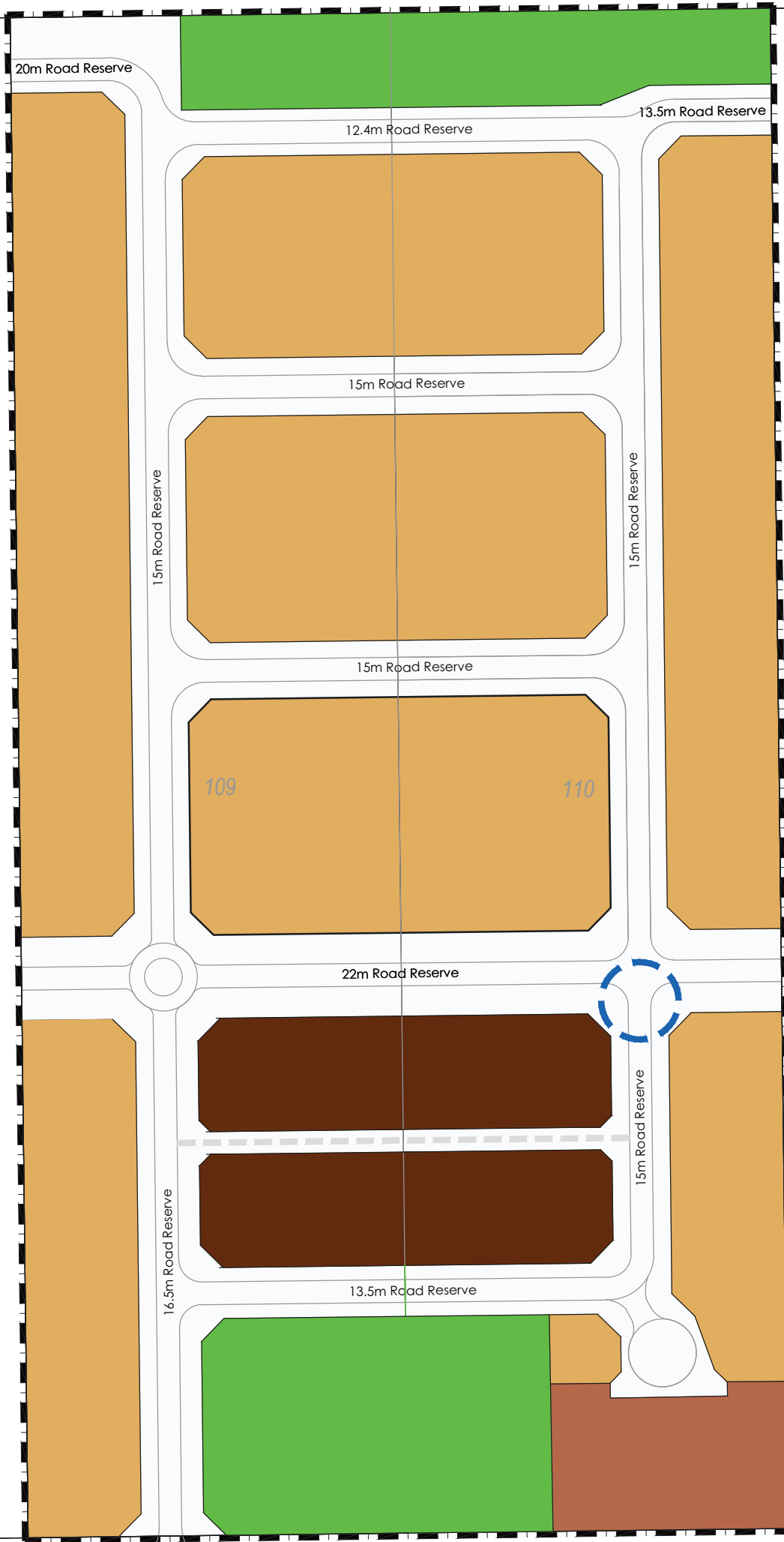


108

109

110

111



WATTLEUP

ROAD

LEGEND

Zones

- Residential R30
- Residential R50
- Residential R60

Local Scheme Reserves

- Parks & Recreation

Other

- Structure Plan Boundary
- Laneway
- Left in/Left out

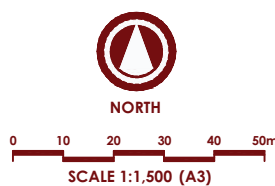
Ordinary Council Meeting: 09/04/2015

Western Australian Planning Commission Approval:
03/11/2015

Structure Plan Expires: 07/12/2027 (Doc Set ID. 11949410)

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PLAN 1





LOTS 109 & 110 WATTLEUP ROAD,
HAMMOND PARK

CITY OF COCKBURN

LOCAL STRUCTURE PLAN

Lots 109 and 110 Wattleup Road, Hammond Park

LOCAL STRUCTURE PLAN

Issue 3: November 2015

Prepared for: **Wattleup Road Property Development Pty Ltd and M & A Dropulic**

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Job code: OPE HAM / EGD WAT
File reference: 151113RWAPC_Lots 109 & 110 Structure Plan
Revision No: 3

Quality Assurance:

Issue/Version:	Date:	Author:	Reviewer:
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2.	21.01.2015	Zarina MacDonald	Jaclyn Ward
3.	13.11.2015		Jaclyn Ward

Project Team:

Planning and Urban Design - Burgess Design Group
Environmental Assessment – Emerge Associates
Local Water Management – Emerge Associates
Engineering Infrastructure and Services – Development Engineering Consultants (DEC)
Traffic and Transport – Transcore
Bushfire Hazard Assessment and Management – Emerge Associates
Landscaping – Emerge Associates

ENDORSEMENT PAGE

This structure plan is prepared under the provisions of the City of Cockburn Local Planning Scheme No. 3.

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

03 November 2015

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

Date of Expiry:

07 December 2027

EXECUTIVE SUMMARY

This Local Structure Plan (LSP) applies to Lots 109 & 110 Wattleup Road, Hammond Park. The subject land comprises a total land area of 8.0938ha and is bound by Wattleup Road along its southern boundary, the Harry Waring Regional Reserve to the north, and Urban zoned land to the east and west.

The subject land forms part of the Southern Suburbs District Structure Plan Stage 3 (SSDSP3) Hammond Park/Wattleup which identifies the majority site for medium density residential development.

A summary of all key statistics and planning outcomes of the Structure Plan is provided in Table 2 below.

TABLE 2 - STRUCTURE PLAN SUMMARY

Item	Data	Section number referenced within Part Two of the Structure Plan Report
Gross Structure Plan Area	8.094 hectares	Section 1.2.2
Area of each land use proposed:		
<u>Zones</u> Residential (R30, R50 and R60)	4.8153 hectares (59.5% of gross area)	Section 3.2
<u>Reserves</u> Amount of Public Open Space	0.9068 hectares (11.2% of gross area)	Section 3.4
Amount of restricted Public Open Space <i>as per Liveable Neighbourhoods</i>	0.1214 hectares (13.39 % of total POS)	
Composition of Public Open Space		
- District Parks	0.0 hectares	
- Neighbourhood Parks	0.0 hectares	
- Local Park	0.8559 hectares 10.64 % (creditable)	Section 3.4 and Table 4
Estimated Lot Yield	152 lots	Section 3.3
Estimated Number of Dwellings	157 dwellings	Section 3.3
Estimated Residential Density		
- dwellings per gross hectare <i>As per Directions 2031</i>	19 dwellings per gross hectare	Section 1.3.3
- dwellings per site hectare <i>As per Liveable Neighbourhoods</i>	32 dwellings per site hectare	Section 1.3.3 & Section 3.3
Estimated Population	439 people @ 2.8 people/household	Section 3.3
Number of Secondary Schools	Nil	-
Number of Primary Schools	Nil	-

TABLE OF CONTENTS

PART ONE | STATUTORY SECTION

EXECUTIVE SUMMARY	5
1. STRUCTURE PLAN AREA.....	1
2. STRUCTURE PLAN CONTENT	1
3. INTERPRETATION AND RELATIONSHIP WITH CITY OF COCKBURN TOWN PLANNING SCHEME NO.3... 1	
4. OPERATION	2
5. LAND USE	2
6. SUBDIVISION / DEVELOPMENT.....	2
7. DEVELOPER CONTRIBUTIONS	3
1. PLANNING BACKGROUND	6
1.1 INTRODUCTION AND PURPOSE.....	6
1.2 LAND DESCRIPTION.....	6
1.2.1 Location.....	6
1.2.2 Area and Land Use	6
1.2.3 Legal Description and Ownership	6
1.3 PLANNING FRAMEWORK	9
1.3.1 Zoning and Reservations	9
1.3.2 Southern Suburbs District Structure Plan - Stage 3, Hammond Park.....	9
1.3.3 Planning Strategies.....	9
1.3.4 Policies	10
2. SITE CONDITIONS AND CONSTRAINTS	14
2.1 SITE HISTORY	14
2.2 BIODIVERSITY AND NATURAL AREA ASSETS.....	14
2.2.1 Vegetation.....	14
2.2.2 Fauna.....	15
2.3 LANDFORM AND SOILS	15
2.4 GROUNDWATER AND SURFACE WATER.....	16
2.5 BUSHFIRE HAZARD.....	16
2.6 CONTEXT AND OTHER LAND USE CONSTRAINTS	16
3. LOCAL STRUCTURE PLAN	19
3.1 DESIGN PHILOSOPHY	19
3.2 LAND USE.....	19
3.3 RESIDENTIAL	19
3.3.1 Density	20
3.3.2 Lot Layout.....	20
3.4 PUBLIC OPEN SPACE	20
3.5 MOVEMENT NETWORK.....	22
3.5.1 Existing Road Network	22
3.5.2 Future Road Network.....	23
3.5.3 Road Hierarchy.....	24
3.5.4 Intersection Treatments.....	24
3.5.5 Public Transport	24
3.5.6 Pedestrian and Bike Network.....	25
3.6 BUSH FIRE MANAGEMENT	25
3.7 WATER MANAGEMENT.....	26
3.8 ACTIVITY CENTRES AND EMPLOYMENT.....	27
4. INFRASTRUCTURE COORDINATION AND SERVICING.....	29
4.1 EARTHWORKS.....	29
4.2 ROADS	29

4.3	DRAINAGE.....	29
4.4	POWER	29
4.5	WATER SUPPLY	30
4.6	SEWER	30
4.7	TELECOMMUNICATIONS	30
4.8	GAS	30
5.	IMPLEMENTATION	31
5.1	STAGING	31
5.2	LOCAL DEVELOPMENT PLANS (LDP).....	31
5.3	LANDSCAPE PLAN.....	32
6.	CONCLUSION	33

LIST OF PLANS

PLAN 1 LOCAL STRUCTURE PLAN

LIST OF FIGURES

FIGURE 1 LOCATION PLAN
FIGURE 2 AERIAL
FIGURE 3 MRS ZONING & TPS ZONING
FIGURE 4 SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN – STAGE 3
FIGURE 5 CONTEXT PLAN
FIGURE 6 PROPOSED LOCAL STRUCTURE PLAN

LIST OF TABLES

TABLE 1: TABLE OF VARIATION(S) TO STRUCTURE PLAN
TABLE 2: STRUCTURE PLAN SUMMARY
TABLE 3: OPPORTUNITIES AND CONSTRAINTS
TABLE 4: PUBLIC OPEN SPACE SCHEDULE
TABLE 5: PRE-LODGEMENT CONSULTATION

LIST OF APPENDICES

APPENDIX 1 CERTIFICATES OF TITLE
APPENDIX 2 ENVIRONMENTAL ASSESSMENT REPORT
APPENDIX 3 BUSHFIRE MANAGEMENT PLAN
APPENDIX 4 TRANSPORT ASSESSMENT REPORT
APPENDIX 5 LOCAL WATER MANAGEMENT PLAN
APPENDIX 6 SERVICING STRATEGY
APPENDIX 7 LANDSCAPE MASTER PLAN

PART ONE | STATUTORY SECTION

1. STRUCTURE PLAN AREA

This Structure Plan is identified as the 'Plan 1 Structure Plan Lots 109 & 110 Wattleup Road Hammond Park'.

The Structure Plan applies to Lots 109 and 110 Wattleup Road, Hammond Park, being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (**Plan 1** – Structure Plan Map).

2. STRUCTURE PLAN CONTENT

The Structure Plan comprises the following sections:

- (i) **Part One** – Statutory Section. This section includes the Structure Plan Map and any textual provisions, standards or requirements that require statutory effect.
- (ii) **Part Two** – Explanatory (Non-Statutory) Information. This section provides the planning context and justification for the Structure Plan Map and the textual provisions contained in Part One of the Structure Plan. Part Two is to be used as a reference to guide interpretation and implementation of Part One.
- (iii) **Appendices**, includes all specialist consultant reports and documentation used in the preparation of and to support the land use outcomes of the Structure Plan.

3. INTERPRETATION AND RELATIONSHIP WITH CITY OF COCKBURN TOWN PLANNING SCHEME NO.3

3.1	Terms and Interpretations	As per Clause 6.2.6.3 of the City of Cockburn Town Planning Scheme No.3.
3.2	Relationship of the Structure Plan with City of Cockburn Town Planning Scheme No.3	This Structure Plan has been prepared under Clause 6.2 of the City of Cockburn Town Planning Scheme No. 3 as the subject land is zoned 'Development' and contained within Development Area No. 27 which is shown on the Scheme Map and contained within Schedule No.11.
3.3	Provisions	Pursuant to Clause 6.2.6.3 and Clause 6.2.12.2 of the City of Cockburn Town Planning Scheme No.3.
3.4	Land Use Permissibility	As per Clause 4.3.2 of the City of Cockburn Town Planning Scheme No.3.

4. OPERATION

4.1	Operation Date	As per Clause 6.2.12 of the City of Cockburn Town Planning Scheme No. 3.
4.2	Variation to Structure Plan	As per Clause 6.2.14 and Clause 6.2.15 of the City of Cockburn Town Planning Scheme No.3.

5. LAND USE

5.1	Residential Density	Residential densities applicable to the Structure Plan area shall be those residential densities shown on the Structure Plan Map.
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6. SUBDIVISION / DEVELOPMENT

6.1	Notifications on Title	<p>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: -</p> <ol style="list-style-type: none"> 1. Land or lots deemed to be affected by a Bush Fire Hazard as identified in a Bushfire Management Plan as outlined within the Lots 109 & 110 Bushfire Management Plan contained within Appendix 3. 2. Building setbacks and construction standards required to achieve a Bushfire Attack Level (BAL-29) or lower in accordance with Australian Standards (AS3959-2009): Construction of buildings in bushfire prone areas.
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6.2	Local Development Plans (Local Development Plans)	Local Development Plans (LDP's) are required to be prepared and implemented pursuant to Clause 6.2.15 of the City of Cockburn Town Planning Scheme No. 3 for lots with one or more of the following site attributes: <ul style="list-style-type: none"> ▪ Lots with rear-loaded vehicle access; ▪ Lots with direct boundary frontage (primary or secondary) to an area of Public Open Space; ▪ Lots deemed to be affected by a recognised Bush Fire Hazard, as identified spatially in Appendix 3 of the accompanying Bushfire Management Plan, under Appendix 3; ▪ Lots adjoining the existing Wattleup Road with a density code of R50; ▪ Front loaded lots with an effective frontage of less than 12m.
6.3	Bushfire Management	This Structure Plan is supported by a Bushfire Hazard Level Assessment (BFHA) and Bushfire Management Plan (BMP) (Appendix 3). Any land falling within 100 metres of a bushfire hazard identified in the BFHA/BMP is designated as a Bushfire Prone Area for the purpose of the Building Code of Australia.

7. DEVELOPER CONTRIBUTIONS

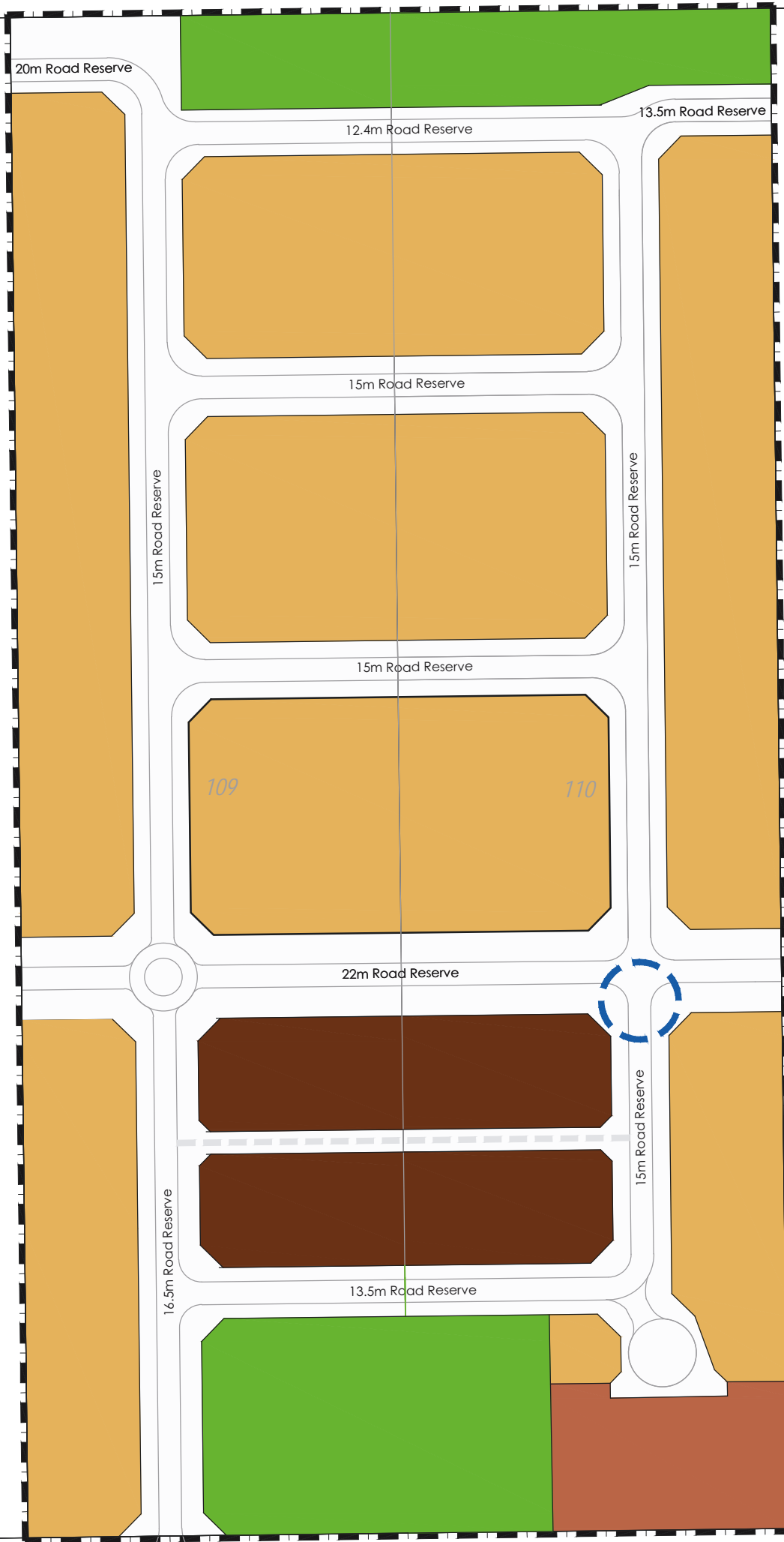
7.1	Development Contributions	The subject land falls within a Special Control Area, being Development Contribution Area (DCA) 13, and DCA10. Development of the land is therefore subject to cost contributions in accordance with Development Contribution Plan (DCP) 10 and DCP13 as prescribed within Schedule 12 of TPS3.
-----	---------------------------	--

108

109

110

111



WATTLEUP

ROAD

LEGEND

Zones

- Residential R30
- Residential R50
- Residential R60

Local Scheme Reserves

- Parks & Recreation

Other

- Structure Plan Boundary
- Laneway
- Left in/Left out

All areas and dimensions are subject to survey, engineering and detailed design and may change without notice. © Copyright of Burgess Design Group.

PLAN 1



0 10 20 30 40 50m
SCALE 1:1,500 (A3)

LOCAL STRUCTURE PLAN
LOTS 109 & 110 WATTLEUP ROAD
HAMMOND PARK
CITY OF COCKBURN

1. PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

This Local Structure Plan (LSP) has been prepared by Burgess Design Group on behalf of Wattleup Road Property Development Pty Ltd, as the contracted purchaser of Lot 109 Wattleup Road, and Mate & Anica Dropulic, being the registered landowners of Lot 110 Wattleup Road, Hammond Park (the subject site).

The *Lots 109 & 110 Wattleup Road LSP* further refines the land uses identified under the *Southern Suburbs District Structure Plan Stage 3 (SSDSP3)* in order to guide future subdivision and development. This structure plan also considers the adjoining proposed structure plan area, *Lots 1, 111 & 801 Wattleup Road LSP*, to create an integrated transition between the two structure plan areas.

This Local Structure Plan has been prepared in consultation with a number of sub-consultants and is informed by a suite of technical investigations and documentation (copies of which are included as the **appendices**) that includes: Environmental Assessment; Traffic Impact Assessment; Civil Engineering and Servicing Report; Local Water Management Strategy; Bushfire Management Plan; *and* Landscape Master Plan.

1.2 LAND DESCRIPTION

1.2.1 Location

The subject land is located in Hammond Park, approximately 25 kilometres south of the Perth CBD, 5.5 kilometres south west of Cockburn Central, within the municipality of the City of Cockburn.

The subject land is bound by Wattleup Road to the south, the Harry Waring Regional Reserve to the north and Urban zoned land to the east and west. The site is located on the western side of the proposed *Lots 1, 111 & 801 Wattleup Road Local Structure Plan* area. Existing access to the site is via Wattleup Road (Refer **Figure 1**).

1.2.2 Area and Land Use

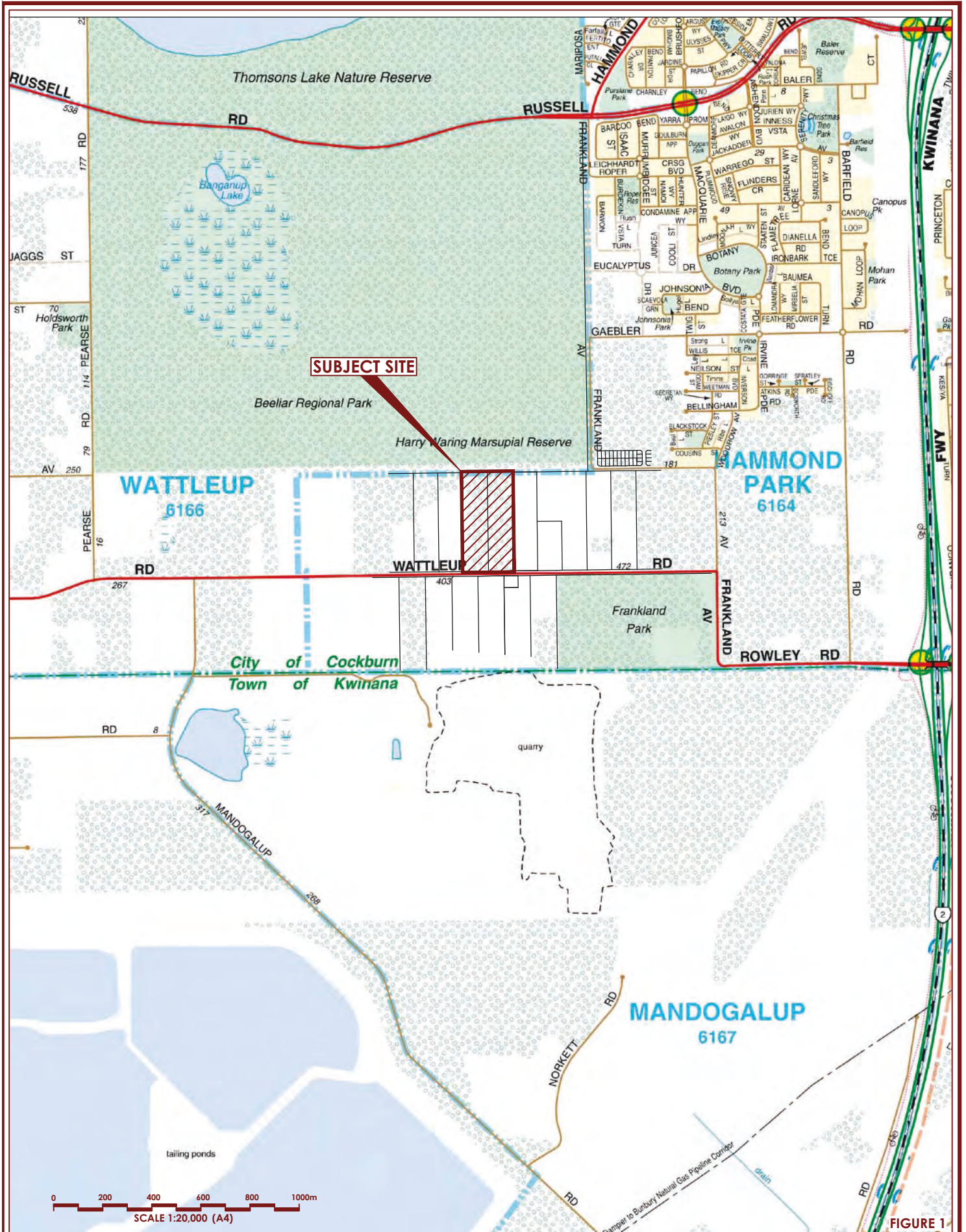
The subject land incorporates Lots 109 & 110 Wattleup Road, Hammond Park, both with site areas of 4.0469ha. Both land parcels have a frontage of approximately 100.5m to Wattleup Road with a lot depth of approximately 402m. The subject site has a total area of 8.0938ha.

The subject land remains largely vegetated, consisting of large areas of Natural Vegetation, with the exception of an existing dwelling and outbuilding located on Lot 110 (refer to **Figure 2**).

1.2.3 Legal Description and Ownership

Certificates of Title are attached at **Appendix 1**. The subject land is legally described as:

- Lot 109 on Plan 8384 Volume: 1304 Folio: 683 (Registered Proprietor: Sail Holdings Pty Ltd)
- Lot 110 on Deposited Plan 8384 Volume: 1304 Folio: 684



Planner: JD
Client: OPE HAM/EGD WAT

Date: 26.11.14
Plan No: OPE HAM 9-01

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LOCATION PLAN
LOTS 109 & 110 WATTLEUP ROAD
HAMMOND PARK
CITY OF COCKBURN



SUBJECT SITE

WATTLEUP

ROAD

0 20 40 60 80 100m
SCALE 1:3,000 (A4)

FIGURE 2



Planner: JD Date: 26.11.14
Client: OPE HAM/EGD WAT Plan No: OPE HAM 9-01

AERIAL PHOTOGRAPH
LOTS 109 & 110 WATTLEUP ROAD
HAMMOND PARK

1.3 PLANNING FRAMEWORK

1.3.1 Zoning and Reservations

The subject land is currently zoned 'Urban' under the Metropolitan Region Scheme and 'Development' under the City of Cockburn Town Planning Scheme No.3 (TPS3) (refer **Figure 3**).

The objectives of the 'Development' zone under TPS3 are *"to provide for future residential, industrial or commercial development in accordance with a comprehensive Structure Plan prepared under the Scheme."*

Pursuant to the above provision as specified in TPS3 (Clause 4.2.1), structure planning is required prior to subdivision and development of the land.

The subject land is further contained within a Special Control Area, being Development Contribution Area (DCA) 13, under TPS3. As such, development of the land is subject to cost contributions in accordance with Development Contribution Plan 13, as prescribed within Schedule 12 of TPS3.

1.3.2 Southern Suburbs District Structure Plan - Stage 3, Hammond Park

The LSP area is located within the *Southern Suburbs District Structure Plan - Stage 3, Hammond Park (SSDSP3)* area (refer **Figure 4**). The *SSDSP3* generally applies to land west of Kwinana Freeway, from Gaebler Road to the north, through to Rowley Road to the south. The *SSDSP3* has been adopted by the City of Cockburn as a guiding document only and therefore does not have the endorsement of the WAPC.

SSDSP3 identifies the need for a Local Structure Plan (LSP) to be prepared over the subject land in order to achieve an integrated and coordinated development outcome. The LSP has been designed to integrate with the adjoining proposed LSP, to ensure that the planning objectives for the area are not compromised.

The *SSDSP3* designates medium density residential uses over the majority of the land, with a portion identified as Public Open Space (POS). The uses proposed herein reflect those identified under the *SSDSP3* by providing a base residential density code of R30, with higher densities adjoining the POS. This LSP coordinates the provision of POS across the two subject landholdings to ensure the 10% POS requirement for each parent lot is achieved, as per the requirements of *SSDSP3*.

1.3.3 Planning Strategies

Directions 2031 – A Spatial Framework for Perth and Peel

Directions 2031 is a high-level strategic plan that establishes a spatial framework and vision for future growth of the Perth metropolitan and Peel region. It provides direction on the region's projected growing population and guides the detailed planning and delivery of housing, infrastructure and services, to ensure the region is able to respond sustainably to longer term growth pressures. Directions 2031 is a medium-term planning tool, anticipating a city of 3.5 million people by the year 2031.

The objectives of Directions 2031 are based on contemporary community, economic and environmental factors that will likely influence the growth of the Perth region and sets a range of strategic directions to guide decision-making. It provides an indication of how the planning system could accommodate the housing and land supply needs of a city of 3.5 million people by establishing a minimum target density of 15 dwellings per gross urban zoned hectare, for the outer metropolitan sub-regions.

This LSP responds to the goals set out in Directions 2031, providing *19 dwellings per gross hectare* of urban zoned land.

Outer Metropolitan Perth and Peel Sub-Regional Strategy

Sub-regional strategies provide a framework for delivering the objectives of Directions 2031. The draft Outer Metropolitan Perth and Peel Sub-Regional Strategy (OMPPSRS) addresses strategic planning issues in the outer sub-regions, such as long-term land supply, and guides the preparation and review of structure plans. The sub-regional strategy provides information about the level of expected population growth in each local government area and estimates the dwelling supply for each sub-region based on currently identified infill opportunities, existing urban and urban deferred zoned land, and potential urban expansion and investigation areas.

The *SSDSP3* area (designated 'SOU1' under the OMPPSRS) has been identified as 'urban zoned undeveloped' under the sub-regional strategy, having the capacity to accommodate an additional 3,000+ dwellings. This LSP has therefore been prepared to meet the objective of achieving housing targets in the south-west sub-region.

1.3.4 Policies

State Planning Policy 3 (SPP3): Urban Growth and Settlement

SPP3 provides a set of principles and considerations which apply to planning for urban growth and settlement in Western Australia and aims to provide a consolidated and sustainable built form.

This Structure Plan has been prepared in accordance with SPP3, and can provide for a range of housing options on highly serviceable land, with good access to nearby activity centres.

Liveable Neighbourhoods

Liveable Neighbourhoods (LN) is a state-wide development control policy that facilitates the development of sustainable communities. It provides an integrated planning and assessment policy for the preparation of Structure Plans and subdivision designs and represents an alternative performance-based approach to conventional subdivision policies.

Liveable Neighbourhoods requires Local Structure Plans to express density targets as dwellings per site hectare and states that "*in most new urban areas, urban densities of at least 15 dwellings per urban hectare, and an average of 22 dwellings per site hectare, should be provided.*"

This Structure Plan meets the LN density target by providing an average of *32 dwellings per site hectare* of residential zoned land.

This Structure Plan further adopts the principles of LN policy and should be assessed against the objectives and requirements of each of the LN design elements, as outlined below:

1. Community design

The proposal will effectively create a sustainable, safe, vibrant, and efficient built form through a structure that is based on connectivity (with nearby local centres and schools) that supports walking and cycling, to promote a sense of community.

2. Movement network

The proposal provides a safe and efficient movement network that utilises the street design principles of LN. The road network is based upon integration with existing Wattleup Road that forms the perimeter of the subject land and opportunities to link the subject land with surrounding developments.

3. Lot layout

The lot pattern is generally based on a traditional grid to maximise the number of east/west or north/south lots for best opportunities for climate responsive design, whilst also facilitating a highly permeable and legible street layout. The LSP provides for a range of residential lot options, with densities concentrated around the area of POS to the south of site.

4. Public parkland

The POS comprises 10.64 % of the subdivisible area, features integrated drainage, and is effectively surveilled by surrounding development.

5. Urban water management

The proposal maximises local recharge of water by utilising integrated drainage basins incorporated within the POS and the co-location of flood storage areas with natural landforms and native remnant vegetation where possible, to ensure an integrated water management approach for site drainage.

6. Utilities

The proposal has been designed to accommodate all normal servicing infrastructure requirements.

7. Activity centres and employment

The subject site contains no activity or employment centres, but is located within 2km of two local centres. The residential densities prescribed herein have been designated with high level of serviceability in mind.

8. Schools

The subject site contains no school sites, but is located approximately 150m east of a public primary school site, and approximately 800m west of a private primary school and public high school site. This structure plan has been designed to provide an appropriate interface and connection with the nearby public primary school.



METROPOLITAN REGION SCHEME



CITY OF COCKBURN LOCAL PLANNING SCHEME



FIGURE 3



Planner: JD Date: 26.11.14
 Client: OPE HAM/EGD Warran No: OPE HAM 9-01

PLAN NOTES

1. FUTURE RESIDENTIAL DEVELOPMENT SHALL NOT DIRECTLY ABUT ROWLEY ROAD. FUTURE LOCAL STRUCTURE PLANNING IS TO DEMONSTRATE A SUITABLE INTERFACE TREATMENT (E.G. ENLARGED SERVICE ROAD DESIGN WITH FRONTING RESIDENTIAL DEVELOPMENT AS A MINIMUM) BEING PROVIDED TO THE FUTURE ROWLEY ROAD FREIGHT ACCESS ROUTE.
2. FUTURE ACCESS ROAD TO BE PROVIDED AS A FULL INTERSECTION UNTIL ROWLEY ROAD IS UPGRADED AND CONSTRUCTED TO A REGIONAL ROAD AT WHICH TIME THE INTERSECTION WILL BE CONVERTED AND MAINTAINED AS LEFT IN LEFT OUT ACCESS ONLY. (SUBJECT TO MAIN ROADS WA APPROVAL).
3. AS PART OF THE UPGRADING OF ROWLEY ROAD, GRADE SEPARATED PEDESTRIAN AND VEHICULAR ACCESS IS TO BE PROVIDED AS A CONTINUATION OF BARFIELD ROAD, IN ORDER TO MAINTAIN CONNECTIVITY BETWEEN FUTURE DEVELOPMENT TO THE SOUTH OF ROWLEY ROAD. THIS MAY BE FURTHER RATIONALISED THROUGH SUBSEQUENT LOCAL STRUCTURE PLANNING TO DETERMINE HOW THIS SPECIFIC ACCESS IS CREATED.
4. FUTURE STRUCTURE PLANNING OF THE CELL SOUTH OF WATTLEUP ROAD MUST PROVIDE AN APPROPRIATE INTERFACE WITH RESIDENTIAL DEVELOPMENT NORTH OF WATTLEUP ROAD. THIS IS TO HAVE PARTICULAR REGARD TO THE POSITION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION IN RESPECT OF ITS POSITION ON THE ACCEPTABILITY (OR OTHERWISE) OF RESIDENTIAL DEVELOPMENT SOUTH OF WATTLEUP ROAD, AND ALTERNATIVE (NON-RESIDENTIAL) LAND USES THAT MAY BE REQUIRED. ANY IMPACTS ASSOCIATED WITH THE FUTURE DEVELOPMENT OF NON-RESIDENTIAL LAND USES IN THE CELL SOUTH OF WATTLEUP ROAD MUST BE FULLY CONTAINED WITHIN THE CELL BOUNDARIES.
5. NEIGHBOURHOOD CENTRE - THE DESIGN AND FUNCTION OF THE PROPOSED NEIGHBOURHOOD CENTRE SHALL BE BASED ON 'MAIN STREET' PRINCIPLES AND RELEVANT PROVISIONS OF LIVEABLE NEIGHBOURHOODS. ANY ASSOCIATED LOCAL STRUCTURE PLAN MUST ADEQUATELY DEMONSTRATE THROUGH CONCEPT PLANS AND/OR DETAILED AREA PLANS THE MANNER IN WHICH THE CENTRE ADDRESSES THE REQUIREMENTS OF THE RELEVANT SECTIONS OF THE SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN - STAGE 3 REPORT, AND PARTICULARLY THE NEIGHBOURHOOD CENTRE CONCEPT PLAN PROVIDED WITHIN THE REPORT DOCUMENT.
6. NEIGHBOURHOOD NODES - THE DESIGN AND FUNCTIONALITY OF THE NEIGHBOURHOOD NODES SHALL BE DISTINCTLY DIFFERENT TO THE PRIMACY OF THE NEIGHBOURHOOD CENTRE. THESE LOCATIONS ARE TO PROVIDE FOR A RANGE OF MORE LOCALLY FOCUSED ACTIVITIES AND FUNCTIONS. WHERE RETAIL IS PROPOSED, THESE ARE TO NOT EXCEED A MAXIMUM RETAIL FUNCTION OF 300SQM, WITH SUCH FUNCTION BASED UPON A 'CONVENIENCE STORE' TYPE USE.
7. CENTRAL PRECINCT - A COMPREHENSIVE LOCAL STRUCTURE PLAN WILL BE REQUIRED FOR THE CENTRAL NEIGHBOURHOOD CENTRE AND ADJACENT DEVELOPMENT. THE CITY WILL NOT CONSIDER INDIVIDUAL STRUCTURE PLANS IN THIS LOCATION DUE TO THE NEED TO ENSURE THE SUITABLE INTEGRATION OF DEVELOPMENT.

GENERAL NOTES

- A. ALL LOCAL STRUCTURE PLANS MUST INCLUDE AND BE INFORMED BY:**
- I) DETAILED LWMS BASED UPON REGIONAL DRAINAGE STUDY.
 - II) DETAILED NOISE MANAGEMENT STRATEGY WHERE LSP ADJOINS ROWLEY ROAD.
 - III) FIRE MANAGEMENT PLAN WHERE LSP IS LOCATED NEAR ROS OR SIGNIFICANT POS.
 - IV) FLORA AND FAUNA MANAGEMENT PLAN.
 - V) TRAFFIC MANAGEMENT PLAN.
 - VI) CONTAMINATED SITES & ACID SULPHATE SOILS MANAGEMENT PLAN WHERE REQUIRED.
 - VII) HERITAGE STUDY WHERE LSP INCLUDES FORMER HISTORIC TRAMWAY.
 - VIII) TRANSITION AND/OR INTERFACE STRATEGY IN RESPECT OF EXISTING RURAL USES.
 - IX) NEIGHBOURHOOD CENTRE CONCEPT PLAN AND DETAILED AREA PLAN WHERE INCLUDED WITHIN LSP AREA.
 - X) NEIGHBOURHOOD NODE CONCEPT PLAN AND DETAILED AREA PLAN.
- B. LOCAL STRUCTURE PLANS**
SUBDIVISION AND DEVELOPMENT OF THE SUBJECT AREA IS TO BE IN ACCORDANCE WITH AN ENDORSED APPLICABLE LOCAL STRUCTURE PLAN.

- C. PUBLIC OPEN SPACE AND DRAINAGE**
PUBLIC OPEN SPACE AREAS ARE INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN AND MODELLING AT THE LOCAL STRUCTURE PLAN STAGE. ALL LOCAL STRUCTURE PLANS MUST ALSO INCORPORATE A LOCAL WATER MANAGEMENT STRATEGY TO DEMONSTRATE THE MANNER IN WHICH DRAINAGE CAN BE SELF CONTAINED WHILST TAKING INTO CONSIDERATION THE DISTRICT/REGIONAL DRAINAGE OBJECTIVES, AND ENSURING BEST PRACTICE WATER SENSITIVE URBAN DESIGN. THE FUNCTIONALITY OF OPEN SPACE FOR INFORMAL ACTIVE RECREATION MUST ALSO BE CONSIDERED AS PART OF FUTURE OPEN SPACE AND DRAINAGE CO-PLANNING.
- D. RESIDENTIAL**
- I) USES WITHIN THE RESIDENTIAL AREAS ARE AS PER THE CITY OF COCKBURN'S TOWN PLANNING SCHEME NO.3 USE CLASS TABLE.
 - II) RESIDENTIAL DENSITIES ARE INDICATIVE ONLY AND SHALL BE REFINED AT THE LOCAL STRUCTURE PLAN STAGE IN ACCORDANCE WITH THE LOCAL CRITERIA AS DEFINED WITHIN THE ASSOCIATED SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN - STAGE 3 REPORT.
 - III) THE BASE CODING/MINIMUM DENSITY APPLICABLE TO THE DISTRICT STRUCTURE PLAN AREA IS TO BE CONSISTENT WITH DIRECTIONS 2031 IN REQUIRING GENERALLY 15 DWELLINGS/HA AND 25 DWELLINGS/HA IN AREAS NEAR 'CENTRES' AND AREAS OF 'AMENITY'.
- E. DEVELOPMENT CONTRIBUTIONS**
DEVELOPMENT IN THIS AREA IS ALSO SUBJECT TO DEVELOPMENT CONTRIBUTIONS, SCHEDULE 12 OF TOWN PLANNING SCHEME NO. 3 DETAILS DEVELOPMENT CONTRIBUTION AREA PROVISIONS. PERSONS OR COMPANIES PROPOSING TO UNDERTAKE SUBDIVISION IN THIS AREA SHOULD REVIEW SCHEDULE 12 AND ALSO CONTACT THE CITY'S STRATEGIC PLANNING TEAM TO ASCERTAIN THERE ARE NO PENDING AMENDMENTS TO THIS SCHEDULE.

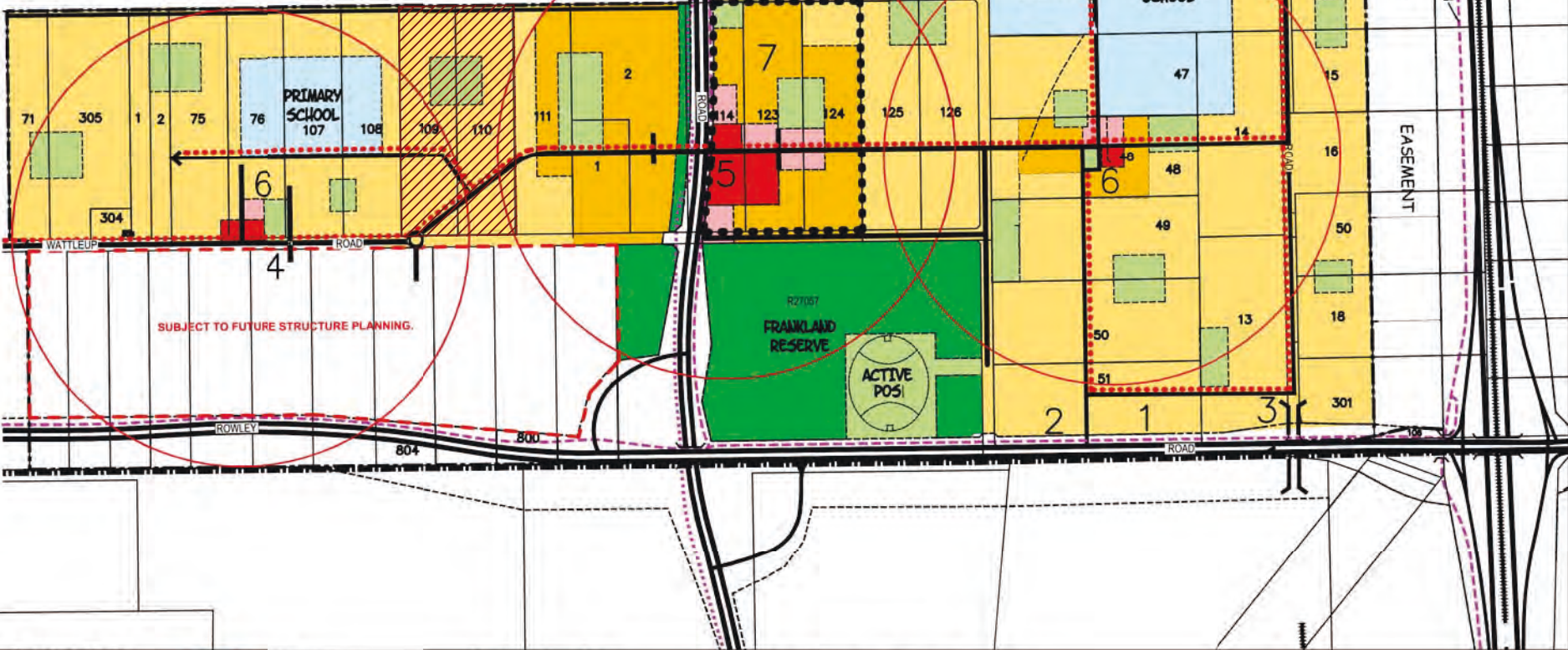


FIGURE 7

GNA 2/05

SCALE 1:12,500

LEGEND

<p>Residential Density</p> <ul style="list-style-type: none"> High Medium 	<ul style="list-style-type: none"> Local Centre (Pedestrian Based Retail) Mixed Business / Commercial / Home Based Business Community Facilities / Schools etc Conservation Category Wetland* * In accordance with DEC Geomorphic Wetlands Swan Coastal Plain dataset 	<p>Key Open Space Areas:</p> <ul style="list-style-type: none"> Public Open Space Regional Open Space 	<p>Key Road Structure (Existing and Proposed)</p> <ul style="list-style-type: none"> Major Shared Path Historic Baldivis Tramway Trail 400m Walkable Catchment Central Precinct
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SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN
- STAGE 3, HAMMOND PARK / WATTLEUP

All areas and dimensions are subject to survey, engineering and detailed design and may change without notice. © Copyright of Burgess Design Group.

FIGURE 4



2. SITE CONDITIONS AND CONSTRAINTS

The following section provides a summary of the key site characters. A Context Plan (**Figure 5**) has also been prepared to illustrate the opportunities and constraints that drove the design response to the site and context analysis.

2.1 SITE HISTORY

Based on a review of historic aerial photography, the majority of the site has remained fully vegetated since at least 1953. There does not appear to be any historic evidence of on-site activities (e.g. market gardening) within the site that would raise considerations relating to potential soil and/or groundwater contamination.

A search of the Department of Environment Regulation's (DER) Contaminated Sites Database and Register (DER, 2013) found there to be no registered sites within or immediately adjacent to the site.

2.2 BIODIVERSITY AND NATURAL AREA ASSETS

A range of environmental investigations have been carried out by Emerge Associates to determine the biodiversity values and natural area assets within the LSP area. The environmental assessment (**Appendix 2**) provides information regarding the environmental attributes and values of the site. It is based on a range of information sources including local and regional reports, databases and publically available mapping, and where available, site specific surveys and investigations.

The environmental assessment has been supported by the following technical investigations:

- Groundwater level and quality monitoring;
- Flora and vegetation surveys (conducted over July and October 2014) and preparation of a *Level 2 Flora and Vegetation Report* (Emerge Associates 2014);
- Fauna survey (August 2014) and preparation of a *Fauna Assessment* (Greg Harewood 2014).

2.2.1 Vegetation

The site contains extensive remnant native vegetation (refer **Figure 2 – Aerial Photograph**), consisting mainly of low Banksia woodland. Vegetation condition ranges from 'Completely Degraded' to 'Excellent'. A Priority 1 Flora species *Eremaea asterocarpa* subsp. *Brachyclada* and a Priority 4 Flora species *Dodoniae hackettiana* was found within the site. These Priority Flora species are known from the local area with the Priority 4 flora species recorded in the adjoining Harry Waring Marsupial Reserve, immediately north of the site, and the Priority 1 flora species recorded east of the site in Wandii.

No Threatened Flora, Threatened Ecological Communities or Priority Ecological Communities were found within the site.

2.2.2 Fauna

Fauna habitat values over the site are relatively good, given the presence of largely intact remnant vegetation however, biodiversity values would have been reduced to a certain degree due to overall fragmentation of vegetation within the wider area by the establishment of market garden operations, residential development and road construction.

One threatened fauna species was observed at the site, being *Carnaby's Black-Cockatoo* and diggings attributed to the southern brown bandicoot (or *Quenda*), a Priority 5 species, was also observed. The habitat tree assessment identified only five trees of suitable size (Diameter at Breast Height >50 cm) to support the Black-Cockatoo, however none of these trees appeared to have hollows associated with Black-Cockatoos.

Given the presence of high value fauna habitat within the adjacent Harry Waring Marsupial Reserve, the removal of vegetation for development is not expected to have a significant impact on local fauna. However, due to the presence of foraging habitat for Carnaby's Black-Cockatoo, the proponent will need to consider their potential obligations pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), prior to commencing development.

2.3 LANDFORM AND SOILS

The majority of the site is underlain by Tamala Limestone with Bassendean Sands in the north east corner of the site (Gozzard 1983) with soils consisting of highly permeable sands.

ASS risk mapping (Landgate 2014) indicates a small area of the north-east of the site as having a 'moderate to low risk' of ASS being present within 3 m of the natural surface. The rest of the site has no known risk of ASS being present within 3 m of the natural surface. It should be noted that any urban development must meet the requirements of the Western Australian Planning Commission's *Acid Sulphate Soils Planning Guidelines of September 2010*.

The current surface level of Lots 109 & 110 ranges from RL 48.0 m AHD in the south east, to RL 38.0 m AHD in the south west, to RL 28.0 m AHD in the north east, with the site reaching its highest elevation in the center of the south-west of Lot 109 at 48.0 m Australian height datum (AHD). Topography slopes away from this high point to the south-west and north-east. The lowest elevation is seen in the north-east corner of the site at 28.0 m AHD.

Development Engineering Consultants (DEC), the project engineers, have advised that based on preliminary earthwork planning, there is likely to be significant site level constraints with level differences between future lot levels and the existing Wattleup Road. The existing Wattleup Road is undulating and surface levels are somewhat fixed at approximately RL 44.0 m AHD adjacent to lot 110 and 38.0 m AHD adjacent to Lot 109, until further development proceeds south of Wattleup Road. This poses some difficulties in achieving acceptable access to the subject land from Lot 110, with access being restricted from Wattleup Road to future lots within Lot 110, until such time as changes are made to the Wattleup Road surface level. Vehicular access from Wattleup Road will therefore need to be provided initially via Lot 109, where the level of Wattleup Road is at RL 38.0 m AHD, making it the most practicable location to incorporate site access whilst also ensuring an acceptable contour to work with across the site.

2.4 GROUNDWATER AND SURFACE WATER

Department of Water (DoW) historical groundwater data recorded at DoW's long term monitoring bore, located 300m from the north-east corner of the site, recorded an historical Maximum Groundwater Level (MGL) of 20.1 m AHD (DoW 2014). Based on the existing topography of the site, depth to MGL therefore ranges from 7.9m to 27.9m below ground level (BGL). The significant depth to groundwater and lack of historical development of the site results in minimal risk to groundwater quality and therefore additional monitoring to support the LSP is not required (M. Hingston [DoW] 2014, pers. comm., 5th June) (refer **Appendix 5 - LWMS**).

The high permeability of the underlying sands and the vegetation coverage has resulted in no natural channels forming over the site and reinforces that the majority of surface runoff will infiltrate at source. There are also no defined streamlines or floodways within the site, with surface runoff from extreme rainfall events likely to be seen as sheet flow directed towards the north-east and south-west corners of the site, as dictated by the natural topography.

2.5 BUSHFIRE HAZARD

A key issue affecting the site is the interface with the adjoining Bush Forever Area to the north. In response to this concern, a bushfire hazard assessment has been carried out and a Bushfire Management Plan (BMP) prepared by Emerge Associates (refer **Appendix 3**).

The site is surrounded by Urban zoned land with the exception of Bush Forever Site No.392 immediately north of the subject land. A vegetation class map has been included as part of **Appendix 3** outlining the existing vegetation classifications on the study site and in the surrounding 100m assessment area. The vegetated Harry Waring Marsupial Reserve adjoining the site to the north (Bush Forever Site No.392), poses the majority of bushfire hazard.

Post-development vegetation mapping has also been prepared under **Appendix 3**, which outlines the dominant vegetation types that will remain within the site and surrounding area (within 100m) after development has been completed.

The Harry Waring Marsupial Reserve (Bush Forever Site No. 392) contains extensive woodland vegetation that will pose a long term bushfire hazard for residential development. Neighbouring vegetation to the west and east of the site will pose only a temporary hazard to development due to the temporary nature of the vegetation. These areas are subject to future urban development in accordance with the approved *SSDSP3*, and once vegetation is removed to accommodate development, the hazard will no longer apply.

2.6 CONTEXT AND OTHER LAND USE CONSTRAINTS

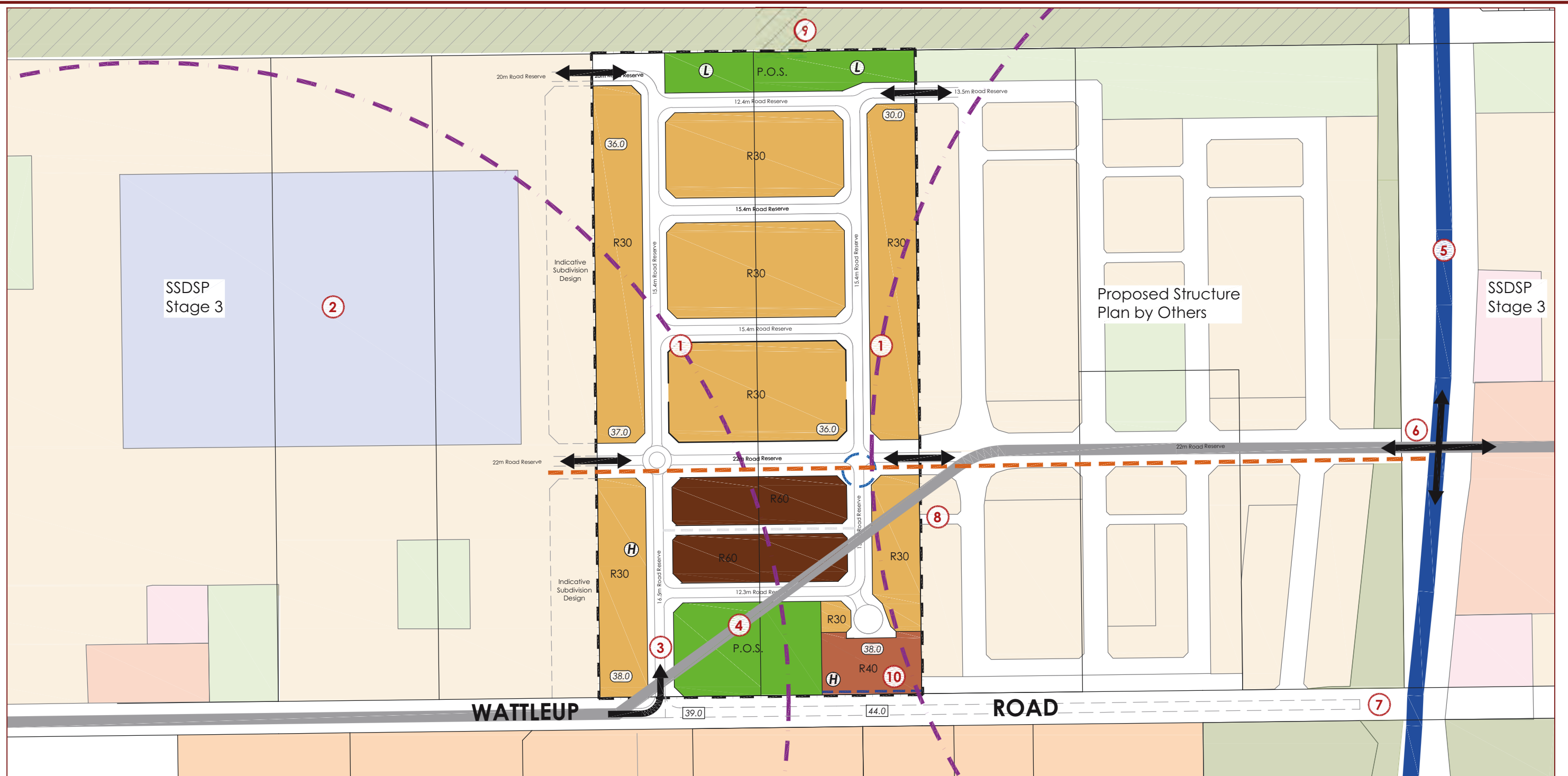
The opportunities and constraints associated with the LSP and surrounding land uses, as discussed in the above section, have been broadly defined in the Context Plan (**Figure 5**) and are summarised briefly in Table 3 below.

TABLE 3: OPPORTUNITIES AND CONSTRAINTS

Opportunities	Constraints
Site located within the 400m catchments of Local Centres under SSDSP3	Topography of subject land - Natural Surface Levels need to be reduced to support service provider requirements
Proximity of Primary School site under SSDSP3	Timing of Rowley Road extension and downgrade of Wattleup Road
Wattleup Road realignment as main east-west road link - internalised pedestrian based main street	Wattleup Road realignment as shown under SSDSP3
Interface with the Harry Waring Reserve (Bush Forever Site No. 392)	Interface with the Harry Waring Reserve (Bush Forever Site N. 392) to provide for both BPZ separation distances and increased construction standards as per AS3959-2009
Natural low point located adjacent to Harry Waring Reserve – drainage and POS interface	Servicing of the site is reliant on adjoining development to the east (extensions from eastern development)
Opportunity for increased density overlooking POS	Existing Wattleup Road level remains unchanged

The opportunities and constraints mapping (**Figure 5**) helps to illustrate the specific site characteristics that have been considered to determine the areas for traditional residential uses, higher density codes, feasible road connections and the location of public open space.

Three key issues were identified through the technical investigations. The first being servicing constraints associated with the topography of the site, the second being the design impact of the realignment of Wattleup Road as shown under the Southern Suburbs District Structure Plan, and the third being the interface with bushfire prone areas adjoining the site.



LEGEND - CONTEXT & OPPORTUNITIES

- ① 400m walkable catchment to Local Centre.
- ② Primary School Site as per SSDSP.
- ③ Linkage to Wattleup Road.
- ④ Wattleup Road realigned as per SSDSP 3.
- ⑤ Hammond Road (Other Regional Road) linkage to regional road network.

- ⑥ Controlled intersection at Hammond and (realigned) Wattleup Roads.
- ⑦ Wattleup Road to be downgraded & terminated.
- ⑧ Submission made on adjoining LSP - laneway to be removed.
- ⑨ Bush Forever Site 392 - bush fire prone area.
- ⑩ Access onto Wattleup Road restricted.

- [] Structure Plan Boundary
- Laneway
- Restricted Access
- Left in/Left out
- Shared Path
- Wattleup Road Downgrade & Termination (long term)
- Wattleup Road Realignment (SSDSP 3)
- Other Regional Road

- 400m Walkable Catchment
- Bushfire Prone Area
- Road Connectivity
- 38.0 Proposed reduced level
- 39.0 Existing road level
- H High Point
- L Low Point

Land Use

- Residential
- Local Centre
- Mixed Use
- Development Zone (TPS 3)

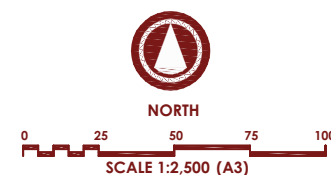
Local Scheme Reserves

- Public Open Space
- Parks & Recreation (MRS)
- Community Facilities/Schools

FIGURE 5



All areas and dimensions are subject to survey, engineering and detailed design and may change without notice. © Copyright of Burgess Design Group.



3. LOCAL STRUCTURE PLAN

3.1 DESIGN PHILOSOPHY

The *Lots 109 & 110 Local Structure Plan* has been guided by the development principles contained within the *Southern Suburbs District Structure Plan Stage 3 - Hammond Park (SSDSP3)*. Ultimately, this LSP will establish a variety of accommodation types, giving future residents a range of housing options regardless of their age or housing preference, thereby providing a varied population and creating a greater sense of community.

The detailed environmental, engineering, traffic, water management and fire management studies have been prepared for the subject site and can be found as the appendices. These technical reports should be read in conjunction with this structure plan to better understand the site characteristics that have influenced and shaped the LSP design.

3.2 LAND USE

The land uses proposed under this Local Structure Plan are in accordance with those outlined in the SSDSP3, with land intended primarily for medium density residential development, including two areas of Public Open Space.

The LSP is based on a logical and permeable network of streets that will combine to create a pleasant walking/cycling environment. Higher residential densities are envisaged in those areas with higher amenity, especially where future lots will overlook an area of Public Open Space.

The LSP showing the proposed land uses can be found in **Plan 1** (statutory) and **Figure 6** (non-statutory).

3.3 RESIDENTIAL

In accordance with the *SSDSP3*, this LSP comprises of a range of medium residential densities ranging from Residential R30 through to Residential R60.

The LSP aims to accommodate approximately 152 residential lots, including up to five duplex sized lots within an R50 zone in the south-east corner of the site. A total of 157 dwellings are expected achieving an overall residential site density of approximately **32 dwellings units per site hectare**.

It should be noted that estimated dwelling yields have been based on the assumption that there is potential for the R50 site to be further subdivided following the lowering of Wattleup Road. The structure plan should therefore ultimately accommodate approximately 439 residents, if fully developed. Population is based on the latest ABS data for household size which indicates an average of 2.8 people per dwelling within the municipality of Cockburn.

The target housing yield set by the *SSDSP3* and *LN* will be achieved, even if the R50 site is not further subdivided.

3.3.1 Density

The application of densities are as prescribed under section 5.4.1 'Housing Principles' of the SSDSP3 report, and the locational criteria set out below:

Locational Criteria - Medium Density - Residential R30

1. Residential R30 will be the minimum base coding over the SSDSP3 area. The R30 density allows for the provision of traditional front-loaded single dwelling lots, ranging upwards from 260m².

Locational Criteria - Medium Density - Residential R50 and R60

1. Generally surrounding areas of high amenity, such as open space;
2. Located so as to maximise access to and use of services and facilities such as public open space, activity nodes and public transport routes; and
3. Located to enhance passive surveillance of public spaces.

Owing to the active area of POS in the south, the proposed increased density of adjoining lots to R60 (laneway) and R50 (homestead site) is in accordance with the criteria for varying the R30 base coding. This POS area provides a betterment function to smaller housing products, which, in return, enhances passive surveillance.

The densities proposed under Plan 1 indicate a good range of housing products will be made available.

3.3.2 Lot Layout

The proposed lot pattern is generally based on a traditional grid to maximise the number of east/west and north/south facing lots, for best attempts at climate responsive design, whilst also facilitating a highly permeable and legible street layout.

The layout has been orientated such that it can provide effective surveillance of (and achieve an effective relationship with) the public domain such as the streets, future bus routes and the local and regional open spaces. The proposed street pattern has been influenced by the need to achieve effective solar orientation for dwellings whilst considering the topography of the site and interface with and layout of the adjoining LSP area to the east.

3.4 PUBLIC OPEN SPACE

A Public Open Space (POS) schedule, in accordance with *Liveable Neighbourhoods* (LN) requirements, is provided at Table 4 below, and should be read in conjunction with the associated Landscape Master Plan (**Appendix 7**) prepared by Emerge Associates. The Landscape Master Plan is an indicative plan to illustrate the general principles and intent of the Public Open Space areas.

Whilst the proposed POS areas within the LSP modifies that originally proposed under the adopted SSDSP3, it maintains the original SSDSP3 objective of ensuring an equal 10% provision of open space across all landowners. POS within the LSP area comprises two (2) Public Open Space (POS) areas, one north and one south, totalling 0.8559 hectares (ha). The northern POS area is 3,700m² in size and the southern POS area is 5,368m² (refer to **Figure 6**).

The functionality of the POS areas evolved as a greater understanding of the site's topographical and land use constraints emerged. The SSDSP3 also provides scope for further rationalisation of the distribution of POS. The location of POS prescribed herein is considered appropriate as it:

- Allows for a cohesive and integrated approach to the provision of POS between the subject LSP and the proposed LSP over the adjoining *Lot 111 Wattleup Road*;
- Accommodates drainage, as dictated by the natural topography, within a usable landscaped area to create amenity for residents;
- Encourages maximum surveillance of POS and bushland areas to discourage opportunities for criminal activities;
- Provides a green interface between residential uses and the adjacent Harry Waring Reserve;
- Reduces the impact of bushfire hazards associated with Harry Waring Reserve by providing a managed landscape buffer between the hazard and future assets; *and*
- Manages the interface with the existing Wattleup Road and the changes in surface levels across the site.

The total POS area meets the minimum 10% provision for each landowner as outlined in the SSDSP3 and Element 4 of Liveable Neighbourhoods. The proposed LSP provides a total of 10.64% creditable POS (refer Table 4).

The City of Cockburn will manage the long term maintenance of the parkland and reserves that fall within POS areas.

TABLE 4: PUBLIC OPEN SPACE SCHEDULE

Lots 109 & 110 Wattleup Road POS Schedule			
		ha	ha
A	Gross Area		
	Lot 109 Wattleup Road	4.0469	
	Lot 110 Wattleup Road	4.0469	
	TOTAL		8.0938
Less Environmental/Ecological Considerations			
	Non Creditable open area's (1:1 drainage)	0.0509	

B		TOTAL	0.0509
C		NET SITE AREA (A-B=C)	8.0429
Non-Residential Deductions			
	Nil		Nil
D		TOTAL	0.0000
E		Net Subdivisible Area (C-D=E)	8.0429
F		10% Requirement (10% of E = F)	0.8043
POS Requirement			
G	Minimum 80% Unrestricted Open Space (80% of F=G)		0.6434
H	Maximum 20% Restricted Open Space (20% of F=H)		0.1609
POS Provided			
U	Total Unrestricted Open Space (T)		0.7234
V	Total Restricted Open Space (S)		0.1214
W	Creditable Restricted Open Space (to a max H)		0.1214
X	Total Unrestricted + Creditable Restricted POS Provided (U+W)		0.8448
Y	Total Unrestricted POS + Creditable POS (X/E)		10.50%
Z	Surplus POS Area (X-F)		0.0405

3.5 MOVEMENT NETWORK

A Transport Assessment Report has been prepared by Transcore over Lots 109 & 110 Wattleup Road, to estimate the generation and distribution of traffic associated with future development (refer to **Appendix 4**). Importantly, the proposed LSP area will gain access from the existing Wattleup Road in the short term. The LSP will later have connections to the broader network via adjacent landholdings to the east and west, which is subject to separate LSP approval, through an east-west spine road.

A summary of the key transport findings is included below.

3.5.1 Existing Road Network

The current road network comprises only Wattleup Road, forming the southern boundary of the subject site. The broader regional road network comprises Rowley Road to the south,

Rockingham Road to the west, Frankland Avenue to the east and the Kwinana Freeway further east.

Wattleup Road is classified as a District Distributor A Road in the Main Roads WA Functional Road Hierarchy document and is currently constructed as a rural standard single carriageway road. Wattleup Road provides the only existing access to the subject area, linking the site to the broader regional road network.

Rowley Road is classified as a District Distributor A Road in the Main Roads WA Functional Road Hierarchy document and is currently constructed as a rural standard single carriageway road. Rowley Road provides an east-west connection linking South Western Highway (via Eleventh Avenue in Armadale), Tonkin Highway, Kwinana Freeway and Rockingham Road in Wattleup (via Wattleup Road).

Frankland Avenue is classified as an Access Road in the Main Roads WA Functional Road Hierarchy document and is currently constructed as a rural standard single carriageway road. Frankland Avenue connects Rowley Road to Russell Road.

Kwinana Freeway is classified as a Primary Distributor and is reserved as a Primary Regional Road in the MRS. It is currently constructed as four lanes divided carriageway in this area and has a posted speed limit of 100km/h. The closest freeway interchange is at Rowley Road.

3.5.2 Future Road Network

The proposed road network within the LSP area conforms to a grid-street layout and will be integrated with neighbouring developments to the east and west, as part of the broader SSDSP3, to provide an interconnected and permeable road network. The future road network will consist of the following:

Wattleup Road (realigned)

Wattleup Road transects the site in an east/west direction and is designated as a 'Neighbourhood Connector A' road. Within the SSDSP3 area, this road extends almost the full breadth of the area. As per the SSDSP3, this road is realigned from its existing location and intersects with the extended Hammond Road to the east in the adjoining LSP area.

In future, when Hammond Road is extended further south and connected to Rowley Road through a grade separated intersection, the existing Wattleup Road will be downgraded and will terminate at Hammond Road. The proposed main east-west spine road will become the realigned Wattleup Road.

Rowley Road

Rowley Road has been identified as the future primary freight road to the Naval Base and Kwinana Beach industrial areas. Planning for the area includes the extension of Rowley Road west to Rockingham Road.

Hammond Road

The proposed extension of Hammond Road to the south is not expected in the interim, thus access to the LSP area in the south will be via the existing Wattleup Road alignment until

Hammond Road is upgraded and extended, and following urbanisation of the SSDSP3 development front, west of Hammond Road. Hammond Road will be the key road linking the subject site to the broader regional road network, via the realigned Wattleup Road.

3.5.3 Road Hierarchy

The proposed road hierarchy is based on projected traffic volumes and the classification of roads as per *Liveable Neighbourhoods*. It should be noted that the proposed road reserve widths and treatments under the traffic report are indicative only and will be subject to further adjustment and design during the detailed subdivision planning phases, in consultation with the City of Cockburn and WAPC.

Neighbourhood Connector A

The road network of the LSP area is proposed to connect to the neighbouring landholdings to the east and west through the main east-west spine road, improving the subject sites permeability and connectivity. This east-west spine road is the Wattleup Road realignment and is proposed to connect to Hammond Road through a roundabout intersection. This Road is estimated to carry about 3,000vpd to 4,000vpd through the LSP area. The traffic report proposes a 22m road reserve for the main east-west spine road including on-road cycle lanes and embayed parking bays.

Access Street D

The majority of proposed internal roads widths are 15 metres. All the internal roads are expected to carry less than 1,000vpd and are therefore classified Access Street D in accordance with LN.

Laneway

The proposed width for laneways is 6 metres. Visitor Car parking is to be constructed within the road reserve adjacent to those lots serviced by rear laneways.

3.5.4 Intersection Treatments

In the interim, the LSP area will gain access from the existing Wattleup Road through a priority controlled T-intersection. The entrance road will connect with the realigned Wattleup Road via a 4-way intersection within the western side of the LSP area, which is recommended to be constructed as a roundabout. A left in/ left out intersection treatment is also proposed for the 4-way intersection within the eastern side of the LSP area.

3.5.5 Public Transport

Existing public transport services in the area are limited with the closest bus route 525 and 526 terminating north of Gaebler Road.

It is anticipated that future bus routes 535 and 536 will service the area west of the Kwinana Freeway, including the possibility of future bus stops within 400m of the subject land. The

Public Transport Authority (PTA) has advised that these routes are likely to be operational in 2016, subject to continued development and available funding.

3.5.6 Pedestrian and Bike Network

Pedestrian and cyclist facilities are required along the realigned Wattleup Road in accordance with the *SSDSP3*. As such, a shared path is proposed on one side of the main east-west 'Neighbourhood Connector A' spine road, with a footpath on the other side. Footpaths are also required on at least one side of all other streets.

3.6 BUSH FIRE MANAGEMENT

All areas within 100 metres of the LSP boundary have been assessed for vegetation classification and bushfire hazard rating levels by Emerge Associates, in consultation with Bushfire Safety Consulting (refer **Appendix 3**). It has been determined that all proposed future dwellings will fall within an acceptable level of bushfire risk. Temporary and permanent Building Protection Zone (BPZ) requirements, as well as the predicted Bushfire Attack Levels (BALs), have been assessed and are shown in the Bushfire Management Plan (**Appendix 3 - BMP**).

A portion of the LSP area has been identified as being exposed to a long term bushfire hazard as a result of the adjoining Harry Waring Marsupial Reserve (Bush Forever Site 392) to the north. The appropriate design response to bushfire threat has been to ensure that no residential lots directly abut the Harry Waring Reserve and, as a minimum, residential land uses are to be separated from the reserve by a perimeter road. The road interface further provides access for emergency vehicles, hydrant locations and will act as a strategic fire break.

Neighbouring vegetation to the west and east of the site will pose only a temporary hazard to the development due to the temporary nature of the vegetation. These areas are subject to future urban development in accordance with the approved *SSDSP3*, and once vegetation is removed to accommodate development, the hazard will no longer apply. The lot neighbouring the subject site to the west holds one residential dwelling and a market garden/greenhouse operation. The majority of this lot has been historically cleared to make way for residential and agricultural land uses however, a patch of remnant native woodland vegetation occurs in the north of this lot, adjacent to the north-west corner of the subject site. The landholding immediately east of the site contains relatively intact native regrowth consisting of open woodland.

The mitigation of hazards within areas proposed as Public Open Space (POS) will be largely addressed through the detailed landscaping design and the selection of suitable species. All POS areas will be managed to maintain low fuel levels and therefore pose a low threat status, based on AS 3959 and Planning for Bush Fire Protection Guidelines (WAPC and FESA 2010). The Department Fire and Emergency Service WA (DFES) policy further promotes the placement of reticulated areas, such as public open space areas, adjacent to bush land areas. Given the relatively narrow urban corridor (in the case of this Structure Plan), the placement of open space areas at the edge of the urban corridor can be accommodated without greatly impacting on accessibility.

Areas of 'Moderate' and 'Extreme' bushfire hazard located within 100m of the site have an appropriate setback distance to ensure that the maximum BAL predicted for the site is BAL-19.

The majority of proposed dwellings will be rated BAL-Low, followed by BAL-12.5, BAL-19 and BAL-29. BAL-29 is not exceeded. The exposed dwellings that are located in the bushfire prone areas, as outlined in the BMP (**Appendix 3**), will have the threat mitigated by ensuring those dwellings are compliant with *Australian Standard 3959 Construction of Buildings in Bushfire Prone Areas* (AS 3959).

3.7 WATER MANAGEMENT

The overall water management objective for residential development is to maintain the existing hydrological regime and minimise pollution. The Local Water Management Strategy (LWMS) (**Appendix 5**) design objectives seek to deliver best practice outcomes using a Water Sensitive Urban Design (WSUD) approach, including management approaches for:

- Water conservation;
- Groundwater management;
- Flood mitigation;
- Stormwater quality management.

The key principles of integrated water cycle management that have guided the water management approach for the development include:

- Considering all water sources, including wastewater, stormwater and groundwater;
- Integrating water and land use planning;
- Allocating and using water sustainably and equitably;
- Integrating water use with natural water processes;
- Adopting a whole of catchment integration of natural resource use and management.

The LWMS provides a comprehensive summary of the existing environmental values of the site, that are based on site-specific studies undertaken and review of publicly available data. The characteristics and environmental values of the site, along with National and State policies and guidelines relevant to urban water management, have guided the water management design criteria and propose a contemporary best practice approach to achieving the design objectives for water management.

The Water Sensitive Urban Design (WSUD) approach and measures that are proposed for the development include:

- Maintaining existing flow regimes by retaining all runoff within the site;
- Runoff retention as high in the catchment as possible;
- Treatment of surface runoff prior to infiltration to groundwater;
- Bio-retention areas incorporated into POS areas;
- Major event flood storage requirements addressed within POS areas;
- Co-location of flood storage areas with natural landforms and native remnant vegetation where possible;
- Adopting appropriate non-structural best management practices;
- Adopting a fit-for-purpose water use approach;
- Minimising use of both scheme and non-potable water.

The LWMS demonstrates that the design approach for the development is consistent with a best practice WSUD approach, that the water management objectives for the site can be

achieved within the spatial allocation of the LSP, and that the requirements of the relevant State and local government policies and guidelines will be satisfied.

3.8 ACTIVITY CENTRES AND EMPLOYMENT

No activity centres are proposed within the LSP area.

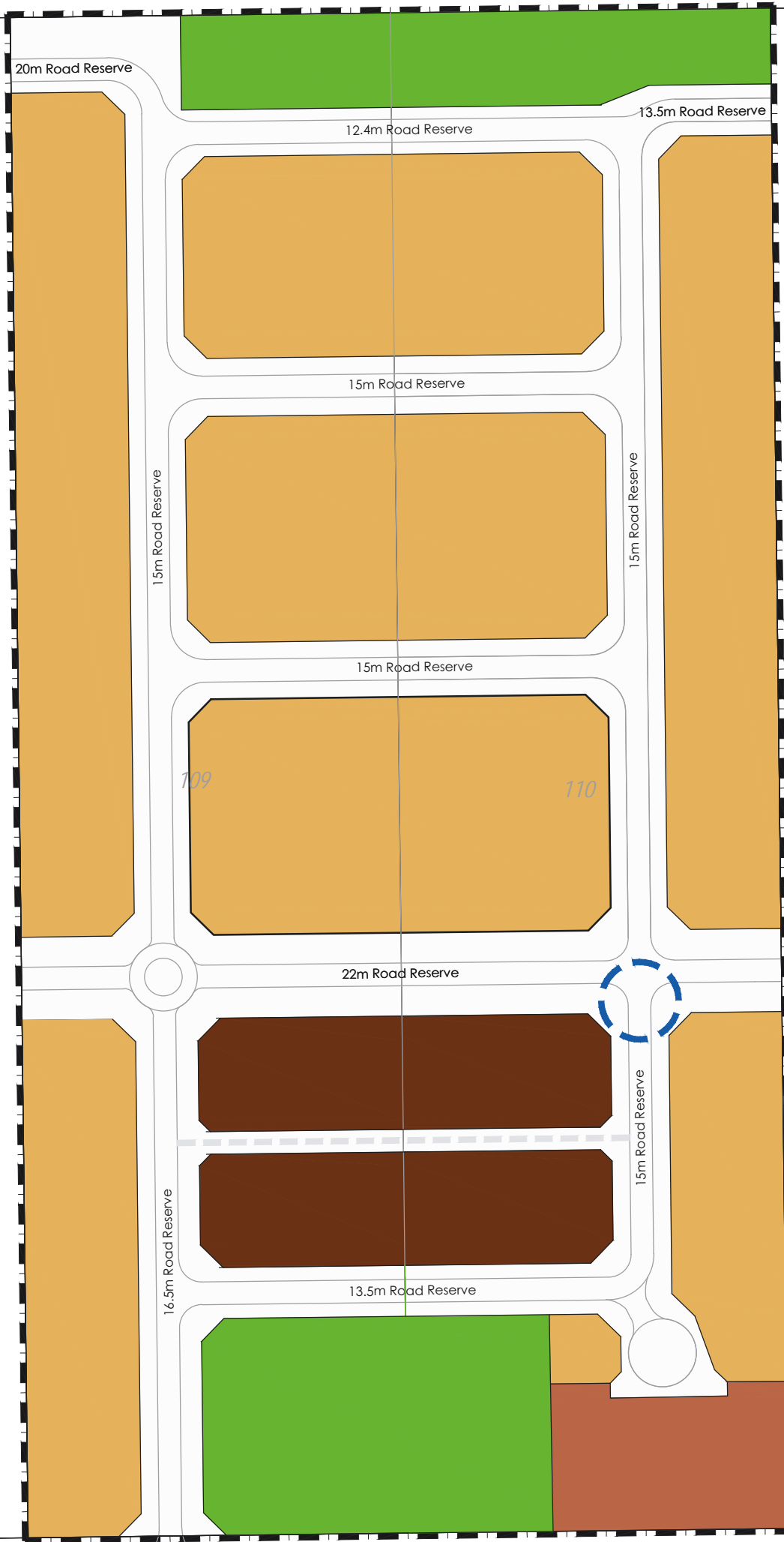
The subject site is, however, located adjacent to the 'Central Precinct' as identified by the *SSDSP3*. The precinct contains a 'Local Centre' located approximately 350 metres east of the subject site. This centre is intended to take the form of a 'main street' style development, comprising some 5,000m² of retail and commercial floor space. Additionally, a smaller localised centre is located approximately 200 metres east of the subject site. Both of these sites will provide vital commercial opportunities for the subject site.

108

109

110

111



WATTLEUP

ROAD

LEGEND

Zones

- Residential R30
- Residential R50
- Residential R60

Local Scheme Reserves

- Parks & Recreation

Other

- Structure Plan Boundary
- Laneway
- Left in/Left out

All areas and dimensions are subject to survey, engineering and detailed design and may change without notice. © Copyright of Burgess Design Group.

FIGURE 6



NORTH



4. INFRASTRUCTURE COORDINATION AND SERVICING

Development Engineering Consultants (DEC) were engaged to prepare an infrastructure and servicing report over the LSP area (refer **Appendix 6**). This report found no significant issues that would prevent urban development however, given the level differences between our client's landholding, adjoining land parcels and with the existing Wattleup Road, interface treatments and subdivisional earthworks needs to be managed effectively.

It is expected that the majority of servicing infrastructure will be extended to the site through the adjoining development of Lots 111, 1 & 801 Wattleup Road.

A summary of the main points of the servicing report can be found below.

4.1 EARTHWORKS

Due to undulating topography of the structure plan area, earthworks will be required to provide level building blocks, thus necessitating extensive low to medium height retaining walls. Substantial earthworks will be required because the land has to be cut down to RL 38.0m AHD in order to service the development with Water Corporation reticulated water. The R50 site will require substantial retaining to achieve a graded separation from the existing Wattleup Road.

Retaining walls along the eastern boundary will be coordinated with the adjoining developer to ensure compatibility with the adjoining site. Earthworks on site will entail removal of topsoil, cut and fill, with no imported fill, but rather export of sand to other sites.

4.2 ROADS

All roads in the structure plan area are to be constructed to the City of Cockburn standards and approval, including kerbing and piped drainage plus provision of footpaths as required.

4.3 DRAINAGE

The site will be self-contained as far as storm water drainage is concerned. The soil characteristics of the site will allow site soakage, based on the geology and the depth to groundwater. The site is contained within one overall drainage catchment. All residential lots will dispose of site generated stormwater into soakwells.

The proposed swale storage basins will be located at the low point of the site to contain the 1 in 100 year storm runoff from roads. These drainage basins will be located along the northern boundary of the site within an area of POS, and will achieve a minimum clearance to the water table of some 10 metres.

4.4 POWER

Sufficient power supplies currently exist in the surrounding areas. A 22kVA high voltage plus low voltage aerial power line is located along the southern verge of Wattleup Rd, connecting to Frankland Avenue to the east of the site.

Connections to the existing power serviced will be constructed at the cost of the developer, and will be subject to approval from Western Power and detailed design at the subdivision stage.

4.5 WATER SUPPLY

At present there is no reticulated water supply connection to the site. The Water Corporation advises that sufficient supply exists to service the site from mains located in Frankland Ave east of the site. Extension from this main will be brought to the site via the adjoining development over Lots 111, 1 & 801 Wattleup Road.

Water Corporation has advised it can only supply a water service to RL 38.0m AHD, and therefore the high land adjacent to Wattleup Road will need to be earthworked down to this level, cutting the natural surface level of Lot 110 (RL 48.0AHD) by up to 10m, creating a significant level difference between the existing Wattleup Road (RL 44.0AHD) and future development (RL 38.0 AHD). Some augmentation of this supply in the way of a 600mm feeder main is planned by the Water Corporation to ensure supply to the RL 38.0 metre AHD level.

4.6 SEWER

The subject site currently does not have any sewer connections, however falls within the Bibra Main Sewer catchment. Development will require the extension of a 225mm gravity sewer from the corner of Frankland Ave and Hammond Rd extension through the adjoining development to the east. This sewer extension will require some fill to maintain minimum cover to the sewer through the adjoining land.

It is planned to extend the 225mm sewer through the development to Wattleup Rd so as to act as a discharge point for a future Waste Water Pump Station (WWPS) to be located west of the subject site.

4.7 TELECOMMUNICATIONS

Telstra services currently exist along Wattleup Road and Frankland Avenue, and are likely to be extended, and upgraded if required, to service the development.

In accordance with recent requirements, the developer will likely be required to install NBN “pipe and pit” to allow for future installation of cables for the NBN. The design of the “pipe and pit” is the responsibility of the developer, and will be designed in conjunction with the underground power network, and installed during the construction phase of the development.

4.8 GAS

Gas mains are available in this area. The nearest ATCO gas main is located in Frankland Avenue to the east of the subject site. Gas can be extended to this development by ATCO in the normal way, with trenching and is the responsibility of the developer.

5. IMPLEMENTATION

The implementation of the planning framework through LSP design, subdivision and development, will ensure the objectives of the EPA and the WAPC can be met in accordance with the below guidelines, policies and standards:

- EPA *Guidance Statement No. 33 Environmental Guidance for Planning and Development* (EPA 2008).
- EPA *Environmental Assessment Guideline No. 8 Environmental factors and objectives* (EPA 2013).
- *State Planning Policy (SPP) 2.9 Water Resources* (WAPC 2006).
- *WAPC's Better Urban Water Management Guidelines* (WAPC 2008).
- *Planning for Bushfire Protection* (WAPC 2010).
- *AS3959 Construction of Buildings in Bushfire Prone Areas* (Standards Australia 2009)

5.1 STAGING

Indicative staging of development in the LSP area generally indicates subdivision construction occurring in a north to south pattern, on the basis of service extensions from the adjoining development over Lots 111, 1 & 801 Wattleup Road.

Final stages of development across the boundaries of the subject site are dependent on:

- a) Removal of temporary bush fire hazards within adjoining development sites; and
- b) Achieving suitable levels to provide efficient interface with adjoining landholdings.

The existing homestead on Lot 110 is intended to be retained until the final stages of development. When the Homestead lot is developed, larger sized lots will be created to enable retaining within the southern portions of these lots. Following development south of Wattleup Road, and a reduced Wattleup Road level, these R50 lots could then be further subdivided once access to Wattleup Road can be achieved.

5.2 LOCAL DEVELOPMENT PLANS (LDP)

As discussed, in order to achieve a range of lot sizes to facilitate a variety of housing choice and to address built form outcomes stipulated in the LSP, Local Development Plans (LDP) will likely be required to guide further development. Local Development Plans are required to be prepared and implemented pursuant to Clause 6.2.15 of the TPS3 for lots with one or more of the following site attributes:

- Lots with rear-loaded vehicle access;
- Lots with direct boundary frontage (primary or secondary) to an area of Public Open Space;
- Lots deemed to be affected by a recognised Bush Fire Hazard, as identified spatially in Appendix 3 of the accompanying Bushfire Management Plan, under Appendix 3;
- Lots adjoining the existing Wattleup Road with a density code of R50;
- Front loaded lots with an effective frontage of less than 12m.

The need for a LDP will be determined by the local government when a subdivision application is lodged.

5.3 LANDSCAPE PLAN

Landscaping treatments have been identified through the Landscape Master Plan (**Appendix 7**) which accompanies this LSP report as well as the indicative cross sections for drainage basins and swales (**Appendix 5 – LWMS**). Whilst the plan and cross sections are provided to illustrate potential development outcomes, further discussion and detail design is required through the preparation of Landscape Management Plans to finalise proposed treatments and maintenance.

The submission of a suitable landscape plan will be required at the subdivision stage. This landscape plan will cover the POS areas within the LSP and will have due regard for the requirements of the *SSDSP3*; this is primarily in regards to the functionality of open space for informal active recreation, the incorporation of drainage, and the utilisation of water sensitive urban design.

6. CONCLUSION

This LSP report, accompanying plans, and appendices, relating to Lot 109 and 110 Wattleup Road, Hammond Park satisfy the planning frameworks adopted by the City of Cockburn and the Western Australian Planning Commission. In summary, the LSP proposes approximately 152 residential lots at densities ranging from R30 to R60, facilitating lot sizes between 225m² and 505m², with an average lot area of 316m².

The proposed structure plan design is based on recommendations from detailed investigations that support development of the land, including flora and vegetation assessments, wetland assessments, transport assessment, planning framework review, servicing analysis, bush fire hazard assessment and local water management plan.

In light of the above, this Local Structure Plan as submitted represents a logical, well planned and timely addition to the ongoing development of the City of Cockburn's Southern Suburbs Growth Corridor and the next stage of implementing the SSDSP3.

Once endorsed, this Local Structure Plan will dictate the zoning or reservation and the Residential Design Code, where applicable, to individual land holdings and will form the framework for landowners to proceed towards subdivision and development in a well-planned and logical manner. This LSP will also enable the relevant government agencies to assess such future proposals in a coordinated fashion.

TABLE 5: PRE-LODGEMENT CONSULTATION

Agency	Date of Consultation	Method of Consultation	Summary of Outcome
Land owners within and adjacent to the structure plan area	March 2014	Email correspondence/ Telephone discussion/ Meeting	Concept Plan adjacent to Plan 1 Structure plan Lots 109 &110 Wattleup Road, Hammond Park
Relevant community groups in the area	Nil – not required	-	-
Local government (City of Cockburn)	July 2014 December 2014	Meeting and Email correspondence/ Telephone discussion Meeting with Planning Staff	City's preliminary comments on concept plan Resolution of proposed Wattleup Road re-alignment, POS position and design, proposed density. Submission of LSP
Department of Planning	Nil	-	-
Department of Water	Nil – not required	-	-
Department of Environment and Conservation	Date unknown	By sub-consultant Emerge Associates	No issues
Department of Education	Nil – not required	-	-
Department of Indigenous Affairs	Date unknown	By sub-consultant Emerge Associates	No issues
Main Roads Western Australia	Date unknown	By sub-consultant Transcore	No issues
Heritage Council	Nil – not required	-	-
Department of Transport	Nil	-	-
Department of Health	Nil – not required	-	-
Public Transport Authority	Nil	-	-
Environmental Protection Authority	Nil	-	-
Western Power	Date unknown	By sub-consultant Development	No issues

		Engineering Consultants(DEC)	
Alinta Gas	Date unknown	By sub-consultant DEC	No issues
Water Corporation	Date unknown	By sub-consultant DEC	No reticulated water supply connection to the site – extension required.
Telstra	Date unknown	By sub-consultant DEC	No issues
Non-government school providers	Nil – not required	-	-
Department for Community Development	Nil – not required	-	-
Department of Sports and Recreation	Nil – not required	-	-
Department of Agriculture and Food Western Australia	Nil – not required	-	-
Fire and Emergency Services Authority	Date unknown	By sub-consultant Emerge Associates	No issues
Any other relevant government agency as required	Nil	-	-