



FRASERS
PROPERTY

STRUCTURE PLAN

(AS AMENDED)

LOT 335 + 780 EIGHTY ROAD, LOT 1001 PIKE ROAD AND
PORTION OF LOT 601 MANDURAH ROAD

PART ONE - STATUTORY SECTION

OCTOBER 2022

CLE Town Planning + Design



LOT 335 + 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

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PART ONE - STATUTORY SECTION

Prepared by:



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2300Rep59N
October 2022



LOT 335 + 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN



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:

22 December 2014

..... Date

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*.

19 October 2025

..... Date of Expiry



TABLE OF CHANGES OR DEPARTURES FROM STRUCTURE PLAN

Change or Departure No.	Description of Change or Departure	Date Adopted by the Council	Date Approved by the WAPC (if required)	Date Structure Plan commences operation
1	Minor lot reconfiguration to lot 335 Eighty Road, abutting lot 2 Eighty Road.	10 May 2015	-	22 May 2015
2	Insert Residential Design Code Variations - Single House (RMD) Standards for Medium Density Housing	10 May 2015	-	22 May 2015
3	Rationalise density codings on lot 335 Eighty Road, selectively replacing pockets of R40 with R25	28 July 2015	-	7 August 2015
4	Introduce Lot 123 Pike Road, Baldivis within the Baldivis Grove Structure Plan by applying residential densities ranging from RMD 25 – RDM 40, along with a single parcel of land for the purpose of POS.	-	-	26 October 2016
5	Rationalise the density coding with the structure plan area, replacing selected pockets of R25 with R40 and minor realignment of selected local roads to reflect current WAPC subdivision approvals. Deletes all references to the Residential Design Code Variations - Single House (RMD) Standards for Medium Density Housing and removes land from the structure plan area which has been normalised within the City of Rockingham Local Planning Scheme 2.	-	6 September 2021	-
6	Introduce Lot 780 Eighty Road, Baldivis within the Baldivis Grove Structure Plan by applying residential densities ranging from R5 to RMD25.	-	28 October 2022	-



EXECUTIVE SUMMARY

The Pike Road Structure Plan allows for the creation of a diverse and vibrant community that responds to its surrounding, the natural environment and significant landform.

The Structure Plan area covers a total area of approximately 26.7 hectares, comprising lot 335 and 780 Eighty Road, lot 1001 Pike Road and a portion of lot 601 Mandurah Road, Baldivis. The subject area has been identified for development and is currently zoned 'Urban' and 'Development' under the Metropolitan Region Scheme and City of Rockingham Town Planning Scheme No. 2 respectively. The Pike Road Structure Plan is lodged pursuant to clause 4.2.4 of the City's Scheme which requires a structure plan prior to development or subdivision for land zoned 'Development'.

Once developed the Pike Road Structure Plan will provide for the creation of a diverse range of high quality housing that will appeal to a wide spectrum of the market; with densities ranging from R5 to R40. Higher densities will be focused around key roads and areas of high amenity, while a number of rural lifestyle lots will provide an appropriate interface to Woodleigh Grove Estate to the north and the rural land to the west. The Structure Plan creates one centrally located area of open space which will provide residents with a readily useable, aesthetic and liveable space while also serving a drainage function in accordance with water sensitive urban design principles.

The Pike Road Structure Plan has responded to a request from the Department of Education, and will create an Early Childhood Centre to ease student number pressures on nearby schools, with

this site being located at the corner of Eighty and Pike Roads with two local roads to the north and west providing good circulation and access. The Structure Plan demonstrates a clear and legible hierarchy of roads which creates a series of permeable connections onto Eighty and Pike Roads, providing residents with excellent accessibility to nearby facilities and amenity. The plan itself is environmentally responsive, utilising the natural landform of the site and nestling behind a ridgeline which has been identified by the City as significant and worthy of protection.

In preparation of the Structure Plan the following reports were prepared, and are summarised in Part 2 of the Structure Plan report, with complete copies included as technical appendices:

1. Environmental Assessment Report
2. Fire Management Plan
3. Landscape Masterplan and Strategy
4. Local Water Management Strategy
5. Transport Assessment
6. Engineering Servicing Review

These reports comprehensively address all of the relevant planning considerations, and demonstrate that the land is suitable for urban development in the form proposed by the Pike Road Structure Plan.

Table 1 provides a land use summary of the Structure Plan.



ADDENDUM (AMENDMENT 5)

Amendment 5 to the Pike Road Structure Plan reconfigures residential densities within the structure plan area, replacing select pockets of R25 with R40, as well as realigns two local roads.

The reason behind the amendment is to increase the variety of lot types within the structure plan area through the introduction of contemporary 'compact' lots, being lots of reduced depth, in response to current market conditions. The amendment also takes the opportunity to realign the two local roads simply to reflect current WAPC subdivision approvals.

This Amendment also deletes all references to the Residential Design Code Variations - Single House (RMD) Standards for Medium Density Housing and removes land from the structure plan area which has been normalised within the City of Rockingham Local Planning Scheme 2.

ADDENDUM (AMENDMENT 6)

Amendment 6 to the Pike Road Structure Plan looks to introduce lot 780 Eighty Road into the structure plan area, by extending the base R25 density code and the larger R5 rural residential density into the subject site. This amendment has been progressed to facilitate future subdivision and development over Lot 780 to reflect its 'Development' zoning under the City of Rockingham Local Planning Scheme 2. To ensure a suitable interface to the rural residential lots to the north, the R5 density code has been applied along the northern boundary of the subject site. The amendment also reflects the existing road network established by current WAPC subdivision approvals within the Baldivis Grove estate, by providing a suitable east-west access road connection. In doing so, this Amendment also introduces requirements to protect and manage trees (where relevant) on site as conditions of subdivision approval.



Land Use Summary

Item	Data	Section number referenced within the Structure Plan Report
Gross Structure Plan Area	26.7 hectares	Section 1.2.2
Area of each land use proposed (approximate)		
Zones		
- Residential	16.1 hectares	Section 3.1
Reserves		
- Road Reserve	6.4 hectares	
- Public Open Space Reserve	3.1 hectares	
- Public Purposes	1 hectare	
Estimated Lot Yield	360 - 380 lots	Section 3.2.2
Estimated Number of Dwellings	360 - 380 dwellings	Section 3.2.2
Estimated Residential Density		Section 3.2.2
- dwellings per gross hectare	15.4 dwellings per gross hectare	
As per Directions 2031		
- dwellings per site hectare	24 dwellings per site hectare	
As per Liveable Neighbourhoods		
Estimated Population	952 - 1008 people @ 2.8 people/household	
Number of Secondary Schools	Nil	N/A
Number of Primary Schools	1 (Early Childhood Centre)	Section 3.5
Amount of Public Open Space	2.45 hectares (gross) 11.3%	Section 3.3.1
As per Liveable Neighbourhoods	2.34 hectares (Unrestricted) 96%	
	0.11 hectares (Restricted) 4%	

Notes

1. The gross site area comprises the total area of lot 335 & 780, 1001 and the portion of lot 601 zoned 'Urban' under the MRS.
2. Excludes the R5 rural-lifestyle lots.



TABLE OF CONTENTS

- 1.0 STRUCTURE PLAN AREA**
- 2.0 STRUCTURE PLAN CONTENT**
- 3.0 INTERPRETATION AND SCHEME RELATIONSHIP**
 - 3.1 Land Use and Zones**
- 4.0 OPERATION**
- 5.0 LAND USE AND SUBDIVISION REQUIREMENTS**
 - 5.1 Residential**
 - 5.1.1 Density
- 6.0 DEVELOPMENT REQUIREMENTS**
 - 6.1 Notifications On Title**
 - 6.2 Detailed Area Plans**
 - 6.3 Fire Management Plan**
 - 6.4 Environmental**

PLANS

- Plan 1:** Structure Plan



SECTION ONE: BACKGROUND AND PLANNING CONTEXT

1.0 STRUCTURE PLAN AREA

This Structure Plan applies to lot 335 and 780 Eighty Road, lot 1001 Pike Road and a portion of lot 601 Mandurah Road, Baldivis, being the land that is contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan 1).

2.0 STRUCTURE PLAN CONTENT

The Structure Plan comprises the following:

- Part 1: Statutory Section - This section contains the Structure Plan map and statutory planning provisions and requirements.
- Part 2: Explanatory Section - This section is to be used as a reference guide to interpret and justify implementation of Part 1.
- Technical Appendices - Technical reports and supporting plans and maps.

3.0 INTERPRETATION AND SCHEME RELATIONSHIP

Unless otherwise specified in this part, the words and expressions used in this Structure Plan shall have the respective meanings given to them in the City of Rockingham Town Planning

Scheme No. 2 (the Scheme), including any amendments gazetted thereto.

The Structure Plan has been prepared under Clause 4.2 of the Scheme as the subject land is zone 'Development' and contained within Development Area 41 which is shown on the Scheme Map and contained within Schedule No. 9.

The Structure Plan map (Plan 1) outlines zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to the land within it as if the zones and reserves were incorporated into the Scheme.

Pursuant to Clause 4.2 of the Scheme, the provisions, standards or requirements specified under Part One of this Structure Plan shall have the same force and effect as if it were a provision, standard or requirement of the Scheme.

In the case of any inconsistency between the Scheme and any provisions, standards or requirements specified under Part One of this Structure Plan, the Scheme prevails to the extent of any inconsistency.

3.1 Land Use and Zones

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



4.0 OPERATION

In accordance with clause 4.2.9 of the Scheme, this Structure Plan shall come into operation when it is adopted by the Council pursuant to clause 4.2.6.15 of the Scheme.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

5.1 Residential

5.1.1 Density

Plan 1 allocates the residential densities for the Structure Plan area.

6.0 DEVELOPMENT REQUIREMENTS

6.1 Notifications On Title

In respect of applications for the subdivision of land the Council shall recommend to the Western Australian Planning Commission that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate(s) of Title(s) to advise of the following: -

- (i) Land or lots deemed to be affected by a Bush Fire Hazard as identified in a Fire Management Plan as outlined within the Fire Management Plan (February 2014) - Bushfire Safety Consulting contained within Appendix 2.

6.2 Detailed Area Plans

Detailed Area Plans (DAP's) are required to be prepared and implemented pursuant to Clause 4.23 of the Scheme for lots comprising one or more of the following site attributes:

- (i) Lots with rear-loaded vehicle access; and/or
- (ii) Lots with direct boundary frontage (primary or secondary) to an area of Public Open Space; and/or
- (iii) Lots with a Residential Density Code of R5.

6.3 Fire Management Plan

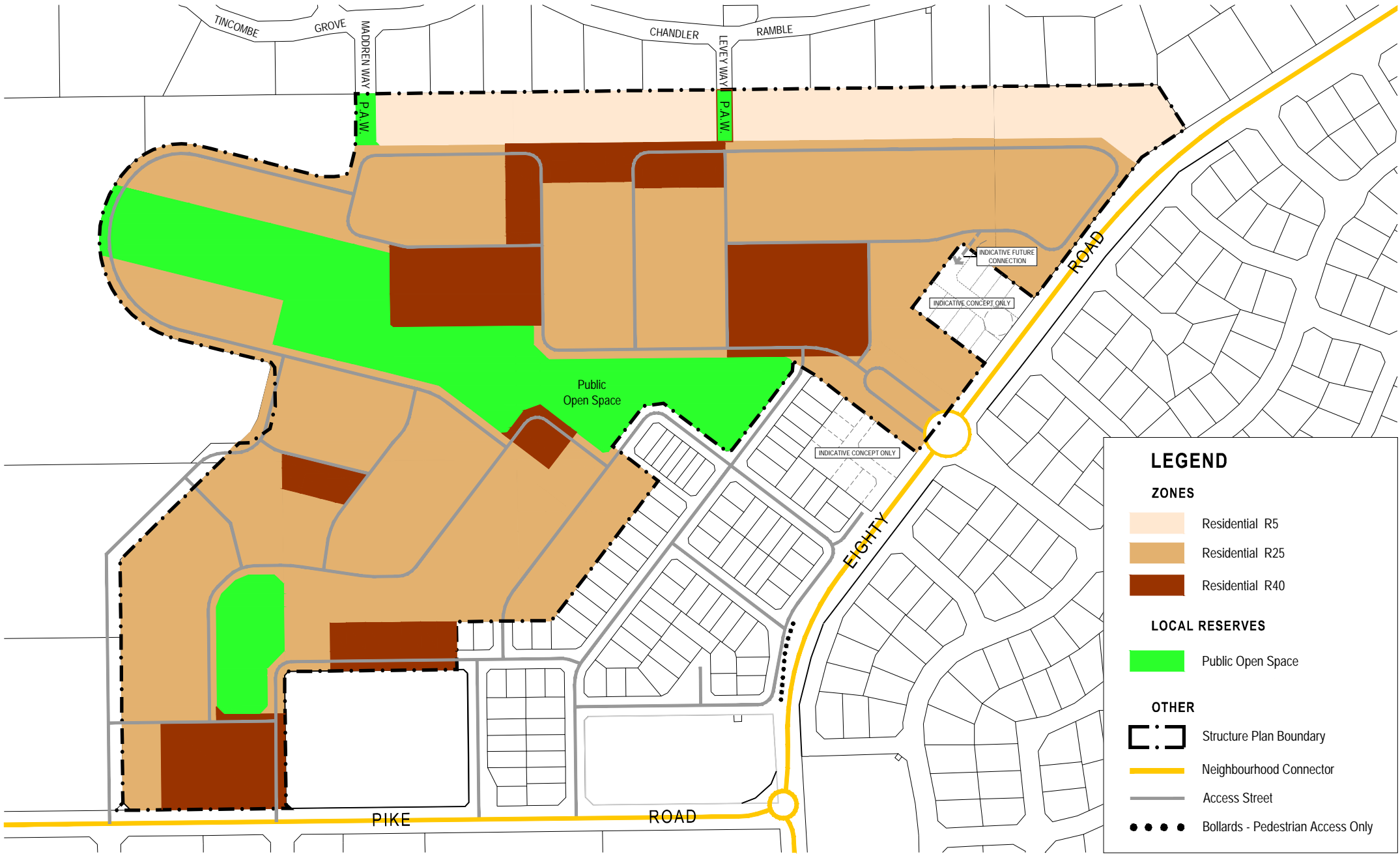
This Structure Plan is supported by a Fire Management Plan (Appendix 2) and a Bushfire Management Plan prepared for lot 780 (Amendment 6 Addendum). Regardless of whether the land has been formally designated as bushfire prone, any building to be erected on land identified as falling within 100 metres of a bushfire hazard is designated as bushfire prone land and shall comply with the requirements of Australian Standard 3959 under the Building Code of Australia.



6.4 Environmental

The following technical reports / strategies are to be prepared and submitted as a condition of subdivision approval (where applicable):

- Tree Survey;
- Tree Protection Management Plan; and
- Fauna Relocation Management Plan



LEGEND

ZONES

- Residential R5
- Residential R25
- Residential R40

LOCAL RESERVES

- Public Open Space

OTHER

- Structure Plan Boundary
- Neighbourhood Connector
- Access Street
- Bollards - Pedestrian Access Only



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(AS AMENDED)

LOT 335 & 780 EIGHTY ROAD, LOTS 1001 AND 3001 PIKE
ROAD AND PORTION OF LOT 601 MANDURAH ROAD

PART TWO - EXPLANATORY REPORT
(INCLUDES AMENDMENT 5 & 6 ADDENDUM)

OCTOBER 2022

CLE Town Planning + Design



LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

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LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD



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LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD AND PORTION OF LOT 601 MANDURAH ROAD

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PART TWO - EXPLANATORY REPORT

(INCLUDES AMENDMENT 5 & 6 ADDENDUM)

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October 2022



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AND PORTION OF LOT 601 MANDURAH ROAD

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PROJECT TEAM

Planning and Urban Design – CLE Town Planning + Design

Environmental Assessment – 360 Environmental

Groundwater and Drainage – 360 Environmental

Engineering Infrastructure and Services – JDSi Consulting Engineers

Traffic and Transport – Transcore Pty Ltd

Bush Fire Protection – Bushfire Safety Consulting Pty Ltd

Landscaping – Emerge Associates



LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN



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TABLE OF CONTENTS

1.0 INTRODUCTION AND PURPOSE

1.1 Report Structure

1.2 Land Description

1.2.1 Location and Land Area

1.2.2 Ownership and Title Details

1.2.3 Existing and Surrounding Land Use

1.3 Planning Framework

1.3.1 MRS Zoning

1.3.2 City of Rockingham Town Planning Scheme No. 2

1.3.3 Directions 2031 and Beyond (August 2010)

1.3.4 Draft Outer Metropolitan and Peel Sub-Regional Strategy (2010)

1.3.5 Southern Metropolitan Sub-Regional Structure Plan (2009)

1.3.6 City of Rockingham Urban Growth Programme (2009)

1.4 Context Analysis

2.0 SITE CONDITIONS AND CONSTRAINTS

2.1 Biodiversity and Natural Area Assets

2.2 Landform and Geology

2.2.1 Acid Sulphate Soils

2.2.2 Contamination

2.3 Hydrology

2.4 Fire Management

2.5 Heritage

3.0 LOCAL STRUCTURE PLAN

3.1 Plan Overview and Land Use

3.2 Residential

3.2.1 Housing Principles

3.2.2 Yield Estimates

3.2.3 Development Requirements

3.3 Public Open Space

3.3.1 Public Open Space Provision and Schedules

3.3.2 Water Management

3.3.3 Description of Open Space Area

3.3.4 Streetscape Treatment

3.3.5 Plant Species and Irrigation Strategy



LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN



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3.4 Movement Network

- 3.4.1 *Existing Movement Network*
- 3.4.2 *Planned Road Network*
- 3.4.3 *Transport Network Analysis*
- 3.4.4 *Intersection Treatments*

3.5 Education Facilities

3.6 Activity Centres and Employment

3.7 Earthworks and Servicing

- 3.7.1 *Earthworks Strategy*
- 3.7.2 *Waste Water*
- 3.7.3 *Water Supply*
- 3.7.4 *Power Supply*
- 3.7.5 *Gas Supply*
- 3.7.6 *Telecommunications*
- 3.7.7 *Staging and Implementation*

LIST OF TABLES

Table 1: Land Use Schedule

Table 2: Public Open Space Schedule

LIST OF FIGURES

Figure 1: Location Plan

Figure 2: Site Plan

Figure 3: Metropolitan Region Scheme (Current)

Figure 4: City of Rockingham Town Planning Scheme No. 2

Figure 5: Draft Outer Metropolitan Sub-Regional Strategy (2010) - South West Region

Figure 6: Southern Metropolitan Sub-Regional Structure Plan (2009)

Figure 7: City of Rockingham Urban Growth Programme (2009)

Figure 8: Landform

Figure 9: Development Concept Plan

Figure 10: Landscape Masterplan

Figure 11: Street Tree Masterplan

Figure 12: Road Hierarchy

Figure 13: Pedestrian Network

Figure 14: Road Intersections

Figure 15: Indicative Staging



LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN



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AMENDMENT 5 ADDENDUM

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Ownership

1.0 JUSTIFICATION OF THE AMENDMENT

2.1 Location Provision for R40

2.2 Interface with R5 Lifestyle Lots

2.3 Local Road Realignment

2.4 Technical Reports

1.0 CONCLUSION

LIST OF FIGURES

Figure 1: Subdivision Concept



LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN



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AMENDMENT 6 ADDENDUM

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Ownership

2.0 PLANNING FRAMEWORK

3.0 JUSTIFICATION OF THE AMENDMENT

3.1 Subdivision Concept Plan

3.1.1 Zoning

3.1.2 Environmental

3.1.3 Public Open Space

3.1.4 Movement Network

3.1.5 Servicing

LIST OF FIGURES

Figure 1: Subdivision Concept Plan

LIST OF TABLES

Table 1: Liveable Neighbourhoods Public Open Space Schedule

ATTACHMENTS

Attachment 1: Urban Water Management Plan (360 Environmental)

Attachment 2: Environmental Assessment Report (360 Environmental)

Attachment 3: Transport Assessment Addendum (Transcore)

Attachment 4: Bushfire Management Plan (Bushfire Safety Consulting)





1.0 INTRODUCTION AND PURPOSE

The "Lot 335 & 780 Eighty Road, Lot 1001 Pike Road and a portion of Lot 601 Mandurah Road, Baldivis Structure Plan" (from here on in referred to as the 'Pike Road Structure Plan') has been prepared by CLE Town Planning + Design, on behalf of the Australand Property Group. The structure plan is lodged in accordance with Clause 4.2 of the City of Rockingham Town Planning Scheme No. 2, which requires a Structure Plan for 'Development' zoned land.

The Pike Road Structure Plan provides a statutory planning framework to guide future subdivision and development of the subject site.

1.1 Report Structure

The format of the Pike Road Structure Plan accords with the WAPC Structure Plan Preparation Guidelines (August 2012), and provides a framework for future subdivision and development for the site.

The Structure Plan consists of three parts:

Part 1: Statutory Section, which contains the Structure Plan Map and the statutory planning provisions and requirements that will facilitate the various initiatives described in the Explanatory Section. These provisions are given the force and effect of the Scheme, pursuant to Clause 4.2.9 of the City of Rockingham Town Planning Scheme No. 2.

Part 2: Explanatory Section, which discusses the key outcomes and planning implications of the background and technical reports, and describes the broad vision and more detailed planning framework which will be developed.

Technical Appendices, being the technical reports and supporting plans and maps as prepared by the project team.

Amendment 5 Addendum (April 2021)

This Part 2 report was originally prepared in support of the Pike Road Structure Plan, which was subsequently approved by the WAPC on 22 December 2014. Amendment 5 to the Pike Road Structure Plan (dated April 2021) has subsequently rationalised the residential density coding within the structure plan area by replacing selected pockets of RMD-R25 with RMD-R40. Amendment 5 also took the opportunity to realign two local access street to reflect current WAPC subdivision approval.

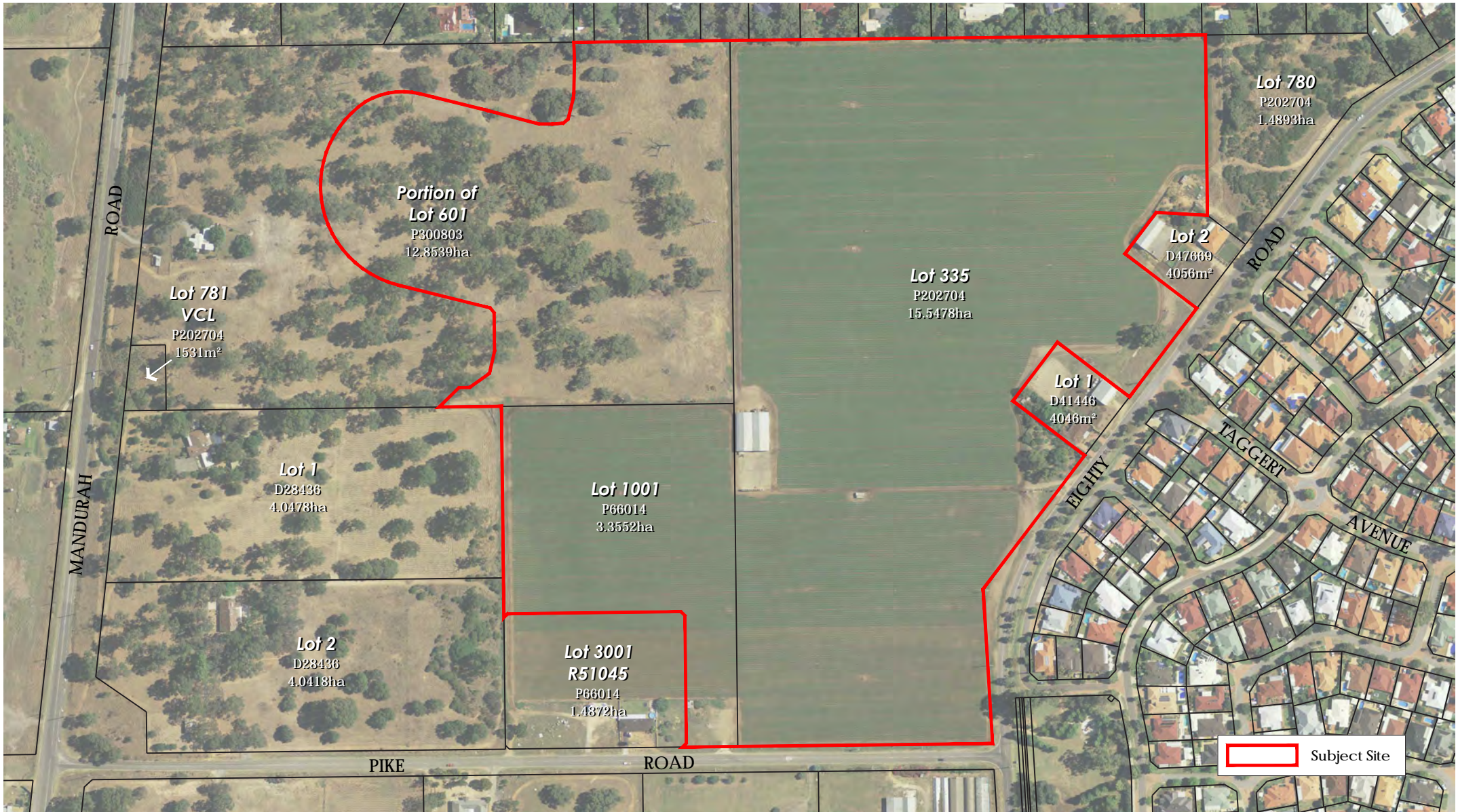
As a consequence, this (Part 2) Structure Plan Report has been updated to include the 'Amendment 5 Addendum', providing the explanatory information relating to Amendment 5. This Part 2 explanatory report should be read in its entirety including the 'Amendment 5 Addendum'.

1.2 Land Description

1.2.1 Location and Land Area

The land within the Pike Road Structure Plan is located at the intersection of Eighty Road and Pike Road, Baldivis, approximately 50 km south of the Perth CBD, 8 km south-east of the Rockingham town centre, 4 km east of the coast and 2 km west of the Kwinana Freeway.

The site has an area of approximately 25.2 hectares. A location plan is included at Figure 1.





1.2.2 Ownership and Title Details

The Pike Road Structure Plan comprises of three separate titles, being lot 335 Eighty Road, lot 1001 Pike Road and a portion of lot 601 Mandurah Road, Baldivis.

This land is legally described as follows:

Lot Number	Plan	Volume	Folio	Total Area*
335	202704	1394	676	15.5478ha
601	300803	1654	895	12.8539ha
1001	66014	2779	92	3.3552ha

**Areas sourced from Landgate*

It is important to note that only a 6.3ha portion of lot 601 is included in the Pike Road Structure Plan. The total area of the Structure Plan measures approximately 25.2 hectares, which includes a number of rural-lifestyle lots along the northern edge.

Australand Property Group has a controlling interest over all of the lots subject to the Pike Road Structure Plan.

1.2.3 Existing and Surrounding Land Use

Lots 335 and 1001 were used for market gardening, and are primarily cleared of all vegetation, while lot 601 is currently a rural-lifestyle lot. A number of agricultural sheds associated with the market gardening are situated on lot 335.

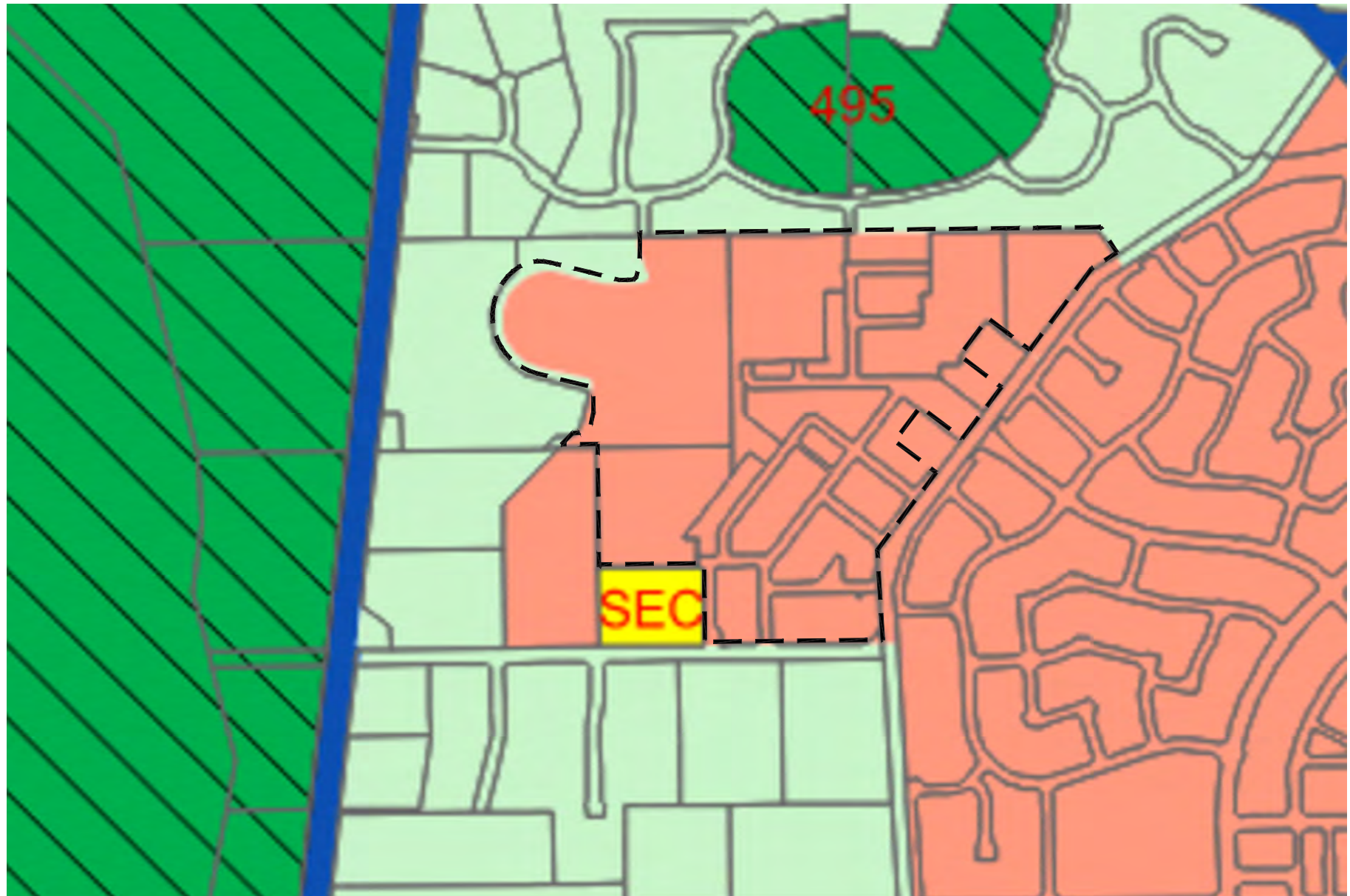
The structure plan area is partially bound by existing residential development, with larger lifestyle lots found to the north in Woodleigh Grove and the Settlers Hills residential estate situated due east on the opposite side of Eighty Road. Land to the south is used for small scale agricultural purposes, with Lake Walyungup located on the opposite side of Mandurah Road, which abuts the rural-lifestyle lots along the western side of the structure plan area.

Two additional dwellings are located along the structure plan's eastern boundary (lots 1 and 2 Eighty Road), fronting onto Eighty Road.

Lot 3001 which abuts the structure plan area is owned by Western Power and is the site of a future power sub-station.

The Pike Road Structure Plan site is shown at Figure 2.

- Legend**
-  Scheme boundary
 - Reserved lands**
 -  Parks and recreation
 -  Restricted public access
 -  Railways
 -  Port installations
 -  State forests
 -  Civic and cultural
 -  Waterways
 -  Water catchments
 -  Public purposes - denoted as follows:
 -  H Hospital
 -  HS High school
 -  TS Technical school
 -  CP Car park
 -  U University
 -  CG Commonwealth Government
 -  SEC State Energy Commission
 -  SU Special uses
 -  WSD Water Authority of WA
 -  P Prison
 - Reserved roads**
 -  Primary regional roads
 -  Other regional roads
 - Zones**
 -  Urban
 -  Urban deferred
 -  Central city area
 -  Industrial
 -  Special industrial
 -  Rural
 -  Rural - water protection
 -  Private recreation
 - Notice of delegation**
 -  (Site No) Bush forever area
 - Redevelopment schemes**
 -  Redevelopment scheme/act area
 -  Subject Area



Source: WAPC





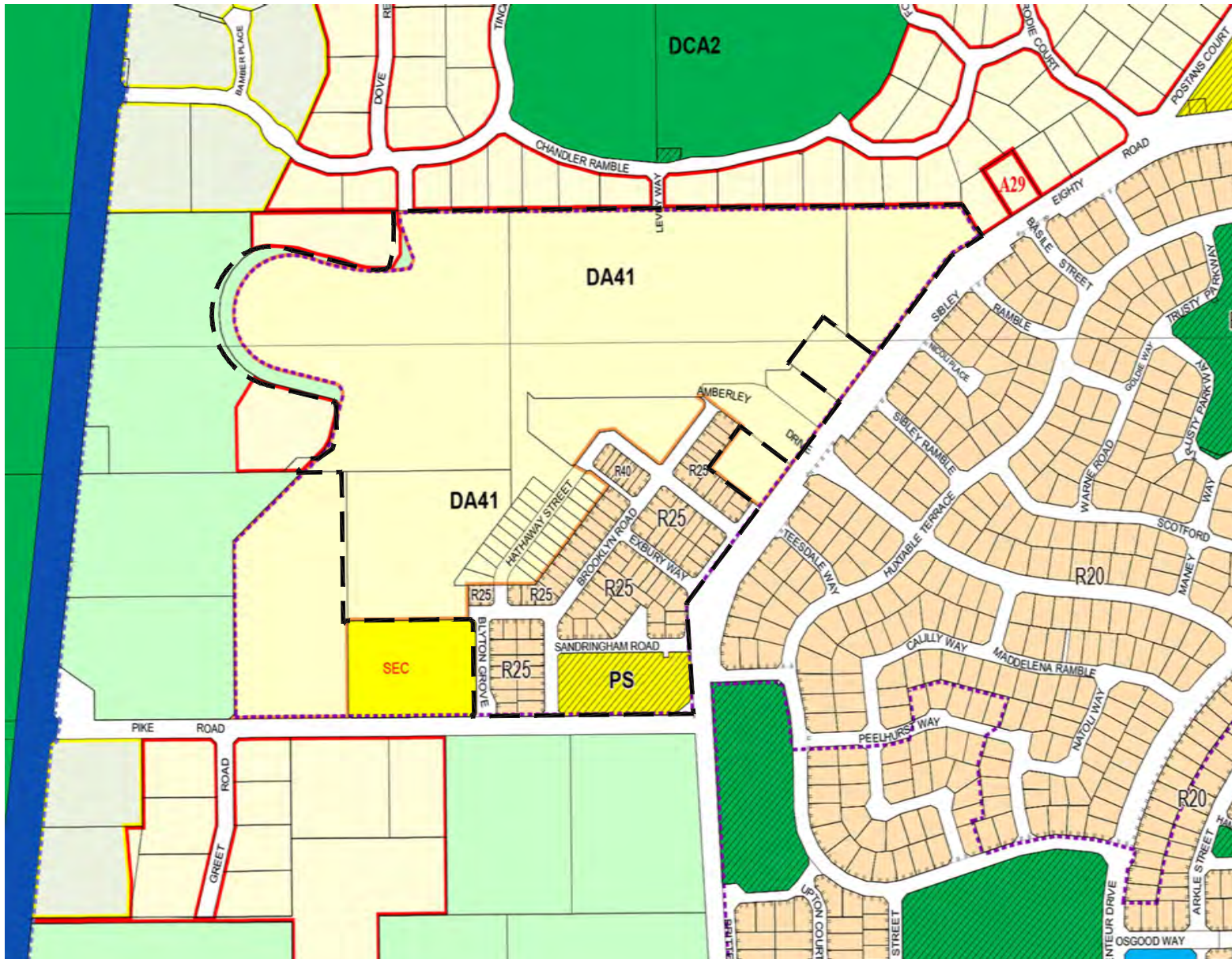
1.3 Planning Framework

1.3.1 MRS Zoning

The structure plan area is zoned 'Urban' under the Metropolitan Region Scheme.

The subject land is bound by 'Rural' zoned land to the north, south and west, with 'Urban' zoned land situated due east. A 'Public Purpose' reserve (State Energy Commission) is adjacent to the north-eastern corner of the site.

The MRS zoning for the area is shown at Figure 3.



Source: DPLH

LEGEND

Structure Plan Area

REGION SCHEME RESERVES (MRS)

	Civic and Cultural		Public Purposes
	Other Regional Roads		Public Purposes - Car Park
	Parks and Recreation		Public Purposes - Commonwealth Government
	Parks and Recreation - restricted		Public Purposes - High School
	Port Installations		Public Purposes - Hospital
	Primary Regional Roads		Public Purposes - Prison
	Railways		Public Purposes - Special Uses
	State Forests		Public Purposes - State Energy Commission
	Waterways		Public Purposes - Technical School
	Water Catchments		Public Purposes - University
			Public Purposes - Water Authority of WA

LOCAL SCHEME RESERVES

	Civic and Cultural		Public Open Space
	Civic and Cultural : Community Buildings		Public purposes
	Civic and Cultural : Family Centre		Public Purposes : Cemetery
	Civic and Cultural : Hall		Public Purposes : Drain
	Civic and Cultural : Infant Health Clinic		Public Purposes : Primary School
	Civic and Cultural : Kindergarten		Public Purposes : Telecom
	Civic and Cultural : Library		Public Purposes : Water Corporation
	Local Roads		

LOCAL SCHEME ZONES

	Commercial		General Industry
	Community purposes		Light Industry
	Community Purposes : Aged Persons Accommodations		Port Kennedy Business Enterprise
	Community Purposes : Child Minding Centre		Primary Centre Campus
	Community Purposes : Church		Primary Centre City Centre
	Community Purposes : Fire Station		Primary Centre City Living
	Community Purposes : Historical Site		Primary Centre Urban Living
	Community Purposes : Hospital		Primary Centre Urban Village
	Community Purposes : Nursing Home		Primary Centre Waterford Village
	Community Purposes : Nursing Home/Aged Persons Accommodation		Residential
	Community Purposes : Primary School		Rural
	Community Purposes : Primary School/High School		Service Commercial
	Community Purposes : Religious Institutions		Special Commercial
	Community Purposes : Special Use		Special Industry
	Community Purposes : Youth Camp		Special Residential
	Development		Special Rural
	District Town Centre		Special Use

OTHER CATEGORIES

	Scheme Area Boundary		Development Area
	Local Government Boundary		Development Contribution Area No.1
	R20 R-Codes		Development Contribution Area No.2
	A1 Additional Uses		Environmental Conditions
	S1 Special Use Area		Primary Centre Boundary





1.3.2 City of Rockingham Town Planning Scheme No. 2

The structure plan area is zoned 'Development' (Development Area 41) under the City of Rockingham Town Planning Scheme No. 2, with a publication in the Government Gazette notifying of the rezoning of the land from 'Rural' on 7 February 2014.

In accordance with Clause 4.2.3 of the Scheme, the purpose of the 'Development' zone is:

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

This Structure Plan is lodged pursuant to Clause 4.2.4, where a structure plan is required prior to subdivision or development within the 'Development' zone.

1.3.3 Directions 2031 and Beyond (August 2010)

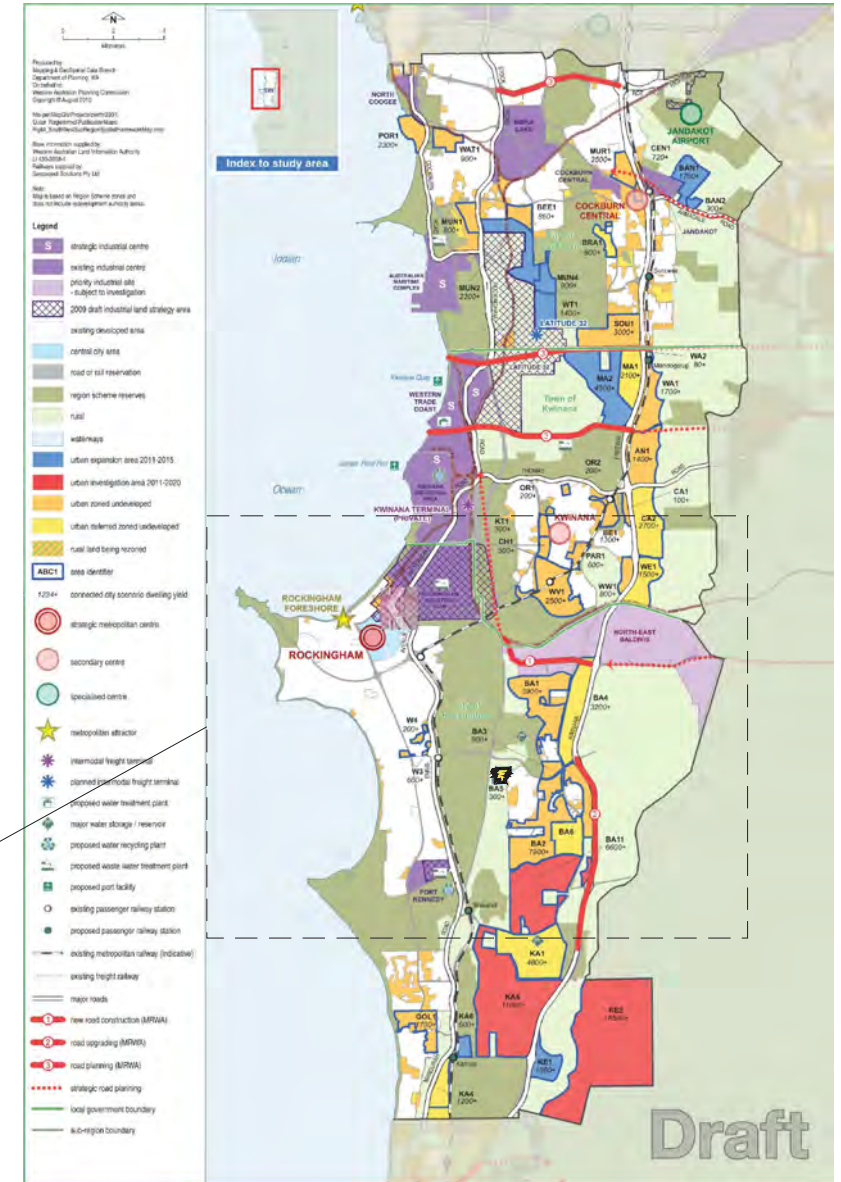
Directions 2031 and Beyond is the regional spatial framework and strategic plan that establishes a vision for the future growth of the Perth Metropolitan Region for the delivery of housing, infrastructure and essential services.

Directions 2031 includes the structure plan area within the South-West Sub Region, with this Region identified as experiencing considerable economic and population growth, with population expected to grow by 34% (278,000 people) by the year 2031.

Within the Sub Region the subject land is identified as 'Future Urban Development'. Directions 2031 is supported at a sub-regional level by the draft Outer Metropolitan Perth and Peel Sub-Regional Strategy.



Source: Outer Metropolitan Perth & Peel Sub Regional Strategy



DRAFT OUTER METROPOLITAN SUB-REGIONAL STRATEGY (2010) - SOUTH WEST REGION



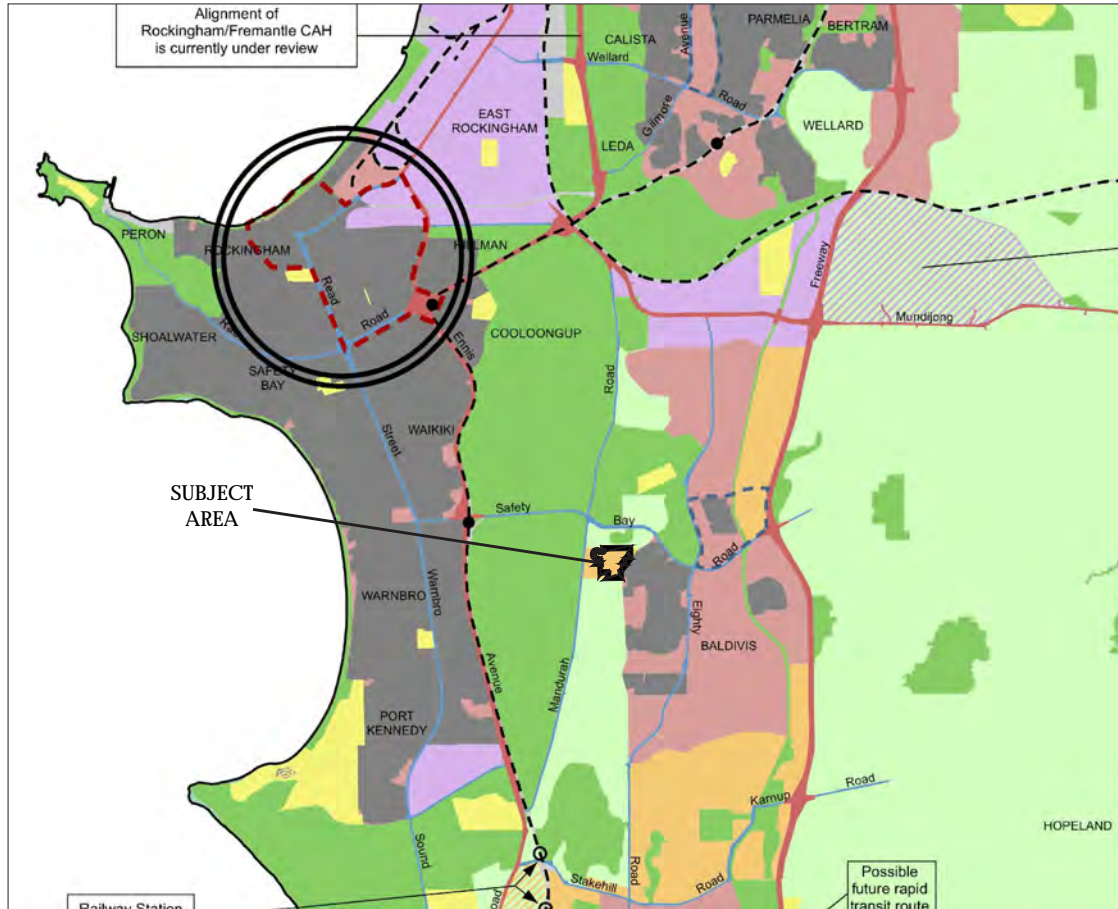


1.3.4 Draft Outer Metropolitan Perth and Peel Sub-Regional Strategy (2010)

The draft Outer Metropolitan Perth and Peel Sub-Regional Strategy (the Sub-Regional Strategy) provides additional information about the level of expected population growth and highlights development opportunities throughout the metropolitan area and Peel region.

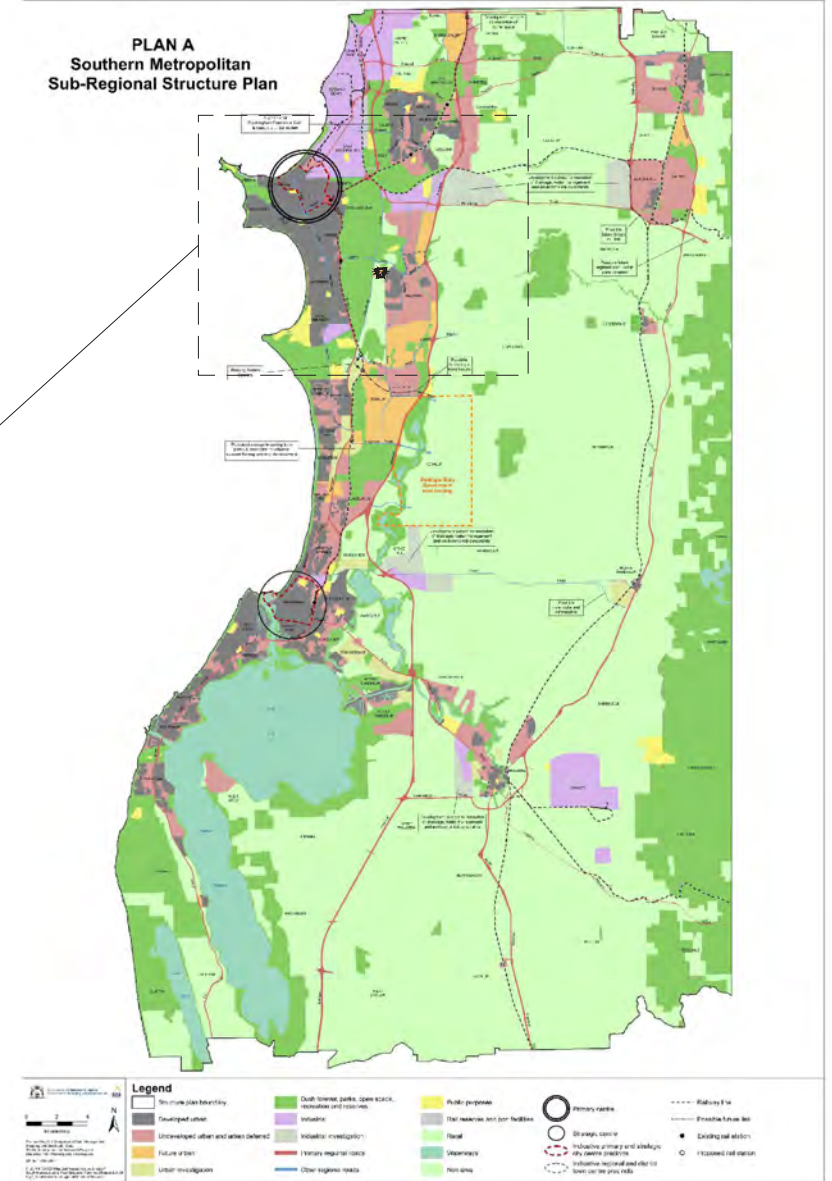
The structure plan area is located in the south-west sub-region, with the Sub-Regional Strategy identifying 99,260 dwellings being provided through greenfield development in the south-west sub-region. The Sub-Regional Strategy has the structure plan area as providing an estimated 300+ dwellings, with the current proposed plan exceeding this estimated target.

A copy of the Sub-Regional Strategy (South-West Region) is included at Figure 5.



Source: Department for Planning & Infrastructure

PLAN A
Southern Metropolitan
Sub-Regional Structure Plan



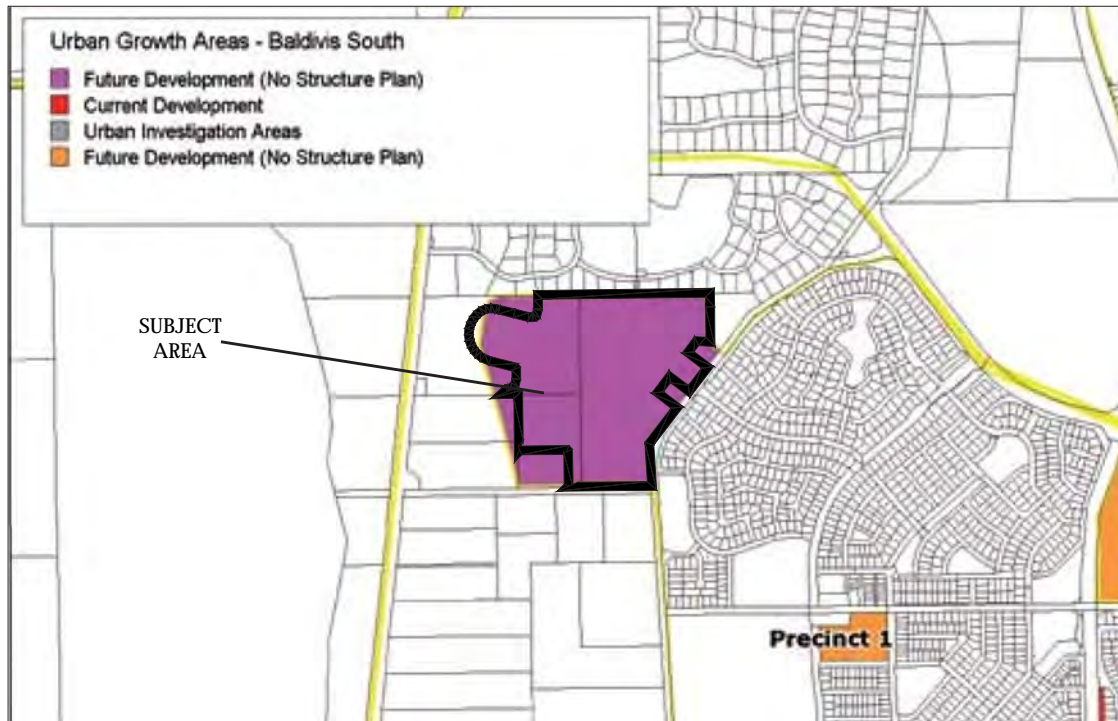


1.3.5 Southern Metropolitan Sub-Regional Structure Plan (2009)

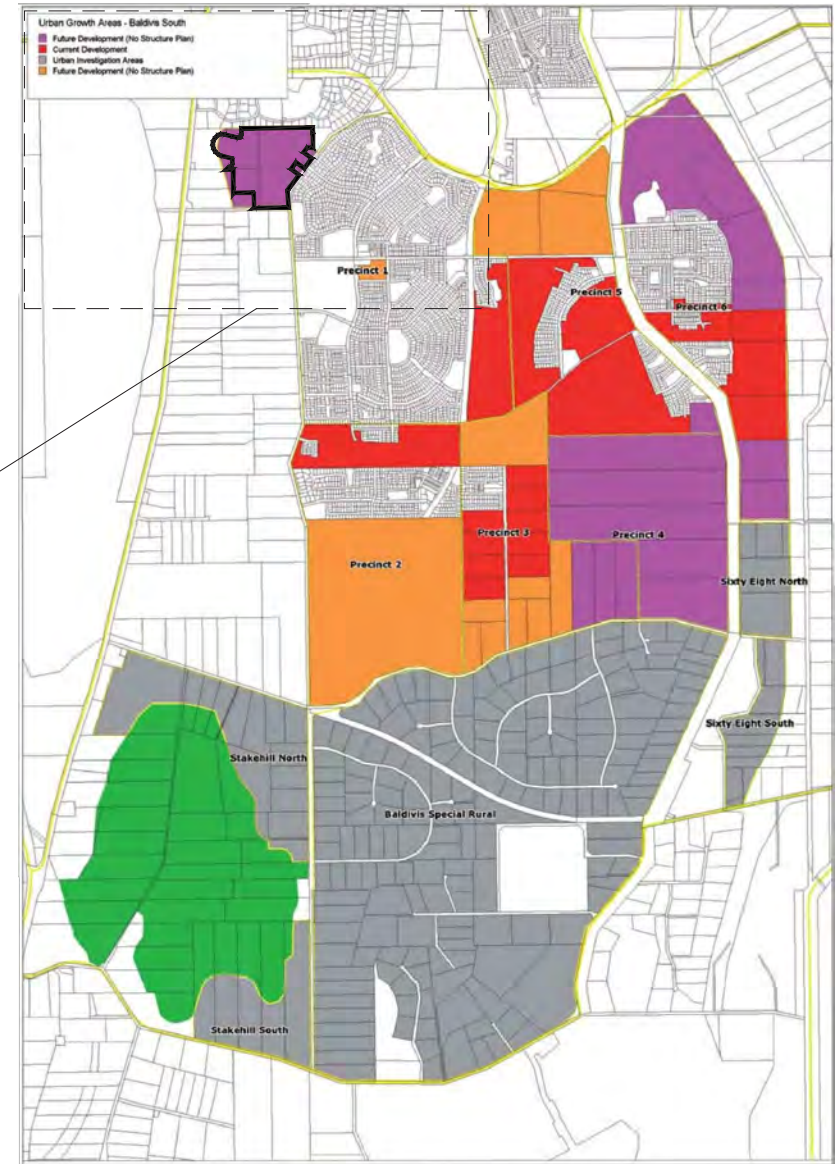
The Southern Metropolitan Sub-Regional Structure Plan (the Sub-Regional Structure Plan) was prepared by the WAPC and released for public comment in June 2009, and is a strategic document that will guide the planning and growth of land within the southern metropolitan and Peel regions.

The structure plan area has been identified as being suitable for urban development, being shown as 'Future Urban' under the Sub-Regional Structure Plan. A copy of the Sub-Regional Structure Plan is shown at Figure 6.

It is anticipated that the modified Sub-Regional Structure Plan will be released early-mid 2014.



Source: City of Rockingham



CITY OF ROCKINGHAM URBAN GROWTH PROGRAMME (2009)





1.3.6 City of Rockingham Urban Growth Programme (2009)

The City of Rockingham Urban Growth Programme was prepared to assist Council in understanding the likely pattern of urban growth within the City of Rockingham, and considered existing population and dwelling statistics, existing structure plans and forecast future urban growth patterns.

The Programme provides the City with a summary of expected urban development areas; to help guide Council in its decision making processes.

The Pike Road Structure Plan falls within Precinct 1 of South Baldivis. It identifies this area as being for 'future development' but with no structure plan in place. The Programme suggests that development of the structure plan area has the capacity to accommodate approximately 345 dwellings.

The Pike Road Structure Plan represents the fulfilment of the expected urban growth within Baldivis South, as projected by the Programme. The South Baldivis locality of the Urban Growth Programme is shown at Figure 7.



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1.4 Context Analysis

The Pike Road Structure Plan represents the last parcel of (undeveloped) land identified for urban development within the West Baldivis locality.

Interfacing against existing rural-lifestyle land to the south and west, and nestled behind a significant and naturally landscaped ridgeline, the Structure Plan provides an excellent opportunity to consolidate this last portion of urban land in a manner that appropriately interfaces with the adjacent rural landscape, while ensuring that land use and infrastructure planning is integrated and coordinated.

The site has access to both Eighty Road and Pike Road, providing connections in both north-south and east-west directions, giving convenient access to a range of retail, commercial and community facilities, employment nodes and public transport. The Kwinana Freeway is readily accessed via the Safety Bay Road interchange to the north. Pike Road connects directly to Mandurah Road to the west, allowing for easy access to the Rockingham and Mandurah Strategic Metropolitan Centres.

The Structure Plan area is located in close proximity to a number of existing activity centres and employment nodes. The Rockingham and Mandurah Strategic Metropolitan Centres are easily accessible, and offer employment opportunities and access to retail, commercial and community services. Likewise the Baldivis District Shopping Centre on Safety Bay Road is only located some 2km from the structure plan area with a small local centre situated on Osgood Way in Settlers Hills (Baldivis), providing a more local level of amenity.

The area is serviced by a number of existing and proposed educational establishments, and the structure plan will create an early childhood centre which will accommodate children ranging from KP through to K3. Adjacent Settlers Hills includes an existing primary school, with a second school planned as part of the nearby Parkland Heights development. An existing private K-12 school (Tranby College) is also located in Settlers Hills.

The Pike Road Structure Plan is bound by Lake Walyungup and rural landscaped land to the west, with the Tamworth Wetlands to the north; offering an important recreational opportunity for future residents in addition to a number of local and neighbourhood open spaces which exist in neighbouring Settlers Hills.

The area can be provided with all essential infrastructure for all future development proposed by the Structure Plan. An Engineering Servicing Review prepared by JDSi Consulting Engineers demonstrates that these services can be provided in a timely and integrated manner.

In effect the Pike Road Structure Plan represents a logical extension to the existing urban development front at Settlers Hills.





2.0 SITE CONDITIONS AND CONSTRAINTS

2.1 Biodiversity and Natural Area Assets

The Pike Road Structure Plan area is relatively unconstrained and the environmental factors affecting the land, including groundwater, drainage, contamination and bushfire management can be adequately managed via standard practices.

An Environmental Assessment Report has been undertaken for the Structure Plan area by 360 Environmental and is included in full as Appendix 1. The EAR concluded that:

- Native vegetation across the structure plan area is limited to the western portion of the site, beyond the area used for market gardening, and consists primarily of parkland cleared overstorey. There are a number of mature trees across the site, however, understorey is limited.
- There are no known Priority Flora of Threatened or Priority Ecological Communities within the structure plan area.
- The structure plan area does fall within the mapped buffer of a critically endangered Threatened and Priority Ecological Community (TEC/PEC), and an Environmentally Sensitive Area (ESA) associated with Lake Walyungup, however, with the site having been cleared for market gardening it is highly unlikely the TEC or PEC will be within the subject area or that future development will affect the ESA.

- There are no wetlands on the site.
- The Department of Parks and Wildlife dataset shows that there are no occurrences of conservation significant flora and only one record of a Priority 4 bird within the site boundary.

Australand has referred the remnant vegetation on lot 601 to the Department of the Environment (DotE), formerly known as the Commonwealth Department of Sustainability, Environment, Water, Population and Communities, on the basis of the Priority 4 bird species recorded onsite. DotE has formally confirmed that the project was a 'non-controlled' action in June 2012, with a copy of the referral and the response included as an appendix to the 360 Environmental Report. The remnant native vegetation that is to be retained has been identified by the Landscape Masterplan contained in Appendix 3.

2.2 Landform and Geology

Landform varies from a height of approximately 18m AHD in the west, grading downwards to a small depression in between two ridges, ranging from approximately 5 to 10 metres AHD. This eastern depression generally coincides with the market garden. The landform and geology within the structure plan area does not constrain development within the structure plan area, with the earthworks design to respect the general landform and fall of the site. The landform of the structure plan area can be seen at Figure 8: Landform.



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Preliminary investigations undertaken by GALT Geotechnics shows that the bedrock geology is part of the Warnbro geology group, which overlie shoreline and coastal eolian deposits. The structure plan area is characterised as having pale brown to yellow, deep sands, with the potential for some localised limestone and sandy clay in the western portion and south-eastern corner of the site respectively.

2.2.1 Acid Sulphate Soils

The structure plan area does not fall within any identified areas of Acid Sulphate Soils (ASS) risk. Nevertheless, due to the wetlands located to the north, south and west the site has been mapped by the DEC as having the potential for ASS, warranting the need for an ASS assessment to determine the need for any treatment and management.

2.2.2 Contamination

The structure plan area is not located within any DER listed contamination site; however, market gardens are generally identified as a potentially contaminating land use.

360 Environmental completed a Groundwater Monitoring Program (September 2010 – August 2012), which found some contaminant levels that exceeded recommended DEC criteria. Following the completion of the market gardening activities, a contaminated sites investigation will be undertaken to determine the nature and extent of contamination (if any) at the site.

2.3 Hydrology

The management of ground and surface water is comprehensively addressed within the Local Water Management Strategy (LWMS), prepared by 360 Environmental in support of the structure plan, and demonstrates that this is not a constraint to development. The LWMS was prepared in accordance with a District Water Management Strategy (DWMS) which was approved for the site by the Department of Water in February 2013.

The existing hydrological conditions of the structure plan area are summarised below, while the key principles of the LWMS are discussed further in section 3.3 of this report.

360 Environmental undertook a Groundwater Monitoring Program between September 2010 and August 2012; with six monthly testing on five monitoring bores having occurred during that time period.

360 Environmental found that groundwater across the eastern portion of structure plan area recorded levels of between 2.8m and 5.27m below the ground level across the site from east to west respectively. The groundwater level in the western most portion of the structure plan area was not recorded due to the significantly higher elevation of this land when compared to the eastern side. This depth to the groundwater indicates that there is no impediment to the development of the site.

There are no natural surface water features identified within the structure plan area, with the yellow sands being found to be well suited to infiltration drainage.



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2.4 Fire Management

In accordance with the WAPC's Planning for Bushfire Protection Guidelines, a Fire Management Plan (FMP) has been prepared by Bushfire Safety Consulting, and is included as Appendix 2.

The FMP summarises that bushfire risk is not a constraint to development of the structure plan area, and any risks can be managed through the implementation of appropriate building protection zones and requiring minimum construction standards (Building Attack Level) for those dwellings identified as being within proximity to an identified risk.

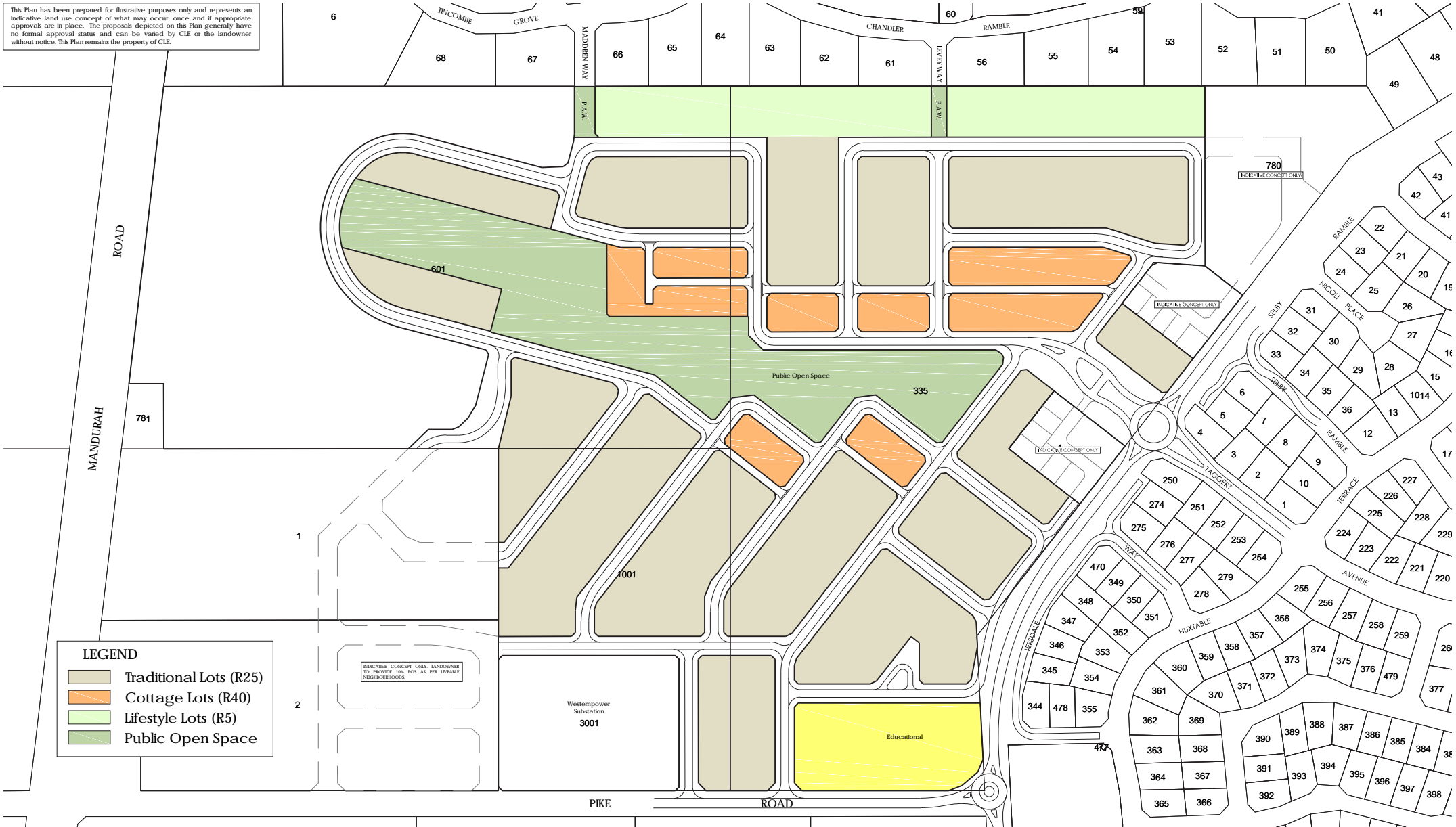
In response to the FMP, the structure plan ensures that adequate separation is provided between the rural zoned land to the west, and the future urban area by way of an access road interface. The combination of this access road and mandatory building setbacks will provide the building protection zones identified in the FMP. Any dwelling that is to be erected within 100m of a bushfire risk identified by the FMP will need to comply with the requirements of Australian Standard 3959-2009 under the Building Code of Australia.

The FMP will be refined at the time of subdivision to identify the appropriate BAL standard for any lot within 100m of an identified bushfire risk.

2.5 Heritage

The Department of Indigenous Affairs Sites Database lists no registered Aboriginal heritage sites within the structure plan area. There are no listed European sites of heritage significance located in the structure plan area.

This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.



INDICATIVE CONCEPT ONLY. LANDOWNER TO PROVIDE 60% PCS AS PER LIVEABLE NEIGHBOURHOODS.

LEGEND

- Traditional Lots (R25)
- Cottage Lots (R40)
- Lifestyle Lots (R5)
- Public Open Space

DEVELOPMENT CONCEPT PLAN





3.0 LOCAL STRUCTURE PLAN

3.1 Plan Overview and Land Use

The Pike Road Local Structure Plan establishes the planning framework for a robust and environmentally responsive residential development respecting the rural and natural amenity of its surrounds, and forming an integrated community within Baldivis.

The Development Concept Plan, shown at figure 9, demonstrates how the development could take place, based on the structure plan principles and requirements. It is important to note that this Development Concept Plan represents only one manner in which development could occur, and which will be refined further at the time of subdivision.

The key principles of the Pike Road Structure Plan are to:

- Enable the creation of a diverse range of high quality housing choices that will appeal to a broad range of the market.
- Provide a robust urban form that responds to the site's local context and the location within the wider Baldivis locality.
- Recognise the natural amenity and landform of the site through appropriate management and the retention of existing vegetation within well planned open space.
- Provide an accessible, attractive and multi-functional central spine of public open space that addresses drainage requirements as well as offering a range of active and passive recreational opportunities.

- Extend the necessary services and infrastructure in a timely and coordinated manner, to support the future development.

Based on these key principles, the Pike Road Structure Plan provides the framework for:

- Approximately 360 dwellings across the structure plan area, with residential densities ranging from R5 to R40. Higher densities are focused around key access roads and areas of high local amenity
- A number of rural-lifestyle properties with a transitional density of R5 providing an appropriate interface with the rural land to the west and Woodleigh Grove to the north, as agreed with the City of Rockingham as part of the lifting of Urban Deferred.
- A centrally located linear public open space of approximately 3.1 hectares, that meets recreational and drainage objectives, while retaining key areas of existing vegetation and natural landform. This public open space exceeds the required minimum of 10% public open space.
- An Early Childhood Centre site, sized and located in accordance with the Department of Education requirements.
- A permeable network of access roads that are responsive to the existing road networks surrounding the structure plan area, while providing opportunities for future public transport, cyclist and pedestrian system.



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- A landscaping strategy that guides the development of the centrally located public open space, as well as providing an integrated drainage response.
- A preliminary earthworks strategy that recognises the significant landform of the site.

The Structure Plan Map and the Development Concept Plan both show indicative designs over lots 1, 2 and 780 Eighty Road and lots 1 and 2 Mandurah Road. They demonstrate one manner in which development could be undertaken in an integrated manner. However, it is important to note that these lots do not comprise part of the structure plan area, and will be subject to future planning by others.

A Land Use Schedule is included as Table 1, which describes the allocation of land area, and should be read in conjunction with the Development Concept Plan (figure 9), and the Public Open Space Schedule, shown as Table 2.

3.2 Residential

3.2.1 Housing Principles

The Pike Road Structure Plan provides the framework for the delivery of a diverse range of lot types and housing typologies, achieving residential density targets specified under State policy.

The delivery of quality housing that responds to the landform of the site is a key objective of the structure plan, with there being opportunities for the proponent to build out pockets of housing to deliver this range of housing type.

The following provides a brief description of the envisaged housing typologies that may be delivered within the structure plan area.





RURAL-LIFESTYLE HOMESTEAD LOTS

TYPICAL FRONTAGE	50m
TYPICAL DEPTH	40m
MINIMUM LOT AREA	2000m ²
VEHICLE ACCESS	Primary or Secondary Street
RESIDENTIAL DENSITY CODE	R5
DEVELOPMENT CONTROL	Residential Design Codes Detailed Area Plans
BUILT FORM DELIVERY	Single dwellings Typically sold as land only Generally single storey, potential for two storey development
LOCAL CONTEXT	Rural interface





FAMILY HOUSING LOTS

TYPICAL FRONTAGE	15m - 17m
TYPICAL DEPTH	30m
MINIMUM LOT AREA	450m ² to 510m ²
VEHICLE ACCESS	Primary or Secondary Street
RESIDENTIAL DENSITY CODE	R25
DEVELOPMENT CONTROL	Residential Design Codes
BUILT FORM DELIVERY	Single dwellings Typically sold as land only, but opportunity for developer build outs Generally single storey, potential for two storey development
LOCAL CONTEXT	Suburban character





CONTEMPORARY FRONT LOADED COTTAGE LOTS

TYPICAL FRONTAGE	10m – 13m
TYPICAL DEPTH	25m to 30m
MINIMUM LOT AREA	250m ² to 390m ²
VEHICLE ACCESS	Primary or Secondary Street
RESIDENTIAL DENSITY CODE	R25, R30, R40
DEVELOPMENT CONTROL	Residential Design Codes
BUILT FORM DELIVERY	Single and grouped dwellings Typically sold as land only, but opportunity for developer build outs Generally single storey
LOCAL CONTEXT	Suburban character, mixed with larger lots Opportunities to 'step down' sloping sites





REAR LOADED COTTAGE LOTS

TYPICAL FRONTAGE	7.5m
TYPICAL DEPTH	30m
MINIMUM LOT AREA	225m ²
VEHICLE ACCESS	Rear laneway
RESIDENTIAL DENSITY CODE	R40
DEVELOPMENT CONTROL	Residential Design Codes
BUILT FORM DELIVERY	Single and grouped dwellings Lots typically built out and sold as finished house and land package Generally single storey Opportunities for terraced housing adjacent to POS Opportunities for innovative housing design
LOCAL CONTEXT	High amenity areas and higher order roads Limited opportunities in areas subject to significant slope



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3.2.2 Yield Estimates

The Pike Road Structure Plan will deliver a range of densities, housing types and tenures to facilitate residential yields that accord with the strategic and statutory planning framework, as well as recognising the site's context in the broader district.

The Structure Plan has the potential to deliver approximately 340-360 dwellings at densities ranging from R5 to R40 based on the following principles:

- The majority of the site has a density code of R25, providing opportunities to deliver traditional front loaded lots ranging in size from approximately 350m² to 600m².
- Larger rural-lifestyle lots located along the northern boundary of the site, coded R5, ensuring a suitable transition of the rural-lifestyle land to the north, with lot areas to be a minimum of 2000m²; following the intended zoning of this land as 'Special Rural' under the recent zoning to the MRS.
- Medium density R40 coded lots located through the structure plan area in proximity to the central public open space, with this coding to deliver contemporary cottage style housing with rear laneway access. Single house lot sizes will generally be approximately 225m².

Directions 2031 and Beyond recommends a housing density target of 15 dwellings per gross urban zoned hectare. The intent of this density target is to encourage more efficient use of infrastructure and housing; however, it is important that the application of this target be considered in the context of specific site constraints.

The Pike Road Structure Plan recognises the need to deliver specific densities, and balances this with the recognition of a number of contextual and site specific constraints.

- The requirement to provide a transition of rural-lifestyle (minimum lot area of 2000m²) properties along the northern edge, to transition between the similar land use to the north;
- Bushfire Building Protection Zone setbacks;
- Retention of the landform and significant trees along the western portion of the structure plan area; and
- The need to accommodate an Early Childhood Centre which is proportionally more difficult to absorb given the small footprint of the structure plan area.

In addition, with the Pike Road Structure Plan interfacing onto rural land to the south and west, there is no provision of any activity centres, rail stations or employment generators which warrant the inclusion of higher residential densities.

Based on the above criteria, the Pike Road Structure plan has the potential to achieve 15.4 dwellings per gross urban zoned hectare, meeting Directions 2031 target of 15. The Structure Plan also delivers approximately 24 dwellings per site hectare across the structure plan area. This meets the Liveable Neighbourhoods requirement of an average of 22 dwellings per site hectare (being the pure residential area, excluding open space, roads and other non-residential uses).



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3.2.3 Development Requirements

Detailed Area Plans (DAPs) will be required for a number of lot types within the Pike Road Structure Plan, as these lot types need specific development requirements to deliver a suitable built form response to their site context.

These DAPs will be required as a condition of subdivision approval, to be approved by the City of Rockingham in accordance with section 4.23 of Town Planning Scheme No. 2.

The lot typologies that will require DAPs are as follows:

- R5 Rural Lifestyle Lots
- Lots with rear loaded vehicle access
- Lots abutting areas of Public Open Space
- Lots affected by an approved Bushfire Management Plan

The following outlines the key provisions that are to be addressed in these DAPs, with a brief explanation of their application.

R5 Rural Lifestyle Lots

The R5 rural lifestyle properties of the Pike Road Structure Plan provide a transitional interface with the rural land to the north in Woodleigh Grove.

To ensure a successful transition between Woodleigh Grove and the structure plan area, the rear of the R5 rural lifestyle lots (in the Pike Road Structure Plan area) are to be developed to a more 'rural' standard. This will include the need to provide open rural style fencing to the rear and side boundaries of these properties, and to establish a minimum rear setback of 20m; reinforcing the rural setting and allowing for the retention of any significant vegetation. This rear setback will also form part of a building protection zone in accordance with the Fire Management Plan provided in Appendix 2.

While the rear of the R5 rural lifestyle lots are to be a more rural setting, the front of the lots as they face back into the structure plan area are urban in nature. A reduction in the front setback distance to 4m will be permitted to allow for the provision of the 20m rear setback to Woodleigh Grove.

Lots with rear loaded vehicle access

DAPs will be prepared for all residential lots with rear (vehicle) laneway access, to allow the built form to respond to this lot typology.

This will include mandating vehicle access to be solely from the (rear) laneway and prescribing a 1m rear setback to the garage, ensuring adequate space for vehicle manoeuvring (including City rubbish truck movements). There will need to be consideration made in the design for bin pads for a small number of laneway lots in which rubbish truck movements will not allow direct pickup at the lot. These bin pads will be identified on the DAPs.



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Lots abutting areas of Public Open Space

Typically the interface to public open space will be via roads; however, in some instances direct lot frontage is appropriate as it provides increased surveillance, activity and diversity to public spaces. Liveable Neighbourhoods and the City's Planning Policy 3.4.1 (Public Open Space) support residential lots directly abutting open space, where the useability of the POS is not compromised and where the dwelling appropriately addresses the open space providing adequate visual surveillance.

To ensure these public open spaces are not compromised subsequent subdivision design and engineering detail will ensure that visitor parking opportunities are provided along adjacent streets, and the adjacent residential lots are elevated a minimum of 500mm above the POS ground level to create a visible separation between the private and public realm. Furthermore, footpaths within the POS will then be used to create a pedestrian interface, facilitating activity and surveillance within this public space.

It is also critical to ensure the adjoining dwellings address and add value and safety to the open space in accordance with the City's Policy. This will include enforcement (via DAPs) of appropriate setbacks and major openings facing the open space with any form of blank or boundary wall explicitly prohibited to this interface, ensuring the dwelling design increases rather than undermines the amenity of the interface. In conjunction with these dwelling design elements, the mandatory use of open style fencing along the shared boundary with the POS will maximise the surveillance of the space.

Where lots interface with open space DAPs will need to be prepared to ensure the appropriate built form outcome. These DAPs will address:

- minimum setbacks to the public open space.
- mandating major openings (other than bedrooms) to address the space.
- provision of permeable fencing only to ensure constant surveillance.

These design solutions, both in terms of the physical interface (that is those implemented by the developer) between the lots and the POS and mandatory dwelling design elements, will improve the usability and quality of the public space. This POS will be provided with increased surveillance, additional activity and a diversity, in turn improving the quality and amenity of the open space for both users of the open space and residents. This approach has been implemented across a number of local authorities and has been widely accepted by the building industry, local authorities and the WAPC.

Lots affected by an approved Bushfire Management Plan

DAPs will be prepared for lots identified at risk of bushfire attack by the Bushfire Management Plan in Appendix 2 of this structure plan. These DAPs will ensure that landowners will be notified of the property being affected by bushfire risk, and that subsequent dwellings will be constructed to an appropriate Building Attack Level (BAL). Mandatory boundary setbacks can also form part of any required building protection zone (if applicable).



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3.3 Public Open Space

3.3.1 Public Open Space Provision and Schedules

There is a total of approximately 3.11 hectares of open space in the Pike Road Structure Plan, provided by way of a centrally located multi-purposed space. Once credits are applied, a total of 11.3% public open space is provided, exceeding the minimum 10% requirement of Liveable Neighbourhoods as shown in Table 1 (Land Use Schedule) and Table 2 (POS Schedule). The Early Childhood Centre site and the rural-lifestyle lots have all be considered as deductions from the gross site area.

A Landscape Masterplan has been prepared by Emerge Associates as part of the Structure Plan, providing more detail to the planned landscaped response for this central area of public open space. This Landscape Masterplan can be found in its entirety at Appendix 3.

The following summarises the key aspects of the public open space provisions based on Liveable Neighbourhoods requirements, with a more detailed description of the public open space detailed in section 3.1.3.

- The Structure Plan provides 3.11 hectares of centrally located public open space, which serves a shared drainage function, while not compromising the active and passive recreational uses.
- Approximately 0.65 hectares of the open space will receive drainage for events occurring more frequently than the 1 in 1 year (1 hour) event, with this area being taken as a deduction from the Nett Site Area in accordance with Liveable Neighbourhoods (LN33).
- Based on the requirements of Liveable Neighbourhoods, a maximum of 0.43 hectares can be restricted use open space and a minimum of 1.74 hectares of unrestricted open space.
- In accordance with water sensitive urban design principles, only approximately 0.11 hectares (approximately 4% of the total POS contribution) of open space will receive drainage from the 1 in 1 year to the 1 in 5 year event; in a vegetated basin and bio-retention area located to the eastern portion of the open space. The 1 in 5 year event drainage is taken as restricted use open space in accordance with Liveable Neighbourhoods.
- In accordance with the City of Rockingham Planning Policy 3.4.1 (Public Open Space), the area that is affected by stormwater from the 1 in 10 year event is limited to 25% of the total public open space area



TABLE 1: PIKE ROAD LOCAL STRUCTURE PLAN LAND USE SCHEDULE
(Based on 2300-58D-01; March 2014)

Gross Site Area¹			23.34ha
Less			
Early Childhood Centre	0.98ha		
Total		0.98ha	
Net Site Area			22.36ha
Deductions²			
Total drainage area up to the 1:1 year event	0.65ha		
Total		0.65ha	
Gross Subdivisible Area			21.71ha
Public Open Space @ 10%		2.17ha	
Public Open Space Contribution			
Minimum 80% unrestricted POS	1.74ha		
Maximum 20% restricted POS able to be credited	0.43ha		
Unrestricted Open Space²			
Central Open Space	2.34ha		
Total Unrestricted Use		2.34ha	
Restricted Open Space²			
Drainage area between 1:1 and 1:5 year events not exceeds 20% of total open space area	0.11ha		
Total Restricted Use Open Space		0.11ha	
Summary			
Minimum Unrestricted POS Required	1.74ha		
Unrestricted Open Space Provided	2.34ha		
Maximum Restricted Open Space Permitted	0.43ha		
Restricted Open Space Provided	0.11ha		
Total Unrestricted & Restricted Public Open Space Provision			2.45ha
Total Public Open Space Provisions as a % of Gross Subdivisible Area			11.3%

REFER ADDENDUM 6
UPDATED SCHEDULE

Notes:

1. The gross site area comprises the total area of lot 335, 1001 and the portion of lot 601 zoned 'Urban' under the MRS, it excludes the R5 rural-lifestyle lots.
2. In accordance with Liveable Neighbourhoods: the area subject to inundation more frequently than a one year average recurrence interval rainfall event is not included as restricted or unrestricted open space and is a deduction from the net site area (LN R33); areas for the detention of stormwater for a greater than one year average recurrence interval up to the five year recurrence interval is restricted open space up to 20%, the area greater than 20% is a deduction (not applicable in this case) (LN R26 & Table 11); areas for the detention of stormwater for a greater than five year average recurrence interval is within unrestricted open space (LN R25).



3.3.2 Water Management

The Structure Plan adopts best practice urban water management principles through the integration of stormwater detention and infiltration into public open space, creating multi-purpose areas without compromising the amenity or functionality.

In accordance with the WAPC's Better Urban Water Management Guidelines, 360 Environmental has prepared a Local Water Management Strategy (LWMS) for the structure plan area, with a copy of this LWMS provided as Appendix 4.

The LWMS is a strategy for the management of groundwater quality and stormwater runoff, and follows the District Water Management Strategy (DWMS) that has been prepared for the site and approved by the Department of Water in February 2013. The strategy outlined in the LWMS will then be refined and implemented as part of Urban Water Management Plans (UWMP); which will be prepared at the time of subdivision.

Stormwater Management Strategy

The LWMS proposes stormwater management that utilises water sensitive design practices; comprising of a series of pipes, bio-retention areas, and water retention areas to infiltrate and improve the water quality treatment of stormwater.

- For individual lots, soakwells will be used to allow infiltration at source. For lots less than 300m² a connection into the street drainage system will be required.

- Surface drainage will be via a conventional system of road gullies and underground pipes leading to retention basins within public open space.
- Stormwater drainage will be discharged into areas of public open space, via gross pollutant traps and bubble up structure to improve water quality.
- For the 1 year event Average Recurring Interval (ARI) stormwater will be retained within stormwater infrastructure (pipe and pit) located within areas of public open space, allowing nutrient stripping as this water infiltrates onsite.
- For higher frequency storms (up to 5 years ARI), stormwater runoff will flow via the local pipe drainage system leading to retention areas within public open space.
- For stormwater from 10 year event ARI, stormwater will be discharged in specifically designed public open space or drainage swales via bubble up pits, to be infiltrated onsite.
- For less frequent storm events, up to the 100 year ARI, stormwater will be provided for in overland flood ways comprising of road reserves, drainage channels and swales within public open space.



TABLE 2: PIKE ROAD STRUCTURE PLAN - CENTRAL PUBLIC OPEN SPACE SCHEDULE									
(Based on 2300-58D-01; March 2014)									
		Deductions ²	Restricted Use Open Space ³				Unrestricted Open Space ⁴		
Local Open Space Area	Gross Area	1:1 year Drainage Area ²	Gross Area less 1:1 year Drainage Area	1:5 year Drainage Area ²	1:1 – 1:5 year Drainage Area ³	1:1 – 1:5 year Drainage Area as a % of Total Opens Space Area	Area not receiving drainage for <5 year event	1:10 year Drainage Area ²	1:5 – 1:10 year Drainage Area ³
Central POS	31105m ²	6530m ²	24575m ²	7660m ²	1130m ²	3.6%	23445m ²	7960m ²	300m ²

Notes:

1. The 1:1, 1:5 and 1:10 year drainage volumes have been sourced from the 360 Environmental LWMS with drainage areas confirmed by JDSi Consulting Engineers.
2. Areas subject to inundation more frequently than a one year average recurrence interval rainfall event are not included as restricted or unrestricted open space and are a deduction from the net site area.
3. Areas for the detention of stormwater for a greater than one year average recurrence interval up to the five year recurrence interval are treated as restricted open space up to 20%.
4. Areas for the detention of stormwater for a greater than five year average recurrence interval are within unrestricted open space and receive a full open space credit.



Ground Water Management

A preliminary earthworks strategy prepared for the structure plan area has suggested that some imported fill will be needed to obtain the required levels due to drainage and existing sewer levels.

With the objective to keep imported fill to a minimum, and to retain the general landform of the site, post-development groundwater levels across the site are not expected to significantly vary from those currently found (pre-development). Local groundwater mounds associated with stormwater retention during rain events may occur, but these are not expected to alter the subsurface hydrology.

Water Use Sustainability Measures

The LWMS includes a number of water use sustainability measures that maximise the efficiency of water use across the development, and minimise the use of scheme water wherever possible.

Water Efficiency Measures

Public open spaces and streetscapes will be designed to minimise irrigation requirements as follows:

- Retention of native vegetation and bushland wherever practicable.
- Use of drought tolerant plant species for the landscaping of open space and streetscapes.
- Improving soil properties and mulching to improve moisture retention.
- Retention and infiltration of stormwater onsite within public open space and swales.

- Flush kerbing to be used adjacent public open space.
- Use of bottomless drainage pits to facilitate at source infiltration.
- Hydrozoning and use of Smart Irrigation systems
- Underground storage to be considered at detailed design.
- Keeping the use of turfed areas to active spaces only.

Water Supply

With scheme water to be used for domestic use and private garden irrigation, it is important to encourage the conservation and efficient use of this potable supply at the household scale:

- Requirement to construct homes consistent with the current Building Codes of Australia water efficiency and standards.
- Encourage the use of AAA water efficient appliances in homes, further supported by the Water Corporation's Waterwise Rebate Program.
- Promote the establishment of waterwise gardens, smart irrigation and the use of alternative water supply systems (grey water, rainwater tanks).



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3.3.3 Description of Open Space Area

The landscape strategy behind the public open space development is to provide a readily useable, aesthetic and liveable environment to future residents from day one. Landscaped open space areas shall incorporate features and facilities to both encourage residential growth and to provide public, aesthetic and site character building amenities to residents. Landscape works shall contain and maximise both aesthetic and functional uses where possible.

The landscape strategy for the project consists of carefully designing a variety of uses via different areas within one centrally located public open space. This public open space will be within walking distance of all future residents and the retention of existing trees at the western end of the site will assist with the immediate amenity.

In broad terms the project site is divided into the areas described below, each offering different function and use but collectively, creating one area of truly multi-use open space.

Western Area

- Responds to the significant landform rise found at this western end of the open space, retaining the natural ground levels and significant trees.
- Creates a wide view corridor, as seen from the east, through to the rural land situated on the high ground to the west of the structure plan area; reinforcing the importance of the site's natural landform.

- Allows for the provision of shelter and picnic facilities, accessible from safe pedestrian connections, all nestled under retained (mature) vegetation, maximising the available shaded areas.
- Retained trees will be trimmed to ensure good surveillance and to provide the opportunity for a large, safe and accessible play element for all ages.
- Ground surfaces below retained trees will be cleared of all shrub and then mulched, turfed or paved to create an area of low fire risk.

Central Area

- Comprising a large turf space, providing informal opportunities for play and informal sport for all ages through the provision of a kick-about area.
- Pedestrian pathways surrounding the turf spaces forms part of a wider exercise and cycle circuit linking all three areas and the broader path network.
- Conveys drainage from the adjacent vegetated retention area, taking stormwater drainage from events greater than 1 in 1 year.

Eastern Area

- Facilitates drainage infrastructure for the site for 1 in 1 year events in the form of swales and basins. These areas will be vegetated with native wetland species and will add to the overall character and diversity of the development.



• NOTE:
 * Retained trees as shown will require trimming and dead-wooding to ensure good surveillance and safety.
 Ground surface treatments below retained trees will be cleared of scrub and either mulch, turf or hard pavements installed depending on slope, general landscape design and accessibility.



CONNECTED



COMFORTABLE



INTERACTIVE



CONSIDERED



TEXTURAL





- Waterwise native landscaping incorporating hydro zoning principles to keep irrigation requirements to a minimum.
- Creates additional opportunity for seating and pedestrian linkages to shelter and picnic facilities in the central area.

A detailed Landscape Masterplan has been prepared by Emerge Associates, and is included as Appendix 3, with a POS Concept Plan shown at figure 10.

3.3.4 Streetscape Treatment

Streets throughout the project are important elements in promoting access and the design character of the Pike Road Structure Plan. Streetscapes throughout the development shall incorporate a variety of treatments in response to the road hierarchy system. In all cases landscape works shall incorporate tree planting in accordance with the accepted traffic standards. The streetscape characters located throughout the scheme can be divided into two distinct categories.

Major Roads which form the arterial routes through and around the development. These typically form the largest and widest thoroughfares within the development housing parking provision, dual use paths, wide planted verges and median planting strips.

Minor Roads within this development form the majority of the access thoroughfares within the structure plan area. These roadways comprise in the main of large planted verges directly next to the road reserve, with footpaths abutting the lot or POS boundary. Roadways within the residential areas will generally form part of a narrow street design whereby the design by default will slow down any vehicles, making it a safer environment.

The selected tree species are shown on the Street Tree Master Plan, shown at figure 11. Roadside swales will generally be planted with native shrubs to assist with nutrient stripping. The detailed design for these streetscape areas will be confirmed with the City of Rockingham at detailed design stage.

3.3.5 Plant Species and Irrigation Strategy

Plant species are proposed to be a mix of endemic native and native species suitable for various zones within the project. Typically it is expected that the vast majority of plants used will be endemic native species suitable for local conditions. Shade, screening and character will be created by an over storey of open canopy trees with a low native shrub planting understorey.

The planting design of all Streetscape and Public Open Space areas will consist of predominantly endemic native species. Planting design is proposed to include a water sensitive design approach and will also seek to reduce irrigation rates over the long term to planting areas to promote a longer term water saving strategy for the development.

Hydrozoning will also provide a supplementary design principle whereby groups of plants with similar irrigation demand needs will be grouped together. This will facilitate irrigation efficiencies that can be made across the scheme.

Areas within the drainage swales and retention basins are proposed to be in the main non-irrigated and will be planted with native sedges and rushes to facilitate with the drainage engineering required for the site



Agonis flexuosa -
WA Peppermint



Fraxinus angustifolia 'Raywood' -
Claret Ash



Corymbia ficifolia -
Red Flowering Gum



Eucalyptus leucoxydon 'Rosea' -
Pink Flowering gum



Eucalyptus sideroxydon 'Rosea' -
Red Ironbark

Note:
Street trees located in Public Open Space areas with Building Protection Zone considerations are to apply to the relevant tree canopy separation requirements





3.4 Movement Network

The following section discusses the planned road network for the Pike Road Structure Plan area, as outlined in the comprehensive Transport Assessment undertaken by Transcore (traffic engineers), dated February 2014. A complete copy of the Transcore Transport Assessment can be found as Appendix 5 in the Technical appendices.

3.4.1 Existing Movement Network

The characteristics of the existing movement network are as follows:

- Eighty Road is constructed as a 7.4m wide single carriage way (two lanes), with a posted speed limit of 60km/h. Access to the existing residential development on the eastern side of Eighty Road adjacent to the structure plan area (Settlers Hills) is limited by a priority controlled intersection at Taggart Avenue.
- Recorded weekday traffic flows from the City of Rockingham (May 2013) and MRWA for Eighty Road are as follows:
 - Eighty Road (south of Safety Bay Road): 3300 vpd
 - Eighty Road (south of Tranby Drive): 4300 vpd
 - Eighty Road (north of Sixty Eight Road): 2800 vpd
- Pike Road, connecting Eighty and Mandurah Roads, is constructed as a 7.5m wide single carriageway with two rural standard lanes, also with a posted speed limit of 60km/h. The Eighty Road/Pike Road intersection is simply priority-controlled 'T' junction with no turn lanes or splitter islands.

- Mandurah Road, located east of the structure plan area, is identified as an 'Other Regional Road' reservation under the Metropolitan Region Scheme, with Pike Road connecting to Mandurah Road approximately 180m west of the structure plan area.

The residential development immediately north of the structure plan area is serviced by a low speed road network, comprising of 6m wide single carriage way roads, with a local speed limit of 50km/h. Two short spur roads (Maddren Way and Levey Way) have been constructed southwards, as future road connections into the structure plan area.

Public bus services 564, 567 and 568 connect to Warnbro Train Station and run along Safety Bay Road, approximately 400m north of the structure plan area, with deviations of routes 567 and 568 also connecting to the Baldivis District Shopping Centre. Public bus service 464 also runs on Arpenteur Drive, off Safety Bay Road, approximately 500m east of the structure plan area.

Eighty Road and Pike Road are considered a good riding environment in accordance with Perth Bike Map series (Department of Transport; 2009).

A 2 metre wide shared pathway is located along Huxtable Terrace, running parallel to Eighty Road approximately 100m east of the structure plan area, with a second shared pathway passing through public open space to Huxtable Terrace near the Eighty Road and Pike Road intersection.



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3.4.2 Planned Road Network

Road Network

The Transcore Road Hierarchy Plan shows the movement network planned for the Pike Road Structure Plan area which is in accordance with Liveable Neighbourhoods, and is shown at figure 12.

The planned network will provide a robust and permeable layout throughout the LSP area, integrating the structure plan with Eighty and Pike Roads. Careful consideration has been given to the low density residential development to the north (Woodleigh Grove), with no public vehicle connections into this estate.

The road network has been planned and modelled based on known and forecast traffic volumes, and will be refined further at the time of subdivision, to relevant City of Rockingham standards.

It is important to note that the planned road network includes envisaged connections within adjacent lots 1 and 2 Mandurah Road which fall outside the structure plan area and are to be developed by others. However, it was considered important to recognise the eventual development of this land to provide a transparent and robust model.

The key features of the planned movement network are as follows:

- Eighty Road is already a dedicated road reserve, identified as a Neighbourhood Connector A. The City of Rockingham, as detailed in the Baldivis Roads Needs Study, has acknowledged that it may need to upgrade Eighty Road, with the Needs

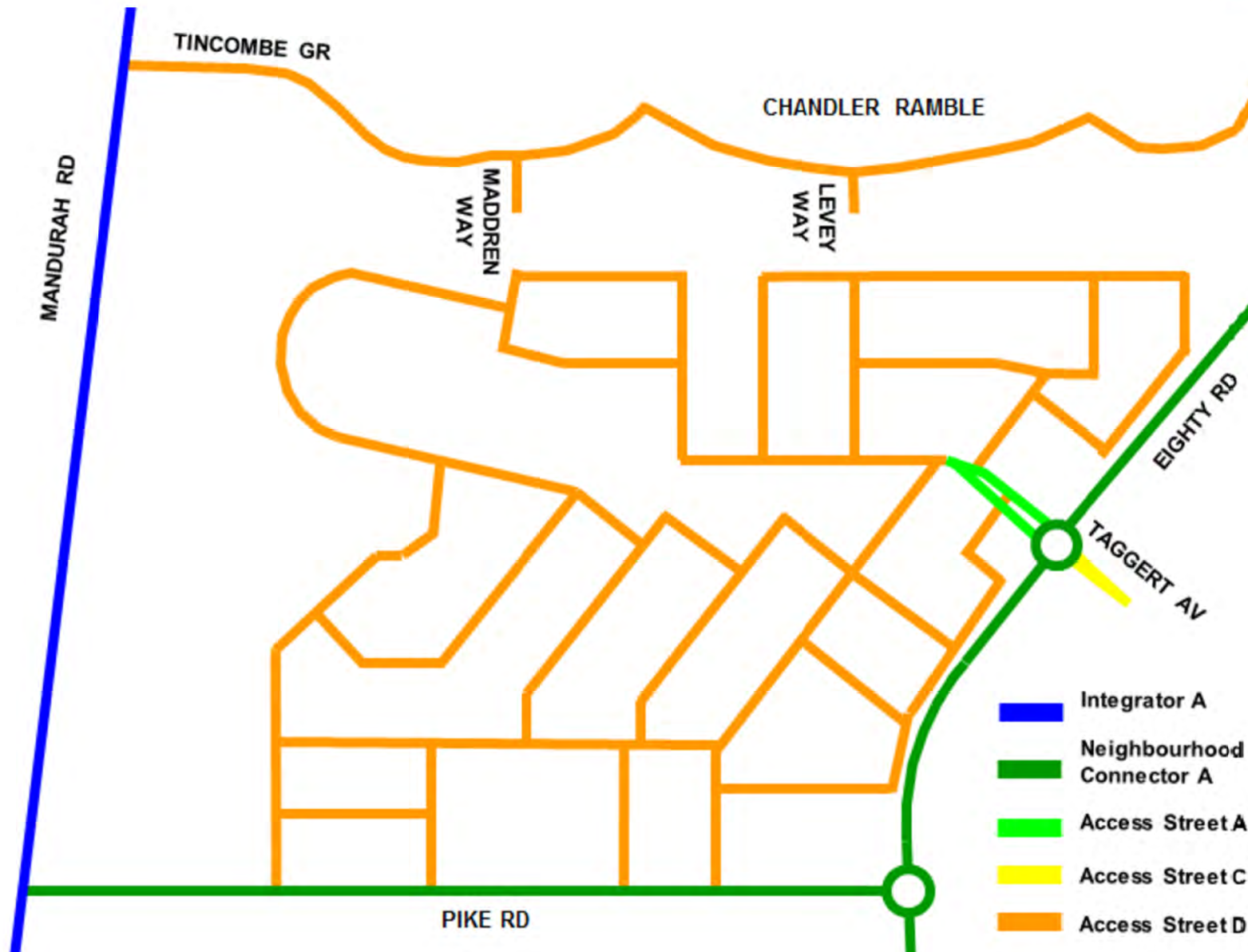
study recommending a cross section comprising of 2 x 3.5m traffic lanes and 2 x 1.5m on-road cycle lanes; given the rural interface to the south-west. Traffic islands may also be provided in locations of significant pedestrian movement.

- Pike Road is also a dedicated road reserve, identified as a Neighbourhood Connector A and which will be upgraded as recommended in the 2005 Baldivis Roads Needs Study, namely 2 x 3.5m traffic lanes and 2 x 1.5m on-road cycle lanes with no median island.
- Access Streets within the structure plan area will range in width from 14.2m to 20m road reserves; however the majority will be constructed as 15m road reserves with a 6m paved carriageway. In accordance with Liveable Neighbourhoods and modelled traffic volumes, no road within the structure plan area will be classified above that of an Access Street.
- Laneways shall be a minimum width of 6m to accommodate two way movement and rubbish collection, with visitor parking to dwellings abutting laneways to be provided within nearby access street road reserves.

Pedestrian and Cyclist Facilities

The structure plan area will be provided with excellent pedestrian and cyclist facilities that are consistent with Liveable Neighbourhoods:

- Shared pathways to be constructed on the northern side of Pike Road and the western side of Eighty Road, with a minimum width of 2 metres.





- Footpaths to be provided on at least one side of all access roads, constructed to a minimum width of 2 metres.
- Roads adjacent to the early childhood centre will be provided with a 2.5 metre shared pathway.
- Laneways to have footpath access to the visitors parking bays provided in the nearby road reserve.
- On-street cycle lanes to be included on Neighbourhood Connector A roads (Eighty and Pike Roads).
- The pedestrian and cyclist network for the structure plan area is shown at Figure 13.

Integration with Surrounding Areas

The structure plan area will extend into the existing road network, via a number of key connections.

On the eastern side of the structure plan area, a road connection will create a roundabout controlled intersection at Eighty Road and Taggart Roads.

Two road connections to Pike Road to the south have been considered in the traffic modelling, with one of these being the responsibility of Australand, specifically that adjacent to the early childhood centre.

The comprehensive path network within the structure plan area will also connect to the surrounds of the structure plan area

Public Transport

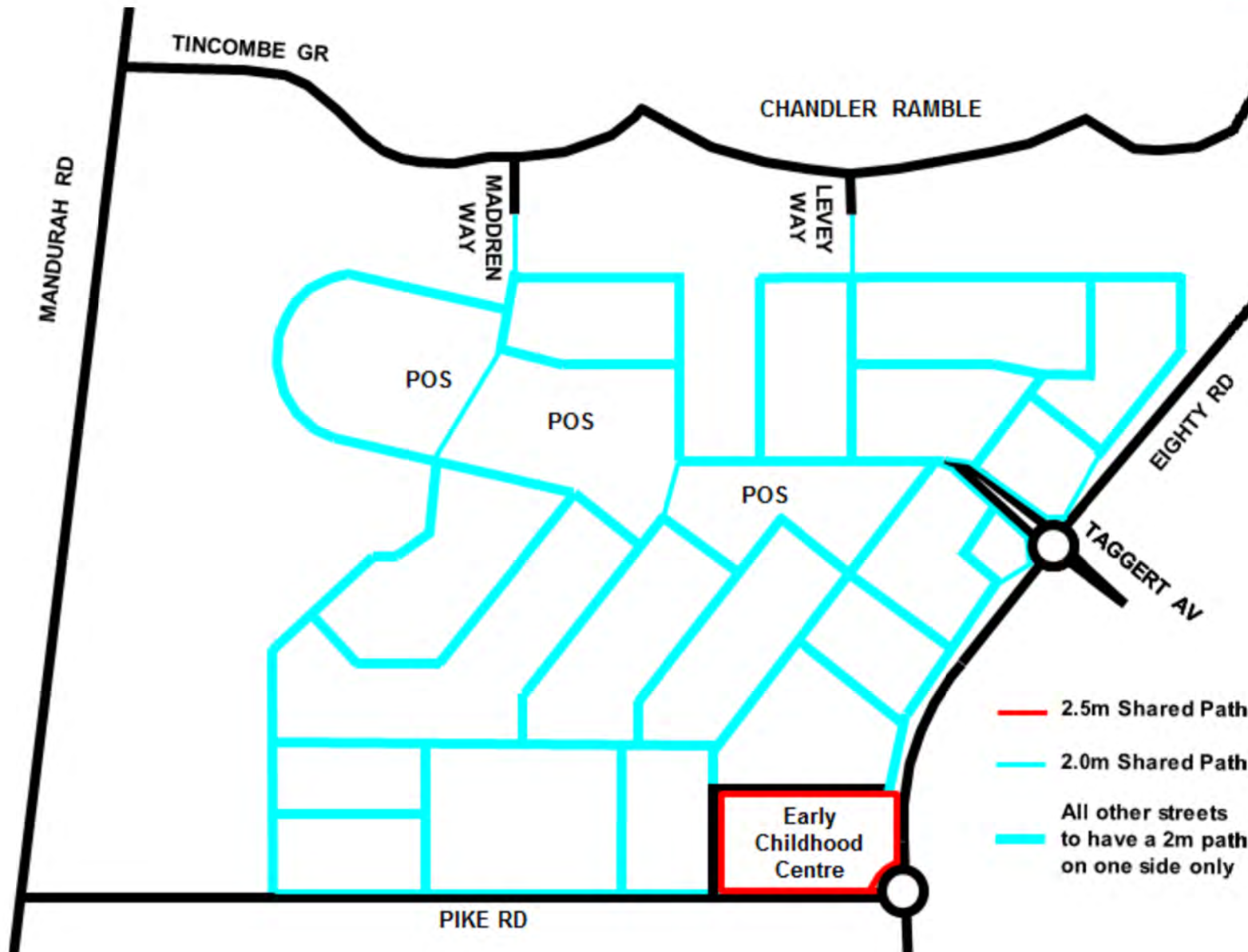
The Public Transport Authority has advised that public transport stops cannot be determined until the time of subdivision and development, when lot design is final, and that currently there are no future bus routes proposed within or adjacent to the structure plan area.

Nonetheless, Eighty Road as a Neighbourhood Connector A does provide the opportunity for future bus services, placing the majority of the structure plan area within a walkable catchment of a public transport service.

3.4.3 Transport Network Analysis

Detailed traffic modelling has been undertaken for the movement network proposed by the structure plan, demonstrating that the road hierarchy and associated road reserve widths have the capacity to accommodate the expected traffic volumes for the ultimate development in the year 2031.

The forecast traffic volumes all fall well within the acceptable limits outlined by Liveable Neighbourhoods; based on 8 vehicle trips a day (vpd) as recommended by the WAPC Transport Assessment Guidelines for Development (2006) and 528 vehicle trips per day for the early childhood centre (assuming 200 students), which is higher than the trip rate of 2vpd per student typically used for such sites. It is anticipated that the structure plan will generate approximately 2880 vpd, with some of these being internal trips, including trips to and from the early childhood centre.





Eighty Road, being a Neighbourhood Connector A, is forecast to experience approximately 4400 vpd and 2600 vpd for the north and southbound directions (as taken from Taggart Avenue, at ultimate development in the year 2031) respectively, which is well within the acceptable limits set by Liveable Neighbourhoods. Similarly Pike Road is expected to accommodate 5400 vpd, which is still within acceptable limits for this category of road.

The traffic volumes on the proposed streets connecting to the Woodleigh Grove development to the north are low, aided by road treatment to reduce volumes into this residential development.

It is important to note that these traffic volumes are based on an envisaged road network that includes adjacent lots 1 and 2 Mandurah Road which fall outside the structure plan area and are to be developed by others, along with the Eighty Road and Taggart Road roundabout. This ensures a transparent and robust model.

3.4.4 Intersection Treatments

Figure 14 details the proposed intersection treatments within the structure plan area.

Eighty Road/Taggart Road Intersection

The proposed access road to Eighty Road will create a four way intersection with Eighty Road and Taggart Avenue, which connects into Settlers Hills. A four-way roundabout is proposed for this intersection, to manage traffic movements and control traffic speeds along Eighty Road. Splitter islands for the roundabout will facilitate improved pedestrian crossing at this intersection.

Eighty Road/Pike Road Intersection

On the advice of the City of Rockingham, a roundabout upgrade is proposed at the intersection of Eighty and Pike Roads.

A capacity analysis was undertaken using the SIDRA intersection modelling tool, indicating that these intersections will operate satisfactorily at peak periods at full development (2031).

Internal Intersections

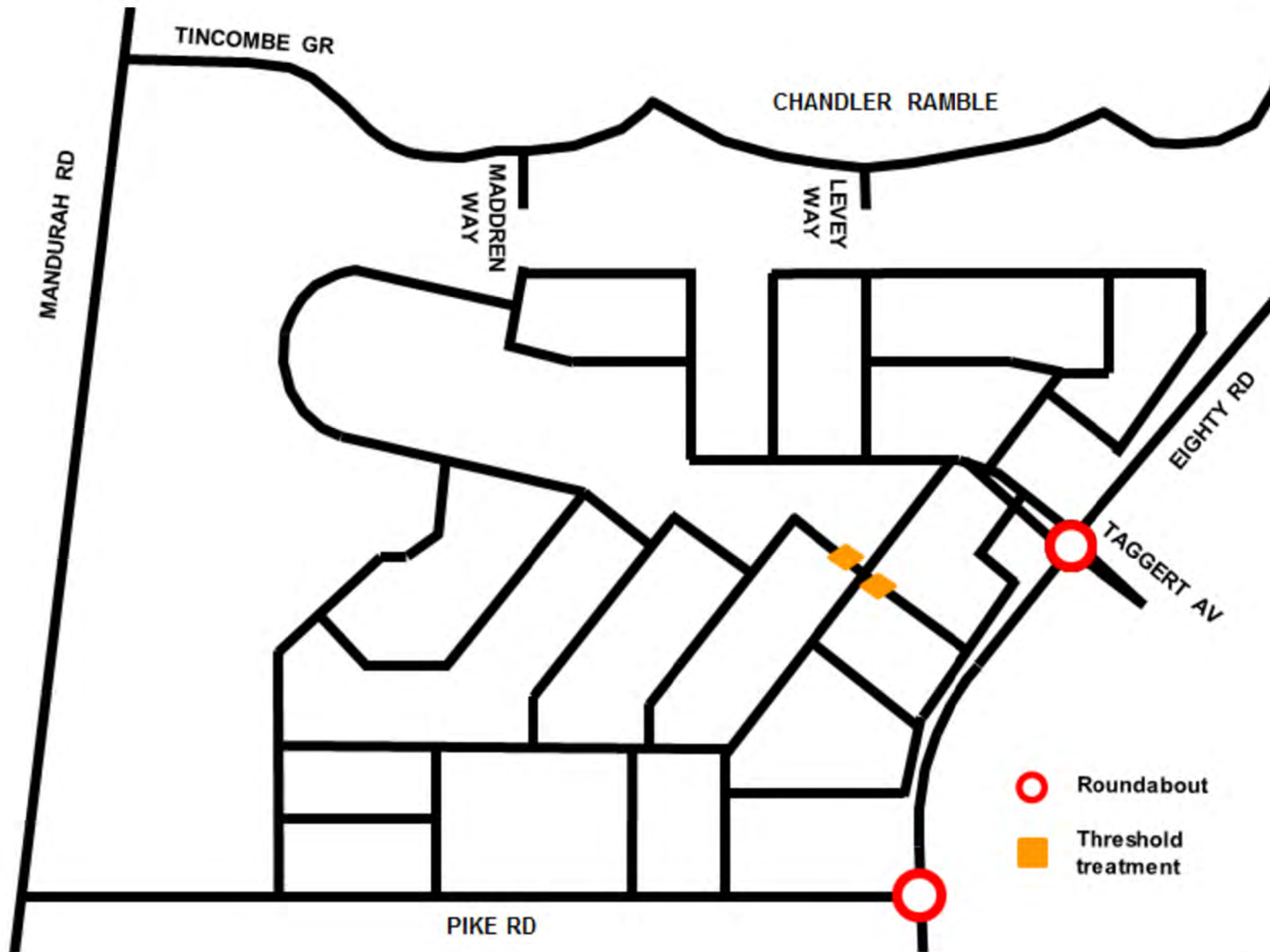
There is only one four-way intersection proposed within the structure plan area.

This four-way intersection will be constructed as a priority controlled intersection, with Give Way signs to the minor road approaches, in accordance with Liveable Neighbourhoods.

3.5 Education Facilities

The Department of Education has requested the creation of an early childhood centre site within the structure plan area, to ease the student number pressures on nearby schools within the locality. The Department has indicated that this early childhood centre is expected to cater for approximately 200 children ranging from KP through to K3.

In direct response to the request of the Department, a site is being provided for within the structure plan area, located at the corner of Eighty and Pike Roads, with two roads to the north and west providing the centre with good access and circulation. The preliminary earthworks strategy demonstrates that the site will be level and serviced for future development.





The Department of Education has indicated its support for the size and location of the early childhood centre site, and has confirmed that this site will satisfy the pro-rata contribution for an educational facility, outlined in the WAPC Development Control Policy 2.4: School Sites.

3.6 Activity Centres and Employment

As briefly discussed in section 1.4, the Pike Road Structure Plan is located in close proximity to a number of proposed activity centres and employment nodes, ensuring excellent accessibility to commercial services, and providing good opportunities to meet employment self-sufficiency targets set out in Directions 2031 and Beyond.

The Rockingham and Mandurah Strategic Metropolitan Centres and the Kwinana Secondary Centre are all easily accessible from the structure plan area, and offer employment opportunities and access to retail, commercial and community services. Likewise the Baldvis District Centre on Safety Bay Road is also located only 2km from the structure plan area with a small local centre situated on Osgood Way in Settlers Hills (Baldvis), providing another choice in local amenity.

This hierarchy of existing Centres, as well as a number of major existing and proposed employment nodes in proximity to the structure plan area; including Western Trade Coast, Kwinana Industrial Area and the Australia Marine Complex, Latitude 32 Industrial Estate and North-East Baldvis provide opportunities for residents, and a much needed increase to the employment catchment for these important employment nodes.

The City of Rockingham Planning Policy 3.1.2 Local Commercial Strategy does encourage the provision of local centres where opportunities may arise, to provide a level of local convenience, and does indicatively locate a local centre within the structure plan area along Pike Road.

In general, the viability of local centres is typically determined by:

- The residential population within a walkable catchment;
- The amount of passing trade; and
- Competition with other centres in the locality.

The City's Local Commercial Strategy states that to make a local centre commercially viable it generally requires up to 5000 residents within a walkable catchment.

The Pike Road Structure Plan is accommodating a number of rural lifestyle lots along the north boundary, an early childhood centre and a Western Power Sub Station, all bound by rural land to the south and west; which simply reduces the catchment far below the Policy's acknowledged criteria.

In addition, with the Rockingham, Mandurah, Kwinana and Baldvis District Centre all readily accessible, as well as the nearby Settlers Hills Centre offer a more local facility, future residents have choice regarding commercial facilities.

The provision of a local centre within the structure plan area would be commercially unviable on the basis of the limited catchment being offered by the development, the number of established centres located elsewhere within the wider locality and the lack of passing vehicle trade.



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3.7 Earthworks and Servicing

The following section summarises the engineering considerations for the structure plan area, based on the Engineering Servicing Review undertaken by JDSi Consulting Engineers, dated February 2014. This review shows that the site can be earth worked in a manner that responds to the landform of the site, and readily serviced. A complete copy of the JDSi Engineering Servicing Review is included as Appendix 6.

3.7.1 Earthworks Strategy

A preliminary earthwork concept plan has been prepared showing that site works within the LSP area will generally comprise of earth working the existing ground surface to facilitate the required levels for development.

In order to recognise the significant ridge landform along the western edge of the structure plan area, and to allow for roads and development sites to be graded to the existing topography, the following responsive principles are to be adopted:

- Create finished levels within the LSP area that accommodates gravity-reliant infrastructure to maximise drainage and sewer efficiencies.
- The large lifestyle lots along the northern boundary of the structure plan area will retain the local topography, to match into the adjoining landholding to the north and to provide maximum flexibility for tree retention.
- Carefully considered finished surface levels and retaining

walls along the north-western portion of the development area will allow for the retention of as many of the existing trees as possible in an area subject to significant slope.

- The remaining areas of more gentle slope will be provided with standard flat lot levels to reduce retaining and construction costs, allowing for more affordable housing.

While it is anticipated that some imported fill will be required, the preliminary earthworks concept will attempt for a near balanced cut to fill scenario, to reduce import costs.

3.7.2 Waste Water

The Water Corporation has confirmed that the Point Peron Wastewater Treatment Plant has capacity to service the LSP area, however, ultimately sewer flows will be redirected to the planned East Rockingham Wastewater Treatment Plan (WWTP), with government funding now allocated for construction of this treatment plant and which is expected to be operational in 2016.

The LSP area will be serviced by way of two existing connection points located in Maddren Way and Levey Way, to the north-east and north-west of the site respectively. These connection points both flow to the Baldivis South Pump Station 3, which currently pumps to the Point Peron Wastewater Treatment Plant, but as mentioned above, will be redirected to the East Rockingham Wastewater Treatment Plan (once operational).



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3.7.3 Water Supply

The Water Corporation has confirmed that the structure plan area can be serviced by the existing reticulated water system infrastructure within the area, which consists of a 500mm diameter main running along the western side of Eighty Road and a 200mm diameter distribution main along the eastern side of Eighty Road and Teesdale Way, with water supply to be from the Tamworth-Karnup Scheme.

Development will be serviced from the 200mm diameter distribution main along Eighty Road, with long term planning undertaken by Water Corporation showing the 500mm diameter main along Eighty Road being extended westwards down Pike Road through to Mandurah Road.

While development of the Pike Road Structure Plan is not contingent on the extension of the 500mm diameter main along Pike Road, as set out in the Water Corporation's infrastructure planning for the locality, it will nonetheless provide additional security to water supply in the area.

3.7.4 Power Supply

The existing power network within the vicinity has capacity to service the structure plan area, with an existing HV feeder running along Eighty Road and Pike Road to be extended; providing electricity supply to the structure plan area.

Power supply will be provided by the Waikiki Substation, located approximately 6km from the site, with the capacity forecast indicating adequate allocation for at least 5 years. Once additional capacity is required, the future Baldivis Zone Substation can be constructed on the adjacent lot 3001, which is owned by Western Power, ensuring ongoing power supply.

3.7.5 Gas Supply

Advice from Atco Gas, being the responsible service provider for reticulated gas, is that the LSP area can be serviced from three 100mm medium pressure gas mains which are already situated along Eighty Road and within the Levey Way and Maddren Way road reserves located immediately north.

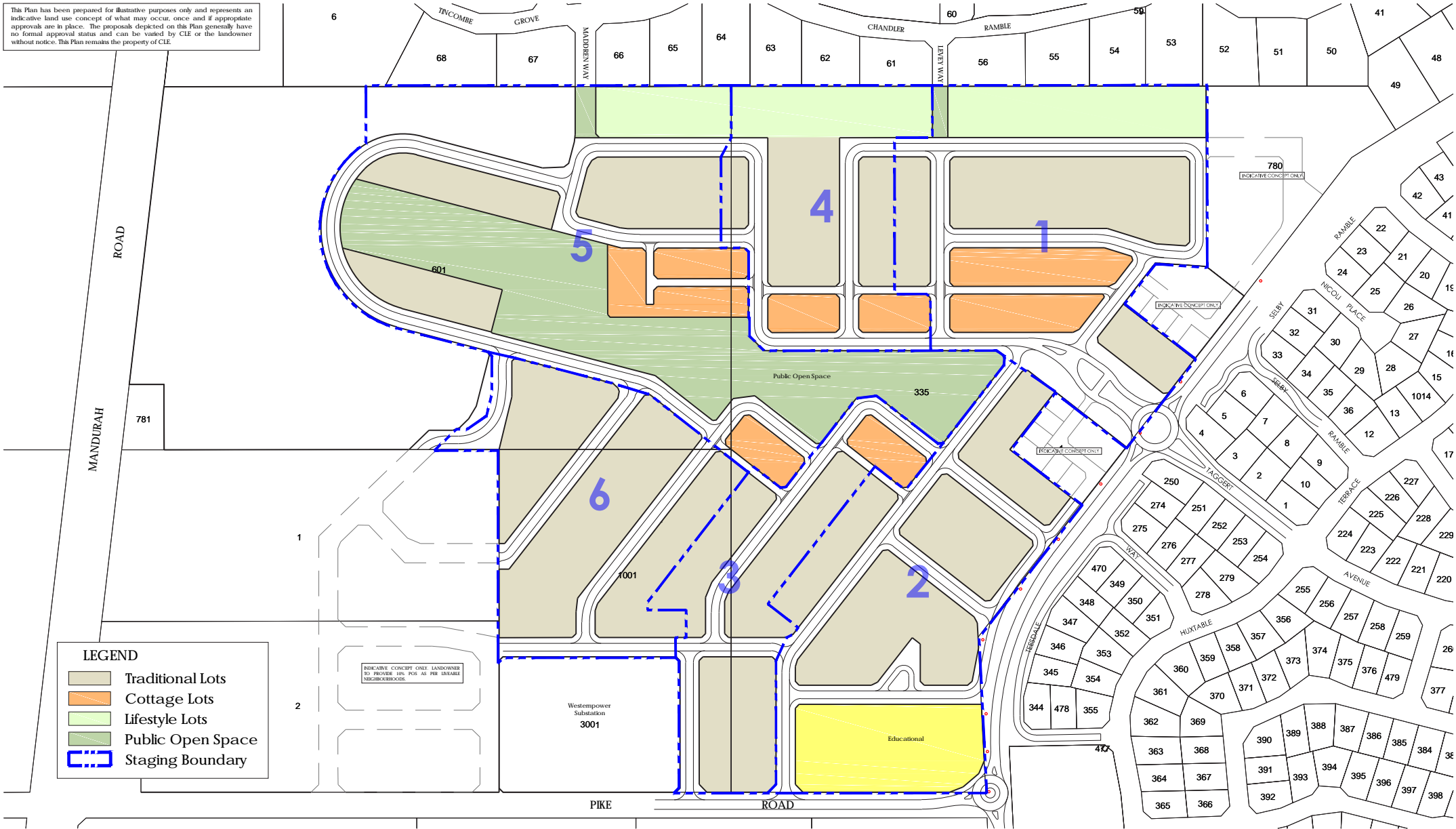
3.7.6 Telecommunications

Current Federal Government telecommunication policy has seen the ownership of delivering the wholesale fibre to the home system transferred to the Government. Telstra has advised that it is anticipated that telecommunications can be provided through the NBN Co, with the structure plan area surrounded by existing pit and pipe communications infrastructure.

General communications services for the structure plan area will comprise of the proponent being responsible for the installation of pit and pipe infrastructure, with the NBN Co to then install the fibre optic infrastructure.

Post construction and due to potential NBN Co rollout programming delays, interim services and internet will be provided via wireless broadband services and existing Telstra assets located in Pike and Eighty Roads.

This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.



INDICATIVE STAGING





3.7.7 Staging and Implementation

It is anticipated that the Pike Road Structure Plan will be implemented to match market demand. Initially development will be focused within the north-eastern portion of the structure plan area, to facilitate the construction of the estate entry off Eighty Road and easy extension of necessary services. Development will then typically proceed in an east to west fashion, providing for the progressive and logical extension to the estate. An indicative staging plan is shown as Figure 15.

The Pike Road Structure Plan will provide the planning framework for subsequent subdivision, with the table below setting out further documentation required to be undertaken by the landowner as part of future development.

Documentation	Approval Stage	Approving Authority
Urban Water Management Plan	Subdivision condition	City of Rockingham & Department of Water
Contamination Investigation	Subdivision condition	Department of Environment Regulation
Geotechnical Report	Subdivision condition	City of Rockingham
Earthwork Plan	Subdivision condition	City of Rockingham
Fire Management Plan (identifying BAL Standards)	Subdivision Condition	City of Rockingham
Detailed Area Plans	Subdivision condition	City of Rockingham



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LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD



STRUCTURE PLAN

LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN

AMENDMENT 5 ADDENDUM

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AMENDMENT 5 ADDENDUM

1.0 Introduction

The primary purpose of this amendment (Amendment 5) is to increase the variety of lot types within the structure plan area through the introduction of contemporary 'compact' lots, being lots of reduced depth, in response to current market conditions.

This will be undertaken through the application of the RMD-40 being apply to six cells currently shown as RMD-25 density coding on the Structure Plan map. It is important to note that the proposed changes to the density coding is intended to facilitate for adjustments to lot type only and will not result in any increase in lot yield within the Estate.

Amendment 5 also takes the opportunity to realign two local access streets simply to reflect current WAPC subdivision approval.

1.1 Ownership

All land subject to Amendment 5 is owned by Australind Industrial No. 63 Pty Ltd, a subsidiary of Frasers Property Australia. The amendment has been configured so that it does not affect or abut any lot currently held in private (third party) ownership.

2.0 Justification of the Amendment

The primary purpose of Amendment 5 is to increase the contemporary lot types. Specifically, this referees to the application of the RMD-40 density code to six cells currently shown as RMD-25 to facilitate the production of 15m and 12.5m frontage compact lots, in place of the current 14m wide lots, which do not accommodate housing types that are suited to these locations.

The changes to density coding is intended to facilitate adjustments to lot type only and will not result in any increase in lot yield from the Estate.

The following points are provided in justification of the proposal:

- The proposed change will enhance the presentation of streetscapes, with housing types presenting identically to traditional 12.5m and 15m housing types and reducing the potential for 12.5m dwelling frontages to be developed on 14m wide lots.
- The proposed change will not result in any increase in lot yield against currently approved subdivision designs and density coding's under the current Structure Plan map.
- The proposed lot types provide an ideal 'bookend' to street cells, resulting in reduced lengths of side fencing visible to the street.

This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.



LEGEND

 Proposed R40 Sites

SUBDIVISION CONCEPT PLAN





- The proposed change will enable the production of more efficient house and land packages and meet market affordability requirements, which are relevant to the affected locations.

Figure 1: Subdivision Concept Plan demonstrates the proposed RMD-40 coding will not create areas of higher density, but simply enable increased housing choice from the Project.

The amendment will also take the opportunity to realign two local access streets to reflect current subdivision approval.

2.1 Location Provision for R40

The Pike Road Structure Plan sets out that RMD-R40 coded lots will be located throughout the structure plan area in proximity to the central public open space, with these lot sizes to generally measure approximately 225m²; also stating that this is to deliver cottage style housing with rear laneway access.

Contemporary 'compact' lots were simply not contemplated by the Structure Plan as it is a design that was not existent at the time. The intent of Amendment 5 is to create opportunities for these lot types.

In that regard, the location provision within the Structure Plan is not wholly appropriate to assess the amendment in a considered manner, and the locations of proposed RMD-40 coding are suitable in that:

- It will not result in any increase in lot yield based on current subdivision design and coding shown on the Structure Plan map.

- Provides for additional market segments that are currently lacking in the Estate, meaning the provision of more affordable lot choice along with catering for those that simply want smaller lots sizes without the need to jump to a cottage (laneway) home.
- Is a mechanism to significantly reduce side fencing within the streetscape.
- The proposed change will enable the production of more efficient house and land packages and meet market affordability requirements, which are relevant to the affected locations.

2.2 Interface with R5 Lifestyle lots

It is acknowledged that Amendment 5 looks to face a number of these 'compact' lots with the R5 lifestyle lots to the north; however, it is important reiterate that this amendment does not look to increase lot yield, but instead only facilitates the delivery of lots of reduced depth but which from the public realm (street) present as traditional 12.5m or 15m wide lots.

As is shown on the accompanying Subdivision Concept (Figure 1), wider >15m frontages will be located at corners to position wider dwelling designs more prominently, while the reduced depth of these lots also offer the benefit in similarly reducing the length of side fencing presenting to the street - as would otherwise happen with lots of standard (30m) depth.

This part of the Estate is to be delivered to a more 'rural' character, to complete the transition between the lifestyle lots to the north and the more 'urban' lots to the south.



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To that end, a suite of landscape treatments will be implemented which will include:

- Semi-mountable kerbing being installed to the northern side of the road to dissuade parking on this verge by residents. This style of kerbing is also considered superior from a presentation perspective.
- Detailed landscaping of the Levey Way pedestrian access way, which will include landscape treatment of the verge area fronting the rural lifestyle lots. This landscaping will comprise turf, garden areas and tree plantings and with rural style fencing behind. A high level of amenity and screening/separation for residents on the lifestyle lots is expected.
- In addition to landscaping of the northern verge, street trees will be installed to the southern side of the road immediately following the creation of lots. Trees will be irrigated and maintained by the developer until such time as they can be amalgamated with the front landscape packages of completed homes.

Collectively, this will ensure the successful delivery of a more rural characteristic in this part of the Estate.

2.3 Local Road Realignment

Amendment also proposes the realign two local access streets. This is solely to bring the Structure Plan map into alignment with WAPC subdivision approvals (WAPC references 153120 and 157690).

2.4 Technical Reports

As outlined above, Amendment 5 will not see any increase in lot yield within the structure plan area, whilst also taking the opportunity to reflect the currently approved road network rather than propose any future changes.

In that regard Amendment 5 does not necessitate the need to update or replace any of the supporting technical work that underpins the Pike Road Structure Plan.



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3.0 Conclusion

This amendment to the Pike Road Structure Plan will facilitate the increase the variety of lot types within the structure plan area through the introduction of contemporary 'compact' lots, being lots of reduced depth, in response to current market conditions.

The amendment also proposes the realign two local roads to reflect WAPC subdivision approval.



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LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD
AND PORTION OF LOT 601 MANDURAH ROAD



STRUCTURE PLAN

LOT 335 & 780 EIGHTY ROAD, LOT 1001 PIKE ROAD AND PORTION OF LOT 601 MANDURAH ROAD

STRUCTURE PLAN

AMENDMENT 6 ADDENDUM

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1.0 INTRODUCTION

The primary purpose of this amendment (Amendment 6) is to facilitate subdivision and development over Lot 780 Eighty Road, by introducing the subject site into the structure plan area.

To reflect the subject site's 'Development' zoning under the City of Rockingham Local Planning Scheme No.2 (LPS2), the introduction of the subject site into the structure plan area will represent a logical extension of urban development in the Baldvis Grove locality.

Specifically, this amendment intends to extend Residential zoning across the entirety of the subject site, with density codes of R5 and R25. The R25 base density code will cover the majority of the subject site, with the R5 density coding being applied to the lots along the northern boundary of the subject site to ensure a suitable interface and to reflect the rural characteristics of the rural residential lots to the north.

The amendment also reflects the existing road network established by current WAPC subdivision approvals within the Baldvis Grove estate, by providing an east-west access road connection.

1.1 Ownership

All land subject to Amendment 6 is owned by Australind Industrial No. 63 Pty Ltd, a subsidiary of Frasers Property Australia. The amendment has been configured so that it does not affect any lot currently held in private (third party) ownership.

2.0 PLANNING FRAMEWORK

Lot 780 was previously reserved in the MRS as 'Public Purpose – State Energy Commission' but was zoned 'Urban' as part of minor Amendment 1297/57 which was gazetted on 24 November 2015.

Following the gazettal of Amendment 1297/57, Lot 780 was zoned 'Development' under the City of Rockingham Local Planning Scheme No.2 (LPS2) via Amendment 169 to LPS2 and subsequently gazetted on 19 March 2019. In accordance with LPS2 the purpose of the 'Development' zone is:

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

The 'Development' zone, and the applicable Development Area 41 (DA41), of which the subject land forms part of, requires an approved Structure Plan to guide subdivision and development.

The Baldvis Grove Structure Plan, which abuts the western edge of the subject site, was approved by the Western Australian Planning Commission (WAPC) on 22 December 2014 and subsequently adopted by the City of Rockingham on 14 January 2015. Pursuant to Clause 4.2 of LPS2, the Baldvis Grove Local Structure Plan is an operational structure plan.



LEGEND

Subject Area

YIELD	
Lifestyle	- 3 lots
Traditional	- 21 lots
Total	- 24 lots

All road carriageway detail where depicted on this subdivision plan including road pavements, road treatments, medians or parking, are for illustrative purposes only and are subject to final engineering design and separate approval processes. The detail reflects the preferred urban design intent for the road network standards.

All dimensions and areas depicted on this plan are subject to pre-civil and final survey and will vary from the figures shown. This plan remains the property of CLE.





3.0 JUSTIFICATION OF THE AMENDMENT

A Subdivision Concept Plan has been prepared in support of the amendment, showing how Lot 780 can be developed in accordance with the Structure Plan (as amended). The Subdivision Concept Plan reflects the existing density codes established in the Baldvis Grove Structure Plan, through the provision of R5 and R25 density codes.

Supporting technical work has been undertaken to this amendment, demonstrating that there are no impediments to the amendment progressing. The outcomes of the technical are outlined in detail below.

3.1.1 Zoning

The primary component of the amendment is to include the subject site within the structure plan area, to facilitate subdivision and development consistent with the density codes established in the Baldvis Grove locality.

The subject site has been identified as Residential, with density codes of R5 and R25 includes across the site.

The R5 density code is proposed to be extended from the existing LSP, and will provide opportunities to deliver lot areas typically around 2,000m² extend along the northern boundary of the subject site. This will provide a suitable interface to the rural residential lots to the north within the Woodleigh Grove Estate and is intended to deliver to a more 'rural' character, to complete the transition between the rural residential lots to the north and the more traditional 'urban' lots to

the south. This approach is consistent with previous amendments to the Baldvis Grove Structure Plan.

The remainder of the subject site will include base R25 density code established under the Baldvis Grove Structure Plan, providing opportunities to deliver a range of traditional lots typically ranging in size from 300m² to 500m².

3.1.2 Environmental

An Environmental Assessment Report (EAR) has been prepared and identifies the site's key environmental features as well as outlining management measures to support the proposed amendment. These items relate specifically to conservation areas, flora and vegetation and fauna. It should be noted that the site does consist of several large, isolated trees which are expected to be retained where practical. These trees will be retained where possible, subject to subsequent planning at the subdivision stage, with a tree survey mandated via conditions of subdivision approval under Section 6 or Part 1 including completion of a Tree Survey and Tree Protection Management Plan.

Ultimately, the EAR demonstrates that the vacant site is free of any environmental features that would restrict residential development on site.



TABLE 1: PIKE ROAD LOCAL STRUCTURE PLAN LAND USE SCHEDULE
(February 2022)

Gross Site Area¹			24.22ha
Less			
Early Childhood Centre	0.98ha		
Total		0.98ha	
Net Site Area			23.24ha
Deductions²			
Total drainage area up to the 1:1 year event	0.65ha		
Total		0.65ha	
Gross Subdivisible Area			22.58ha
Public Open Space @ 10%		2.25ha	
Public Open Space Contribution			
Minimum 80% unrestricted POS	1.80ha		
Maximum 20% restricted POS able to be credited	0.45ha		
Unrestricted Open Space²			
Central Open Space	2.34ha		
Total Unrestricted Use		2.34ha	
Restricted Open Space²			
Drainage area between 1:1 and 1:5 year events not exceeds 20% of total open space area	0.11ha		
Total Restricted Use Open Space		0.11ha	
Summary			
Minimum Unrestricted POS Required	1.74ha		
Unrestricted Open Space Provided	2.34ha		
Maximum Restricted Open Space Permitted	0.43ha		
Restricted Open Space Provided	0.11ha		
Total Unrestricted & Restricted Public Open Space Provision			2.45ha
Total Public Open Space Provisions as a % of Gross Subdivisible Area			10.9%

Notes:

1. The gross site area comprises the total area of lot 335, 780, 1001 and the portion of lot 601 zoned 'Urban' under the MRS, it excludes the R5 rural-lifestyle lots.
2. In accordance with Liveable Neighbourhoods: the area subject to inundation more frequently than a one year average recurrence interval rainfall event is not included as restricted or unrestricted open space and is a deduction from the net site area (LN R33); areas for the detention of stormwater for a greater than one year average recurrence interval up to the five year recurrence interval is restricted open space up to 20%, the area greater than 20% is a deduction (not applicable in this case) (LN R26 & Table 11); areas for the detention of stormwater for a greater than five year average recurrence interval is within unrestricted open space (LN R25).



3.1.3 Public Open Space

The amendment does not require any additional areas of open space, and still ensures the minimum 10% public open space provisions with the inclusion of Lot 780, see updated POS Schedule.

All stormwater generated from the site is expected to be accommodated in the central POS already established in the Baldvis Grove estate. The introduction of Lot 780 (1.2ha), which represents 4.6% of the current Baldvis Grove subdivision, does not result in any additional drainage areas that create additional flow into the Central POS (refer Table 2). All runoff resulting from 1 in 1 and 1 in 5 AEP events will fully infiltrate within the Basin and will have a negligible impact on the drainage areas in the Central POS, due to the following:

- R25 Lots will retain the first 15 mm runoff within the lot using soak wells. All the stormwater exceeding the first 15 mm will be collected by the drainage network and directed to the Basin located in the central POS, where it will infiltrate
- The drainage system will fully manage R40 Lots and Roads runoff in rainfall events up to 1% AEP.

The introduction of Lot 780 does not result in the need for additional drainage areas within the Baldvis Grove estate. This is reflected in the updated POS Schedule (Table 1) and clearly shows drainage events can be adequately accommodated within the central POS drainage basin.

3.1.4 Movement Network

The original *Baldvis West Local Structure Plan Transport Assessment* report (2014) considered the future residential development of the subject site, and the indicative road network and traffic volumes of the entire Baldvis Grove Estate, meaning that the traffic generated by the subject site has already been accounted for and is simply a subset of the total traffic volumes.

The only change to the movement network is the extension of the east-west access street which will be reconfigured to extend into the subject site via standard road reserves consistent with the requirements of the Liveable Neighbourhoods policy. No vehicular access to Eighty Road from the subject site is proposed as part of this amendment.

An addendum to the *Baldvis West Local Structure Plan Transport Assessment* report has been enclosed to support the proposed amendment. The addendum demonstrates that the proposed amendment, and inclusion of the subject site, does not compromise the function of the existing movement network, and simply extends the established road network in the Baldvis Grove locality. The amendment does not change the forecast total traffic flows of any of the external intersections.



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3.1.5 Bushfire Management

The application area is identified as bushfire prone under the Department of Fire and Emergency Services State Bushfire Mapping, which triggers the bushfire planning requirements under State Planning Policy 3.7 Planning in Bushfire Prone Areas.

A Bushfire Management Plan (BMP) has been prepared by Bushfire Safety Consulting as part of this amendment. The BMP identifies that the bushfire risk will not be an impediment to development and that the site will have a Bushfire Hazard Level (BHL) above Low and a Bushfire Attack Level (BAL) rating above BAL-Low. A copy of the Bushfire Management Plan is enclosed.

3.1.6 Servicing

All services, for the existing Baldivis Grove Estate, will be extended in an eastward direction to support inclusion of the subject site within the structure plan area.

An overlay of the preliminary earthworks strategy and tree survey has been prepared to ensure the following:

- The protection and retention of significant trees.
- Consistent and complementary ground levels with the adjoining landholdings and road connections.
- Appropriate contouring to deliver appropriate drainage infrastructure.

4.0 CONCLUSION

This amendment to the Baldivis Grove Structure Plan will facilitate the logical extension of urban development into the subject site. The introduction of density codes into the subject site, consistent with the existing densities established under the structure plan, will ensure residential subdivision and development is able to progress as envisaged for the subject site.