Emerge Associates and Bushfire Safety Consulting 2018), in accordance with *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7) (WAPC 2015), the *Guidelines for Planning in Bushfire Prone Areas Version 1.3* (the Guidelines) (WAPC and DFES 2017) and *Australian Standard 3959-2009 Construction of buildings in bushfire prone areas* (AS 3959) (Standards Australia 2009).

The assessment undertaken indicates that:

- Vegetation within Bush Forever Site 361, in the southern portion of the site, has been classified as a mix of 'forest' and 'woodland' vegetation, and is identified as having an 'extreme' hazard rating.
- The proposed buffer to a conservation category wetland, adjacent to the western boundary of the site, is currently largely paddock grasses, however is proposed to be revegetated as 'scrub' vegetation as part of future development and will therefore have an 'extreme' hazard rating.
- Overall, in the post-development scenario, the majority of site will be subject to 'low' hazard rating as the entire site (except for areas of retained vegetation or areas of revegetation) will be considered 'low threat' in accordance with Clause 2.2.3.2 of AS 3959. Where future lots are within 100 m of nearby Bush Forever Sites or the proposed conservation category wetland buffer area, these lots will be subject to a 'moderate' hazard rating.

The management of potential bushfire hazards is considered further in Section 4 and the BMP, provided in **Appendix 6**.

3.7 Management of Off-Site Impacts

3.7.1 State Planning Policy 4.1 – State Industrial Buffer Policy

SPP4.1 is the current existing policy dealing with industrial land use separation. The WAPC recently advertised a draft new version of SPP4.1, renamed as “SPP4.1 – Industrial Interface”.

With regard to *State Planning Policy 4.1*, emissions from industry are to be managed within the boundaries of Cardup Business Park within an on-site buffer area (i.e. emissions shall be managed within the lot boundary or within the boundary of Cardup Business Park).

It will be the responsibility of future landowners/developers to ensure that development is located appropriately within Cardup Business Park to meet requirements.

The Statutory Provisions outlined in Part One of this report will ensure that any measures required in order to contain the impact of industrial development within the boundaries of the subject land shall be implemented up front at the development application stage.

SPP4.1 recognises the need to implement buffers. The provisions of this LSP provide the statutory framework to implement the key principles of SPP4.1, with *Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA 2005)* to inform the buffer sizes. The EPA Guidance Statement is explained in further details as follows.

3.7.2 Guidance on Separation Distances

The Environmental Protection Authority (EPA) and Department of Environment Regulation (DER) approach to protecting the amenity of sensitive land uses from industrial land uses and their associated emissions is based on the following hierarchy.

- Avoidance of impacts.
- Individual industry to take all reasonable and practicable measures to prevent or minimise emissions from their premises by implementing best practice.
- Ensure environmental impacts from industrial emissions are acceptable and meet the relevant regulations and health criteria beyond the boundary of the site, industrial estate or buffer area.

There are a number of regulations and policies that have been implemented to support the objectives of the Environment Protection Act 1986. The EPA has also prepared various guidance documents to assist in considering the potential impact on the environment from various activities.

Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA 2005) recognises that there is the potential for emissions such as noise, gas, dust and odours generated by a wide range of land uses, including industrial, commercial and rural activities and infrastructure, to exceed amenity levels considered acceptable in residential areas (and at other sensitive land uses), or pose a health risk to the community.

The Guidance Statement has been prepared by the EPA to provide advice on generic separation distances between specific industry and sensitive land uses, to support the planning process, and to identify the requirement for more detailed site-specific investigations.

The generic separation distances detailed within the Guidance Statement are not intended to be absolute separation distances but rather are a tool to assist in avoiding or minimising the potential for land use conflict by:

- Identifying the need for a specific separation distance or buffer definition investigations.
- Providing general guidance on separation distances in the absence of site specific

technical studies.

Therefore, *Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA 2005)* is an appropriate tool to determine when more information is required in order to demonstrate that appropriate separation distances have been achieved.

3.7.3 Application of EPA Guidance Statement to Cardup Business Park

General Industrial land uses encompass a wide range of activities that may or may not result in emissions that could affect the amenity levels considered acceptable in residential areas or other nearby sensitive land uses. The extent of emissions from a particular activity will depend on site and process-specific factors such as the scale of the operation, plant processes and emission controls, storage of raw material and waste, local wind patterns and topography.

The design of the facility and the process controls and management measures are a significant consideration when determining potential impacts and/or appropriate separation distances. Generally, these factors will not be determined until the planning approval stage, when operation of the proposed facility is well understood.

Under the Guidance Statement, it is recognised that the design of a facility and the process controls and management measures implemented within the facility can mitigate potential impacts, and therefore generic separation distances are not always relevant or appropriate.

The size and extent of Cardup Business Park means that a wide range of industry-type activities can be accommodated within the site. It is not necessary to specify particular separation distances at the local structure planning stage as it will be the responsibility of the future operators to ensure that the lot is suitable for the proposed activity, and to demonstrate that emissions are managed and do not extend outside the boundary of Cardup Business Park, and where relevant, that the required separation distances to sensitive land uses are achieved.

3.7.4 Future approval process

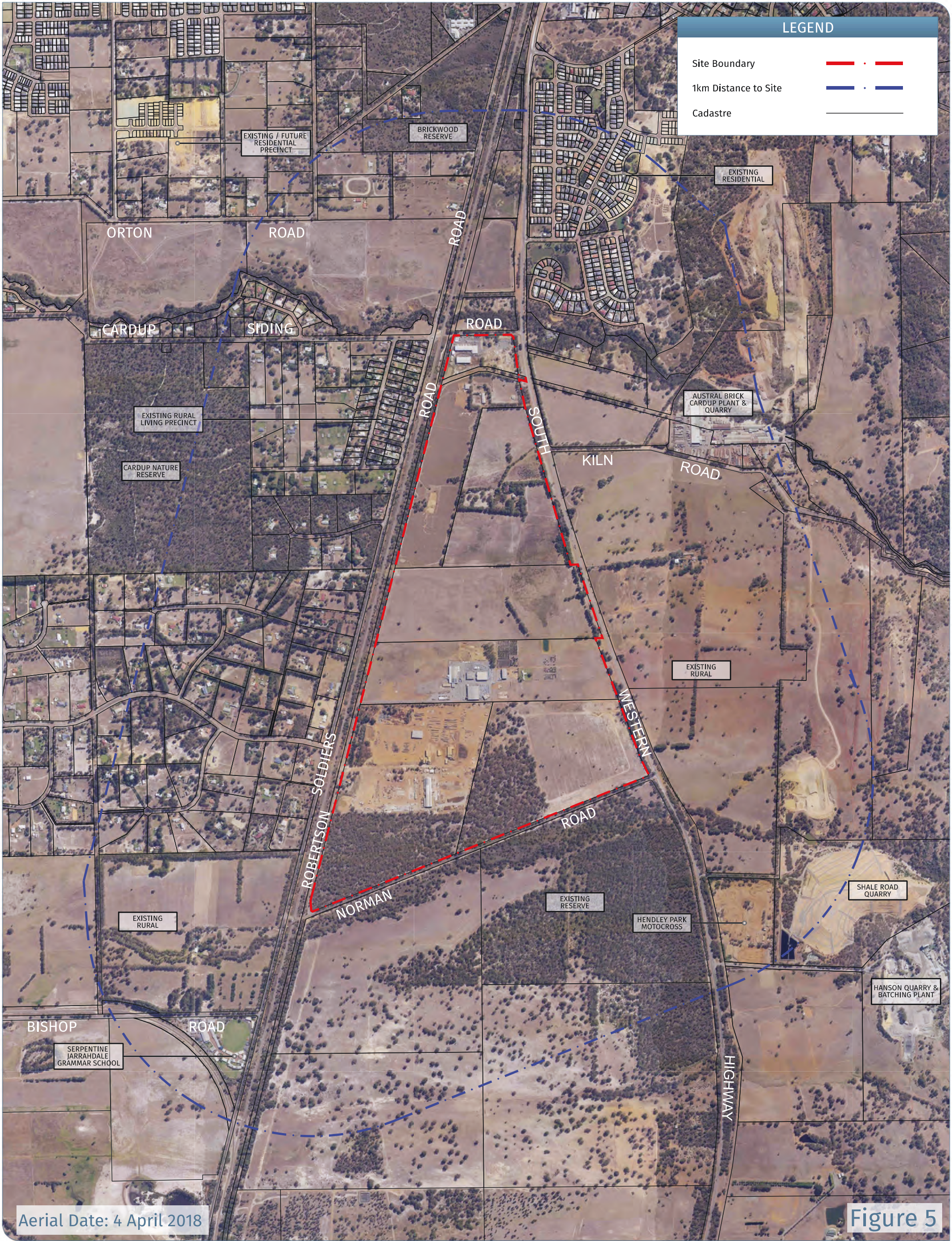
Since existing sensitive land uses are situated in nearby proximity to the local structure plan area (See **Figure 5**), the Guidance Statement provides that it will be the responsibility of the future operator to ensure that the relevant separation distances are achieved.

As part of the development approval process, where requested by the Shire of Serpentine-Jarrahdale the proposed facility should be able to demonstrate that it:

- Meets the relevant legislative requirements, including but not limited to the Environmental Protection Act 1986 and its associated regulations.
- Achieves the generic separation distances (where applicable), outlined within *Guidance for the Assessment of Environmental Factors No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA 2005)*.
- Where required, has undertaken site specific technical investigations to specify a separation distance that is different to the generic separation distances.
- Details how the design, process controls and management measures proposed appropriately manage any potential impacts from the proposed industry.

Separate to the planning process, where applicable under Part V of the Environmental Protection Act 1986 (administered by the DER), operators will be required to obtain a works approval (for construction), and a licence or registration (for operation) for facilities that are prescribed in Schedule 1 of the Environmental Protection Regulations 1987 (EP Regulations). There are 89 categories of facility currently prescribed.

It is also proposed that any future lots that are created within 1 kilometres of nearby sensitive land uses have notifications placed on title to make purchasers aware of the need to achieve appropriate separation distances in accordance with *Guidance for the*



Aerial Date: 4 April 2018

Figure 5

LAND USE PLAN

Cardup Business Park
CARDUP

Plan No. | 21228-07
Date | 11/05/18
Drawn | JW
Checked | RD
Revision | A

PERTH & FORRESTDALE:
Lvl 1, 252 Fitzgerald St
PERTH WA 6000
1/2 Hensbrook Loop,
FORRESTDALE WA 6112
T: 08 9495 1947
E: metro@harleydykstra.com.au

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ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

Scale | 1:15000@A3

0 200m 400m

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

4.0 LOCAL STRUCTURE PLAN

4.1 Design Principles

The LSP has been designed to facilitate a wide variety of lot sizes to accommodate various types of general industrial uses. The final lot sizes will ultimately depend on the types of uses proposed. For instance, it is expected that uses such as warehousing, transport and logistics business and the like will be attracted to the area. These uses may typically require a lot size ranging from 2-5 hectares in area. Other types of uses that might typically be expected to take advantage of exposure to the South Western Highway will be showroom type uses which would start at a minimum lot size of 2,000m².

Ultimately, the design of the LSP in terms of the street block spacing is sufficiently robust to accommodate a wide variety of employment generating land uses that broadly fit within the 'General Industrial' zoning/land use criteria provided for in TPS 2.

The LSP identifies the following land uses:

- (1) General Industrial – development to be in accordance with the provisions of TPS 2 for 'General Industrial'; and
- (2) 'Public Open Space' – future reserve for drainage and to accommodate CCW buffer requirement.

4.2 Environmental Assessment and Management Strategy

The Environmental Assessment and Management Strategy (EAMS) identifies the major environmental attributes and values within the site, and the management of these values through the LSP and as part of future subdivision and development. The LSP provides for the management of environmental values through:

- Consideration of the need for an acid sulfate soil management plan for future development within the south-eastern portion of the site if required. The potential for acid sulfate soils to occur is only likely to be a consideration where excavation extends more than three metres below the existing natural soil surface, or the permanent groundwater table;
- The retention of areas of remnant vegetation within the southern portion of the site (that contain conservation significant vegetation and fauna habitat values), which are proposed to be protected in perpetuity as part of Bush Forever Site 361. A hard interface, in the form of a public road is provided between Bush Forever Site 361 and future lots, to provide separation between the vegetation values and future development;
- The provision of:
 - A public open space corridor adjacent to the western boundary of the site, to support the provision of a buffer to the conservation category wetland located within the rail reserve adjacent to the site. This area will be revegetated as part of future development and will include the provision of a fire break/access track adjacent to future lots;
 - Public open space areas to support the conveyance and treatment of stormwater across the site.

- Minimising potential noise impacts from future development, through appropriate noise mitigation measures. A noise assessment was prepared for the site and outlines sound power levels proposed industrial land uses will need to meet to minimise noise impacts on nearby existing residents in accordance with the Environmental Protection (Noise) Regulation 1997 (and is provided in **Appendix 1 Environmental Assessment and Management Strategy**).
- The assessment indicates that the central and southern portion of the site is best suited for higher noise emission industries, and that built form could provide noise attenuation, however noise mitigation should be addressed as part of development approval process when detail on the proposed land use is known; and
- Providing appropriate bushfire mitigation, through the location of the public road network and firebreaks/access tracks to provide separation to the main bushfire hazards, namely Bush Forever Site 361 (within the southern portion of the site) and Bush Forever Site 350 (adjacent to the western boundary of the site).

4.3 Local Water Management Strategy

A Local Water Management Strategy (LWMS) has been prepared and updated for the site to support the LSP and considers the principles detailed in the *Cardup Business Park District Water Management Strategy* (Cardno 2011). The LWMS is provided in **Appendix 3** and details the stormwater management strategy for future development to maintain or improve existing surface water flows and groundwater quality and is based on the following:

- The pre-development surface water discharge rates will be maintained and will be based on:
 - Lot drainage: the first 15 mm of rainfall will be retained within the lot and treated, and up to the 1% annual exceedance probability (AEP) will be detained with outflow matching the predevelopment rates.
 - Development drainage: within the road network, the first 15 mm will be conveyed to downstream detention swales and basins where water will be treated. Up to the 1% AEP will be detained, with outflow matching predevelopment rates.
 - Arterial flow drainage: will maintain existing flows from upstream catchments through the development
- Reducing the total nutrient load through the treatment of surface water runoff from small rainfall events.
- Providing appropriate separation between maximum groundwater levels and infrastructure (including onsite wastewater treatment), which may include the use of fill or sub-soil drainage where the natural surface levels do not provide adequate separation (however will be based on lot specific requirements).
- Minimising net water use within the development through encouraging the use of waterwise gardening principles, water efficient fittings and appliances, and promotion of rainwater tanks.

4.4 Integrated Landscape Management Strategy

An Integrated Landscape Management Strategy (ILMS) (**Appendix 2**) has been prepared for the site to provide a comprehensive approach to addressing the future management requirements for the various environmental values identified within the site or nearby as part of subdivision and development and is intended to replace the requirement for multiple management plans. Four 'management areas' have been identified within the site and are associated with specific values or management approaches and include:

- Conservation Category Wetland Buffer
- Bush Forever Interface
- Drainage Reserves/Public Open Space
- Subdivision area

Where these management areas are identified, a range of management elements may need to be addressed at subdivision and development and will likely require the preparation of a Landscape Management Plan as a condition of subdivision approval. Management measures that will be required include (but are not limited to):

- Maintenance of hydrological regimes in accordance with the LWMS, including provision of conveyance and detention basins.
- Revegetation of the wetland buffer area based on the 'planting in conservation area' requirements, detailed within the ILMS.
- Installation of appropriate conservation fencing and vehicle access within the wetland buffer area and/or adjacent to Bush Forever Site 361.
- Minimising potential for dieback to be introduced to the wetland buffer area and Bush Forever Site 361 through vehicle hygiene practices as part of construction, and planting with dieback-free plant stock.
- Inspecting paddock trees for fauna prior to removal, and if found, appropriate relocation of fauna species.

4.5 Movement Networks

A Traffic Impact Assessment report has been prepared by Cardno in accordance with the Western Australian Planning commission (WAPC) *Transport Assessment Guidelines for Developments: Volume 2 – Structure Plans (2006)*. This report is provided in **Appendix 4**.

The report provides an assessment of the proposed LSP road network internally and its connections to the adjacent road network, with a focus on traffic volumes, access and accessibility.

The report assesses changes to the surrounding road network and integration, provides and analysis of existing and ultimate capacity and looks at site specific issues such as safety and access. The report has been prepared having regard to the overall LSP design, together with the broader landscape design principles. The report concludes that all intersections will operate acceptably, outlining both "interim" and "ultimate scenarios".

4.6 Infrastructure Coordination, Servicing and Staging

A comprehensive servicing report for the Cardup Business Park has been compiled by JDSi consultants and addresses all aspects of site development, essential services and drainage infrastructure provision. The report recognises that there are no impediments to the development of the Structure Plan area as proposed, subject to normal servicing extensions and connections at the subdivision and development stages.

There are no formal infrastructure coordination or staging arrangements proposed in the LSP, owing to the limited number of properties affected and a relatively incremental and straightforward approach to the provision of infrastructure. In this respect, a formal developer contribution framework adopted as part of this LSP has not been required.

The Shire of Serpentine Jarrahdale has carried out feasibility into a development contribution arrangement, which has determined that a development scheme may be required to appropriately fund a number of infrastructure items affected by the LSP site. The scope of any potential development contribution arrangements is yet to be

determined and, if required, shall be formulated collaboratively between the Shire, WAPC and the landowners in accordance with *State Planning Policy 3.6 – Development Contributions for Infrastructure*.

4.7 Bushfire Management Plan

A Bushfire Management Plan (BMP) (**Appendix 6**) has been prepared for the site in accordance with *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7) (WAPC 2015), the *Guidelines for Planning in Bushfire Prone Areas Version 1.3* (the Guidelines) (WAPC and DFES 2017) and *Australian Standard 3959-2009 Construction of buildings in bushfire prone areas* (AS 3959) (Standards Australia 2009), and includes an assessment of vegetation classifications and effective slope within and surrounding the site (within 150 m).

The BMP demonstrates that as development progresses, an acceptable solution can be adopted for each bushfire hazard management issue, as summarised below:

- **Location:** future industrial development can be located in an area that will, on completion, be subject to low or moderate bushfire hazard. Areas of extreme bushfire hazard are located within the southern portion of the site (associated with Bush Forever Site 361) and western portion of the site (associated with the revegetated wetland buffer area) adjacent to future lots, however separation can be provided through the public road network, firebreaks/access tracks and internal asset protection zones.
- **Siting and Design:** whilst industrial buildings are not required to comply with the higher construction standards outlined in AS 3959, there is sufficient area available that will enable lots to be sized / designed so that future habitable buildings can be located in an area that is subject to a BAL rating of BAL-29 or below. Where required, asset protection zones will be able to be accommodated within lots and will only be required for those lots that directly abut Bush Forever Site 361 and the wetland buffer area.
- **Vehicular Access:** the proposed LSP provides six connections to the existing public road network, allowing vehicles to move through the site easily and safely at all times. As part of future development stages, there may be a requirement for temporary emergency access ways to provide for secondary access, but this will be determined as part of subdivision.
- **Water:** the development is located within the current reticulated network and therefore, will be provided with a permanent and secure reticulated water supply, which is to be installed in accordance with the standard Water Corporation specifications, including the installation of fire hydrants where required.

It is possible that future land uses within the site may be considered high risk land uses in accordance with *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7) (WAPC 2015), particularly uses such as service stations, bulk storage of hazardous materials and fuel depots. If any of these land uses are proposed, the associated development applications will need to be supported by a bushfire management plan and risk management plan.

5.0 CONCLUSION

As evidenced by this report and the appended technical and design studies, the subject land is well suited to accommodate development in accordance with the Structure Plan.

The structure plan provides that any environmental implications associated with the development of the subject land be managed within the statutory framework provided herewith.

The proposal also represents an opportunity to provide a new employment centre with the South Eastern corridor in between the recognised catchments of Byford and Mundijong-Whitby, whilst making efficient use of existing infrastructure on land which has largely been cleared.