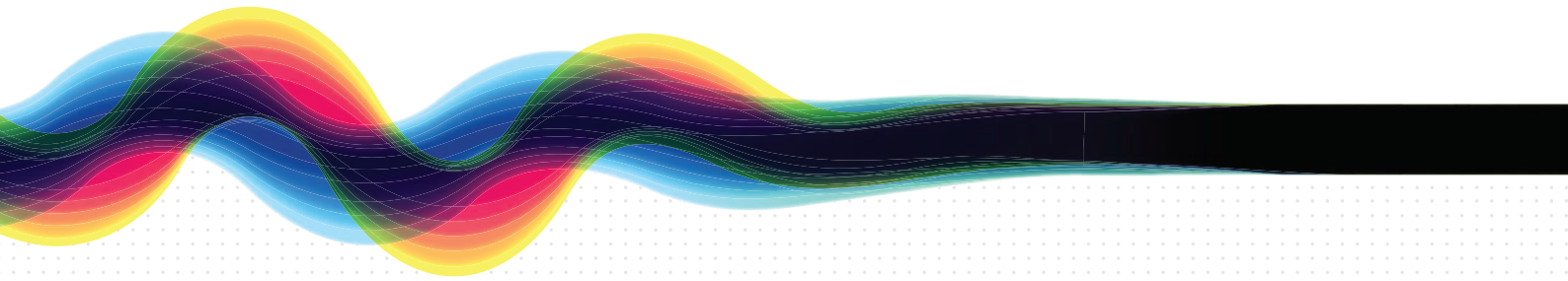


Structure Plan

Lot 561 Paris Road, Australind

Prepared for Fabray Pty Ltd and Paris Road Australind Pty Ltd
September 2022 | 18-588



Document ID: /Volumes/Planning - Archive/PG 2018/18-588 Australind, Lot 561 Paris Road/7 Final Documents/1 Lodged/18-588 Lot 561 Paris Road Australind - Structure Plan Report F Folder/18-588 Lot 561 Paris Road, Australind - Structure Plan Report F3 220907.indd

Issue	Date	Status	Prepared by		Approved by	
			Name	Initials	Name	Initials
1	19.06.19	Draft	Mike Davis		Matt Raymond	
2	25.06.19	Final	Mike Davis		Matt Raymond	
3	27.08.19	Final	Mike Davis		Matt Raymond	
4	21.06.22	Final	Leigh Caddy		Matt Raymond	
5	28.06.22	Final	Leigh Caddy		Matt Raymond	
6	04.07.22	Final	Leigh Caddy		Matt Raymond	
7	07.09.22	Final	Leigh Caddy		Matt Raymond	

This report has been prepared for the exclusive use of the Client, in accordance with the agreement between the Client and Element Advisory Pty Ltd (**element**) ('Agreement').

element accepts no liability or responsibility whatsoever in respect of any use of or reliance upon this report by any person who is not a party to the Agreement or an intended recipient.

In particular, it should be noted that this report is a qualitative assessment only, based on the scope and timing of services defined by the Client and is based on information supplied by the Client and its agents.

element cannot be held accountable for information supplied by others and relied upon by **element**.

Copyright and any other Intellectual Property arising from the report and the provision of the services in accordance with the Agreement belongs exclusively to **element** unless otherwise agreed and may not be reproduced or disclosed to any person other than the Client without the express written authority of **element**.

Contents

List of Figures	iv	Appendix A	41
List of Tables	iv	Certificate of Title	41
List of Abbreviations	iv	Appendix B	45
Endorsement Page	v	Submission on Shire of Harvey Local Planning Strategy	45
Table of Amendments	vi	Appendix C	75
Table of Density Plans	vii	WAPC Correspondence	75
Executive Summary	ix	Appendix D	79
Purpose	ix	Acoustic Report	79
Summary Table	x	Appendix E	81
Part One – Implementation	1	Industrial Land Demand Assessment	81
1. Structure Plan Area	1	Appendix F	83
2. Operation	1	Retail Sustainability Assessment	83
3. Structure Plan Content	1	Appendix G	85
4. Staging	1	Transport Impact Assessment	85
5. Subdivision and Development Requirements	1	Appendix H	87
6. Local Development Plans	2	Landscape Concept Plan	87
7. Other Requirements	2	Appendix I	89
Part Two – Explanatory Section and Technical Appendices	7	Local Water Management Strategy	89
1. Planning Background	7	Appendix J	91
2. Site conditions and Constraints	22	Bushfire Management Plan	91
3. Land Use and Subdivision Requirements	25	Appendix K	93
		Engineering Servicing Report	93

List of Figures

Figure No.	Description
1	Location Plan
2	Aerial Plan
3	Site Plan
4	Greater Bunbury Region Scheme
5	Shire of Harvey District Planning Scheme No. 1
6	Greater Bunbury Strategy
7	Bushfire Prone Mapping
8	Landscape Cross Section
9	Proposed Road Hierachy
10	Proposed Intersection Treatments

List of Tables

Table No.	Description
1	Certificate of Title Particulars
2	Liveable Neighbourhoods Assessment
3	Structure Plan Composition
4	Estimated Dwelling Yield
5	Existing Traffic Volumes
6	Public Open Space Schedule

List of Abbreviations

Abbreviation	Meaning
AHD	Australian Height Datum
ASS	Acid Sulphate Soils
BAL	Bushfire Attack Level
BMP	Bushfire Management Plan
Dia	Diameter
DFES	Department of Fire and Emergency Services
DPLH	Department of Planning, Lands and Heritage
DWER	Department of Water and Environmental Regulation
DPS1	Shire of Harvey District Planning Scheme No. 1
GBRS	Greater Bunbury Region Scheme
Ha	Hectare
HP	Horsepower
HV	High Voltage
Km	Kilometre
kpA	Kilopascal
kvA	Kilovolt-amp
LDP	Local Development Plan
LWMS	Local Water Management Strategy
OBRM	Office of Bushfire Risk Management
RSA	Retail Sustainability Assessment
TIA	Transport Impact Assessment
Vpd	Vehicle per day
Vph	Vehicle per hour
WAPC	Western Australian Planning Commission
WWTP	Waste Water Treatment Plant
PH	Potential Hydrogen
POS	Public Open Space

Endorsement Page

This Structure Plan is prepared under the provisions of the Shire of Harvey District Planning Scheme No. 1.


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

21 September 2022 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 presence of:



Witness

27 September 2022 Date

27 September 2032 Date of Expiry

Table of Amendments

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved By WAPC

Table of Density Plans

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved By WAPC

Executive Summary

The Structure Plan area is located within the Shire of Harvey in the locality of Australind. It applies to Lot 561 Paris Road and a portion of unconstructed road reserve in Australind totalling an area of 50.99 hectares (ha). The objective of the Structure Plan is to provide a pragmatic spatial planning framework for the Shire of Harvey and the Western Australian Planning Commission (WAPC) in which to implement the orderly and properly planning of the subject site.

Historically, the subject site was rezoned from 'Rural' to 'Light Industry' due to the sites location within the buffer of the Australind Wastewater Treatment Plant (WWTP). This plant subsequently closed in 1999, with the opening of the Kemerton WWTP. The removal of this buffer constraint has provided an opportunity to re-examine the highest and best land uses to activate this site.

A Retail Sustainability Assessment undertaken over the Shire of Harvey and the broader Greater Bunbury region recently concluded that the current Light Industry zoning over the subject site is not the highest and best use of the land, whereby a significant oversupply of general and light industrial land has been observed. The analysis concluded that at the long-term take-up rates, there is sufficient supply of general and light industrial land that is zoned, vacant and developable to meet local industry needs for the long term.

In the context of the above, the Structure Plan seeks to provide a balanced land use approach. The Structure Plan framework responds to above matters by setting out the following objectives:

- achieve a range of land uses for the locality to facilitate sustainable economic, social and environmental outcomes, in accordance with the State government's overarching Greater Bunbury Strategy;
- provide for an appropriate mix of light industrial development areas which integrate with the existing light industrial area;
- provide for a range of residential lot sizes to meet the local demographic needs. The residential estate will need to provide for a range of low to medium density housing options with the potential to also establish aged persons' accommodation in proximity to a consolidated commercial precinct adjacent to the existing 'Spudshed' development;
- consolidate commercial land uses within the north-eastern portion of the subject site;
- achieve a suitable transition and separation between residential and light industrial land uses in accordance with best-practice stipulated under the WAPC's draft State Planning Policy 4.1 – Industrial Interface; and
- respect visual management considerations along the periphery of the subject site through integrated landscape solutions.

On the basis of the above, the Structure Plan seeks to facilitate a sustainable and balanced range of land uses that will positively contribute to the growth and development of Australind. The justification for the range of zones employed within this Structure Plan is contained in Part 2 of this document.

Purpose

This Structure Plan provides a statutory framework to guide and facilitate future land use, subdivision and development for a range of residential, light industrial and commercial purposes. The Structure Plan has been prepared in accordance with Part 4, sub-clause 15 (a) of the Deemed Provisions (When Structure Plan May Be Prepared), where:

the area is –

(ii) all or part of a zone identified in this Scheme as an area suitable for urban or industrial development.

The requirement for a Structure Plan over the subject site was further reinforced by the Western Australian Planning Commission (WAPC) in its correspondence to the Shire of Harvey dated 13 March 2017 where the WAPC resolved to:

“determine that a structure plan is required for the whole of Lot 56 Paris Road, Australind...for the purposes of orderly and proper planning”.

The principle purpose of the Structure Plan is to provide an agreed design framework which will enable the subject site to be implemented in a logical manner, coordinating land uses, services and infrastructure. Following endorsement of this Structure Plan, a local scheme amendment shall be initiated to the Shire of Harvey District Planning Scheme No. 1 to normalise the Structure Plan into the Scheme. The majority of the northern portion of the subject site shall be rezoned to ‘Residential Development’ to align with the residential use proposed under this Structure Plan, however ‘Other Commercial – Showroom’ is proposed to correspond with the existing Spudshed development and adjacent land, while a small area is set aside for ‘Shop’ to allow for the introduction of a small range of retail and commercial land uses to service the local area.

Summary Table

The Structure Plan Summary Table below details the breakdown of land uses and key outcomes proposed within the Structure Plan.

Table 1 – Structure Plan Summary Table

Item	Data	Structure Plan Ref (Section No.)
Total area covered by the structure plan	50.99 ha	Section 1.2.3
Area of each land use proposed	Hectares	Lot Yield
• Residential	12.8119 ha	449 approx. Section 3.3
• Light Industrial	19.7557 ha	Section 3.2
• Shop	1.0300 ha	Section 3.4
• Other Commercial - Showroom	3.0800 ha	Section 3.4
• Public Open Space	2.8189 ha	Section 3.6
• Landscape and Drainage Buffer	3.3850 ha	Section 3.6
Total estimated lot yield	500 lots	Section 3.1
Estimated number of dwellings	451 dwellings	Section 3.3.1
Estimated residential site area density	35 dwellings/ha ¹	Section 3.3.1
Estimated population	1,141 ²	Section 3.3.1
Estimated commercial floor space	11000 ha	Section 3.4
Estimated area and percentage of Public Open Space	2.8189 ha (13.1%)	Section 3.6
Estimated percentage of natural areas	0.6000 ha	Section 3.6

Notes

¹ ‘Residential Site Hectare’ refers to the definition under Element 1 of WAPC’s Liveable Neighbourhoods.

² Based on average household size of 2.53 persons per dwelling for Australind (Source: Harvey Community Profile, 2016)

The Structure Plan seeks to deliver a balanced mix of land uses consistent with the projected land use demand for residential, retail, commercial and light industrial uses. The Structure Plan will facilitate the timely development of this largely vacant land and the appropriate mixture of light industrial, residential and commercial land uses shall deliver a positive employment outcome within a medium timeframe.

The current blanket zoning of ‘Light Industry’ over the Structure Plan area is no longer appropriate given that the former Waste Water Treatment Plant odour buffer no longer constrains land use in this location. The variety of land uses sought overcomes the prospect of having large tracts of undeveloped light industrial land for the medium to long term.

The Structure Plan has taken a sensitive design approach to provide a high amenity outcome at the interface of residential and light industrial land uses through the provision of a centrally located multiple use landscape open space corridor. This open space corridor physically separates the land uses while also providing visual and recreation amenity to future residential lots abutting the open space.

It is also noted that light industrial uses, by their definition, are required to contain emissions on site so as not to unduly impact on the amenity of sensitive receptors such as residential uses.

The Structure Plan incorporates larger medium density residential development sites with the intention to deliver aged persons’ housing and/or retirement village as the market requires.

The proposed commercial uses will augment the ability for the Structure Plan to deliver a range of employment and services, with the amount of ‘shop’ retail to be limited in area so that it provides localized services without undermining the existing hierarchy of established retail centres within the District and wider area.

Part One – Implementation

1. Structure Plan Area

This Structure Plan shall apply to the whole of Lot 561 Paris Road and a portion of road reserve (unconstructed), being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (**Plan 1**).

2. Operation

This Structure Plan shall come into operation on the day on which it is endorsed by the Western Australian Planning Commission (WAPC).

3. Structure Plan Content

This Structure Plan comprises:

- **Plan 1 - Structure Plan Map.** The Plan outlines the land use classifications applicable within the Structure Plan boundary. Due regard is to be given to these land use classifications when determining subdivision and development applications applicable to the Structure Plan.
- **Part One – Implementation.** The provisions, standards and requirements specified under Part One of this Structure Plan, shall be given due regard in any planning decision making.
- **Part Two – Explanatory Section** including Technical Appendices. The Explanatory Section of this Structure Plan and all Appendices are to be used as a reference only to clarify and guide interpretation and implementation of Part One.

4. Staging

Staging of this Structure Plan is not dependent upon infrastructure triggers.

If necessary environmental and planning approvals are forthcoming for proposed alignment of Kingston Drive shown in Inset 1, subdivision is to occur in accordance with the layout depicted on Inset 1.

5. Subdivision and Development Requirements

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

Land use permissibility shall be in accordance with the corresponding zone or reserve under the DPS1 (as amended). Prior to or at the time of lodgement, the applicant is to address the following matters:

- 5.1 *The final location, size and configuration of the ultimate WWPS site will need to be considered in more detail at the subdivision stage to provide a suitable site free of drainage constraints, of sufficient area to accommodate staging of pump stations and the long term 30m radius odour buffer, and provision of suitable and safe vehicular access to the site for Water Corporation construction and operational purposes.*
- 5.2 *An updated Transport Impact Assessment which addresses whether upgrades are required to the intersection of Paris Road/Road 01 and the safe movement of RAV4 vehicles throughout the structure plan area and on the surrounding road network.*

At the time of subdivision, the following strategies and plans will be required via conditions of subdivision approval:

- 5.3 *An addendum to the existing Bushfire Management Plan contained within this document, taking into consideration the final alignment of Kingston Drive;*
- 5.4 *Urban Water Management Plan;*
- 5.5 *Landscape and Streetscape Plan, to be prepared and implemented for each stage of the subdivision; and*
- 5.6 *Geotechnical Report.*

5.7 Fencing of the shared boundary of Lot 560 Paris Road, Australind and implementation of a dieback hygiene management plan in consultation with the Department of Biodiversity, Conservation and Attractions.

5.8 Acoustic Wall Amenity Plan to the satisfaction of the Local Government

5.9 At the time of subdivision, a condition of subdivision approval is to be imposed requiring to lodge a Section 70A notification on all residential lots requiring either Treatment Package A or B at the time of subdivision approval stating the following:

“Notice: This lot is situated in the vicinity of a transport corridor and is currently affected, or may in the future be affected, by transport noise. Transportation noise controls and Quiet House Design strategies at potential cost to the owner may be required to achieve an acceptable level of noise reduction. Further information is available on request from the relevant local government offices.”

5.10 Notification to be placed on the Certificate(s) of Title(s) to advise that land or lots may be affected by a Bushfire Hazard.

The following development requirements apply to C1 on the Structure Plan:

A total retail floorspace of 1,200m² applies to the area designated Shop on Plan 1 - Structure Plan, with this floorspace to be apportioned across a range of retail uses which are permitted within the Shop zone, subject to the following limitations:

- Fast Food Outlets - up to 750m²
- Liquor Store - Small - up to 200m²
- Pharmacy - up to 250m²
- Service Station (retail component) - up to 200m²
- Hair or Beauty Salon - up to 70m²
- Small Convenience Store - up to 350m²

6. Local Development Plans

Local Development Plans (LDP's) shall be prepared as a condition of subdivision approval to guide the preparation and assessment of applications for development on lots where subject to the following criteria:

6.1 Where a lot is located immediately adjacent to an area of public open space (POS), the development shall address the POS area and provide boundary fencing designed to enable passive surveillance where applicable;

6.2 Where a lot requires vehicle access from a laneway; and

6.3 Where a lot requires Quiet House Design for noise attenuation through deemed-to-comply noise insulation packages, and/or lots identified as requiring specialist acoustic requirements. Quiet House Design treatment packages shall apply to residential lots subject to 55-60dB (Package A) and 60-63B (Package B) noise levels as measured from the Forrest Highway.

6.4 Where a lot requires restrictions on development within areas identified as having a Bushfire Attack Level (BAL) of BAL-40 or BAL-FZ; and

6.5 On R1/R7 and C1/C2 to detail development standards and interface.

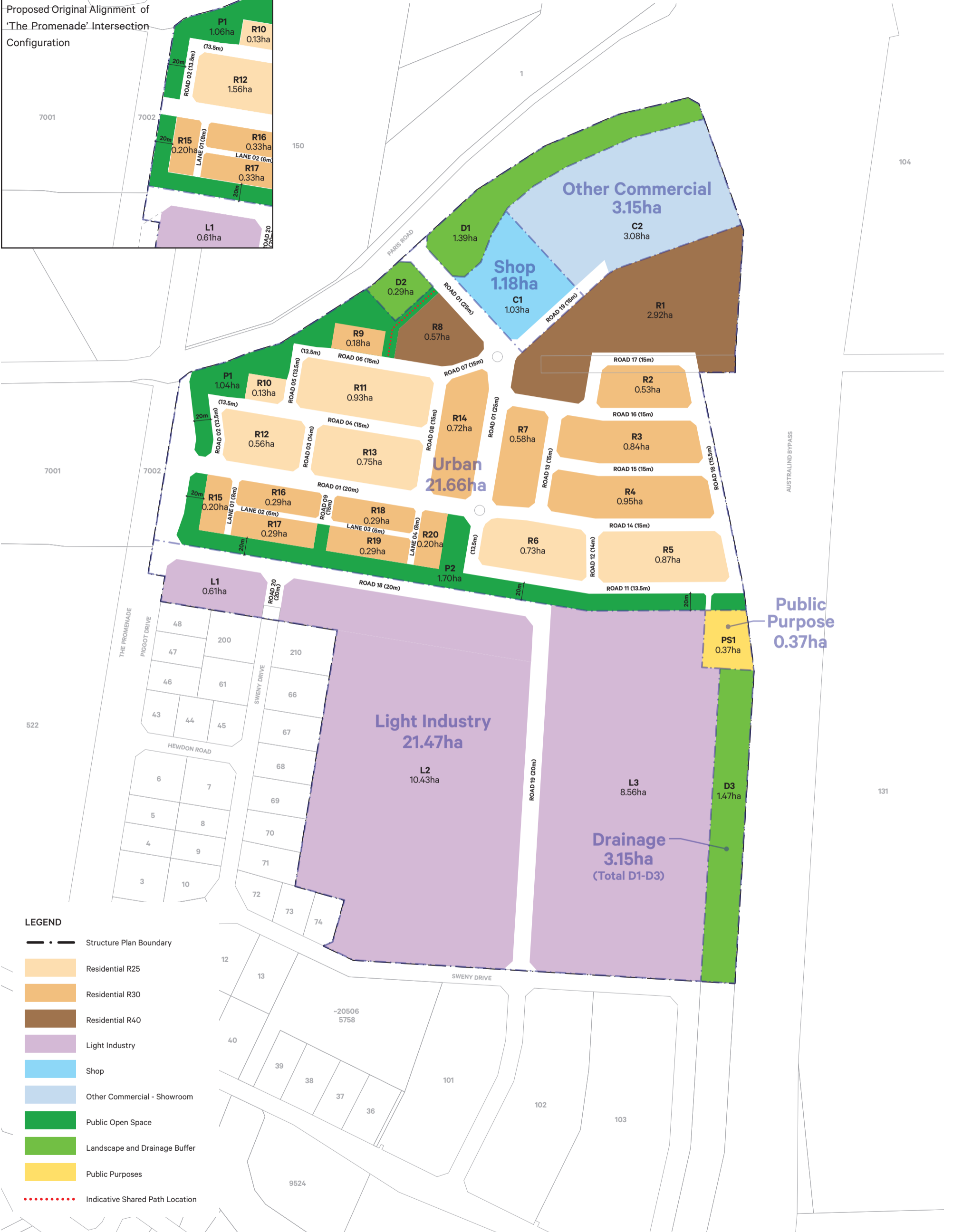
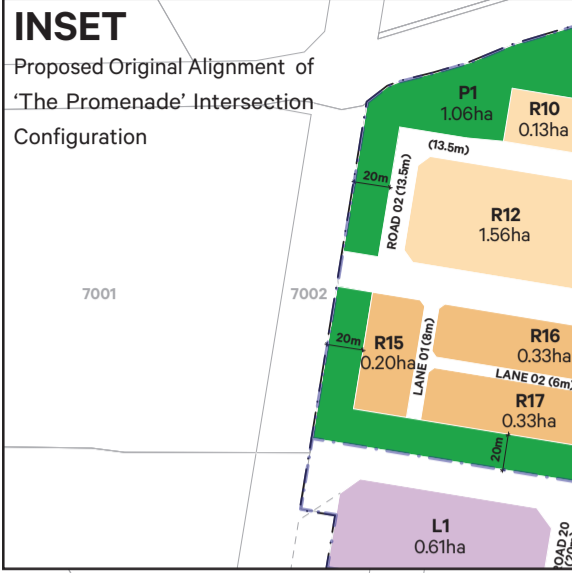
7. Other Requirements

The floorspace limitations and land use mix detailed in section 5 are to be included within the Shire of Harvey District Planning Scheme No. 1 (as amended) via an amendment.

Plan 1 - Structure Plan

INSET

Proposed Original Alignment of 'The Promenade' Intersection Configuration



LEGEND

- Structure Plan Boundary
- Residential R25
- Residential R30
- Residential R40
- Light Industry
- Shop
- Other Commercial - Showroom
- Public Open Space
- Landscape and Drainage Buffer
- Public Purposes
- Indicative Shared Path Location

Plan 1: Structure Plan

Lot 561 Paris Road, Australind

Date: 26 Aug 2022 Scale: 1:4000 @ A3 File: 18-588 CP-1 A Staff: MR MD GW Checked: MR



element.

Level 18, 191 St Georges Terrace, Perth Western Australia 6000
 PO Box 7375 Cloisters Square, Perth Western Australia 6850.
 T. +61 8 9289 8300 | E. hello@elementwa.com.au elementwa.com.au

Part Two – Explanatory Section and Technical Appendices

1. Planning Background

1.1 Introduction and Purpose

This Structure Plan has been prepared by **element** on behalf of the landowner of Lot 561 Paris Road, Australind (the ‘subject site’ or ‘Structure Plan area’). The Structure Plan has been prepared in accordance with Part 4, sub-clause 15 (a) of the Deemed Provisions (When Structure Plan may be prepared), where:

the area is –

(ii) all or part of a zone identified in this Scheme as an area suitable for urban or industrial development.

The requirement for a Structure Plan over the subject site was further reinforced by the Western Australian Planning Commission (WAPC) in its correspondence to the Shire of Harvey dated 13 March 2017 where the WAPC resolved to:

“determine that a structure plan is required for the whole of Lot 561 Paris Road, Australind...for the purposes of orderly and proper planning”.

The principle purpose of the Structure Plan is to provide an agreed design framework which will enable the subject site to be implemented in a logical manner, coordinating land uses, services and infrastructure.

1.2 Objectives

The objectives of the Structure Plan are to provide a spatial planning framework which shall:

- achieve a range of land uses for the locality to facilitate sustainable economic, social and environmental outcomes, in accordance with the State government’s overarching Greater Bunbury Strategy;
- provide for an appropriate mix of light industrial development areas which integrate with the existing light industrial area;
- provide for a range of residential lot sizes to meet the local demographic needs;
- consolidate commercial land uses within the north-eastern portion of the subject site;
- achieve a suitable transition and separation between residential and light industrial land uses in accordance with best-practice stipulated under the WAPC’s draft State Planning Policy 4.1 – Industrial Interface; and
- respect visual management considerations along the periphery of the subject site through integrated landscape solutions.

1.3 Zoning Implementation

The site is zoned ‘Urban’ pursuant to the Greater Bunbury Region Scheme (GBRS) and is currently zoned ‘Light Industry’ pursuant to the Shire of Harvey District Planning Scheme No. 1 (DPS1). The majority of the northern portion of the subject site shall be rezoned to ‘Residential Development’ to align with the residential use proposed under this Structure Plan, however ‘Other Commercial – Showroom’ is proposed to correspond with the existing Spudshed development and adjacent land, while a small area is set aside for ‘Shop’ to allow for the introduction of a small range of retail and commercial land uses to service the local area.

1.4 Project Team

Supporting documentation in the form of separate technical reports have been prepared to inform the Structure Plan by the multidisciplinary project team. These documents include:

- Bushfire Management Plan prepared by Emerge Associates;
- Environmental Noise Assessment prepared by Reverberate;
- Industrial Land Demand Assessment prepared by Macroplan Dimasi;
- Retail Sustainability Assessment prepared by Macroplan Dimasi;
- Traffic Impact Assessment prepared by Transcore;
- Local Water Management Strategy prepared by Oversby Consulting;
- Engineering Servicing Report prepared by Calibre Consulting; and
- Landscape Concept Masterplan prepared by Emerge Associates.

1.5 Land Description

1.5.1 Location

The subject site is located within the Shire of Harvey, approximately 150 km south of the Perth metropolitan region and approximately 13 km north east of the Bunbury Regional Centre, within Australind. The subject site is located at the intersection of Paris Road and Forrest Highway, forming a significant body of land and an important visual corridor through to the residential estate of Kingston, Bunbury Catholic College, the Australind Christian Reformed Church and recreation precinct located on the northern side of Paris Road. Existing light industrial development (Australind Industrial Estate) is located immediately to the south of the subject site. The subject site is also bound by the Wardandi Flora Reserve on a portion of the western boundary. The Leschenault Leisure Centre and Recreation Park and Leschenault Medical Centre provide district level facilities in close proximity to the subject site.

Refer to Figure 1 – Location Plan

1.5.2 Area and Land Use

The subject site is 50.99ha in area, which includes a portion of unconstructed road reserve of approximately 4639m² in area. The subject site currently contains the 'Spudshed' warehouse and associated parking and drainage located in the northeast portion of the site. Industrial operations (lay down area) exist in the southeast portion, while the remainder of the land is currently vacant, with some remnant vegetation interfacing with Paris Road.

Refer to Figure 2 – Aerial Plan

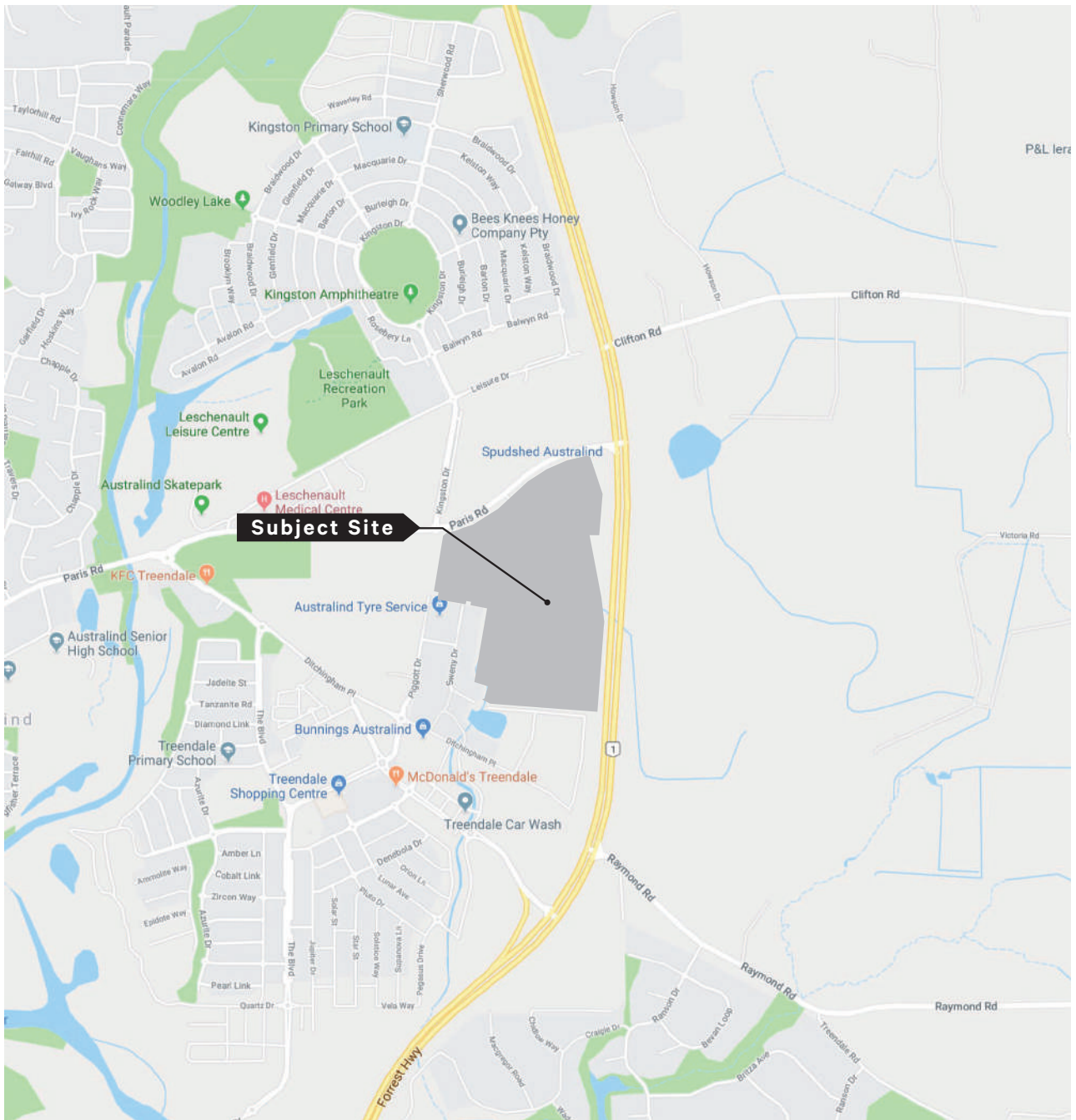


Figure 1. Location Plan





 Subject Site



source: nearmaps

Figure 2. Aerial Plan

1.5.3 Legal Description and Ownership

The subject site is described as Lot 561 Paris Road, Australind and includes a portion of unconstructed road reserve of approximately 0.4639 ha in area. Table 1 lists the particulars of the Certificate of Title for Lot 561.

Table 1 – Certificate of Title Particulars

Lot	Plan	Vol/Fol	Area(ha)	Landowner
561	68321	2763/465	50.5261	Fabray Pty Ltd and Paris Road Australind CT Pty Ltd

Refer to Figure 3 – Site Plan

Limitations, Interests, Encumbrances and Notifications

The following easements are noted on the Certificate of Title:

- Easement in favour of Shire of Harvey for drainage purposes in favour of the Shire of Harvey (Doc ref: F979037); and
- Easement to Water Corporation for pipeline purposes (Doc ref: J826329).

Consideration has been given to these encumbrances in preparing the Structure Plan.

Refer to Appendix A – Certificate of Title

1.6 Planning Framework

1.6.1 Zoning and Reservations

1.6.1.1 Greater Bunbury Region Scheme

The Greater Bunbury Region Scheme (GBRS) is the primary statutory document guiding land use and development within the Greater Bunbury Region. Pursuant to the GBRS, the subject site is zoned 'Urban'. The Urban zone is intended to provide for residential development and associated local employment, recreation and open space, shopping, schools and other community facilities. The proposed land uses forming part of this Structure Plan and the ultimate 'Residential Development' and 'Light Industry' zones of the Shire of Harvey District Planning Scheme No. 1 (DPS1) are compatible with the intent of the overarching 'Urban' zone.

The Forrest Highway adjacent to the Structure Plan area on the eastern boundary is reserved for 'Primary Regional Roads'. Land to the west of the subject site is reserved for 'Regional Open Space' associated with the Wardandi Flora Reserve.

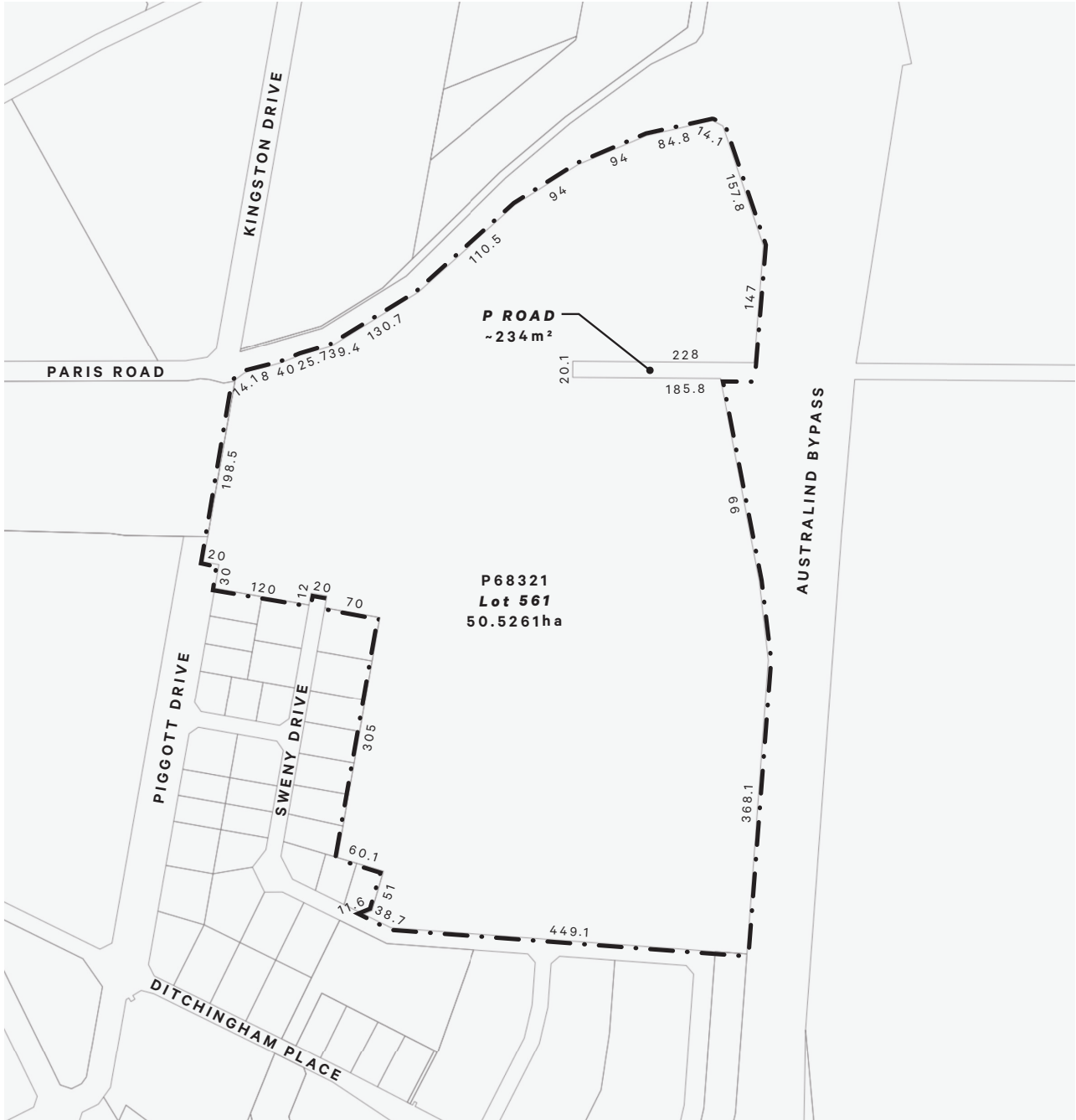
Refer to Figure 4 – Greater Bunbury Region Scheme

1.6.1.2 Shire of Harvey District Planning Scheme No. 1

The majority of the subject site is zoned 'Light Industry' under the Shire of Harvey District Planning Scheme No. 1 (DPS1), with small tracts of land along the northern and eastern boundaries of the subject site being reserved for 'Recreation'.

Land to the north of Paris Road is zoned 'Residential' and 'Residential Development' while the existing school and recreation precinct (Leschenault Leisure Centre and Recreation Park) are reserved for 'Public Purposes'. Land to the south of Ditchingham Place is zoned 'Other Commercial – Showroom' which provides for a range of large format showroom and commercial outlets. Land immediately to the west of the subject site is reserved for 'Public Purposes' associated with Wardandi Flora Reserve.

Refer to Figure 5 – Shire of Harvey District Planning Scheme No. 1




 Subject Site



Figure 3. Site Plan

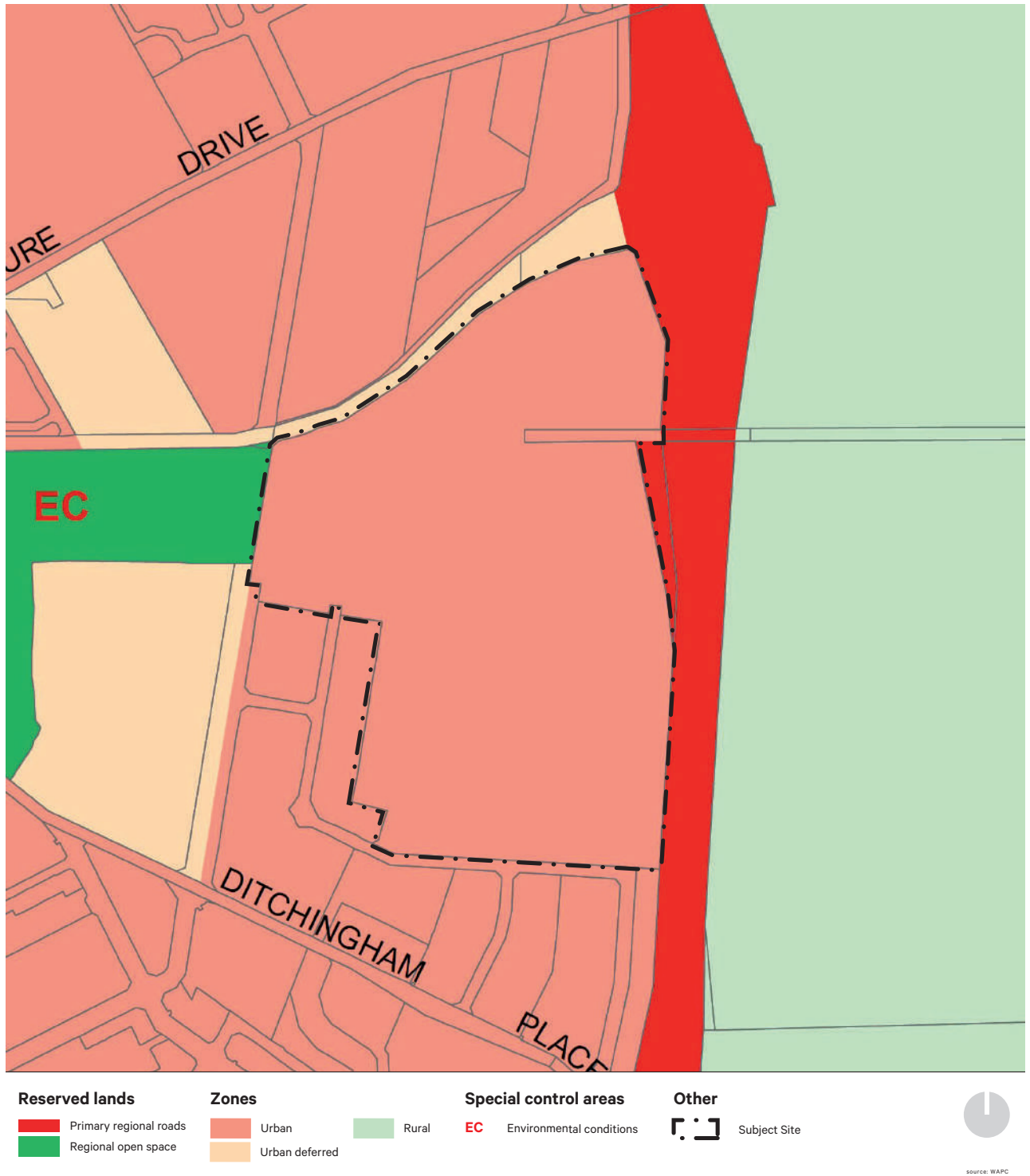


Figure 4. Greater Bunbury Region Scheme

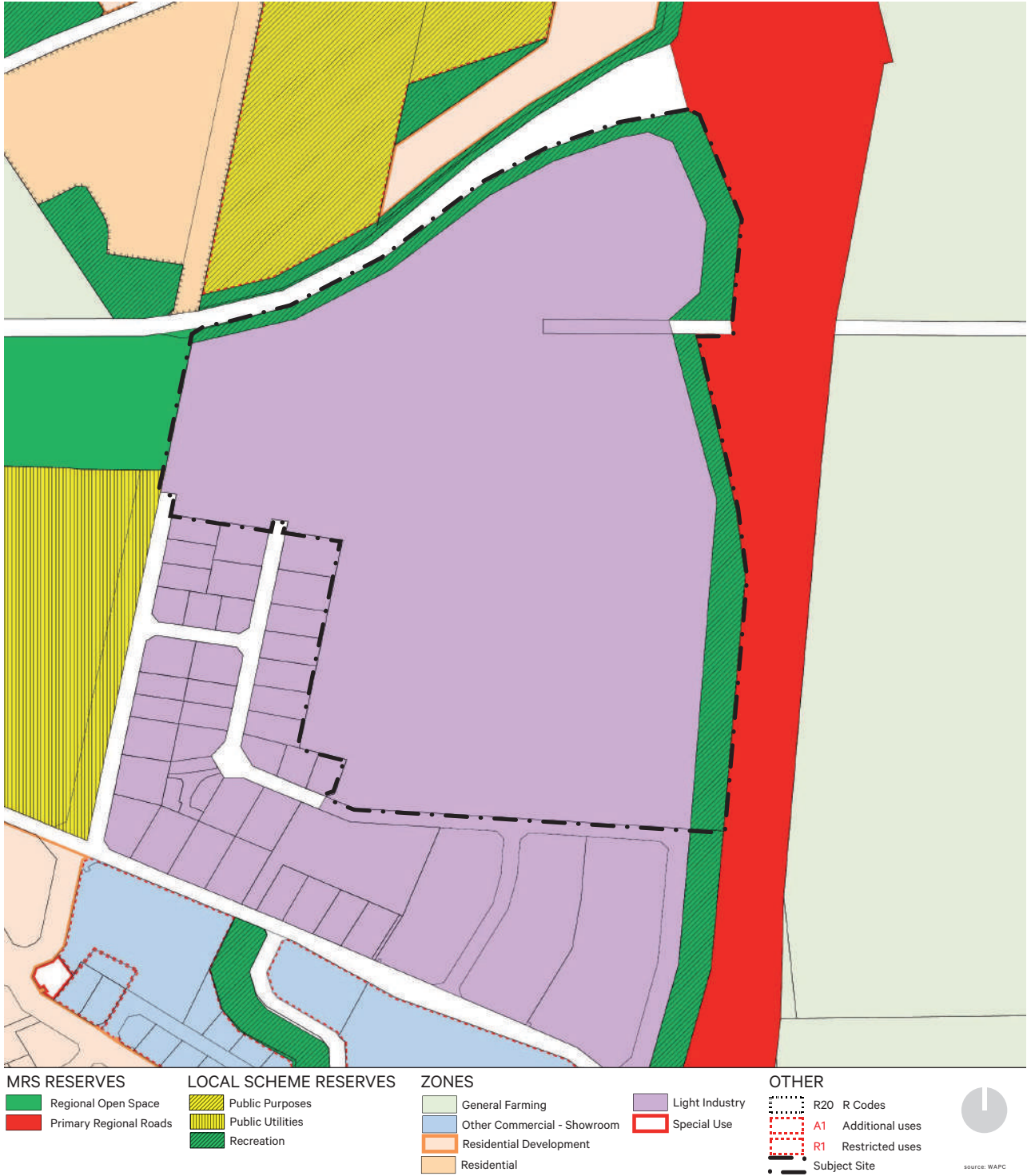


Figure 5. Shire of Harvey District Planning Scheme No. 1

1.6.2 Sub-Regional Structure Plan

1.6.2.1 The Greater Bunbury Structure Plan (2013)

The Greater Bunbury Structure Plan 2013 identifies land ahead of the rezoning process so that future development can occur in a logical manner. The document promotes the principles of a compact and connected city.

The subject site is identified as 'urban undeveloped land', defined as land currently zoned urban that has not been developed yet. The short to medium term priority of the region is to provide a more efficient use of existing urban developed land, and existing urban or industrial undeveloped land. The proposed land use and development outcomes advocated by this Structure Plan for the subject site is in accordance with the outcomes envisaged by the Greater Bunbury Structure Plan.

1.6.3 Planning Strategies

1.6.3.1 Greater Bunbury Strategy (2013)

The Greater Bunbury Strategy (the Strategy) has been prepared by the Department of Planning Lands and Heritage (DPLH) in collaboration with the local governments of Bunbury, Capel, Dardanup, and Harvey and in consultation with service providers. It addresses the key elements within the Greater Bunbury sub-region to inform and guide planning and management of urban growth and infrastructure delivery from 2011 to 2031 and beyond. General objectives include:

1. Identifying the most advantageous and sustainable locations to accommodate urban growth;
2. Identify the most advantageous and sustainable locations for future industrial areas;
3. Assist in the coordination of major infrastructure provision from a government perspective;
4. Determine areas required for future Greater Bunbury Region Scheme public purposes; and
5. Determine appropriate future Greater Bunbury Region Scheme reservation requirements.

One of the Strategy's policies is infill development. Accordingly, the Strategy strongly promotes higher residential densities and infill development in all areas of existing developed land, in both Bunbury and hinterland towns. This provides the opportunity for housing diversity, housing affordability, urban regeneration and revitalisation, as well as providing a more attractive urban environment.

The Structure Plan aligns with the objectives of the Strategy, and is consistent with its land use map for urban development. The Structure Plan will facilitate the redevelopment of underutilised land providing a diversity of land uses including residential (provided at multiple densities), commercial and industrial land uses, unlocking a vacant land area for future development.

Refer to Figure 6 – Greater Bunbury Strategy

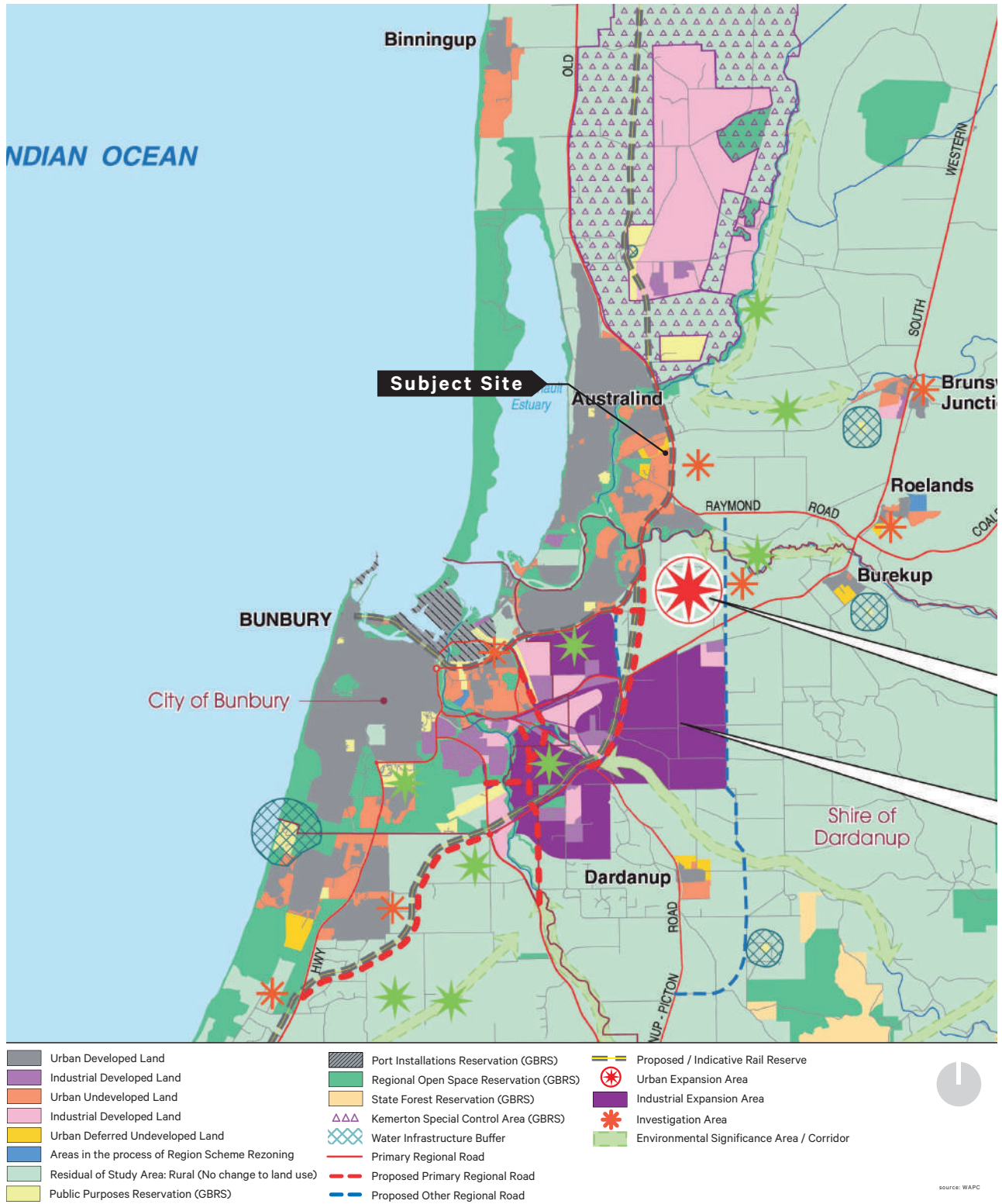


Figure 6. Greater Bunbury Strategy

1.6.3.2 Shire of Harvey Local Planning Strategy

The Shire of Harvey Local Planning Strategy (the Strategy) was adopted in April 2020. The Strategy sets out the Shire's broad vision in respect to balancing growth, environmental responsibilities, land use management, appropriate development control, housing affordability and the health and wellbeing of the community.

Table 28 of the Strategy refers directly to the subject site. The Strategy identifies the site as developable for light industry purposes, however states that "consideration may be given to a proposal for land use change within a component of this site to residential use (with limited commercial) if it can be demonstrated that the current zoned industrial land to be supplied at Australind LIA would represent a surplus of industrial zoned land for the medium to longer term land needs within the locality".

element, on behalf of the landowner provided a submission to the Shire on the draft Strategy and this submission is contained at Appendix B.

Notwithstanding the fact that the Shire's Strategy identifies the entire Structure Plan area as remaining zoned as light industrial, the submission notes there is strong justification for a portion of the site to be set aside for residential development with a smaller portion set aside for commercial land uses.

Firstly, the Industrial Land Demand Assessment prepared by Macroplan and contained at Appendix E identifies that the reduced industrial land supply within the Structure Plan area combined with remaining vacant industrial land within the Shire will be sufficient to meet demand for the next 30 years.

Based on this finding, it is clear that medium to long term light industrial land supply will be able to be met to need the demand within the Shire. On this basis, rather than having large portions of the Structure Plan area remain vacant while this industrial demand is being met at the southern portion of the Structure Plan area, this Structure Plan seeks to establish an appropriate mix of land uses to facilitate the highest and best use of the land.

The Strategy also identifies the greater Australind area as having a high resident population growth rate and will continue to be the main focus for urban growth. It is considered that the northern portion of the subject site is well placed to accommodate residential growth, being located in close proximity to a range of existing amenities, including, but not limited to the Leshenault Leisure Centre, Recreation Centre and Leschenault Medical Centre, the New Mercy Campus and the Wardandi Flora reserve.

Refer to Appendix B – Submission on draft Local Planning Strategy

1.6.4 Planning Policies

1.6.4.1 Activity Centres for Greater Bunbury Policy

The Activity Centres for Greater Bunbury Policy was prepared by the then Department of Planning in 2012 to provide a framework to guide the provision of commercial and retail development within the Greater Bunbury region. The policy establishes a hierarchy to guide the distribution of activity centres to meet different levels of community need, to enable employment and to ensure the efficient use of infrastructure to support activity centres.

The policy acknowledged the Bunbury Central Business District as being the highest order Regional Centre within the region, which is supported by a range of district, neighbourhood and specialised centres.

The policy requires the preparation of a Retail Sustainability Assessment (RSA) for proposals incorporating shop-retail floorspace in specific circumstances. Specifically, an RSA is required for proposals that would result in the total shop-retail floorspace within recognised District and Neighbourhood centres exceeding 6,000sqm net lettable area (nla) or expanding by more than 3,000sqm nla. The proposed structure plan contemplates approximately 1,000-1,200sqm of additional shop-retail floorspace and therefore would not trigger the requirement for an RSA under this requirement.

However, it is noted that the Structure Plan area is not an identified activity centre in accordance with the policy. For this reason, an RSA has been prepared to examine the impact of any future shop-retail floorspace within the Structure Plan area on the recognised activity centre hierarchy.

The RSA prepared by Macroplan is provided at Appendix F. The RSA examines the trading impact on the contemplated shop-retail floorspace on existing centres within the trade catchment area, which includes the Treendale Centre, Australind Centre, Eaton Fair and Brunswick Junction. The RSA concludes that the additional shop-retail floorspace within the Structure Plan area will have minimal impact on the trading capacity of these centres and concludes that these centres will continue to operate sustainably.

1.6.4.2 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

Pursuant to the Department of Fire and Emergency Services (DFES) online map of bushfire prone areas, the northeast and northwest portion of the subject site is classified as being bushfire prone. The site is therefore subject to consideration under State Planning Policy No. 3.7 – Planning in Bushfire Prone Areas (and associated guidelines).

According to SPP3.7, any strategic planning proposal within a bushfire prone area will need to be accompanied by the following:

- the results of a Bushfire Hazard Level assessment determining the applicable hazard levels;
- where the lot layout of the proposal is known, a Bushfire Attack Level (BAL) Contour Map to determine indicative acceptable BAL ratings across the site;
- the identification of bushfire hazard issues arising from the relevant assessment; and
- clear demonstration that compliance with the bushfire protection criteria in the guidelines can be achieved in subsequent planning stages.

A Bushfire Management Plan has been prepared by Emerge Associates and is addressed in further detail later in this report.

1.6.4.3 Draft State Planning Policy 4.1 – Industrial Interface

The purpose of the draft Industrial Interface State Planning Policy No. 4.1 (SPP4.1) is to provide a consistent State wide approach for the protection and long-term security of industrial zones, transport terminals (including ports), other utilities and special uses. Due to the very nature of industry and infrastructure, a range of emissions of pollutants including noise, dust, gas, odour, fumes, lighting overspill as well as risk levels are most likely incompatible with other uses including residential.

According to SPP4.1, light and service industry should retain all emissions and hazards on-site or at least within the zone areas and on-site buffer areas should be sufficient to address local amenity. Land use allocation has been carefully considered when developing this Structure Plan. Sufficient setback distances between light industrial and residential land uses are provided, with further separation and amenity afforded through the integration of a multiple use open space corridor which separates the light industry and residential designated land.

1.6.4.4 State Planning Policy 5.4 Road and Rail Noise

State Planning Policy No. 5.4 (SPP5.4) is intended to minimise the impact of road and rail noise on noise-sensitive land uses; and protect the State's key transport corridors. SPP5.4 applies to the preparation and assessment of structure plans where there is proposed noise-sensitive land use within the Policy's trigger distance of a transport corridor.

Noise-sensitive land use and/or development is defined as:

“development occupied or designed for occupation or use for residential purposes (including dwellings, residential buildings or short-stay accommodation), caravan park, camping ground, educational establishment, child care premises, hospital, nursing home, corrective institution or place of worship.”

Accordingly, the trigger distance from Primary Regional Roads (red roads under region schemes) is 300 metres.

This Structure Plan proposes land uses including residential development within 300m of Australind Bypass, a Primary Region Road as identified under the GBRS. Table 2 of SPP5.4 sets out a noise criteria that is to be achieved by proposals to which the policy applies.

In accordance with provisions of SPP5.4, an Environmental Noise Assessment has been completed and is addressed in further detail later in this report.

1.6.4.5 State Planning Policy 7.3 Residential Design Codes

The Residential Design Codes of Western Australia (R-Codes) provide a statutory framework for the development of residential dwellings across the State. Volume 1 provides numerous provisions in relation to single/ grouped dwelling developments including those regarding minimum and average lot sizes. Accordingly, provisions outlined in the R-Codes will need to be considered in future subdivision/ development design and corresponding applications.

The Structure Plan assigns an R-Code to residential land within the Structure Plan area to provide densities ranging between R25, R30 and R40. Volume 2 – Apartments, is a policy for apartments and mixed-use developments which focuses on improved design outcomes for apartments. Policy objectives include providing residential development of an appropriate design for the intended residential purpose, land tenure, density, place context and scheme objectives.

Any future multiple dwelling development proposed within the structure plan area will need to consider provisions outlined in Volume 2.

1.6.4.6 Liveable Neighbourhoods 2009

Liveable Neighbourhoods is an operational policy, adopted by the Western Australian Planning Commission (WAPC), for the design and assessment of structure plans and subdivisions for residential development. The elements of Liveable Neighbourhoods primarily relate to large-scale, greenfield communities however Liveable Neighbourhoods requires an assessment of subdivision proposing 20 or more lots.

The proposed Structure Plan incorporates the following attributes in accordance with the relevant themes of the current adopted Liveable Neighbourhoods document.

Table 2 – Liveable Neighbourhoods Assessment

Element	Deliverables
Element 1 Community Design	<ul style="list-style-type: none"> The Structure Plan connects new urban and industrial areas to existing urban areas within Australind, ensuring permeability through new internal road networks, connected and landscaped pedestrian access ways, and through links with new pedestrian and cyclist infrastructure. The lot configuration provides a mix of residential density options that will appeal to a broad cross section of the community and provide an appropriate interface within the existing residential context.
Element 2 Movement Network	<ul style="list-style-type: none"> The internal integrator roads are site responsive and provide through-site connectivity. Provisions have been made for a safe, convenient and legible pedestrian network. The road and lot layout provide lots with a continuous street frontage. The road layout separates industrial and residential traffic. A Transport Impact Assessment prepared by Transcore has informed the layout and planning of the internal road network.
Element 3 Lot Layout	<ul style="list-style-type: none"> The proposed lot layout provides for variety for housing choice and affordability. Street blocks are appropriately dimensioned and lots are regular and in accordance with Liveable Neighbourhoods design principles. Lot design facilities development fronting major streets and public open space to support safety and surveillance.
Element 4 Public Parkland	<ul style="list-style-type: none"> A large portion of quality Public Open Space (POS) has been provided to contribute towards the recreational and social needs of the community in appropriate locations. Passive surveillance is provided to areas of POS and will be designed to provide for a range of passive and active recreational pursuits.
Element 5 Urban Water Management	<ul style="list-style-type: none"> Stormwater is anticipated to be retained within the allocated Landscaped and Drainage areas via retention and filtration with possible capture and re-use opportunity. A Local Water Management Strategy has been prepared which will inform the preparation of future Urban Water Management Plans. Urban Water Management Plans will be prepared in support of any future subdivision or development within the Structure Plan area.
Element 6 Utilities	<ul style="list-style-type: none"> Connection to essential services including underground power, reticulated water and wastewater is available. Water management measures will be integrated in an efficient urban structure and range of parkland types. Public lighting in streets and public spaces for the safety of pedestrians, cyclists and vehicles will be provided accordingly.
Element 7 Activity Centres and Employment	<ul style="list-style-type: none"> Industrial development and car-dependent businesses are provided in locations that are appropriate in terms of exposure and compatibility with surrounding uses. The Structure Plan proposes commercial land use as an extension to the existing Spudshed which will service the local catchment without having a negative impact on existing established Centres in proximity to the Structure Plan area. The Structure Plan provides a balanced mix of land uses to optimise employment generation in the medium term.
Element 8 Schools	<ul style="list-style-type: none"> The Structure Plan is appropriately serviced by existing school facilities in the District.

1.6.4.7 Development Control Policy 1.1 Subdivision of Land – General Principles

Development Control Policy No. 1.1 Subdivision of Land – General Principles (DC1.1) provides guidance relating to matters the WAPC considers when determining structure plans and applications for subdivision generally. The policy aims to ensure that proposed subdivision does not prejudice the existing zoning boundary or zoning objectives, in this instance residential and industrial development.

The relevant objectives of DC1.1 are as follows:

- To ensure that all lots created have regard to the provisions of the relevant local government local planning scheme.
- To ensure the subdivision pattern is responsive to the characteristics of the site and the local planning context.
- To ensure that the subdivision is consistent with the orderly and proper planning and the character of the area.
- To facilitate development which achieves appropriate community standards of health, safety and amenity.
- To facilitate appropriate access and movement systems for all modes of transport.
- To ensure constructed vehicle access from the gazetted public road system to each new lot.
- To create lots that are capable of lawful development and, at the same time, ensure that existing lots or the development on them is not rendered illegal.
- To secure public utility services to each new lot appropriate for intended use of the lot.
- To make appropriate arrangements for development contributions, where necessary and relevant, for the orderly and proper planning of the locality containing the subdivision.

The proposed Structure Plan allocates general areas to support both residential and industrial development. Internal road networks are identified and integrated effectively into the existing road network. Roads have been placed to provide buffers between sensitive land uses, as well as development and dense vegetation. Pockets of Public Open Space (POS) and landscaping/ drainage buffers provide both a visual break and amenity within the redevelopment site. A more detailed evaluation against the development principles of DC1.1 is to be provided with subsequent subdivision applications.

1.6.4.8 Development Control Policy 2.2 – Residential Subdivision

Development Control Policy No. 2.2 – Residential Subdivision (DC2.2) sets out the requirements to be used by the WAPC in regard to the subdivision of land into residential lots. It establishes a consistent approach to ensure that each lot is provided with a suitable level of amenity, services and access. DC2.2 also facilitates the supply of residential lots of a wide range of sizes and shapes, and which reflect the need for sewerage connection and frontage to public roads.

The general requirements of the policy identify that all new residential lots should:

- be able to be developed in accordance with the Residential Design Codes;
- have a lot area that is suitable for subdivision in relation to topography, soils, drainage, vegetation and natural features;
- be serviced by a movement network that is compliant with Development Control Planning Policy 2.6: Residential Road Planning (if proposing public roads);
- have access to convenient passive and active areas of POS in accordance with the Development Control Planning Policy 2.3: Public Open Space in Residential Areas;
- be provided with all essential services particularly sewerage;
- be co-located with community facilities; and
- be suitably buffered from the effects of any land use.

This Structure Plan identifies land parcels for residential development and in accordance with the requirements of DC2.2 as it; provides diversification of residential density, provides essential services to the lots and access to public open space and accounts for the topography of the subject site. A more detailed evaluation against the development principals of DC2.2 is to be provided with subsequent subdivision applications.

1.6.4.9 Development Control Policy 2.3 – Public Open Space in Residential Areas

The purpose of Development Control Policy No. 2.3 – Public Open Space in Residential Areas (DC2.3) is to ensure that all residential development in the State is complemented by adequate, well located areas of Public Open Space (POS). The policy states that where residential development is proposed, and where practicable, 10 percent of the gross subdivisible area be given up free of cost by the subdivider and vested in the Crown as a reserve for recreation.

In terms of the location and distribution of POS, the commission favours an overall balance between incidental open space and readily accessible to all residentials, and recreational open space in larger units suitable for active leisure pursuits.

In accordance with the 10 percent requirement, 10.2% (or 2.8189 ha) of the gross site area is allocated as POS. Public open space has been strategically located to provide a buffer between sensitive land uses (i.e. light industrial and residential), as well as allocating areas large enough to be used by residents for a range of passive and active recreational activities. Types of infrastructure and activities envisaged to be accommodated within the POS include the following:

- Shared paths for walking and cycling;
- Sheltered BBQ and picnic areas at strategic locations along the shared path network;
- Active public open space kick-about area; and
- Children's playground.

1.6.4.10 Development Control Policy 4.1 – Industrial Subdivision

The purpose of Development Control Policy No. 4.1 – Industrial Subdivision (DC4.1) is to encourage the development of well-designed industrial areas serving the full range of general and special industrial needs throughout the State. The policy provides guidance on matters to be considered by the Commission when determining applications for industrial subdivisions including lot sizes and shapes, flexibility and staging, access and road layout, public open space and services.

Provisions outlined in DC4.1 will need to be considered in further detail when any application for industrial subdivision is lodged with the WAPC.

1.6.4.11 Draft Development Control Policy 4.3 – Planning for High Pressure Gas Pipelines

Draft Development Control Policy 4.3 – Planning for high pressure gas pipelines (DC4.3) sets out to provide planning guidance for authorities and applicants to ensure pipeline risk management is considered through the planning stage. The ATCO gas pipeline runs within the Paris Road and Forrest Highway road reserve alignments and a portion of the Structure Plan area falls within the notification area.

Future subdivision may trigger the relevant planning authority's notification to the pipeline owners to make them aware of any development intensification, which may trigger advice on suitable management practices that should be implemented as part of any subdivision of the subject site.

1.7 Pre Lodgement Consultation

This Structure Plan has been prepared following considerable consultation with the Shire of Harvey administration, Shire Councillors and Department of Planning, Lands and Heritage (DPLH). Specific consultation activities that have occurred to date include the following:

- Meetings with both Shire of Harvey administration staff and staff of DPLH to discuss the landowner's intentions and preliminary plans for the subject site;
- Presentation to the Shire of Harvey Councillors in August 2017 detailing the strategic direction in which the landowners wished to proceed;
- Meeting with Shire administration staff and Shire President on 28 November 2018 to discuss land use options for the subject site;
- A workshop session with Shire of Harvey administration staff held on 11 January 2019 to explore land use planning, open space, road planning and other opportunities and direction for the subject site;
- A briefing of Shire of Harvey Councillors on 14 May 2019 with a view to collaborating with the Shire on land use planning outcomes for the subject site; and
- Ongoing correspondence with the Shire of Harvey and DPLH throughout this process.

In addition to the above, the WAPC has previously written to the Shire requesting that a Structure Plan be prepared for the subject site and this correspondence is provided at Appendix C.

Refer to Appendix C – WAPC Correspondence

2. Site conditions and Constraints

2.1 Biodiversity and Natural Area Assets

The site is predominantly cleared of nature assets as a result of the sites past use for grazing of livestock. A pocket of remnant vegetation approximately 0.6ha in area remains on a portion of the site adjacent to Paris Road to the north, however this vegetation contains limited understorey and has been assessed as being in degraded condition due to *'partial clearing, altered fire regimes, grazing by livestock and infection by Phytophthora cinnamom (dieback) disease'* (Emerge Associates, 2018).

According to Emerge Associates (2019):

"Historically the remnant vegetation remaining within the site formed part of a larger patch that was identified as containing habitat for a number of federally protected fauna species. It is unlikely that this vegetation would be considered significant habitat (and/or have restrictions with regard to modification) for any of the species identified due to its size and condition. Information from the proponent indicates that previous federal environmental approvals to clear a larger area of remnant vegetation within the site was determined to be 'not a controlled action' pursuant to the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)."

Vegetation is also contained within the Forrest Highway road reserve located adjacent the site along the eastern boundary. The Wardandi Flora Reserve (Reserve 35061) is located adjacent to the western boundary of the site and contains an extensive area of remnant vegetation and habitat area. Proposed development within the structure plan area will not directly impact on vegetation within this reserve.

2.2 Landform and Soils

The topography of the site can be described as generally flat to gently undulating. The northern section of the site gently slopes down towards the north west, with elevation falling from 14.8 to 11.2m AHD. The gradient of the undulation is generally less than 1%. The southern section of the site gently slopes toward the south and south west, with elevations ranging from 14 to 12.5m AHD.

Brown Geotechnical and Environmental Pty Ltd (BGE) undertook a geotechnical assessment of the site in October 2008. The geotechnical report identifies that the site is primarily underlain by Bassendean sands over Guildford Formation Clays. The geotechnical investigations included 50 test pits to determine subsurface soil conditions. These conditions consist of the following:

- Topsoil – composed of fine to medium grained, grey sands to a depth of 0.1 to 0.3m.
- Sand – was located in all test pits below the topsoil. The sand was medium grained, light grey, mottled brown, yellow or orange brown with trace amounts of silt. The sand was medium dense to approximately 1.5m and dense to very dense below this. Some of the test puts had presence of clay below 1m in depth.
- Coffee Rock – was encountered across approximately two thirds of the site. Where the excavator could break through the rock, the thickness of the coffee rock was found to be between 0.2 and 1.8m. The coffee rock was typically encountered around 1.5 to 2.0m below the surface of isolated pockets up to 1m below the surface.

2.3 Groundwater and Surface Water

2.3.1 Groundwater

Groundwater modelling was undertaken by TME between November 2007 to December 2009 to inform the preparation of a Local Water Management Strategy for the site. Twelve bores were installed across the site to a depth of 2.1m.

The data collected from the bores revealed that the groundwater tends to flow in a westerly direction, with the highest seasonal peak groundwater level of 13.7m AHD observed in the south eastern corner of the site.

The groundwater contours fall to 12.4m AHD in the north western corner. Two dams have been constructed on land where groundwater expresses at the surface. A further drainage basin has been constructed immediately south of the site, which also exhibits groundwater expressions above the surface.

2.3.2 Surface Water

The site is located within the Leschenault Estuary Catchment and presently onsite surface water discharges west and north towards the Preston River and ultimately the Leschenault Estuary.

The dominant surface water features include five dams, a large dam/basin adjoining the southern boundary and several associated drainage lines. A distinct drainage line traverses the site, directing water flow of the site and from the surrounding land to the east.

2.4 Bushfire Hazard

Portions of the subject site are identified as bushfire prone under the state-wide *Map of Bush Fire Prone Areas* prepared by the Office of Bushfire Risk Management (OBRM 2018). The risk of bushfire is associated with areas of vegetation located within the Forrest Highway reserve, Rural zoned land to the east of the Structure Plan area and associated with vegetation contained within the Wardandi Flora Reserve located to the west of the Structure Plan area.

The identification of an area with a declared bushfire prone area necessitates further assessment of the bushfire risk and suitability of the proposed development to be undertaken in accordance with *State Planning Policy 3.7 – Planning in Bushfire Prone Areas* (SPP 3.7) and the *Guidelines for Planning in Bushfire Prone Areas Version 1.3*.

A Bushfire Management Plan has been prepared by Emerge Associates in accordance with the requirements of the planning framework and this is addressed in further detail later on in this report.

Refer to Figure 7 – Bushfire Prone Mapping

2.5 Heritage

2.5.1 Aboriginal heritage

A desktop search of the DPLH Aboriginal Heritage Inquiry System was undertaken on 20 February 2019. No registered Aboriginal heritage sites are reported on the site. The nearest registered site is listed as an 'Other Heritage Place' (Place 5167) which is an artefacts / scatter site located approximately 200m to the north of the site. Brunswick River (Site 17776) is located approximately 850m to the west of the site.

The relevant obligations under the *Aboriginal Heritage Act 1972* will need to be observed when undertaking any future ground disturbance activities within the Structure Plan area.

2.5.2 Non-indigenous heritage

A search of the State Heritage Office online Inherit database revealed that there are not any listed heritage sites or places of interest located on the site.

2.6 Site Contamination

A search of the Department of Water and Environmental Regulation's (DWER) Contaminated Sites Database concluded that there is no known contamination of or in proximity to the site.

2.7 Acid Sulfate Soils

A search of the DPLH PlanWA online mapping database revealed that the Structure Plan area is located in an area mapped as having a moderate to low risk of encountering Acid Sulfate Soils (ASS) within 3m of the natural soil surface but high to moderate risk of ASS occurring beyond 3m of the natural soil surface.

Detailed ASS investigations are not required to support the Structure Plan, however, may be required as part of future subdivision and associated development depending on the extent of excavations or if dewatering is required (e.g. for services, including sewer).



Figure 7. Bushfire Prone Mapping

source: SLIP

2.8 Noise Attenuation

Due to the Structure Plan area being bound by Forrest Highway, Paris Road and the future extension of Kingston Drive, an acoustic report was commissioned to specify required acoustic treatment packages to future sensitive land uses in accordance with the requirements of draft State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4).

In addition to the requirements of SPP 5.4, the acoustic report also provides recommendations in relation to noise generated from future commercial and light industrial land uses.

The acoustic report assumes a ‘worst case’ scenario in relation to commercial noise generation and assumes that the commercial zoned land will include a service station and take-away outlets, which generate more noise than other typical commercial uses. The report recommends the following noise attenuation measures to address noise emissions and their impact on future residential lots:

- Requirement to implement noise barriers in strategic locations in order to achieve compliance with the *Environmental Protection (Noise) Regulations 1997* with respect to internal and external noise compliance for dwellings in proximity to Forrest Highway, Paris Road and the commercial zoned land (including any associated amenity plan for these barriers).
- Quiet House Design treatment packages for residential lots subject to 55-60dB (Package A) and 60-63B (Package B) noise levels as measured from the Forrest Highway.
- Requirement to lodge a Section 70A notification on all residential lots requiring either Treatment Package A or B at the time of subdivision approval stating the following:

“Notice: This lot is situated in the vicinity of a transport corridor and is currently affected, or may in the future be affected, by transport noise. Transportation noise controls and Quiet House Design strategies at potential cost to the owner may be required to achieve an acceptable level of noise reduction. Further information is available on request from the relevant local government offices.”

Further analysis in relation to the requirement to provide noise barriers in relation to the commercial zoned land will need to be undertaken as part of any future development applications for this land.

Refer to Appendix D – Acoustic Report

3. Land Use and Subdivision Requirements

3.1 Land Use

Land use permissibility within the Structure Plan area shall be in accordance with the corresponding and proposed zones and reserves under DPS1 (as to be amended):

- Light Industry (as designated under DPS1 map, termed as ‘Light and Service Industry’ under Table 17);
- Residential Development;
- Other Commercial – Showroom;
- Shop; and
- Recreation.

The southern half of the Structure Plan shall to continue to accommodate a wide variety of light and service industry land uses as are listed under the Land Use Categories column of the Light and Service Industry Zoning and Development Standards Table 17 of DPS1. The subdivision and subsequent development of these light industrial lots will be configured in response to end-user requirements, subject to the development standards of DPS1.

The northern portion of the Structure Plan provides for a range of residential densities (R25, R30 and R40) to ensure diversity in lot product is achieved. Table 6 of DPS1 provides for a range of potential land uses under the ‘Residential Development’ zone. The portion set aside for ‘Other Commercial – Showroom’ land use reflects the existing commercial operation (Spudshed) and a consolidated area allocated for ‘Shop’ use.

The Structure Plan accommodates DPS1’s allocated Recreation reserve which frames the outer boundary of the subject site.

The Structure Plan comprises the following designations based on a total site area of 50.99 ha:

Table 3 – Structure Plan Composition

Zone / Land Use	Area (ha)
Residential (26.4%)	
Residential R25	3.9759 ha (7.8%)
Residential R30	5.3425 ha (10.5%)
Residential R40	3.4935 ha (6.9%)
Light Industrial	19.7557 ha (38.7%)
Commercial (76%)	
Shop	1.0300 ha (2.0%)
Other Commercial - Showroom	3.0800 ha (6.0%)
Public Open Space	2.8189 ha (5.5%)
Landscape and Drainage Buffer	3.3850 ha (6.6%)
Roads	8.1085 ha (15.9%)
TOTAL	50.99 ha

Based on the above land use composition, the Structure Plan is estimated to yield in the order of 500 lots.

3.2 Rationalising Light Industry Area

3.2.1 Industrial Land Supply

Historically, the subject site was rezoned from ‘Rural’ to ‘Light Industry’ due to the sites location within the buffer of the Australind Wastewater Treatment Plant (WWTP). This plant subsequently closed in 1999, with the opening of the Kemerton WWTP. The removal of this buffer constraint provides an opportunity to re-examine the highest and best land use of this site.

Macroplan Dimasi were engaged to undertake an Industrial Land Demand Assessment to examine the supply of light industrial land within the Shire of Harvey in light of the removal of the WWTP buffer. The study specifically excluded existing and proposed light industrial land located outside of the Shire, however it is noted that the proposed Waterloo light industrial precinct south of Harvey is also likely to soak up demand for light industrial land and will increase the supply of light industrial lots within the region in addition to that identified within the Industrial Land Demand Assessment.

Macroplan has identified a take-up rate of light industrial land within the Shire of Harvey to be 0.66 ha per year. Based on this take-up rate, the 19.56 ha of vacant and available light industrial land within the Shire will last approximately 30 years. If the total Structure Plan area of approximately 50 ha were to remain as light industrial, the overall land supply would last 75 years, not taking into account other light industrial land to come into the pipeline within this timeframe in proximity to Australind.

Notwithstanding this assessment, Macroplan notes the following with respect to demand for light industrial land within the Shire:

- There have been few new light industrial land sales of vacant industrial land parcels for development or improvement (most sales have been resales of existing developed properties).
- Vacant industrial land parcels are not being improved (i.e. with construction or buildings).
- There has been negligible price growth over time in the light industrial area.
- Existing light industrial land uses to the south of the Structure Plan area are primarily servicing the residential areas rather than supporting strategic industry or major business-to-business goods or services. This indicates that the area has evolved to more ‘service commercial’ rather than ‘industrial’ uses.

So while the analysis suggests the takeup rate of light industrial land of 0.66ha per annum will mean the remaining vacant light industrial land will be absorbed over the next 30 years, the reality is that a majority of this takeup can be attributed to existing developed light industrial properties.

Refer to Appendix E - Industrial Land Demand Assessment

Rather than leaving a significant portion of the Structure Plan area vacant for many years to come, this Structure Plan seeks to provide a balanced mix of land uses to optimise the site for the highest and best mix of uses. It is therefore proposed to zone some of the existing light industrial land to ‘Commercial-Other’ and ‘Shop’ to deliver uses that will have a higher employment generating potential to ensure the delivery of a positive job outcome within a medium timeframe. This commercial outcome is also supported by a separate Retail Sustainability Assessment prepared by Macroplan Dimasi.

Refer to Appendix F – Retail Sustainability Assessment

The northern portion of the subject site also lends itself to a residential outcome, owing to the amenity afforded by the nearby Wardandi Flora Reserve and the Leschenault recreation precinct immediately to the north of Paris Road.

3.2.2 Achieving a Positive Interface to Light Industry

Light industrial uses by their definition are those that ‘will not adversely affect the amenity of the locality by reason of emission of light, noise, electrical interference, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water or other waste products’. Notwithstanding, the Structure Plan proposes the establishment of an open space corridor and wider road reserves to provide a physical separation between light industrial and residential zoned land. This open space corridor will afford a high amenity outlook for residential lots abutting this space.

Landscaping and vegetation of the open space corridor, street tree planting within the adjacent road reserves and landscaping of the front setback areas to future light industrial lots will all play a role in softening the interface between residential and light industrial development. The cross section provided at Figure 8 demonstrates the proposed separation and vegetation screening to achieve a high amenity outcome and separation between future residential and light industrial lots.

Refer to Figure 8 – Landscape Cross Section

3.2.3 Separating Traffic

The road network design of the Structure Plan deliberately separates industrial and residential traffic to avoid conflicts between trucks and cars. The proposed internal road network logically connects to The Promenade (future Kingston Drive) to the west, Sweny Drive, and provides a centralised link south.

3.3 Residential

3.3.1 Land Use and Residential Density

The development of land for residential purposes is to be in accordance with the requirements of the State Planning Policy No. 7.3 Residential Design Codes: Volume 1 and Volume 2 with reference to the applicable R-Code number, except as otherwise required by a Local Development Plan.

The proposed residential densities as designated on the Structure Plan and resultant lot yield is outlined in the following table:

Table 4 – Estimated Dwelling Yield

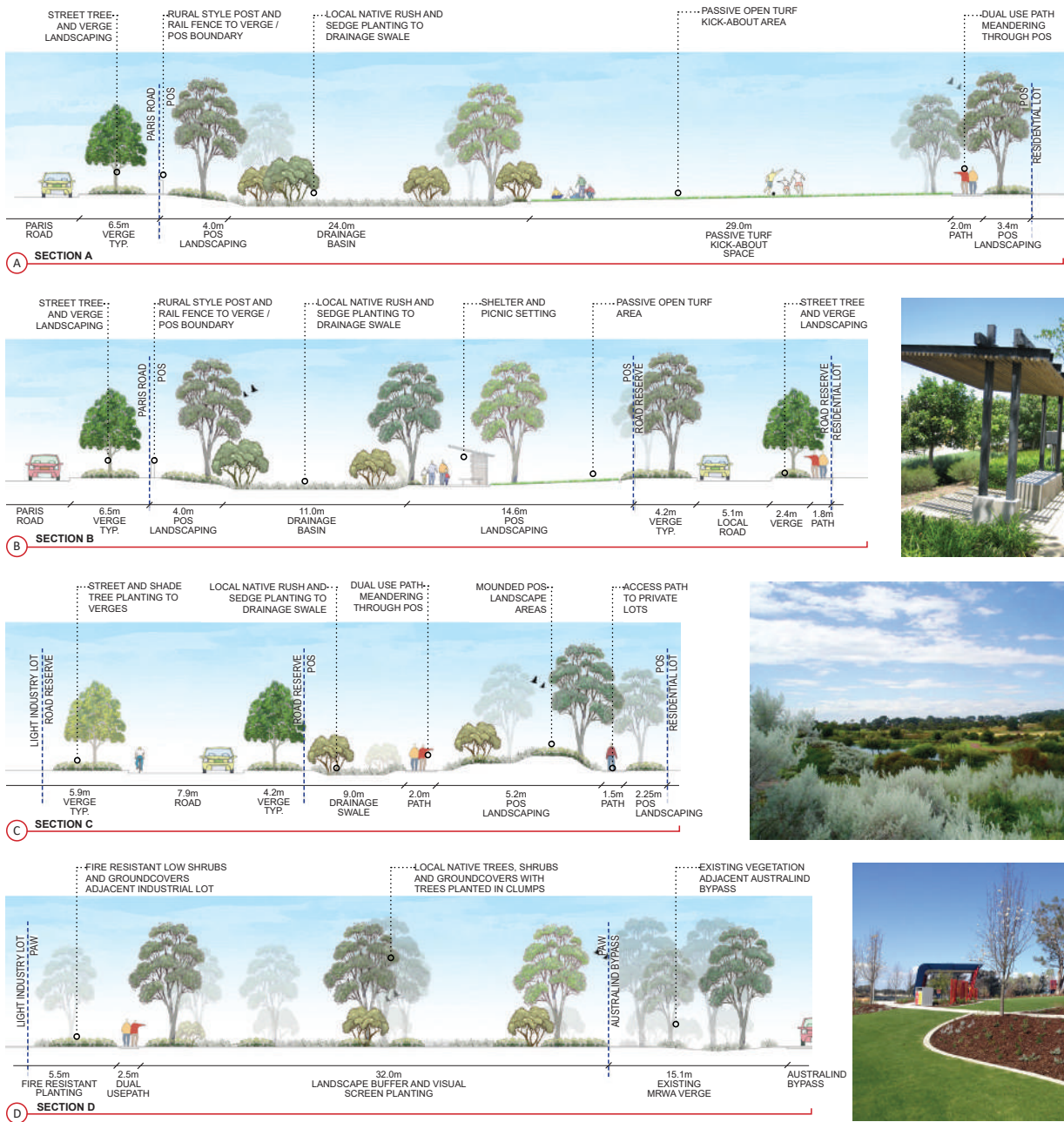
Density	Net Subdividable Area	Estimated Dwelling Yield
R25	3.9759 ha	113 dwellings
R30	5.3425 ha	178 dwellings
R40	3.4935 ha	158 dwellings*
TOTAL	12.8119 ha	449 dwellings*

* Please note that this figure does not apply the site area bonus available if the land were to be developed for retirement living purposes or on the basis of multiple dwellings being proposed

Based on the above estimated dwelling yield of 449 dwellings, the Structure Plan has the potential to accommodate 1,136 new residents, based on an average household size of 2.53 persons per dwelling for Australind (Source: Harvey Community Profile, 2016).

The residential site area density, calculated in accordance with Liveable Neighbourhoods (2015), is 35 dwellings per site hectare. This is a reasonably high residential yield outcome which is the result of the residential land being located in proximity to commercial land uses, the recognised need to respond to a shortfall in retirement living accommodation and based on the subject site’s proximity to existing services, including recreation and education facilities immediately to the north of the Structure Plan area.

The Structure Plan identifies the potential to accommodate retirement living / aged persons’ dwellings within R40 coded residential areas, which are appropriately located in close proximity to the commercial designated land. This is in response to the recognized undersupply of retirement living units within the locality. According to Macroplan (Appendix F), there is currently an undersupply of 146 retirement living units. This undersupply is projected to increase further to 191 dwellings by the year 2026.



PARIS ROAD, AUSTRALIND
TYPICAL SECTIONS

DWG: TPG-05-02
REV: C
DATE: 14-07-2021
SCALE: 1:250 @ A3

0 1 2 3 4 5 6 m

© THIS DRAWING CAN NOT BE PUBLISHED OR DISPLAYED WITHOUT THE WRITTEN PERMISSION OF THE CLIENT AND ARCHITECT AND IS SOLELY FOR INFORMATION PURPOSES ONLY AND MAY ALTER WITHOUT NOTIFICATION.



Figure 8. Landscape Cross Section

The rationale for the distribution of residential density throughout the Structure Plan is set out below:

- Residential R40 zoned land has been identified adjacent to the 'Commercial' and 'Shop' zoned land to take advantage of future services on this land, which anecdotally may include medical centre, pharmacy, private recreation, food and beverage and limited convenience retailing.
- The R40 coded land could accommodate retirement living which has been identified by Macroplan as being in substantial undersupply in the locality and this undersupply is only going to increase should demand not be met.
- R30 coded land has typically been designated adjacent to areas of higher amenity, such as adjacent to public open space and along the 'main street' / entry road to the precinct. This land is intended to provide a variety of lot product, including rear laneway lots and smaller front loaded residential lots. The intent is to provide a diverse range of lot product to the majority of existing larger residential lot product currently available within Australind.
- R25 coded land is provided over the remainder of land designated for residential purposes and will cater for the continued demand for the standard residential lot product typical to Australind.

It is considered that the proposed density throughout the Structure Plan area will provide a range of residential lot product to delivery diversity and to meet specific demand within the market such as retirement living units.

3.3.2 Local Development Plan

It is anticipated that Local Development Plans will be prepared to vary specific deemed-to-comply requirements of the R-Codes for those lots abutting public open space and / or serviced by a rear laneway.

3.4 Commercial

The Structure Plan proposes to zone 3.08 ha of land as 'Other Commercial – Showroom' and 1.03 ha of land as 'Shop' to provide a logical extension to the existing Spudshed located in the north-eastern portion of the Structure Plan area. It is expected that this portion of the Structure Plan will yield in the order of 1.1 ha of commercial net lettable area and approximately 1000-1,200sqm of shop-retail floorspace.

Conceptually, a tavern/restaurant, medical centre, fast food outlets, service station, chemist outlet and indoor recreation centre have previously been considered for this area. These land uses are considered compatible with both the existing Spudshed and future residential land use, while also not competing or undermining the existing established hierarchy of activity centres within the District.

Macroplan Dimasi were engaged to prepare a Retail Sustainability Assessment (RSA), provided at Appendix F, which examines the inclusion of commercial floorspace within the Structure Plan and its impact on the activity centre hierarchy in accordance with the requirements of the Activity Centres for Greater Bunbury Policy.

The RSA assesses the likely economic impact on the proposed commercial and retail uses on the surrounding activity centres, including the Treendale Shopping Centre, Australind Shopping Centre, Eaton Fair and Brunswick junction. The report concludes that the proposed inclusion of 'Other Commercial – Office' and 'Shop' zones would have modest to limited impacts on any of the existing centres within the retail catchment area, for the following reasons:

- Spudshed already provides a commercial anchor and provides a point of difference to food and grocery offered by traditional supermarkets. The Spudshed attracts business from a large catchment, given its differentiated offer.
- The defined trade area population is projected to grow steadily in the foreseeable future, increasing the overall population base and retail expenditure pool in the region for all relevant centres.
- The proposed additional retail facilities would provide complementary retail outlets servicing both local residents and residents from the broader region. Given the proposed composition of the offer, these facilities are unlikely to redirect spending from any single particular centre, but rather from the myriad of surrounding centres.
- The estimated sales potential for the proposed additional retail facilities within the Structure Plan area represents only around 1.6% of the total available retail expenditure within the defined primary trade area. Therefore, almost all of the trade area expenditure would still be directed to the surrounding existing centres.
- The estimated impacts on traditional retail centres in the primary sector are considered to be well within the reasonable bounds of normal competition, and at around 3% or less, would not in any way threaten the viability of any retailer in the area.

Other key findings of the RSA that have informed the land use mix proposed by this Structure Plan include:

- An additional medical centre is likely to reduce the supply gap for GP services in the Australind primary sector, which at 2018 was estimated to be undersupplied by 3 GPs and at the year 2026 is estimated to be an undersupply of 18 GPs.
- The land uses envisaged by this Structure Plan could deliver between 321-336 jobs in the short term (within five years) whereas if the Structure Plan area were to remain entirely light industry, the timeframe to realise an equivalent number of jobs would be a much longer timeframe.

The RSA concludes that the proposed Structure Plan is consistent with the current and projected demand for residential, retail, commercial and light industrial uses. The Structure Plan would deliver a positive employment outcome within a medium time frame versus the prospect of having large tracts of undeveloped light industrial land for many years to come.

Refer to Appendix F - Retail Sustainability Assessment

3.5 Movement Network

A Transport Impact Assessment (TIA) has been prepared by traffic consultants Transcore in support of the Structure Plan design. Refer to Appendix G.

The Transport Assessment concludes that the proposed road network within the Structure Plan has been designed in accordance with Liveable Neighbourhoods requirements and has capacity to safely accommodate the ultimate projected traffic volumes predicted to use the road network.

3.5.1 Existing Movement Network

Forrest Highway, located along the eastern edge of the Structure Plan area, is designated as a Primary Regional Road Reserve within the Greater Bunbury Region Scheme and is classified as a Primary Distributor in the Main Roads WA functional road hierarchy. Forrest Highway is a dual carriageway rural highway (two lanes each way) with a wide central median. The highway has a posted speed limit of 80km/h in the northbound direction and 100km/h in the southbound direction in the vicinity of the site.

Paris Road is classified as a Local Distributor road in the Main Roads WA functional road hierarchy and is under the care and control of the Shire of Harvey. It has a posted speed limit of 80km/h in this vicinity. Paris Road is constructed as a two-lane rural road with two 3.5m traffic lanes and approximately 1.0m of the shoulders sealed on each side.

Paris Road currently forms a T-intersection onto Forrest Highway east of the Structure Plan area. The right turn from Paris Road across the northbound carriageway of the highway is controlled by Stop signs and then has a right turn acceleration lane over 500m in length to merge with southbound traffic on the highway.

The Paris Road / Kingston Drive intersection is constructed as a single-lane roundabout.

The main entry road into the Structure Plan area from Paris Road is constructed as a two-lane boulevard-style road, with two 4.5m traffic lanes and a 2.5m red asphalt median with traffic islands to protect the street lights located within the median.

The existing industrial access roads at the southwest edge of the Structure Plan area include Ditchingham, Place, Piggott Drive, Hewdon Road and Sweny Drive. They are constructed with 7.4m carriageway width and the default built up area speed limit of 50km/h applies.

Piggott Drive will ultimately become a frontage road or service road servicing the existing industrial development along the planned Kingston Drive extension in this area. The intersection of Ditchingham Place / The Promenade / Piggott Drive has been constructed as a single-lane roundabout on the alignment of the planned Kingston Drive extension.

3.5.1.1 Existing Traffic Volumes

Transcore sourced the existing traffic count information from Main Roads WA online Traffic Map Facility for the surrounding road network. The existing traffic volumes are provided in the following table.

Table 5: Existing Traffic Volumes

Road (Location)	AWT (HV)	AM Peak	PM Peak	Weekend Peak	Date
Forrest Hwy (N of Clifton Rd)	13,350vpd (18.2%HV)	883vph 0800-0900	1059vph 1530-1630	1261vph 1100-1200	2013/14
Forrest Hwy (S of Raymond Rd)	18,912vpd (11.8%HV)	1321vph 0745-0845	1673vph 1630-1730	1705vph 1100-1200	2013/14
Paris Rd (W of Forrest Hwy)	6,110vpd (??%HV)	518vph 0745-0845	580vph 1645-1745	460vph 1145-1245	2017/18
Kingston Dr (N or Leisure Dr)	6,339vpd (5.2%HV)	619vph 0800-0900	637vph 1700-1800	480vph 1145-1245	2014/15
Ditchingham Pl (W of Piggott Dr)	6,038vpd (7.8%HV)	488vph 1145-1245	567vph 1615-1715	604vph 1115-1215	2016/17

3.5.1.2 Heavy Vehicles

Forrest Highway is classified as a Restricted Access Vehicle (RAV) Network 7, which allows heavy vehicle combinations up to 36.5m long to operate on the highway.

Paris Road (from Forrest Highway to Grand Entrance) is included in RAV Network 3 to provide heavy vehicle access to industrial land uses along Ditchingham Place. RAV Network 3 allows a number of heavy vehicle combinations up to 27.5m long to operate on this road. Deliverys to the Spudshed currently include 27.5m B-double trucks.

3.5.1.3 Public Transport

Existing bus route 841 from Bunbury bus station to Australind runs on Leisure Drive and passes within 600m northwest of the Structure Plan area. It typically provides an hourly service during the day on weekdays with higher frequency during weekday morning and evening peak periods, hourly services on Saturdays and two-hourly on Sundays and public holidays.

3.5.1.4 Pedestrian and Cyclist Facilities

There is an existing 2m path along one side of the main entry road and the Spudshed access road within the Structure Plan area, which conveys pedestrian and cyclist access from Paris Road.

The hard shoulders of Forrest Highway can be used by cyclists and the design of the Forrest Highway / Paris Road intersection includes cycle lanes on Forrest Highway and across the seagull island in the Forrest Highway median.

Kingston Drive north of Paris Road includes 2m paths on both sides, as does The Promenade south of Ditchingham Place. The Bunnings warehouse development south of Ditchingham Place also provided a 2m wide path on the southern verge of Ditchingham Place adjacent to that development.

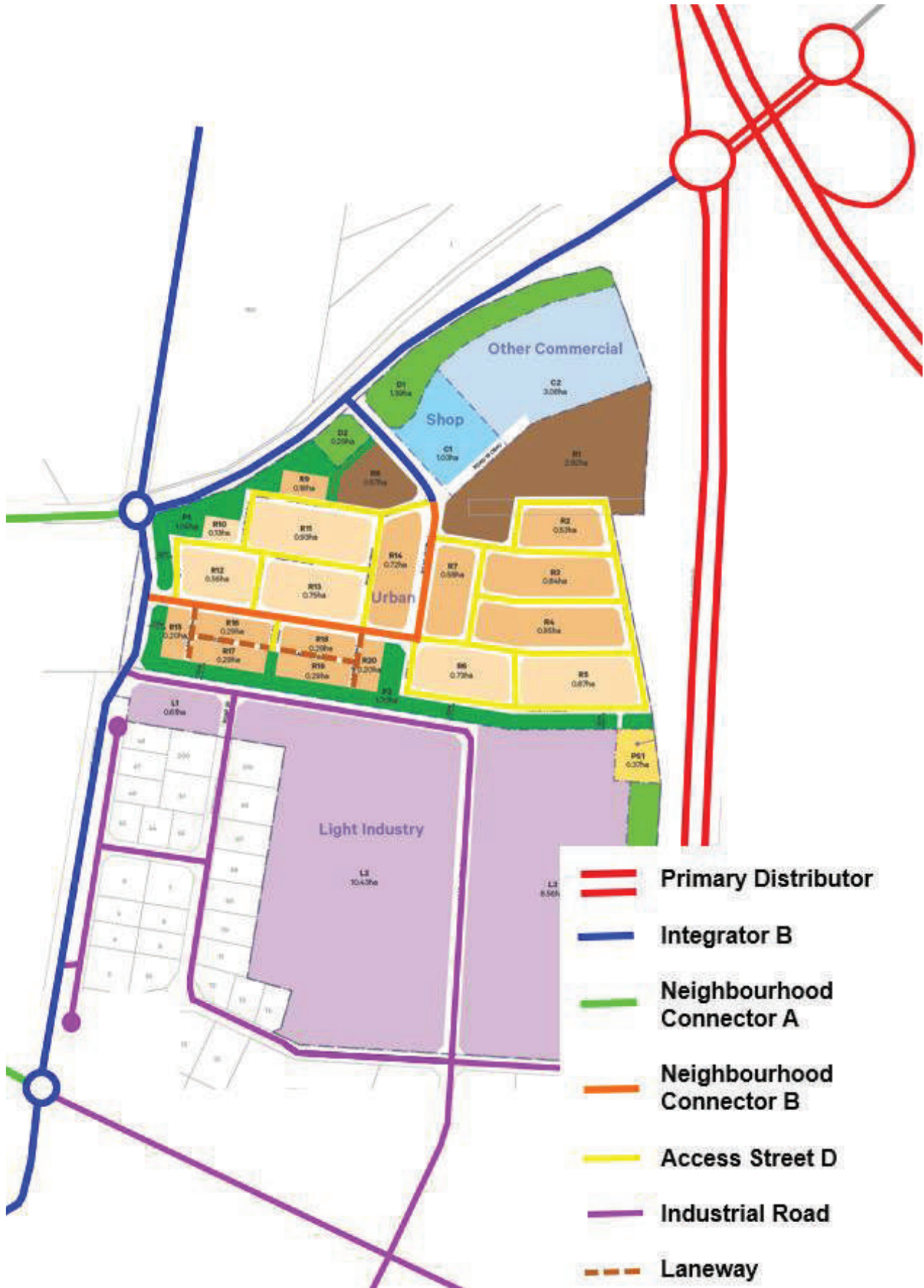


Figure 9. Proposed Road Hierarchy (Source: Transcore 2019)



Figure 10. Proposed Intersection Treatments (Source: Transcore 2019)

3.5.2 Proposed Internal Transport Network

3.5.2.1 Traffic Generation

It is anticipated that the proposed Structure Plan would ultimately generate traffic flows of up to 16,870 vehicles per day (vpd) (i.e. 8,435 in / 8,435 out) but approximately 1,900vpd is existing traffic (Spudshed), 6,350vpd would be pass by or diverted trips already on the adjacent road network and 8,620vpd would be new trips on the surrounding road network.

3.5.2.2 Road Hierarchy

The proposed hierarchy of roads within and adjacent to the Structure Plan area is illustrated in Figure 9 and summarised further below.

Main Entry Road

The existing main entry road from Paris Road to the Spudshed driveway has been constructed with two 4.5m traffic lanes and a 2.5m red asphalt median with traffic islands around the light poles. The Structure Plan proposes that this road be accommodated within a 25m road reserve, which is consistent with the 25.2m width nominated in Liveable Neighbourhoods for an Integrator B (town centre main street).

The continuation of this main entry road south and westwards to connect to the future Kingston Drive extension will carry significantly lower traffic flows (less than 2,000vpd) and is proposed as a Neighbourhood Connector B route through the proposed residential area.

Access Streets

Most access streets within the Structure Plan area will be an Access Street D classification. This standard Access Street is a 6m wide carriageway in a 15m road reserve. On access streets abutting public open space, Liveable Neighbourhoods allows the verge width to be reduced. The Structure Plan allocates 13.5m wide road reserves in these circumstances. Between the R12 and R13 blocks and the R6 and R5 blocks are short access streets which are 14m in width as the length of road reduces the need for verge space either side.

Laneways

A minimum width of 6.0 metres is proposed for laneways identified within the Structure Plan area to accommodate two-way movement and rubbish collection.

Refer to Figure 9 – Proposed Road Hierarchy (Source: Transcore 2019)

Departure from Planned Connection Between Paris Road and Saltwood Drive

A previous approved subdivision of the Structure Plan area (WAPC Ref: 153812) contemplated a continuous north-south oriented road reserve between Paris Road and Ditchingham Place that would have provided a continuous link between Paris Road and Saltwood Drive. This connection was considered desirable when the connection was proposed to service industrial traffic only. However, this connection is no longer contemplated by this Structure Plan on the basis that it is more desirable to separate future industrial and residential traffic within the Structure Plan area.

Access to Paris Road from Saltwood Drive is currently available via Ditchingham Place and Grand Entrance with future access to be secured via the Kingston Drive link. The provision of a north-south road through the Structure Plan area to provide a connection between Paris Road and Saltwood Drive is not necessary for the adequate functioning of the local road network.

3.5.2.3 Intersection Controls

The proposed intersection treatments are illustrated in Figure 10.

It is anticipated that the Forrest Highway / Paris Road intersection will ultimately need to be signalised to accommodate the combination of natural traffic growth and development traffic in this area by the time the Structure Plan area is fully developed.

A second left-in left-out access is mooted for Paris Road from the Structure Plan area.

It is anticipated that the existing full movement T-intersection at the main entry road intersection on Paris Road will need to be upgraded to traffic signals or a proposed roundabout to accommodate the turn movements generated by the proposed commercial / retail land in the longer term. Given the current preference of Main Roads WA for roundabouts instead of new signalised intersections, it is anticipated a roundabout will be the preferred treatment. This is to be addressed in more detail prior to or at the subdivision stage.

The proposed 4-way intersections along the main entry road are proposed to be treated as roundabouts.

Two full movement T-intersections are proposed on the planned Kingston Drive extension to provide access into the industrial and residential precincts of the Structure Plan area.

The proposed 4-way intersection within the industrial area is recommended to be controlled by Stop signs on the east and west approaches as there would not be expected to be any significant amount of east west cross movement through this intersection.

Refer to Figure 10 – Proposed Intersection Treatments (Source: Transcore 2019)

3.5.2.4 Public Transport

The WAPC Transport Impact Assessment Guidelines (2016) suggest that it is desirable for at least 90 per cent of dwellings to be within 400m straight line distance of a bus route.

The planned Kingston Drive extension will provide a suitable north south road alignment for a future bus route adjacent to the Structure Plan area. This will result in more than half of future residents being located within 400m of this future bus route which is considered a reasonable level of public transport accessibility, taking into consideration the lower availability of public transport services in regional locations outside of the Perth metropolitan area.

3.5.2.5 Pedestrian and Cyclist Facilities

Paths will be provided on at least one side of all roads within the Structure Plan area. It is proposed to provide paths on both sides of the main entry road adjacent to the proposed ‘Shop’ zoned land.

Laneway lots would be required to have footpath access to the visitor parking bays provided within the road reserve.

On road cycling facilities are proposed for the main entry road.

3.6 Public Open Space

3.6.1 Provision of Public Open Space

Public Open Space (POS) will be provided in accordance with the requirements of Liveable Neighbourhoods, which requires that a minimum of 10% of the Net Subdivisible Area be provided as POS. Two percent of the 10% POS provision may comprise restricted use POS, such as drainage reserves and natural wetlands. In this case, the drainage component has not been utilised due to a surplus of POS supplied.

The POS schedule is detailed in Table 6.

Table 6 – POS Schedule

Public Open Space Schedule	Sub Total	Total
Site Area		50.99 ha
Less Deductions (Gross Area)		
Regional Open Space	N/A	
Shop	1.1800 ha	
Other Commercial - Showroom	3.1500 ha	
Industrial	21.6100 ha	
Landscape and Drainage Buffer	3.3850 ha	
Sub Total	29.3250 ha	
Net Residential Subdividable Area		21.6650 ha
Total Public Open Space Requirement		2.16650 ha
Public Open Space Contribution		
Unrestricted Public Open Space	2.8189 ha	
Restricted Public Open Space	N/A	
Total POS Provided		2.8189 ha
Percentage		13.0%

3.6.2 Form and Function of Public Open Space

A Landscape Concept Plan has been prepared for the areas of POS within the Structure Plan and this plan demonstrates the ability for the proposed areas of POS to accommodate a range of passive and active recreation activities in addition to accommodating functional drainage requirements. Specifically, POS is envisaged to accommodate the following functions:

- Retention of approximately 0.6 ha of existing mature vegetation adjacent to Paris Road in the northern part of the Structure Plan area;
- Shallow road side drainage swales planted with local native rushes and sedges;
- Additional drainage basin areas to accommodate overland flows across Australind Bypass;
- Shade shelter and picnic setting at strategic locations adjacent to cycle and pedestrian paths;
- Mounded POS areas planted with local native species to screen industrial lots from residential lots;
- Landscaped buffer areas to Forrest Highway; and
- Centralised active POS area provided turf kick-about space adjacent to local scale playground and picnic benches / shelters.

The Structure Plan provides a balanced mix of passive and active recreational spaces to suit the needs of future residents within the Structure Plan area.

Refer to Appendix H – Landscape Concept Plan

3.6.3 Proposed Management Responsibilities

The local POS will ultimately be handed over to the local government free of cost and therefore the management of this POS will ultimately be the responsibility of the local government. Similarly, the Landscape and Drainage buffer will also be ceded to the local government free of cost. It is expected that the local government take on management responsibilities of this restricted open space also.

3.7 Stormwater Management

A Local Water Management Strategy (LWMS) has been prepared by Oversby Consulting in accordance with the WAPC's *Better Urban Water Management* (2008) document and is provided at Appendix I. The LWMS has informed the preparation of this Structure Plan and the key elements of the LWMS are summarised below.

Water Conservation and Servicing

- Encouraging all lot owners to install water efficient fixtures and fittings for all buildings constructed;
- Encouraging industrial and commercial lot purchasers to participate in the Water Corporation's Waterwise Business Program;
- Encouraging all lot owners to install a suitable rainwater tank. The tank size will be dependent on the roof area and water usage patterns of the business;
- Providing awareness raising material to lot owners regarding water saving measures;
- Encouraging grey water reuse systems, particularly for garden irrigation requirements;
- Public open spaces and street landscaping will have a strong focus on using locally suitable native Waterwise species and the retention of existing remnant native vegetation to reduce irrigation requirements; and
- Water supply and sewer servicing from Water Corporation will be upgraded and extended to service the development.

Drainage Management Strategy

- Constructing side entry and junction pits within the road reserves to manage runoff from the road up to and including the 10% annual exceedance probability (AEP) storm event for commercial and light industrial areas and the 20% AEP for residential areas;
- Stormwater detention systems combined with treatment systems such as bioretention gardens will capture and treat stormwater flows. All flows leaving the site, up to the 1% AEP have been modified to rates agreed with the Shire of Harvey;
- Commercial and light industrial lots are to provide on-lot detention of flows up to and including the 10% AEP storm event within lot boundaries using bioretention gardens or soakwells;
- Improving and utilising the existing detention basin (Dirk Basin) adjoining the subject land to the south;
- Improving and utilising the existing detention basins on the northern extents of the development abutting Paris Road;

- Incorporating water treatment structures as part of the landscaped multiple use corridor;
- Providing stormwater storage in the eastern landscape buffer; and
- Modelling assumes all residential lots to provide 1m³ of storage for every 65m² of roof area. Excess flows will be directed towards the road drainage network. Lots less than 300m² are assumed to have a direct lot connection to the road drainage with no on lot storage.

Flood Protection

- All finished floor levels will be designed to maintain a clear separation of 300mm between the habitable floor levels and the 1% AEP event flood level generated on site; and
- Directing excess water, when the drainage network flows at capacity, down the road reserves and multiple use corridors and into the three detention basins designated for the subject land, which will protect necessary infrastructure.

Water Quality

- Implementing water sensitive urban design principles that include property soak wells and/or on-site detention basins, for industrial and commercial lots, to capture sediments, large debris and nutrients from impervious surfaces;
- Planting public open spaces and road verges with appropriate local native plants, minimising grassed areas and use of soil amendments to minimise the quantity of fertiliser application required;
- Providing all lot owners with information relating to minimisation of lawn areas, and the establishment and maintenance of Waterwise and nutrient wise gardens; and
- Industrial and commercial building design guidelines to encourage structural separation of potential pollution runoff in work areas from stormwater runoff pathways.

Groundwater Management and Acid Sulfate Soil Management Strategy

- Implementing WSUD principles to treat stormwater runoff prior to infiltrating into the groundwater table;
- Using appropriate fill levels and subsoils to ensure adequate separation of the buildings, WSUD drainage and property soak wells from the current average annual maximum groundwater level;
- Lime treating of all soils excavated and stockpiled. Treated soils then to be reused on-site after tests confirm they satisfy the acceptable threshold of a pH greater than 6.5;
- Limiting the need to undertake dewatering excavations and following the dewatering management plan when dewatering required. Monitoring of downstream bores to ensure that no contamination of groundwater quality occurs during dewatering practices; and
- Landscaping to utilise groundwater acquired through trading.

Monitoring and Maintenance

- Monitoring is to be undertaken throughout the construction phase of each stage for surface water and potential groundwater in relation to possible contamination; and
- 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;
- The Shire of Harvey 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.

Under the post-development stormwater scenario within the LWMS, minor refinements to the configuration of the 'Landscape and Drainage Buffer' land use areas under the LSP may be required. Detailed stormwater design will be undertaken at the subdivision stage and in accordance with an Urban Water Management Plan prepared as a condition of subdivision approval.

Requirement where Groundwater Source is Not Secured

Where an adequate ground water licence (or other suitable water supply) is unable to be secured to provide an acceptable level of irrigation for the proposed landscape approach, an alternative landscaping approach to that identified in the approved local structure plan will be required to be developed to the satisfaction of the Shire. Any alternative landscaping solution will need to be cognisant of the following:

- Landscaping needs to provide good amenity outcomes for residents
- Reduction in planting (eg turf) and potential impacts on the water strategy with respect to water quality treatment
- Need to ensure treatment measures (eg swales) have capacity for runoff from additional paving areas
- Ensuring mulched areas do not transport to roads and drainage areas
- Residential community expectations that POS will contain turf for passive recreation activities

The above will be addressed at the subdivision stage through a revised landscape plan and the UWMP prepared as a condition of subdivision to the satisfaction of the Shire.

Refer to Appendix I – Local Water Management Strategy

3.8 Bushfire Management

Emerge Associates were engaged to prepare a Bushfire Management Plan (BMP) to address bushfire risk within the Structure Plan area. The report notes that the majority of the Structure Plan area is cleared of native vegetation and is composed of areas of bare mineral earth or unmanaged grassland (Class G). There is an area of forest (Class A) and shrubland (Class C) vegetation located in the north-west corner of the Structure Plan area, while outside of the site, forest vegetation has been identified to the east, north and west of the Structure Plan area associated with existing vegetation within the Forrest Highway road reserve and areas of retained native vegetation.

The BMP assumes the following post development vegetation classification for vegetation within and around the Structure Plan:

- The majority of classified vegetation within the site will be removed to make way for development or converted to areas of public open space that will be managed to a 'low threat' standard;
- A visual amenity / landscape buffer adjacent to the eastern boundary of the Structure Plan area where it abuts the future industrial development areas will be revegetated and is assumed to be classified as scrub vegetation;
- Vegetation external to the Structure Plan area, apart from vegetation within the future Kingston Drive / The Promenade extension and the Sweny Drive extension, will remain the same as the pre-development assessment. The vegetation within the future Kingston Drive/The Promenade extension and the Sweny Drive extension will be removed as part of the construction of these roads.

The BMP includes a BAL assessment undertaken in accordance with the requirements of SPP3.7 and associated Guidelines. The BMP demonstrates that as subdivision and development progresses in accordance with the Structure Plan that it will be possible for an acceptable solution to be adopted for each of the applicable bushfire protection criteria as outlined in the Guidelines. This includes the following outcomes:

- Location: future habitable buildings can be located in an area that will, on completion, be subject to low or moderate bushfire hazard. Habitable buildings will be able to be located in areas subject to a BAL rating of Bal-29 or less.
- Siting and Design: The Structure Plan, through the location of public roads and public open space, generally provides suitable separation to enable a BAL rating of BAL-29 or less to be achieved at future habitable buildings. Portions of the R40 development area and industrial area are identified as being subject to a BAL rating greater than BAL-29. In these areas, future habitable buildings will be able to be designed so that the minimum separation necessary to achieve BAL-29 or less is provided, through the location of roads, buildings, parking or communal open space areas (with the development large enough to accommodate the necessary setbacks).
- Vehicular Access: the proposed Structure Plan provides for an interconnected loop road network within the site that will connect to the existing public road networks, specifically Paris Road to the north, Ditchingham Place to the south and the proposed extension of Kingston Drive/The Promenade in the west. It is noted that the road network for the industrial and residential components of the Structure Plan will be separated, however both will have access to two different destinations. These public roads allow for egress to the east, west, north and south, including east towards Forrest Highway, which allows egress to the regional road network.

The management/mitigation measures outlined within this BMP and to be implemented through the Structure Plan and associated future subdivision processes demonstrate that the bushfire protection criteria can be satisfied in accordance with SPP 3.7 and the Guidelines, and having regard to clause 6.11 of SPP 3.7, the precautionary principle has been satisfied and bushfire risk can be appropriately managed.

Refer to Appendix J – Bushfire Management Plan

3.9 Servicing and Staging

3.9.1 Water Supply

The Water Corporation reticulated water supply network extends down Paris Road at the northern end of the Structure Plan area and Sweny Drive in the southern end of the precinct. As part of previous works, a 250Dia water main was constructed within a 3m wide easement to extend services south into the Structure Plan area. This service will need to be realigned as part of future subdivision works.

A 150Dia Water Corporation main exists at the northern connection point of Sweny Drive, with a 100Dia main at the southern extent of the road's current construction. Both of these mains, along with the 150Dia main in Piggott Drive will be connection points for the future subdivision.

Water Corporation also propose a 300Dia water main extending south of the Kingston Drive/Paris Road roundabout, which is proposed to terminate 25m into the future Kingston Drive extension road reserve. This main will provide an additional connection point for future subdivision within the Structure Plan area.

Water reticulation will likely consist of a 250Dia main running centrally from Paris Road to Sweny Drive and ultimately Ditchingham Place. From this main, the industrial lots are proposed to be served by smaller 150Dia reticulated mains, while future residential lots will be serviced by 100Dia reticulation.

3.9.2 Waste Water

The majority of the Structure Plan area is located within the Australind pump station C catchment area. The flows for this area, as calculated by the Water Corporation, are equal to 8.8L per second. Pump station C is proposed to be located within the Structure Plan area within a landscape buffer area adjacent to the Forrest Highway and future light industrial development to maximise separation to future residential land uses within the Structure Plan area.

The pump station will ultimately take discharges from three large diameter pressure mains on top of the 8.8L/s from the catchment area. These additional flows result in the pump station possessing a long term pump rate of 165.8L/s, requiring a Type 180 pump station and 450Dia pressure main to the Kemerton treatment plant. Discussions between Calibre engineers and the Water Corporation indicate it is likely that a temporary smaller sized pump station and pressure main will be accepted as an interim measure.

It is proposed that 225Dia gravity sewers will service the proposed light industrial lots and residential lots. A 225Dia main is also proposed to extend to the north to service the commercial land use precinct, including the Spudshed private pump station.

The final location, size and configuration of the WWPS site will be addressed prior to or at the subdivision stage in accordance with Water Corporation requirements.

3.9.3 Power

A review of Western Power's Network Capacity Mapping Tool indicates there is 30,000 kVA remaining capacity in the area. This is sufficient capacity to serve the proposed development envisaged by this Structure Plan.

It is noted that the proposed commercial zoned land will generate significant power demands which may require additional transformers. Western Power will likely require a HV ring main configuration and therefore the 400HV cable at the northern end of the Structure Plan area will need to link into the HV line available at Sweny Drive and Piggott Drive.

3.9.4 Telecommunications

Both Telstra and NBN services are available to the Structure Plan area, with infrastructure provided within the Paris Road reserve. These services have previously been extended into the subject site. These services are able to be extended further to service future subdivision and development within the Structure Plan area.

3.9.5 Gas

The current provider of reticulated gas for the Structure Plan area is Atco Gas Australia. A 150ST 4.2HP 1900kPa gas main exists along the northern side of Paris Road. Gas can be extended within the Structure Plan area to service future development.

3.9.6 Siteworks and Earthworks

A preliminary earthworks concept was prepared by Calibre to inform the Structure Plan subdivision layout. The concept proposes the importation of 1.5m of imported clean fill over the industrial lots and at least 1.3m of clean fill over the proposed residential lots. These earthworks will allow for the installation of drainage and service infrastructure. Furthermore, fencing and management of the site works will need to be in accordance with DBCA requirements.

3.9.7 Staging

No specific staging strategy has been identified for the Structure Plan area. The Structure Plan has been configured so that the light industrial land can be subdivided and developed independent of the residential and commercial land to the north.

Refer to Appendix K – Engineering Servicing Report

3.10 Developer Contribution Arrangements

Developer contributions for the Structure Plan area are established via the Shire of Harvey and Shire of Dardanup Joint Town Planning Scheme No. 1 (JTPS) dated November 2018. The JTPS establishes shared infrastructure costs relating to the development of the East Australind and Eaton precincts. The developer contribution costs relate to the following items:

- Eaton Drive first carriageway;
- Eaton Drive second carriageway;
- Kingston Drive;
- Ditchingham Place;
- Land Acquisition;
- Collie River Bridge; and
- Administration costs.

At the time of report publication, the contribution rate applicable to the Structure Plan area is \$37,259 / ha, which equates to a total overall contribution of \$1,561,158.

3.11 Implementation

This Structure Plan has been prepared in accordance with the requirements of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations). The Regulations set out the process in which a Structure Plan is to be considered and processed by the Shire and establishes the WAPC as the final determining authority in relation to Structure Plans.

Following WAPC approval of this Structure Plan, it is intended that a basic scheme amendment be initiated to the Shire of Harvey DPS1 to normalise the Structure Plan into the scheme. The Structure Plan will be used to guide future subdivision and development applications. Local Development Plans will also be prepared to provide detailed design guidance for residential lots abutting POS and / or that are serviced by a laneway.

Appendix A

Certificate of Title

Appendix B

Submission on Shire of Harvey Local Planning Strategy

Appendix C

WAPC Correspondence

Appendix D

Acoustic Report

Appendix E

Industrial Land Demand Assessment

Appendix F

Retail Sustainability Assessment

Appendix G

Transport Impact Assessment

Appendix H

Landscape Concept Plan

Appendix I

Local Water Management Strategy

Appendix J

Bushfire Management Plan

Appendix K

Engineering Servicing Report

element.

the art and science of place

Level 18, 191 St Georges Tce, Perth WA 6000

T. (08) 9289 8300 – E. hello@elementwa.com.au

elementwa.com.au