



Town Planning & Urban Design

Parkland Heights Local Structure Plan

Lot 1507 Eighty Road, Baldivis

Part 1

DECEMBER 2020

Parkland Heights Local Structure Plan.

PART 1

DECEMBER 2020

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DOCUMENT STATUS

Version	Comment	Prepared	Reviewed	Issued
1	Lodgement	TV	KB	06.12.2018
2	WAPC Modifications	TV	KB	09.12.2020

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This structure plan is prepared under the provisions of the City of Rockingham Town Planning Scheme No. 2.

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

19 OCTOBER 2015

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b) of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Date of Expiry: 19 OCTOBER 2025

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Table of Amendments

Amendment No.	Summary of Amendment	Amendment Type	Date Approved by Council/WAPC
1	Stage 4 & 5 Lot Product Alterations	Minor	N/A
2	Stage 6 Lot Product Alterations; and Introduce Part 1 & R-MD Code Provisions	Minor	N/A
3	Increased residential density from 'R20' to 'R25' in select locations over portion of the Structure Plan area east of Nairn Drive; Increased residential density from 'R30' to 'R40' for lots with laneway access over portion of the Structure Plan area east of Nairn Drive; and Introduced 'RMD' Provisions over lots east of Nairn Drive designated 'R25' and 'R40' to be developed for a single house	Minor	N/A
4	Introduce 'Commercial' zone over previous 'Village Centre' west of Nairn Drive and delete note 3 from Structure Plan Map; Introduce 'Special Use' zone over previous 'Village Centre' east of Nairn Drive; Introduce requirement to prepare Local Development Plan/s over land zoned 'Commercial' and 'Special Use'; Delete Table 1 - Single House (RMD) Standards for Medium Density Housing; and Update terms of reference and structure of Part 1 - Implementation Report consistent with the <i>Planning and Development (Local Planning Scheme) Regulations 2015</i> and the WAPC's 'Structure Plan Framework' (August 2015)	Standard	13/02/2019
5	Minor updates including: <ul style="list-style-type: none"> Removal of left in, left out access point located on the south bound land (eastern side) of Nairn Drive; Modify the access street internal road network in the north eastern portion of the Structure Plan area (Stages 13 and 14); Increase the residential density of the grouped dwelling site of the corner of Nairn Drive and the east/west neighbourhood connector road from R40 to R60; Modify the configuration of POS K; and Modify the southern portion of the structure plan area to reflect WAPC subdivision approval 156276. 	Minor	23/12/2020

Table of Density Plans

Density Plan No.	Area of Density Plan Application	Date Endorsed by WAPC

Executive Summary.

This Structure Plan has been prepared to facilitate the coordinated development of the residual balance of Lot 1507 Eighty Road, Baldivis (Parkland Heights Estate).

The subject site is located within the South West Corridor of the Perth Metropolitan Region within the municipality of the City of Rockingham, approximately 10km south-east of the Rockingham Strategic Metropolitan Centre and 2.5km south of the Baldivis Town Centre.

The Structure Plan proposes continued development of the land predominantly for residential purposes, inclusive of a range of residential densities and associated public reserves.

The subject land is owned by Rockingham Park Pty Ltd.

Table 1: Executive Summary Table

Item	Data
Total area covered by the Structure Plan	120.8ha
Area of each land use proposed (approx.)	
Residential (nett)	60.48ha
Commercial	5.11ha
Special Use	1.31ha
Roads	37.06ha
Public Open Space	12.94ha
Public Purposes (Primary School)	4.03ha
Estimated lot yield	1,200 lots
Estimated dwellings	1,580 dwellings
Estimated commercial floorspace	10,000m ² NLA of retail/shop 4,500m ² GFA other non-residential
Estimated residential density	~ 15+ dwellings/gross urban zone ¹ ~26+ dwellings/site hectare ²
Estimated population (based on 2.8 persons per dwelling)	4,420 people
Primary School	1 site
Estimated number and % of Public Open Space given over to:	
Local Parks (< 3,000m ²)	4 @ 0.88ha (6.9%)
Neighbourhood Parks (> 3,000 ² - 2.5ha)	9 @ 6.22ha (48.3%)
District Open Space (> 2.5ha)	1 @ 5.77ha (44.8%)

FOOTNOTES:

¹ 'Gross Urban Zone' refers to the definition under WAPC's Directions 2031 and supporting documents.

² 'Residential Site Hectare' refers to the definition under Element 1 of WAPC's Liveable Neighbourhoods.

Parkland Heights Local Structure Plan

PART ONE - IMPLEMENTATION REPORT



1 Structure Plan Area

This Structure Plan shall apply to Lot 1507 Eighty Road being the land contained within the inner edge of the line denoting the structure plan boundary on the Structure Plan Map.

The Structure Plan is identified as the Parkland Heights Structure Plan.

2 Operation

Pursuant to clause 28, Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015* ('the Regulations'), this Structure Plan came into effect on the day in which it is approved by the Western Australian Planning Commission and is valid for a period of 10 years from the date of gazettal of the Regulations, being 19 October 2015, unless the period of approval is otherwise extended in accordance with the Regulations.

3 Interpretation and Relationship with Statutory Planning Framework

This Structure Plan has been prepared pursuant to clause 4.2 of the City of Rockingham Town Planning Scheme No. 2 ('the Scheme') as the subject land is zoned 'Development' and contained within Development Area No. 19 (shown on the Scheme Map and detailed within Schedule No.9).

The Structure Plan Map outlines the Zones and Reserves applicable within the Structure Plan area.

Pursuant to clause 27 (1), Schedule 2 of the Regulations, a decision maker of an application for development approval or subdivision approval on land within the boundaries of the Structure Plan is to have due regard to the provisions of the Structure Plan.

4 Subdivision and Requirements

The following development standards are to be read in addition to the provisions of the Scheme and other relevant City of Rockingham local planning policies.

4.1 Land Use Permissibility

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

4.1.1 Special Use Zone

A person shall not use any land, or any building or structure within the Special Use zone, except for the purposes set out in Table 2 and subject to compliance with any conditions set out under Table 2.

Table 2: Special Use Zone

No.	Site Description	Use	Special Conditions
1	Parkland Heights Neighbourhood Centre (east of Nairn Drive)	Group Dwelling Multiple Dwelling Short Stay Accommodation Child Care Premises Club Premises Consulting Rooms Health Studio Medical Centre Office Private Recreation	N/A

No.	Site Description	Use	Special Conditions
		Restaurant Shop Veterinary Clinic Educational Establishment	

4.2 Residential Density

4.2.1 Residential Zone

Residential Densities applicable to the Structure Plan area shall be those residential densities shown on the Structure Plan Map.

4.2.2 Commercial Zone and Special Use Zones

Residential development on land zoned 'Commercial' and 'Special Use' on the Structure Plan Map shall be in accordance with the R60 density code.

4.3 Notifications on Title

In respect of applications for the subdivision of land, the City may recommend the WAPC impose a condition of subdivision approval for a notification to be placed on the Certificates(s) of Title(s) for the following:

- Lots within 300m of a market garden which may be affected by odours, noise, spray drift and dust; and
- Lots identified as Bushfire Prone on the Department of Fire and Emergency Services *Map of Bush Fire Prone Areas* and with a Bushfire Attack Level (BAL) rating of 12.5 or above.

4.4 Residential Design Code Variations

All single dwelling development on land zoned R25 – R60 shall be assessed in accordance with the City of Rockingham's Planning Policy No. 3.3.22 – *Medium-Density Single House Development Standards – Development Zones*.

4.5 Lot Access

An average lot width of not less than 12 metres, with no more than five (5) adjoining lots with a frontage of less than 12 metres, is required in any street block where garage access is provided to the primary street.

5 Local Development Plans

5.1 Residential

Local Development Plans (LDP), are required to be prepared and approved pursuant to clause 47, Schedule 2, of the Regulations for lots with one or more of the following site attributes:

- Lots with rear-loaded vehicle access; and
- Lots with direct boundary frontage (primary or secondary) to an area of Public Open Space.

5.2 Commercial and Special Use

An LDP is required to be prepared and approved pursuant to clause 47, Schedule 2, of the Regulations prior to development or subdivision of the land zoned 'Commercial' and 'Special Use' on the Structure Plan Map.

Separate LDP's may be prepared for each side of Nairn Drive and, notwithstanding the above, a decision maker may approve development or subdivision over 'Commercial' or 'Special Use' zoned land in the

absence of an LDP if it is satisfied that the proposed development or subdivision would not prejudice the coordinated development of the land.

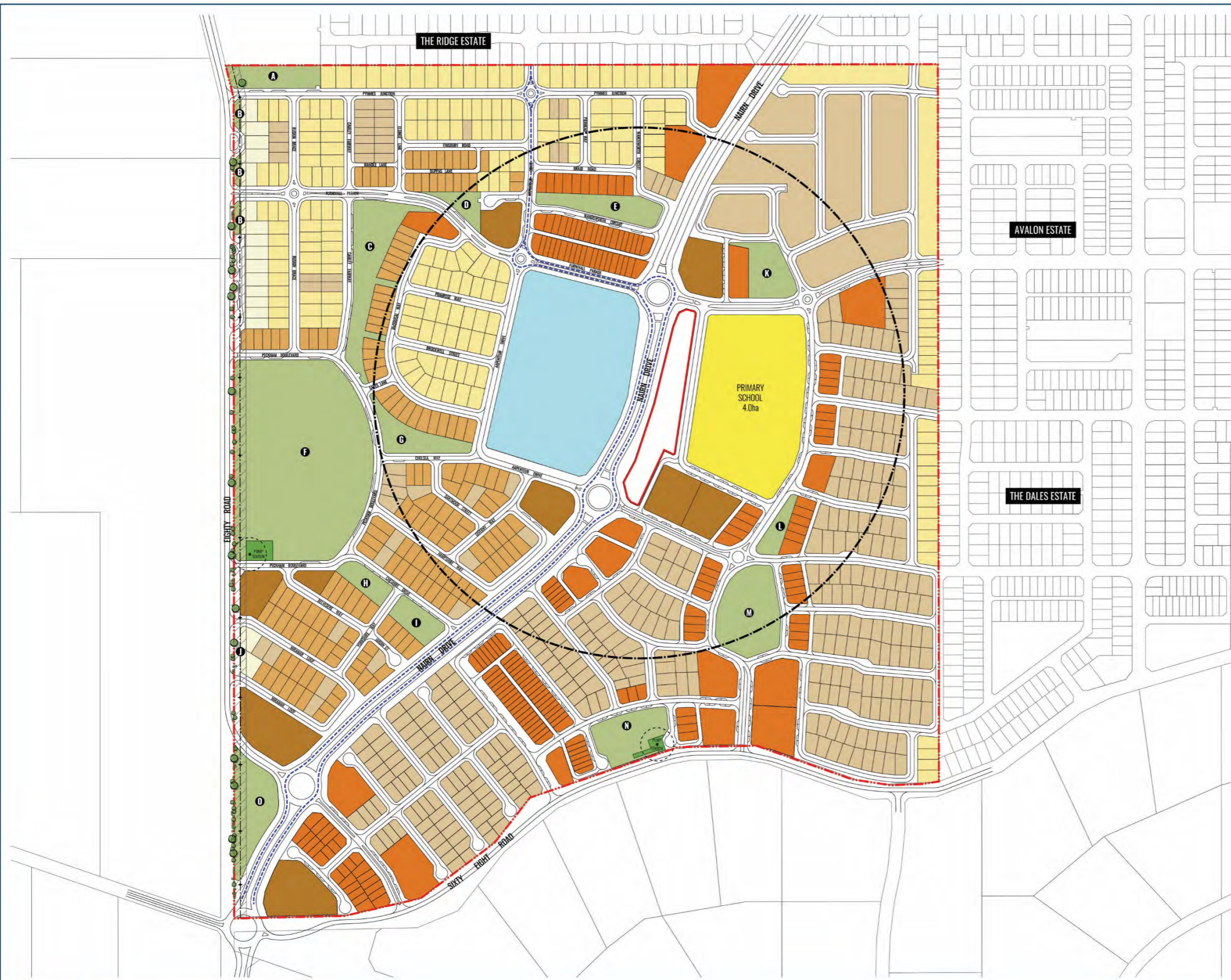
The LDP/s shall coordinate development of the 'Commercial' and 'Special Use' zoned land and address the following matters:

- The location of vehicle access points and indicative intersection treatments;
- The alignment of a 'Main Street' and other key internal vehicle circulation routes including service access and loading areas;
- The siting and orientation of key buildings and their interface with the street;
- The indicative location and distribution of retail and commercial uses;
- Key pedestrian routes and linkages through the site;
- Indicative car park locations and sizes;
- Provisions to ensure that ground level building facades appropriately respond to adjoining roads, footpaths and public spaces with particular regards to any buildings fronting the main street; and
- Variations to any built form development controls contained within a City of Rockingham Local Planning Policy or the R-Codes.

6 Other Requirements

6.1 Developer Contributions

This Structure Plan is located within Development Contribution Area No.2 of the Scheme. Residential uses are subject to contributions in accordance with Development Contribution Plan No.2 at Schedule 12 of the Scheme.



LEGEND

ZONES/RESERVES

- RESIDENTIAL R15
- RESIDENTIAL R20
- RESIDENTIAL R25
- RESIDENTIAL R30
- RESIDENTIAL R40
- RESIDENTIAL R60
- COMMERCIAL
- SPECIAL USE
- EDUCATION
- PUBLIC OPEN SPACE

OTHER

- LOCAL STRUCTURE PLAN BOUNDARY
- 400m NEIGHBOURHOOD WALKABLE CATCHMENT
- PUMP STATION ODOUR BUFFER
- POWERLINE EASEMENT
- ROAD WIDENING (SIXTY EIGHT ROAD)
- PLANNED BUS ROUTE
- VEGETATION TO BE PROTECTED (WHERE POSSIBLE)
- SEWER PUMP STATION (900m² - 1220m²)

NOTES

- 1 The boundary of this Local Structure Plan (LSP) is in accordance with the approved Comprehensive Development Plan (CDP) 2002 and original Lot 1507 boundary.
- 2 The access street and associated lot layout shown on the plan is indicative only and subject to refinement as part of the detailed subdivision process.
- 3 POS Areas are indicative only and subject to further detailed design and drainage considerations.
- 4 All road carriageway detail depicted on the Plan including pavements, road treatments, medians and parking are for illustrative purposes only and are subject to final engineering design and any relevant approvals. The detail reflects the intent of road network standards preferred for this subdivision. All dimensions and areas depicted on the Plan are subject to pre-cal and final survey and may vary from figures shown.
- 5 Bushfire attack level to be reviewed prior to creation of titles. Development may require construction in accordance with AS3959 - Construction in Bushfire Prone Areas.
- 6 Sixty-Eight Road widening to accommodate future upgrade to boulevard standard. Construction requirements to be negotiated at subdivision stage of development.

LOCAL STRUCTURE PLAN MAP

Lot 1507 Eighty Road, BALDIVIS

A Rockingham Park Project

NORTH

Scale: 1:6000 @ A3

PLAN: RHPH-2-001 REVISION:
 DATE: 20/11/2018 DRAWN: JP
 PROJECTION: PCG 94 PLANNER: BK
 DATUM: AHD CHECK: TV



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Parkland Heights Local Structure Plan

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Parkland Heights Local Structure Plan

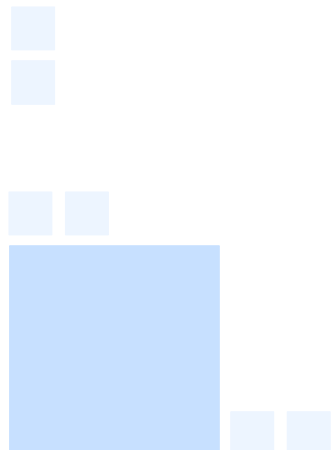
PART TWO - EXPLANATORY REPORT (2012)



Lot 1507 Eighty Road, Baldivis Local Structure Plan

December 2012

Prepared for
Rockingham Park Pty Ltd



DOCUMENT HISTORY AND STATUS

Lot 1507 Eighty Road, Baldivis - Local Structure Plan		00/075	Revision	Reviewer	Date Issued
Prepared By:	Taylor Burrell Barnett Town Planning and Design 187 Roberts Road SUBIACO WA 6008 Phone: 9382 2911 Fax: 9382 4586 admin@tbbplanning.com.au	0	BDM	14.07.2011	
		1	BDM	19.12.2011	
		2	DR	05.04.2012	
		3	DR	19.07.2012	
		4	DR	18.12.2012	
In association with:	Emerge Associates: Landscape Architect ENV Australia : Environment & Urban Water Management Serling Consulting: Civil Engineering Transcore: Transport Planning Whelans: Mapping & Survey				

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8	Local Context Plan	20	Bus Route, Path Network & Parking Bays
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11	Bush Fire Hazard Assessment	23	Major Service Alignments
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APPENDICES

Appendix No.	Document Title	Approval Required or Support Document Only	Approval Status	Approval Agency
A	Pre-Lodgement Consultation Table	Support Document	-	-
B	Certificate of Title	Support Document	-	-
C	Environmental Assessment Report	Support Document	-	-
D	Supplementary Tree Information	Support Document	-	-
E	Fire Management Plan	Support Document	APPROVED	City of Rockingham
F	DoE Acceptance of Primary School Site	Support Document	-	-
G	Public Open Space Concepts	Support Document	-	-
H	Transport Assessment	Support Document	-	-
I	Nairn Drive Access Strategy	Support Document	-	-
J	Local Water Management Strategy	Approval Required	APPROVED	Department of Water
K	Service Infrastructure Report	Support Document	-	-

1 PLANNING BACKGROUND

1.1 BACKGROUND

This Local Structure Plan (LSP) has been prepared on behalf of Rockingham Park Pty Ltd, the owners of Lot 1507 Eighty Road, Baldvis and developer of Parkland Heights Estate.

An approved Comprehensive Development Plan (CDP) currently exists over approximately half of the site (west of Nairn Drive), with two stages of subdivision and a display home village currently under construction in accordance with that plan.

Due to the length of time since the original CDP's 2002 adoption, and the significant change in planning policy and market acceptance that has occurred since it was designed, Rockingham Park now wish to proceed with a comprehensive review of the total landholding including all undeveloped land either side of Nairn Drive.

1.2 INTRODUCTION & PURPOSE

Local Structure Plans are forward-planning documents that resolve regional and/or localised issues concerning land use and infrastructure and are often prepared as a precursor to extensive subdivision and development.

This Structure Plan has been prepared in accordance with Section 4.2 of Council's Town Planning Scheme in order to facilitate urbanisation of the subject site, being the site's transition from a rural to urban use. Through the use of graphics and supporting technical data, the Structure Plan recommends the preferred:

-  pattern of land use;
-  network and hierarchy of roads;
-  public open space network; and
-  servicing strategy for the precinct.

Once endorsed, the LSP will become the new reference document for all future subdivision and development within the subject site. It has been prepared with due regard to the requirements of Council's Scheme and is supported by a range of technical reports including environmental, traffic, hydrological and servicing analysis that can be found as Appendices to the rear of the report.

As required by the Department of Planning, the LSP has been prepared in accordance with the requirements of *Liveable Neighbourhoods Edition 3*, and has been structured having regard for both the City's Planning Procedure 1.6 (*Preparation and Assessment of Structure Plans*), and the Western Australian Planning Commission's *DRAFT Structure Plan Preparation Guidelines (August 2011)*.

1.3 PROJECT TEAM

This Local Structure Plan has been prepared by Taylor Burrell Barnett (TBB) in collaboration with the following team of specialist consultants:

ENV Australia
Environment &
Urban Water Management

Emerge Associates
Landscape Architect

Transcore
Transport Planning

Serling Consulting
Civil Engineering

Whelans
Mapping & Survey

Formulation of the LSP has involved consultation with the City of Rockingham, relevant Service Authorities and the Department of Planning, as summarised in the Pre-Lodgement Consultation Table attached as **Appendix A**.



LOCATION PLAN

Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project



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figure
01

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1.4 LAND DESCRIPTION

1.4.1 LOCATION

Lot 1507 lies 10 km south east of the Rockingham Strategic Metropolitan centre and 45 km south of the Perth Central Business District (refer **Figure 1**). The Kwinana Freeway lies approximately 4 km to the east of the site providing convenient access to the rest of the Perth Metropolitan Region and beyond.

1.4.2 AREA & LAND USE

Measuring 120.8249 ha, research indicates that the site was not subject to any specific land use prior to 1963. Sometime between 1963 and 1974 the land was cultivated for forestry product purposes. There is no indication that the site was utilised for any other land use between 1973 and 2000. The Forest Products Commission began harvesting at the site sometime between 2001 and 2004 and completely withdrew from the land in 2010.

Prior to the commencement of the Stage 1 works, infrastructure associated with the site is limited to unsealed roads which run through the site and along the site perimeter. No other man-made infrastructure or dwellings were located on the site.

1.4.3 LEGAL DESCRIPTION & OWNERSHIP

The land is described as Peel estate Lot 1507 on Diagram 94627 being the whole of the land in Crown Title Volume 3115 Folio 948. The land is wholly owned by Rockingham Park Pty Ltd, with the only encumbrance being an existing 18m wide power line easement running along the western boundary of the property. A copy of the Certificate of Title is included as **Appendix B**.

1.5 PLANNING FRAMEWORK



1.5.1 METROPOLITAN REGION SCHEME

Lot 1507 is predominantly zoned 'Urban' under the Metropolitan Region Scheme (MRS). The only exception is the future alignment of Nairn Drive, which divides the site diagonally in half and is identified as an 'Other Regional Road' within a 40m wide reservation (refer **Figure 2**).

1.5.2 CITY OF ROCKINGHAM - TOWN PLANNING SCHEME NO.2

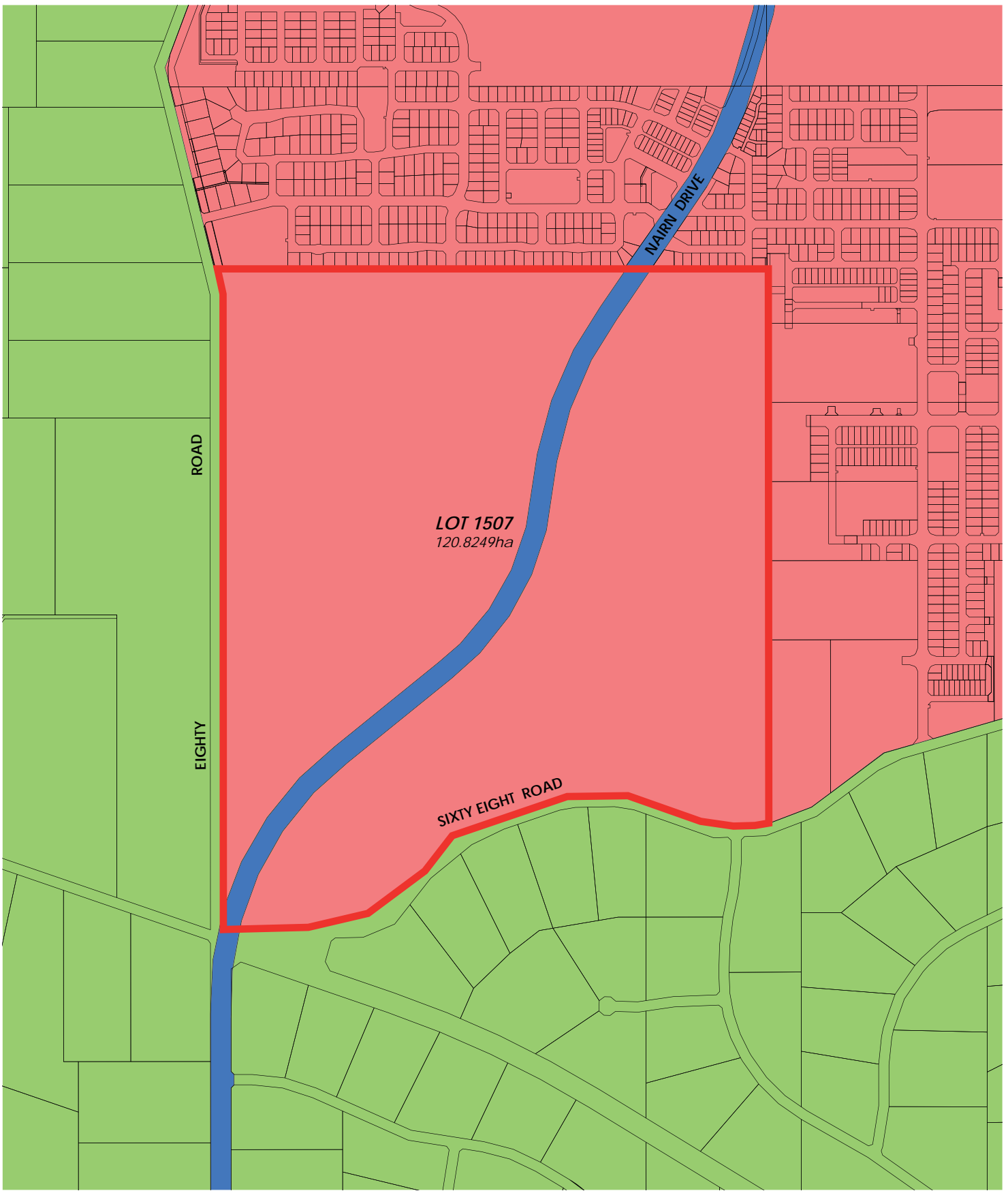
Aside from the MRS 'Other Regional Road' reservation the entirety of Lot 1507 is zoned 'Development' under the City of Rockingham's Town Planning Scheme No. 2 (TPS2 - refer **Figure 3**).

Clause 4.2.3 of the TPS2 defines the purpose of the Development Zone as follows:

-  To identify areas requiring comprehensive planning prior to subdivision and development; and
-  To coordinate subdivision, land use and development in areas requiring comprehensive planning.

Clause 4.2.4 goes on to specify the requirement for an LSP to be adopted over Development zoned land prior to substantive subdivision or development.

This requirement is then reiterated within Schedule 9 of TPS2, which identifies the land as Development Area No.19 for which an approved Structure Plan is required to guide future subdivision and development. The purpose of this LSP is to fulfil these requirements of TPS2.



LEGEND

 RESERVES	 ZONES	 OTHER	 SUBJECT SITE
 OTHER REGIONAL ROAD	 URBAN		
	 RURAL		

EXISTING ZONING
METROPOLITAN REGION SCHEME

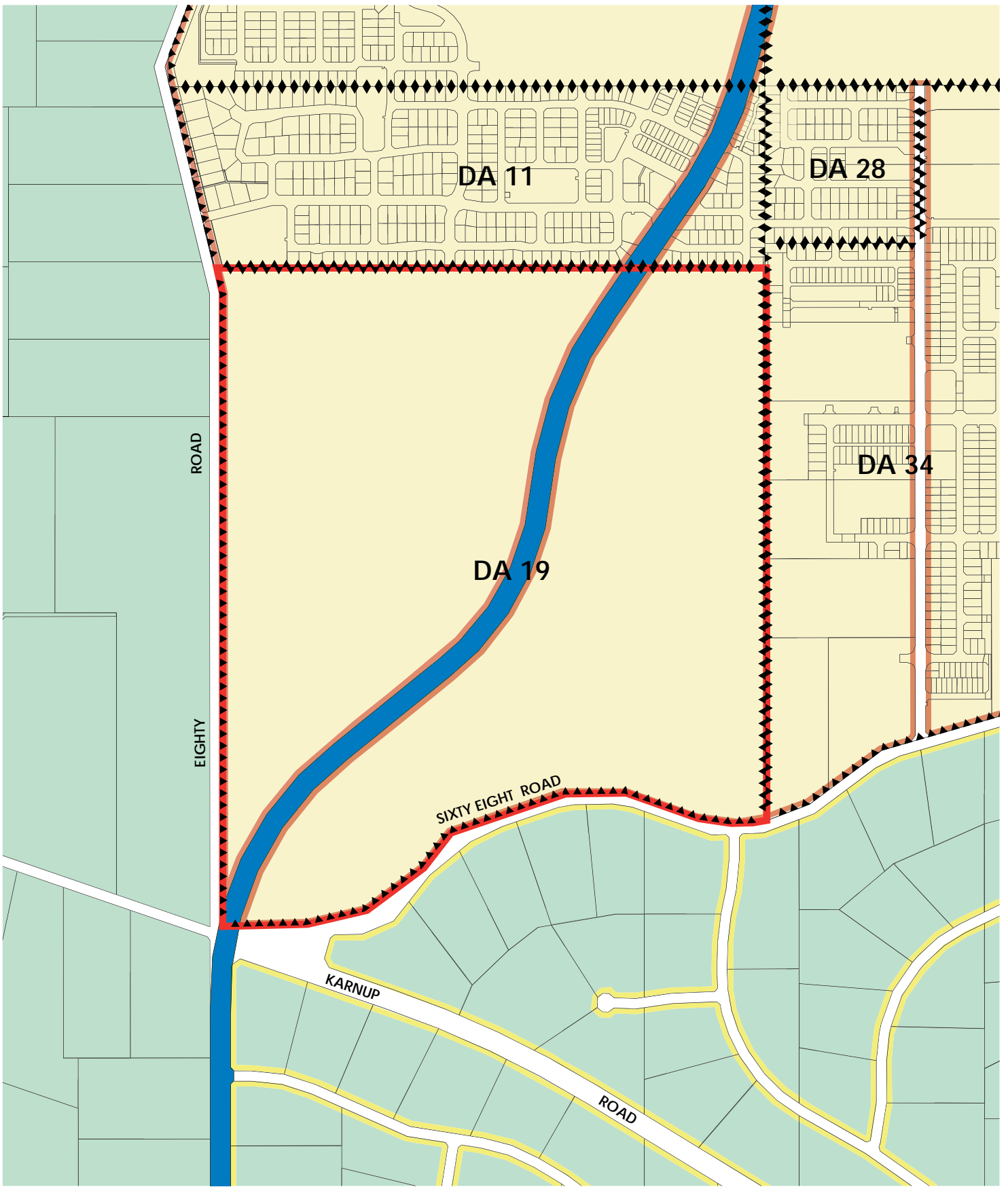
Lot 1507 Eighty Road, Baldvis
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figure
02

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LEGEND

METROPOLITAN REGION SCHEME RESERVES
 OTHER REGIONAL ROADS
 LOCAL ROADS

ZONES
 DEVELOPMENT
 RURAL
 SPECIAL RURAL

OTHER
 DEVELOPMENT AREA (see scheme text)
 SUBJECT SITE

EXISTING ZONING TOWN PLANNING SCHEME No. 2
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project

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 figure 03

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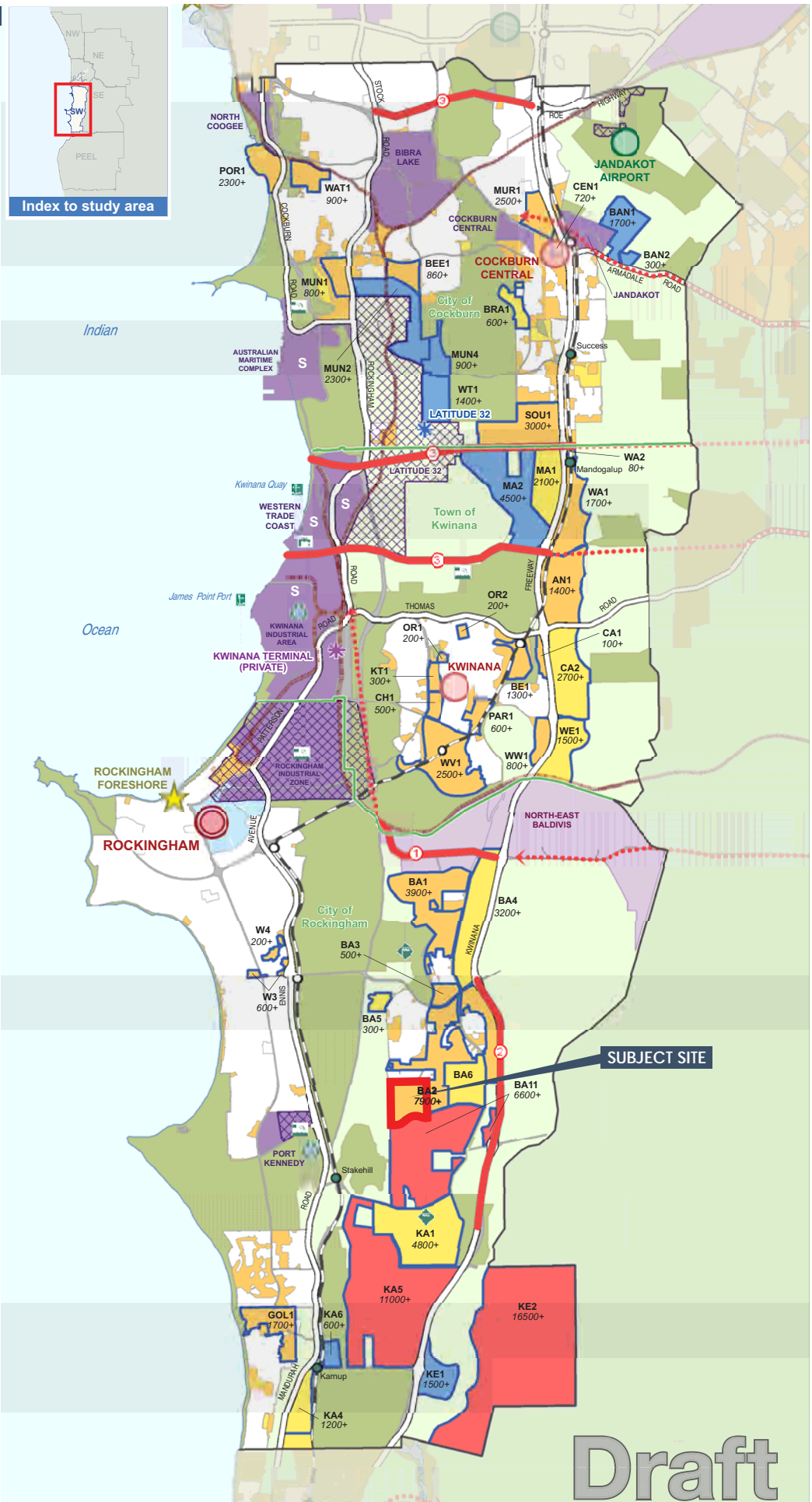
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Outer_Regions/mxd/PublicationMaps/
Fig64_SouthWestSubRegionSpatialFrameworkMap.mxd

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Western Australian Land Information Authority
LI 430-2009-4
Railways supplied by:
Geoproject Solutions Pty Ltd

Note:
Map is based on Region Scheme zones and
does not include redevelopment authority areas.

- S strategic industrial centre
- existing industrial centre
- priority industrial site - subject to investigation
- 2009 draft industrial land strategy area
- existing developed area
- central city area
- road or rail reservation
- region scheme reserves
- rural
- waterways
- urban expansion area 2011-2015
- urban investigation area 2011-2020
- urban zoned undeveloped
- urban deferred zoned undeveloped
- rural land being rezoned
- ABC1 area identifier
- 1234+ connected city scenario dwelling yield
- strategic metropolitan centre
- secondary centre
- specialised centre
- ★ metropolitan attractor
- ✳ intermodal freight terminal
- ✳ planned intermodal freight terminal
- Ⓜ proposed water treatment plant
- Ⓜ major water storage / reservoir
- ♻️ proposed water recycling plant
- ♻️ proposed waste water treatment plant
- Ⓜ proposed port facility
- existing passenger railway station
- proposed passenger railway station
- existing metropolitan railway (indicative)
- existing freight railway
- major roads
- 1 new road construction (MRWA)
- 2 road upgrading (MRWA)
- 3 road planning (MRWA)
- ⋯ strategic road planning
- local government boundary
- sub-region boundary



Draft

DRAFT SOUTH WEST SUB-REGIONAL SPATIAL FRAMEWORK
Lot 1507 Eighty Road, Baldvis
A Rockingham Park Pty Ltd Project



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figure 04

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1.5.3 STRUCTURE PLANNING

1.5.3.1 DRAFT OUTER METROPOLITAN SUB REGIONAL STRATEGY

Sub-Regional strategies provide a framework for delivering the objectives of Directions 2031 (the highest level of strategic metropolitan planning in Western Australia). They identify a strategic plan of actions, stakeholder responsibilities and timeframes for delivery. Importantly, they also express dwelling targets based on defined areas that strive to improve land efficiency and counter the trend towards urban sprawl.

The *Draft Outer Metropolitan Sub-Regional Strategy* (2010) identifies Lot 1507 as being located within the Cell 'BA2' area, being undeveloped land within the existing Urban zone. Encompassing the undeveloped balance of the Baldvis South District Structure Plan area and small portions of surrounding land, a target of an additional 7,900 dwellings is identified in the Draft Strategy for this cell (refer **Figure 4**).

A finalised version of the Strategy was due to be released by the Department of Planning in late 2011.






1.5.3.2 SOUTH WEST CORRIDOR STRUCTURE PLAN

The *South West Corridor Structure Plan* (1993) provides the current framework for urban development within the South West corridor. The Structure Plan also identifies the location and hierarchy of activity centres, major employment areas and proposals for regional open space and regional roads.

The SWCSP classifies the subject site as Category 'A1 – Future Urban', being land that has no constraints to urban development within the short-term future (refer **Figure 5**).

1.5.3.3 SOUTH BALDIVIS DISTRICT STRUCTURE PLAN

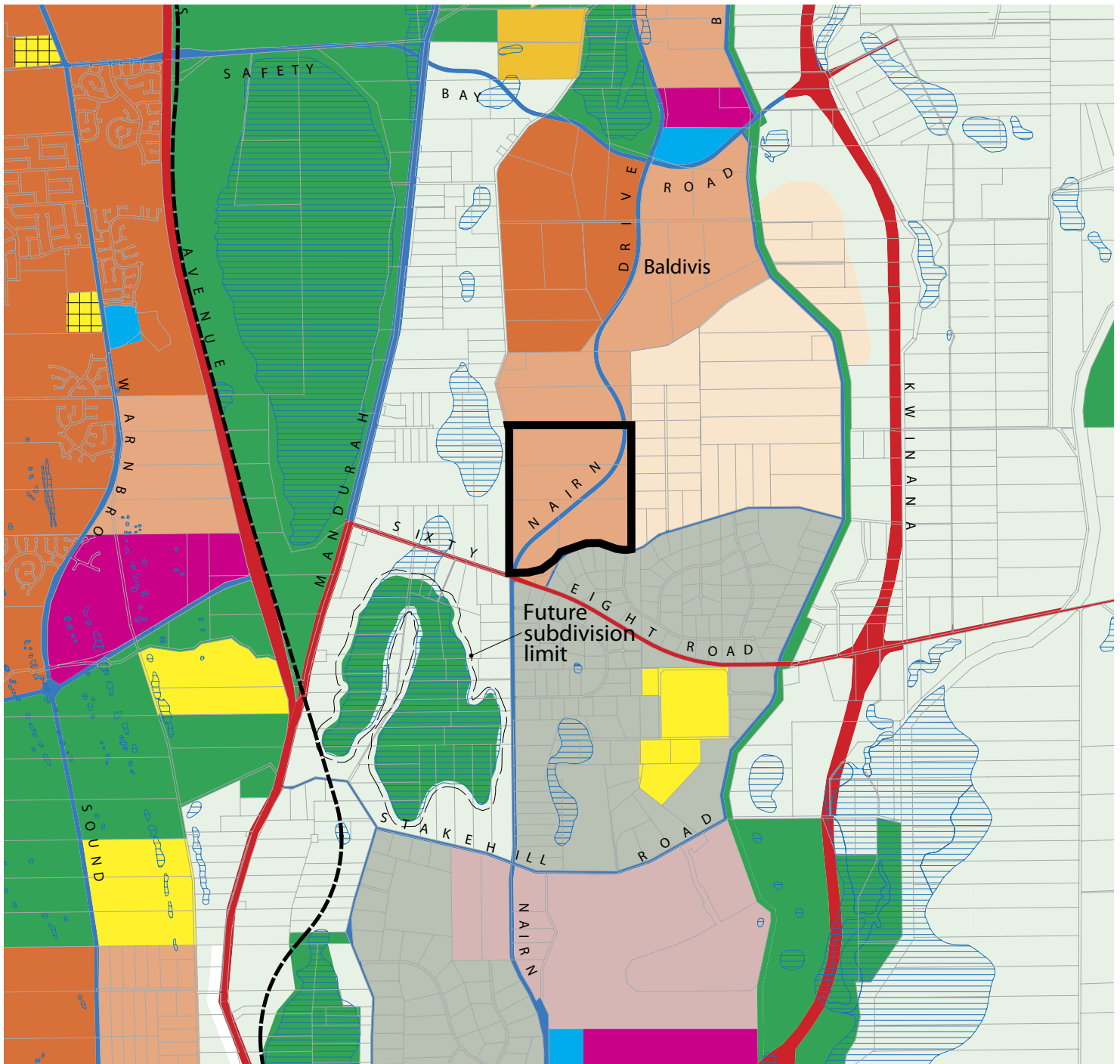
The South Baldvis District Structure Plan (DSP) provides the strategic framework for the coordination and preparation of LSP's in this locality. The subject land is identified as being located within Precinct 2 of the DSP (refer **Figure 6**), for which the following development parameters are attributed:

-  Gross area of 193.68 ha, with a predominant zoning of 'Urban';
-  Approximate yield of 1,593 lots with an ultimate population of 4,301 people;
-  A Neighbourhood Centre with a maximum Retail NLA of 2,070m²;
-  Approximately 22.76 ha of Public Open Space (POS) and Drainage; &
-  A government Primary School.
























On a proportional basis the LSP satisfies the requirements of the DSP as demonstrated in the following table:

Category	DSP Target	LSP	Relative Proportion
Gross Area	193.68 ha	120.82 ha	62.4%
Dwelling Yield	1593	1447	90.8%
Population (@ 2.7 persons / dwelling)	4301	3907	90.8%
Neighbourhood Centre (2,070m ² NLA)	✓	(Lot 731)	-
POS & Drainage	22.76 ha	13.01 ha	57.2%
Primary School	✓	✓	-

The LSP is therefore consistent with strategic direction provided by the DSP and the nominal requirements pertaining to the land. The higher than expected yield is a direct response to the targets set in the Outer Metropolitan sub-Regional Strategy. Its performance against the criteria expressed in Liveable Neighbourhoods is outlined in **Section 3.4.1**.



LEGEND

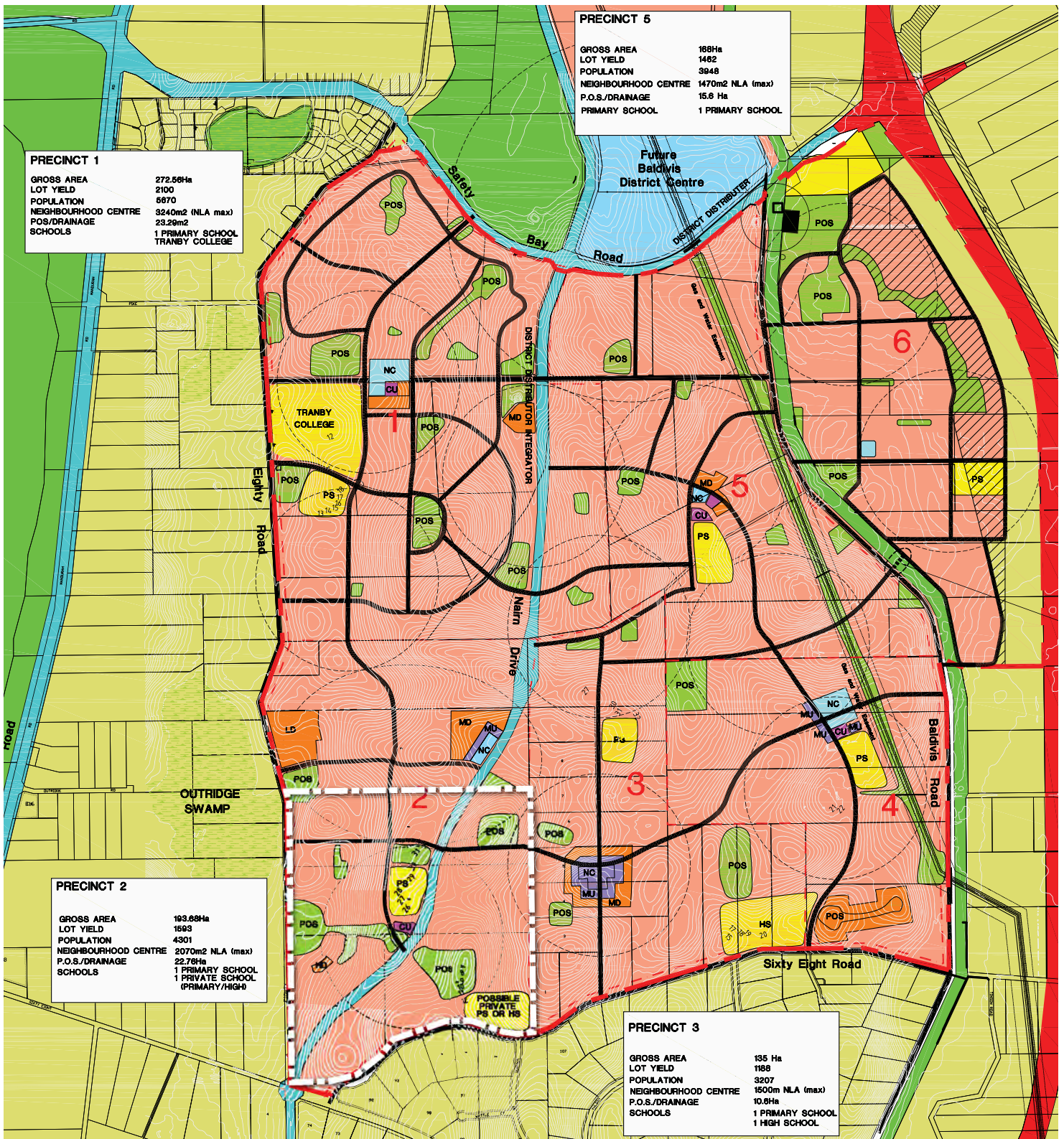
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|--|--|--|
|  SUBJECT SITE |  Institutional |  Mining Related Activities |
|  MRS Urban and Urban Deferred |  Tourist and Recreational Development |  Wetlands |
|  Category A1 Future Urban |  Public Utilities |  Primary Road |
|  Category A2 Future Urban |  Open Space |  District (Distributor) Road |
|  Category B Future Urban |  Rural |  Existing Railway Reserve |
|  Major Commercial/Institutional and Employment C |  Rural Living - Ultimate Urban |  Proposed Rapid Transport Route |
|  Industrial |  Area subject to further study |  Air Pollution Shadow |
|  Mixed Business Areas |  Basic Raw Materials | |

* Refer to the Urban Expansion Policy Statement (1990)
 Note: All alignments and boundaries are indicative only

EXTRACT OF SOUTH WEST
 CORRIDOR STRUCTURE PLAN
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project



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PRECINCT 1

GROSS AREA	272.56Ha
LOT YIELD	2100
POPULATION	6670
NEIGHBOURHOOD CENTRE	3240m ² (NLA max)
POS/DRAINAGE	23.29m ²
SCHOOLS	1 PRIMARY SCHOOL TRANBY COLLEGE

PRECINCT 5

GROSS AREA	188Ha
LOT YIELD	1482
POPULATION	3948
NEIGHBOURHOOD CENTRE	1470m ² NLA (max)
P.O.S./DRAINAGE	15.6 Ha
PRIMARY SCHOOL	1 PRIMARY SCHOOL

PRECINCT 2

GROSS AREA	193.88Ha
LOT YIELD	1693
POPULATION	4301
NEIGHBOURHOOD CENTRE	2070m ² NLA (max)
P.O.S./DRAINAGE	22.78Ha
SCHOOLS	1 PRIMARY SCHOOL 1 PRIVATE SCHOOL (PRIMARY/HIGH)

PRECINCT 3

GROSS AREA	135 Ha
LOT YIELD	1168
POPULATION	3207
NEIGHBOURHOOD CENTRE	1500m ² NLA (max)
P.O.S./DRAINAGE	10.8Ha
SCHOOLS	1 PRIMARY SCHOOL 1 HIGH SCHOOL

LEGEND

- SUBJECT SITE
- STRUCTURE PLAN BOUNDARY
- PRIMARY DISTRIBUTOR ROAD
- DISTRICT DISTRIBUTOR ROAD A & B
- NEIGHBOURHOOD CONNECTOR ROADS
- REGIONAL OPEN SPACE
- PUBLIC OPEN SPACE & DRAINAGE
- RURAL
- LOCAL CENTRES (LC)
- URBAN

- POTENTIAL URBAN LAND
- SCHOOLS
- NEIGHBOURHOOD CATCHMENTS
- WALKABLE CATCHMENTS
- PUBLIC PURPOSE
 - NC Neighbourhood Centre
 - LD Low Density
 - MD Medium Density
 - MU Mixed Use
 - CU Community Use

* Home Stores not included, refer to Retail Strategy



ENDORSED COMPREHENSIVE DEVELOPMENT PLAN (2002)
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project

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1.5.3.4 EXISTING COMPREHENSIVE DEVELOPMENT PLAN

A Comprehensive Development Plan (CDP) for Lot 1507 was approved by the Western Australian Planning Commission on the 27th November 2002. Limited to west of Nairn Drive, the CDP provides for conventional residential development across the site inclusive of a Primary School, community centre, POS network and limited commercial opportunities. An indicative road network is also depicted over the land east of Nairn Drive.

Clause 4.2.11 of TPS2 empowers any CDP duly approved by the Council and the Commission under Clause 5.25 of the former Town Planning Scheme No.1 as if it were approved as a Structure Plan under Clause 4.2.6.15 of TPS2. Thus, pending approval of this LSP, the CDP remains the current operational Structure Plan for Lot 1507.





On the 2nd December 2010, and again on the 21st March 2011, minor modifications to the CDP relating to Stages 1 and 2 of Parkland Heights Estate were approved by the City pursuant to Clause 4.2.7 of TPS2. A copy of the current Structure Plan is included as **Figure 7**.

1.5.4 RELEVANT PLANNING POLICIES

1.5.4.1 LIVEABLE NEIGHBOURHOODS (WAPC, 2007)

Liveable Neighbourhoods (LN) is the Western Australian Planning Commission's operational policy guiding the design and approval of structure plans for greenfield sites. The objective of LN is the delivery of new developments that provide high quality living, working and recreational environments, thereby contributing to the successful implementation of the *State Planning* and *State Sustainability Strategies*.





The LSP meets the requirements of LN, with a particular focus on the following key aims:

-  An urban structure based on interconnected, safe and walkable neighbourhoods;
-  Creating a sense of community, identity and a sense of place;
-  Providing a variety of lot sizes and housing types to cater for the diverse housing needs of the community at density that can support local services and public transport; and
-  Maximising land efficiency wherever possible.

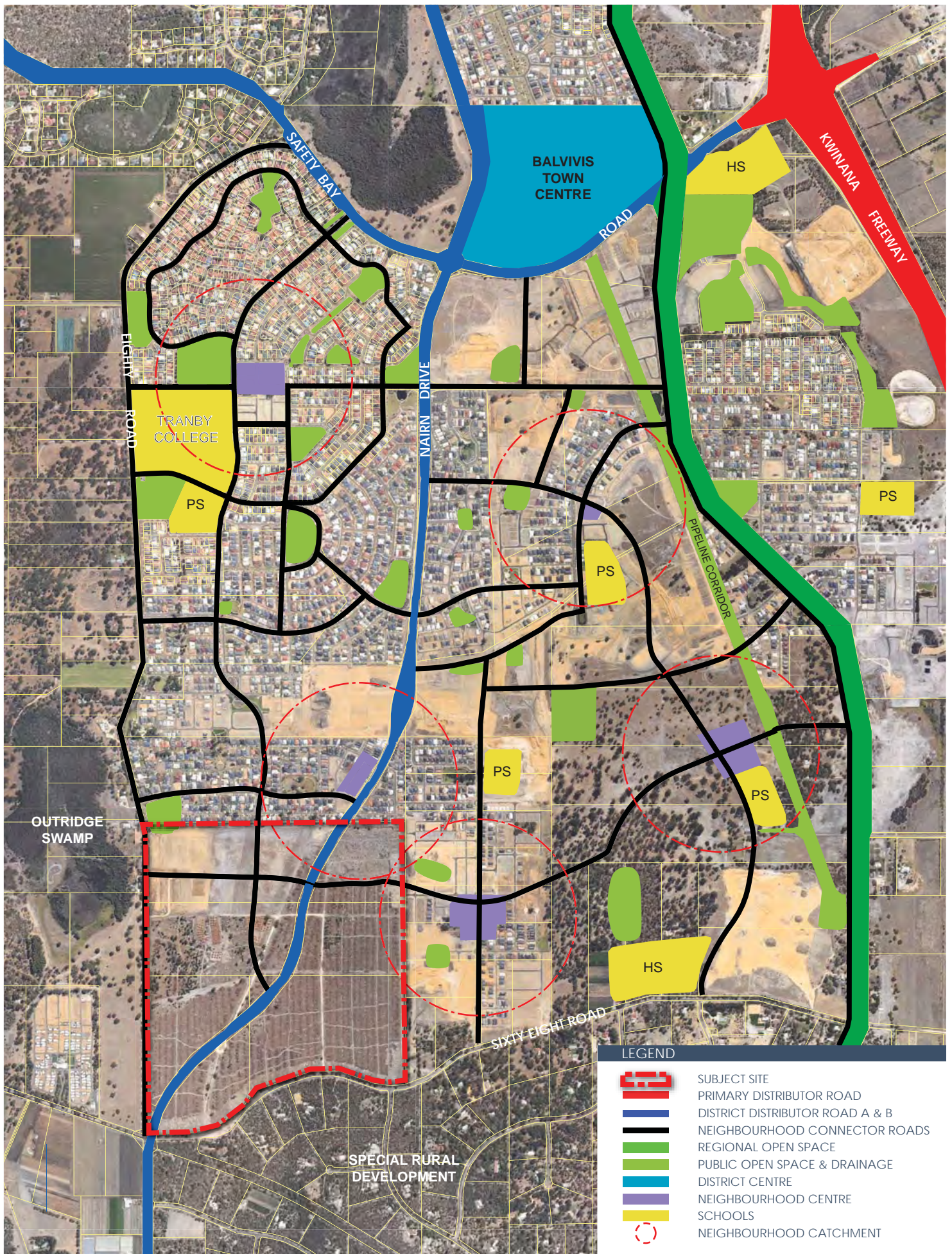
1.5.4.2 PLANNING POLICY NO 3.4.1 – PUBLIC OPEN SPACE (CITY OF ROCKINGHAM, 2009)

This Policy sets out “the objectives and policy provisions which the Council shall have due regard to in assessing the provision, location, design and development of POS within the City of Rockingham.

Some of the key policy statements include:

-  Requirement for the lodgement of a POS Concept Plan, POS Schedule and Local Water Management Plan to accompany proposed Structure Plans;
-  Criteria for the provision of restricted POS, community purpose sites and the joint use of POS;
-  Criteria for the location, design, development and maintenance of POS; and
-  Provisions for cash-in-lieu and urban water management.

The proposed LSP meets the requirements of the Policy other than where detailed in **Section 3.5** of this report.



LOCAL CONTEXT PLAN

Lot 1507 Eighty Road, Baldvis

A Rockingham Park Pty Ltd Project














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1.6 CONTEXT ANALYSIS

Figure 8 outlines the planning context of Lot 1507 and the surrounding area. Significant elements within the locality include:

-  **Kwinana Freeway:** Primary regional transport route connecting Baldivis with the Perth Central Business District (CBD) to the north, Mandurah to the south, and the South West Region beyond;
-  **Safety Bay & Karnup Roads:** Primary east-west aligned regional transport routes linking Baldivis with Rockingham to the west, and existing and planned connections eastward to the Kwinana Freeway;
-  **Nairn Drive:** Secondary north-south aligned transport route through the Centre of the Baldivis Urban Area, connecting Mundijong Road in the north to Paganoni Road in the South;
-  **Public Transportation:** Limited to bus services from Warnbro Train Station on the South West Metropolitan Railway Line inclusive of connections to the nearest major activity centre (Baldivis District Centre), located at the convergence of Nairn Drive, Baldivis and Safety Bay Roads;
-  **Major Employment Areas in the Region:** Rockingham and Kwinana Industrial Areas in addition to the Rockingham Strategic Metropolitan Centre and Perth CBD;
-  **Two Public High School sites servicing the South Baldivis Area:** An existing facility located at the corner of Safety Bay and Baldivis Roads, and a second future facility to the east of Lot 1507 along Sixty-Eight Road;
-  **Parmelia High Pressure Gas Pipeline Corridor:** Running through the Urban Area well east of Lot 1507;
-  **Outridge Swamp:** A conservation category EPP Wetland located a short distance north west of Lot 1507;
-  **Rural Wedge:** Land west of Eighty Road used for grazing, market gardens and lifestyle accommodation purposes. The rural character of the land is protected via its 'Rural Living' designation under the City's *Rural Landuse Strategy*;
-  **Rural Residential:** A developed 'Special Rural' estate lies immediately to the south of the Lot 1507, although there is a strong likelihood that overtime this will change, with the land being identified as Cell 'BA11' in the Outer Metropolitan Sub-Regional Strategy – an 'Urban Investigation Area (2011-2020)'.
-  **Urban Fringe:** Land to the north and east forms part of the rapidly developing Baldivis Urban Area.

The Context Analysis plan highlights the lack of a neighbourhood nodal point within the central part of Lot 1507, and the significant impediment Nairn Drive has the potential to be in terms of creating a cohesive and integrated residential community.



LOT 1507
 120.8249ha
 Rockingham Park Pty Ltd

STAGE 1
 Under
 Construction

STAGE 2
 Under
 Construction

EIGHTY
 ROAD

EIGHTY

ROAD

WANDO
 DRIVE

SIXTY EIGHT

AERIAL PHOTOGRAPH

Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project



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figure
09

2 SITE CONDITIONS & ENVIRONMENT

2.1 ENVIRONMENTAL ASSETS & CONSTRAINTS

A consolidated Environmental Assessment Report for the land was prepared by ENV Australia in April 2011 (refer **Appendix C**). The report identifies that the environmental aspects of Lot 1507 are heavily influenced by its former use as a pine plantation. This component of the land's history has now ceased with the trees having reached maturity and been clear-felled. Key elements of ENV Australia's report appear in the sections below.

2.1.1 FLORA AND VEGETATION

A recent aerial photograph of the site is included as **Figure 9**. The site is mapped as the Karrakatta Complex – Central and South, which on the Swan Coastal Plain is estimated to have 29.5% of its pre-European extent. This complex remains above the 10% pre-European native retention extent threshold set by the Environmental Protection Authority for constrained areas.

On-site investigation undertaken by ENV Australia in October 2009 identified the small amount of natural remnant vegetation on-site as ranging between 'Completely Degraded' to 'Degraded' in condition, due to weed invasion, rubbish dumping, public access and the land's use as a pine plantation.

No Endangered or Vulnerable species pursuant to the *Environmental Protection Biodiversity and Conservation Act* (1999), no Declared Rare Flora pursuant to the *Wildlife Conservation Act* (1950), no Declared Plant species under the *Agriculture and Related Resources Protection Act* (1976), nor any Priority Flora species or locally significant species were identified within the site.

In summary there are no flora species or vegetation communities of significance on the site. There are no areas of vegetation or particular trees of environmental significance that are required to be retained in planning urban development for the site and no particular requirements have been identified as being necessary for future management of the site.

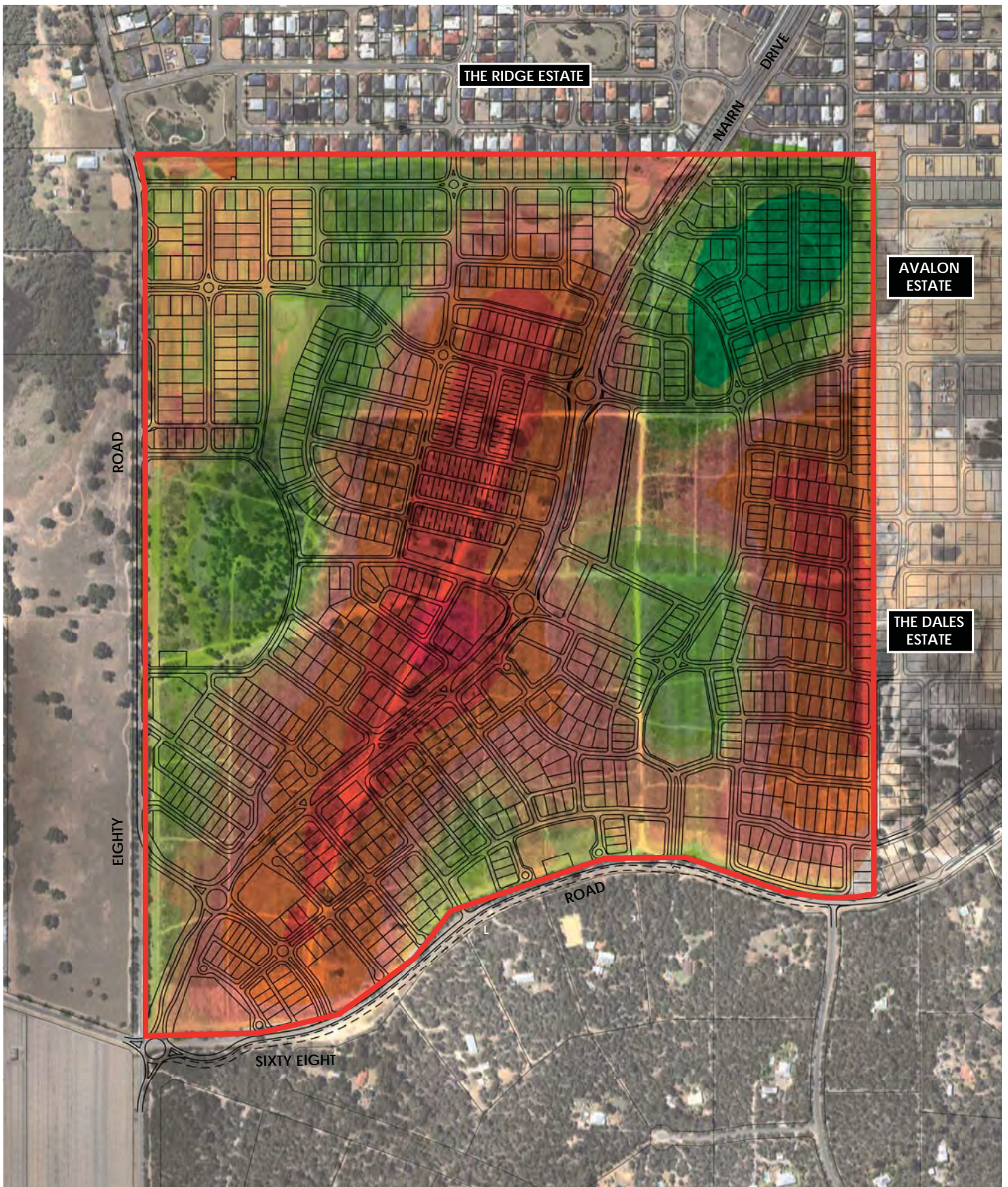
2.1.2 FAUNA

Reflective of the limited habitat that remains on-site, fauna surveys of the site are limited to a Black Cockatoo Site Assessment undertaken by ENV Australia in October 2010. Within the limited remnant vegetation that remains on-site the survey did identify foraging evidence of the Forest Red-tailed Black Cockatoo, however the extent of suitable habitat identified was extremely limited and highly degraded in condition.

In terms of breeding habitat no trees containing existing hollows were identified on-site, and only four trees were identified as being large enough to likely develop breeding hollows within the next 20 years, well below the DEC guidelines which recommend further investigation and the potential protection of areas containing three or more mature breeding trees per 0.5ha. Upon further investigation (refer **Appendix D**), it was noted that the four trees previously identified are located external to the site, within the adjoining Sixty Eight road reservation.

Based on ENV Australia's extensive experience with fauna surveys in the Perth Metropolitan Region, the lack of remnant vegetation and high level of site degradation, it is considered highly unlikely that any species of conservation significance will be affected by the proposed development.

Whilst small in size, the Health Department has identified Outridge Swamp (as per all other wetlands in the locality) as a potential breeding ground for mosquitoes known to carry viruses and other diseases. It is therefore anticipated that memorials will be required on all residential lots advising future purchasers of the hazard.



THE RIDGE ESTATE

NAIRN DRIVE

AVALON ESTATE

THE DALES ESTATE

ROAD

EIGHTY







ROAD

SIXTY EIGHT







LEGEND

 Site Boundary

Depth Key - CUT

-  0.00m to 1.00m
-  1.00m to 2.00m
-  2.00m to 4.00m
-  4.00m to 8.00m
-  8.00m to 12.00m
-  12.00m to 16.00m

Depth Key - FILL

-  12.00m to 9.00m
-  9.00m to 6.00m
-  6.00m to 3.00m
-  3.00m to 2.00m
-  2.00m to 1.00m
-  1.00m to 0.00m

VEGETATION OVERLAYED ON BULK EARTHWORKS

Lot 1507 Eighty Road, Baldvis
A Rockingham Park Project



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figure
10

2.2 LANDFORM & SOILS

2.2.1 LANDSCAPE

From a topographical perspective, there are two main ridges running roughly north-south through the landholding. A small ridge with a high point of 19m AHD is located just inside the western boundary of the site. The second, with a high point of 33m AHD is located in the middle of the site and loosely forms the basis of the future alignment of Nairn Drive. A third ridge is located just east of the site within the adjoining Avalon and Dales Estates. Whilst these ridges require substantive modification in order to accommodate urbanisation of the land, they provide opportunities for views from housing and from streets, both to the Darling Scarp to the east and across rural and natural areas to the south and west.

A low point midway along the western boundary of the site could readily be modified for active open space purposes, inclusive of a curved amphitheatre that would provide a great viewing aspect and protection for spectators during sporting events.

Due to removal of the pine plantation and the significant earthworks required to service the estate (discussed further in **Section 3.9** of this report), opportunities for the retention of existing vegetation are limited to within and adjacent the existing Sixty-Eight and Eighty Road reservations. **Figure 10** clearly demonstrates the issue with all remaining vegetation on-site located in areas shown as requiring earthworks beyond the tolerance at which vegetation can practically be retained.

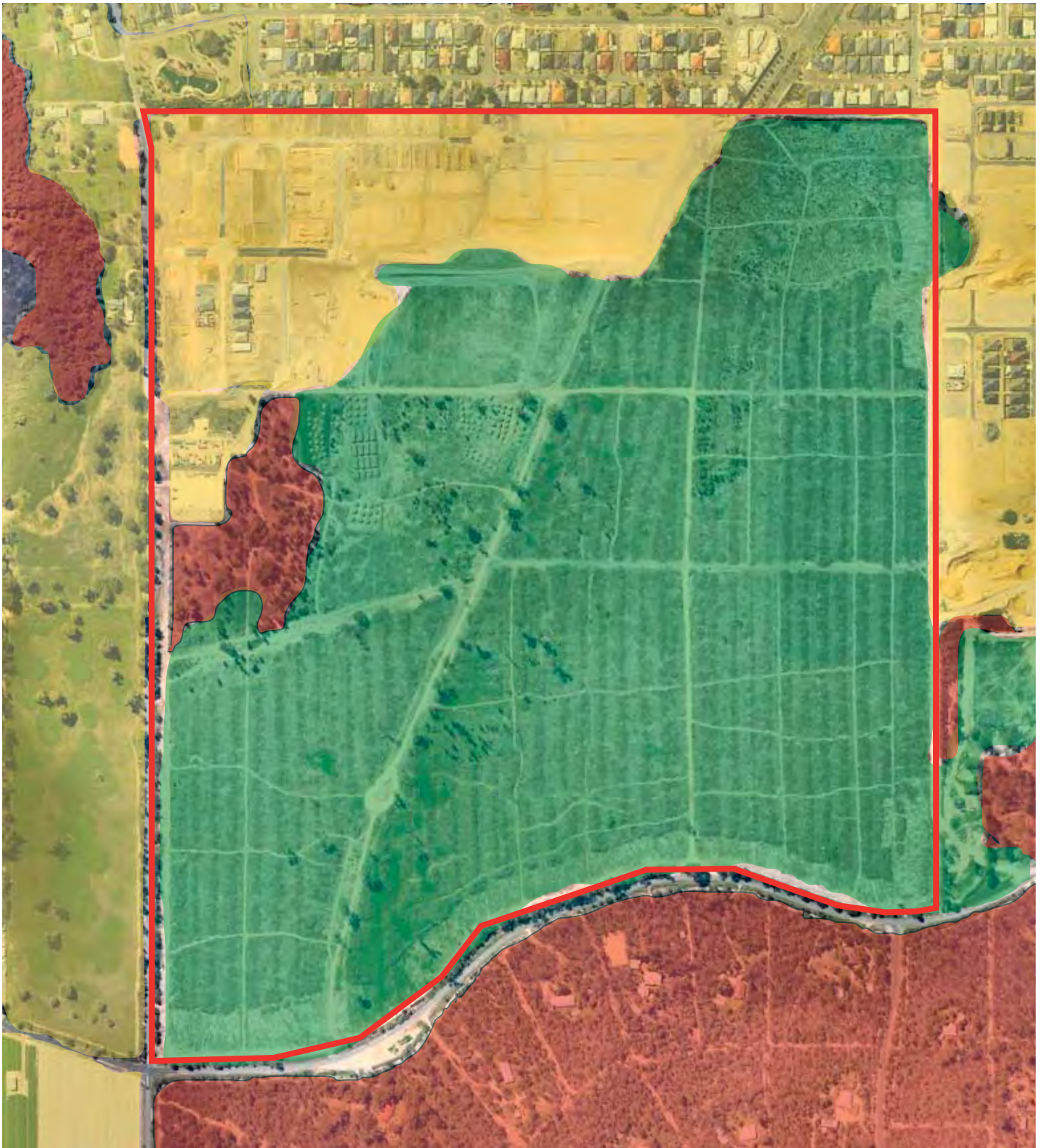
The land is unique however, in its relationship to adjacent land use. To the north and east are existing and/or rapidly developing suburban residential estates. To the south however are bush blocks associated with Rural Residential land use, whilst to the west of Eighty Road are wetlands combined with rural pursuits that provide a natural outlook and amenity. Given the limited landscape features within Lot 1507 it is important that the development embrace and takes advantage of this landscape reference, rather than turn its back on these areas.

2.2.2 SOILS

The geology of the site (S7 – Sand) is characterised by a low corrosion potential, low to medium slope stability, high ease of excavation and low to medium bearing capacity, characteristics that ENV Australia advise will not constrain development of the site.

2.2.2.1 ACID SULFATE SOILS

Department of Environment and Conservation mapping identifies the site as having “*No Known risk of ASS occurring within 3m of the natural soil surface (or deeper)*”. ENV Australia advise that there is limited potential for ASS disturbance along the low lying western boundary of the site, however this can be effectively characterised and managed, meaning that it poses no constraint to development of the site.



LEGEND

- Local Structure Plan Boundary
- Low
- Moderate
- Extreme

Source : Bushfire Safety Fire Management Plan

BUSHFIRE HAZARD ASSESSMENT
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Pty Ltd Project



2.3 HYDROLOGY

2.3.1 SURFACE WATERS

There are no permanent or ephemeral water bodies or existing drainage lines on-site and a low potential for flooding due to relatively dry climatic conditions and highly permeable soils.

2.3.2 GROUNDWATER

Groundwater levels are greater than 1.2m below ground level across most of the site meaning fill will not be required to manage groundwater levels at the site except possibly in isolated areas around public open space and other low points. Subsoil drainage is not considered necessary to manage groundwater levels at the site.

2.4 BUSH FIRE MANAGEMENT

At the City's request, a Fire Management Plan (FMP) including a Bush Fire Hazard Assessment has been prepared by Bushfire Safety Consulting in accordance with the criteria set out in the WAPC's *Planning for Bush Fire Protection Guidelines (Edition 2)*. The FMP concludes that the LSP provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in WAPC policy. Key findings and recommendations of the plan appear on **Figure 11** and are detailed below. A full copy of the report appears as **Appendix E**.

Bushfire hazard levels across the site are rated as predominantly moderate to low due to the existing grass and pine tree slash. All bushfire hazards on-site will be removed during development and the public open space areas created populated with vegetation established and maintained to building protection zone standards as "low threat vegetation" as defined in the Australian Standard AS3959.

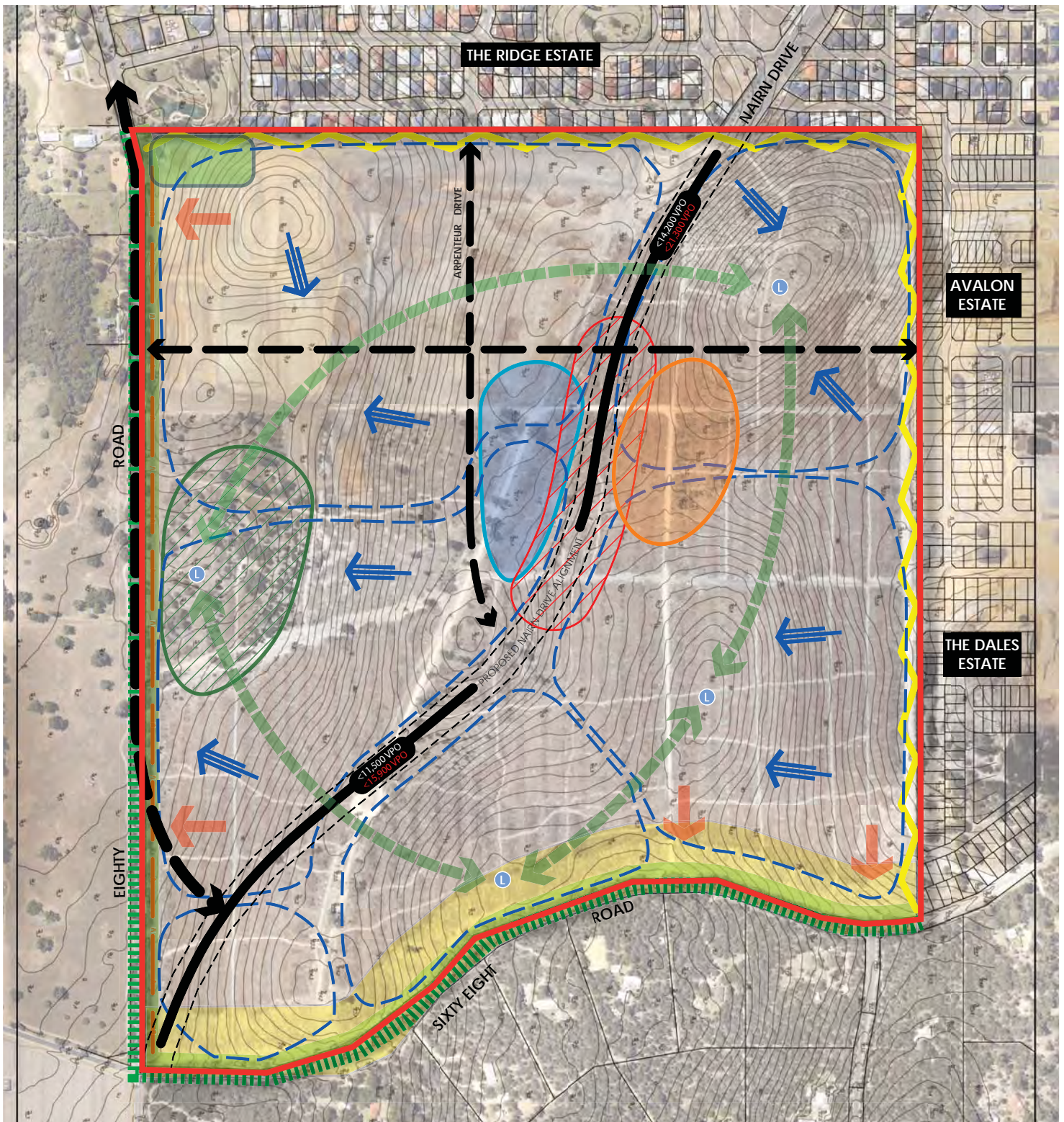
The only undeveloped area of potential concern is that located along the southern boundary within 100m of banksia woodland vegetation south of Sixty Eight Road, with dwellings in this area of the site the most vulnerable to attack. Sixty Eight Road provides good access and separation distance between the bushfire hazard and development. This combined with internal roads, setback distances on lots facing the hazard and management of vegetation on the development side of Sixty Eight Road establish an adequate building protection zone. Nevertheless the FMP recommends that if fuel loads remain at current Bushfire Attack Levels (BAL) a Section 70A Memorial be applied to the Title of all lots within the 100m hazard setback, alerting purchasers and successors in Title of the FMP and the requirement to construct dwellings in accordance with *AS3959 – Construction of Homes in Bushfire Prone Areas*.

As the affected area is contained within what is expected to be the final stages of development, and the land to the south of Sixty Eight Road is identified as an urban investigation area in the Outer Metropolitan Sub-Regional Strategy (refer **Figure 4**), there is a strong possibility that fuel loads in this area will be reduced by the time that development occurs in this portion of the estate. Allowance should be made therefore for BAL's to be re-evaluated prior to the creation of Titles for this portion of the estate.

In the interim, the FMP recommends that a 100m low fuel buffer be created and maintained around development throughout progressive staged development of the estate.

2.5 HERITAGE

There are no known or listed Aboriginal Heritage or European Heritage sites within the site.



LEGEND

- Site Boundary
- ISSUES**
- Nairn Drive Traffic Volumes
 - VPD Retention of existing land use south of Sixty Eight Road
 - VPD Including urbanisation of land south of Sixty Eight Road
- Key linkages (including)
 - Future alignment of Kamup & Sixty Eight Roads
 - Requirement to realign Eighty Road
 - Arpenteur Drive & East-West connector provide primary access into adjoining estates
- Existing 132kv Powerlines
- Low Points
- Existing Drainage Catchments
- Gradient of Landform requires streets to be aligned perpendicular to contours
- Interface with existing and proposed residential lots
- AS3959 Bushfire Protection Zone
- Department of Education and Training preferred Primary School location
- OPPORTUNITIES**
- Opportunity to intergrade in central location
- Preferred location for Retail / Commercial land use
- Interface with and views towards existing rural and special residential land use
- Long Distance Scenic Amenity
- Extended low ground with clumps of native trees forming a natural amphitheatre
- Intergrade public open space with adjacent parkland
- Public Open Space connection between low points
- Enhance vegetation and streetscape along Sixty Eight and Eighty Roads
















ISSUES AND OPPORTUNITIES
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Project

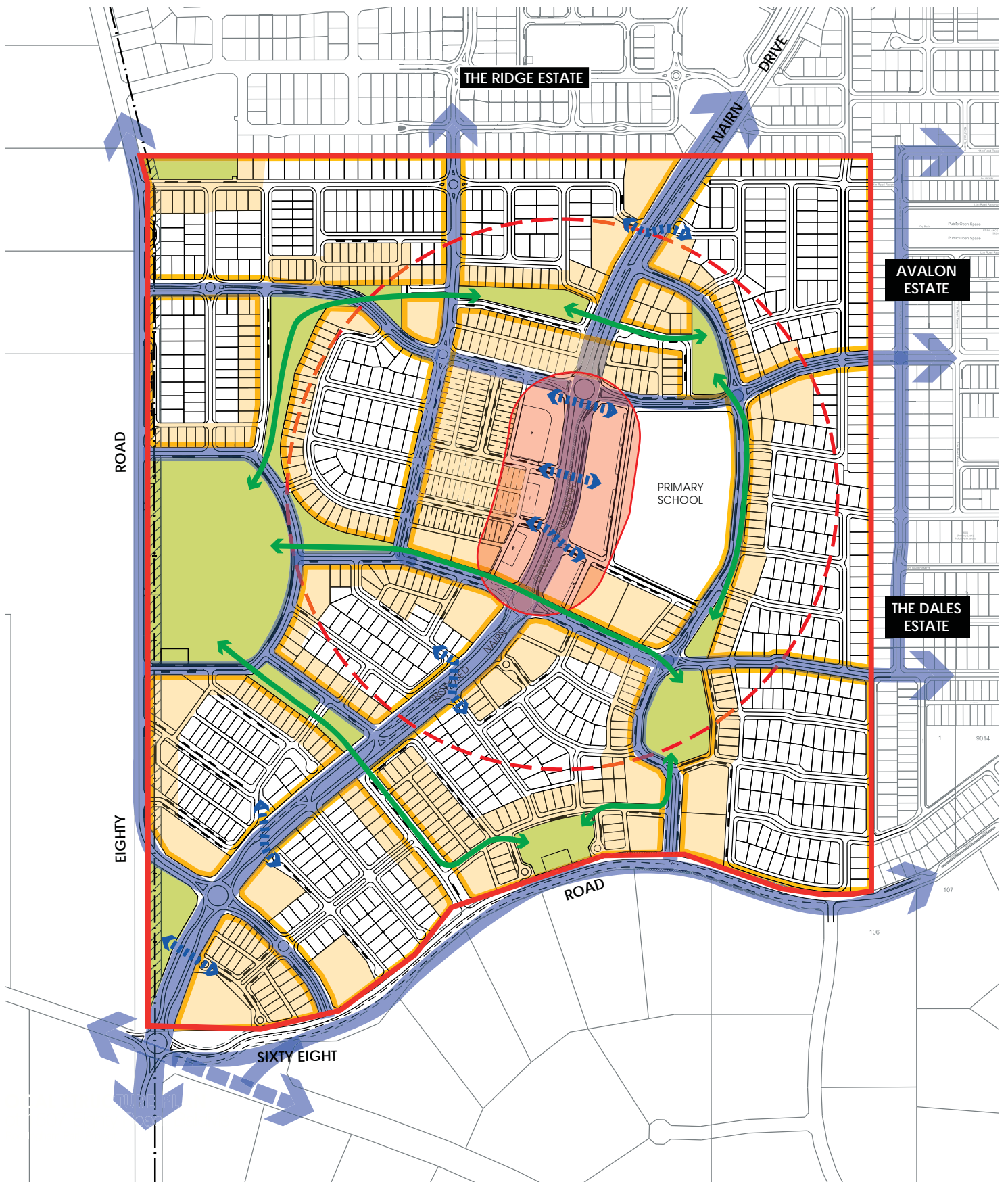
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2.6 SUMMARY OF ISSUES & OPPORTUNITIES

Site analysis issues and opportunities are provided diagrammatically in **Figure 12**. The key elements of the site that need to be taken into account when planning for Lot 1507 include:

-  Integration with existing and approved residential estates, immediately north and east of Lot 1507;
-  Creation of an appropriate interface with land to the west and south, that is likely to be retained for rural, conservation or rural residential purposes;
-  Existing vegetation provides excellent streetscape opportunities along both Eighty and Sixty-Eight Roads;
-  Proximity to the Outridge Swamp creates the need for notifications advising of a potential mosquito nuisance on resultant residential Titles.
-  Bushfire risk across the site is manageable, with the only impact on development being the need for a review of fuel loads prior to the creation of Titles within 100m of banksia woodland south of Sixty Eight Road. If loads remain as they are Memorials should be applied to Titles specifying the need to build in accordance with AS3959 – *Construction of Homes in Bushfire Prone Zones*.
-  A 132kv power line lies 9m within and runs parallel to the Eighty Road reserve boundary. An 18m easement (9m either side of the centre point of the distribution line) will be required to retain its overhead alignment;
-  The north-south ridges running through the site provide for expansive views, particularly to the west;
-  Low points scattered throughout the site provide appropriate opportunities for the location of drainage facilities. Suitably connected, these areas could form the spine of an integrated public open space network;
-  The gradient of the landform requires streets in various areas to be aligned perpendicular to the contour in order to minimise the size of necessary retaining walls;
-  There are only two areas that can practicably be flattened out for expansive land use activities such as playing fields, a primary school and/or commercial development. The first is in the low point adjacent to Eighty Road with the second being located near the crest of the central ridge in the middle of the site, either side of the future alignment of Nairn Drive;
-  Nairn Drive has the potential to act as a significant barrier to cohesive integrated development of the site;
-  Arpenteur Road, an important neighbourhood connector containing the likely bus route, extends into the LSP from the adjoining Ridge Estate and needs to continue through to intersect with Nairn Drive;
-  An east-west neighbourhood connector also needs to be accommodated within the northern portion of the site linking the approved design for Avalon Estate through to Eighty Road.
-  The east-west neighbourhood connector's intersection with Nairn Drive will create a highly energised location ideal for civic and/or commercial land use; and
-  Eighty Road requires realigning at its southern end to allow Nairn Drive to intersect with future construction of the Karnup Road freeway interchange.



LEGEND

- Site Boundary
- Community Hub at the heart of the Estate
- Diversity of active and passive recreation opportunities
- Medium and high density adjacent to activity nodes and open space
- Nairn Drive inclusive of opportunities to maximise integration
- Key Neighbourhood connector network
- Future Upgrade
- Fitness / Walk Trail intergrating Network of open spaces
- 400m / 5min walkable catchment
- Character Precincts incorporating diversity of housing types, urban form and public realm qualities

DESIGN PRINCIPLES

Lot 1507 Eighty Road, Baldvis
A Rockingham Park Project












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3 STRUCTURE PLAN

3.1 DESIGN PRINCIPLES





This LSP has been prepared adopting a cooperative and collaborative approach with stakeholders in the planning process including the City of Rockingham and the State Government Departments of Planning and Education & Training. At its core are a number of fundamental design principles, as summarised below:

-  Respect for the inherent features/attributes of the land and its location;
-  A sound rationale for the unfolding of development including its integration with the wider Baldvis locality;
-  To achieve a distinct identity and sense of place for future residents of the area;
-  To facilitate innovation in built form in terms of housing typologies, affordability and sustainability;
-  To ensure that the Estate is fully integrated across Nairn Drive;
-  To ensure that the Estate completes and builds upon the arterial road network set out on the Baldvis DSP;
-  Creation of attractive network of engaging and well-utilised gathering places;
-  To establish an environment that provides a variety of active and passive recreational facilities that specifically seek to promote the mental and physical health and wellbeing of future residents; and
-  Establish character precincts as true neighbourhoods in a manner that is consistent with contemporary planning principles.

Their influence spatially on the LSP design is depicted diagrammatically in **Figure 13**.

3.2 LAND USE

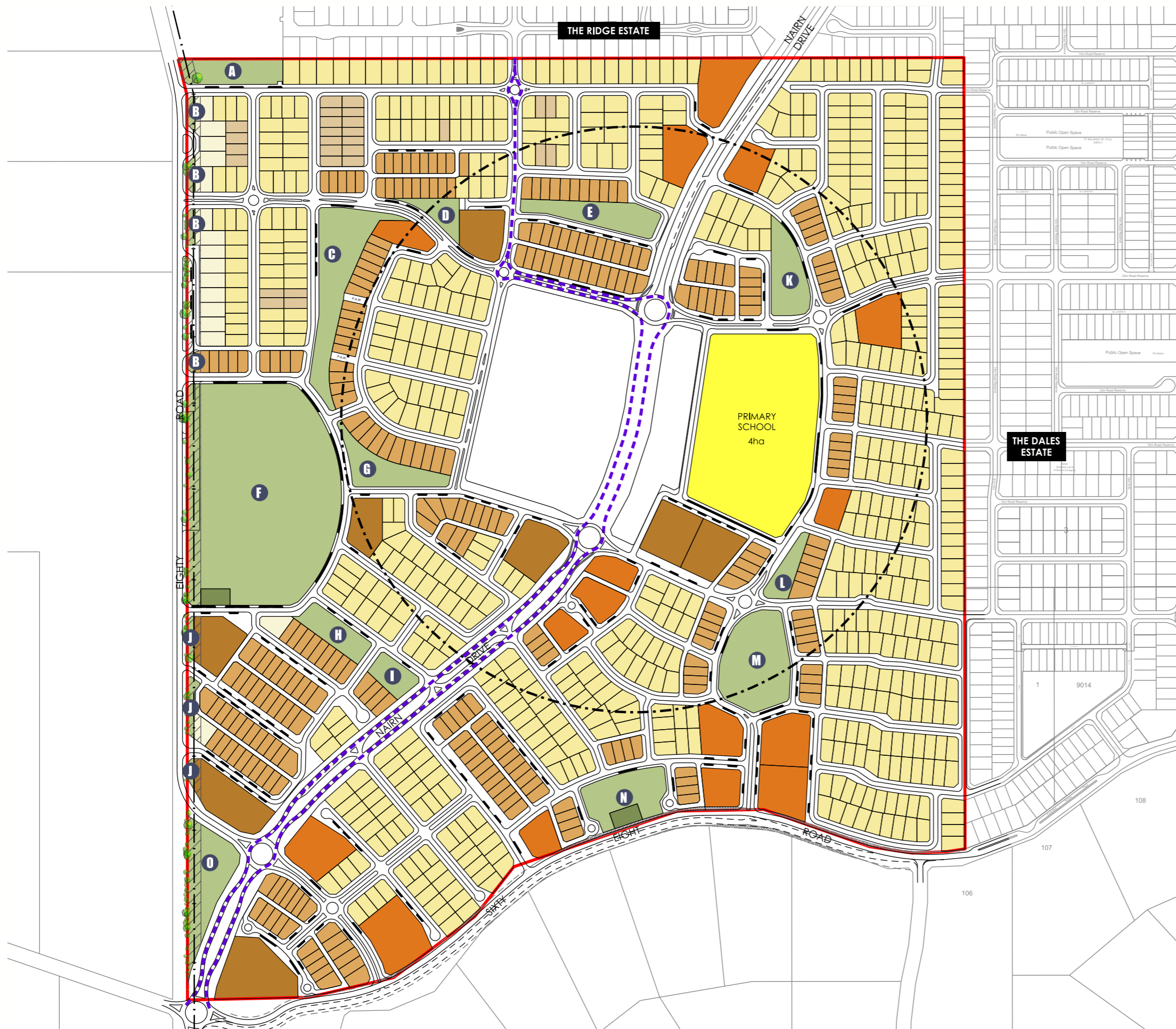
The following sections, detail the nature and location of the various land uses proposed by the LSP. A breakdown of the proposed land use as they appear on **Figure 14** is contained in the following table:

STRUCTURE PLAN SUMMARY TABLE			
Total LSP Area (ha):	120.82	Dwelling Yield Range:	1,300 – 1,600
 Commercial:	Nil (excluded from LSP)	Estimated Population @ 2.7 per dwelling:	3,510 – 4,320
 Education:	4.00	Number of Primary Schools:	1
 POS / Drainage:	12.96	Retail Floorspace:	N/A
 Residential:	63.73	Estimated Employment:	40
Estimated No. of Lots:	1049 x Single Residential 27 x Grouped Housing 4 x Mixed Use / Commercial	Number and Approximate Size of Key Open Space Areas:	20 Reserves encompassing 12.83 ha

3.3 EDUCATION & COMMUNITY FACILITIES

Education facilities within the LSP are limited to the provision of one government operated Primary School. The Department of Education and Training (DET) was consulted early on in the LSP's preparation and indicated acceptance of the location shown which is central to its intended catchment. At the City's request this advice has been confirmed in writing at **Appendix F**. The site will be earth worked to meet the requirements of DET's internal site criteria planning policy.

The City has advised that it has no plans to develop or operate any community facility within the boundaries of the LSP, other than sporting facilities and clubrooms on the District Playing Field site (refer to **Section 3.5.1**).



LEGEND

ZONES / RESERVES

- RESIDENTIAL R60
- RESIDENTIAL R40
- RESIDENTIAL R30
- RESIDENTIAL R25
- RESIDENTIAL R20
- RESIDENTIAL R15
- EDUCATION
- PUBLIC OPEN SPACE

OTHER

- LOCAL STRUCTURE PLAN BOUNDARY
- 400M NEIGHBOURHOOD WALKABLE CATCHMENT
- POWERLINE EASEMENT
- ROAD WIDENING (SIXTY EIGHT ROAD)
- PLANNED BUS ROUTE
- VEGETATION TO BE PROTECTED (WHERE POSSIBLE)
- SEWER PUMP STATION (900m²)

NOTES

- 1 The boundary of this Local Structure Plan (LSP) is in accordance with the approved Comprehensive Development Plan (CDP) 2002 and original Lot 1507 boundary.
- 2 The access street and associated lot layout shown on the Plan is indicative only and subject to refinement as part of the detailed subdivision process.
- 3 The Village Centre shall form the subject of a separate planning exercise and is excluded from this proposal.
- 4 POS areas are indicative only and subject to further detailed design and drainage considerations.
- 5 All road carriageway detail depicted on this Plan including pavements, road treatments, medians and parking are for illustrative purposes only and are subject to final engineering design and any relevant approvals. The detail reflects the intent of the road network standards preferred for this subdivision. All dimensions and areas depicted on this Plan are subject to pre-cal and final survey and may vary from the figures shown.
- 6 Bushfire attack level to be reviewed prior to the creation of titles. Development may require construction in accordance with AS3959 - Construction in Bushfire Prone Areas.
- 7 Sixty-Eight Road widening to accommodate future upgrade to boulevard standard. Construction requirements to be negotiated at subdivision stage of development.

PUBLIC OPEN SPACE TABLE

NOTES	CREDITABLE AREA (ha)	NOTES	CREDITABLE AREA (ha)
A	0.4009	I	0.2388
B	0.1730	J	0.1618
C	0.8576	K	0.3439
D	0.2305	L	0.2328
E	0.5242	M	0.8281
F	5.3703	N	0.4755
G	0.4331	O	0.7076
H	0.3574		
TOTAL AREA OF POS & DRAINAGE		11.3355	
% OF GROSS LANDHOLDING		10.57%	

LOCAL STRUCTURE PLAN
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Project

0m 50 100m
 s: 1:5500@A3
 d: December 2012
 p: 00/075/021L

**BACK
OF
A3 PAGE**



LEGEND

RESIDENTIAL DENSITIES	AREA (ha)	SINGLE LOTS	GH LOTS	GH DWELLINGS	TOTAL DWELLINGS	OTHER
Residential R60	3.7253	0	8	203	203	Local Structure Plan Boundary
Residential R40	5.4665	0	16	243	243	400m Neighbourhood Walkable Catchment
Residential R30	12.0900	299		299	299	Planned Bus Route
Residential R25	1.1489	27		27	27	Local Amenity
Residential R20	36.2858	659		659	659	General Building Orientation
Residential R15	1.2328	16		16	16	
RESIDENTIAL TOTALS	59.9493	1001	24	446	1447	

RESIDENTIAL DENSITIES PLAN
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Project

0m 75 150
 s: 1:7500@A4
 d: Dec 12
 j: 00/075



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3.4 RESIDENTIAL





3.4.1 DENSITY TARGETS

Directions 2031 and Beyond sets a target of '15 dwellings per gross urban zoned hectare' of land in new development areas within the Perth and Peel Metropolitan Regions. Element 1 of Liveable Neighbourhoods embraces this target, equating the measurement to '22 dwellings per site hectare' (encompassing land purely zoned for residential purposes) and asks that this be measured as a means of determining whether the residential densities proposed in a LSP will deliver the dwelling aspirations outlined in *Directions 2031 and Beyond*, the Outer Metropolitan Sub-Regional Strategy and Liveable Neighbourhoods.

In terms of 'Gross Hectare' some 107.43ha of the subject land is zoned 'Urban' in the MRS (which reduces to 100.78ha once the central area excluded from the LSP is deducted). Based on the lot and dwelling predictions outlined in Section 3.2 and an estimated 1,447 dwellings, this equates to '14.4 dwellings per urban hectare'. Once you then reduce the site area to land solely identified for residential land use, the 'Site Hectare' comes down to 59.95ha, with the same maximum number of houses equating this time to '24.1 dwellings per site hectare'. This number is very close to the target set in Liveable Neighbourhoods, but is expected to be whittled down as grouped housing development responds to the market and delivers yields below the maximums identified in this document. The creation of local services will also have a significant impact on the ultimate density of development realised.

3.4.2 LOT SIZE, VARIETY & ORIENTATION

Figure 15 depicts the proposed residential density codings for all residential development within the LSP area. Specifically in relation to the subject site, the LSP proposes:

-  'Medium Density (R30-R60) Grouped Housing' sites shaped to accommodate Rockingham Park's Building Company (Summit's) own building product within immediate proximity to high amenity locations such as the network of public open space outlined in **Section 3.6**. Twenty-seven (27) sites ranging between 3,000m² and 1.1ha in area are proposed, capable of accommodating up to a maximum of 532 additional dwellings on sites ranging between 160m² and 240m² in area.
-  'Medium Density (R30) Rear-loaded Cottage Lots' with frontages of 7.5m-15m, and depths of 28-32m that create sites between 240m² and 480m² in area.
-  'Low Density (R20-R25) Single Housing' over the balance of residential zoned land with 15-22m frontages and lot depths of 28-32m, that create sites between 440m² and 700m² in area.
-  A small strip of larger ('R15') lots located along Eighty Road that are slightly wider or longer to include portions of the land encumbered by the existing power line easement.

In accordance with the requirements of the City's Local Planning Policy on the matter, in the limited instances where lots are proposed directly adjacent POS, lot levels will be raised above, a footpath will be constructed to clearly demarcate the boundary between public and private land, and DAP's will be imposed as conditions of subdivision approval in order to ensure that the fencing and building orientation of subsequent dwellings adequately surveil the adjoining reserve

The residential densities proposed provide for a diverse variety in residential lot and dwelling product befitting an estate of this size, having regard for local site characteristics, market research, and the dwelling targets of the District Structure Plan, Liveable Neighbourhoods and the Outer Metropolitan Sub-Regional Strategy.

POS A

- Neighbourhood Active POS**
- Retention of Existing trees
 - Blend into existing northern POS
 - Recreational facilities such as a small playground and street furniture
 - Open active informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements
 - Limited off street parking

POS C

- Neighbourhood Active POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as a medium playground, street furniture, BBQ and shelter
 - Open active informal grassed area
 - 'Parkland Circuit'
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements
 - Limited off street parking
 - Limited lighting

POS D

- Local Passive POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as street furniture
 - 'Parkland Circuit'
 - High proportion of tree planting
 - Fully irrigated
 - All native trees and shrubs
 - Limited lighting

POS E

- Local Passive POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as street furniture
 - 'Parkland Circuit'
 - High proportion of tree planting
 - Fully irrigated
 - All native trees and shrubs
 - Limited off street parking
 - Limited lighting

POS K

- Neighbourhood Passive POS**
- No existing vegetation
 - Recreational facilities such as a small playground, street furniture
 - 'Parkland Circuit'
 - Open active informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - Large drainage basin requirements
 - Limited off street parking
 - Limited lighting

POS B

- Local Passive POS**
- Retention of Existing trees
 - No recreational facilities
 - All native trees and shrubs
 - Sub-surface drainage infrastructure

POS F

- District Active POS**
- Retention of existing vegetation
 - Community facility (by others)
 - Informal Amphitheatre
 - Recreational facilities such as a medium playground, street furniture, BBQ and shelter
 - POS lighting
 - Open active formal grassed oval
 - 'Parkland Circuit'
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements
 - Waste Water Treatment Plant location
 - Car parking

POS G

- Neighbourhood Passive POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as a street furniture
 - High proportion of tree planting
 - 'Parkland Circuit'
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements
 - Limited off street parking
 - Limited lighting

POS H + I

- Local Passive POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as a street furniture
 - Small informal grassed area
 - 'Parkland Circuit'
 - Fully irrigated
 - All native trees and shrubs
 - Limited lighting

POS J

- Local Passive POS**
- Retention of Existing trees
 - No recreational facilities
 - Fully irrigated
 - All native trees and shrubs

POS L

- Local Passive POS**
- No existing vegetation
 - Residential direct access into POS
 - Recreational facilities such as street furniture
 - 'Parkland Circuit'
 - Small informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - Limited off street parking
 - Limited lighting

POS M

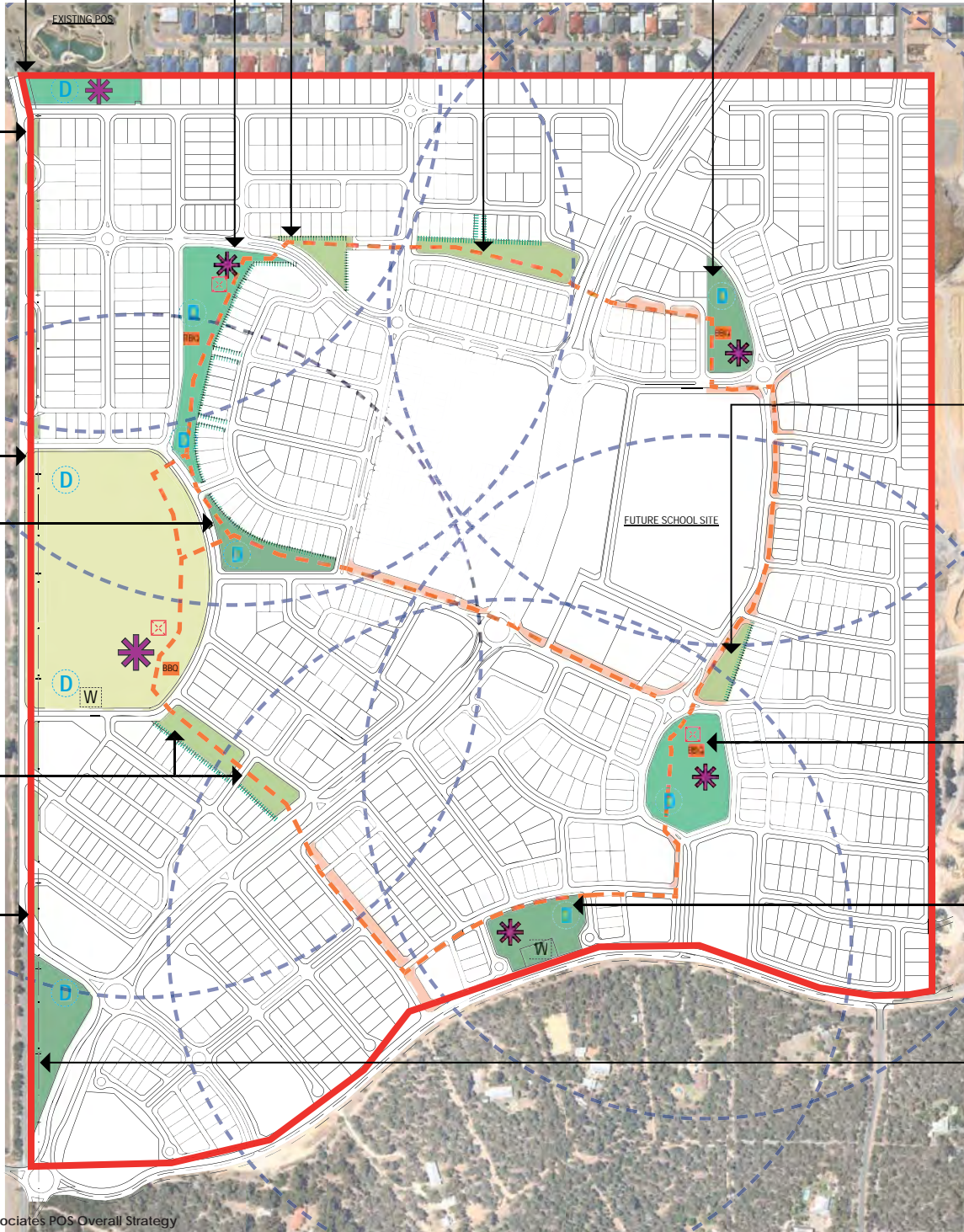
- Neighbourhood Active POS**
- No existing vegetation
 - Recreational facilities such as a small playground, street furniture and shelter
 - 'Parkland Circuit'
 - Open active informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements
 - Limited off street parking
 - Limited lighting

POS N

- Neighbourhood Passive POS**
- No existing vegetation
 - Recreational facilities such as a street furniture
 - Open informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - 'Parkland Circuit'
 - Drainage basin requirements
 - Waste Water Treatment Plant (to be confirmed)
 - Limited off street parking

POS O

- Neighbourhood Passive POS**
- No existing vegetation
 - Recreational facilities such as a street furniture
 - High proportion of tree planting
 - Open informal grassed area
 - Fully irrigated
 - All native trees and shrubs
 - Drainage basin requirements



Source : Emerge Associates POS Overall Strategy

LEGEND

- | | | |
|---------------------------|---|---|
| District POS | Green Link (Widened Verge) | Residential facing POS |
| Neighbourhood Active POS | 'Parkland Circuit' Path Network | Drainage Requirements |
| Neighbourhood Passive POS | Existing Tree to be retained (Where Possible) | Small Open Shelter Location |
| Local Passive | Waste water treatment plant location | BBQ Facilities Location |
| | Playground location | 400m Walkable Catchment (from playground) |

Lot 1507 Eighty Road, Baldvis Local Structure Plan

3.5 PUBLIC OPEN SPACE

Figure 16 shows the proposed distribution and arrangement of Public Open Space across the LSP area. The table below demonstrates that the LSP is compliant in its 10% POS requirement, having regard for both the requirements of *Liveable Neighbourhoods* and the City's Planning Policy 3.4.1, with some additional allowance for ultimate development of the central area that has been excluded from the current proposal.

PUBLIC OPEN SPACE SCHEDULE				[18 December 2012]			
Lot 1507 Eighty Road				120.8250			
less Nairn Drive Regional Road Reservation				6.1563			
less Sixty-Eight Road Reservation Widening				0.1982			
Nett Site Area				114.4705			
Deductions							
Primary School				4.0000			
Central Exclusion Area				6.6513			
2 x Sewer Pump Stations				0.1800			
Dedicated Drainage (up to 1:1 year event)							
	B1	0.1878	1,4977				
	B2	0.2654					
	B3	0.1508					
	B4	0.1043					
	B5	0.1414					
	B6	0.1732					
	B7	0.0798					
	B8	0.0750					
	B9	0.1924					
	B10	0.0814					
	S5	0.0462					
Surplus Restricted Open Space				0.0000			
Gross Subdivisible Area				102.1415			
Public Open Space @ 10%				10.2142			
Unrestricted Public Open Space							
Public Open Space (as shown on Plan)							
ID	Total	Drainage ID	less 1:1 event (deduction)	less 1:5 event (restricted)	less Pump Stations (deduction)	Easement (restricted)	
A	0.4823	B10	0.0814	0.0147		0.0652	0.3210
B	0.1730					0.1730	0.0000
C	1.1250	B8 & B9	0.2674	0.0248			0.8328
D	0.2305						0.2305
E	0.5704	S5	0.0462	0.0111			0.5131
F	5.7749	B5 & B6	0.3146	0.0322	0.0900	0.5561	4.7820
G	0.5129	B7	0.0798	0.0080			0.4251
H	0.3574						0.3574
I	0.2388						0.2388
J	0.1618					0.1618	0.0000
K	0.5317	B1	0.1878	0.0207			0.3232
L	0.2328						0.2328
M	1.0935	B2	0.2654	0.0239			0.8042
N	0.7163	B3	0.1508	0.0247	0.0900		0.4508
O	0.8119	B4	0.1043	0.0163		0.3603	0.3310
TOTAL Unrestricted						9.8427	
Restricted Open Space							
Powerline Easement							
A					0.0652		
B					0.1730		
F					0.5561		
J					0.1618		
O					0.3603		
Drainage Surface Area (between 1:1 year event and 1:5 year event)							
A		(B10)		0.0147			
C		(B8 & B9)		0.0248			
E		(S5)		0.0111			
F		(B5 & B6)		0.0322			
G		(B7)		0.0080			
K		(B1)		0.0207			
M		(B2)		0.0239			
N		(B3)		0.0247			
O		(B4)		0.0163			
TOTAL Restricted						1.4928	
Maximum Permitted						2.0428	
TOTAL Restricted Credited						1.4928	
TOTAL Public Open Space Provision						11.3355	
Unrestricted POS						9.8427	
Restricted POS						1.4928	
Difference						1.1214	

	1:1	1:5	1:10	1:100
B1	0.1878	0.2095	0.2159	0.2495
B2	0.2654	0.2893	0.2977	0.3365
B3	0.1508	0.1755	0.1839	0.2227
B4	0.1043	0.1206	0.1265	0.1546
B5	0.1414	0.1673	0.1759	0.2095
B6	0.1732	0.1795	0.1840	0.2119
B7	0.0798	0.0878	0.0902	0.0935
B8	0.0750	0.0810	0.0836	0.0942
B9	0.1924	0.2112	0.2180	0.2501
B10	0.0814	0.0961	0.1012	0.1245
S5	0.0462	0.0573	0.0607	0.0711

1:10 event	%	NOTES
0.1012	21%	
0.3016	27%	22% when divided by combined area of D & E (which form one linear park)
0.0607	11%	
0.3599	6%	
0.0902	18%	
0.2159	41%	Variation requested on the basis of having to accommodate late change to Primary School location, whilst maintaining secondary N/S connection activating eastern side of school
0.2977	27%	20% when divided by combined area of L & M (which form one linear park)
0.1839	26%	24% if Sixty-Eight Road Widening not imposed
0.1265	16%	

	Un	Restricted	TOTAL
A	0.3210	0.0799	0.4009
B	0.0000	0.1730	0.1730
C	0.8328	0.0248	0.8576
D	0.2305		0.2305
E	0.5131	0.0111	0.5242
F	4.7820	0.5883	5.3703
G	0.4251	0.0080	0.4331
H	0.3574		0.3574
I	0.2388		0.2388
J	0.0000	0.1618	0.1618
K	0.3232	0.0207	0.3439
L	0.2328		0.2328
M	0.8042	0.0239	0.8281
N	0.4508	0.0247	0.4755
O	0.3310	0.3766	0.7076
Excess	N/A		
	9.8427	1.4928	11.3355

11.10%	of Gross Subdivisible Area
---------------	-----------------------------------

In addition to meeting the land area requirements and drainage limitations as they relate to the relevant policies, the LSP also creates a variety of reserves which cater for a diverse range of both active and passive recreational activities. A summary of the different types of reserves is detailed in the following section:










3.5.1 DISTRICT PLAYING FIELD

One of two fundamental design elements of the LSP is the creation of a District Playing Field within an expansion of the natural amphitheatre identified midway along Eighty Road.

Early on in discussions over a potential review of the LSP design, the City advised of a desire to provide a senior sized AFL oval within the site. The LSP embraces this opportunity, viewing the provision of such a facility as an asset to the development.

In order to create a level playing surface of a size capable of meeting the requirements of the City, extensive earthworks are required including the creation of a relatively steep bank along the eastern side of the reserve. This creates the opportunity for terraced seating that compliments the main spectator and clubroom facilities accessed directly off Eighty Road.

Other key elements of the District Playing Fields concept shown at **Figure 17** include:

-  A community facility inclusive of opportunities for a grandstand, ablutions, change rooms and storage;
-  An associated car park that makes use of land constrained by the existing power line easement, and by virtue of being accessed directly from Eighty Road separates recreation from local residential traffic;
-  A shade or similar structure located atop the terraced seating that announces the location of the playing fields and acts as a magnet to residents and visitors uphill of the facility;
-  A children's playground inclusive of shelter and barbecue facilities;
-  A hardstand area for informal basketball play;
-  A series of paths that utilising the adjacent road network radiate out from the reserve, inclusive of key connections that form part of the Parkland Circuit network (detailed in **Section 3.6.6**);
-  Fitness equipment similar to that located along the length of the Parkland Circuit, that contribute to the overall network established within the LSP;
-  Drainage facilities and a Waste Water Pumping Station required to service this portion of the LSP catchment; and
-  Opportunities for supplementary embayed car parking areas (where practical) along the northern, southern and eastern perimeter of the site.

3.5.2 COMMUNITY PARKS

Strategically located throughout the balance of the LSP area is a series of community parks. Located central to the various residential precincts identified within the LSP the parks ensure that all lots are within a walkable catchment of a POS facility, including more than 90% of future residents being located within 400m of a proposed playground location.

The Community parks provide for a high degree of aspect and amenity for surrounding residences, thereby representing an opportunity for housing innovation and diversity. This has been reflected in the LSP, which provides for 'traditional', laneway, direct frontage and grouped housing adjacent to Community Parkland areas. Broad Concept Plans prepared by Emerge for each of the reserves proposed in the LSP are included at **Appendix G**.



Source: Transcore Transport Assessment

LEGEND

ROAD HIERARCHY

- Integrator A
- Integrator B
- Neighbourhood Connector A
- Neighbourhood Connector B
- Access Street B
- Access Street C & D
- Special Access Street
- 100 Forecast Traffic Flows

OTHER

- Local Structure Plan Boundary
- 400m Neighbourhood Walkable Catchment

MOVEMENT NETWORK
 Lot 1507 Eighty Road, Baldvis
 A Rockingham Park Project



s: 1:7500@A4
 d: Dec 12
 j: 00/075



figure
18

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3.6 MOVEMENT NETWORK

Transcore was engaged by Rockingham Park to undertake a Transport Assessment of the Local Structure Plan design. A full copy of the report can be found at **Appendix H**. Key points are summarised below.

3.6.1 ROAD HIERARCHY & TRAFFIC VOLUMES

The proposed road hierarchy for the subject land, and projected traffic volumes attributed to each road are depicted on **Figure 18**, and can be summarised as follows:

ARTERIAL INTEGRATOR

Nairn Drive is an 'Arterial Integrator Road', with its alignment and reservation width set by its 40m wide 'Other Regional Road' reservation in the MRS. Nairn Drive serves the function of an 'Integrator A' at its northern and southern ends within Lot 1507, however projected traffic volumes in the middle of the LSP area allow it to be classified as an 'Integrator B' through this section for the foreseeable future. A 70km/h speed limit on the 'Integrator A' sections shown on **Figure 18** is proposed, however a lower speed is recommended for the Integrator B section. A 60km/h speed limit would assist pedestrian crossing and general integration of the estate across Nairn Drive.

NEIGHBOURHOOD CONNECTORS

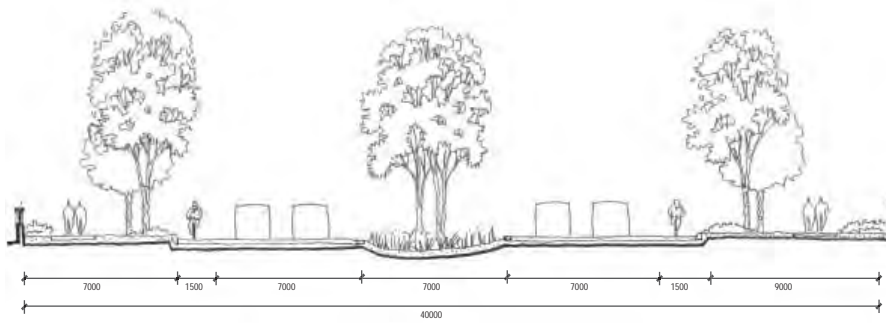
Eighty Road is classified as a 'Neighbourhood Connector A' Road. Similar to what has occurred to the north, the road is proposed to be upgraded to a fully kerbed and drained, 7.4m wide single carriageway, with a reduced traffic speed of 60km/h adjacent and through the LSP area. Development on the eastern side of Eighty Road will need to be setback by virtue of retention of the existing high voltage power line. Access to lots fronting Eighty Road shall be limited to Controlled Access Place (CAP or Service) Roads in a similar manner to that which has been approved and is being constructed in the initial stages of development in the northwest corner of the estate.

Sixty-Eight Road is also classified as a 'Neighbourhood Connector A' Road. Widening of the reserve to accommodate a boulevard road treatment is accommodated in the LSP, based on a 25m wide reservation that due to the unique road geometry of the location is based upon the centreline of the existing carriageway. Similar to Eighty Road, until urbanisation proceeds south of Sixty Eight Road it is proposed that the road be upgraded to a fully kerbed and drained, 7.4m wide single carriageway, with a reduced traffic speed of 60km/h adjacent the LSP area. Access (where proposed), will be restricted to the use of CAP Roads as has been used in 'The Dales Estate' immediately to the east.

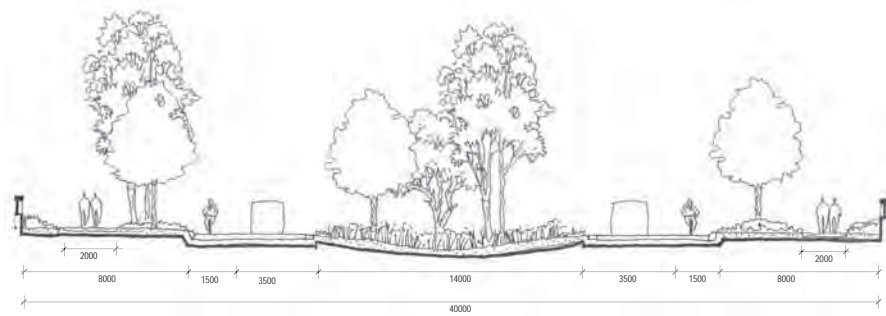
Arpenteur Drive and the continuation of that route through to Sixty-Eight Road are classified as 'Neighbourhood Connector B' Roads. Similar to Eighty and Sixty-Eight Roads, it is proposed that the 7.4m carriageway established within The Ridge Estate be continued on through the LSP, with road reserves to accommodate the service varying from between 16m (adjacent to POS) to 25m where the carriageway has been divided with a median as the southern entrance to the estate. A speed limit of 50km/h is expected to apply to this route.

Furnivall Parade / Regency Avenue located in the northern part of the LSP area is the final Neighbourhood Connector within or adjoining the LSP area. Also classified as a 'Neighbourhood Connector B' Road it is proposed to be constructed as a boulevard-style road within a varying reservation width of 20-25m. At its western end the road acts as the initial estate entrance, with the additional reserve width allowing for a landscaped entry treatment.

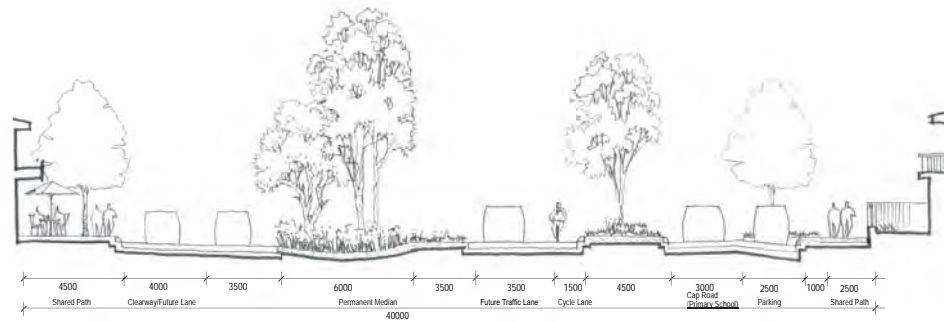
At the request of the City, two additional high order Access Street connections, being a direct **north-south link** between Nairn Drive and Sixty-Eight Road (running along the eastern boundary of the school site), and extension of the east-west aligned **Baroness Road** within 'Avalon Estate' in order to provide a direct connection between Smirk Road and the District Playing Field.



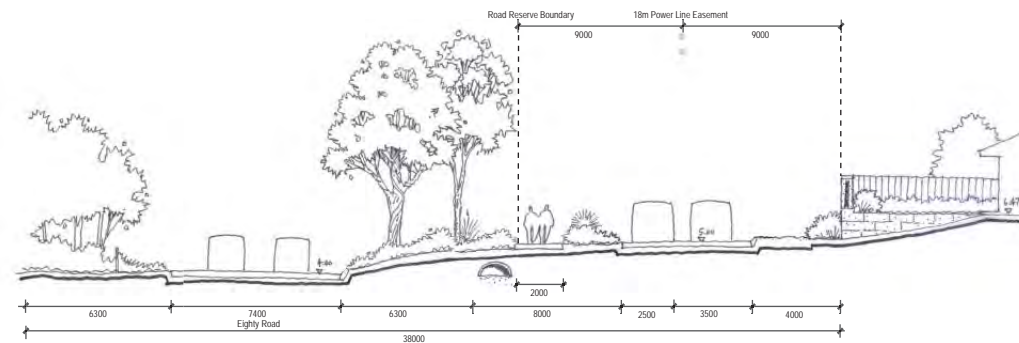
Intergrator A



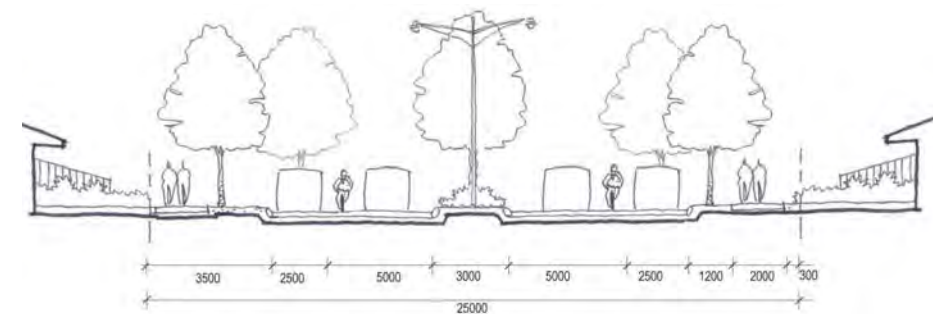
Intergrator B - 40m Reserve - 14m Median



Intergrator B - 40m Reserve - 6m Median



Neighbourhood Connector A - Eighty Road



Neighbourhood Connector B - Boulevard 25m

Source : Emerge Associates Street Sections

TYPICAL ROAD CROSS SECTIONS

Lot 1507 Eighty Road, Baldvis

A Rockingham Park Project

s: nts@A4
d: Dec 12
j: 00/075



figure
19A

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ACCESS STREETS

With the exception of laneways and the special streets discussed below, all other roads within the LSP area are designated as 'Access Streets'. Each of the roads will encompass a 6m wide carriageway within a typical reserve width of 16m. Whilst none of the roads are expected to experience volumes in excess of 1,000 VPD, four of the roads have been designated as 'Access Street B' (as opposed to Access Street 'C' or 'D') which involves a slightly wider 18m reserve width purely to assist with the location of street furniture in areas of higher activity.

Adjacent to public open space *Liveable Neighbourhoods* allows verge widths to be reduced down to 1m as a result of there being no need to accommodate service alignments for the development of adjacent land. The LSP proposes 13.5m reserve widths where access streets abut POS, including a more conservative 2.5m verge on the reserve side on the basis that this width can accommodate street trees and visitor parking embayments without the infrastructure extending outside of the road reservation.

HILLSIDE RELIEF

In the eastern portion of the site where roads rapidly descend from 'The Dales' down towards POS Areas 'L' and 'M', a number of specially landscaped pockets are strategically located so as to provide visual relief, particularly to pedestrians and POS patrons as they traverse and/or look back up the slope in that direction.

SPECIAL ACCESS STREETS

In the southwest corner of the LSP area is a special precinct that has been designed differently. Similar to sections of the Parkland Circuit (discussed in **Section 3.6.7**), two streets have a widened verge on one side where the absence of crossovers allows for additional landscaped connections to be created linking cottages to the nearby District Playing Field. A meandering carriageway embedded with visitor parking and urban water initiatives such as rain gardens will be considered at the subdivision and detailed design stages of implementation.

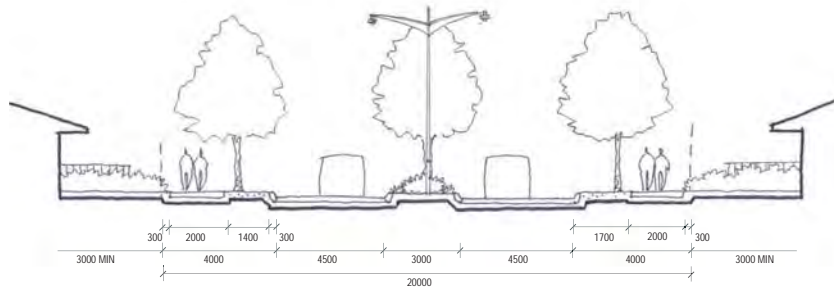
LANEWAYS

At the City's direction reduced carriageway widths and the introduction of a landscaping strip as per the Subi Centro laneway example is no longer proposed. Instead laneways will constitute the typical 6m wide carriageway with 1m building setbacks on both sides to accommodate the requirements of the City's refuse collection vehicle. Along Arpenteur Drive medians have been used to manage intersection spacing in accordance with Liveable Neighbourhoods requirements.

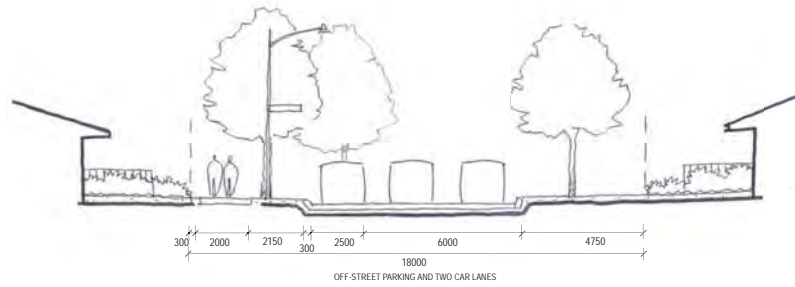
PEDESTRIAN ACCESS WAYS

A limited number of Pedestrian Access Ways (PAW)'s are also proposed in key locations where they open up local residential cells, allow direct access and draws the amenity of local POS reserves further back within each cell. In all instances the PAW's adhere to the guidelines expressed in the WAPC's Planning guidelines for '*Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways (October 2009)*', inclusive of an 8m minimum width with clear sight lines along their entire length. The two located within the dress circle near the District Playing Field also involve a significant level change further minimising impacts on neighbours and opportunities for anti-social behaviour.

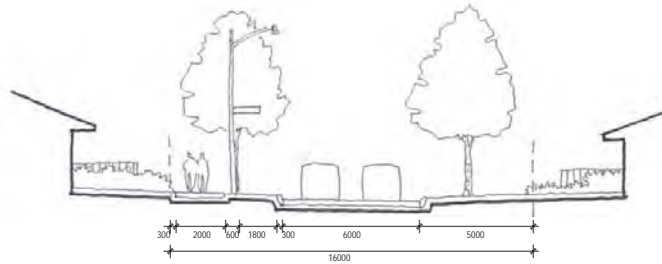
Indicative cross sections for each road in the above hierarchy are depicted on **Figures 19a & 19b**.



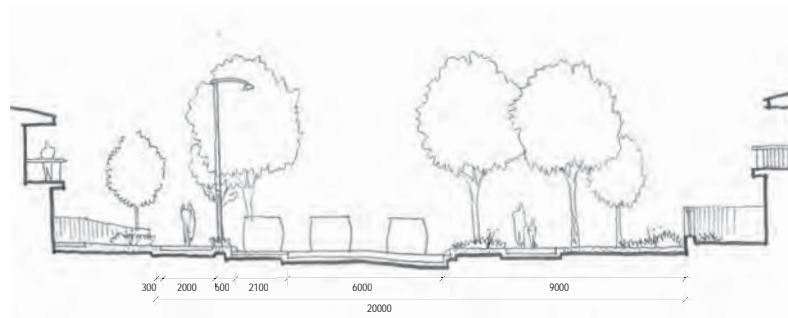
Neighbourhood Connector B - Boulevard 20m



Residential Road - 18m Reserve - Access Street B

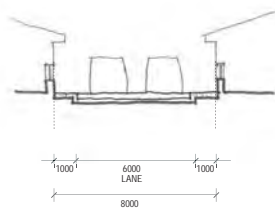


Residential Road - 16m Reserve - Access Street C/D

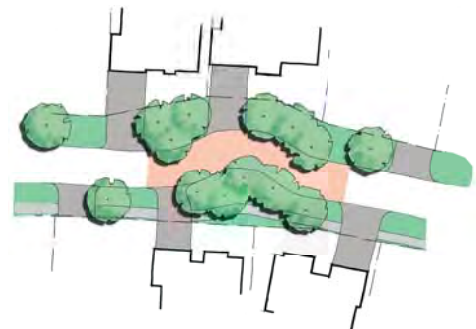


Special Access Street - 20m Reserve

Landscaped Midpoint Concept



Laneway - 6m Reserve



Source : Emerge Associates Street Sections

TYPICAL ROAD CROSS SECTIONS

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figure
19B











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3.6.2 PERMEABILITY & ACCESSIBILITY

Overall the road layout accommodates a high level of interconnectivity with the surrounding area, with regular connections to Nairn Drive (the primary transport route through the area) and relatively short and straight street blocks being arranged in a manner that achieves a high degree of legibility, permeability and walkability in accordance with the principles of *Liveable Neighbourhoods*.

3.6.3 TRAFFIC MANAGEMENT ISSUES






The Local Structure Plan incorporates each of the management devices recommended by Transcore, including:

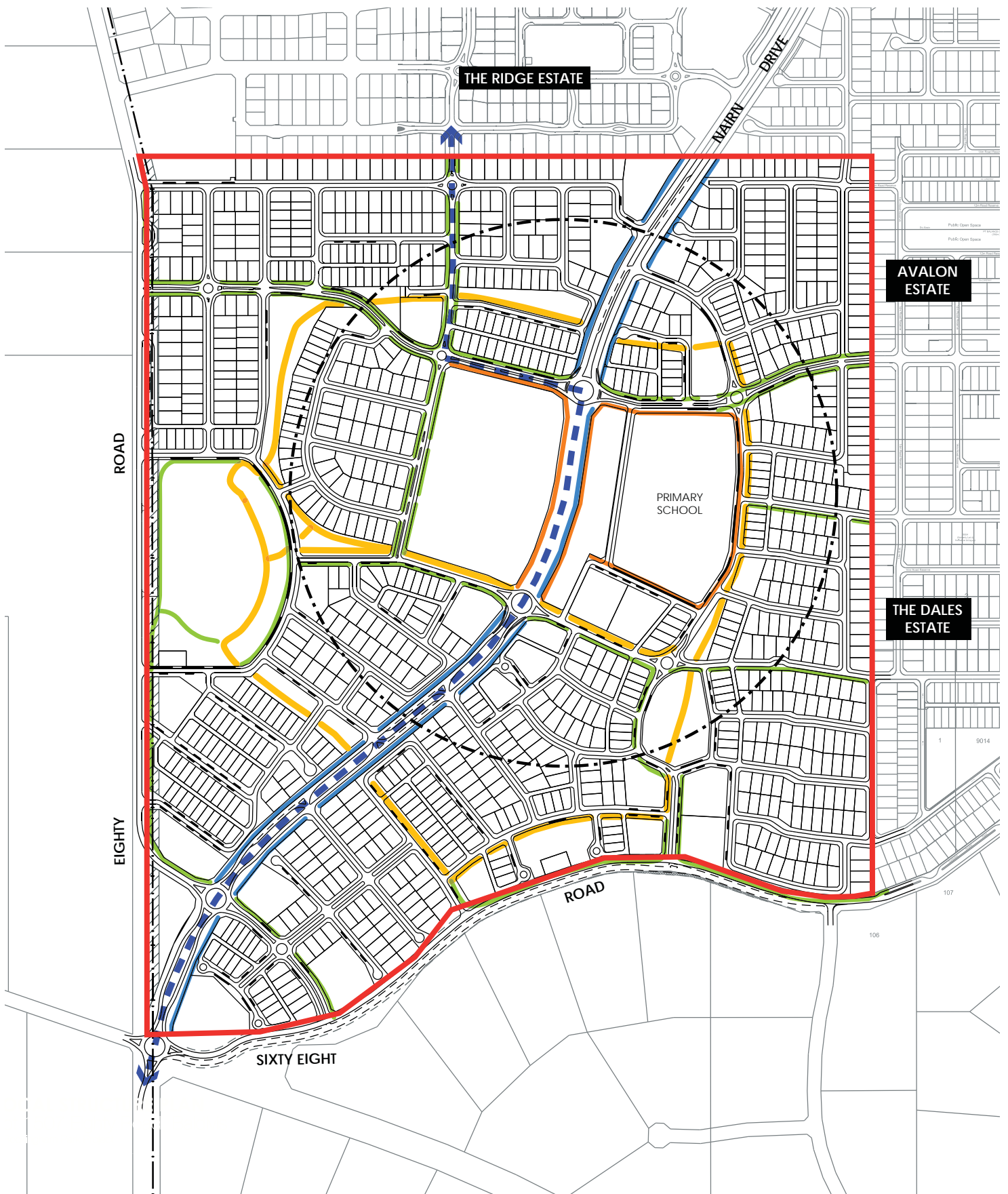
-  Nairn Drive being initially designed and constructed as a single carriageway through the middle of the LSP;
-  A roundabout intersection treatment at the southern end of Nairn Drive as an interim solution pending construction of the Karnup Road extension and future freeway connection;
-  Three other roundabouts along Nairn Drive where four-way intersections are proposed at the intersections of Arpenteur Drive, the east-west aligned 'Neighbourhood Connector' and the realignment of Eighty Road;
-  The staggering of intersections elsewhere along Nairn Drive such that they meet the intersection spacing requirements of *Liveable Neighbourhoods* (or specific techniques are proposed as set out below, to manage traffic where compliance is impractical);
-  Right turn pockets but no left turn deceleration lanes along Nairn Drive, to assist in managing speed;
-  The northern pair of access street intersections with Nairn Drive being configured as left-in, left-out only, so as to eliminate the need for overlapping turning pockets;
-  Use of a wider (14m) median where right turn pockets in the southern portion of the LSP design would otherwise overlap;
-  The creation of a right turning pocket along Sixty-Eight Road at its intersection with the boulevard configured 'Neighbourhood Connector B' Road that in time will become the southern entrance to the estate;
-  Restriction of access along Eighty Road to the use of Controlled Access Plan (CAP) Roads for residential development and limited car parking access for the District Playing Field; and
-  The use of three priority controlled four-way intersection treatments at the convergence of short, low traffic volume access streets within the LSP. Appropriate entry treatments will be provided on side roads to help alert drivers to the presence of the intersection and that traffic on the major road has priority.

A plan showing key intersection treatments within the LSP area appears as **Figure 9 of Appendix H**.

3.6.4 INTERFACE WITH ADJOINING DEVELOPMENT

Careful consideration has been given to the interface of adjoining landholdings. Specifically, the LSP considers:

-  Existing connections to The Ridge Estate to the north;
-  Approved connections to the east through 'The Dales' and 'Avalon Estate';
-  The use of loop or controlled access roads so that where possible, development provides a frontage towards both Sixty-Eight and Eighty Roads, whilst minimising direct access;
-  Use of a variety of lot interface treatments along Nairn Drive that maintain an adequate level of surveillance along its route whilst minimising anticipated impacts on resident amenity; and
-  Potential for closure of some or all of the Eighty Road reservation west of POS Area 'O', such that the park will form a landscaped extension of the adjoining private school facility.



LEGEND

PATH NETWORK

- 'Parkland Circuit' - 2.5m min path
- On-road cycle lanes + 2m footpath
- High use areas (2.5m wide path proposed)
- Major Pedestrian Routes (2m path proposed)

OTHER

- Local Structure Plan Boundary
- 400m Neighbourhood Walkable Catchment
- - - Planned Bus Route
- P Indicative Parking Locations (to be reviewed @ subdivision)

BUS ROUTE, PATH NETWORK & PARKING EMBAYMENTS
 Lot 1507 Eighty Road, Baldvis
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figure
20

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3.6.5 PUBLIC TRANSPORT

A Transperth operated **Bus Route 564** currently provides a limited service to the South Baldvis locality, linking Settlers Hill Estate with Warnbro Station on the SW Metropolitan Railway Line.

The *Baldvis Road Needs Study Traffic and Infrastructure Report (2005)* identifies three bus routes ultimately servicing the locality, inclusive of two routes in or around Lot 1507. The South Baldvis Western Bus Route enters Lot 1507 via Arpenteur Road and continues through the middle of the landholding via Nairn Drive, before terminating at Sixty Eight Road. The South Baldvis Central Bus Route follows a similar north-south aligned route through the adjoining The Dales and Avalon Estates (some 300m east of Lot 1507), this time linking back to the Baldvis District Centre in addition to Warnbro Station.

The LSP accommodates the Western Bus Route alignment both in terms of reservation width and carriageway design. In addition the LSP embraces the opportunities that the bus route presents, by proposing medium density housing adjacent its entire route. Consistent with advice from the Public Transport Authority on similar proposals, bus embayments are not proposed. Wider carriageways and reserves are also provided surrounding the Primary School and District Playing Fields where regular bus use is anticipated.

3.6.6 PEDESTRIAN & CYCLIST NETWORK

A highly permeable road network within the LSP area creates excellent opportunities for the provision of good pedestrian and cyclist facilities that maximise the use of non-motorised transport modes. **Figure 20** outlines the key pedestrian and cyclist routes through the LSP area.

In accordance with the requirements of *Liveable Neighbourhoods*, paths shall be provided on one side of all roads and on both sides of roads classified as an 'Integrator' or 'Neighbourhood Connector' (refer **Figure 18**). In accordance with the current practice of the City of Rockingham all paths will be constructed 2m in width so that they can be designated as shared paths for pedestrians and cyclists. Slightly wider 2.5m widths will be applied in high pedestrian-traffic locations such as adjacent to the Primary School.

On-street cycle lanes will be included along Nairn Drive and along both sides of all internalised 'Neighbourhood Connectors'.

3.6.7 PARKLAND CIRCUIT

The 'Parkland Circuit' path network is the second fundamental design element of the LSP. Identified on **Figure 20**, the circuit is essentially a shared path located within wider landscaped road verges that link the estate's expansive network of public open space reservations, inclusive of on-route facilities that encourage both passive and active recreational use.

Initial thoughts beyond seating and shade structures involve the provision of fitness equipment strategically located at various positions along its route. At the City's suggestion the developer is also investigating the potential to include Calico infrastructure that through the use of totem poles and personal mobile phones, allow users of the route to track their individual performance. Cross-sections detailing the different environment along various sections of the route are shown on **Figure 21a** and **21b**.

3.6.8 VISITOR PARKING

At the City's request visitor parking embayments have been identified in key areas of the LSP, such as adjacent laneway development (which lack driveway depths that accommodate visitor parking); around Grouped Housing sites (to assist in catering for overflow parking having regard for likely future access and egress opportunities); and in and around public open space reservations. These locations are purely notional and will be reviewed at the subdivision and detailed engineering stages of design.

THE 'PARKLAND CIRCUIT' IS A PEDESTRIAN PATH NETWORK CONNECTING PUBLIC OPEN SPACES WITHIN PARKLAND HEIGHTS.

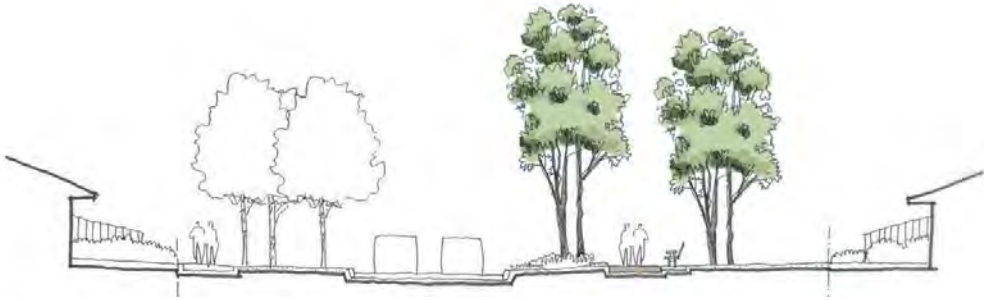
CHARACTERISTICS OF THE 'PARKLAND CIRCUIT' INCLUDE;

- WIDENED PEDESTRIAN PATH (2.5 - 3.0m)
- TREES ALONG THE 'PARKLAND CIRCUIT' PATH NETWORK TO BE THE SAME SPECIES - PROVIDING SHADE AND CHARACTER
- EXERCISE NODES PROVIDED ALONG THE ROUTE TO ENCOURAGE THE COMMUNITY TO CREATE THEIR OWN FITNESS CIRCUIT
- PATH TO BE A DIFFERENT MATERIAL THAN ANY OTHER USED IN THE DEVELOPMENT
- SEATS/PASSIVE NODES TO ALLOW FOR REST ALONG THE CIRCUIT.

THE BELOW SECTIONS PROVIDE AN INDICATIVE GUIDE TO THE VARYING CONCEPTS ALONG THE 'PARKLAND CIRCUIT' (CONCEPT SUBJECT TO DETAILED DESIGN)

1. 'PARKLAND CIRCUIT' TYPOLOGY ONE

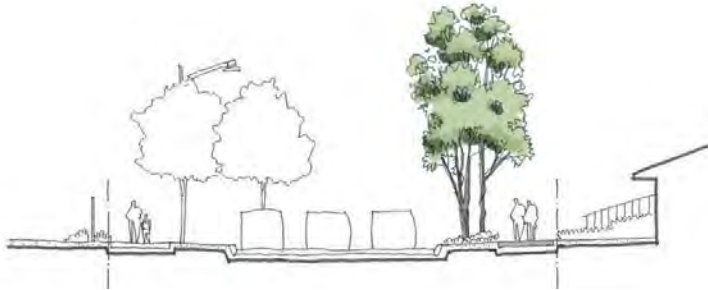
SECTION THROUGH RESIDENTIAL CUL-DE-SAC ROAD (WIDTH VARIES)



- WIDE PATH THROUGH GROVE OF TREES
- PASSIVE NODE

2. 'PARKLAND CIRCUIT' TYPOLOGY TWO

SECTION ADJACENT TO PRIMARY SCHOOL



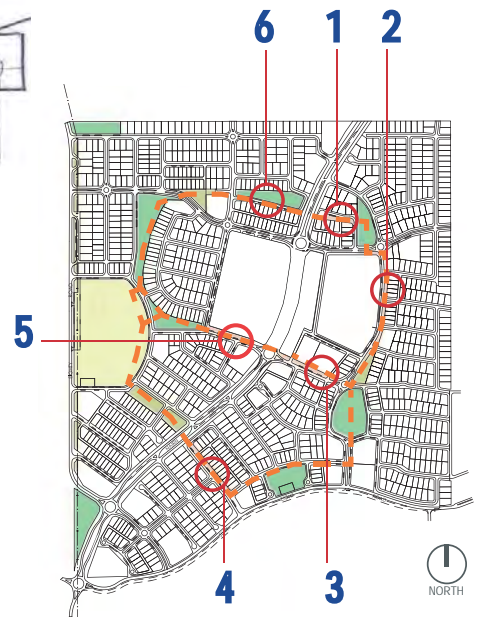
- WIDE PATH ALONG BOUNDARY
- CO-ORDINATION WITH SERVICES AND BOUNDARY FENCING REQUIRED

3. 'PARKLAND CIRCUIT' TYPOLOGY THREE

SECTION THROUGH WIDENED VERGE WITH DRAINAGE (25 M GREEN LINK)



- WIDE PATH THROUGH GROVE OF TREES
- ROAD SIDE SWALE TO PROVIDE A SOFT BUFFER TO ROAD



Source : Emerge Associates POS Overall Strategy June 2011

PARKLAND CIRCUIT

Lot 1507 Eighty Road, Baldvis

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figure
21A

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4. 'PARKLAND CIRCUIT' TYPOLOGY FOUR

SECTION THROUGH WIDENED VERGE WITH PASSIVE NODE/SHELTER (25 M GREEN LINK)



- WIDE PATH THROUGH GROVE OF TREES
- PASSIVE NODE

5. 'PARKLAND CIRCUIT' TYPOLOGY SIX

SECTION THROUGH WIDENED VERGE WITH DRAINAGE (25 M GREEN LINK)



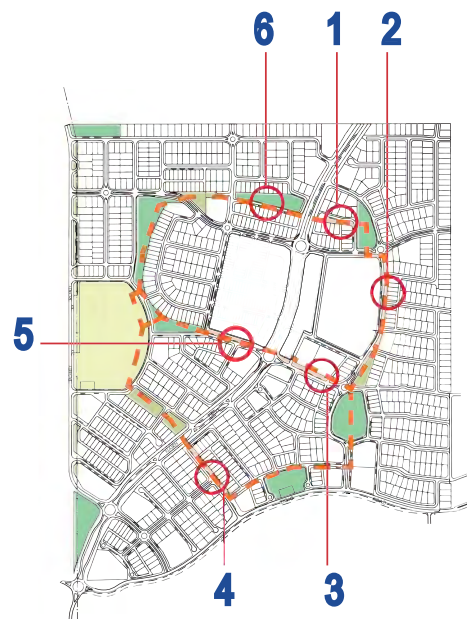
- WIDE PATH THROUGH GROVE OF TREES
- ROAD SIDE SWALE TO PROVIDE A SOFT BUFFER TO ROAD
- TURFED AREA TO PROVIDE OPPORTUNITIES FOR REST
- LIGHTING PROVISIONS

6. 'PARKLAND CIRCUIT' TYPOLOGY SEVEN

SECTION THROUGH PUBLIC OPEN SPACE



- WIDE PATH THROUGH GROVE OF TREES
- MEANDERS THROUGH PUBLIC OPEN SPACE
- EXERCISE NODES LOCATED THROUGHOUT PUBLIC OPEN SPACES



Source : Emerge Associates POS Overall Strategy June 2011



OVERLAND FLOW FOR 1 IN 100 YEAR STORM EVENT

LEGEND

DESIGN ASSUMPTIONS

- Where Subdivision layout not available impervious area equals 25% of total catchment area.
- Infiltration area is estimated at 25% of all
 - POS
 - Road / median area within catchment
 - Below ground infiltration network area

LEGEND

- Generalised drainage flow direction
- Extent of site catchment boundary
- Drainage sub catchment boundary
- Existing surface contour
- Proposed public open space
- Proposed below ground infiltration storage
- Denotes drainage infiltration basin. Shape to be determined at detail design
 - Denotes 1 in 1 storm twl
 - Denotes 1 in 5 storm twl
 - Denotes 1 in 10 storm twl
 - Denotes 1 in 100 storm twl

TABLES

AREAS AND STORAGE 1 IN 5 STORM					
SWALE	CATCHMENT AREA	IMPERVIOUS AREA	INFILTRATION RATE	SWALE AREA	STORM VOLUME
1	1.33 ha	1.20 ha	3.0m/DAY	691m ²	120m ³
2	1.89 ha	1.70 ha	3.0m/DAY	1232m ²	190m ³
3	2.17 ha	1.95 ha	3.0m/DAY	1000m ²	250m ³
4	1.73 ha	1.56 ha	3.0m/DAY	755m ²	180m ³
5	0.99 ha	0.89 ha	3.0m/DAY	573m ²	80m ³

BASIN	CATCHMENT AREA	IMPERVIOUS AREA	INFILTRATION RATE	BASIN AREA	STORM VOLUME
B1	3.17 ha	3.39 ha	3.0m/DAY	2395m ²	114m ³
B2	6.32 ha	5.69 ha	3.0m/DAY	2893m ²	1070m ³
B3	5.09 ha	4.58 ha	3.0m/DAY	1755m ²	1050m ³
B4	2.06 ha	1.85 ha	3.0m/DAY	1264m ²	430m ³
B5	2.75 ha	2.48 ha	3.0m/DAY	1673m ²	440m ³
B6	1.27 ha	1.14 ha	3.0m/DAY	1795m ²	140m ³
B7	1.89 ha	1.70 ha	3.0m/DAY	878m ²	270m ³
B8	1.10 ha	0.99 ha	3.0m/DAY	810m ²	130m ³
B9	3.43 ha	3.09 ha	3.0m/DAY	2122m ²	650m ³
B10	2.72 ha	1.91 ha	3.0m/DAY	961m ²	600m ³

Source : Serling Service Infrastructure Report

BULK EARTHWORKS & DRAINAGE

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figure 22




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3.7 URBAN WATER MANAGEMENT



ENV Australia was engaged by Rockingham Park to prepare a Local Water Management Strategy (LWMS) pursuant to the requirements of the WAPC's *Better Urban Water Management (2008)*. Key information is depicted on **Figure 22** whilst a general overview of the report appears below. A copy of the full report submitted to the Department of Water for its consideration can be found at **Appendix J**.

The objective of the LWMS is to ensure that sustainable management of the total water cycle within the estate occurs through water sensitive urban design. This includes water conservation, stormwater and groundwater management. Rockingham Park Pty Ltd aims to manage these issues at the site through the following initiatives:


WATER CONSERVATION

-  Participating in the EnviroDevelopment program to achieve a maximum potable water usage of 80 kL/person/year and meet the EnviroDevelopment target of a 20% reduction in scheme water use from the State Water Plan target of 100kL/p/a. This will be achieved through implementation of the following:
 - Developer provided free waterwise landscaping for all residential front yards; and
 - Behaviour change of householders, encouraging water conservation through education packages and 'Living Smart' (The Behaviour Change Program).
-  Providing waterwise landscaping for Public Open Space (POS) that includes waterwise plants, soil amendments to improve water and nutrient retention, minimising turf areas and water efficient irrigation;
-  Investigating the possibility of using an alternative water source to irrigate the POS.

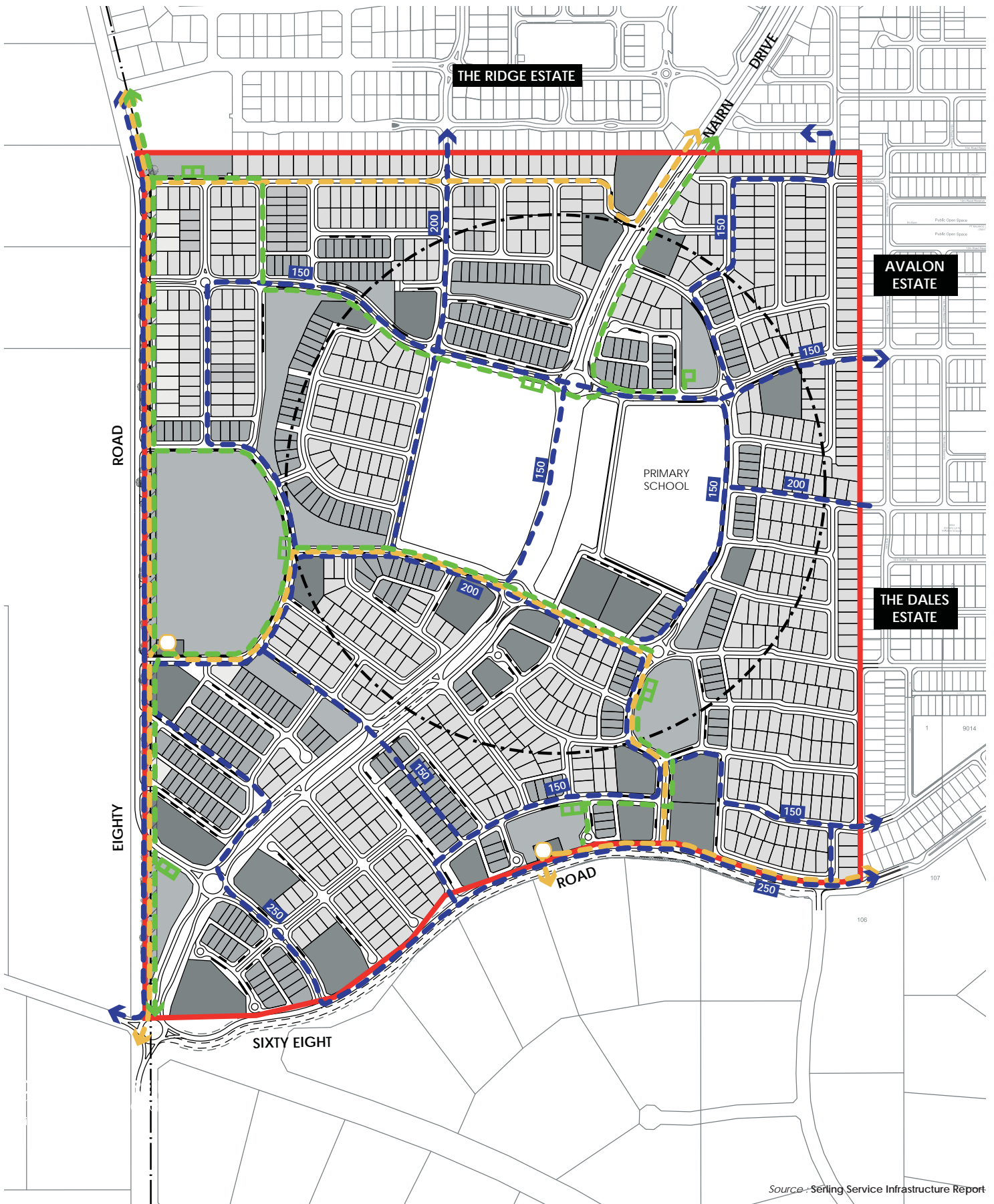
STORMWATER MANAGEMENT

-  Implementing a drainage design that ensures pre-development discharge rates in the event of a 1:100 year ARI event will be maintained through storage and infiltration on-site; and
-  Maximising infiltration by developing swales and rain gardens in road reserves where possible, planted with native vegetation to encourage nutrient and suspended solids uptake and removal prior to infiltration. Open based manholes will be used to maximise infiltration. Infiltration basins in Public Open Space will manage larger events.

GROUNDWATER MANAGEMENT

-  Recognising the issue of restricted groundwater availability and planning low water use POS.

The LWMS demonstrates that Parkland Heights can be developed without significant constraints. Underlying Urban Water Management Plans (UWMP's) prepared on a subdivision stage by stage basis will include information relating to implementation and on-going management responsibilities, maintenance schedules, irrigation and nutrient management, groundwater and surface water monitoring programs and confirm proponent commitments relating to demand reduction within the development.



Source - Serling Service Infrastructure Report

LEGEND

Local Structure Plan Boundary	Water Mains (>150mm)
Potential WWPS Sites	Major Electrical Distribution Lines
Potential Pressure Main Alignments	Transformers and / or Switchgear

MAJOR SERVICE ALIGNMENTS
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3.8 INFRASTRUCTURE CO-ORDINATION, STAGING & SERVICING

Serling Consulting were engaged by Rockingham Park to prepare a Service Infrastructure Report to support the Local Structure Plan design. The report confirms that the land can be connected to all services, either by extension from neighbouring developments or by extension from Eighty Road. Major service alignments are depicted on **Figure 23**. A copy of Serling's report can be found at **Appendix K**, key elements of the report are detailed below:

3.8.1 SEWER

Water Corporation waste water planning identifies the need to construct two Waste Water Pumping Stations (WWPS) and Pressure Mains (PM), (being Baldvis South WWPS's "K" and "N") in order to service the development of Lot 1507 and the surrounding locality.

Negotiations over the construction of the Baldvis South WWPS "K" is currently being sought from the Water Corporation to service the initial stages of development located in the northwest corner of the landholding fronting Eighty Road. The WWPS is a Type 40 permanent station that will be located on the eastern side of Eighty Road contiguous with the District Playing Field public open space. A site of approximately 40m x 22.5m is proposed to accommodate the facility inclusive of vehicle turnaround facility and 3 hours of emergency storage pipe network. Overflow is accommodated within the 1:1 year ARI event level of an adjoining drainage basin, an area that is already deducted from the gross subdivisible area, and therefore doesn't affect POS calculations.

Initially sewerage will be pumped from the proposed WWPS through a 1,360m pressure main to an existing DN225 gravity sewer main on Ridge Boulevard within The Ridge Estate.

Once capacity is reached at the discharge point (expected after 3-5 years of development), this pressure main is to be extended to a discharge point more than 2,150m from the pumping station into an existing DN300 gravity main. This discharge point will be in use for several years of further development, as the ultimate pressure main option will only be completed and used following further Water Corporation headworks.

The proposed ultimate discharge arrangement is located around 300m east of the intersection of Smirk and Sixty-Eight Roads where it is to discharge into DN450 gravity sewer reticulation. The WWPS required in this area and DN450 gravity main is not currently available nor a timeframe as to when it is expected to be available.

Due to the existence of significant vegetation and services within the Eighty Road reservation, open trenching along the majority of the gravity sewer alignment is not possible and boring (up to 6m deep) will be used to lay the sewer.

Land development to the east of Nairn Drive will trigger the need to construct WWPS "N" in the southern part of the development adjacent to Sixty Eight Road. Whilst allowance has been made for a similar sized site collocated with an area of POS located along Sixty-Eight Road, no detailed work has been completed for this pumping station so its location is yet to be confirmed. It is possible that the final location will be outside the LSP area.

3.8.2 WATER

The landholding is located within the Tamworth tank water reticulation area within which the Water Corporation has advised it is unable to service land without localised boosting above the RL 30m AHD contour.

Initial stages of subdivision in the northwest corner of the site are being serviced by an existing DN200 water main located in Arpenteur Drive. Extension of an existing DN375 water main located on the eastern side of Eighty Road will be required to service future development within the southwest corner of the site.

Water supply to the eastern part of the landholding is limited until the DN500 water distribution main in Nairn Drive is extended south to the DN250 reticulation main at The Ridge Boulevard. This work is currently underway with further extensions proposed to occur as the development front continues southward along Nairn Drive.



3.8.3 STORMWATER DESIGN

The undulating topography and sandy geology of the site provides an ideal environment for the adoption of water sensitive design principles focussing on infiltration. Building on the commitments outlined in the LWMS the drainage strategy proposed for the development incorporates progressive infiltration along the entire length of the stormwater system through the use of trapped “leaky” bases, swales and below ground StormTech infiltration systems as appropriate. This holds back the timing of the peak flow, dissipates the nutrients and first flush in a water sensitive design approach, reduces the pipe sizes and reduces the quantity of storm water discharging into the infiltration basins.

Open drainage infiltration basins have been strategically located in the POS areas that cater for the total of ten (10) sub catchments within the development. In accordance with Council Policy, preliminary modelling indicates that in all but one instance (POS Area ‘K’) where a variation has been accepted by the City at LSP adoption, all the infiltration basins within the landholding require no more than 25% of the area of the POS for the 10 year storm event, and the overall system is capable of handling the 100 year storm event without flooding the developed lots. Drainage Catchment Plans included within **Appendix K** detail the proposed drainage system showing the sub-catchment boundaries, the location of swales, below ground infiltration systems and the location and size of infiltration basins required for the 1 in 1yr, 1 in 5yr, 1 in 10yr and 1 in 100yr storm events.

3.8.4 GAS

WestNet gas infrastructure is located within Eighty Road and has sufficient capacity to supply the subdivision and development of Lot 1507.

3.8.5 ELECTRICITY

A 132kV high voltage aerial feeder line is located within the landholding along its frontage to Eighty Road. Retention and protection of this line is proposed via the creation of an 18m wide easement that precludes the construction of buildings underneath. Power will be distributed throughout the estate using high and low voltage underground power lines that connect back to this aerial service.

3.8.6 TELECOMMUNICATIONS

Existing Telstra infrastructure is located within the landholding immediately east of the aerial electricity feeder line. With the impending rollout of the national broadband service however there will no longer be a copper to node service installed. Instead the developer will arrange for an NBNCo approved pit and pipe system design. The external NBNCo connection will most likely use the existing Telstra infrastructure in the Eighty Road reservation.

3.8.7 EARTHWORKS

In order to bring the land below the 30m contour line (above which a reticulated water supply cannot be provided – refer **Section 3.9.2**), and to shape the landholding to facilitate appropriate residential development (including full access road grades where practical and essential, such as major routes to key facilities such as the Primary School, some 2M m³ of excess cut will be removed from the site.

Agreement has been reached with the owners of land located along the eastern boundary of the site to lower existing levels in the order of up to 6m to better suit the development proposed on these landholdings and to achieve a workable interface between the developments. This reduction assists in reducing grades in the eastern portion of the estate, meaning that retaining wall heights throughout the majority of the estate can be kept below 2m in height.

3.8.8 TIMEFRAMES AND STAGING

The development of Parkland Heights estate has already commenced. Construction of Stage 1, located in the north-west corner of the landholding was completed and released for sale in September 2011, whilst Stage 2 (an eastward extension of Stage 1), is scheduled to commence construction in July 2012. Upon approval of this new LSP, Rockingham Park intends to proceed with between 2-4 further stages west of Nairn Drive prior to transitioning across to the eastern side. A plan detailing Rockingham Park's current staging strategy is included as **Figure 24**.

It is worth noting that the earthworks staging is slightly different due to the cut-to-fill strategy adopted for the site. The change relates to the centre of the site which will be earthworked early on (potentially as part of Stage 3 or 4), but not being serviced or developed until later in the development program.

Given the central location and relatively level nature of this and the District Playing Field sites, Rockingham Park intend to approach the City regarding interim use of these areas for various community building and environmental sustainability initiatives it intends to pursue as the estate progresses through its anticipated 20 year lifetime.

An example is the Materials Recovery Centre, a temporary facility that will move along with staging of the estate. Initially located adjacent to the civil works compound on portion of the District Playing Fields site, it is essentially a central storage yard for waste generated by other legitimate activities on-site (civil works and housing construction), the aim being to recycle between 60-80% of unused building products, a significant increase to the 25% average currently achieved across the Metropolitan Region.

Other initiatives may involve the erection of a large multi-purpose building at the centre of the site that can be used for a variety of community activities pending resolution of the detailed planning of this area.

3.9 DEVELOPER CONTRIBUTION ARRANGEMENTS

Lot 1507 is capable of developing independently and is not the subject of any existing or proposed Developer Contribution arrangement as they relate to roads or service infrastructure (utilities, road upgrades etc).

The City is however, in the process of finalising a Community Infrastructure cost sharing initiative across the balance of its urban expansion areas via Amendment No.114 to TPS2. Advertised for public review and adopted for final approval by the City in late 2011, the Amendment is a seriously entertained proposal, meaning that any subsequent stages of development will be conditional upon a proportional contribution towards the final schedule of infrastructure, as subsequently determined by the Minister for Planning.

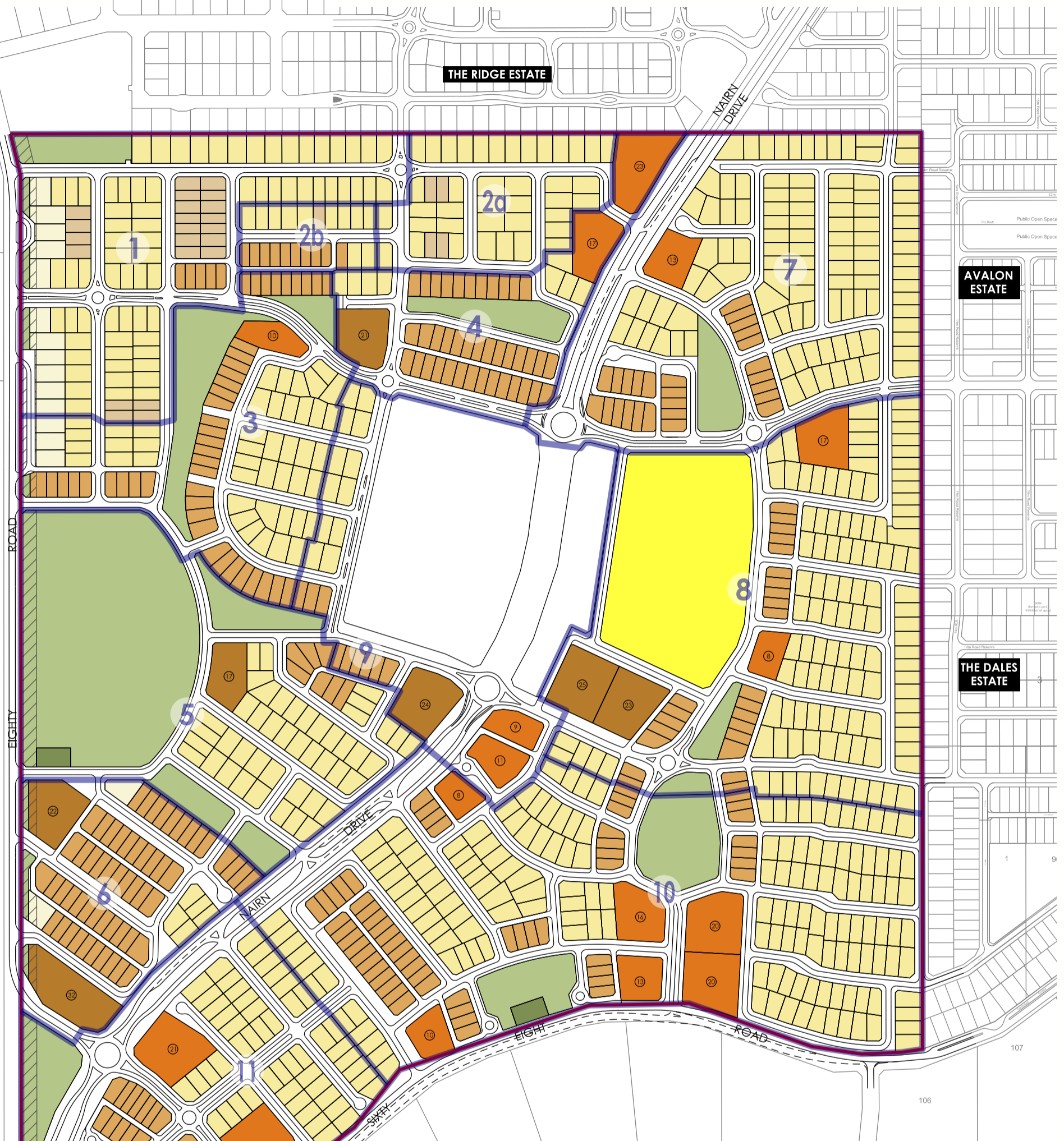
STAGE 1				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R30	1784m ²	5		357m ²
RESIDENTIAL R25	9365m ²	22		425m ²
RESIDENTIAL R20	40084m ²	70		572m ²
RESIDENTIAL R15	8438m ²	11		767m ²
TOTAL	59675m²	109		
PUBLIC OPEN SPACE	6284m ²	4		

STAGE 2				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R30	3421m ²	10		342m ²
RESIDENTIAL R25	2114m ²	5		422m ²
RESIDENTIAL R20	29993m ²	50		599m ²
TOTAL	35528m²	65		

STAGE 3				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R40	2331m ²	1	10	2331m ²
RESIDENTIAL R30	18116m ²	43		421m ²
RESIDENTIAL R20	24974m ²	44		567m ²
RESIDENTIAL R15	2117m ²	3		705m ²
TOTAL	47538m²	91	10	
PUBLIC OPEN SPACE	13821m ²	3		

STAGE 4				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	3838m ²	1	21	3838m ²
RESIDENTIAL R40	8980m ²	2	40	4490m ²
RESIDENTIAL R30	15144m ²	39		388m ²
RESIDENTIAL R20	4466m ²	8		558m ²
TOTAL	32428m²	50	61	
PUBLIC OPEN SPACE	5704m ²	1		

STAGE 5				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	3137m ²	1	17	3137m ²
RESIDENTIAL R30	3421m ²	7		488m ²
RESIDENTIAL R20	25734m ²	45		571m ²
TOTAL	32272m²	53	17	
PUBLIC OPEN SPACE	67940m ²	4		
PUMP STATION	900m ²	1		



STAGE 6				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	9916m ²	2	54	4958m ²
RESIDENTIAL R30	22646m ²	55		411m ²
RESIDENTIAL R20	2627m ²	5		525m ²
RESIDENTIAL R15	1764m ²	2		882m ²
TOTAL	36953m²	64	54	

STAGE 7				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R40	2908m ²	1	13	2908m ²
RESIDENTIAL R30	10646m ²	26		409m ²
RESIDENTIAL R20	58959m ²	106		556m ²
TOTAL	72523m²	133	13	
PUBLIC OPEN SPACE	5316m ²	1		

STAGE 8				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	8903m ²	2	48	4451m ²
RESIDENTIAL R40	5775m ²	2	25	2887m ²
RESIDENTIAL R30	9934m ²	25		397m ²
RESIDENTIAL R20	60122m ²	114		527m ²
TOTAL	125046m²	143	73	
EDUCATION	40312m ²	1		
PUBLIC OPEN SPACE	3772m ²	2		

STAGE 9				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	4428m ²	1	24	4428m ²
RESIDENTIAL R40	4644m ²	2	20	2322m ²
RESIDENTIAL R30	3891m ²	9		432m ²
RESIDENTIAL R20	7307m ²	12		608m ²
TOTAL	20270m²	24	44	
BALANCE LAND	66512m ²			

STAGE 10				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R40	19279m ²	6	87	3213m ²
RESIDENTIAL R30	22001m ²	57		385m ²
RESIDENTIAL R20	82739m ²	155		533m ²
TOTAL	124019m²	218	87	
PUBLIC OPEN SPACE	15753m ²	2		
PUMP STATION	900m ²	1		

STAGE 11				
Lot Type	Area	Single Lots	GH Dwellings	Average Site Size
RESIDENTIAL R60	7026m ²	1	39	7026m ²
RESIDENTIAL R40	10745m ²	2	48	5372m ²
RESIDENTIAL R30	9793m ²	23		425m ²
RESIDENTIAL R20	25566m ²	50		511m ²
TOTAL	53130m²	76	87	
PUBLIC OPEN SPACE	9734m ²	4		

OVERALL LEGEND					
RESIDENTIAL DENSITY CODES	AREA (ha)	SINGLE LOTS	GH LOTS	GH DWELLINGS	TOTAL DWELLINGS
RESIDENTIAL R60	3.7253	0	8	203	203
RESIDENTIAL R40	5.4665	0	16	243	243
RESIDENTIAL R30	12.0900	299			299
RESIDENTIAL R25	1.1489	27			27
RESIDENTIAL R20	36.2858	659			659
RESIDENTIAL R15	1.2328	16			16
RESIDENTIAL TOTALS	59.9493	1001	24	446	1447
LAND USE ZONES					
EDUCATION	4.0312	1			
PUBLIC OPEN SPACE	12.8330	21			
PUMP STATION	0.1800	2			
OTHER					
LSP BOUNDARY	120.7577				
POWERLINE EASEMENT	1.7074				

Note: Lot Layout Indicative Only.

INDICATIVE STAGING PLAN

Lot 1507 Eighty Road, Baldvis
a Rockingham Park Project

0m 25 50 75m

s: 1:5000@A3
d: December 2012
p: 00/075/0321

4 STATUTORY PLANNING IMPLEMENTATION

The Parkland Heights Local Structure Plan and report is submitted to the City of Rockingham for consideration in accordance with the requirements of Clause 4.2.3 of the City's Town Planning Scheme No.2. Upon its approval by the City and endorsement by the WAPC there are no further impediments to continued subdivision and development of Lot 1507.

As an interim measure approval has recently been granted to subdivide the parent land holding into two more manageable portions based on the eastern alignment of the Nairn Drive Other Regional Road Reservation. This should not be interpreted as an intent to sell portion of the site but is purely proposed for project budgeting purposes due to stricter regulations on money borrowing emanating from the Global Financial Crisis.

Upon the cessation of the LSP public advertisement period (at which stage any major issues with the proposal should have been identified), it is Rockingham Park's intention to lodge a subdivision application for the balance of the LSP landholding, encompassing all of the remaining landholding on both sides of Nairn Drive.

The need for notifications on title relating to mosquito nuisance is acknowledged. Also acknowledged is the potential for Section 70A Memorials to be applied along the southern boundary, a matter to be explored as and when clearance of the lot is requested but not prior to subdivision approval, as the physical siting of development is not in question, merely the standard of construction should the banksia woodland to the south of Sixty Eight Road remain.

Detailed Area Plans will be prepared in consultation with the City of Rockingham for the rear –loaded cottage lot product, lots adjacent PAW's and any other area identified in this document or as determined by the WAPC when approving subsequent subdivision proposals. Blanket variations to front setback and site coverage requirements of subsequent residential development, are currently being considered for future stages of the estate pending the outcomes of the ongoing Residential Design Codes Review.



**Lot 1507 Eighty Road, Baldivis
Local Structure Plan**



APPENDICES



**APPENDIX A
PRE-LODGEMENT CONSULTATION TABLE**



**Lot 1507 Eighty Road, Baldvis
Local Structure Plan**



APPENDIX B CERTIFICATE OF TITLE



**Lot 1507 Eighty Road, Baldvis
Local Structure Plan**



**APPENDIX C
ENVIRONMENTAL ASSESSMENT REPORT**



**APPENDIX D
SUPPLEMENTARY TREE INFORMATION**



**Lot 1507 Eighty Road, Baldivis
Local Structure Plan**



APPENDIX E FIRE MANAGEMENT PLAN



**APPENDIX F
DET ACCEPTANCE OF PRIMARY SCHOOL SITE**



APPENDIX G POS CONCEPTS



APPENDIX H TRANSPORT ASSESSMENT



APPENDIX I NAIRN DRIVE ACCESS STRATEGY



**Lot 1507 Eighty Road, Baldivis
Local Structure Plan**



**APPENDIX J
LOCAL WATER MANAGEMENT STRATEGY**



**Lot 1507 Eighty Road, Baldvis
Local Structure Plan**



APPENDIX K SERVICE INFRASTRUCTURE REPORT

Parkland Heights Local Structure Plan

ADDENDUM 1 - EXPLANATORY REPORT
AMENDMENT 4 (2019)



PARKLAND HEIGHTS

LOCAL STRUCTURE PLAN

AMENDMENT 4

PART TWO - EXPLANATORY REPORT

FEBRUARY 2019



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PARKLAND HEIGHTS LOCAL STRUCTURE PLAN
AMENDMENT 4
PART TWO - EXPLANATORY REPORT

Prepared by:



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3039Rep23D
February 2019

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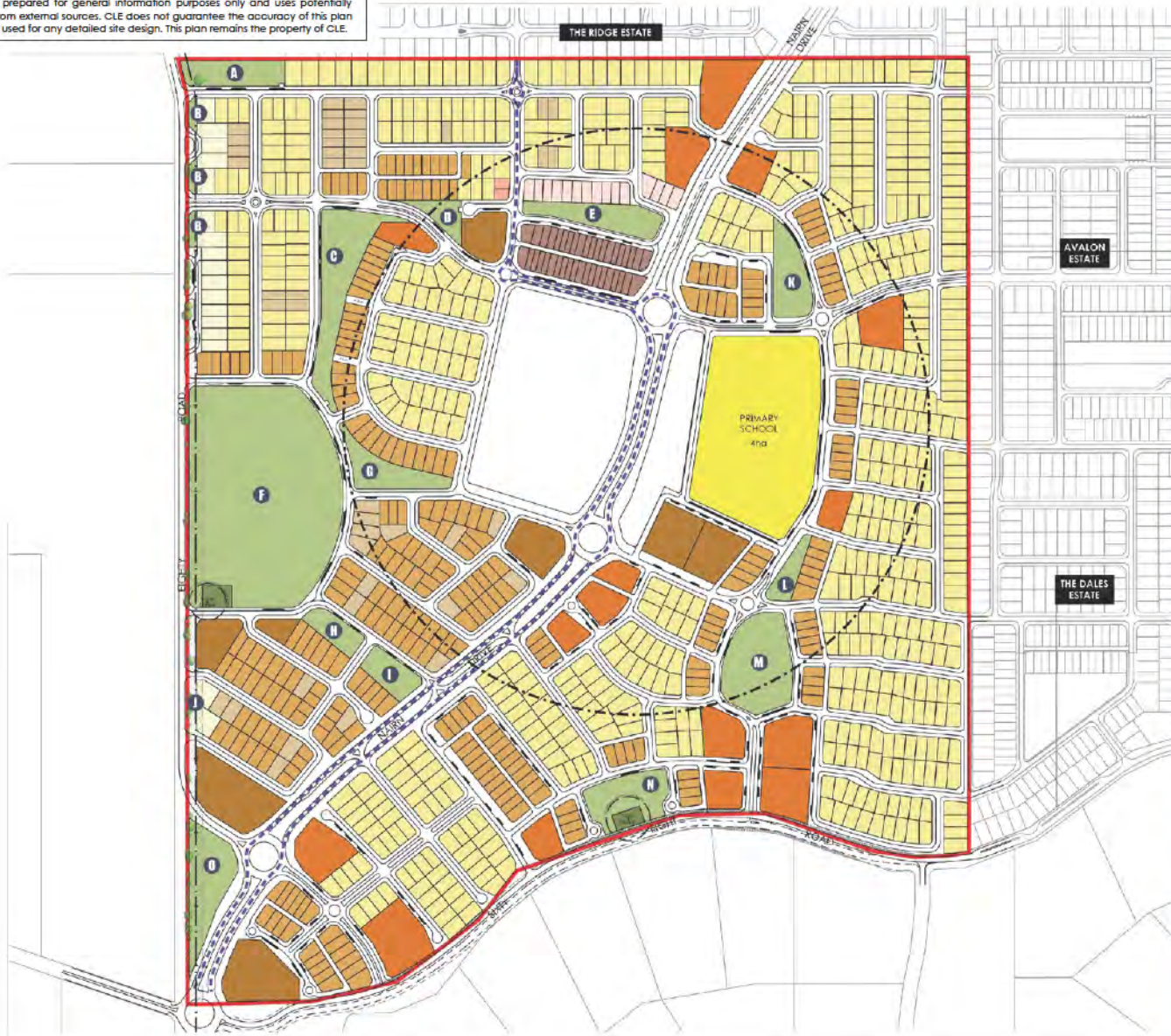
- Figure 1: Approved Local Structure Plan
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- Appendix 1: Retail Sustainability Assessment (Pracsys)
- Appendix 2: Traffic Impact Assessment (Transcore)

PARKLAND HEIGHTS LOCAL STRUCTURE PLAN AMENDMENT 4 PART TWO - EXPLANATORY REPORT

This plan has been prepared for general information purposes only and uses potentially uncontrolled data from external sources. CLE does not guarantee the accuracy of this plan and it should not be used for any detailed site design. This plan remains the property of CLE.



LEGEND

ZONES / RESERVES

- RESIDENTIAL R60
- RESIDENTIAL R40
- RESIDENTIAL R30
- RESIDENTIAL R25
- RESIDENTIAL R20
- RESIDENTIAL R15
- EDUCATION
- PUBLIC OPEN SPACE
- RMD R40
- RMD R30
- RMD R25

OTHER

- LOCAL STRUCTURE PLAN BOUNDARY
- 400M NEIGHBOURHOOD WALKABLE CATCHMENT
- PUMP STATION ODOUR BUFFER
- POWERLINE EASEMENT
- ROAD WIDENING (SIXTY EIGHT ROAD)
- PLANNED BUS ROUTE
- VEGETATION TO BE PROTECTED (WHERE POSSIBLE)
- SEWER PUMP STATION (900m² - 1200m²)

NOTES

- The boundary of this Local Structure Plan (LSP) is in accordance with the approved Comprehensive Development Plan (CDP) 2002 and original Lot 1507 boundary.
- The access street and associated lot layout shown on the Plan is indicative only and subject to refinement as part of the detailed subdivision process.
- The Village Centre shall form the subject of a separate planning exercise and is excluded from this proposal.
- POS areas are indicative only and subject to further detailed design and drainage considerations.
- All road carriageway detail depicted on this Plan including pavements, road treatments, medians and parking are for illustrative purposes only and are subject to final engineering design and any relevant approvals. The detail reflects the intent of the road network standards preferred for this subdivision. All dimensions and areas depicted on this Plan are subject to pre-call and final survey and may vary from the figures shown.
- Bushfire attack level to be reviewed prior to the creation of Titles. Development may require construction in accordance with AS3259 - Construction in Bushfire Prone Areas.
- Sixty-Eight Road widening to accommodate future upgrade to boulevard standard. Construction requirements to be negotiated at subdivision stage of development.

PUBLIC OPEN SPACETABLE

NOTES	CUMULATIVE AREA (HA)	NOTES	CUMULATIVE AREA (HA)
1	0.4009	1	0.3235
2	0.1463	2	CONVERTED TO ROAD RESERVE
3	0.8566	3	0.3439
4	0.2283	4	0.2328
5	0.5220	5	0.8281
6	5.3214	6	0.4755
7	0.4668	7	0.7076
8	0.2747		
TOTAL AREA OF POS & DRAMA			11.009
% OF TOTAL CARROTTABLE			10.0%



1.0 PLANNING BACKGROUND

1.1 Introduction and Purpose

The Parkland Heights Local Structure Plan (LSP) was endorsed by the Western Australian Planning Commission (WAPC) on the 13th February 2013 and is the overarching framework guiding the development of the residential estate known as 'Parkland Heights' at Lot 1507 Eighty Road, Baldivis. The Parkland Heights LSP comprises a 120.82 hectare area in the south west corner of the South Baldivis District Structure Plan. Parkland Heights is in the single ownership of Rockingham Park Pty Ltd who are progressing staged development from the northern and eastern boundaries.

The current LSP identifies a 'Village Centre' at the centre of the LSP Map, co-located with the future Primary School (refer Figure 1). Note 3 of the LSP Map states that "*the Village Centre shall form the subject of a separate planning exercise and is excluded from this approval*". Whilst the current LSP Map identifies the location and land area of the future Centre, it defers consideration of the zoning and composition to a subsequent planning stage.

Parkland Heights and Southern Baldivis in general, are planned to accommodate substantial population growth over the coming decades which has led to further investigation into the size of the activity centre planned for Parkland Heights. To this end, Rockingham Park Pty Ltd commissioned the preparation of a Retail Sustainability Assessment (RSA) by Pracsys (refer Appendix 1). The RSA concluded that, without a Neighbourhood Centre sized retail development, South Baldivis residents would need to travel outside of their local area to fulfil their shopping needs, resulting in longer trip requirements.

This Amendment to the Parkland Heights LSP (Amendment No.4) has been prepared to facilitate the development of a 10,000m² Neighbourhood Centre in response to the identified future shortfall in retail offerings within South Baldivis. The amended Part 1 – Implementation Report, this Part 2 - Explanatory Report and the accompanying appendices constitute the 'separate planning exercise' required under note 3 of the current approved LSP Map.

This Part 2 - Explanatory Report explains and justifies the amendments to the Part 1 – Implementation Report and the LSP Map. It does not replace the previous Explanatory Report prepared in support of the current LSP (Taylor Burrell Barnett, December 2012) rather, it forms an addendum and is supplementary to, the previous Explanatory Report and addresses only the proposed amendments to the Part 1 - Implementation Report and LSP Map.

The following technical appendices have been prepared in support of this LSP amendment and are appended in full:

- Appendix 1: Retail Sustainability Assessment (Pracsys)
- Appendix 2: Traffic Impact Assessment (Transcore)

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1.2 Planning Framework

1.2.1 Zoning

The proposed Neighbourhood Centre is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Development' under the City of Rockingham's Town Planning Scheme No.2 (TPS2). The Neighbourhood Centre directly abuts an 'Other Regional Road' reserve under the MRS in the form of the future Nairn Drive extension.

As previously stated, the Neighbourhood Centre is covered by the approved Parkland Heights LSP however, the LSP Map states that the Centre is subject to a separate planning exercise which this Amendment proposes to address.

1.2.2 Planning Strategies

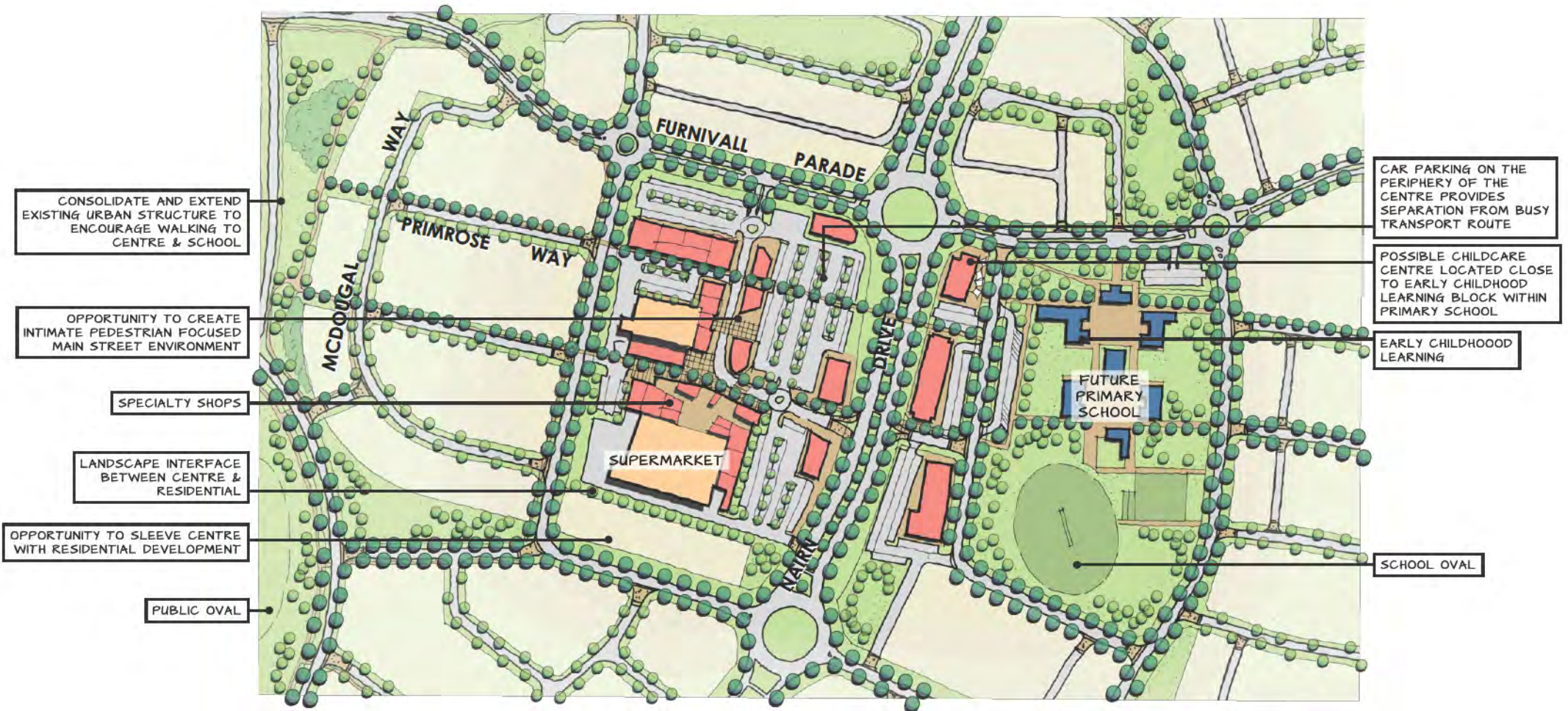
Given the approved status of the LSP and its identification of a 'Village Centre' (by exclusion) on the approved LSP Map, the review of planning strategies in association with this Amendment is limited to those relevant to the proposed Neighbourhood Centre. The approved status of the LSP and subsequent development of the first stages of Parkland Heights confirm that the land is suitable for urban development and so the matter is not discussed in further detail as part of this Amendment.

Draft South Metropolitan Peel Sub-regional Planning Framework

The draft South Metropolitan Peel Sub-regional Planning Framework ('the Framework') has been prepared by the State Government to establish a long-term integrated framework for land use and infrastructure provisions to plan for and coordinate Perth's growth to a city of 3.5 million people by the year 2050. The Framework Plan identifies area for future growth as well as higher order activity centres (District Centres and above). The Framework does not specifically identify lower order activity centres such as Neighbourhood Centres and Local Centres however, does identify large areas of future urban land in South Baldivis. Future development and growth within these areas warrants and will sustain a Neighbourhood Centre for Parkland Heights.

A key objective of the Framework is to increase the number of people living close to where they work to reduce travel times and decentralise employment from the Perth CBD. As demonstrated in the RSA (Appendix 1), the Parklands Heights Neighbourhood Centre is expected to generate 57 full time jobs during construction and 294 permanent jobs when operating, assisting to deliver the objectives of the Framework.

This plan is an indicative land use concept depicting one hypothetical development scenario for the land and is prepared for illustrative purposes only. It has no formal endorsement or approval status. Any lot boundaries, areas, road networks, public open space or any other land use detail depicted should be considered notional and will be subject to change as part of any subsequent formal planning approval processes. This plan remains the property of CLE.



Liveable Neighbourhoods

Liveable Neighbourhoods is the WAPC's operational policy for the design of new subdivisions and the assessment of structure plans. In addition to shop retail, *Liveable Neighbourhoods* advocates local-scale office uses and higher density residential development in and around Neighbourhood Centres. The current LSP allocates higher density precincts around the Centre to maximise the potential population living within a walkable catchment. As demonstrated by the Preliminary Concept Plan (refer Figure 2), the Neighbourhood Centre is capable of accommodating a range of commercial uses as well as a residential precinct on the southern boundary. The residential precinct is subject to detailed design however, can potentially accommodate multiple dwelling or medium density-style attached housing.

Liveable Neighbourhoods promotes 'main street' activity centres. As depicted at the Preliminary Concept Plan (refer Figure 2), the proposed Neighbourhood Centre will have a strong main street character at the core of site, providing a pedestrian-friendly environment with active uses engaging the street. Further detail with regards to the design of the Centre will be addressed via a Local Development Plan and at the development application stage.

1.3.3 Planning Policies

City of Rockingham Planning Policy No. 3.1.2 – Local Commercial Strategy

The City of Rockingham's Planning Policy No. 3.1.2 – Local Commercial Strategy ('the Commercial Strategy') was prepared by the City to "promote the development of a hierarchy of centres which are viable, sustainable and which provide maximum benefit to the community". The Commercial Strategy, as it relates to the Baldivis Precinct, was reviewed in August 2012 to guide long-term retail and commercial floor space through a distribution of activity centres, consistent with the WAPC's *State Planning Policy 4.2 – Activity Centre for Perth and Peel (SPP 4.2)*. The Commercial Strategy supports an activity centre hierarchy and the need for retail offerings to be readily accessible and encourages the concentration of future retail expansion.

With specific reference to the Baldivis area, the Commercial Strategy identifies the following key objectives:

- "Provide sufficient development opportunities to enable a diverse supply of commercial and residential floorspace to meet projected community needs;
- Cater for a full range of needs from shopping, commercial and community services from local convenience to higher-order comparison retail/goods and services;
- Mitigate the potential for an over-concentration of shopping floorspace in large activity centres at the expense of a more equitable level of service to communities; and

- *Promote the walkable neighbourhoods principle of access to employment, retail and community facilities by distributing activity centres to improve access by foot or bicycle, rather than having to depend on access by car in urban areas."*

The Commercial Strategy divides Neighbourhood and Local Centres into precincts, with the Parkland Heights Neighbourhood Centre located within Precinct 4 – Baldivis. The provisions for Precinct 4 were reviewed in 2012 to incorporate the recommendations of SPP 4.2, particularly to become more flexible and encourage the need to identify and assess the role of a centre rather than specify its size. Specific maximums were subsequently removed in favour of identifying ranges of retail floor space. The Commercial Strategy identifies the following indicative ranges as appropriate:

- Neighbourhood Centre – Servicing between 5,000 and 20,000 residents and with generally 4,500m² - 10,000m² of retail floor space; and
- Local Centre – up to 5,000 residents with generally less than 1,500m² of retail floor space.

The Commercial Strategy identifies Parkland Heights as a Local Centre however, detailed modelling undertaken in association with this LSP Amendment identifies the need for a higher order centre. To reflect this, the Commercial Strategy will need to be updated to refer to Parkland Heights as a Neighbourhood Centre. In discussions with the City's officer's, it was agreed that the City will progress an amendment to the Commercial Strategy concurrently with this LSP Amendment. The update to the Commercial Strategy will be undertaken pursuant to clause 4.6.6 of TPS2 which foreshadows the need for the Commercial Strategy to be refined to reflect best planning outcomes.

The Commercial Strategy requires the preparation of an RSA for a proposal that would result in the alteration to the role or function of a centre. As this LSP amendment seeks to reclassify Parkland Heights from a Local Centre to a Neighbourhood Centre, an RSA has been prepared by Pracsys and is appended in full to this Report (Appendix 1). The findings of the RSA are discussed in further detail under section 3.1 of this Report.

State Planning Policy 4.2 – Activity Centres for Perth and Peel

SPP 4.2 specifies the broad planning requirements for the planning and development of new activity centres, focussing on the distribution, function, broad land use and urban design criteria. The key objectives of SPP 4.2 as they relate to this LSP Amendment are to:

- *Reduce the overall need to travel; and*
- *Support the use of public transport, cycling and walking for access to services, facilities and employment.*

SPP 4.2 advocates a hierarchical structure for activity centres and specifically identifies the higher order centres in the Perth and Peel metropolitan area. Neighbourhood Centres are not specifically identified and are intended to be coordinated through the local planning framework. SPP 4.2 does however, refer to Neighbourhood Centres in general terms, confirming that they are important community focal points for weekly household shopping and community needs and should be located within a walkable catchment of the surrounding population.

SPP 4.2 describes Neighbourhood Centres as generally accommodating supermarket and convenience shopping retail with local professional-type office uses. Residential is typically delivered at medium densities with a minimum density of 15 dwellings per gross hectare and a desirable density of 25 dwellings per gross hectare.

SPP 4.2 sets out the circumstances in which an RSA should be prepared and outlines the specific scope and requirements. As discussed earlier, an RSA has been prepared by Pracsys in accordance with SPP 4.2 (Appendix 1) and is discussed in further detail at section 3.1 of this Report.

1.3.4 Pre-lodgement Consultation

The project team has met twice with the City's officers to discuss the LSP amendment process, the necessary accompanying information and the design principles that should shape the Neighbourhood Centre.

The City advised that it would require the following information to support the reclassification of Parkland Heights from a Local to Neighbourhood Centre under the Commercial Strategy:

- Preparation of an RSA to demonstrate that the Parkland Heights Neighbourhood Centre would not have an unreasonable impact on the viability of existing or planned activity centres in the area. It would also need to demonstrate that 10,000m² of retail NLA would be sustainable for Parkland Heights;
- Preparation of a Traffic Impact Assessment to demonstrate that the planned road network and intersections could accommodate the additional traffic demand generated by the larger Neighbourhood Centre; and
- Preparation of a Local Development Plan (LDP) to coordinate the future development of the Neighbourhood Centre, and which incorporates the City's design feedback. The LDP would be progressed post-approval of the LSP amendment, but would be advertised and considered concurrently.

The City of Rockingham will progress a separate amendment to its Commercial Strategy concurrently with this LSP Amendment provided it is satisfied that the above matters have been appropriately addressed.

In response to the above:

- An RSA has been prepared to demonstrate the viability of the Parkland Heights Neighbourhood Centre (Appendix 1);
- A Traffic Impact Assessment has been prepared, demonstrating that the planned road network can accommodate the increased traffic volumes estimated to be generated by the Neighbourhood Centre (Appendix 2); and
- An LDP has been prepared to coordinate the future development of the Neighbourhood Centre and deliver an integrated shopping centre layout that addresses key design principles such as setbacks, building orientation and façade treatments.

Further details in relation to the above matters is provided in the following sections of this Report.

2.0 AMENDMENT PROPOSAL

The approved LSP map spatially identifies an area for a future 'Village Centre' at the centre of the Parkland Heights estate. At the time the LSP was prepared and approved, the necessary retail floorspace was unknown. It was subsequently decided to review the Centre as part of a separate planning exercise when the necessary size could be more accurately quantified.

Rockingham Park Pty Ltd, as the developers for Parkland Heights, have remained cognisant of the fact that the centre would likely be capable of accommodating greater than the 1,500m² of retail net leasable area (NLA) identified in the City's Commercial Strategy. Development of the residential land both within Parkland Heights and the surrounding South Baldivis area is progressing rapidly and will generate substantial retail demand in the coming years. It has subsequently been determined that the planning for the centre should be progressed.

The RSA commissioned by Rockingham Park confirms that the anticipated population numbers and demographic in South Baldivis are sufficient to warrant a Neighbourhood Centre of 10,000m² without unreasonably impacting the financial viability of other existing and planned centres in the area. In fact, the RSA concludes that without the development of the Parkland Heights Neighbourhood Centre, there is likely to be a large gap in the local capacity to service the retail needs of South Baldivis and that a significant amount of the local population would be forced to commute to other centres outside their primary catchment to fulfill their retail needs.

The purpose of this LSP amendment is therefore to allow for the development of the Centre with up to 10,000m² of retail NLA, which would align with a Neighbourhood Centre designation under the City's Commercial Strategy. To achieve this, the following amendments are proposed to the LSP Map:

- Zone the Parkland Heights Centre 'Commercial' west of Nairn Drive, consistent with the approach outlined in the Commercial Strategy and the objectives of the 'Commercial' zone under TPS2;
- Zone the Parkland Heights Centre 'Special Use' east of Nairn Drive. This will ensure that only specific land uses that are compatible with the adjacent Primary School are permitted within this portion of the Centre; and
- Delete 'note 3' referencing the future planning exercise for the Centre.

To facilitate the orderly and proper planning of the Neighbourhood Centre, the following amendments are proposed to the Part 1 – Implementation Report:

- Insert part 5.2 requiring a Local Development Plan to be prepared over the Neighbourhood Centre as a prerequisite to development and subdivision. Part 5.2 of the Part 1 report identifies the specific matters that are required to be addressed as part of the LDP in order to coordinate the staged development of the Centre and ensure that appropriate development controls are in place to deliver a high standard built form outcome; and
- Insert part 4.2.2 specifying a density code of R60 for any residential development within the 'Commercial' or 'Special Use' Zone.

Other administrative modifications are proposed to the Part 1 – Implementation Report in order to align the Part 1 with changes in the overarching planning framework that have occurred since the LSP was approved. These modifications are summarised as follows:

- Restructure and format the LSP to be consistent with the WAPC's 'Structure Plan Framework' (August 2015);
- Amend part 2.0 'Operation' consistent with the Regulations to clarify the 10 year operational period of an LSP under the Regulations;
- Amend part 3.0 'Interpretation and Relationship with Statutory Planning Framework' to reference the 'due regard' status of structure plans under the Regulations;
- Revise the bushfire provisions to reflect the WAPC's adoption of *State Planning Policy 3.7 – Planning in Bushfire Prone Area (SPP 3.7)* and the operation of the Department of Fire and Emergency Services *Map of Bushfire Prone Areas* as the means for determining land that is classified as 'bushfire prone'; and
- Amend part 4.4 'Residential Design Code Variations' to reflect the City's adoption of Planning Policy No. 3.3.22 – *Medium-Density Single House Development Standards – Development Zones* and delete Table 1 'Single House (RMD) Standards for Medium Density Housing' accordingly.

3.0 PLANNING CONSIDERATIONS

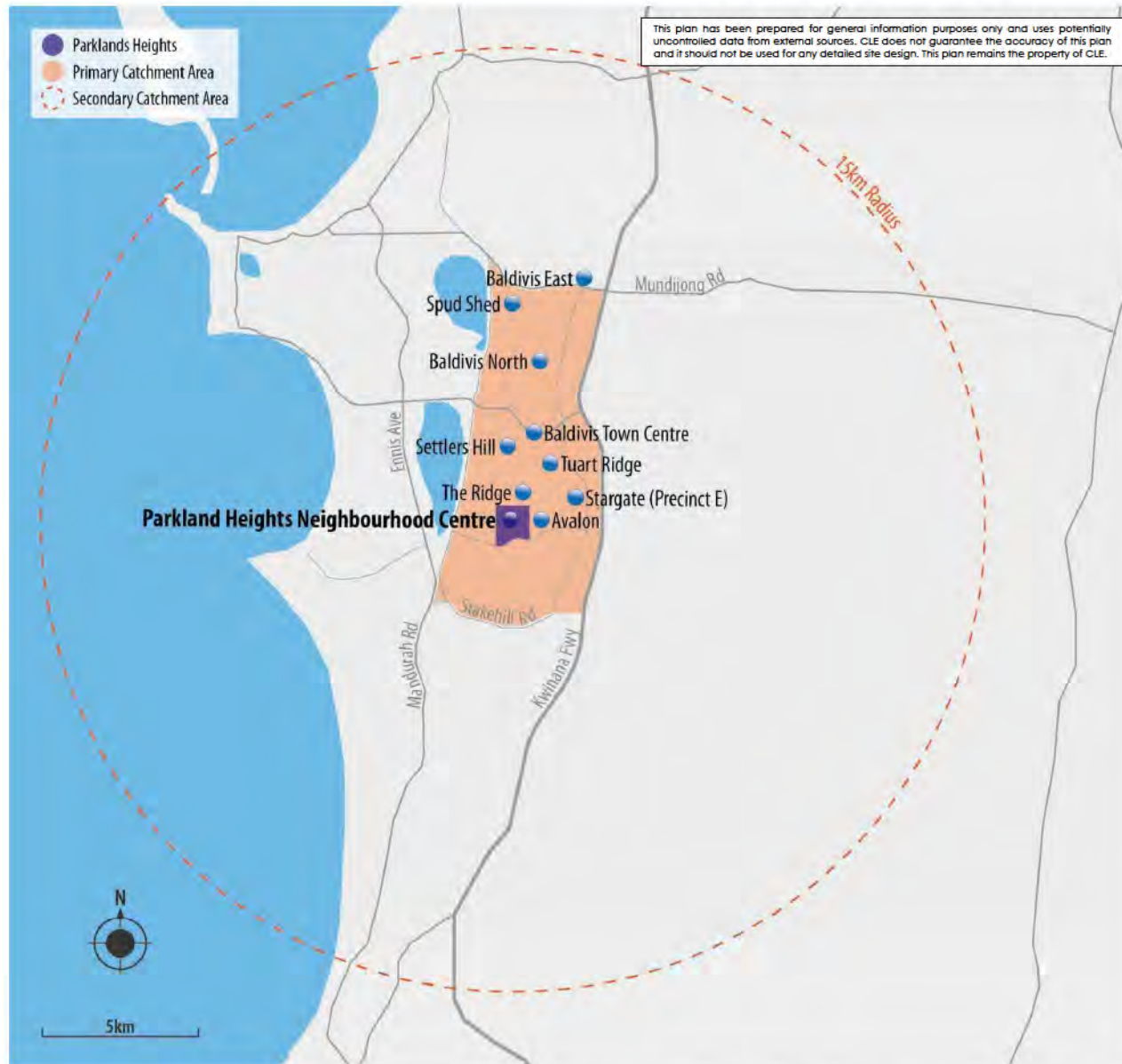
The following sections explain and justify the proposed amendments as outlined above. The explanatory sections are limited to the planning matters relevant to the proposed Neighbourhood Centre LSP Amendment and do not revisit or discuss matters that have already been addressed through the preparation of the original Part 2 – Explanatory Report.

3.1 Neighbourhood Centre Size

This amendment does not propose to spatially increase the size of the Centre currently depicted on the LSP Map. The size and location of the centre was previously defined and approved under the previous LSP process and development of the residential stages of Parkland Heights is proceeding based on the subdivision layout depicted on the current LSP Map.

With the size of the Centre footprint already defined, the LSP amendment seeks only to address the amount of retail floorspace that can be delivered under a subsequent development application for a shopping centre on the site. Specifically, the Amendment will allow for up to 10,000m² of retail floorspace in response to the findings of the RSA undertaken for Parkland Heights. To coordinate the development of the proposed 10,000m² of retail floorspace, the Amendment introduces a requirement to prepare a Local Development Plan for 'Commercial' and 'Special Use' zoned land prior to development.

The Preliminary Concept Plan for the Neighbourhood Centre that has informed the LSP and LDP processes is included as Figure 2 to this Report. Preliminary planning for the Centre indicates that 10,000m² of retail floorspace will be located within the 'Commercial' zone west of Nairn Drive.



3.1.1 Retail and Employment Analysis

To support this LSP amendment, Pracsys were engaged to prepare an RSA (Appendix 1) consistent with the provisions of SPP 4.2, the Commercial Strategy and TPS2. The RSA confirms two key matters relevant to the consideration of the proposal to increase the allowable retail floorspace in accordance with the Commercial Strategy and SPP 4.2:

1. That the proposed Neighbourhood Centre and the associated 10,000m² of retail NLA will be easily viable given the rapid population growth in the region and the provision of other retail offerings within the catchment; and
2. That the development of the Parkland Heights Neighbourhood Centre as proposed will not have an unreasonable impact on other existing and planned centres within the locality i.e. less than 10% impact on profitably.

In its assessment of the above matters, the RSA considered a hypothetical development scenario that all planned centres would be developed by the year 2021, which Pracsys consider a conservative assumption used for retail modelling purposes only.

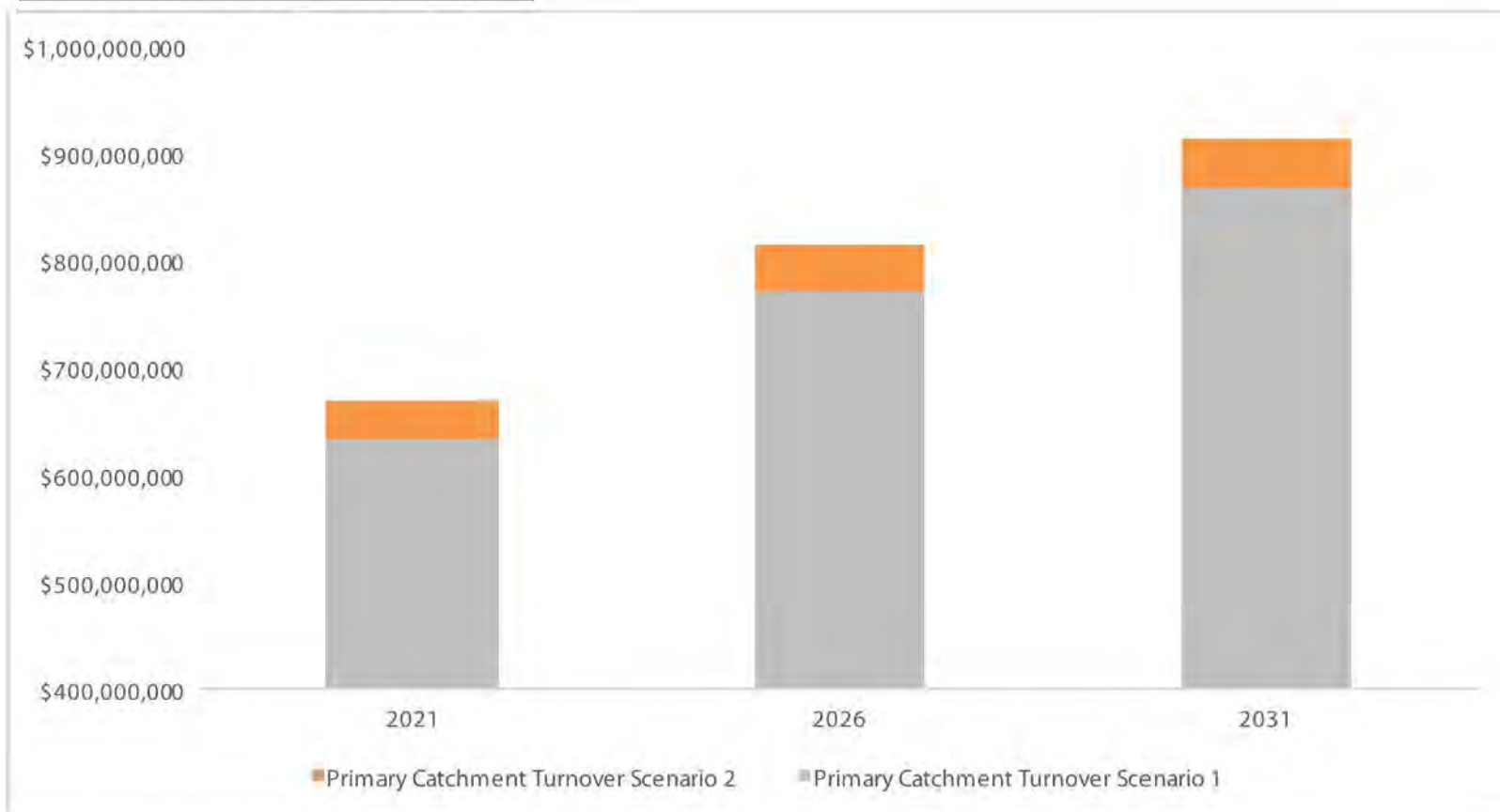
3.1.2 Retail Sustainability Assessment

The RSA uses retail modelling and a catchment analysis to assess the need / demand for the Neighbourhood Centre and therefore its sustainability. The RSA assigns a 15km secondary catchment as the study area which is relatively larger, but allows for consideration of the full activity centre hierarchy in Baldivis as well as the attractiveness of retail offerings at the Rockingham Strategic Metropolitan Centre (refer Figure 3 – Parkland Heights Neighbourhood Centre - Retail Catchment). The RSA analyses the catchment based on factors that affect demand such as population growth, catchment expansion and population demographics including income and retail leakage.

The RSA estimates that population within the primary catchment will double between the years 2016 to 2031 from 12,000 to 24,000 residents. Growth within the secondary catchment is expected to grow by 26,000 residents from 57,000 in 2016 to 83,000 in 2031. The RSA also considers disposable income of the population demographic within the primary catchment which indicate that over half the households would be considered to have a 'high average level of income' with discretion to expend disposable income within the catchment.

The RSA assesses the supply of retail floor space within both the primary and secondary catchments and, for the purpose of a conservative model, assumed that all planned centres would be developed by 2021.

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Source: HSES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

Based on this analysis of the supply and demand factors for retail floorspace within the catchment, the RSA concludes that there is an undersupply of retail floorspace within Baldivis that has the potential to result in a significant amount of leakage of retail spending from within the local area as residents are forced to commute greater distances to access their retail needs. Given the anticipated lack of supply and expected population growth, the proposed Parkland Heights Neighbourhood Centre is expected to operate at a high level of productivity in 2021. The RSA goes on to conclude that if Parkland Heights is not developed with a Neighbourhood Centre as proposed, it is likely that there will be a large gap in the local capacity to provide retail services for South Baldivis.

3.1.3 Potential Impact on Other Centres

The RSA confirms that development of the Parkland Heights Neighbourhood Centre at 10,000m² NLA will not negatively impact the viability of existing or future planned activity centres in the surrounding area. Whilst the performance of surrounding centres will be affected in the short-term, the estimated impacts on these centres will not be significant. The sustainability of a centre is typically considered significantly impacted when their profitability is reduced by more than 10%.

The modelling undertaken as part of the RSA indicates that no centre is impacted by more than 9.11% to 2021, with the centres in closest proximity (The Ridge and Avalon) likely to be the most affected (-9.05% and -9.11% respectively). It should be noted that whilst the City's Commercial Strategy identifies 'The Ridge' as a

Neighbourhood Centre, its floorspace of approximately 2,240m² gross leasable area is significantly less than the amount generally associated with a Neighbourhood Centre and is more akin to a Local Centre designation.

Despite these impacts, the modelling undertaken by the RSA shows that the centres will still be trading at healthy and profitable levels indicating that consumer amenity will not be affected. The modelling further confirms that by the year 2026, it is estimated that the total retail turnover within the catchment will be higher than if Parkland Heights were only to be developed as a Local Centre (1,500m²) with productivity further increasing up to 2031 (refer Figure 4 – Total Catchment Turnover Growth).

The modelling undertaken as part of the RSA confirms a 10,000m² Neighbourhood Centre at Parkland Heights is necessary to meet the future increase in retail demand generated by the forecast rapid population growth in Parkland Heights and South Baldivis. Importantly, productivity levels are only impacted in the short-term up to the year 2021 with productivity then increasing over the next 10 years. No centres within the catchment are significantly impacted in terms of productivity. The proposed Parkland Heights Neighbourhood Centre is therefore justified on the basis of projected demand and limited impact on other existing and planned centres.

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3.2 Movement Network

The original LSP was accompanied by a detailed Traffic Impact Assessment (TIA) prepared by Transcore (July 2011) which addressed all necessary transport planning matters for Parkland Heights. The traffic modelling undertaken as part of the original TIA however, only assumed a retail floorspace of 700m² NLA for the Centre. In preliminary discussions with the City of Rockingham, it was agreed that a revised TIA would be required to model and assess the potential impact of the proposed 10,000m² Neighbourhood Centre on the planned road and intersection network. Transcore were subsequently commissioned to prepare a revised TIA in support of the LSP Amendment which is appended in full to this Report (Appendix 2).

The revised TIA confirms that, whilst the larger Neighbourhood Centre will generate additional traffic volumes, no significant modifications are required to the proposed road hierarchy or intersections to manage the additional traffic. The findings and recommendation of the revised TIA are discussed in further detail below.

3.2.1 Traffic Modelling

The current TIA maintains the following assumptions from the original traffic modelling:

- 1,400 dwelling generating approximately 10,300 vehicle per day (VPD); and
- A primary school with 400 students generating 800 vpd (400 movements in / 400 movements out).

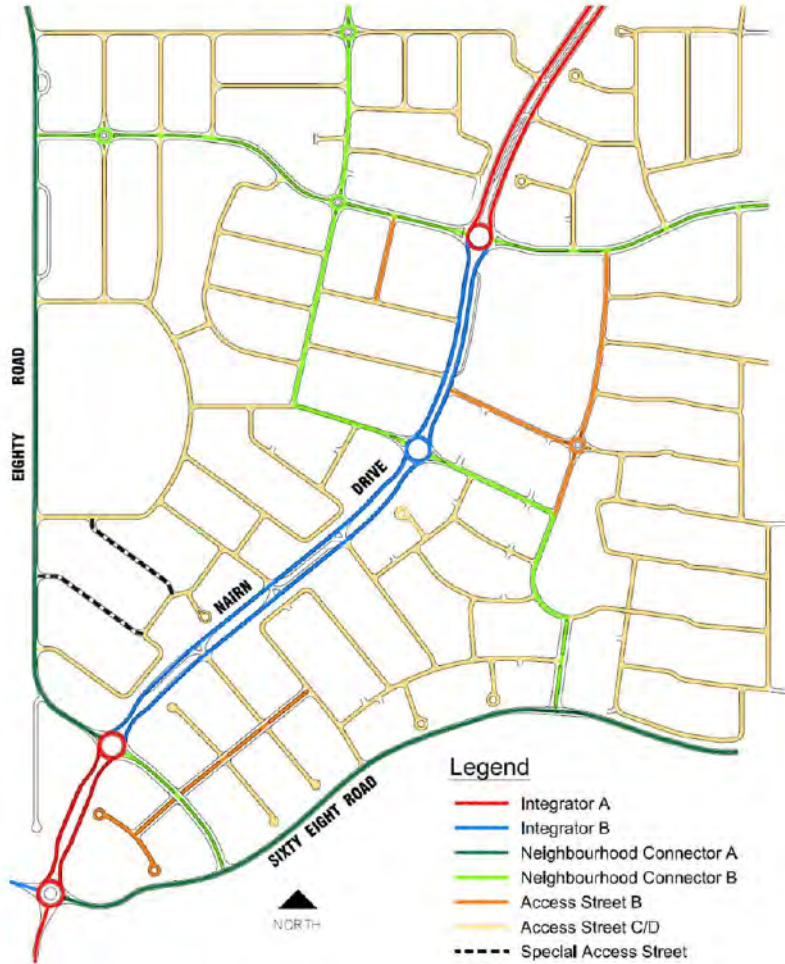
The only change to the modelling assumptions is therefore the increase in retail floorspace proposed as part of the LSP Amendment. The road network that the revised model is based upon has also been updated to reflect the latest approved LSP which varies slightly from the original road network upon which the 2011 TIA was based.

The traffic model used for the proposed LSP Amendment is based on a conservative estimate of:

- 11,500m² of retail NLA; and
- 3,000m² gross floor area (GFA) of non-retail commercial floorspace.

The LSP Amendment only proposes 10,000m² NLA of retail floorspace for the Neighbourhood Centre however, for the purpose of the TIA, a conservative estimate of 11,500m² NLA was used to ensure a robust analysis. 3,000m² of commercial floorspace has been allowed to provide local business and small scale office opportunities to support local employment. These land uses do not constitute 'retail' and so are not included within the 10,000m² of NLA.

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Current Road Hierarchy



Proposed Road Hierarchy

ROAD HIERARCHY COMPARISON

The updated TIA modelling resulted in an estimated 8,970 vehicles per day (vpd) (4,485 in / 4,485 out) with approximately 20% of this total (1,790 vpd) being passing trips along Nairn Drive. The 3,000m² of commercial floorspace anticipated for the Neighbourhood Centre is expected to generate approximately 510 vpd (255 in/255 out). The proposed Neighbourhood Centre is expected to increase traffic volumes by 7,780 vpd as compared to the originally modified scenario in 2011.

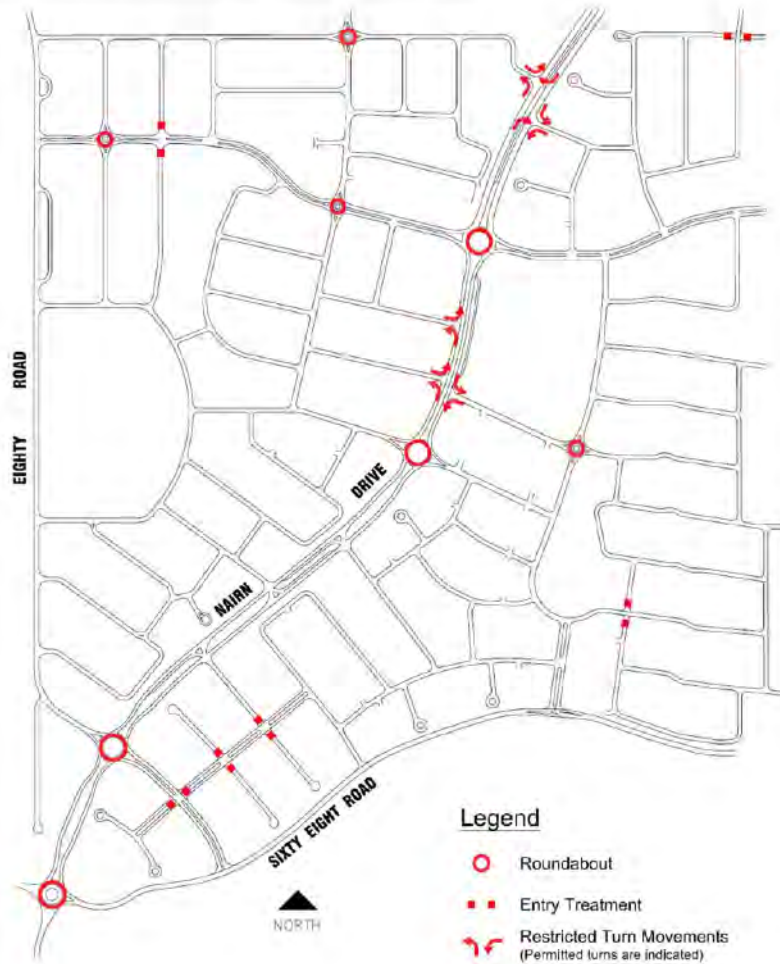
The traffic model demonstrates that the traffic generated by the Neighbourhood Centre can be accommodated by the originally planned road hierarchy with the exception of one minor upgrade. The key findings in relation to the planned road hierarchy and the expected 7,780 vpd increase are:

- Nairn Drive will remain an Integrator A road north of the Parkland Heights Neighbourhood Centre and south of the Eighty Road intersection;
- Nairn Drive will remain an Integrator B road abutting the Neighbourhood Centre and further south to the Eighty Road intersection;
- Arpenteur Road and the road abutting the western and southern boundary of the Neighbourhood Centre will remain Neighbourhood Connector B roads;

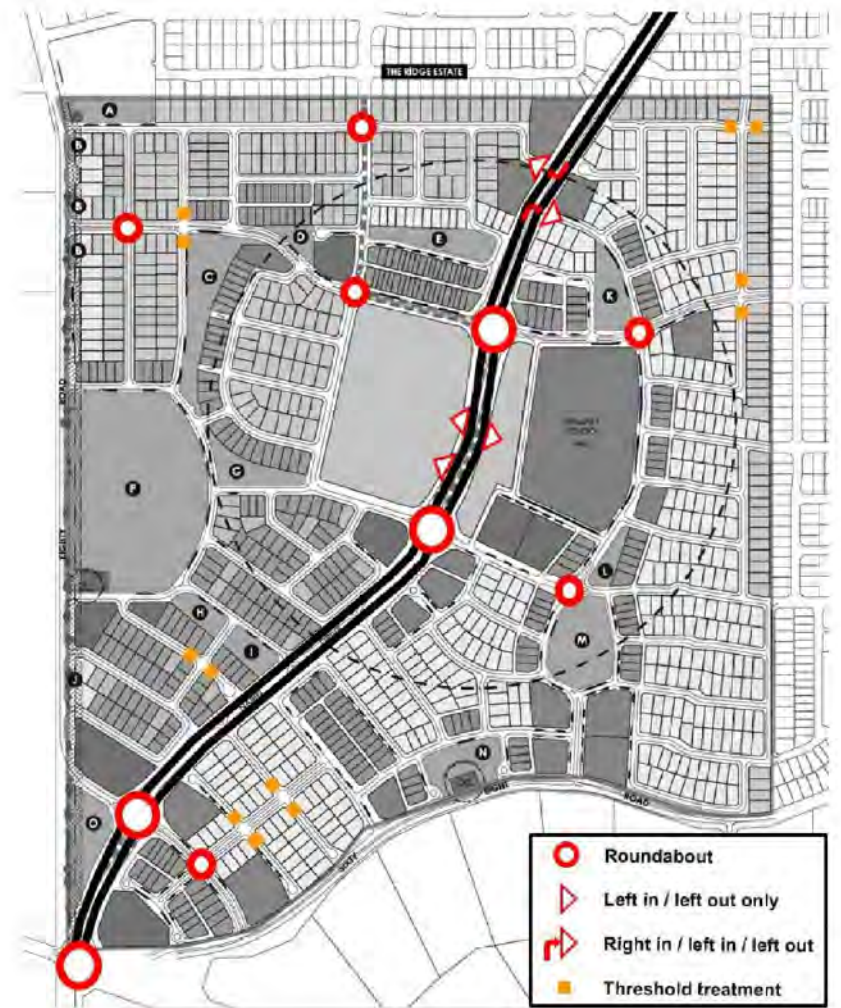
- Furnival Parade will remain a Neighbourhood Connector B road with the exception of the portion abutting the northern boundary of the Neighbourhood Centre. This is the only required change to the road hierarchy (increase from Neighbourhood Connector B to Neighbourhood Connector A) however the necessary road cross section can still be accommodated within the original planned road reserve width of 25m. The upgrade to Neighbourhood Connector A standards therefore does no impact the land requirement for the road, only the construction detail; and
- The roads abutting the future primary school will remain at Access Street B standard.

A comparison of the 2011 and the proposed road hierarchy under the revised TIA is provided at Figure 5 – Road Hierarchy Comparison. All road classifications are assigned based on the forecast traffic volumes consistent with *Liveable Neighbourhoods* road classification hierarchy.

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Current Intersection Treatment



Future Intersection Treatment

3.2.2 Intersections

The recommended intersections within the revised TIA are generally consistent with the original TIA prepared in 2011. A comparison plan of the original intersection treatments with the proposed is provided at Figure 6. The main changes in intersection treatments between 2011 and the current TIA are attributed to previous miscellaneous amendments to the LSP that were undertaken after the original TIA was prepared in 2011. For the sake of an accurate and robust traffic analysis, the TIA is based on the road network under the current LSP and therefore incorporates updates beyond the potential impact of the Neighbourhood Centre.

In relation to the proposed LSP amendment for the Neighbourhood Centre, all originally planned intersection treatments for the road network will operate satisfactorily and are not required to be upgraded.

3.2.3 Access to the Neighbourhood Centre

The TIA has considered the preliminary concept design (refer Figure 2) and provides recommendations in relation to intersection treatments for the access points to and from the Neighbourhood Centre. As the concept design is preliminary, it does not form part of the LSP however, the TIA establishes principles for vehicle access to be implemented at future, more detailed stages of the planning process. The key principles for future access to the Neighbourhood Centre are:

- Access to and from Nairn Drive is to be designed as left in/left out access only;
- The northern access from Furnivall Parade is to be designed as a full movement T-intersection; and
- The eastern access points to be designed as a full movement intersections.

The intersection treatments for the access points to the Centre will be defined as part of the LDP process, as discussed in further detail below.



3.2.4 Pedestrian and Cycling Facilities

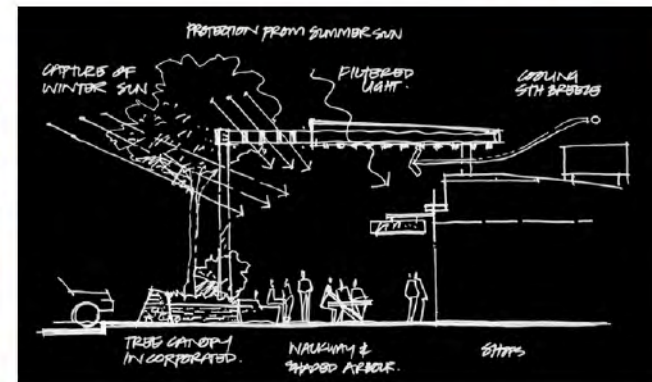
The TIA has revised the planned pedestrian and cyclist network and facilities based on the proposed Neighbourhood Centre as well as other miscellaneous changes to LSP road network under previous LSP amendments.

The key changes in relation to this LSP amendment are:

- A 2.5m wide shared path abutting the Neighbourhood Centre; and
- A 2.5m wide shared path around the portion of the Neighbourhood Centre east of Nairn Drive and the future Primary School.

As referenced above, other updates to the distribution of pedestrian and cyclist facilities have been undertaken consistent with the current LSP design and the as-constructed road and path network. Specifically, the as-constructed path network within the residential stages west of the Centre varies from the 'Parkland Circuit' depicted within the current LSP and the updated pedestrian and cyclist plan (refer Figure 7) reflects this. With regard to the Centre, the same standard of pedestrian and cyclist infrastructure is proposed as the current LSP and whilst the term 'Parkland Circuit' is no longer referenced on the revised pedestrian and cyclist plan (Figure 7), the path alignments and standard of infrastructure are consistent with the current LSP and the design intent to connect areas of POS throughout the estate.

Generally speaking, all lower order access streets will be provided with a 2m path to one side of the road with higher order roads accommodating either a 2.0m or 2.5m shared path (refer Figure 7 – Pedestrian and cyclist facilities). This approach is consistent with the originally approved TIA and reflects previous miscellaneous changes to the LSP road and path network.



Source: NH Architects

3.3 Design and Built Form

As referenced previously, the City of Rockingham's preference is for the LSP to contain provisions that ensure the future design and development of the Neighbourhood Centre will be to a high standard. Given that the LSP Amendment process is not intended to address detailed design matters, it was determined that an LDP would be required as a prerequisite to development in order to coordinate future development and demonstrate that key elements would be required to be addressed at the development application stage.

Whilst a separate process, the LDP would be prepared and lodged concurrently with this LSP amendment to demonstrate that the built form outcomes for the Neighbourhood Centre would be secured. The developers of Parkland Heights estate, Rockingham Park Pty Ltd, are committed to the delivery of a high standard Neighbourhood Centre that provides the necessary retail amenities in a form that is not only functional but achieves a high level of visual amenity, as proven through previous shopping centre developments within the City of Rockingham.

Consistent with *Liveable Neighbourhoods*, the Preliminary Concept Plan (refer Figure 2) depicts the Neighbourhood Centre in a main street configuration which will include on-street parking as well as additional parking areas behind buildings. It is envisaged that the Centre will be developed with active uses and building frontages addressing the core of the main street in an urban environment that caters for pedestrians as well as vehicles. Alfresco and piazza dining areas are anticipated east of the main street to create a vibrant setting that is activated outside of traditional business hours. The adjacent photo montage provides an example of

similar built form outcomes which Parkland Heights will seek to emulate.

Part 5.2 of the Part 1 – Implementation Report requires preparation of an LDP prior to development. The LDP is required to address key matters in terms of the design for the Centre such as vehicle access, main street alignment, the general siting of buildings as well as building orientation to assist coordinate the vision for the Centre.

The Implementation Report allows for separate LDP's to be prepared for the western and eastern portions of the Neighbourhood Centre, given that they are separated by Nairn Drive into two distinct land areas. This will allow for the east and west portions of the Neighbourhood Centre to be developed separately. The shopping centre will be developed over the western and majority portion of the Neighbourhood Centre whilst the eastern side will be developed at a later date with the exact timing and design layout subject to market forces.

The preparation of two separate LDP's is appropriate as it allows flexibility for the eastern portion of the Neighbourhood Centre without prejudicing the coordinated development of the shopping centre west of Nairn Drive. The development of the western site is not linked or contingent upon the east side of Nairn Drive and each can be progressed separately. Importantly, the draft LDP provides for the comprehensive planning of the shopping centre and will coordinate its staged development to deliver a high quality asset for Parkland Heights and the wider South Baldivis community.

3.4 Other Considerations

The following headings address other miscellaneous updates that are required to the Part 1 – Implementation Report that are not directly related to the purpose of the LSP amendment but are necessary to ensure the orderly and proper planning of the balance of the Estate.

3.4.1 Consistency with Planning Framework

Since the current version of the LSP was approved, important changes to the planning framework have been made that impact the operation and content of structure plans. As part of this LSP amendment process it is therefore necessary to update the Part 1 – Implementation Report to be consistent with these changes.

Planning and Development (Local Planning Scheme) Regulations 2015

The Regulations were gazetted on 19 October 2015 and by virtue of the 'deemed provisions' within Schedule 2, contain provisions in relation to structure plans that override those within the City's TPS2 under which the current LSP was approved. The key changes to the Part 1 – Implementation Report necessary to bring the LSP into line with the Regulations are:

- Insert part 2.0 'Operation' to confirm that the LSP (once approved) is operational for a period of 10 years pursuant to clause 28 (1), Schedule 2 of the Regulations; and
- Confirm the status of the LSP as a 'due regard' document pursuant to clause 27 (1), Schedule 2 of the Regulations.

This rectifies part 3.2 of the current Part 1 Report which refers to the Zones and Reserves under the LSP applying as if they exist under TPS2. Further, part 3.3 states that the standards and requirements under the LSP have the same force and effect as TPS2.

Structure Plan Framework

The WAPC adopted the Structure Plan Framework in August 2015 sets out the manner and form for the preparation of structure plans. The Structure Plan Framework prescribes a different layout and headings for Part 1 of structure plans and refers to them as an 'Implementation Report' rather than 'Statutory Report' as per previous practice.

The LSP Part 1 Report has been restructured to be consistent with the Structure Plan Framework and retitled so that it is now referred to as the Part 1 – Implementation Report.

State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) was gazetted in December 2015 and establishes a new method for designating land as 'bushfire prone'. Structure Plans previously relied on Bushfire Management Plans to assess potential bushfire hazards and designate land that is required to respond to, and manage, potential bushfire hazards. This method is referenced within the current approved Part 1 report under part 6.4 'Other provisions / standards / requirements' and is required to be amended consistent with SPP 3.7.

SPP 3.7 confirms that a designated bushfire prone area is an area that is identified on the Department of Fire and Emergency Services *Map of Bush Fire Prone Areas*. Accordingly, the Part 1 – Implementation Report has been amended to refer to the *Map of Bushfire Prone Areas* when determining land as ‘bushfire prone’ within the LSP.

3.4.2 Density Coding for proposed Neighbourhood Centre

The LSP assigns a density coding of R60 to the land zoned ‘Commercial’ and ‘Special Use’ on the LSP Map. Table No.1 ‘Zoning Table’ of TPS2 allows for ‘multiple dwellings’ and ‘grouped dwellings’ to occur within the ‘Commercial’ zone.

In the case that residential development is proposed within the Neighbourhood Centre, a density coding of R60 will deliver an appropriate density response based on immediate access to services and amenities within the Centre as well as the prevailing context around the Centre. The LSP Map currently identifies a number of R60 group housing sites adjacent the Neighbourhood Centre and development within the Centre at R60 would be consistent with the expected built form outcomes for these sites.

3.4.3 R-Code variations

The current approved Part 1 – Implementation Report contains R-Code variations at Table 1: Single House (RMD) Standards for Medium Density Housing consistent with the WAPC’s Planning Bulletin 112/2016 ‘Medium Density single house development standards–Development Zones’. Since the Part 1 – Implementation Report was amended to include Table 1 in 2015, the City of Rockingham have adopted Planning Policy No 3.3.22 – ‘Medium-Density Single House Development Standards – Development Zones’ which identifies Parkland Heights within the policy area. The policy duplicates the variations at Table 1 of the LSP, and as such, these variations are no longer required to be included within the structure plan. The Part 1 – Implementation Report has been modified accordingly to remove these variations.

3.4.4 Public Open Space

The purpose of this LSP Amendment does not impact on the provision or distribution of public open space (POS). It is noted that ‘Grouped Dwellings’ and/or ‘Multiple Dwellings’ may be approved within the Centre thereby increasing the gross subdivisible area.

The current POS schedule approved as part of the original LSP demonstrates that 11.1% of the gross subdivisible area is designated as POS which equates to a 1.12 hectare surplus above the required 10%. In the event that residential uses are proposed within the Centre, the 1.12 hectare POS surplus is more than capable of offsetting the potential increase in gross subdivisible area. Any subdivision application that proposes the creation of residential lot/s is required to demonstrate that 10% POS is maintained in accordance with *Liveable Neighbourhoods*.

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4.0 CONCLUSION

This amendment to the LSP will facilitate the delivery of an appropriately sized Neighbourhood Centre for Parkland Heights that will not only serve the surrounding estate, but the wider South Baldivis area. The LSP and accompanying RSA demonstrate that there is an identified retail demand within the locality that warrants development of the Neighbourhood Centre site incorporating 10,000m² of retail NLA. Further, the retail modelling undertaken as part of the RSA confirms that the Parkland Heights Neighbourhood Centre will not have an unreasonable impact on other existing or planned centres in the surrounding area. This amendment also addresses other key planning considerations such as traffic and built form/ design outcomes. The TIA confirms that, whilst the development of the Neighbourhood Centre for 10,000m² of retail NLA will increase traffic volumes, the originally planned road hierarchy and intersection treatments are able to accommodate these additional volumes with only minor upgrades.

The LSP amendment ensures that the Neighbourhood Centre will be designed to a high standard to integrate with the surrounding residential area through the requirement to prepare an LDP to inform key design matters at the development application stage. The end result will be an integrated, diverse, and vibrant Neighbourhood Centre based on main street principles that will be a valuable asset for Parkland Heights and the South Baldivis community.

Parkland Heights Local Structure Plan

ADDENDUM 2 - EXPLANATORY REPORT
AMENDMENT 5 (2020)





Town Planning & Urban Design

Parkland Heights Local Structure Plan

Lot 1507 Eighty Road, Baldivis
Appendix M - Explanatory Report

DECEMBER 2020

Parkland Heights Local Structure Plan.

APPENDIX M – EXPLANATORY REPORT

DECEMBER 2020

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DOCUMENT STATUS

Version	Comment	Prepared	Reviewed	Issued
1	Lodgement	TV	KB	06.12.2018
2	WAPC Modifications	TV	KB	09.12.2020

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1 Introduction & Purpose

The purpose of this Amendment to the approved Structure Plan for the Parkland Heights Estate is to update the design of Stages 13 and 14, update the layout of previously approved stages and to remove the RMD References from the Plan 1.

2 Land Use & Subdivision Requirements

2.1 Land Use

The proposed land-uses and general design within Stages 13 and 14 has remained generally the same, the amendment proposes the following changes:

- Removal of the majority of the R40 rear-loaded products.
- Introduces new R40 rear loaded products which front the POS, serviced by a 9m laneway, which provides for visitor parking adjoining the Grouped Housing lot;
- Re-design of the Public Open Space (POS) to a more regular shape allowing more useable space;
- Relocation of the grouped housing site to the intersection of Nairn Drive and the east-west road, which is opposite the Neighbourhood Centre.

2.2 Design Elements

The redesign of Stages 13 and 14, is generally consistent with road layout of the approved Structure Plan. The indicative concept plan for the stages provides for approximately 162 single residential lots plus one grouped housing site, which is an increase of 28 single residential lots (refer to **Figure 1** – Concept Plan).

2.2.1 R40 Laneway Lots

A laneway lot precinct is proposed overlooking POS K, it is proposed to be supported by a 9m wide laneway which provides for visitor parking within the laneway, as well as opportunities for visitor parking surrounding the POS.

Under Element 3 of *Liveable Neighbourhoods*, rear laneway product adjoining a POS is supported where the maximum length is 80m and visitor parking is supplied on the adjoining streets. The proposal is consistent with *Liveable Neighbourhoods*.

2.2.2 R60 Grouped Housing Lot

A mid-higher density (R60) residential development is proposed in proximity to (and potentially within) the future Neighbourhood Activity Centre. The R60 density code offers a minimum and average lot product considered suitable for this location within the outer-metropolitan area of Perth and adjacent to a Neighbourhood Centre. It is anticipated that the product could accommodate approximately ~30+ dwellings.

LEGEND

SUBJECT LANDHOLDINGS



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Scale: 1:2000 @ A3
 0 20 40 60m

PLAN: RPHH/3-004
 DATE: 04/12/2018
 PROJECTION: PG 34
 DRAWING: P
 PLANNER: BK
 CHECK: TV

CONCEPT SUBDIVISION PLAN
 Stages 13-14 Parkland Heights, BALDVIS
 A Rockingham Park Project

2.2.3 Road Pattern

The general road pattern of the approved Structure Plan within Stages 13 and 14 has been maintained, including the type of frontage to Nairn Drive, however more north-south streets facilitating more east-west lots which optimise solar penetration has been proposed. Consistent with the approved Structure Plan, two cul-de-sacs are proposed, with one portion being provided with an internal road frontage. The two proposed cul-de-sacs are compliant with *Liveable Neighbourhoods* (Element 2: Movement Network; Cul-de-sac), as they:

- are both well under the 120m maximum length permitted;
- serve no more than 20 dwellings each. The northern most cul-de-sac serves 6 lots and southern 10 lots only;
- serve only 16 lots, being under 10% of the overall 163 lot yield, well under the 15% permitted; and
- are designed in a way that allows for pedestrian and cyclist access to/from Nairn Drive, whilst not impeding on the overall interconnectivity of the pedestrian and vehicle movement system.

The proposed update to the design removes the current access from Nairn Drive, the desire to remove this connection is to avoid creating a 'rat-run' through Stages 13 and 14 to access the Primary School (to the south). It also assisted with design of the Stages, to regulate the configuration of the POS and other adjoining lots.

It is acknowledged that a 'Nib' road has been proposed in the redesign. The current street block layout provides for better pedestrian/cyclist connectivity to the near-by POS., whilst reducing the overall number of roads. This layout has enabled the design to create one portion of road parallel to Nairn Drive, where the previous design did not provide this. The design is limited due to the configuration of the cell and alignment of Nairn Drive. The 'Nib' road only services two lots and the garage locations, bin pads, setbacks of the two lots can be managed through a LDP. In addition, a similar 'Nib' road configuration was proposed to the north-west corner of the approved Structure Plan, serving five lots, whereas the 'Nib' road in question only serves two lots

2.3 Public Open Space

The POS schedule has been updated to reflect all the subdivisions approved to date, in addition the redesign of POS K.

Table 1: POS Schedule

PUBLIC OPEN SPACE SCHEDULE - PARKLAND HEIGHTS STRUCTURE PLAN		
Gross Site Area		120.825
Deductions		
Nairn Drive Regional Road Reservation	6.399	
Sixty Eight Road Widening	0.127	
Primary School	4.032	
Commerical/Special Use	6.292	
Pump Stations	0.181	
1:1 Drainage	1.402	
Surplus Restricted Open Space	0.000	
Total Deductions		18.433
Gross Subdivisible Area		102.392
<i>Maximum 2% Restricted POS Permitted</i>	2.048	
<i>Minimum 8% Unrestricted POS Required</i>	8.191	
10% POS Requirement		10.239
Restricted POS Provision		
>1:1 - 1:5yr Drainage	0.328	
Powerline Easement	1.129	
Creditable Restricted POS Provision		1.457
Unrestricted POS Provision		
Credited POS (inclusive >1:5 - 1:100yr drainage)	9.831	
Creditable Unrestricted POS Provision		9.831
TOTAL POS PROVISION	11.02%	11.288
OVER/UNDER PROVISION OF POS		1.049

Table 2: Detailed POS Breakdown

POS AND DRAINAGE PROVISION - DETAILED BREAKDOWN							
<i>All Figures in hectares (ha)</i>		Uncredited Green Space (Deduction)		Credited 'Restricted' Public Open Space		Credited 'Unrestricted' Public Open Space	Total Credited Public Open Space
POS/Easement Reference	Land Area	Pump Station	1:1yr drainage	Powerline Easement	>1:1 - 1:5yr Drainage	<i>Inclusive >1:5 - 1:100yr drainage</i>	
A	0.4823		0.0775	0.0652	0.0155	0.3241	0.4048
B	0.1463		0.0000	0.1463	0.0000	0.0000	0.1463
C	1.1240		0.2080		0.0732	0.8428	0.9160
D	0.2283		0.0000		0.0000	0.2283	0.2283
E	0.5681		0.0297		0.0213	0.5171	0.5384
F	5.7711	0.1200	0.3322	0.5562	0.1046	4.6581	5.3189
G	0.5129		0.0461		0.0279	0.4389	0.4668
H	0.2747		0.0000		0.0000	0.2747	0.2747
I	0.3235		0.0000		0.0000	0.3235	0.3235
K	0.5289		0.1878		0.0207	0.3204	0.3411
L	0.2328		0.0000		0.0000	0.2328	0.2328
M	1.0935		0.2654		0.0239	0.8042	0.8281
N	0.7366	0.0609	0.1508		0.0247	0.5002	0.5249
O	0.8475		0.1043	0.3610	0.0163	0.3659	0.7432
TOTAL	12.8705	0.181	1.402	1.129	0.328	9.831	11.288

The changes to the POS areas through the approved subdivisions and POS k, still result in a surplus of POS being provided in the Parkland Heights Estate.

2.4 Transport Assessment

An assessment of the proposed Structure Plan Modifications has been undertaken by Transcore and included as **Appendix 1**. The assessment by Transcore is summarised below.

The increase in dwellings within Stages 13 and 14, will increase traffic on the surrounding roads by approximately:

- +200vpd on the easternmost access street within the subject site (i.e. increase from 800vpd to 1000vpd);
- +400vpd on Nairn Drive from the deleted T-intersection to the neighbourhood connector south of the subject site (i.e. increase from 16,900vpd to 17,300vpd); and
- +600vpd on the neighbourhood connector south of the subject site (i.e. increase from 2,300vpd to 2,900vpd).

In terms of the surrounding network and road classifications, apart from short sections of Nairn Drive (+400vpd) and the neighbourhood connector road south of the subject site (+600vpd) all other roads are expected to have traffic increases of no more than 200vpd.

All the access streets within the subject land will have traffic volumes up to 1,000vpd and will remain as Access Street D. The Neighbourhood Connector Road south of the Stages 13 and 14 will still have traffic volumes less than 3,000vpd and will remain as Neighbourhood Connector B. Nairn Drive adjacent to the Stages 13 and 14 will still have traffic volumes above 15,000vpd and will remain as an Integrator A. Therefore, the traffic increases associated with the proposed modifications to the Structure Plan in this area do not have any impact on the road hierarchy of this structure plan.

2.5 Nairn Drive Signalised Intersection

The proposed Structure Plan incorporates the current approved design for the Nairn Drive intersection with a roundabout. It is acknowledged the CoR and DPLH's preference is for a signalised intersection. This too is supported by Rockingham Park, however is the subject of review and formal approval by Main Roads WA (MRWA). At the time of the preparation of this report, that status of the signalised intersection is as follows:

- The Traffic Signals Approval letter prepared jointly by CoR and Rockingham Park was submitted to MRWA on 26 November 2018 to satisfy the NA1 Application component of MRWA's Traffic Signal Approval Policy.
- Notwithstanding, there is a WAPC Approval 155055 for the School Site which shows the subject intersection as a roundabout. This plan was approved in July 2017.
- The 2021 School Site opening has been announced; the School Site approval will be activated, and construction delivered in accordance with the approved plan. The associated civil works will need to be completed by June 2019. In this regard, agreement on the intersection will need to be reached prior to the end of January 2019 to facilitate the necessary construction works.

2.6 Water Management

RPS have prepared an updated LWMS based on the Structure Plan Amendment and also to include other modifications to the drainage as a result of the approved UWMP for constructed Stages of the Estate.. The LWMS Update is contained as **Appendix 2**. The updated LWMS has been approved by both the City of Rockingham and Department of Water.



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