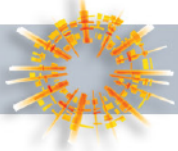


# **ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C PART ONE - IMPLEMENTATION REPORT**

**AS AMENDED - JANUARY 2018**





**ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C**  
**PART ONE - IMPLEMENTATION REPORT**

Prepared by:



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2142Rep471J  
As Amended - January 2017



## ENDORSEMENT PAGE

This structure plan is prepared under the provisions of the City of Swan  
Local Planning Scheme No.17

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

**13 OCTOBER 2015**

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

Date of Expiry:

**19 OCTOBER 2030**

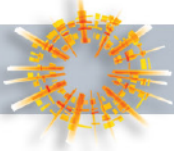
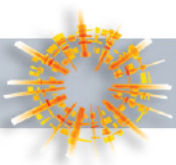


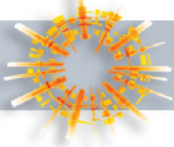
TABLE OF AMENDMENTS

Amendment Number	Summary of the Amendment	Amendment Type	Date Approved by WAPC
1	Amend the 'Special Use – Neighbourhood Centre (R100)' zone to 'Special Use – District Centre (R100)' zone and increase the size of the Centre; and  Update terms of reference consistent with the <i>Planning and Development (Local Planning Scheme) Regulations 2015</i> .	Standard	27 February 2018



**TABLE OF DENSITY PLANS**

Density Plan Number	Area of Density Plan Application	Date Endorsed by WAPC



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7.1 **Provision of community infrastructure (Funding Arrangements)**

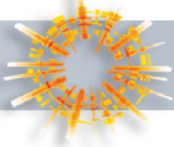
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## 1.0 STRUCTURE PLAN AREA

This Local Structure Plan, also referred to as Albion (Brabham) Local Structure Plan 1C (LSP 1C), applies to that land contained within the inner edge of the broken line denoting the structure plan boundary as shown on Plan A: Local Structure Plan, being Lots 15, 17, 19 and 20 Woolcott Avenue, Lot 16 Everglades Avenue, part Lot 804 Youle Dean Road, and the existing road reserves of Woolcott Avenue and Youle Dean Road.

## 2.0 STRUCTURE PLAN CONTENT

This Local Structure Plan comprises:

- Part One – Implementation Report
- Part Two – Explanatory Report
- Appendices – Technical Reports
- Amendment 1 Addendum Reports and Appendices

Part One of the Local Structure Plan comprises the structure plan map and planning implementation provisions and requirements. Part Two of the Local Structure Plan justifies and clarifies the provisions contained in Part One, and is used as a reference guide to interpret and implement Part One.

## 3.0 INTERPRETATION AND RELATIONSHIP WITH STATUTORY PLANNING FRAMEWORK

Pursuant to clause 27 (1), Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations), a decision maker of an application for development approval or subdivision approval is to have due regard to the provisions of this Local Structure Plan.

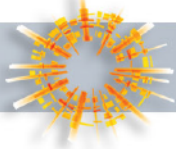
Part Two of this Local Structure Plan and all appendices are to be used as a reference only to clarify and guide the interpretation of Part One.

Unless otherwise specified in this part, the words and expressions used in this Local Structure Plan shall have the respective meanings given to them in the City of Swan Local Planning Scheme No. 17 (the Scheme) including any amendments gazetted thereto.

## 4.0 OPERATION

The Albion (Brabham) Local Structure Plan 1C constitutes a Local Structure Plan required to be prepared prior to subdivision and development of the subject land pursuant to Schedule 4 – Special Use provisions of the Scheme applicable to Albion.

Pursuant to clause 28, Schedule 2 of the Regulations, this Structure Plan comes into effect on the day on which it is approved by the Western Australian Planning Commission and is valid for a period of 10 years from that date, or another period determined by the Commission in accordance with the Regulations.



## 5.0 LAND USE AND SUBDIVISION REQUIREMENTS

### 5.1 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, or as otherwise outlined in this Structure Plan. In addition, the following land uses are classified as 'D' uses in the Residential zone.

- "Display Home Centre" - A singular dwelling or a group of two or more dwellings and incidental car parking, which are intended to be open for public inspection as examples of dwelling design.
- "Residential Sales Office" - A building of either a temporary or permanent nature, and incidental car parking, used directly in relation to the sale of land and dwellings in new residential estates.

### 5.2 Residential

#### 5.2.1 Dwelling Target

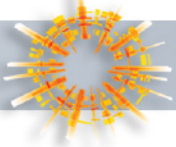
Subdivisions are to achieve the following:

- i) A residential density of 30 dwellings per site hectare within a 400 metre radius of the 'Special Use - District Centre' zone; and,
- ii) An average residential density of 22 dwellings per site hectare across the entire LSP1C area.

#### 5.2.2 Density

- a) Plan A defines the broad residential density ranges that apply to specific areas within the Structure Plan. Lot specific residential densities, within the defined residential ranges, are to be subsequently assigned in accordance within a Residential Code Plan approved by the WAPC.
- b) A Residential Code Plan is to be submitted at the time of subdivision to the WAPC and shall be consistent with the Structure Plan, and the Residential Density Ranges identified on Plan A and locational criteria contained in Clause 5.2.3.
- c) The Residential Code Plan is to include a summary of the proposed dwelling yield of the subdivision.
- d) Approval of the Residential Code Plan shall be undertaken at the time of determination of the subdivision application by the WAPC. The approved Residential Density Code Plan shall then form part of the Structure Plan and shall be used for the determination of future development applications.
- e) Variations to the Residential Code Plan will require further approval of the WAPC, with a revised Residential Code Plan submitted generally consistent with the approved plan of subdivision issued by the WAPC. The revised Residential Code Plan shall be consistent with Residential Density ranges identified on Plan A and the locational criteria contained in Clause 5.2.3.
- f) A revised Residential Code Plan, consistent with Clause 5.2.2 (e) will replace, wholly or partially, the previously approved Residential Code Plan, and shall then form part of the Structure Plan as outlined in Clause 5.2.2 (d).





- g) Residential Code Plans are not required if the WAPC considers that the subdivision is for one or more of the following:
- i) The amalgamation of lots;
  - ii) Consolidation of land for 'superlot' purposes to facilitate land assembly for future development;
  - iii) The purposes of facilitating the provision of access, services or infrastructure; or
  - iv) Land which by virtue of its zoning or reservation under the Structure Plan cannot be developed for residential purposes.

### 5.2.3 Locational Criteria

The allocation of residential densities shall be in accordance with the following locational criteria:

- 1) The R40 density code shall apply as the base code to all 'Residential' zoned lots, with the exception of those lots coded R60 or R80 as set out in 2) and 3) below.
- 2) The R60 density code shall apply to 'Residential' zoned lots where:
  - i) the lot is located within 250m of the perimeter of the 'Special Use - District Centre' zone; or,

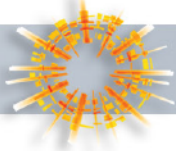
- ii) The lot is located within a 250m walkable catchment of the Everglades Avenue road reserve or other designated public transport route.

- 3) The R80 density code shall apply to 'Residential' zoned lots that meet one or more of the criteria set out in 2) above and where:

- i) the lot is abutting or located directly adjacent to public open space not less than 3,000sqm in area; or
- ii) the lot is abutting or located directly adjacent to the 'Special Use - District Centre' zone; or
- iii) the lot is greater than 800sqm, excluding balance of title lots.

- 4) The R100 density code shall apply as the base code to all residential development within the 'Special Use - District Centre' zone.

The Residential Code Plan forming part of this Structure Plan shall indicate the R-Code applicable to each lot in accordance with the locational criteria.



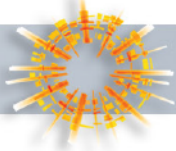
### 5.3 Special Use – District Centre Zone

#### 5.3.1 Zone Purpose and Objectives

The purpose of the 'Special Use - District Centre' zone is to facilitate the comprehensive and coordinated planning and delivery of a District Centre, as envisaged by the Albion District Structure Plan. The District Centre will provide a retail core, including a main street, with provision for some car-oriented, mixed business development on the periphery of the centre. The planning for the centre will also enable a relatively smooth transition from a predominantly commercial to residential environment through appropriate built form and mix of land uses.

The objectives of the 'Special Use - District Centre' zone are to:

- facilitate retail, mixed use and residential development in proximity to public transport services, with limitations on the scale of development to avoid fragmentation of land uses and to ensure continuous, activated street frontages and safe and efficient pedestrian access to and within commercial areas;
- encourage the development of a wide range of retail services, and a complementary mix of dining, entertainment, office and community facilities, within the 'Retail Core' precinct so as to provide lower order convenience shopping to the wider community;
- encourage the development of a wide range of commercial and professional offices and community facilities and services, as well as a complementary mix of supporting commercial development, within the 'Mixed Use' precinct so as to enhance the prospects for employment and serve the needs of the wider community;
- ensure future development of the centre accords with 'main street' design principles, providing an integrated, attractive, safe and vibrant focus for the community;
- encourage the development of shopping, dining, and entertainment facilities at street level and commercial and professional offices and residential development in the upper levels of buildings, so as to enhance the viability of retail development and the overall vitality of the centre;
- ensure car parking and vehicular access areas are located and designed so as to maximise shared use of facilities and the efficient use of land, and so as not to detract from the amenities and continuity of main street development;
- ensure development within each precinct is complementary to other precincts of the centre, and that commercial activity in the zone does not detract from the viability or integrity of the Strategic Regional Centre or other commercial zones.



### 5.3.2 Activity Centre Plan

Pursuant to clause 31, Schedule 2 of the Regulations and *State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2)*, an Activity Centre Plan is required to be prepared and submitted over the 'Special Use – District Centre' zone prior to approval of a subdivision or development application. The Activity Centre Plan shall be prepared in accordance with clause 32, Schedule 2 of the Regulations and *State Planning Policy 4.2 - Activity Centres for Perth and Peel* as determined by the WAPC.

Notwithstanding part 5.3.3 of Part 1 of this Structure Plan, a decision maker may approve an application for development or subdivision approval in accordance with clause 43 (2), Schedule 2, of the Regulations.

### 5.3.3 Land Use Permissibility

Land use permissibility within the 'Special Use – District Centre' zone shall be in accordance with an approved Activity Centre Plan.

### 5.3.4 Residential Density

The allocation of residential density within the 'Special Use – District Centre' zone shall be in accordance with Clauses 5.2.2 and 5.2.3 of Part 1 of this Structure Plan.

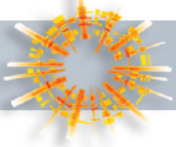
## **5.4 Public Open Space**

The provision of a minimum of 10 per cent public open space (POS) being provided. The 10% POS provision includes a pro-rata contribution to the three Neighbourhood Parks and the Local Community Centre site identified in the *Development Contributions Plan DCA1 - Brabham (Albion)*. The balance of the 10% POS contribution shall be provided in accordance with the WAPC's Liveable Neighbourhoods policy.

Public open space is to be provided generally in accordance with Plan A and Table 1 of Part 1 of this Structure Plan, with an updated public open space schedule to be provided at the time of subdivision for determination by the WAPC, upon advice of the City of Swan.

**Table 1: Strategic Public Open Space**

Strategic Public Open Space Site	Indicative Size (Ha)
Local Park Central	1.70
Local Open Space (Drainage)	1.85
Multi Use Corridor 1	0.70
Neighbourhood Park 1	0.68
Neighbourhood Park 2	0.40
Neighbourhood Park 3	0.56
Neighbourhood Park 4	0.59



## 5.5 Utilities Planning

### 5.5.1 Gas Pipeline Corridors

The land comprising the existing Dampier to Bunbury Natural Gas Pipeline (DBNGP) easement as shown on the structure plan map (Plan A) shall be ceded free of cost to the Crown as a local scheme reserve for 'Public Utilities' at time of subdivision and vested in the Department of Lands, unless otherwise determined by the Western Australian Planning Commission and agreed with the City of Swan.

The WAPC, on advice of the City of Swan and/or relevant utilities service provider(s), may require as a condition of subdivision approval:

- i) the preparation and approval of an AS2885 Safety Management Study (Qualitative Risk Assessment) in accordance with WAPC guidelines and/or approved methodologies, to be implemented as part of the subdivisional works to the specification of the WAPC and/or relevant utilities service provider(s) (DBP and/or APA Group).
- ii) a notification pursuant to Section 70A of the Transfer of Land Act 1893 to be placed on the certificate(s) of title of lot(s) created within the setback distances outlined in Planning Bulletin 87. The notification is to advise that the lot is in close proximity to the DBNGP corridor.

### 5.5.2 Western Power Easement

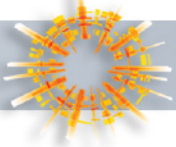
The WAPC, on advice of the City of Swan and/or relevant licensed service provider(s), may require as a condition of subdivision approval the provision of easements pursuant to Section 167 of the Planning and Development Act 2005 for existing or planned power infrastructure being granted free of cost to that body (Western Power).

## 5.6 Noise Mitigation

In accordance with the Transportation Noise Assessment prepared by Lloyd George Acoustics dated 31 March 2015, the Western Australian Planning Commission (WAPC), on the advice of the City of Swan, may require the following noise mitigation measures to be implemented by the developer at subdivision stage as a condition of subdivision approval for Lot 15 Woolcott Avenue:

- i) Construction of a 1.8m high noise barrier along the boundary of the MRS Public Purposes reserve, to the satisfaction of the City of Swan; and
- ii) Notifications on title advising of potential noise impacts for the lots identified within the above Transportation Noise Assessment.





## 5.7 District Community Centre

A District Community Centre site of 5,000m<sup>2</sup> in area is required to be provided within the 'Special Use – District Centre' zone.

Endorsement of the ultimate location of the site within the Structure Plan area is at the discretion of the City of Swan and may be subject to further detailed design and/or development within the 'Special Use – District Centre' Zone and the ongoing development of the surrounding Structure Plan area.

The District Community Centre is a community infrastructure item subject to development contributions in accordance with the *Development Contributions Plan DCA 1 – Brabham (Albion)*.

## 5.8 Road Network

### 5.8.1 Agreement for Construction of Selected Infrastructure

In order to accommodate residential development within the Structure Plan area and pursuant to the deed of "Agreement for Construction of Selected Infrastructure" between the subdivider of the land and the City of Swan; the Western Australian Planning Commission (WAPC), on the advice of the City of Swan, may require as a condition of subdivision approval for the creation of any lot(s) that will cause the total number of lots approved for subdivision within the Structure Plan area to exceed 300:

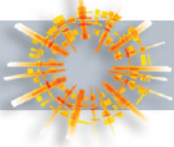
- i) satisfactory arrangements being made with the City for the upgrade and/or construction of Everglades Avenue, including a controlled intersection at Youle Dean Road as deemed necessary, in the location shown indicatively on

the Structure Plan Map (Plan A) by the landowner at the landowner's cost, to the specifications and satisfaction of the City of Swan; and,

- ii) satisfactory arrangements being made with the City for upgrade and/or construction of Youle Dean Road, including a controlled intersection at Lord Street as deemed necessary, in the location shown indicatively on the Structure Plan Map (Plan A) by the landowner at the landowner's cost, to the specifications and satisfaction of the City of Swan and Main Roads WA.

### 5.8.2 Everglades Avenue Road Widening

In accordance with the Albion District Structure Plan, Everglades Avenue is a planned Integrator Arterial B road with a reserve width of 29.2 metres, and is subject to a 4.6 metre road widening to both sides of the road reserve, as depicted on the Structure Plan Map (Plan A), at the time of subdivision.



## 6.0 DEVELOPMENT

### 6.1 Local Development Plans

#### 6.1.1 Residential Zone

The preparation of a Local Development Plan in accordance with Clause 48, Schedule 2 of the Regulations may be required by the Western Australian Planning Commission (WAPC), on the advice of the City of Swan, as a condition of subdivision approval where deemed necessary for land comprising, but not limited to:

- Lots with a density code of R80;
- Lots abutting the Woolcott Avenue road reserve and subject to a buffer separation from the Western Power 132kV transmission line;
- Lots within a designated Bushfire Prone Area; and
- Lots subject to "Quiet House Design" principles.

### 6.2 Residential Design Code Variations

Development within the Structure Plan area on land coded R40 and R60 is subject to the provisions of the City of Swan's Local Planning Policy Pol-LP-11 'Variation to Deemed-to-Comply Requirements of the R-Codes – Medium-density single house development standards (R-MD Code)'.

### 6.3 Bushfire Management

For the purpose of this Structure Plan, all lots within a designated Bushfire Prone Area on the Department of Fire and Emergency Services Map of Bush Fire Prone Areas shall be classified as Bushfire Prone.

Notwithstanding any statement to the contrary within the Australian Standard – Construction of Buildings in Bushfire Prone Areas (AS3959- 2009) (or equivalent), any Class 1, 2, or 3 building or Class 10a building or deck associated with a Class 1, 2, or 3 building to be erected on residential lots within the 'Bushfire Prone Area' as declared in this LSP shall comply with the requirements of AS3959-2009 (or equivalent).

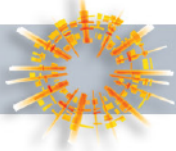
The Western Australian Planning Commission (WAPC), on the advice of the City of Swan and/or the Fire and Emergency Service Authority (FESA), may require as a condition of subdivision approval the preparation and approval of a Fire Management Plan to the specifications of the City of Swan and/or FESA.

### 6.4 Quiet House Design

"Quiet House" design principles apply to the first row of dwellings abutting the MRS Public Purposes reserve as depicted on the Structure Plan Map (Plan A) to minimise noise intrusion through house layout and noise insulation.

A copy of the relevant "Quiet House Design" acceptable treatment package(s) are included in Part 2 (Explanatory Report) of this Structure Plan.





## 7.0 OTHER REQUIREMENTS

### 7.1 Provision of Community Infrastructure (Funding Arrangements)

Land within the Structure Plan area is within Development Contribution Area 1 (DCA 1) as identified in the Scheme Map and Schedule 13 of the Scheme (as amended), and the *Development Contributions Plan DCA 1 - Brabham (Albion)* (as amended) should be read in conjunction with this Structure Plan.

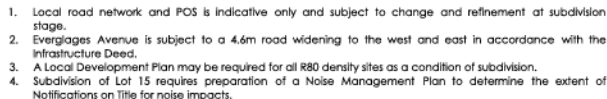
A landowner shall be liable to make a cost contribution at the time and in the circumstances contemplated in Part 5A.2 of the Scheme (as amended), and this will be imposed as a condition of subdivision or development approval, generally whichever is granted first.

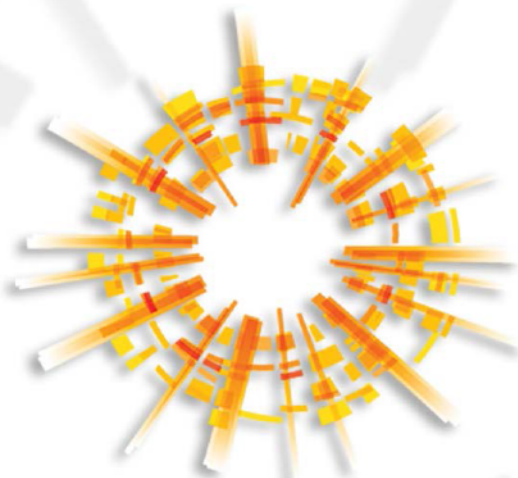
The District Community Centre is a community infrastructure item subject to development contributions in accordance with Development Contributions Plan DCA 1 – Brabham (Albion).

### 7.2 Conditions of Subdivision Approval

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

- Urban Water Management Plan;
- Bushfire Management Plan (BAL Assessment);
- Acid Sulphate Soils Management Plan;
- AS2885 Safety Management Study (Qualitative Risk Assessment);
- Noise Management Plan;
- Safe Walk/Cycle to School Assessment and updated Urban Water Management Plan.

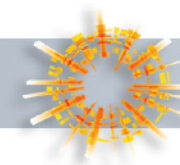




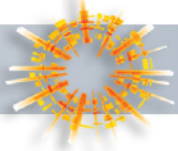
# **ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C PART TWO - EXPLANATORY REPORT**

**AS ADOPTED BY WAPC (SEPTEMBER 2015)**





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**ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C**  
**PART TWO - EXPLANATORY REPORT**

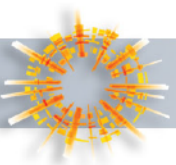
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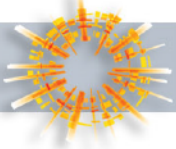
[www.cleplan.com.au](http://www.cleplan.com.au)

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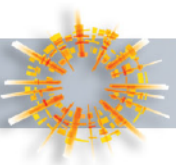




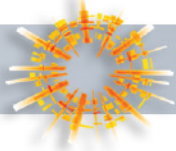
## PROJECT TEAM

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Landowner / Project Manager	Stockland Developments
Planning & Urban Design	CLE Town Planning + Design
Civil Engineers	Cossill & Webley
Environmental Consultant	Emerge Associates
Traffic Engineers	Arup
Landscape Architects	EPCAD
Environmental Hydrologist	RPS
Bushfire Management	Bushfire Safety Consulting / Emerge Associates



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## EXECUTIVE SUMMARY

The Albion (Brabham) Local Structure Plan 1C (LSP1C) allows for the creation of a diverse urban community that responds to the surrounding land use context, natural environment and State Government infill targets.

The LSP area covers approximately 66 ha over Lots 15, 16, 17, 19 and 20 Woollcott Avenue, Brabham. The LSP area is a southern continuation of LSP1A (Whiteman Edge) and is generally bound by Lord Street (west), Youle Dean Road (south), Lot 10 (east) and Woollcott Avenue (north). The LSP establishes a robust statutory planning framework that provides a comprehensive guide for future land use and development, whilst recognising the site's context within the strategic planning framework, as well as its physical setting.

The development of the subject land provides further opportunities to maximise the catchment to existing and planned infrastructure through consolidation of urban development in the Albion District Structure Plan area, while satisfying State Government infill housing targets, and recognising the natural setting of the land.

The LSP responds to the current planning framework provided by the Albion District Structure Plan and elaborates and refines its key principles to provide a finer grained statutory mechanism for its implementation.

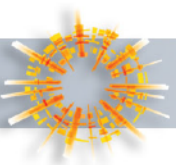
The LSP allows for the creation of approximately 1000 – 1100 dwellings over approximately 63 ha of Urban zoned land. Overall the Plan allows for the provision of approximately 5.2 hectares of

creditable public open space achieving an appropriate amount of useable passive open space as well as recognising significant vegetation and drainage requirements within public open space reserves. In accordance with Liveable Neighbourhoods, once appropriate credits are applied, approximately 10% open space is provided.

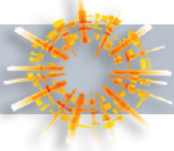
Consistent with the Albion District Structure Plan, the LSP provides for a Large Neighbourhood Centre, central to the DSP area located on the southern edge of the LSP area. The Centre will support a variety a commercial activity and services including retail, dining, showroom, office, community and medical facilities. The Plan also provides for possible 'main street' development within the Centre, consistent with the objectives of the DSP.

Once developed, the LSP area will provide a broad range of housing choice. Medium density housing options will be located around key areas of public open space, within close proximity to the Neighbourhood Centre and planned public transport routes, balanced with transitional densities that integrate with surrounding development. The plan has the potential to deliver an overall housing density in excess of 15 dwelling units per gross urban hectare, and 22 dwellings per site hectare meeting the objectives of Directions 2031 and Beyond and the Albion District Structure Plan.

The LSP responds to the land use considerations identified in the Albion District Structure Plan, including provision of a Large Neighbourhood Centre, conveyance of drainage and higher order road hierarchy. Appropriate planning controls are established through the statutory section of the LSP to ensure that these land use considerations are addressed appropriately.



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The LSP demonstrates and confirms that the subject land can be readily serviced, with essential infrastructure already available in the area. The recently gazetted Development Contribution Plan (DCA 1 – Brabham (Albion)) ensures that cost sharing for provision of infrastructure is not in any way prohibitive to development.

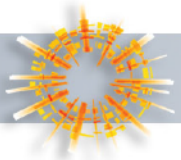
As part of the preparation of the LSP, the following reports, assessments and management plans have been prepared and are summarised in this report. Full copies are included as technical appendices.

1. Environmental Assessment Report, including Vegetation Management Strategy and Fauna Management Strategy;
2. Transport and Access Strategy;
3. Local Water Management Strategy;
4. Landscape Concept Plan and Open Space Strategy;
5. Servicing and Infrastructure Strategy; and
6. Fire Management Plan.

These strategies and reports comprehensively address all of the applicable planning considerations and demonstrate that the subject land is capable of supporting urban development in the form proposed via this LSP.

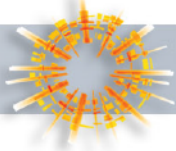
**Structure Plan Summary Table**

Item	Data	LSP Section
LSP Area		
Albion Special Use Zone:	63.8ha	
MRS Primary Regional Road:	2.2ha	
MRS Other Regional Road:	3.0ha	
MRS Public Purposes:	1.6ha	
Partridge Sreet Road Reserve:	1.1ha	
Total:	71.7ha	
Area of each land use proposed (approx)		
Residential:	50.9ha	3.1
Neighbourhood Centre:	5.6ha	
Public Open Space:	7.6ha	
MRS Reserves:	6.8ha	
Estimated lot yield	900 - 1000	3.3
Estimated number of dwellings	1000 - 1100	3.3
Estimated residential density	15-17 du/gross urban ha	3.3
Estimated population	2800 - 3080	3.3
Number of high schools	Nil	3.6
Number of primary schools	Nil	3.6
Estimated total commercial floorspace	<ul style="list-style-type: none"> <li>• 15,000m<sup>2</sup> retail with potential to accommodate up to 20,000m<sup>2</sup> should the demand eventuate</li> <li>• 10,000m<sup>2</sup> other (non retail) with an additional 7,000m<sup>2</sup> to the south of Youle Dean Road</li> </ul>	3.7



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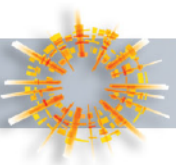
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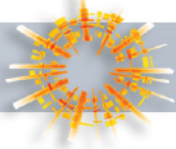
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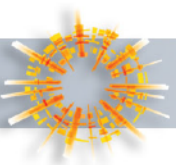
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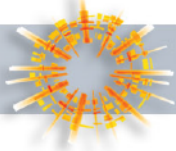
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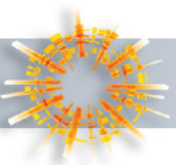
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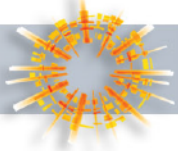
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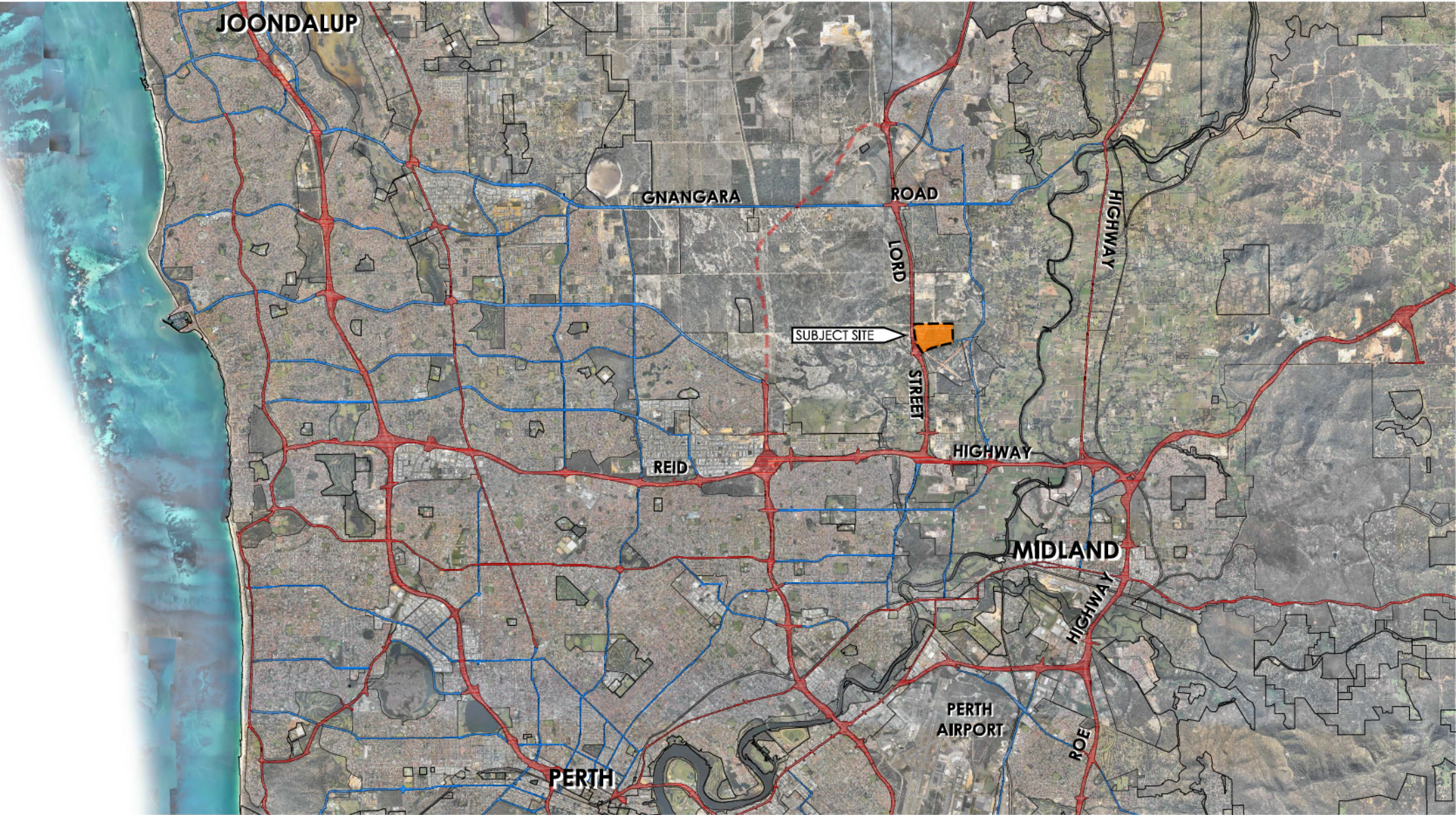
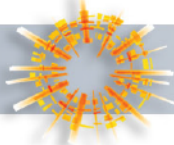
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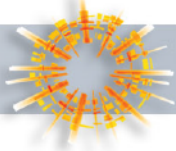
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## 1.0 PLANNING BACKGROUND

### 1.1 Introduction and Purpose

The Albion Local Structure Plan 1C (LSP1C) report is prepared on behalf of the landowners, Stockland Development Pty Ltd (Stockland) in consultation with participating landowners GM Property Group, pursuant to City of Swan Local Planning Scheme No. 17 (LPS 17). LSP1C covers Lots 15, 16, 17, 19 and 20, which are centrally located within the Albion District Structure Plan area.

The purpose of this LSP is to refine the level of planning detail provided in the Albion District Structure Plan (DSP). LSP1C draws on the key elements of the DSP and ensures that all environmental, social, economic and infrastructure issues are comprehensively addressed.

A number of local structure plans have been prepared over the north-western portion of the DSP area and are at various stages of approval and development. The LSP area is a logical local extension of the existing structure planning that has already occurred to the north, and is consistent with the criteria established in the DSP for determining local structure plan boundaries.

The structure and format of this LSP provides a framework for future subdivision and development consistent with, and implementing the objectives and strategies of the DSP.

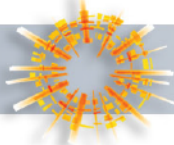
This Report comprises three sections, consistent with the WAPC's Structure Planning Guidelines:

- Part 1 – Statutory Section
- Part 2 – Explanatory Report
- Part 3 – Technical Appendices

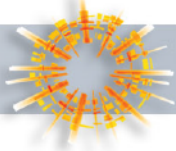
The Part 1 Statutory Section contains clear, measurable, defined provisions to implement the Explanatory Report outcomes at future stages. These provisions are to be given the force and effect of the Scheme, pursuant to clause 5A.1.12.3 of LPS 17. The framework for these provisions is derived from existing statutory documents, including the DSP, LPS 17 and Residential Design Codes. Part 1 contains the Statutory Plan and is consistent with the framework prescribed in the WAPC's Structure Plan Preparation Guidelines.

The Part 2 Explanatory Report distils the key outcomes and planning implications of the background reports to deliver an implementation framework. The format of the Part 2 Explanatory Report is based on the WAPC's Structure Plan Preparation Guidelines and responds to each of the key elements of the DSP.









Part 2 is based on a detailed site specific analysis of opportunities and constraints and the following technical reports and strategies:

- Environmental Assessment Report, including Vegetation Management Strategy and Fauna Management Strategy;
- Fire Management Plan;
- Transport & Access Strategy;
- Landscape Concept Plan and Descriptions;
- Open Space Strategy;
- Local Water Management Strategy; and
- Servicing and Infrastructure Strategy.

Preparation of this LSP has involved extensive consultation with the City, Department of Planning, Department of Transport, Main Roads WA and relevant service authorities.

LSP1C will facilitate growth of the existing Albion community through the creation of approximately 1000-1100 dwellings, as well as enabling delivery of a Large Neighbourhood Centre with approximately 10,000m<sup>2</sup> of retail floor space consistent with the current statutory planning framework. LSP1C will also contribute to the extensive public open space network and expand and connect into the existing local road network.

## 1.2 Land Description

### 1.2.1 Location

The Albion DSP area, located in the suburb of Brabham, covers approximately 570 ha and is located within the City of Swan. The DSP area is approximately 17km north east of Perth CBD, 5.5km south of the Ellenbrook Secondary Centre and 7.5km north of the Midland Strategic Metropolitan Centre, refer Figure 1 – Location Plan.

The LSP1C area covers Lots 15, 16, 17, 19 and 20, generally bound by Lord Street, Woolcott Avenue, Youle Dean Road and Lot 10, refer Figure 2 – Site Plan.

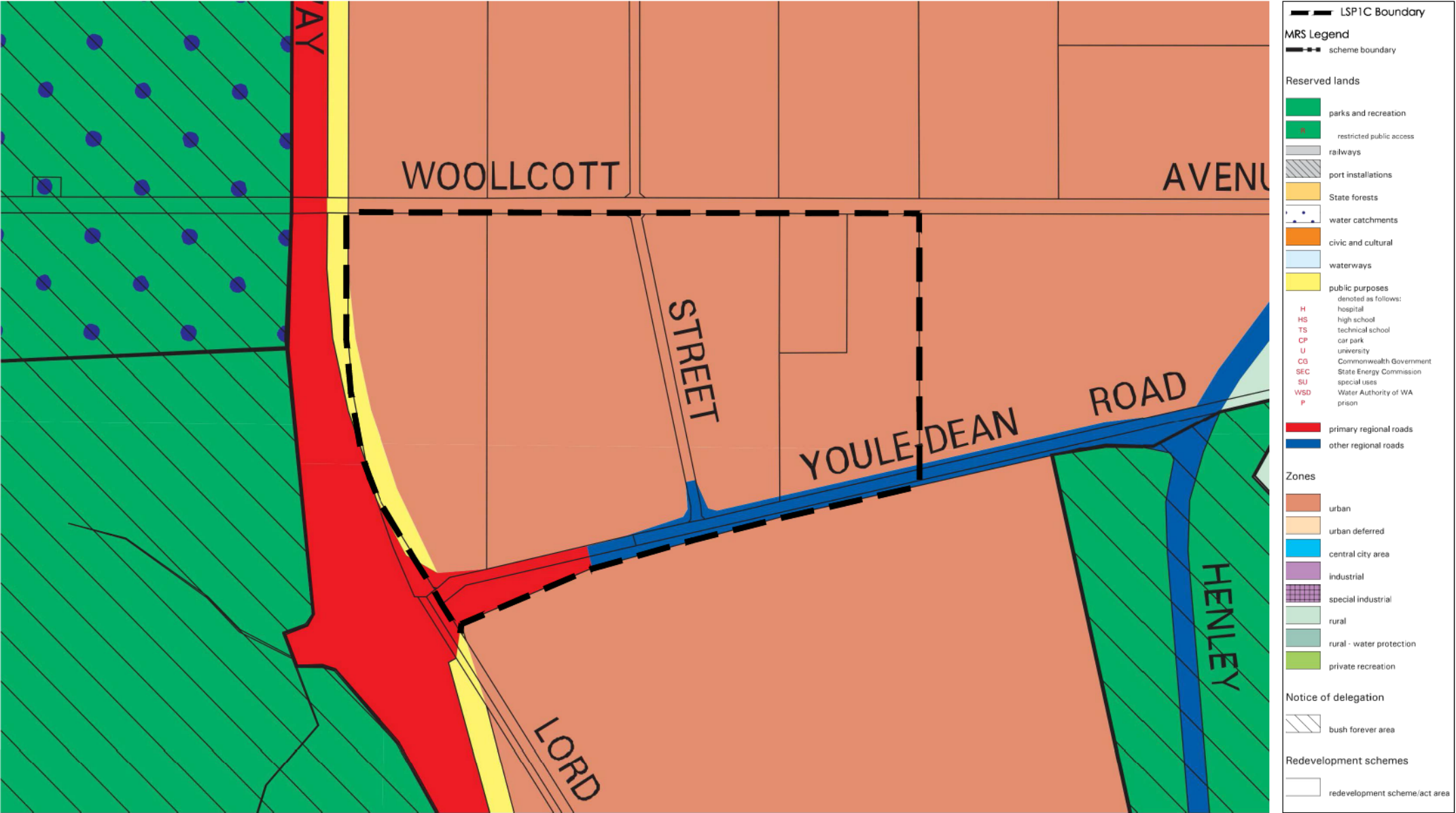
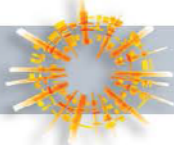
The LSP area forms the southern extension of the 'Whiteman Edge' project area. Whiteman Edge is currently under construction and at full development, will deliver approximately 2,000 dwellings.

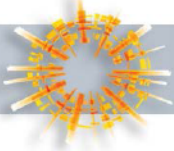
### 1.2.2 Area and Land Use

LSP1C is approximately 66.2 ha in size and is mostly cleared, having been previously used predominantly for agricultural land uses including grazing of cattle and horses. The site is generally flat, with a small ridge around a man-made open water body located in the northern portion of Lot 16.

The majority of the site is grassland with generally sparse trees, comprising a mix of native and introduced species. Trees become more prominent around the open water body and in the south-western corner of the structure plan area.







### 1.2.3 Legal Description and Ownership

LSP1C comprises of Lots 15, 16, 17, 19 and 20. Table 1 sets out the legal description of each individual land parcel within the LSP area.

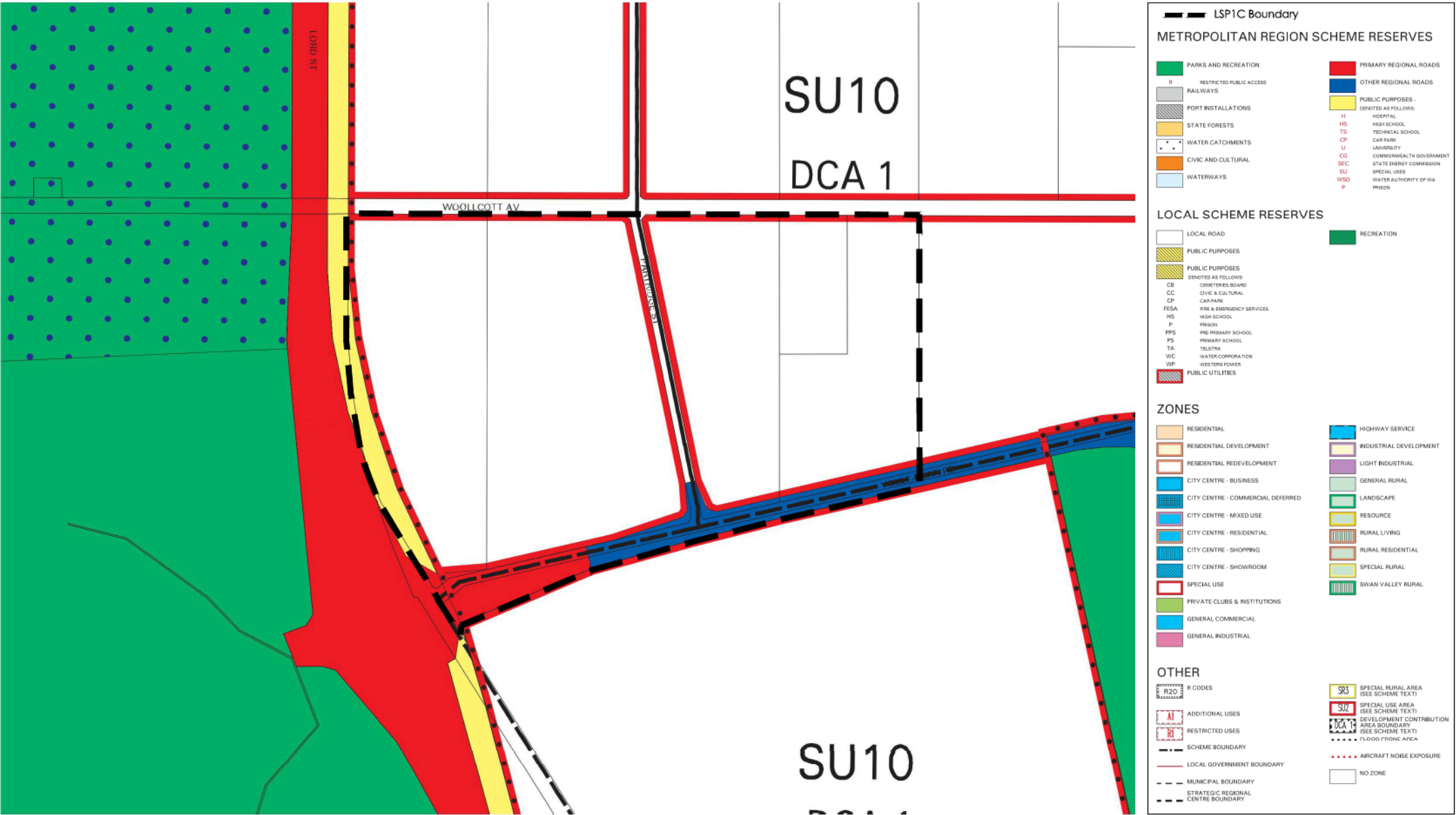
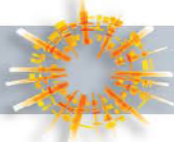
The LSP area also includes three existing road reserves, as demonstrated in Table 2.

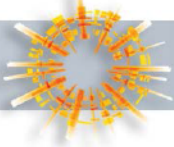
**Table 1: Legal Description**

Lot No.	Land Owner	Volume	Folio	Diagram	Area (ha)
15	Stockland Development Pty Ltd	1731	385	39200	17.4578
16	Stockland Development Pty Ltd	2045	259	59865	22.1976
17	Stockland Development Pty Ltd	1869	176	59866	12.2045
19	GM Brabham Pty Ltd	2103	662	83113	3.5864
20	Sandra & Giuseppe Bellini	2103	661	91765	10.7624

**Table 2: Road Reserves within LSP Area**

Road Name	Reserve Width	Zoning – MRS/LPS 17	Current Status / Comments
Woolcott Avenue	30m	Urban / Special Use	Partially constructed as single carriageway rural standard. LSP1C retains as neighbourhood connector road and proposes to close access to Lord Street.
Partridge Street	20m (additional widening identified in DSP)	Urban / Special Use	Partially constructed as single carriageway rural standard. LSP1C widens to Integrator B standard and will connect to the constructed portion of Partridge Street further to the north.
Youle Dean Road	Various - tapers from west to east	PRR – ORR / Regional Road Reserve	Partially constructed as single carriageway rural standard. LSP1C shows as Integrator B standard, with controlled access to Lord Street.





### 1.3 Planning Framework

The following provides an overview of the planning framework as it relates to the LSP area.

#### 1.3.1 Zoning and Reservations

##### Metropolitan Region Scheme (MRS)

LSP1C is consistent with the zonings under the Metropolitan Region Scheme (MRS).

The LSP1C area is zoned Urban under the MRS, refer Figure 3 – MRS Zoning Plan.

A Primary Regional Road reservation adjoins the western boundary for the future Perth Darwin National Highway (PDNH) alignment. It is understood that an alternative alignment for the PDNH is currently being investigated by the State Government and the City of Swan, which is likely to result in the relocation of the Primary Regional Road reserve in the future.

The westernmost portion of Youle Dean Road where it connects to the future PDNH is Primary Regional Road (PRR) Reserve, in anticipation of a future grade separated interchange. Further to the east, Youle Dean Road is reserved as Other Regional Road (ORR). Portions of these PRR and ORR reservations encroach into Lots 15, 16, 17 and 20 respectively. The size and location of these reservations were determined on the assumption that there would ultimately be a grade separated interchange with the PDNH at the Youle Dean Road intersection. With the Government's

decision to relocate the PDNH, there is an opportunity to review the width and alignment of the PRR and ORR reservations on Youle Dean Road.

There is a 40m strip of Public Purpose Reserve between the Primary Regional Road Reservation and the DSP area, the majority of which is owned by the Western Australian Planning Commission (WAPC), with approximately 1.6ha located within Lot 15. It is understood that this Reservation is to allow for a future public transport corridor, although there is currently no government commitment for the construction or delivery of public transport infrastructure within this corridor.

##### City of Swan Local Planning Scheme No. 17 (LPS 17)

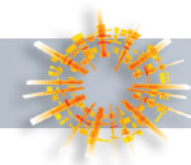
The LSP1C area is generally zoned Special Use – Albion pursuant to LPS 17, refer Figure 4 – LPS 17 Zoning Plan.

This Report comprises a Local Structure Plan for the purposes of Part 5A and Schedule 4 of LPS 17.

Schedule 4 Special Use - Albion sets out objectives for the site to be considered when preparing a District or Local Structure Plan. Table 3 outlines each objective and where the objective is addressed in the relevant report section.

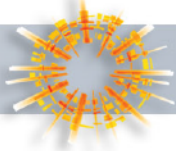
LPS 17 identifies that a key objective of the local structure planning is to coordinate subdivision and development to provide comprehensive planning. Pursuant to Clause 5A.1.5.2 of LPS 17 a Local Structure Plan can be prepared over all of part of a structure planning area.





**Table 3: Albion Special Use Zone Objectives**

Objective	Relevant Report Section
a) To consider and demonstrate integration with the broader district context	Section 2.6 & 3.4
b) To develop the Estate in a manner that protects, conserves and enhances the natural environment and cultural assets and to investigate and manage impacts	Section 2.0 - 2.5
c) To provide for the development of a functional and cohesive community consistent with orderly and proper planning and in the interest of the amenity of the Estate	Part 3
d) To encourage variety in the range of lot sizes and dwelling types within the Estate, consistent with a cohesive and attractive built environment	Section 3.3
e) To enhance the Estate with the provision of open space and recreation networks and facilities with particular attention being given to the timely provision of appropriate community services	Section 3.2
f) To make provision for school sites and other appropriate educational facilities within the Estate designed to encourage their management and use as a resource for local communities	Section 3.6
g) To provide appropriate retail and commercial facilities to service the needs of residents of the Estate and with a view to the integration of retail areas with other commercial and business areas and with social services so as to maximise convenience	Section 3.7
h) To provide retail and commercial centres, business parks and service areas to satisfy the need for such services within the Estate and to provide local employment opportunities	Section 3.7
i) To employ strategies and designs aimed at optimising accessibility to local centres by the use of comprehensive movement networks and by other means which will facilitate connection with public transport and arterial road links to Midland, Perth and other parts of the Metropolitan Region	Section 3.4



The DSP sets out indicative local structure planning boundaries for the basis of land use calculations.

The DSP acknowledges that, to a large extent, local structure planning boundaries are impacted by land ownership, development intentions and staging. The DSP establishes criteria for the determination of local structure plan boundaries in accordance with Clause 5A.1.2.5.

The LSP1C boundary has been determined based on servicing, land ownership and drainage considerations.

The following demonstrates how the LSP1C boundary meets the criteria established under the DSP.

**1. *Demonstrate that the local structure plan can address drainage and water management consistent with the approved District Structure Plan (Section 4.2 & Local Water Management Strategy), State Planning Policy 2.9 and Better Urban Water Management to the specification of the Department of Water.***

The LSP1C Local Water Management Strategy (LWMS), refer Appendix 1, demonstrates that drainage can be managed in accordance with the DSP, State Planning Policy 2.9 and Better Urban Water Management.

The majority of the LSP area forms part of the Horse Swamp drainage catchment, with the land east of Partridge Street forming part of the separate St Leonards Creek drainage catchment.

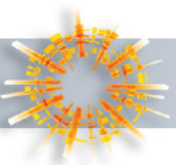
The LWMS includes arterial drainage modelling to demonstrate how drainage will be managed across the Horse Swamp catchment and levels at culvert outfalls under Lord Street.

**2. *Demonstrate that the local structure plan allows for integrated and staged development with surrounding landowners (including consideration of future road connections and intersections and the coordinated provision of essential services and drainage).***

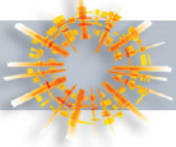
The LSP is bounded by Woollcott Avenue to the north and Youle Dean Road to the south, with Partridge Street traversing the LSP area on a north-south axis. Intersection design and spacing on Woollcott Avenue is consistent with the approved subdivision to the north and allows for road connections to the north and south consistent with the DSP. The LSP also allows for future integration with the land south of Youle Dean Road, which is owned by the Department of Housing.

Services are generally being delivered from the existing Whiteman Edge project area to the north, with the LSP1C area being a logical extension to the existing development front.





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3. *Management plans and landscape strategies included in the Local Structure Plan are to cover the total area of identified wetlands and conservation areas and not dissect these environmental features (to ensure protection and management is considered holistically).*

The DSP does not identify any wetlands or significant environmental features within the LSP1C area.

4. *The local structure plan boundaries should generally correspond with features shown on the DSP (such as higher order roads) to coordinate logical integration and should not dissect major non-residential land uses (such as commercial centres and school sites). Local structure plans shall demonstrate the interface with any different land uses contemplated by the DSP which adjoin the proposed local structure plan boundary.*

Woolcott Avenue and Youle Dean Road form a hard edge to the northern and southern boundaries of the LSP area, providing an appropriate managed interface to future adjoining land uses. The western boundary of the LSP area is consistent with the western boundary of the DSP area, while the eastern boundary is defined by a combination of the Parmelia gas pipeline easement and the boundary of Lot 20.

With the exception of a small strip of non-retail commercial land to the south of Youle Dean Road which can be addressed as part of a separate structure plan over this area,

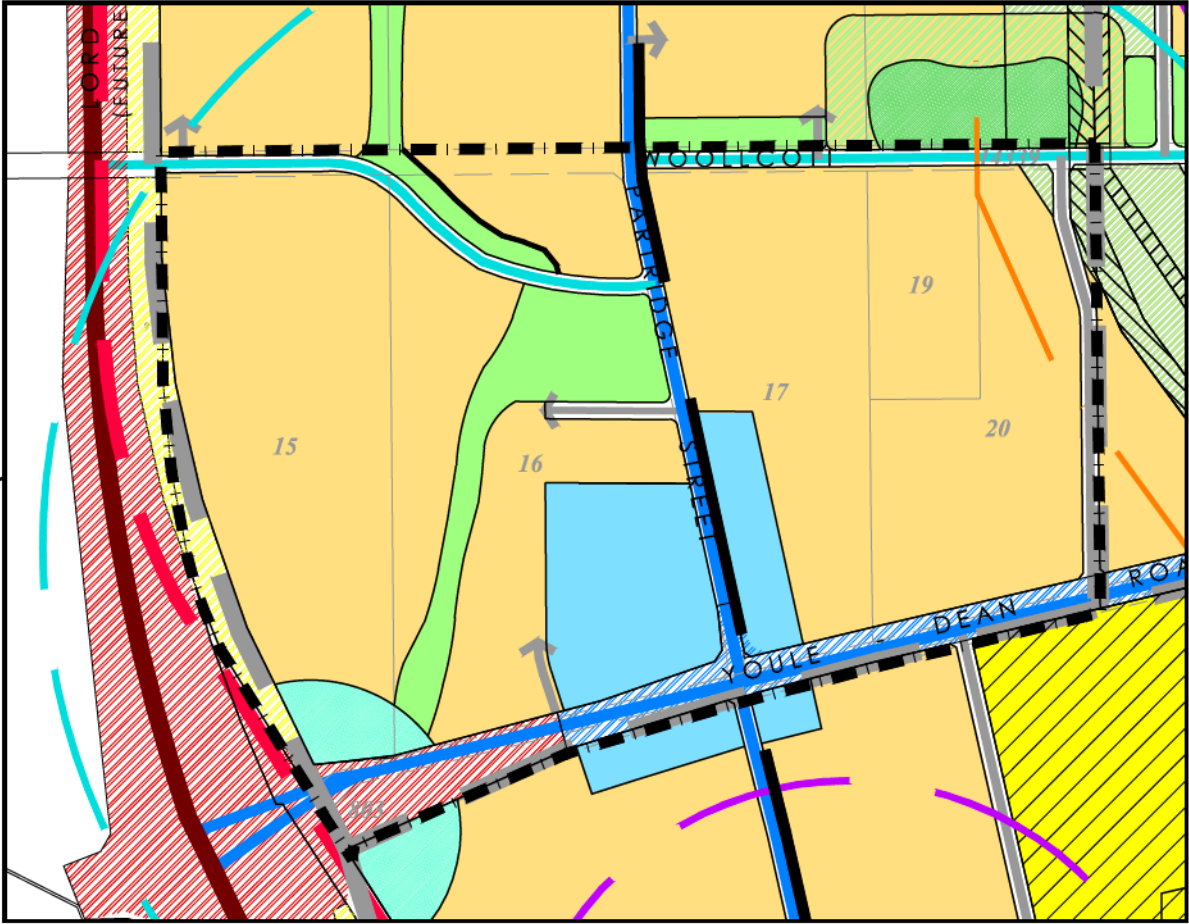
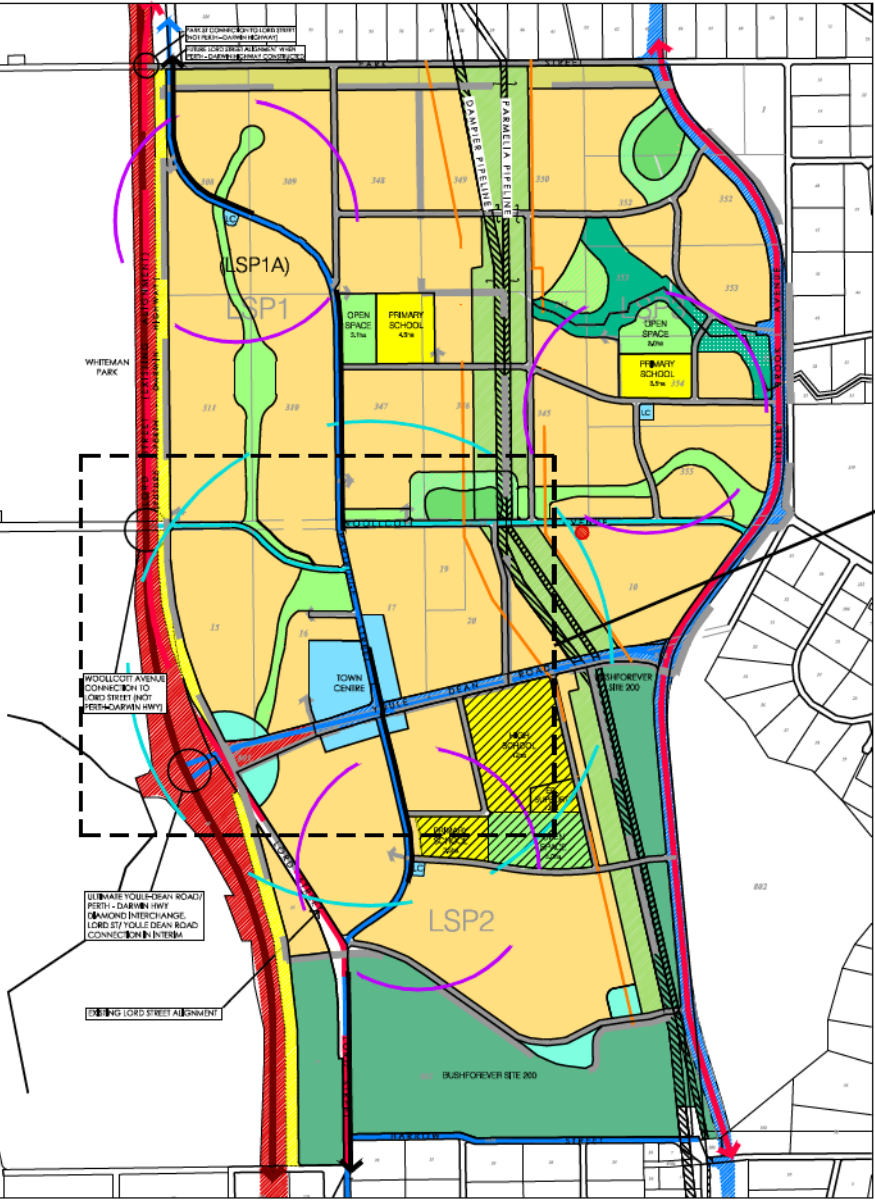
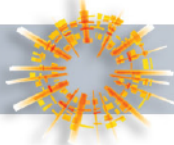
the majority of the Large Neighbourhood Centre, including all of the 10,000m<sup>2</sup> of retail floor space, is located within the LSP1C area.

5. *Will result in a POS distribution which is generally consistent with the DSP and with POS credits calculated in accordance with Liveable Neighbourhoods.*

Refer Table 7 Public Open Space Schedule and Figure 9 Public Open Space.

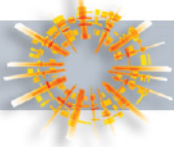
6. *The local structure plan boundary will not prejudice the preparation of a local structure plan over adjoining land to achieve the above.*

The LSP boundary will not prejudice the preparation of future local structure plans on adjoining land. Lot 800 (to the south of Youle Dean Road) is a large, self contained land parcel under single ownership and is a logical LSP in itself. Lot 10 to the east of the LSP area forms part of a larger area owned by the Department of Housing and it is logical that Lot 10 is included in the structure planning for this larger area, consistent with the DSP.



- Albion LSP1C Boundary
- Residential
- Town Centre
- Indicative Local Centre (LC)
- Multiple Use / Local Active Open Space
- Local Open Space / Drainage
- Integrator Arterial A
- Integrator Arterial B
- Neighbourhood Connector A
- MRS Primary Regional Road Reservation
- MRS Other Regional Road Reservation
- MRS Public Purpose
- Gas Pipeline Easement
- Gas Pipeline Residential Conditional Area
- Sensitive Land Use Conditional Area





In addition to Clause 5A.1.6, Schedule 4 of LPS 17 sets out an environmental reporting hierarchy to be incorporated as a detail of the local structure plan. Table 4 sets out the requirements of Schedule 4 and where it is addressed in this report.

**Table 4: Details Submitted as part of a Local Structure Plan pursuant to LPS 17 Schedule 4 Special Use Albion Zone**

Requirement	Addressed within this report
Acid Sulphate Soils (ASS) Site Assessment Management Plan	Appendix 2
Urban Water Management Plan <i>Note: Local Water Management Strategy required pursuant to SPP2.9 and Better Urban Water Management</i>	Appendix 1
Wetland Management Plan	Not Applicable
Cultural Heritage Management Plan	Refer section 2.5 and Appendix 3.
Fire Management Plan	Section 2.4, 3.9 and Appendix 4

### 1.3.2 Albion District Structure Plan

The LSP area is located within the Albion District Structure Plan area, refer Figure 5 – DSP Context Plan.

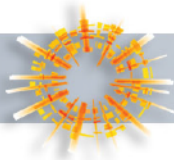
The DSP was endorsed by the Western Australian Planning Commission in January 2011 and provides the statutory framework for more detailed land use planning at the local level. The LSP has been prepared within the framework specified by the DSP, and addresses each of the critical elements identified in the DSP in detail.

Pursuant to LPS 17 the DSP includes a number of endorsed environmental management plans including:

- Strategic Acid Sulphate Soils Management Plan;
- Local Water Management Strategy;
- Noise Management Plan;
- Quantitative Risk Assessment Plan (Planning Bulletin 64); and
- Bushland Management Plans.

The DSP includes the following land use elements over the LSP area which are recognised and refined through the LSP, refer Figure 5 – Albion DSP Context Plan.





### Centres

The DSP identifies a 'Large Neighbourhood Centre' (LNC) on Lots 16 and 17. The LNC is described as having an indicative retail floorspace of 10,000m<sup>2</sup>, with an estimated 17,000m<sup>2</sup> of non retail commercial floorspace at ultimate development. The DSP anticipates that the mix of land uses could potentially include:

- Two supermarkets (6,000m<sup>2</sup> combined);
- Various specialty shops (3,000m<sup>2</sup>); and
- Fast food, restaurants etc (1,000m<sup>2</sup>).

As well as a number of non-retail uses including:

- Small showrooms;
- Local offices;
- Medical;
- Child care;
- Health club;
- Small tavern; and
- Live / work accommodation.

The DSP recognises that further detailed planning over the LNC is necessary in order to ensure that the LNC develops in accordance with the DSP objectives. The DSP notes that this further detailed planning can be included as a detail within a subsequent local structure plan. Given that the DSP identifies the centre as a 'Large Neighbourhood Centre' as opposed to a 'District Centre' it is appropriate that the detailed planning is addressed via the LSP and subsequent Detailed Area Plan, as opposed to a separate Activity Centre Structure Plan.

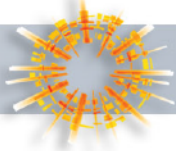
### Transport Network

The DSP provides an indicative grid of Integrator and Neighbourhood Connectors that link the key land use nodes within the DSP. This road network has been further refined by Local Structure Plan 1A and subsequent subdivision approvals which provides a road network generally consistent with the principles of the DSP.

The DSP recognises the potential for the upgrading of Lord Street and construction of the Perth-Darwin National Highway (PDNH).

Partridge Street is identified as an Integrator B Road and forms the main north-south route through the LSP area.

Youle Dean Road is also identified as an Integrator B Road. The DSP shows a full movement access point to Lord Street, which is to be upgraded to a full grade separated interchange as part of the construction of the PDNH.



### Open Space and Drainage

The DSP designates approximately 5.2ha of open space / drainage within LSP1C. This includes a multiple use corridor that links to the existing open space network to the north and traverses LSP1C on a north-south axis. This multi use corridor conveys drainage from LSP1A in a southerly direction.

A 1.2ha 'drainage' area is shown at the end of the multi use corridor in the south western corner of LSP1C.

There are opportunities to refine this open space / drainage network through detailed planning and drainage modeling as part of the LSP.

### Residential

The large majority of LSP1C is identified as 'Residential' in the DSP, with opportunities for a range of housing densities commensurate with proximities to the LNC and major public transport routes. There are opportunities to increase residential densities surrounding the LNC, recognising that the amenity and employment opportunities provided within the LNC warrant a higher density response than the balance of LSP1C.

### Surrounding Land Uses

The DSP identifies an educational precinct to the south of Youle Dean Road, providing opportunities for increased employment self sufficiency and improved community facilities for LSP1C. The educational precinct includes a high school site with associated educational support as well as a primary school. The Precinct is co-located with 5ha of district open space.

A second primary school and co-located open space is located to the north of the LSP area on the eastern side of Partridge Street.

As demonstrated further in Section 3 of this report, LSP1C provides a logical refinement of the abovementioned land use elements as depicted on the DSP.

### 1.3.3 Planning Strategies

The LSP area and broader DSP are located within the Swan Urban Growth Corridor Sub-Regional Structure Plan (SRSP). The SRSP is a non-statutory structure plan which informs the broad land use principles over the entire Swan growth corridor, including the development cells of Albion, West Swan, Dayton and Caversham.

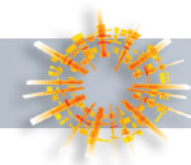
The land use principles depicted on the SRSP within LSP1C are consistent with the Albion DSP.

### 1.3.4 Policies

The following State and Local Planning Policies are directly relevant and applicable to LSP1C:

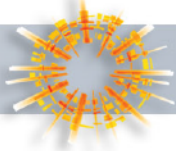
- State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2);
- Draft State Planning Policy 3.7 - Planning for Bush Fire Risk Management, and Planning for Bush Fire Protection Guidelines;
- Liveable Neighbourhoods Operational Policy; and
- Structure Plan Preparation Guidelines.





**Table 5: SPP4.2 - District and Neighbourhood Activity Centre Characteristics (SPP 4.2)**

	<b>District Centre</b>	<b>Neighbourhood Centre</b>	<b>Albion LNC Characteristics as per DSP</b>
<b>Transport connectivity and accessibility</b>	Focal point for bus network	Stopping / transfer point for bus network	The DSP identifies Partridge Street, which passes through the LNC, as the designated public transport (bus) corridor. A secondary route will most likely connect Henley Brook Avenue with Lord Street. The LNC will be a designated stopping / transfer point along these corridors.
<b>Typical retail types</b>	Discount department stores Supermarkets Convenience goods Small scale comparison shopping Personal services Some specialty shops	Supermarket/s Personal services Convenience shops	The DSP anticipates that the LNC will comprise of the following: <ul style="list-style-type: none"> <li>• Two supermarkets</li> <li>• Various specialty/convenience shops</li> <li>• Personal services</li> </ul> The DSP does not provide for or anticipate a Discount Department store.
<b>Typical office development</b>	District level office development Local professional services	Local professional services	Local offices / professional services only



The LSP has been prepared to be consistent with the principles and requirements of the WAPC's operational policies and guidelines outlined above. Compliance with operational policy requirements is further demonstrated throughout Section 3 of this report.

State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2) specifies broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in the Perth and Peel regions.

SPP4.2 identifies the LNC depicted on the Albion DSP as an 'Emerging District Centre'. It is noted that this designation under SPP4.2 is not consistent with the statutory DSP, which identifies the centre as a Large Neighbourhood Centre.

SPP4.2 identifies the key distinguishing characteristics of both District and Neighbourhood Centres, as summarised in Table 5.

As demonstrated in Table 5, whilst SPP4.2 identifies the LNC as a District Centre, the more detailed planning established through the statutory Albion DSP clearly demonstrates that the characteristics and composition of the LNC are more in keeping with a Neighbourhood Centre.

### 1.3.5 Other Approvals and Decisions

The Albion District Structure Plan area was zoned 'Rural' under the City of Swan Town Planning Scheme No.9. Council initiated Amendment 364 to Town Planning Scheme No. 9 to rezone

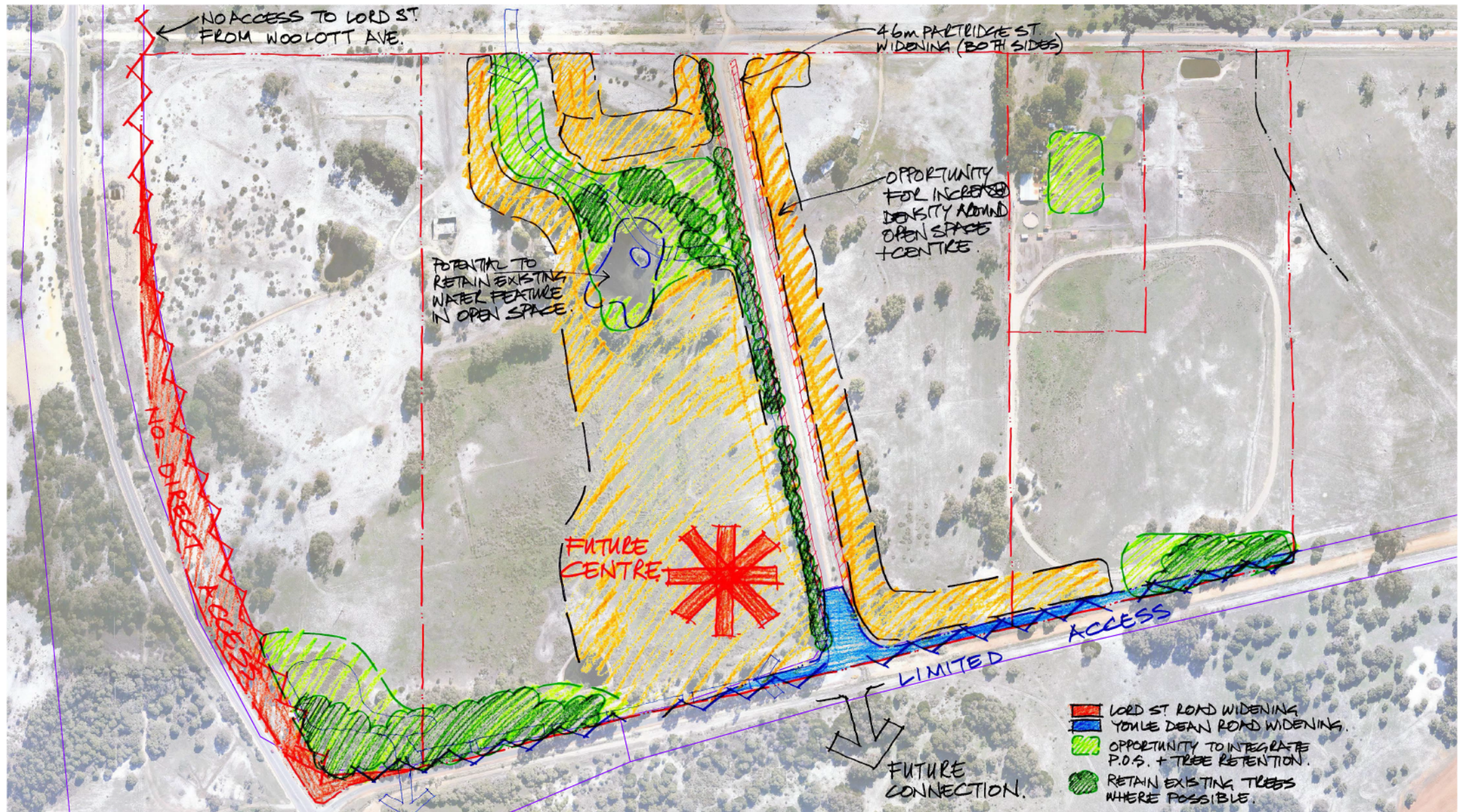
the site from 'Rural' to 'Special Use - Albion' in 1999. The City forwarded the Amendment to the Environmental Protection Authority (EPA), who issued final instructions for the preparation of an Environmental Review in October 1999. An Environmental Review was prepared by the proponent (Department for Housing & Works) in conjunction with the Department for Environment and Conservation (DEC) and the City of Swan, which was to be advertised concurrently with Amendment 364 to Town Planning Scheme No.9.

Importantly, this document was completed in May 2006 to the satisfaction of the City of Swan and DEC and addressed the environmental issues identified by the EPA and established a comprehensive environmental management plan framework to be set out in the 'Special Use Zone - Albion' provisions under Town Planning Scheme No.9.

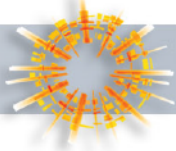
During the preparation of the Environmental Review documents, the City of Swan progressed Local Planning Scheme No.17 to final approval, superseding Town Planning Scheme No.9.

Amendment 364 and the associated Environmental Review document, whilst in a form satisfactory to the City of Swan and DEC, was not advertised for public comment due to the progress and adoption of Local Planning Scheme No. 17 into which the Amendment No. 364 provisions were included. The Environmental Protection Authority considers that the Schedule 4 provisions of Local Planning Scheme No.17 adequately address the environmental issues.









## 2.0 SITE CONDITIONS - OPPORTUNITIES AND CONSTRAINTS

Based on the background and planning context described above, the following section describes key site opportunities and constraints that have informed and impacted on the LSP urban form and structure. This analysis has been further summarised in Figure 6 – Opportunities and Constraints Map.

Environmental consultant, Emerge Associates, has undertaken a desktop investigation of the site in order to determine its environmental features and attributes. This included, but was not restricted to a review of investigations previously conducted for the historical planning process over the site including:

- the proposed rezoning of the site (City of Swan Town Planning Scheme No. 9, Amendment 364); and
- the Albion District Structure Plan.

The following summarises the analysis undertaken by Emerge Associates. A more comprehensive analysis is included as Appendix 3 – Environmental Assessment Report.

### 2.1 Biodiversity and Natural Area Assets

#### 2.1.1 Flora and Vegetation

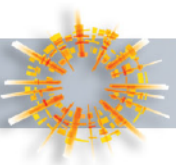
The site has been extensively cleared over a number of years and is relatively unconstrained by any significant flora or vegetation. A review of historical aerial photography shows the majority of the site was cleared between 1953 and 1965.

Regional vegetation mapping undertaken by Heddle et al (1980) indicates the site is located within the Southern River complex which is defined as an “open woodland of *Corymbia callophylla* (Marri), *Eucalyptus marginata* (Jarrah) and *Banksia* species with fringing woodland of *Eucalyptus rudis* (flooded gum) and *Melaleuca raphiophylla* (Swamp Paperbark) along creekbeds”.

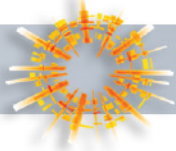
As part of Scheme Amendment No. 364 (Town Planning Scheme No. 9), a flora and vegetation survey was conducted over the site (and wider Scheme Amendment area) by Ecoscape (1997) and W.G. Martinick and Associates (1997). As part of preparing an Environmental Review for the rezoning of the site Ecoscape (2006) reviewed previous surveys and completed aerial photography interpretation and site inspections to verify previous survey results.

No Declared Rare Flora or Priority Flora was identified during the historic vegetation surveys of the site. Furthermore, no Threatened Ecological Communities or Priority Ecological Communities were recorded within the site and as such, require no specific consideration with regard to retention or management.

Whilst not a statutory requirement, there are opportunities to recognise existing vegetation within areas of open space within the LSP area, subject to civil design and drainage requirements.



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### 2.1.2 Wetlands

The Department of Parks and Wildlife (DPaW) maintains the *Geomorphic Wetlands of the Swan Coastal Plain* database which identifies wetland areas and categorises individual wetlands into specific management categories being Conservation Category, Resource Enhancement and Multiple Use.

The *Geomorphic Wetlands of the Swan Coastal Plain* dataset (Hill et al. 1996) indicates that there are six wetlands mapped as part of the dataset within the LSP1C site, comprising Resource Enhancement and Multiple Use categories only.

The preparation and approval of Scheme Amendment No. 364 and the DSP included a comprehensive analysis of all of the identified wetlands within the DSP area, including those within LSP1C. As part of this assessment, the EPA and the former Department of Environment and Conservation (now DPaW) confirmed that none of the wetlands identified above are required to be retained, however, other wetlands within the DSP area were identified for retention and are depicted on the DSP map. This is reflected in the endorsed DSP, which does not depict any wetland conservation areas within the LSP1C. Notwithstanding this, there are opportunities to retain portions of the identified wetlands within broader areas of open space / drainage corridors where civil and landscaping requirements allow.

### 2.1.3 Fauna

Given the site has been extensively cleared of native vegetation dating back to 1965, there is limited fauna habitat and values within the site and the site is unlikely to support any quality habitat for conservation significant species.

## **2.2 Landform and Soils**

The LSP1C area is relatively level and is therefore well suited to urban development. LSP1C has a south easterly aspect and site elevations range from 32 m AHD along the northern edge of the site through to 23 m AHD in the south western corner. A prominent sand ridge exists along the northern boundary of LSP1C.

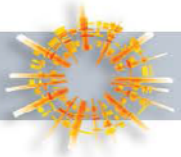
Previous land uses within LSP1C have created a series of bunds around an open water body located in the northern portion of the site. These bunds are raised up to 5m above the natural surface level. Opportunities exist to retain portions of the bund and associated vegetation within public open space thereby providing a high amenity public area adjacent to the planned Neighbourhood Centre.

Landform and soil mapping undertaken by Churchward and MacArthur (1980) indicates that the site is found within the Southern River soil association and is described as "Sandplain with low dunes and many intervening swamps, iron and humus podzols, peats and clays" (Churchward and MacArthur 1980).

Environmental geology for the site has been mapped through the Geological Survey of Western Australia (Gozzard 1986). The majority of the site consists of sand with two small areas of peaty clay, one in the north east corner and one in the south west.

These identified soil types are common to the Swan urban corridor and are not a constraint to urban development.





Source: Emerge

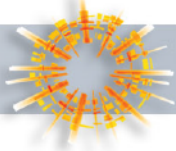
2142-568-01 (24.09.2014), Not to scale



BUSHFIRE HAZARD MAP

Figure 7





## 2.3 Groundwater and Surface Water

### 2.3.1 Groundwater

The Perth Groundwater Atlas (DoW 2013) indicates that minimum groundwater levels (May 2003) beneath LSP1C range between 26 m AHD in the north to 23 m AHD in the south. This suggests that groundwater ranges between 1 – 3 m below the current ground level.

According to the Local Water Management Strategy (JDA 2009) produced to support the Albion DSP, there have been three stages of groundwater investigations within the DSP area. 24 bores covering the DSP area have been installed since 2001. Groundwater levels for AAMGL calculations were measured by JDA in January 2006 which were then compared to four Department of Environment (DoE) bores near the study area which provide a long term record (from 1977) for the area. According to the LWMS (JDA 2009), depth to AAMGL varies from >1.5 m within the north west portion of the site to ponding at the surface.

Both the groundwater levels and quality within the site will be maintained and managed in accordance with an approved Local Water Management Strategy which has been prepared by RPS and is included as Appendix 1.

### 2.3.2 Surface Water

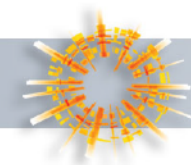
LSP1C is located within the Horse Swamp catchment, which drains to the south west through to Horse Swamp within Whiteman Park. Further detail on surface water drainage can be found within the Local Water Management Strategy at Appendix 1.

## 2.4 Bushfire Hazard

A Bushfire Hazard Assessment has been prepared based upon the existing vegetation type and structure over LSP1C, refer Figure 7 – Bushfire Hazard Map. Bushfire hazard ratings within LSP1C (and the surrounding 100m) range from "extreme" to "low". Following development, the bushfire hazard rating within LSP1C will be reduced to "low" as the majority of vegetation will be cleared as part of the proposed development and any areas of remnant vegetation which are retained will be managed as "low threat" vegetation in accordance with Australian Standard 3959 (AS 3959) Construction of Buildings in Bushfire Prone Areas. These areas are therefore not considered a bushfire risk and do not require further consideration.

A Fire Management Plan prepared by Bushfire Safety Consulting, refer Appendix 4, indicates that bushfire management measures can meet the performance criteria of the Planning for Bushfire Protection Guidelines and that the potential bushfire risk can be managed within the local structure plan design through dwelling setbacks and construction standards of BAL 12.5 - BAL 29. Section 3.9 outlines the LSP fire management response in more detail.

In accordance with LPS 17 Amendment No. 99, LSP1C has provided a map of Bushfire Prone Areas (refer Figure 7) to demonstrate those areas which require a detailed Bushfire Attack Level (BAL) Assessment prior to dwelling construction. The bushfire mapping detailed in the fire management plan supersedes the City of Swan bushfire mapping, in accordance with the Scheme provisions outlined in LPS 17 Amendment 99.



## 2.5 Heritage

### 2.5.1 Indigenous Heritage

An Aboriginal Cultural Heritage Survey was completed for the DSP area in 1996 and 1997 (W.G. Martinick and Associates Pty Ltd 1998). This survey included an archaeological investigation and Aboriginal consultation. The archaeological investigation found an archaeological site within the DSP area associated with Park Street (outside of the LSP1C area). The archaeological investigation also located two isolated finds (stone artefacts) over Lot 17 and Lot 18.

An online search for relevant Aboriginal heritage information was undertaken using the Department of Aboriginal Affairs (DAA) Aboriginal Heritage Inquiry System (AHIS) that incorporates both the heritage site register and the heritage survey database (DIA 2009). The Aboriginal Heritage Site Register is maintained pursuant to Section 38 of the Aboriginal Heritage Act 1972 and contains information on over 22,000 listed Aboriginal sites throughout Western Australia.

The AHIS shows that a small portion of the registered Aboriginal site "Lord Street North 2" (Site ID 552) occurs within LSP1C. This Aboriginal site is a "Ceremonial" and "Mythological" site associated with a water source. The site is located within the Lord Street Transit Corridor and is therefore unlikely to be affected by the development of LSP1C.

While no Aboriginal heritage sites have been identified within the LSP1C area, it is acknowledged that there is the potential that Aboriginal heritage sites may be found during civil and construction works. It is recognised that if during construction Aboriginal artefacts or sites are uncovered, that these are protected under the Aboriginal Heritage Act 1972 and that works will need to cease and suitably qualified experts will be brought in to survey the potential site. If required, permission under the Aboriginal Heritage Act 1972 to manage and disturb sites will be sought.

### 2.5.2 Non-Indigenous Heritage

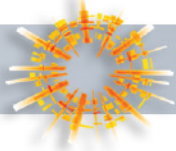
A desktop survey undertaken by Emerge Associates indicated that there are no European heritage sites present within LSP1C.

## 2.6 Context and Other Land Use Constraints

In addition to the key environmental considerations outlined above, the following sections summarise other key land use considerations and opportunities for LSP1C.

### 2.6.1 Existing and Future Road Network

LSP1C is situated within an established framework of existing and planned regional and district roads, ensuring strong permeability throughout the LSP area. This framework is well established through the existing statutory planning context, as outlined in Section 1 of this report.



Lord Street is a principal north – south distributor adjoining the western boundary of LSP1C and provides an important link between Gnangara Road and Reid Highway. This section of Lord Street currently carries approximately 13,800 vehicles per day.

Previous planning has indicated that Lord Street will ultimately be upgraded and replaced by the Perth – Darwin National Highway (PDNH). This is reflected in the MRS reservation of this corridor as a Primary Regional Road.

In 2013 the Western Australian Government announced that the portion of the PDNH reservation between Reid Highway and Gnangara Road is to be relocated to the western side of Whiteman Park. This modified alignment is currently being formalised through the planning process and will ultimately result in an amendment to the MRS. Lord Street is likely to remain as an important district level integrator, although the precise nature and function of the ultimate Lord Street has not yet been determined.

The relocation of the PDNH and subsequent downgrading of the Youle Dean Road intersection presents opportunities for LSP1C with respect to the land requirements associated with Youle Dean Road.

Further discussion on the planned road network and the LSP response is provided in Section 3.4 of this report, and Appendix 7.

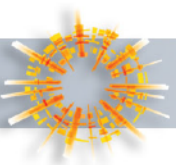
#### 2.6.2 Public Transport

As noted previously, there is a 40m wide Public Purpose Reserve between the Primary Regional Road Reservation and the western boundary of LSP1C. The majority of this Reserve is owned by the Western Australian Planning Commission (WAPC). It is understood that the purpose of this Reserve is to allow for a future public transport corridor, most likely in the form of Bus Rapid Transit (BRT), although there is currently no government commitment for the construction or delivery of public transport infrastructure within this corridor.

Notwithstanding the lack of any firm government commitment to a BRT, there are opportunities to futureproof LSP1C to ensure that if a BRT is delivered in the future that it can be integrated with the planned road network and internal bus routes to maximise opportunities for appropriate transit oriented development.

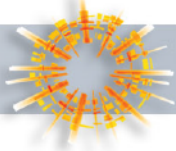
#### 2.6.3 Infrastructure and utilities

Cossill and Webley consulting engineers have undertaken a review of existing and planned infrastructure for LSP1C. A comprehensive servicing report is provided as Appendix 5 and summarised in Section 3.8. As demonstrated at Appendix 5, the LSP1C area can be readily serviced from a simple extension of the existing infrastructure within LSP1A to the north.



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#### 2.6.4 Drainage

Drainage for the western portion of the DSP area was premised on a central multi use open space corridor that conveys water from north to south and discharges into Horse Swamp to the west of Lord Street. The endorsed LWMS for LSP1A, subsequent subdivision approvals and UWMPs have reflected this.

There are opportunities to extend and refine this multi use corridor through the LSP1C area, providing a high amenity linear open space network connecting the Neighbourhood Centre and other key land uses with the broader residential area, whilst also retaining mature trees and vegetation.

Further discussion on drainage and urban water management is provided in Section 3.5 and Appendix 1.

#### 2.6.5 Dampier Pipeline

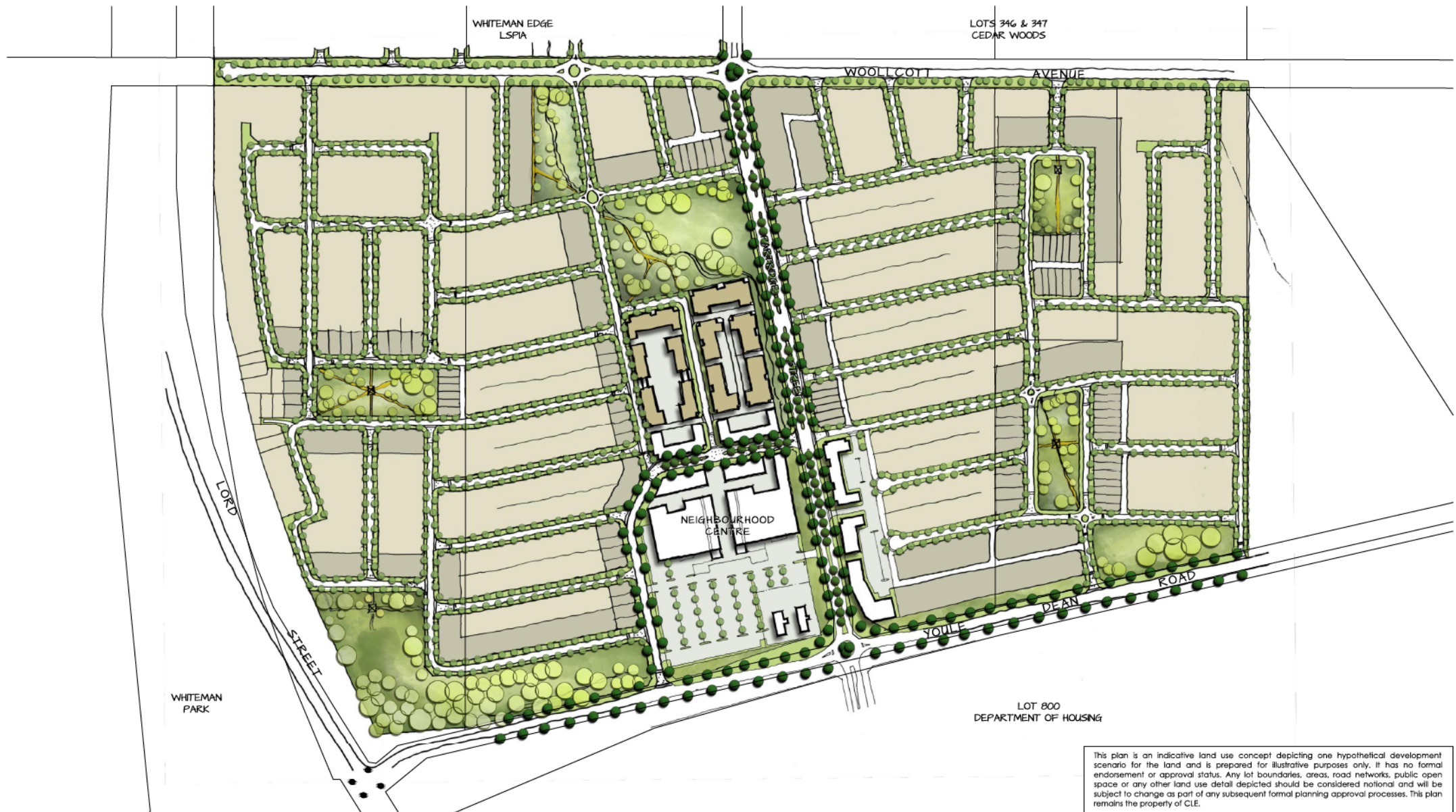
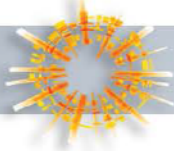
The Dampier–Bunbury Natural Gas Pipeline easement encroaches into the north eastern corner of Lot 20. Consistent with the DSP and recent structure plan approvals to the north of LSP1C, there are opportunities to set aside the easement within a public utilities reserve or similar, with residential land uses adjoining. This is discussed further in Section 3.8.4.

#### 2.6.6 Transport Noise

The endorsed DSP included a detailed noise assessment which took into consideration traffic noise generated by the future Perth-Darwin National Highway. The DSP recommended the construction of a 1.8m high noise wall along the western boundary of the DSP area, which includes a portion of LSP1C as well as the implementation of 'Quiet House Design' principles for the first row of houses adjacent to the transport corridor.

A Transport Noise Assessment to supplement the LSP has been prepared by Lloyd George Acoustics and is included as Appendix 8. The report recommended the construction of a 1.8m noise wall, Package A Quiet House Design principles, notifications on title and further acoustic investigation for dwellings proposed greater than single storey.

Further discussion on noise attenuation and LSP response is included in Section 3.10.

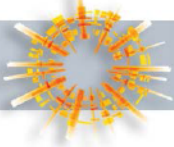


This plan is an indicative land use concept depicting one hypothetical development scenario for the land and is prepared for illustrative purposes only. It has no formal endorsement or approval status. Any lot boundaries, areas, road networks, public open space or any other land use detail depicted should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

## DEVELOPMENT CONCEPT PLAN







### 3.0 LAND USE AND SUBDIVISION REQUIREMENTS

#### 3.1 Land Use

LSP1C provides the framework for a robust urban development surrounding a planned activity node, forming an important part of the Whiteman Edge community and the broader Brabham suburb. LSP1C provides a level of detail that builds upon and refines the principles of the Albion DSP, whilst also remaining flexible in recognition of more detailed stages of planning in the future.

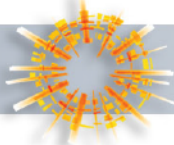
The Development Concept Plan indicatively demonstrates how development could occur on the site consistent with the LSP requirements, refer Figure 8. The following outlines the fundamental design components of LSP1C, consistent with the guiding principles of the Albion District Structure Plan:

- Allow for the creation of a diverse range of housing choices, meeting affordable living objectives.
- Provide robust urban form and land use response adjoining the planned Neighbourhood Centre and transport corridors.
- Delivering a permeable, interconnected road and path network encouraging and facilitating multi-modal transport outcomes.
- Deliver a connected network of public open space meeting local active and passive, conservation and drainage needs allowing for planned and unplanned community activity.

- Recognise existing natural features within public open space and balance these features with competing demands.
- Support the realisation of local employment opportunities through retail, community, commercial, and home based business functions.

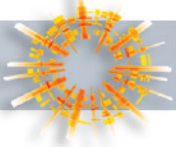
Based on these key principles, LSP1C provides a framework for the creation of:

- A total of approximately 900 - 1000 lots and approximately 1000 - 1100 dwelling units, with appropriate density responses adjacent to the planned Neighbourhood Centre. Higher residential densities are focused around the Neighbourhood Centre and key areas of open space with the balance of the LSP1C area comprising of more traditional medium density housing of R40, consistent with LSP1A to the north.
- A separate Special Use - Neighbourhood Centre zone over the Large Neighbourhood Centre that recognises the need for further detailed planning over this precinct via a Detailed Area Plan to ensure that the Centre provides opportunities for the employment, retail, community and recreation opportunities envisaged by the DSP.
- Approximately 7.6 hectares (gross) of strategic public open space meeting active and passive recreation, drainage objectives, as well as meeting the minimum 10% public open space requirement of Liveable Neighbourhoods.



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





- A clear hierarchy of integrator arterial roads and neighbourhood connectors, providing a framework for the provision of a local bus service and walking and cycling. The road network is fully integrated with the planned and approved road network as determined in LSP1A.
- Vehicle access points to Lord Street at Youle Dean Road that are consistent with the DSP.

## 3.2 Open Space

### 3.2.1 DSP Open Space Context

Section 7.0 of the approved DSP describes the open space strategy for the Albion cell. In brief, there are seven different categories of open space described:

- Multiple Use (MU);
- Local Active and Passive Open Space (LA/LP);
- Local Open Space – Drainage (D);
- Wetlands (W/WB);
- Conservation (C);
- St Leonards Multiple Use (StL);
- Bush Forever and Parks and Recreation; and
- Neighbourhood Parks.

The public open space areas shown on the DSP are indicative and subject to detailed design, modelling and confirmation at LSP stage. The DSP establishes the broad principles for public open space distribution at a district level and recognises that the LSP will refine the provision of public open space. Additional local parks will be shown at the local planning level.

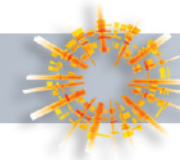
The DSP shows a central spine of multiple use open space within LSP1C, serving a recreation and drainage function, as well as a central node of local passive open space for informal play and community gathering. A drainage area of approximately 1.2ha is identified in the south western corner of LSP1C. The total open space area shown on the DSP within LSP1C is approximately 5.2ha.

The DSP states that the calculation of public open space credits will be calculated in accordance with Liveable Neighbourhoods principles which recognises the detailed water modelling undertaken at LSP stage as part of the Local Water Management Strategy. The approved DSP does not set out public open space credits.

### 3.2.2 LSP1C Public Open Space Provision

Based on a gross subdivisible area of 57.68ha, the 10% open space requirement for LSP1C is 5.77ha. The Development Concept Plan allows for the provision of approximately 7.6ha of gross public open space, including multiple use and drainage open space.



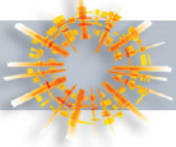


**Table 6: Public Open Space Schedule (all areas are in hectares)**

<b>Site Area</b>		<b>71.74</b>
<b>Deductions</b>		
Partridge Street	1.08	
Partridge Street Widening	0.49	
PP Reserve	1.60	
PRR Reserve	2.21	
ORR Reserve	2.99	
DBNGP Easement	0.28	
Non-creditable MUC	0.11	
1:1 Year Drainage within POS	1.70	
Neighbourhood Centre	3.61	
Restricted Use (above 2%)	0.0	
<b>Total Deductions</b>	<b>14.06</b>	
<b>Net Site Area</b>		<b>57.68</b>
<b>Other Deductions</b>		
Gross Subdivisible Area		57.68
POS @ 10%		5.77
<b>Public Open Space Requirement</b>		
May Comprise:		
Min 8% unrestricted POS	4.61	
Max 2% restricted POS	1.15	
<b>TOTAL POS REQUIRED</b>		<b>5.77</b>
<b>Public Open Space Provided</b>		
1. Local Park Central	1.22	0.09
2. Neighbourhood Park 1	0.38	0.09

3. Neighbourhood Park 2	0.24	0.02
4. Neighbourhood Park 3	0.38	0.02
5. Neighbourhood Park 4	0.34	0.06
6. Local Open Space (Drainage)	2.00	0.14
7. MU Corridor 1	0.62	0.04
8. MU Corridor 2	0.00	0.13
9. MU Corridor 3	0.00	0.13
<b>Total</b>	<b>5.19</b>	<b>0.72</b>
<b>Additional Deductions</b>		
Restricted Open Space Surplus		-0.43
Revised Public Open Space Contribution		
Min 8% unrestricted POS	5.19	8.99%
Max 2% restricted POS	0.72	1.25%
<b>Total Creditable POS Provided</b>	<b>5.91</b>	<b>10.25%</b>

1. Site Area is the total area of Lots 15-17, 19 and 20, and the total area of the Partridge Street road reserve and Youle Dean Road Reserve, including lot 803.
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. Drainage areas are based on the revised LWMS (RPS Jan 2015).
4. The area required for drainage between the 1:1 and 1:5 year event represents ~10% of total open space, less than the 20% restricted open space provision under Liveable Neighbourhoods.
5. The MUC is treated as restricted open space, with the exception of the 1:1 year storage area, which is a deduction.
6. All POS areas are indicative only and are subject to refinement and detailed design at subdivision stage.
7. The POS provision includes a pro-rata contribution to the three Neighbourhood Parks and the Local Community Centre site identified in the Development Contribution Plan. The balance of the POS (shall be provided in accordance with the WAPC's Liveable Neighbourhoods method of calculation.



Once Liveable Neighbourhoods credits are applied, the open space provision is 10.2% which is consistent with the requirements of WAPC policy and Liveable Neighbourhoods to provide 10% creditable public open space, (refer Table 6), Liveable Neighbourhoods POS Schedule and Figure 9 – Public Open Space Plan.

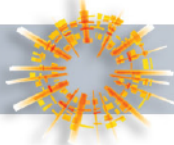
The following outlines the key aspects of public open space provision based on Liveable Neighbourhoods requirements, with the detailed description of each open space type outlined in Section 3.2.3.

- The Development Concept Plan provides 7.6ha of gross open space, with all open space areas serving a shared drainage function, without compromising the active and passive recreational uses.
- Approximately 1.7ha of open space will receive drainage for events occurring more frequently than the 1 in 1 year (1 hour) event and as such are a deduction from the Gross Subdivisible Area in accordance with Liveable Neighbourhoods.
- Liveable Neighbourhoods allows up to 2% of the 10% open space requirement to comprise of restricted use open space. The balance of restricted use open space becomes a deduction.
- Based on the requirements of Liveable Neighbourhoods, a maximum of 1.1ha can be creditable restricted use open space and a minimum of 4.6ha unrestricted open space.

- Approximately 0.4 ha of open space will receive drainage from between the 1 in 1 year and 1 in 5 year drainage event in landscaped infiltration basins, swales and bio-retention areas, in accordance with water sensitive urban design principles. The 1 in 1 to 1 in 5 year drainage event is treated as restricted use open space in accordance with Liveable Neighbourhoods.
- Consistent with the DSP, the portion of the Multiple Use linear open space that is not inundated more regularly than 1 in 5 years is unrestricted open space, as it serves as a pedestrian connection and allows for passive recreation.
- The entire portion of Multiple Use linear open space adjacent to Partridge Street is restricted use open space.
- All other POS areas are unrestricted open space, providing a range of passive and active functions as well as recognising the existing environment through the retention of mature trees and vegetation wherever possible. The total unrestricted use open space area is 5.1 ha.

### 3.2.3 Public Open Space Description

The following provides a summary of the key principles for landscape distribution, function and design throughout the LSP area, consistent with the DSP. A detailed Landscape Strategy prepared by EPCAD Landscape Consultants is Appendix 6 and is shown as Figure 10.



**POS 20. LINEAR PARK NORTH**  
This park is a continuation of the Oval park to the north and comprises the central 'living stream' passing through open grass areas for passive recreation such as picnics. The meandering stream is planted with sedges and native vegetation with boardwalks, and a bridge leads to a shade structure with views across the stream. Footpaths ensure a good network link between the northern precinct and the southern precinct.

**POS 21. CENTRAL PARK**  
This is the main and largest park in the precinct and comprises numerous existing trees, both native and exotic. The former lake will become the main swale for the 1 in 1 storm water events, planted with littoral species to strip nutrients and surrounded by the existing Melaleuca with boardwalks to provide a circular walk around the habitat with interpretation and seating.  
  
The linear 'living stream' also passes through the park, planted with sedges and rushes and crossed by small bridges to maintain good circulation around the park.  
  
To the north, an existing mound with existing trees is to be retained to maintain an additional dimension of height and exploited for views out across the park and for the level change to create fun slides and climbing facilities leading into the play area.  
  
The existing collection of exotic species could be supplemented to create a mini arboretum with interpretation.

**POS 22. LOCAL PARK WEST**  
This public open space is also a community pocket park that comprises a shade structure and picnic facilities, play equipment and a general kick about area. The functional 1 in 1 drainage is held in a circular, low walled swale with boardwalk crossing which then overflows into the grassed areas in larger storms.

**POS 23. LINEAR SWALE**  
This linear 'backbone' through the precinct is primarily to accommodate the 'living stream' but also provides an excellent footpath linkage throughout the development and has the added benefit of retaining a significant avenue of mature trees to most of its length. The living stream varies in width and profile, and meanders around the trees providing an excellent shaded walk along its length, with occasional seating and small crossing points to allow people to filter into the space at key locations.

**POS 24. SOUTHERN PARK WEST**  
This park comprises a large existing group of trees which form an important buffer and feature along Youle Dean Road. The area of park just to the north of the trees will be geared towards fitness, with a shade structure as a central rest area and an area of grass and exercise equipment for active pursuits. A large circular footpath network around the park and through the existing trees provides a fitness trail for joggers and walkers.  
  
Drainage for the 1 in 1 year events is stored in controlled swale which then overflows onto the grass areas and finally into the existing area of Melaleuca trees is greater storm water events.  
  
Existing vegetation will be cleared of weeds and dead material and rehabilitated and supplemented where required. The periphery planting and area to the north will be planted with low, fire retardant species and footpaths will act as a fire break between existing vegetation and the new.

**GENERAL**  
All the active and passive parts of the parks are commonly surrounded by a multi-tiered structure of tree and shrub planting. Parks are designed using sound water sensitive design practice and all planting is native or native derivative shrub species with a combination of native trees and feature ornamental trees that are recognised as 'low drop' or 'two drop' species in the Water Corporation 'Waterwise Guide to Gardening'.  
  
Wherever possible, hard surfaces or low water alternatives are used instead of turf, with grass being limited to run around based activity within the parks. Water harvesting is also exploited wherever possible using swales, weirs, channels and ground amendment to reduce the need for overall water consumption.

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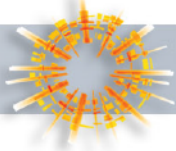
**J. LOCAL PARK EAST**  
This public open space is a community pocket park with trees and shrubs creating a series of spaces for passive recreation. Two nodes feature at each end, one with a small shade structure and shade picnic facilities, with an adjacent open grass area for family cricket and the like, and the other has a viewing area with seating and interpretation. The park also addresses some local storm water management, with swales for regular storm water events, which open out onto the grass in larger storms.

**L. LINEAR PARK EAST**  
This public open space encourages active recreation with children's play and grassed kick about area. A small shade structure with seating adjacent to the play equipment allows good surveillance whilst also providing views out across the open grass area with shade trees. Storm water drainage is held within swales to the south of the park and is planted with wetland species.

**M. SOUTHERN PARK EAST**  
This park becomes the start of the east west linear swale and comprises existing vegetation as a predominant feature. This park is primarily passive recreation with walks through the existing trees and a small shade structure with seating. Footpaths around this park also link to the linear swale to the west and on to the Southern Park East.







### Central Local Passive Open Space (LP)

Consistent with the DSP, LSP1C includes a centrally located local passive open space, allowing for a high amenity open space immediately adjacent to the Neighbourhood Centre. This open space will enable both a formal and informal meeting place for the community in high quality landscaped surrounds with the better quality existing mature trees retained wherever possible.

### Multiple Use (MU) Open Space

The MU Open Space comprises of four separate sections:

- MU1 is located immediately to the south of Woolcott Avenue and provides an important drainage function as a continuation of the 'living stream' as identified in LSP1A. MU1 is a high amenity open space, with residential lots directly abutting the POS ensuring passive surveillance is provided. Consistent with the principles of the DSP, the portion of the Multiple Use linear open space that is not inundated more regularly than 1 in 5 years is unrestricted open space, as it serves as an important pedestrian connection and allows for passive recreation.
- MU2 and MU3 run parallel to Partridge Street and are a further continuation of the living stream concept. MU2 and MU3 also allow for the retention of mature eucalypts adjacent to Partridge Street ensuring a high amenity entrance from Youle Dean Road, as well as providing a suitable interface for the laneway lots that front on

to Partridge Street. A dual use path will be provided within MU2 and MU3, allowing for safe and convenient pedestrian movement. MU2 and MU3 are restricted use open space. Indicative cross sections of MU2 and MU3 are shown at Figure 11.

- MU4 runs parallel to Youle Dean Road and will function as a high amenity landscaped interface between the road and the adjacent urban environment, as well as conveying stormwater towards Lord Street. MU4 will also accommodate a dual use path, allowing for good pedestrian and cyclist connections surrounding the Neighbourhood Centre. MU4 is treated as a deduction, as it is predominantly located within an MRS Road Reserve.

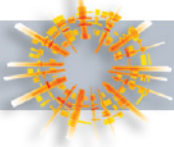
### Local Open Space – Drainage (D)

The DSP identifies a 1.2ha area in the south western corner of LSP1C as Local Open Space / Drainage. This open space area is critical to the broader drainage network as it detains stormwater before discharging under Lord Street and into Horse Swamp.

Consistent with the DSP, LSP1C includes a local open space / drainage area in the south western corner. Whilst serving an important drainage function, this open space also allows for the retention of some mature trees and vegetation within this area and will provide an appropriate interface between the Youle Dean Road / Lord Street intersection and the adjoining residential areas. Consistent with Liveable Neighbourhoods, those portions of this POS that are not detaining high frequency stormwater events (i.e. more frequent than 1 in 5 year) are unrestricted open space.







### Neighbourhood Parks (NP)

Consistent with the DSP, neighbourhood parks will comprise the balance of the 10% POS requirement. The size, location and orientation of neighbourhood parks will be confirmed following detailed subdivision design as they are dependent on the subdivision layout. The Development Concept Plan at Figure 8 and Landscape Master Plan at Figure 10 show one possible configuration for neighbourhood parks throughout LSP1C.

The design of neighbourhood parks will be subject to the City's approval following detailed subdivision design based on the following key principles:

- Located within 400m of all dwellings consistent with Liveable Neighbourhoods principles;
- Shade structures and seating facilities will reinforce community meeting opportunities; and
- Incorporation of children's play equipment in design of some of the neighbourhood parks.

## **3.3 Residential**

### 3.3.1 Housing Principles

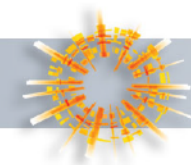
LSP1C provides a structure for the delivery of a diverse range of housing types, achieving residential density targets specified under State policy as well as meeting affordability and diversity objectives.

The major landowner within the LSP1C, being Stockland Residential has a proven track record of promoting innovative and diverse housing options and delivering appropriate housing densities.

The following sections provide a broad overview of the LSP housing strategy.

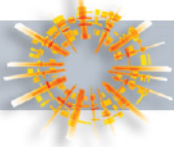
### 3.3.2 Residential Density and Yield Estimates

LSP1C will deliver a range of medium – high densities, enabling a diverse range of housing types and tenures to facilitate residential yields commensurate with the proximity to the Neighbourhood Centre.



**Table 7: Dwelling Yields and Housing Density**

<b>Directions 2031</b>	Density Target	15 dwelling units per gross urban hectare across LSP area
	Gross Urban ha in LSP area	64.95 ha
	Estimated Dwelling Yield	1000 - 1100 dwellings
	Dwellings per GUha in LSP	15 - 16 dwellings / ha
<b>State Planning Policy 4.2</b>	Density Target	Minimum 15 dwelling units per gross urban hectare within 200m walkable catchment of Neighbourhood Centre
	Gross Urban ha in 200m walkable catchment	10 ha
	Estimated dwellings in walkable catchment	150 - 170 dwellings
	Dwellings per GUha in walkable catchment	15 - 17 dwellings / ha
<b>Albion DSP</b>	Density Target	Average 22 dwellings per site hectare across LSP area
	Estimated site area in LSP area	36 ha
	Estimated dwellings per site ha in LSP	27 dwellings / ha



LSP1C utilises an R-Code density range of R40 – R80 to maximise opportunities for diversity and innovation in housing types and tenures and to ensure affordability imperatives are met. The R-Code range will operate as follows:

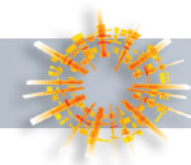
- A base code of R40 will apply to all residential lots. This base coding is consistent with the southern half of LSP1A, where the R40 base code also applies. The R40 coding will facilitate a wide range of single and grouped housing including small lot terrace style housing and larger front loaded homes.
- An R60 code can be applied to residential lots located within 200m walkable catchment of a designated public transport route or within 200m of the Special Use – Neighbourhood Centre zone.
- The R80 code can be applied to all lots that meet the R60 criteria, and are larger density sites greater than 800m<sup>2</sup>, or directly abutting the Large Neighbourhood Centre, or directly abutting public open space greater than 3,000m<sup>2</sup> in area. The R80 code allows for high density single lot and grouped housing as well as providing opportunities for multiple dwelling development.

Directions 2031 and Beyond promotes a residential density target of 15 dwelling units per gross urban ha for all greenfields developments. Furthermore, SPP 4.2 requires a minimum residential target of 15 dwellings per gross urban ha within 200m of neighbourhood centres.

LSP1C achieves both the Directions 2031 and SPP 4.2 density targets, providing for approximately 150 - 170 dwellings at 15 - 17 du/ha within 200m of the Neighbourhood Centre, and 1000 - 1100 dwellings at 15 - 17 du/ha across the entire LSP. Further, LSP1C exceeds the DSP density target of achieving an average 22 dwellings per site hectare. This is demonstrated further in Table 7.

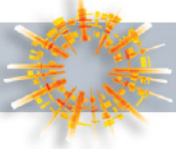
In considering this LSP, the City has determined that a density target of 30 dwellings per site hectare within 400m of the Neighbourhood Centre is an appropriate density target for the LSP area. The urban form and allocation of densities throughout the LSP area will facilitate the realisation of this density target at ultimate development.





**Table 8: Typical Lot / Dwelling Types**

	Contemporary Front Loaded	Compact Front Loaded	Front Loaded Terrace	Rear Loaded Cottage	Grouped / Multiple Housing
<b>Typical Lot Width</b>	7.5m / 10m / 12.5m	10m / 12.5m / 15m	6m - 8m	5m / 7.5m / 10m	Varies
<b>Typical Lot Depth</b>	25m - 30m	15m - 25m	15m - 30m	25m - 30m	Varies
<b>Lot Area</b>	180m <sup>2</sup> - 360m <sup>2</sup>	250m <sup>2</sup> - 300m <sup>2</sup>	150m <sup>2</sup> - 300m <sup>2</sup>	160m <sup>2</sup> - 360m <sup>2</sup>	Typically > 800m <sup>2</sup>
<b>Vehicle Access</b>	Street	Street	Street	Rear lane	Varies
<b>Residential Density Code</b>	R40 Min lot size: 180m <sup>2</sup> Avg lot size: 220m <sup>2</sup>	R40 Min lot size: 180m <sup>2</sup> Avg lot size: 220m <sup>2</sup>	R80 Min lot size: 100m <sup>2</sup> Avg lot size: 120m <sup>2</sup>	R40 / R80 Min lot size: 180m <sup>2</sup> / 100m <sup>2</sup> Avg lot size: 220m <sup>2</sup> / 120m <sup>2</sup>	R80 Min lot size: 100m <sup>2</sup> Plot Ratio: 1
<b>Development Control</b>	<ul style="list-style-type: none"> <li>Table 3A of R-Code Variations (refer Part 1)</li> <li>Residential Design Codes</li> <li>City of Swan Local Planning Scheme</li> </ul>	<ul style="list-style-type: none"> <li>Table 3A &amp; 3B of R-Code Variations (refer Part 1)</li> <li>Residential Design Codes</li> <li>City of Swan Local Planning Scheme</li> </ul>	<ul style="list-style-type: none"> <li>Table 3A of R-Code Variations (refer Part 1)</li> <li>Residential Design Codes</li> <li>City of Swan Local Planning Scheme</li> </ul>	<ul style="list-style-type: none"> <li>Table 4 of R-Code Variations (refer Part 1)</li> <li>Residential Design Codes</li> <li>City of Swan Local Planning Scheme</li> </ul>	<ul style="list-style-type: none"> <li>Residential Design Codes</li> <li>City of Swan Local Planning Scheme</li> <li>Detailed Area Plans</li> </ul>
<b>Built Form Character and Delivery</b>	<ul style="list-style-type: none"> <li>Single dwellings</li> <li>Typically sold as land only for lots greater than 10m wide</li> <li>Lots less than 10m wide typically built out and sold as house and land package</li> <li>Opportunities for innovative delivery of housing on narrow lots</li> </ul>	<ul style="list-style-type: none"> <li>Single dwellings</li> <li>Typically sold as land only</li> <li>Opportunities for innovative delivery of housing with appearance of a traditional home from the street</li> </ul>	<ul style="list-style-type: none"> <li>Single dwellings</li> <li>Typically built out and sold as house and land package</li> <li>Opportunities for innovative delivery of housing on narrow lots where laneway access is not available</li> </ul>	<ul style="list-style-type: none"> <li>Single and grouped dwellings</li> <li>Potential for studios over garages</li> <li>Lots less than 10m wide typically built out and sold as a house and land package</li> <li>Opportunities for innovative delivery of housing on narrow lots</li> <li>Opportunities for terrace housing abutting POS</li> </ul>	<ul style="list-style-type: none"> <li>Grouped and multiple dwellings</li> <li>Typically built out by single builder</li> </ul>



### 3.3.3 Housing Types

The delivery of quality housing is a key objective of LSP1C, ensuring the housing style and character reflects the amenity and attributes of the area. R-Code variations, site specific detailed area plans and developer implemented design guidelines shall enable key housing principles to be mandated including dwellings to address and survey public open space, incorporation of solar passive design principles for private outdoor living areas and ensuring garages/carports are appropriately located. Table 8 provides a brief description of the housing typologies that could be delivered within LSP1C.



**Front Loaded Terrace (7.5m x 15m) - source: ABN**



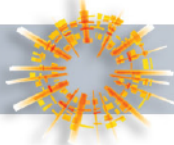
**Contemporary Front Loaded (10m x 30m)**  
Source: Plunkett Homes



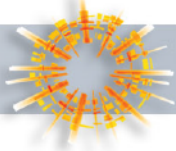
**Contemporary Front Loaded (12.5m x 30m)**



**Rear Loaded Cottage (7.5m x 30m)**







### 3.3.4 Variations to Residential Design Codes

The WAPC released Planning Bulletin 112/2015 on 8 May 2015, which outlines acceptable residential development standards for medium density single houses in structure plan areas. The provisions respond to market demands for smaller lots and address built form, streetscape, open space and site cover. The relevant R-MD provisions have been included in Part One - Statutory Section of the LSP.

## **3.4 Movement Networks**

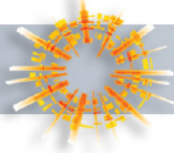
The Albion DSP provides the key transport elements and identifies the regional and district road hierarchy for the DSP area. A Transport Planning Report for LSP1C has been prepared by Arup Traffic Engineers, refer Appendix 7. This report draws on the key elements of the traffic assessment prepared as part of the DSP and provides updated traffic modelling specific to LSP1C.

The following section outlines the key elements of the Transport Assessment including details of the existing and the proposed road networks, the road hierarchy classification and road cross-sections. The section also provides an overview of the public transport, cyclist and pedestrian network provision within LSP1C.

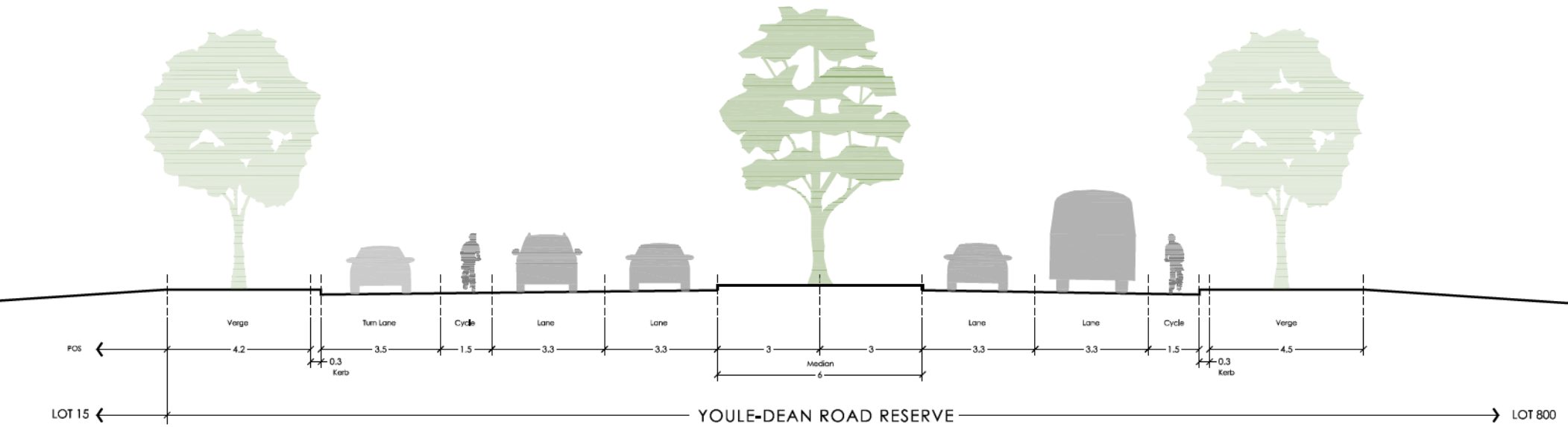
### 3.4.1 Road Network, Capacity and Arterial Road Access

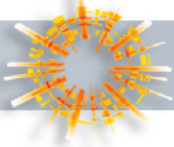
- The DSP provides an indicative grid of Integrator and Neighbourhood Connectors that link the key land use nodes within the DSP. This road network has been further refined by Local Structure Plan 1A and subsequent subdivision approvals which provides a road network generally consistent with the principles of the DSP.

- LSP1C refines and builds upon the existing road network as well as the network established via the DSP. LSP1C also recognises the planned relocation of the Perth-Darwin National Highway and subsequent retention of Lord Street as an Integrator road.
- The Road Hierarchy Plan at Figure 12 identifies the proposed LSP road network, including the identification of a hierarchy of integrator roads, neighbourhood connectors and local access streets within LSP1C.
- The traffic volumes forecast for the LSP1C road network and broader regional network are comfortably within the acceptable limits as prescribed in the DSP and Liveable Neighbourhoods. The LSP Integrator B roads are typically forecast to carry up to 15,000 vpd, with a reserve width in the order of 30 metres. Neighbourhood Connectors will typically carry approximately 3,000-7,000vpd within a 20m-24m reserve. The estimated traffic volumes and road hierarchy are consistent with the nominal road capacities provided in the DSP and the indicative volume ranges provided in Liveable Neighbourhoods.



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





### 3.4.2 Street Cross Sections

The following provides a summary of the indicative cross sections and reserve widths for the key streets within LSP1C area. The cross sections and reserve widths are indicative only, and will be confirmed at subdivision stage in accordance with current practise. The cross sections described in this report are included in section 7 of Appendix 7.

#### Partridge Street

Partridge Street is identified as an Integrator Arterial B road within LSP1C. Consistent with the DSP and LSP1A, Partridge Street is a 29.2m reserve including a 4.6m road widening on either side of the existing 20m reserve. The cross section in Appendix 7 shows a single carriageway road, with central median, on street parking and cycling lanes.

#### Youle Dean Road

As noted previously, the western portion of Youle Dean Road (west of Partridge Street) is reserved as 'Primary Regional Road' in the MRS (reserve width approx 55m-79m), while east of Partridge Street, Youle Dean Road is reserved as 'Other Regional Road' (reserve width 45m). It is understood that these reservations were put in place when the PDNH was planned on the Lord Street alignment, with Youle Dean Road providing grade separated access to the PDNH. With the planned realignment of PDNH, the nature of Youle Dean Road has changed significantly. Whilst still an important integrator road, the traffic volumes have decreased significantly from the DSP forecasts, creating an opportunity to review the land requirements for the Youle Dean reservation. This is reflected in the WAPC's approval of the DSP, which included the following notation in section 6.1.1:

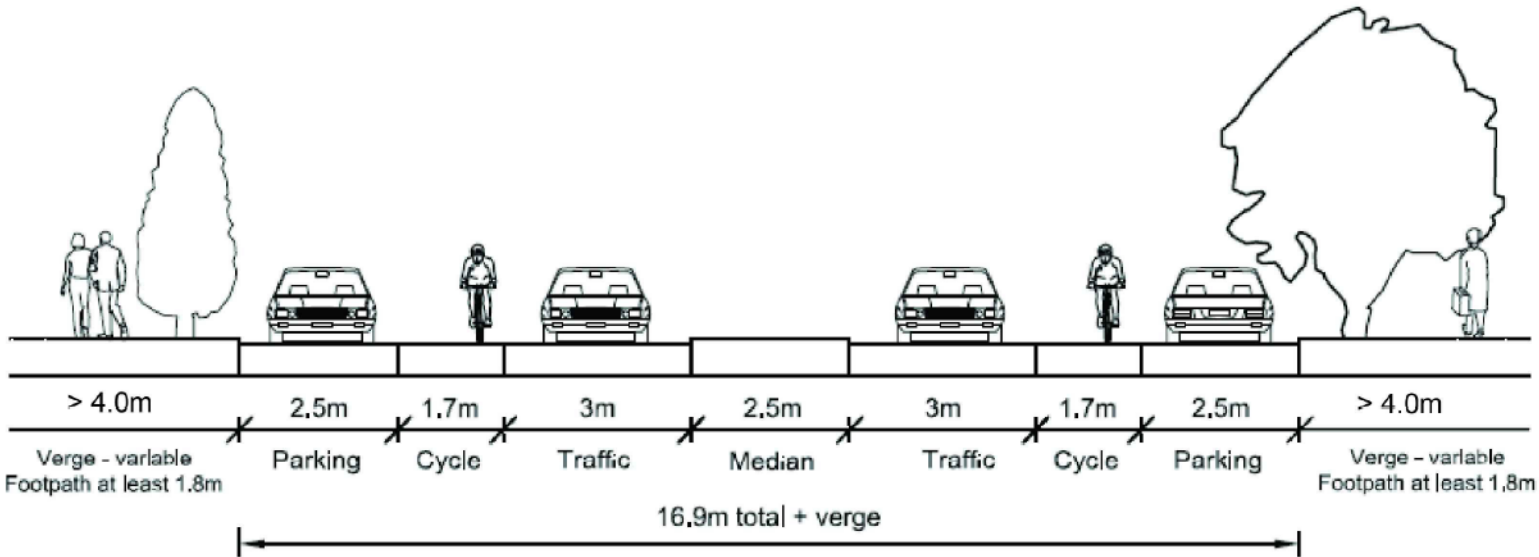
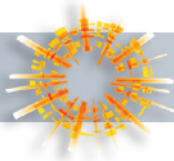
*"Youle Dean Road is an 'Other Regional Road' under the MRS connecting Perth Darwin Highway and Henley Brook Avenue. The ultimate function, cross-section and access points / intersection spacings for Youle Dean Road (including any proposed to the Large Neighbourhood Centre in proximity to the Perth Darwin Highway/Youle Dean Road interchange) is to be reviewed in consultation with the Department of Planning's Urban Transport System's branch and should be completed prior to the finalisation of any structure plans which abut or propose ultimate access to this road."*

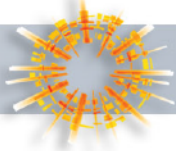
LSP1C identifies Youle Dean Road as an Integrator Arterial A road west of Partridge Street, and an Integrator B road to the east of Partridge Street, with a daily forecast of between 10,000 and 15,000 vpd at ultimate development. The function of Youle Dean Road differs on either side of Partridge Street. This changing traffic environment is reflected in the road cross-section provided in Figure 13 and in particular, through the inclusion of two traffic lanes west of Partridge Street.

#### Woolcott Avenue

Consistent with the DSP, the LSP identifies Woolcott Avenue east of Partridge Street as a Neighbourhood Connector A Road, carrying a relatively low traffic volume of 3000-5000 vpd LSP1C does not propose to connect Woolcott Avenue to Lord Street, instead directing traffic onto Lord Street via Youle Dean Road to the south and the existing connection to the north. This approach will minimise access points on to Lord Street, consistent with Main Roads' request, will not adversely affect the level of service at Youle Dean Road / Lord Street intersection.







The existing Woollcott Avenue road reserve is 30m wide and can easily accommodate a Neighbourhood Connector A standard road as per Liveable Neighbourhoods standards. The surplus road reserve will allow for wider landscaped verges and provide a clear demarcation between the suburban environment of LSP1A to the north of Woollcott Avenue and the more urban environment of LSP1C to the south. The Woollcott Avenue indicative cross section is Figure 14.

#### Special Purpose Streets

The LSP1C identifies a Special Purpose Street (1) that connects Woollcott Avenue with the Neighbourhood Centre, and a second Special Purpose Street (2) that will form the “main street” of the Neighbourhood Centre. These key roads provide secondary access to the Centre and have been specially designed to accommodate high volumes of slow-moving traffic, demand for on-street parking, and equal levels of pedestrian and cyclist access and amenity in the Neighbourhood Centre and surrounding high density areas.

The cross sections in Appendix 7 show Special Purpose Street (1) as a single carriageway road with on street cycle lanes and on street parking, and Special Purpose Street (2) as a single carriageway road with central median, on street cycle lanes and indented parking. The cross sections in Appendix 7 are indicative only and the reserve widths and design of these roads will be further refined at subdivision stage in order to suit the intended purpose of each road.

#### Local Access Streets

Access streets will form the vast majority of local streets within LSP1C. Consistent with the WAPC's Structure Planning Preparation Guidelines, access streets are not shown on the LSP Plan and will be determined at subdivision stage once planning is further progressed. All local access streets carry less than 1000 vpd and are classified as B-D, refer Appendix 7. The Development Concept Plan at Figure 8 shows one possible manner in which local access streets can be located and aligned within the broader network.

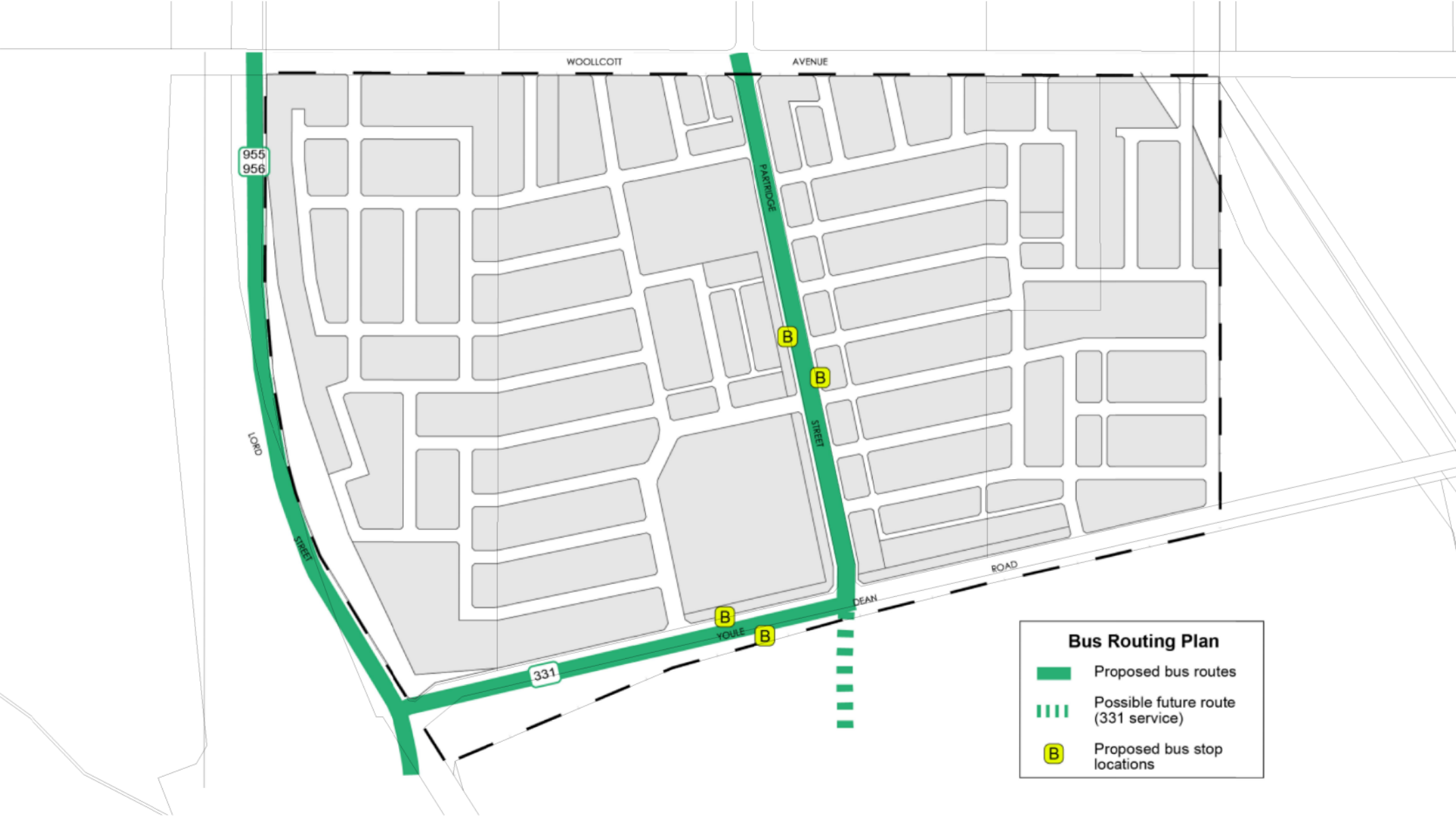
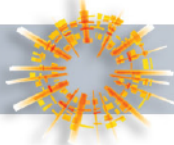
The indicative cross sections for local access streets are included in Appendix 7 and are consistent with the Liveable Neighbourhoods cross sections Figures 19-21. Reserve widths and design of access streets will be further refined at subdivision stage.

#### 3.4.4 Public Transport

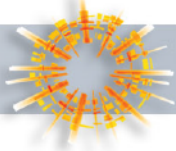
##### Bus Rapid Transit

The MRS identifies a dedicated Public Purpose reserve that connects Ellenbrook to Reid Highway. A portion of this reserve abuts the western boundary of LSP1C. It is understood that this reserve was originally identified as being suitable for a future rapid transit link, although there is no current government commitment to construct this link and the location of any future transit stations has not been confirmed.

LSP1C is sufficiently robust to allow for a future rapid transit station to be located adjacent to the LSP area, should the state government determine that this is appropriate. The location of the Neighbourhood Centre and planned medium – high density residential uses are an appropriate planning response to a future public transit station and will maximise opportunities for walk-on patronage.







### Internal Bus Network

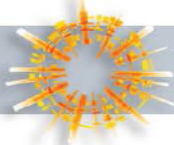
LSP1C provides a legible and permeable road hierarchy that is entirely consistent with the DSP and the developed areas within LSP1A to the north. This road hierarchy allows for the operation of a regular internal bus service via the designated activity corridor of Partridge Street.

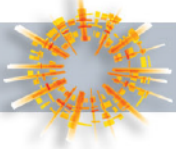
As part of the preparation of this LSP, traffic consultant Arup has been liaising with the Department of Transport and PTA to confirm the latest bus network planning for the LSP1C area as well as the broader Albion DSP cell. The latest bus network planning is depicted at Figure 15. In brief, The PTA has confirmed the bus network planning for this area as follows:

- Existing services 955 and 956 along Lord Street will continue to operate for the foreseeable future.
- New services 331 and 332 are likely to be introduced as the project progresses, with Partridge Street and Henley Brook Avenue providing the key north-south routes.

Partridge Street and Youle Dean Road both provide sufficient reserve widths to allow for high frequency bus traffic, with the location of bus stops and other public transport infrastructure to be confirmed as part of the detailed design following subdivision approval. The public transport network and operational considerations for bus movement are discussed further at Appendix 7.







### 3.4.5 Pedestrian and Cyclist Network

The LSP facilitates safe and convenient pedestrian and cycle movement through a combination of permeable road networks with short street lengths, linear open space and provision of a detailed network of footpaths and shared paths. As demonstrated in the Development Concept Plan at Figure 8 and the Pedestrian and Cyclist Network plan at Figure 16, LSP1C provides multiple route options to the LNC and Partridge Street, ensuring that future residents are afforded every opportunity to utilise alternative modes of transport.

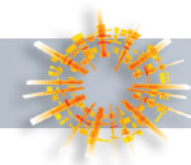
The key principles for determining the hierarchy of pedestrian and cycling facilities is as follows:

- Integrator B roads Partridge Street and Youle Dean Road will provide designated on-road cycle lanes and footpaths either side.
- Neighbourhood Connector roads will allow for on-road cycling (either in designated lanes or shared spaces) as well as footpaths on either side.
- Local access streets will provide a footpath on one side of the street.
- Key areas of public open space will provide recreational footpaths / shared paths to facilitate safe pedestrian and cycle movement away from key transport corridors.

These principles will be confirmed and refined as part of further detailed planning at the detailed design stages.







### 3.5 Water Management

LPS 17 sets out a framework for environmental and water management reporting for the Albion cell at DSP, LSP and subdivision stages. A Local Water Management Strategy (LWMS) was prepared and adopted as a detail of the Albion DSP, pursuant to LPS 17. The Albion DSP LWMS was prepared in the context of existing and concurrent regional and district ground water studies including the Drainage Management Strategy for the North East Corridor (GB Hill 1995) and the Swan Urban Growth Corridor Drainage Water Management Plan (DWMP) (GHD 2009).

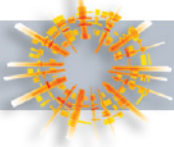
LPS 17 Schedule 4 requires the preparation of an Urban Water Management Plan (UWMP) to support a Local Structure Plan. This is inconsistent with the hierarchy of water strategy documents outlined in the WAPC Better Urban Water Management 2008 (BUWM), which requires a LWMS to be prepared at the local structure planning level and not at the district level. The water management strategies and plans required pursuant to BUWM and LPS 17 are set out in Table 11.

The endorsed Albion DSP sets out an agreed water management reporting framework at LSP and subdivision stages, refer Table 9. It has previously been agreed with the City of Swan and the Department of Water (DoW) that the appropriate level and content of investigation and reporting for a LSP is a Local Water Management Strategy as described in BUWM. Urban Water Management Plans (UWMP) will be prepared for all subsequent subdivision application areas as a condition of subdivision approval. This approach has been successfully implemented within the LSP1A area to the north.

**Table 9: Planning Stages and Required Water Management Strategies**

Planning phase	BUWM - Water management strategy/plan	LPS 17 - Water management strategy/plan	Agreed Albion Water Management Framework
District Structure Plan	Drainage and Water Management Plan / District Water Management Strategy	Local Water Management Strategy	Local Water Management Strategy
Local Structure Plan	Local Water Management Strategy	Urban Water Management Plan	Local Water Management Strategy
Subdivision	Urban Water Management Plan	No Report Required	Urban Water Management Plan

The LSP1C LWMS provides a localised urban water management strategy for the site consistent with the requirements of the Albion DSP LWMS, the framework and requirements outlined in BUWM and LPS 17. The LWMS is also a refinement of the detailed water planning that has already occurred within LSP1A, which is upstream in the same catchment as LSP1C.



Whilst referred to as the LSP1C LWMS, the document addresses the reporting requirements under LPS 17 at LSP stage. To address the nomenclature inconsistencies between LPS 17 and BUWM the LWMS includes a sub-heading 'Urban Water Management Plan – City of Swan LPS 17'. As outlined above a UWMP will be prepared at subdivision stage consistent with BUWM.

The following summarises the key outcomes and implications of the LWMS.

### 3.5.1 Water Conservation

Water conservation measures are incorporated into the design of the LSP to create a “waterwise” development and minimise water servicing requirements. The water conservation strategy will aim to reduce water demand through incorporating a variety of effective initiatives. These are described in more detail below.

#### Water Conservation Measures

Consistent with previous stages of development in LSP1A, the LWMS adopts the following water conservation measures:

- All display homes will feature water efficient appliances and fittings.
- Front yard waterwise landscaping packages will be provided to all home buyers.
- Groundwater will be used to irrigate public open space (POS) and landscaped garden areas.

- Native trees and plant species will be used in public open space areas.

### Waterwise Landscaping Packages

Front yard landscaping packages will be promoted and provided to all new home owners. This will include the use of plant species particularly those with low water requirements and minimal turf.

Irrigation of front gardens will be the responsibility of the owner following occupancy. Irrigation operational procedures will be provided to ensure controlled application rates are implemented.

### 3.5.2 Surface Water Management

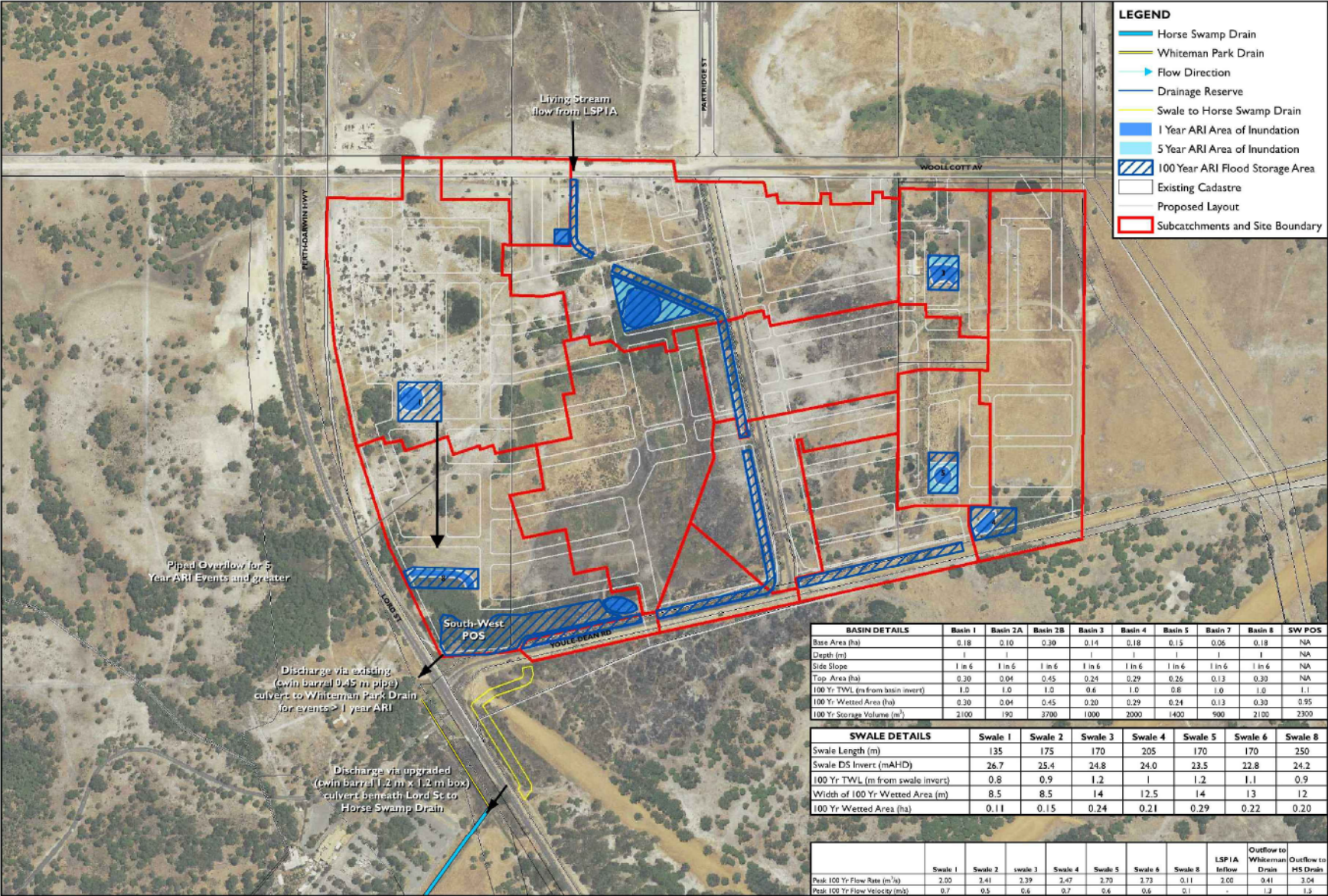
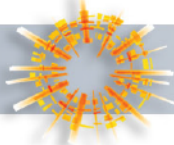
#### Design Objectives

LSP1C achieves stormwater management through the implementation of current water sensitive urban design (WSUD) principles and BMPs to effectively control water quality and quantity from both minor and major storm events.

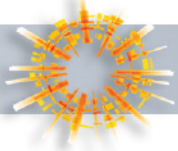
In accordance with the Stormwater Management Manual for Western Australia (DoW, 2004–2007), the drainage system will aim to achieve the following objectives:

- Maintain the existing hydrological regime where possible and minimise fill requirements.
- Improve stormwater quality, as compared to a development that does not actively manage stormwater.









- Rainfall from 1 year ARI (Annual Recurrence Interval) events will be retained and infiltrated as close to the source as possible.
- Large rainfall events (5 ARI to 100 ARI) will be conveyed and retained through a network of roads, drainage reserves and POS within each catchment.

The main feature of the drainage system is the continuation of the vegetated stormwater infiltration and conveyance swale, referred to as the 'Living Stream' through the site from the LSP1A area. This principle is entirely consistent with the drainage strategy identified via the DSP.

Drainage practices and concepts intended for stormwater management are described below however will be subject to further design and engineering specifications during the detailed design phase. This information will be included in any subsequent Urban Water Management Plans.

Stormwater modelling has been completed by RPS with the engineering and earthworks design being completed by the project engineers Cossill and Webley.

The drainage strategy was derived using the existing drainage catchments and contouring where possible in order to provide post-development catchment boundaries and low points with minimal impact on the existing land form.

The main drainage feature is the use of a linear living stream located in the centre of LSP1C which conveys stormwater from the LSP1A area through the site, consistent with the DSP. Drainage retention basins have been located within the POS in the surrounding stormwater catchments to detain all events up to and including the 100 year ARI event.

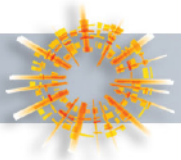
Consistent with the previously endorsed LSP1A LWMS (Emerson Stewart 2010), the living stream will leave the site through existing culverts (to be upgraded) located along Lord Street and convey stormwater through to Horse Swamp in adjoining Whiteman Park.

Part of the living stream which encroaches the MRS road reserve on Youle Dean Road will have no impact on the construction of the road.

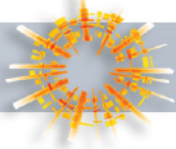
A conceptual drainage plan for the site is provided at Figure 17 and Appendix 1. The Drainage Strategy and Cut to Fill Plan are preliminary designs only and subject to change at detailed engineering design phase. Nevertheless, they demonstrate that the site is capable of managing both minor and major stormwater events (up to 100 year ARI) within the LSP design.

#### Minor Drainage System (1 to 5 year ARI)

Consistent with best practice, 1 year ARI run-off will be retained and infiltrated as close to the source and as high in the catchment as possible to maintain the pre-development hydrologic regime and minimise environmental impacts.



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On this basis, the 1 year ARI event can be infiltrated within lot boundaries with run-off from roofs and impermeable surfaces being directed into soakwells. Lots which are less than 300m<sup>2</sup> will however, require lot connections in accordance with the City's requirements and advice that lots of this size will have limited space to provide onsite infiltration through the use of soakwells. Lot connection pits will be bottomless to allow for drainage infiltration. The piped drainage system and basin design has accounted for this additional flow in those catchments where lot connections apply.

All open space areas have strategically placed swales with extensive littoral planting in order to treat stormwater entering the open space in the common rainfall events prior to infiltrating to the groundwater or entering the main living stream.

A conventional pipe network will be used to convey up to the 5 year ARI events from road surfaces.

#### Major Drainage System

A major drainage system of connected swales and drainage basins will be used to convey events greater than the 5 year ARI event. Once the road drainage network is at full capacity, stormwater flow will be conveyed either by roads or overland flow paths through open space to the living stream or drainage basins located at the low points within each sub-catchment. Overland flow through areas of open space and the living stream will employ structural controls to ensure minimal erosion and controlled flow paths (e.g. rock pitching, small weirs and vegetation).

The impervious areas, run-off and routing calculations to determine the critical storm duration and peak flows from multiple connecting basins has been completed by RPS in order to predict the storage volume required for each catchment, refer Appendix 1.

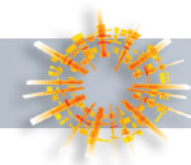
This drainage strategy is consistent with the drainage concepts outlined in the previously endorsed LSP1A LWMS (Emerson Stewart 2010) in which the living stream will leave the site through existing culverts (to be upgraded) located along Lord Street and convey stormwater through to Horse Swamp.

#### 3.5.3 Ground Water Level Management

The LSP and associated LWMS put in place an appropriate program to manage groundwater levels and water quality through the use of a subsurface drainage system, identical to that currently in operation in LSP1A to the north.

As part of the LWMS preparation, RPS has constructed a calibrated groundwater flow model to predict post-development groundwater elevations which was in turn used to assess the need for a subsurface drainage system to control the groundwater across LSP1C. The groundwater modelling predicted that subsurface drainage installed into the road reserves would control the predicted post-development groundwater levels. A subsurface drainage system was subsequently designed to ensure adequate post-development groundwater clearance and sufficient transmission of groundwater through the network during high rainfall events.





Subsurface drains will be installed within road reserves (avoiding footpaths where possible) and directly beneath POS areas, and will discharge into the Living Stream for water quality treatment and flood management accordingly. No subsurface drains will be installed within lot boundaries.

#### 3.5.4 Water Quality Management

Water quality can be effectively managed at the site through appropriate landscaping and plant species selection, minimising the use of fertilisers and the use of soil amendment in drainage infiltration areas.

PRI analysis completed across the greater LSP1A area indicates that a majority of the subsurface soil (less than 1.2 m) has a weak to moderate adsorbing capability with PRI values ranging from 0.03 mL/g to 7.40 mL/g. Where possible, major infiltration areas will be amended with soils that have a PRI of at least 7 without compromising infiltration rates used in the drainage design.

In addition, the use of native and native derivative plant species means that there are less fertiliser requirements and all fertiliser applications will be slow release.

Plant selection will comprise predominantly native and derivative of native species, with the use of drought tolerant or "one and two drop" (as advised by the Water Corporation) non-native species in key locations. Littoral plants and ephemeral trees will be used in swales and the living stream to assist in erosion control, maintain soil infiltration and restrict water flows and to remove nutrients that can be potentially transported with stormwater.

#### 3.5.5 Groundwater Abstraction Licences / Irrigation Supply

The City of Swan is currently liaising with Department of Water to establish the irrigation requirements within the Albion DSP area. Subsequent to this work being finalised Stockland, in consultation with the City of Swan, will finalise water licensing arrangements with the Department of Water for LSP1C.

### **3.6 Education Facilities**

LSP1C area is well serviced by planned educational facilities. The DSP establishes the number and distribution of primary and secondary schools throughout the DSP area. This distribution has been confirmed in consultation with the Department of Education, with the school sites being centrally located within the surrounding catchment, consistent with Liveable Neighbourhoods.

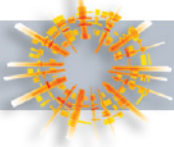
There are no planned educational facilities within LSP1C however, the following sections demonstrate the availability of public education facilities within close proximity.

#### 3.6.1 High Schools

The DSP identifies a 12ha public high school site within Lot 800, approximately 800m to the south of LSP1C. Accompanying the high school is an additional 1.5ha site that is set aside specifically for "Education Support". It is intended that this high school will service LSP1C at ultimate development.

#### 3.6.2 Primary Schools

The DSP identifies three public primary schools evenly distributed throughout the DSP area. Two of these three primary schools are within an 800m catchment of LSP1C, ensuring convenient and safe access for future residents.



### 3.7 Activity Centres and Employment

As outlined in Section 1.3.4, the LSP provides a framework that will allow for the development of a Large Neighbourhood Centre (LNC), consistent with the principles established in the Albion DSP.

The Neighbourhood Centre Concept Plan at Figure 18 demonstrates the allocation of up to 15,000m<sup>2</sup> of retail floor space, consistent with the City of Swan's Retail Needs Assessment (August 2011). The proposed 'Special Use - Neighbourhood Centre' is of a size that could potentially accommodate up to 20,000m<sup>2</sup> of retail floor space should long term demand within the Brabham and wider catchment warrant. An activity centre structure plan may be required if the centre evolves into a District Centre over time, as required under State Planning Policy - 4.2 Activity Centres for Perth and Peel.

Staged increases in the retail floor space of the Activity Centre over time will be subject to market demand and ongoing monitoring of the development and performance of the proposed Large Neighbourhood Centre by the City of Swan. In accordance with the Albion District Structure Plan, the provision of up to 5,000m<sup>2</sup> net leasable area is expected to be provided at the first stage of the Activity Centre's development, with subsequent stages to respond to actual and projected growth of the number of people living and working in the trade area.

Key features of the LNC that are set out in LSP1C:

- Located at the junction of Partridge Street and Youle Dean Road in order to maximise passing trade and ensure patrons have good access to the district road network and public transport;
- Sufficient land area to accommodate the land uses envisaged by the DSP with the provision of up to 15,000m<sup>2</sup> (and potentially up to 20,000m<sup>2</sup>) of retail floor space and

a proportionate share of mix of land uses (non-retail) floor space as attributed to LSP1C in the DSP.

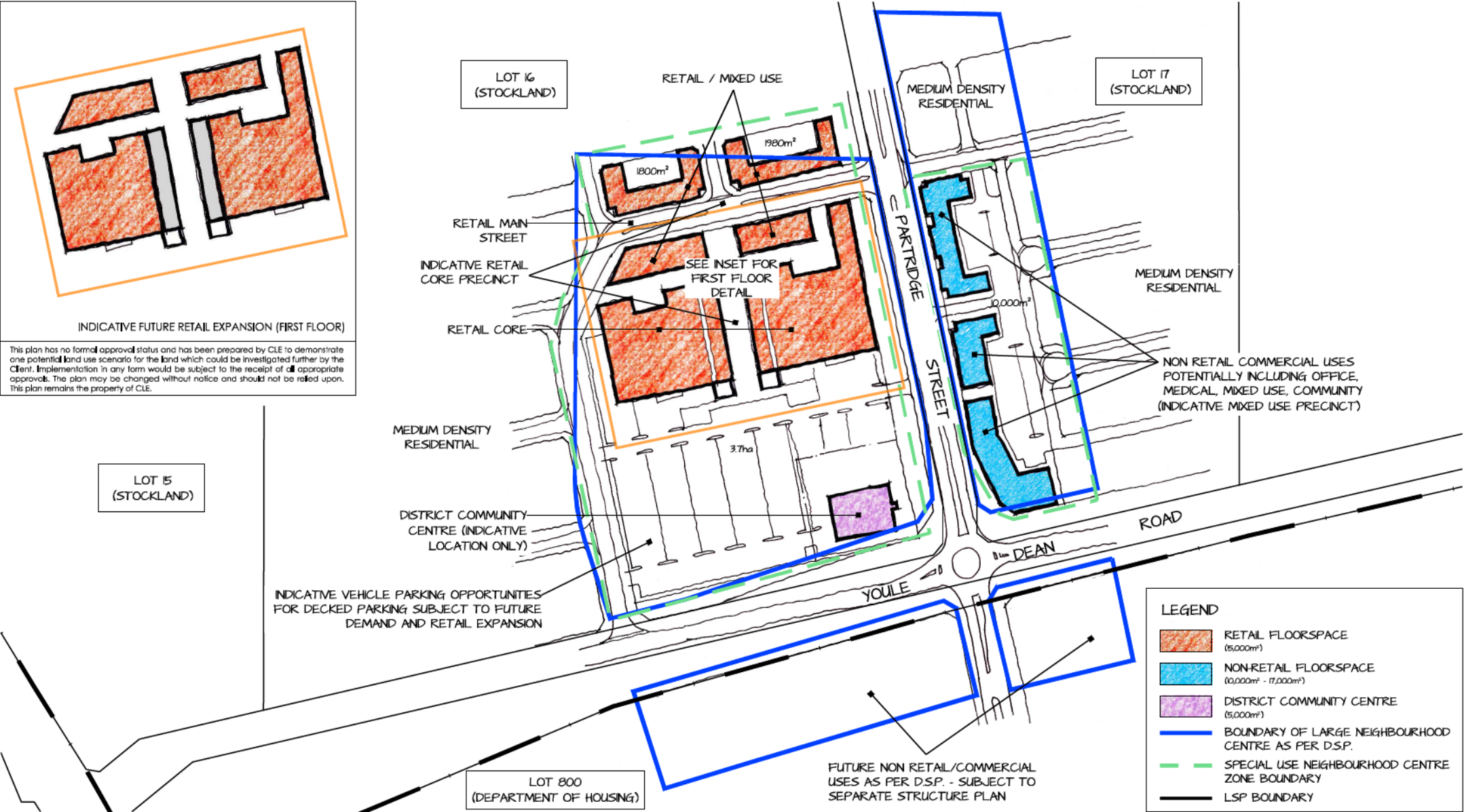
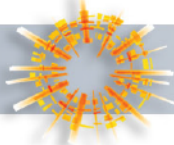
- A main street based centre with opportunities for uses to address the public realm;
- A permeable road layout that encourages alternative modes of transport to private vehicles; and
- Provision for a 5,000m<sup>2</sup> multi-purpose District Community Centre site within 150m of the Neighbourhood Centre, consistent with the DSP and the Brabham (Albion) Development Contribution Plan. The location of the centre may be determined subject to the agreement of the City of Swan

#### 3.7.1 Implementation Framework

The DSP recognises the centre's status as a Large Neighbourhood Centre. As part of the WAPC's adoption it resolved to include the following provision within the DSP:

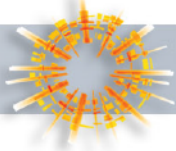
*"The WAPC may require an Activity Centre Plan for the Albion Neighbourhood Centre, to be incorporated into a Local Structure Plan which seeks to zone the locality as contemplated in the draft 'Activity Centres Policy'. In addition to the planning objectives outlined in the DSP, the Local Structure Plan (or Activity Centres Plan, if required) which includes the Albion Neighbourhood Centre, shall address, inter alia, the permissible uses within the commercial zoning; the distribution of floor space allocations; required that showroom uses be located at the periphery of the town centre in a location which does not adversely impact on main street design objectives and the integration with the activity corridor; and address key access requirements from Youle Dean Road and the Partridge Street activity corridor."*





NEIGHBOURHOOD CENTRE CONCEPT PLAN





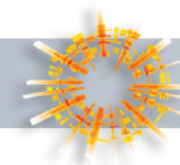
Consistent with the WAPC's resolution on the DSP, LSP1C zones the entire LNC as 'Special Use – Neighbourhood Centre'. This approach is also consistent with the approach for the Special Use - Local Centre zoning in LSP1A to the north. LSP1C also includes an 'Activity Centre Plan' section within the Part 1 statutory section, which sets out land use / urban design controls. It also establishes a requirement for a Detailed Area Plan to be prepared over the entire Special Use – Neighbourhood Centre zone as a condition of subdivision approval, in order to ensure that the DSP objectives are addressed.

SPP 4.2 does not require the preparation of an Activity Centre Structure Plan for Neighbourhood Centres. Further, there are significant benefits for the project for the planning of the Neighbourhood Centre to be included within the local structure plan. The land ownership will ensure the development of the Neighbourhood Centre integrates with the balance of the LSP1C area.

The Special Use – Neighbourhood Centre zone is approximately 5ha in area, ensuring sufficient land area to accommodate the range of retail and commercial land uses envisaged by the Albion DSP. The Neighbourhood Centre Concept Plan at Figure 18 demonstrates this further, and identifies the likely distribution of retail, community and non-retail land uses across three centre 'precincts', consistent with the Albion DSP. The Concept Plan also clearly demonstrates the consistency between the LSP and the Albion DSP with respect to the Centre size, location and boundaries.

The key features of the Neighbourhood Centre Concept Plan are:

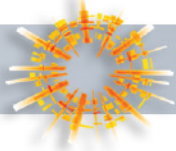
- A 3.7ha 'retail core' located on the western side of Partridge Street, consistent with the DSP. This site allows for large format retail such as supermarkets, along with specialty shops, fast food, and other retail uses, as well as incidental car parking.
- A retail / mixed use area of approximately 0.4ha to the north of the retail core, forming the northern side of the main street, and including ground floor retail uses, as well as opportunities for non-retail commercial and/or residential uses in the future. This area, combined with the 3.7ha retail core, has the potential to deliver up to 15,000m<sup>2</sup> NLA of retail floor space, consistent with the DSP, and potentially up to 20,000m<sup>2</sup> NLA of retail floor space as contemplated by the City of Swan's Retail Needs Assessment (August 2011).
- Approximately 0.9ha of non retail commercial area to the east of Partridge Street, potentially accommodating a range of non-retail / service commercial type uses in buildings of 1-3 storeys, and including local professional services (office), medical consulting rooms, community uses, child care, as well as opportunities to incorporate residential land uses.
- Potential for a third service commercial centre precinct on the south side of Youle Dean Road (Lot 800), consistent with the DSP. Whilst not included within this LSP or the Special



**Table 10 – Land Use Permissibility**

Use Class	Permissibility	
	Retail Core Precinct	Mixed Use Precinct
Aged or Dependant Persons Dwelling	D	D
Ancillary Accommodation	X	A
Amusement Parlour	D	D
Bed and Breakfast	X	A
Betting Agency	D	D
Car Park	D	D
Caretaker's Dwelling	D	D
Child Care Premises	D	D
Cinema / Theatre	D	D
Civic Use	D	D
Club Premises	D	D
Community Purpose	D	D
Consulting Rooms	P	P
Convenience Store	D	D
Educational Establishment	D	P
Exhibition Centre	D	D
Family Day Care	D	D
Fast Food Outlet	D	D
Food and Beverage Production	D	D
Grouped Dwelling	X	D
Home Business	D	D
Home Occupation	P	P
Home Office	P	P
Home Store	A	A
Hotel	A	A

Use Class	Permissibility	
	Retail Core Precinct	Mixed Use Precinct
Lunch Bar	P	D
Market	D	D
Medical Centre	P	P
Multiple Dwelling	D	P
Night Club	A	A
Office	D	P
Place of Assembly	D	D
Reception Centre	D	D
Radio & TV Installation - Private	P	P
Recreation – Private	D	D
Recreation – Public	D	D
Restaurant	P	P
Restricted Premises	A	A
Service Station	A	A
Shop	P	P
Showroom	X	D
Single Bedroom Dwelling	D	D
Single House	X	D
Tavern	A	A
Telecommunications Infrastructure	D	D
Veterinary Centre	D	D
Any other uses not listed in the Local Planning Scheme Zoning Table	A	A



Use – Neighbourhood Centre zone, this area is depicted on the Albion DSP and as such, has been included for the purpose of calculating total floor space potential for employment – refer section 3.7.2 below. Given the land use characteristics of this precinct are significantly different to the rest of the centre by virtue of Youle Dean Road separation and the likely predominance of car based commercial uses, this precinct does not have any significant bearing on the balance of the Neighbourhood Centre, and can be easily accommodated and addressed as part of future structure planning over lot 800.

- Provision of an indicative site / location for a future District Community Centre, as envisaged by the DSP. The location of the Community Centre site on Figure 18 is indicative only, with the ultimate location of the site subject to further discussion and agreement with the City of Swan.

The Concept Plan represents one possible development scenario for the Neighbourhood Centre at ultimate development, if developed in accordance with the DSP. It is important to note that the development of the Centre is likely to be staged over a number of years, and it is unrealistic to expect full development of the Centre, including non-retail uses, in the early stages of development.

### 3.7.2 Employment

The Albion DSP estimated total employment of 724 jobs within the Large Neighbourhood Centre. This estimate was based on a number of assumptions, including allowance for approximately 17,000m<sup>2</sup> of non-retail commercial floor space, representing

approximately 63% of the total commercial floor space allocation. Once again it is important to note that this represents an ultimate development scenario, with local employment evolving organically as the Centre matures.

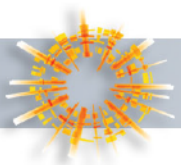
As demonstrated in the Neighbourhood Centre Concept Plan at Figure 18, the Special Use – Neighbourhood Centre zone is of sufficient size to accommodate a minimum of 27,000m<sup>2</sup> of commercial floor space including 10,000m<sup>2</sup> – 15,000m<sup>2</sup> of retail floor space. This total floor space estimate is entirely consistent with the Albion DSP, and clearly demonstrates that the Neighbourhood Centre can ultimately deliver on the employment opportunities envisaged by the DSP.

### 3.7.3 Land Use Permissibility

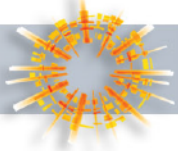
Land use permissibility will support an integrated, mixed use neighbourhood centre that provides goods, services and facilities to the surrounding community and contributes to the overall amenity of the locality. Residential uses can be incorporated into the Centre offering home based business and adaptable development opportunities that complement commercial uses.

Land use permissibility for uses in the Special Use – Neighbourhood Centre zone will be in accordance with Table 10, which is duplicated in Part 1 of LSP1C. Land use permissibility for the centre precinct located on the southern side of Youle Dean Road will be assessed against the planning objectives for the Large Neighbourhood Centre as set out in the Albion District Structure Plan, as part of a separate structure plan for Lot 800 Youle Dean Road.





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The land use permissibility designated for the Special Use – Neighbourhood Centre zone provides Council with a discretionary decision making opportunity to ensure land use is appropriately distributed throughout the Special Use – Neighbourhood Centre zone and consistent with an adopted Detailed Area Plan.

#### 3.7.4 Special Use – Neighbourhood Centre Detailed Area Plan

A Detailed Area Plan will be required as a condition of subdivision for the entire Special Use – Neighbourhood Centre zone to ensure that the planning objectives of the District Structure Plan are met. The Detailed Area Plan will be expected to address the following:

- Land uses and interface to main street;
- Identification of key vehicle access points and car parking locations;
- Key pedestrian connections;
- Distribution of non-retail land uses;
- Opportunities for and location of home based office and adaptable housing;
- Built form controls including setbacks, building height and other provisions to ensure a positive relationship between the public / private realm;
- Location of community facilities consistent with the City's community infrastructure planning; and
- Opportunities for residential / mixed uses within the Centre.



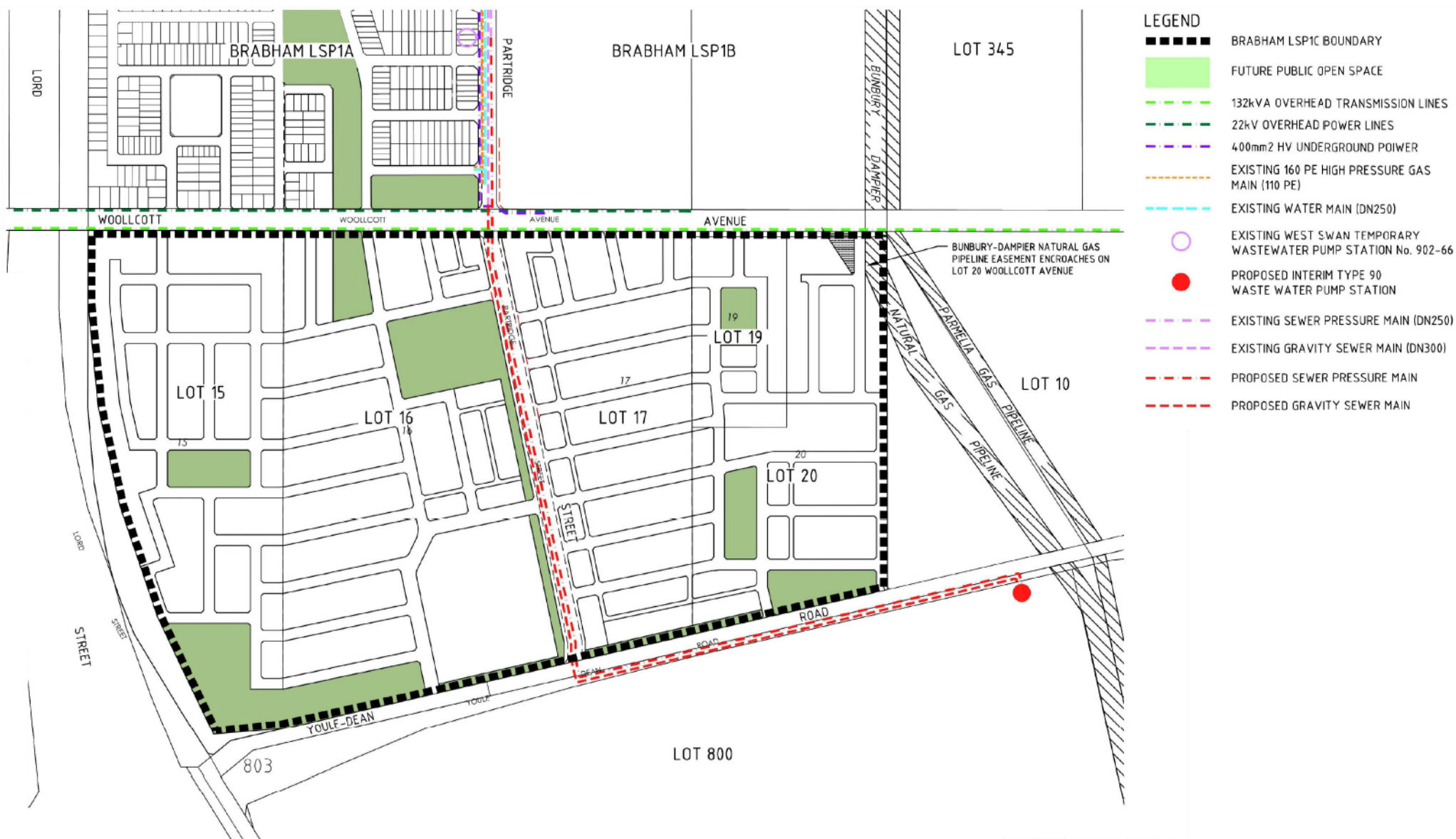
Brighton, WA



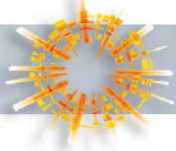
Rouse Hill, NSW



Point Cook, VIC







### 3.8 Infrastructure Coordination, Servicing and Staging

Cossill & Webley Engineers have prepared an Infrastructure Report in support of LSP1C, refer Appendix 5.

The DSP provides a broad overview of district infrastructure provision, which has now been refined for LSP1C. The servicing strategy remains consistent with Figure 14 of the Albion DSP.

The servicing initiatives for LSP1C are summarised below and an Infrastructure Plan is Figure 19.

#### 3.8.1 Sewer

The LSP1C area is located within the Water Corporation's wastewater supply operating licence area for the Perth Metropolitan area and is capable of being provided with reticulated waste water infrastructure.

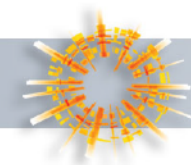
An existing temporary Type 40 wastewater pumping station (TWWPS) is located on the eastern boundary of Lot 310, adjacent to Partridge Street and services the wastewater needs of the LSP1A area and will potentially service the LSP1B area when developed. The TWWPS pumps effluent from these catchments via a 250mm diameter sewer pressure main constructed to the Water Corporation's existing Barrambie Way pump station located to the west of the intersection of Lord Street and Gnangara Road.

The LSP1C area does not fall within the wastewater catchment for the West Swan TWWPS and the Water Corporation has indicated that an Interim Wastewater Pump Station will need to be constructed to service the wastewater needs of the LSP1C area.

The Water Corporation and the proponents are currently investigating the construction of a Type 90 Interim Wastewater Pumping Station (WWPS) at a suitable location on Youle Dean Road. The construction of the Interim WWPS will service the wastewater needs of the LSP1C area and will also service the LSP1A and LSP1B areas. The West Swan TWWPS will be decommissioned following the construction of the Interim WWPS.

The construction of the Interim WWPS and associated infrastructure will be prefunded by the Developer with reimbursement by the Water Corporation over an agreed period following the commissioning of the pump station.

The LSP1C area falls within the Water Corporation's wastewater servicing of the West Swan region. The Water Corporation ultimately proposes to install a permanent Type 180 wastewater pumping station to service the West Swan region with the pumping station to be located north of Harrow Street approximately 2km south of LSP1C. No timeframe associated with the commissioning of the Type 180 WWPS has been provided by the Water Corporation, however based on recent practices, the construction is only likely to commence when sufficient development of the West Swan region has taken place. The permanent Type 180 pumping station will be fully funded and constructed by the Water Corporation.



### 3.8.2 Water Supply

The LSP1C area is located within the Water Corporation's water supply operating licence area for the Perth Metropolitan area and existing water reticulation mains are located within the developed areas of LSP1A. Information provided by the Water Corporation indicates the nearest water reticulation main is a DN250 main in Partridge Street. The Water Corporation has confirmed that the immediate water reticulation requirements of LSP1C can be supplied by way of extension of the existing water reticulation mains located in the LSP1A area.

The Water Corporation has indicated that ultimately a water distribution main will need to be constructed in Lord Street from an existing distribution main located in Gnangara Road to service the ultimate water supply needs of the Albion DSP area. The Water Corporation is monitoring the service capacity of this existing DN250 water main that supplies the Albion DSP area and has advised the alignment, size and timing of the water distribution main that will replace the DN250 main is currently under review.

### 3.8.3 Power

#### Transmission Network (132kV)

There are existing Western Power transmission assets in the vicinity of the LSP1C area, as identified below:

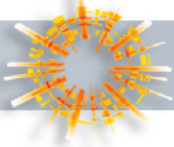
- Henley Brook Zone Sub Station – This substation is located south of Gnangara Road and west of Lord Street. This

substation currently only has a single transformer in operation and a further two may be installed as load in the surrounding areas increase over time. LSP1C is located within the supply area of this substation.

- Woollcott Avenue – An existing 132kV overhead transmission main is located in the southern verge of Woollcott Avenue. The 132kV overhead transmission lines will remain in Woollcott Avenue and subject to the development of the LSP1C area where it borders Woollcott Avenue, easements or housing setback requirements may be applied by Western Power to those lots fronting this road reserve.

Western Power planning indicates that the regional HV system will require further expansion in the future, with up to two new substations required, possibly near Albion and Caversham. A site for the Albion substation, Lot 10, and the associated 132kV transmission mains in Henley Brook Avenue and Woollcott Avenue, has been identified in the Albion District Structure Plan (DSP).

Development of LSP1C will not require the construction of any of these new substations as all demand for the site can be met from the existing Henley Brook Zone Substation. Similarly the installation of the additional 132kV transmission main that interconnects the proposed substations will only be required once the construction of a new substation commences, which is likely to be in a 10 to 15 year timeframe.



#### High Voltage Network (22kV)

Existing 22kV overhead HV power lines are located in the northern verge of Woollcott Avenue which are supplied from the Henley Brook Zone Substation and terminates at the boundary between Lot 346 and 347 Woollcott Avenue. It is expected that the decommissioning of this 22kV overhead power line will occur when Woollcott Avenue is upgraded and will be replaced with appropriate HV underground power infrastructure.

#### 3.8.4 Gas

##### Gas Reticulation

Gas supply to the Brabham area was provided in July 2011 with Stockland Development and Terranovis (developers of the Avonlee Development on Park Street) co-funding the construction of a 160PE high pressure gas main extension south, down Lord Street from the existing gas main in Gngara Road (approximately 2.6km in length). ATCO Gas Australia (previously WA Gas Network) confirmed that this gas main extension would service the needs of development to the south (LSP1C) and east (LSP1B) of the LSP1A area.

Gas reticulation has been installed as part of the common civil trench installation during the development of the LSP1A area at no cost to the developer. Information from ATCO Gas confirms that an existing 160PE high pressure gas main is located to the north of the LSP1C area in the western verge of Partridge Street. It is anticipated that the same approach will be adopted by ATCO Gas as part of subdivision construction in LSP1C.

#### Dampier to Bunbury Natural Gas Pipeline and Parmelia Gas Pipeline

The Dampier to Bunbury Natural Gas Pipeline (DBNGP) and Parmelia Gas Pipelines are located to the east of the LSP1C area with the DBNGP located inside a 30m wide easement in the north-east corner of Lot 20 Woollcott Avenue. The gas main (and easement) then deviates on a south east alignment through Lot 10 Woollcott Avenue, which is outside of the LSP1C area. The Parmelia Gas Pipeline is located to the east of the DBNGP and neither the gas pipeline nor its easement (20m in width) encroaches within the LSP1C area.

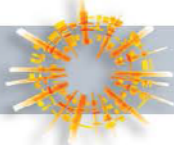
Consistent with the approach taken in LSP1B and other LSPs that are affected by the DBNGP, LSP1C sets aside the DBNGP easement within a public utilities reserve, with residential land uses adjoining.

#### 3.8.5 Telecommunications

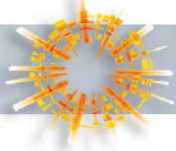
A development agreement is in place between Stockland Development and the National Broadband Network (NBN) for the provision of the NBN Co's fibre to the home (FTH) in the LSP1A area. NBN compliant pit and pipe infrastructure is currently being installed as part of the subdivision works in LSP1A with NBN pit and pipe infrastructure now extending south on Partridge Street to its intersection with Woollcott Avenue.

It is understood that the LSP1C area also falls within NBN Co's servicing region and there would be an opportunity for the landowners to enter into an agreement with NBN Co for the provision of FTH in the LSP1C area.









### 3.8.6 Earthworks

As part of the civil subdivisional works, the site will be re-contoured through a cut to fill operation and imported fill will be used to maintain clearance to groundwater or the controlled groundwater in low lying areas. Subsoil drainage will be installed in road reserves to create a controlled groundwater environment and maintain a minimum separation distance between finished lot levels and the groundwater.

The potential site classification in accordance with AS2870-1996 is Class 'A' subject to the site preparation recommendations in the geotechnical investigation being implemented.

### **3.9 Bushfire Management**

The LSP provides a comprehensive statutory response to address potential bush fire hazard, and demonstrates that bushfire risk over the site can be managed through a combination of dwelling setbacks and construction standards.

A Fire Management Plan (FMP) has been prepared by Bushfire Safety Consulting in conjunction with Emerge Associates, refer Appendix 4. This FMP has been prepared in accordance with the WAPC's Planning for Bushfire Protection Guidelines, and includes a detailed Bushfire Hazard Assessment, as well as identification of Bushfire Prone Areas, and BAL ratings.

The FMP demonstrates that the bushfire threat and hazard will be restricted to vegetation surrounding the perimeter of the site.

In accordance with LPS 17 Amendment No.99, the LSP1C statutory plan identifies Bushfire Prone Areas to identify those residential areas which require a BAL construction standard in accordance with AS 3959. The bushfire mapping detailed in the FMP supersedes the City of Swan bushfire mapping, in accordance with the Scheme provisions outlined in LPS 17 Amendment No.99.

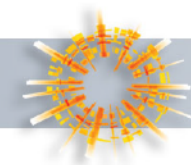
Figure 20 identifies the post-development bushfire hazards and the declared Bushfire Prone Areas in accordance with the Fire Management Plan at Appendix 4.

### **3.10 Traffic Noise**

As noted previously, the Structure Plan shares a boundary with an important regional road, being Lord Street, to the west. Lord Street is forecast to carry approximately 18,000 vpd and, in accordance with State Planning Policy 5.4, the impacts of traffic noise must be taken into consideration.

The endorsed DSP included a detailed noise assessment which took into consideration traffic noise generated by the future Perth-Darwin National Highway. The DSP recommended the construction of a 1.8m high noise wall along the western boundary of the DSP area, which includes a portion of LSP1C, as well as the implementation of Quiet House Design principles for the first row of residential dwellings.

A Transport Noise Assessment has been prepared by Lloyd George Acoustics in support of the LSP, a copy of which is Appendix 8. The report concludes that traffic noise is not a constraint to development subject to the inclusion of some noise mitigation treatments as part of the ongoing development of the LSP area.

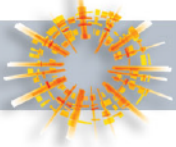


**Table 11: Package A Quiet House Design Requirements**

Area	Orientation to Road or Rail Corridor	Package A (up to 60dB $L_{Aeq(Day)}$ and 55dB $L_{Aeq(Night)}$ )
Bedrooms	Facing	<ul style="list-style-type: none"> <li>Windows systems: Glazing up to 40% of floor area (minimum <math>R_w + C_{tr}</math> 28) - 6mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings.</li> </ul>
	Side	<ul style="list-style-type: none"> <li>Windows systems: As above.</li> </ul>
	Opposite	No requirements
Other Habitable Rooms Including Kitchens	Facing	<ul style="list-style-type: none"> <li>Windows and external door systems: Glazing up to 60% of floor area (minimum <math>R_w + C_{tr}</math> 28) - 6mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings. Doors to be either 35mm thick solid timber core door with full perimeter acoustic seals. Glazed inserts to match the above. Sliding glass doors to be same performance including brush seals.</li> </ul>
	Side	<ul style="list-style-type: none"> <li>Windows and external door systems: As above.</li> </ul>
	Opposite	No requirements
General	Any	<ul style="list-style-type: none"> <li>Walls (minimum <math>R_w + C_{tr}</math> 45) - Two leaves of 90mm thick brick with minimum 50mm cavity</li> <li>Roof and ceiling (minimum <math>R_w + C_{tr}</math> 35) - Standard roof construction with 10mm plasterboard ceiling and minimum R2.5 insulation between ceiling joists.</li> <li>Eaves to be closed using 4mm compressed fibre cement sheet.</li> <li>Mechanical ventilation - Refer Appendix 8 - Transport Noise Assessment</li> </ul>
Outdoor Living Area		<ul style="list-style-type: none"> <li>Locate on the side of the building that is opposite to the corridor; or</li> <li>Locate within alcove area so that the house shields it from corridor.</li> </ul>

Note: Any penetrations in a part of the building envelope must be acoustically treated so as to not downgrade the performance of the building elements affected. Most penetrations in external walls such as pipes, cables or ducts can be sealed through caulking gaps with non-hardening mastic or suitable mortar.





These noise mitigation measures include:

- The construction of a 1.8m high noise wall on the western boundary;
- Package A Quiet House Design treatment for dwellings in the first row;
- Notifications on Title for lots in the first row; and
- Further noise investigation for development greater than single storey.

Notwithstanding that Lord Street will no longer be carrying the volumes anticipated by the DSP by virtue of the relocation of the Perth-Darwin National Highway, the LSP reflects the recommendations of the DSP, and requires the following:

- Construction of a 1.8m high noise wall along the western boundary of the LSP area abutting the MRS Public Purpose - Special Use Reserve;
- A statutory provision requiring the first row of houses to comply with Quiet House Design principles;
- A requirement for a further noise assessment as a condition of subdivision approval in order to determine the extent of lots to which a s70A notification (advising of potential noise impacts) might apply.

Table 11 summarises the Package A Quiet House Design requirements in accordance with SPP 5.4.

### 3.11 Development Contribution Arrangements

The Albion DSP, which includes the LSP1C area, is within Development Contribution Area 1 (DCA 1) under Schedule 13 of LPS17 and thus is subject to the relevant Development Contribution Plan (DCP) for DCA 1.

The DCP applicable to DCA 1 identifies infrastructure items that are outside of, and in some cases immediately adjoining the LSP1C area which are required to be ceded, resumed or constructed as part of the urban development of the area. The DCP includes the following infrastructure items that are located within the LSP1C area:

- District Community Centre (Land)
- District Community Centre (Embellishment)

The 'Infrastructure Demand' is apportioned across the development in order to derive Infrastructure Contribution Rates for each network of infrastructure. Each subdivider will be required to make Cost Contribution payments based on the area that they develop against the applicable Contribution Rate for DCA 1.



# ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C AMENDMENT ONE

ADDENDUM REPORT



Stockland  
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TOWN PLANNING + DESIGN



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**ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C - AMENDMENT 1**  
**ADDENDUM REPORT**

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2142Rep758A  
January 2018



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## EXECUTIVE SUMMARY

The Brabham Local Structure Plan 1C (LSP1C) provides the statutory framework for the delivery of the second phase of Stockland's Whiteman Edge – a thriving residential estate that will deliver more than 2,000 residential dwellings upon completion.

Critical to the sustainability and liveability of Whiteman Edge and the broader Brabham area, is the planned activity centre located on the southern edge of the LSP1C area. This activity centre has long been identified in State and local strategic planning as an emerging large neighbourhood / district centre, with current planning indicating that the centre could support in excess of 20,000m<sup>2</sup> of retail floor space by 2025 / 2026. Stockland, as the custodian of the centre, recognises the importance of realising its true potential, and is currently progressing a range of planning processes in order to deliver a high quality district centre to the Brabham community.

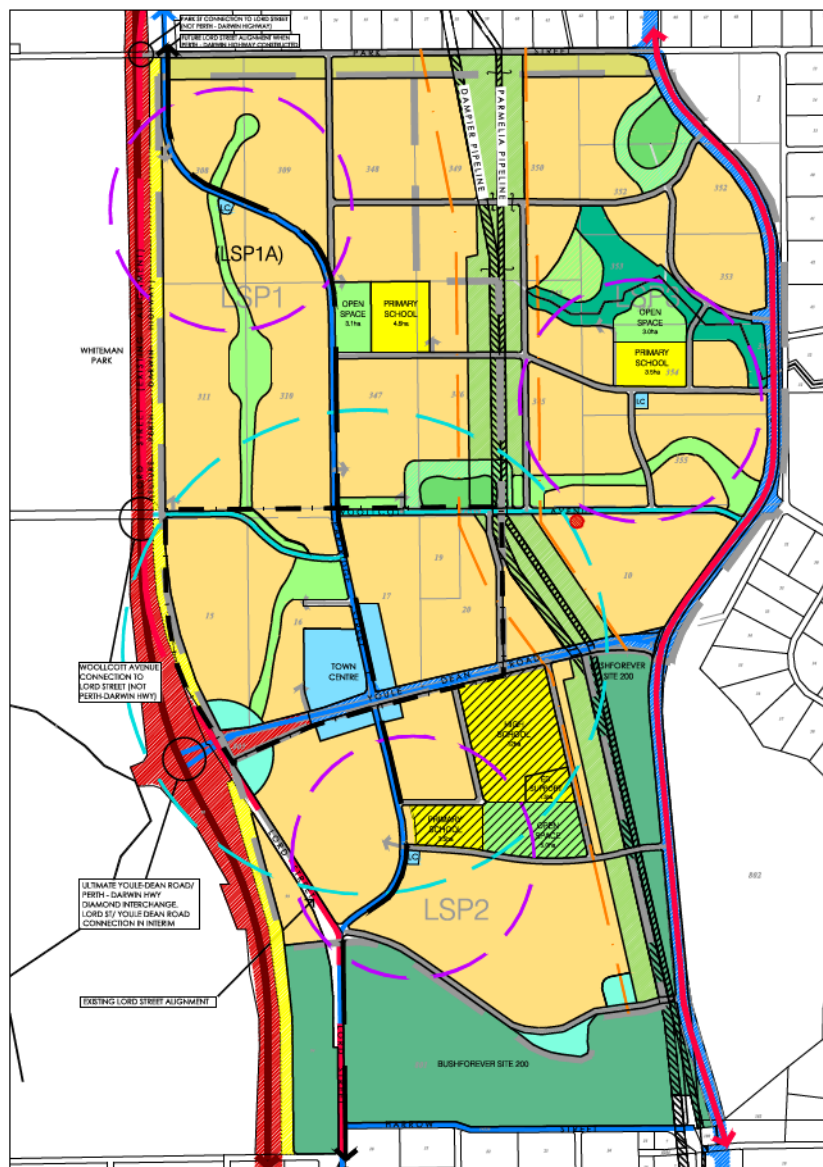
In order to deliver an activity centre at this scale, it is necessary to amend LSP1C to better align the LSP framework with the intention to deliver the larger district centre. This amendment, which is intended to be considered in parallel with an amendment to the Albion District Structure Plan, comprises of:

- A modified Local Structure Plan 1C Part 1 Implementation Report, which, amongst other matters, includes a requirement for an Activity Centre Plan as a precursor to development of the centre;

- An amended LSP Map which increases the footprint of the centre, modifies the zoning to 'Special Use – District Centre', and realigns Mayfield Drive;
- This addendum report which provides comprehensive planning justification for the proposed amendments and demonstrates that the amendments will have a positive impact on Whiteman Edge and the Brabham area; and
- A suite of supporting technical reports including a detailed traffic assessment prepared by Transcore, and an updated Bushfire Management Plan prepared by Natural Area Management Services.

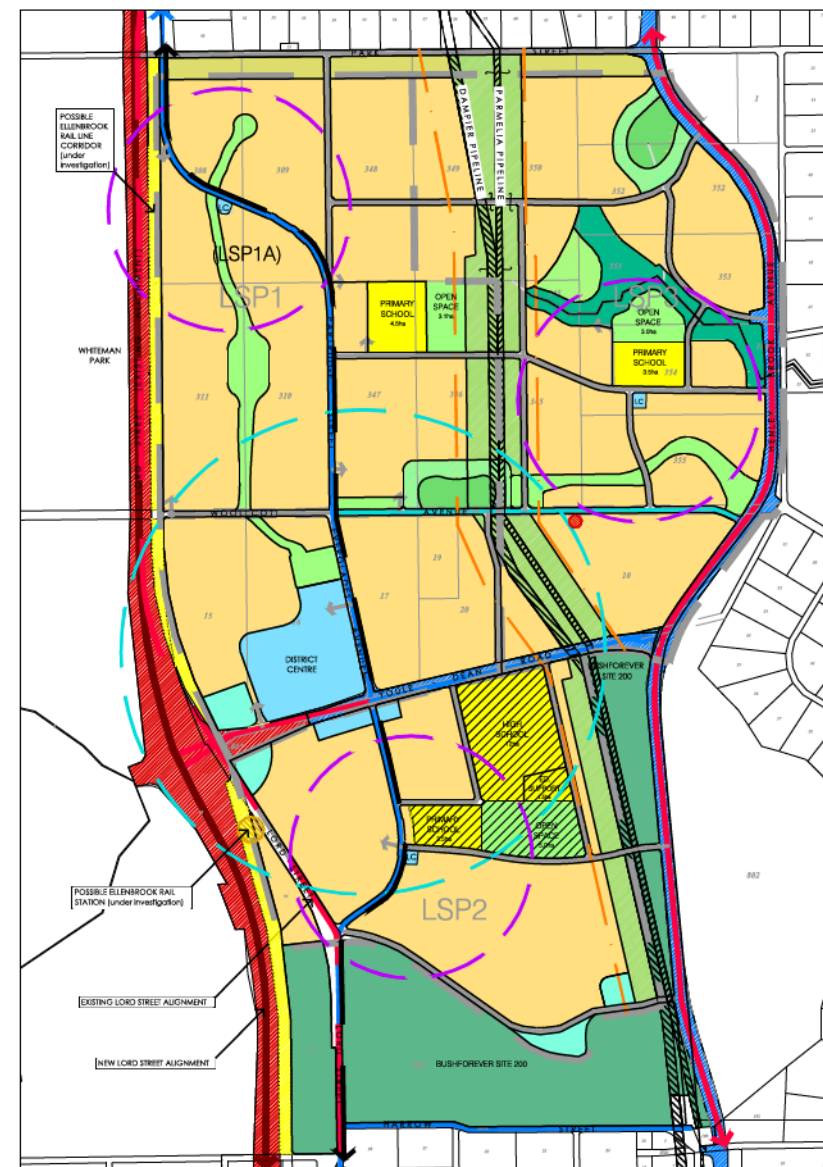
This LSP Amendment is an essential step towards delivering a high quality district centre to the Brabham community. Stockland is a highly regarded developer of commercial activity centres across Australia, and intends to bring all of the experience and knowledge from previous projects into the delivery of the district centre at Whiteman Edge. The end result will be an integrated, diverse, and vibrant activity centre that will be a tremendous asset for Whiteman Edge and the Brabham community.

# ALBION (BRABHAM) LOCAL STRUCTURE PLAN 1C - AMENDMENT 1 ADDENDUM REPORT



Current Albion District Structure Plan

- Albion LSP1C Boundary**
- DSP LEGEND**
- District Structure Plan Boundary / Local Structure Plan Areas (LSP) (Refer section 1.2.2.4 of Structure Plan)
  - 400m Walkable Catchment to Local Centre
  - 800m Walkable Catchment to District Centre
  - Residential
  - Special Residential
  - Town Centre (Refer Note 3)
  - Indicative Local Centre (LC)
  - School
  - K-12 Education Precinct
  - Activity Corridor
  - Public Purpose Site - Power Substation
- Road Hierarchy:**
- Primary Distributor
  - Integrator Arterial A
  - Integrator Arterial B
  - Existing Lord Street Alignment (Refer Appendix 7 of Structure Plan)
  - Neighbourhood Connector A
  - Neighbourhood Connector B
  - Access Streets
  - MRS Primary Regional Road Reservation
  - MRS Other Regional Road Reservation
  - MRS Public Purpose
- Public Open Space:** (Refer Figure 11)
- Multiple Use / Local Active Open Space
  - Local Open Space / Drainage
  - Wetlands
  - Wetland Buffer (Refer Section 4.2.3 of Structure Plan)
  - Bush Forever Site 200/Parks & Recreation
  - Possible Conservation (Refer Note 2)
  - St Leonards Multiple Use
- Gas Pipeline:**
- Gas Pipeline Easement
  - Gas Pipeline Residential Conditional Area (Refer Note 1)
  - Sensitive Land Use Conditional Area



Proposed Albion District Structure Plan



## 1.0 BACKGROUND

### 1.1 Purpose and Scope of Amendment

The purpose of this report is to support an amendment to the Albion (Brabham) Local Structure Plan 1C ("LSP1C") on behalf of Stockland Developments in order to modify the designation of the retail centre from a 'Large Neighbourhood Centre', to a 'District Centre' consistent with *State Planning Policy 4.2 - Activity Centres for Perth and Peel* (SPP 4.2), and to address consequential changes to the LSP with respect to road network and public open space.

The purpose of this report is to explain and justify the amendments that are sought to the Part One - Implementation Report and the Structure Plan Map. This report does not replace, but rather forms an addendum to the LSP1C Explanatory Report (CLE reference 2142Rep472F) that was endorsed by the Western Australian Planning Commission (WAPC) in October 2015.

The following specialist studies have been prepared in support of this amendment, and are included as appendices to this addendum report.

- Traffic and Transport Analysis (Transcore)
- Bushfire Management Plan (Natural Area Management)

It is intended that this amendment be read and assessed in conjunction with the proposed amendment to the Albion District Structure Plan (CLE ref 2142Rep750).

### 1.2 Planning Overview

#### 1.2.1 Zoning

The LSP1C area is predominantly zoned 'Urban' under the Metropolitan Region Scheme (MRS), and 'Special Use – Albion' under the City of Swan's Local Planning Scheme No.17 (LPS17). The MRS and LPS17 zones and reserves have not changed over the LSP1C area since the endorsement of LSP1C in October 2015.

#### 1.2.2 Albion District Structure Plan

The Albion District Structure Plan, which included the LSP1C area, was endorsed by the Western Australian Planning Commission in January 2011. The DSP established key land uses such as schools, activity centres, POS / drainage corridors, and the higher order road network. The purpose of the DSP is to guide more detailed land use planning at local structure planning stage.

Stockland is currently pursuing a concurrent amendment to the DSP in order to change the designation of the activity centre from a 'Large Neighbourhood Centre' to a 'District Centre', in keeping with current activity centre policy framework.

A copy of the current endorsed and proposed DSP Map is Figure 1.





### 1.2.3 Local Structure Plan 1C

The Albion (Brabham) Local Structure Plan 1C was prepared on behalf of the majority landowners, Stockland Development Pty Ltd (Stockland), in consultation with participating landowners GM Property Group and the Belini Family, pursuant to City of Swan Local Planning Scheme No. 17 (LPS 17). LSP1C covers all of Lots 15, 16, 17, 19 and 20, centrally located within the Albion District Structure Plan area.

LSP1C was endorsed by the WAPC in October 2015 and in broad terms, currently provides for:

- A total of approximately 900-1,000 residential lots and approximately 1,000-1,100 dwelling units, with appropriate density responses adjacent to the planned Activity Centre. Higher residential densities of R80 are focused around the Centre and key areas of open space, while the balance of the LSP area will comprise of more traditional medium density housing of R40.
- A Special Use - Neighbourhood Centre zone over the designated activity centre, consistent with the DSP, and recognising the need for further detailed planning over this precinct via a Local Development Plan.
- Approximately 7.6ha hectares (gross) of strategic public open space meeting active and passive recreation, drainage objectives, as well as exceeding the minimum 10% public open space requirement of Liveable Neighbourhoods.

- A clear hierarchy of integrator arterials and neighbourhood connectors, providing a framework for the provision of a local bus service, as well as walking and cycling.
- Vehicle access points to Lord Street at Youle Dean Road, consistent with the DSP.

There are current subdivision approvals in place over the majority of the LSP1C area, and approximately 240 lots have been developed and titled in the northern section as of January 2017.

A copy of the current LSP1C Map is Figure 2.

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## 2.0 AMENDMENT PROPOSAL

Following the endorsement of LSP1C, Stockland has undertaken some detailed market analysis into the need for, and viability of, a larger activity centre in the current 'Large Neighbourhood Centre' location on the north side of Youle Dean Road and west side of Everglades Avenue (formerly Partridge Street).

Stockland's analysis confirms that the trade area population is sufficient to support a two stage development of the centre, with the first stage providing a full-line supermarket, a mini-major retailer and a select range of specialty shops. The second stage would most likely include a discount department store, a second supermarket and a broader range of specialty shops, as well as a greater range of food and beverage offerings and non-retail uses.

As noted above, Stockland is currently progressing an amendment to the Albion DSP in parallel with this amendment (CLE ref 2142Rep750). The DSP amendment addresses the higher order planning considerations including a full Retail Sustainability Assessment in support of the activity centre, and a review of likely traffic implications on the higher order road network.

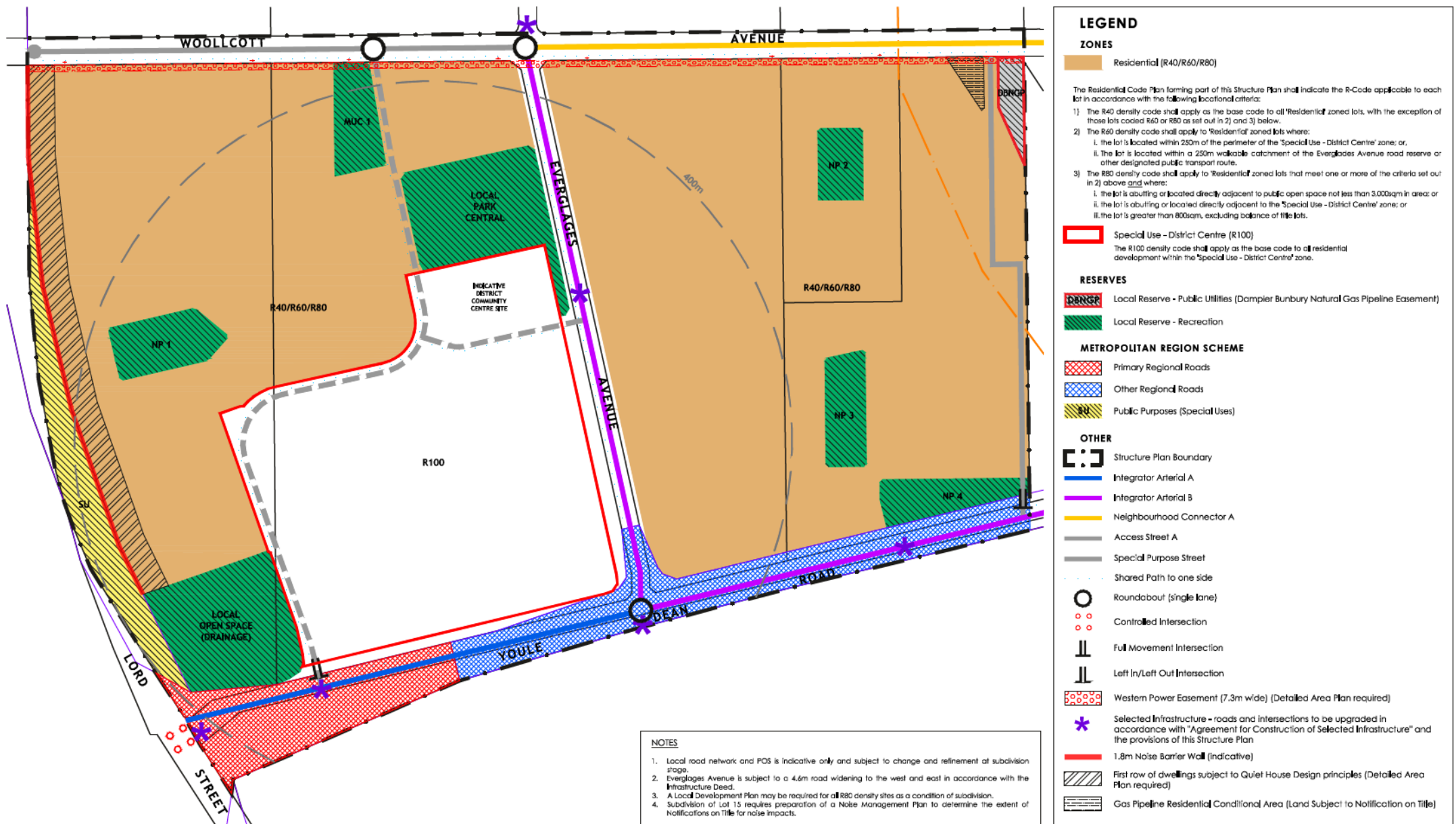
As a result of the proposal to expand the activity centre, it has also become necessary to amend LSP1C to address the zoning and land use permissibility, as well as a number of consequential changes to the local road network, interface to bushfire hazards, and distribution of public open space.

The amendments to LSP1C are limited entirely to Stockland's landholding of Lots 15, 16 and 17 Youle Dean Road, and will not have any discernible impact on lots 19 or 20 Woolcott Avenue.

The scope of the amendments to LSP1C can be broadly described as:

### LSP Map

- Amend the current 'Special Use – Neighbourhood Centre' zone to 'Special Use – District Centre';
- Increase the footprint of the Special Use – District Centre to the north and west from 3.5ha to 11ha (approx);
- Identify a 5,000m<sup>2</sup> site on the northern side of the centre for a future community facility and remove the current 'indicative location' in the south eastern corner of the centre zone.
- Realign the designated 'main street' further to the north;
- Realign Mayfield Drive further to the west to align with the outer edge of the modified centre zone;
- Remove the portion of the centre on the eastern side of Everglades Avenue (formerly Partridge Street) and revert to residential in order to consolidate the centre on the western side; and
- Consolidate the open space / drainage area in the south western corner of the LSP area to provide an improved interface to the centre, whilst continuing to provide a balanced response to recreation, tree retention and drainage.



### LSP Part One – Implementation Report

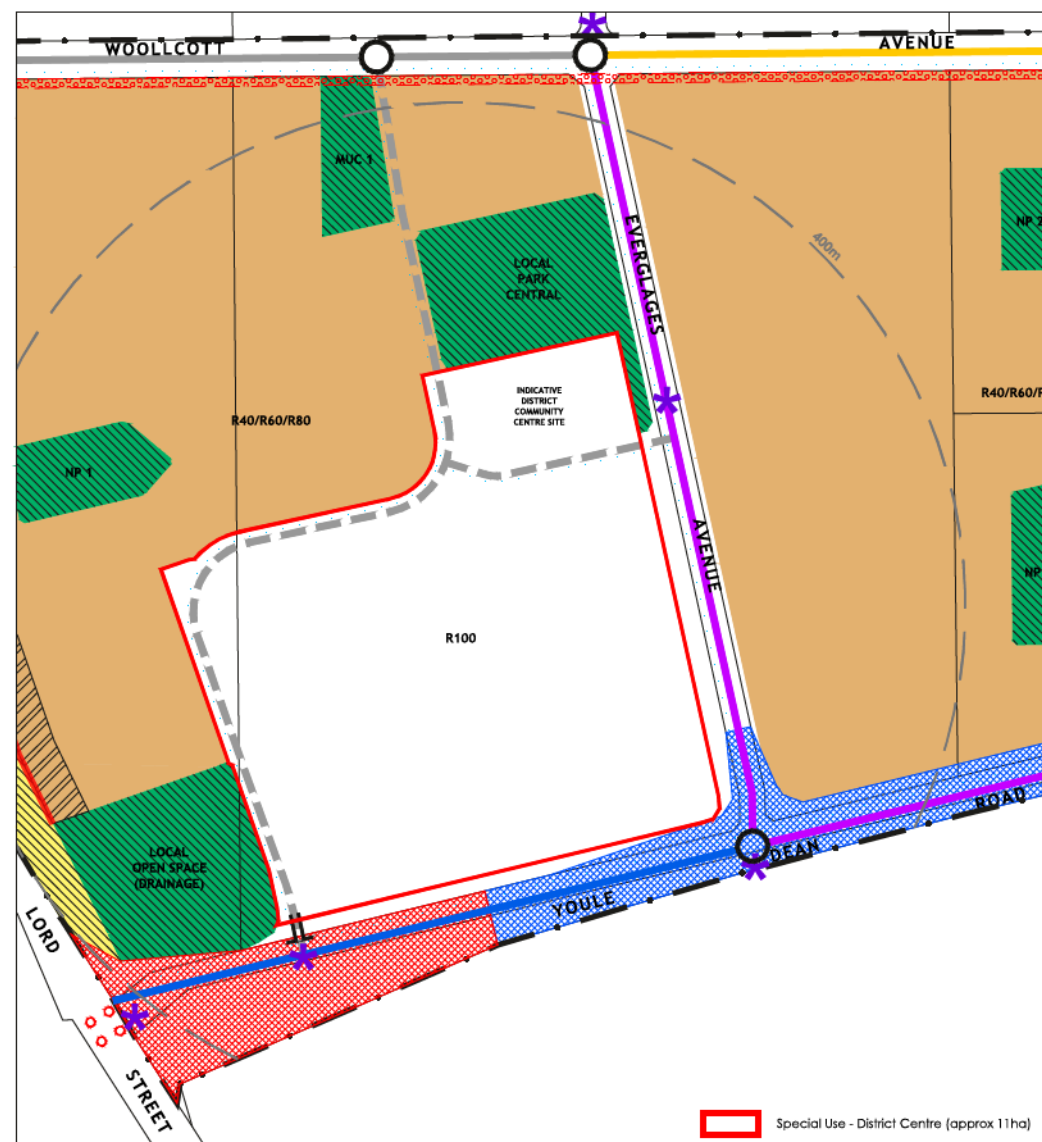
- Modify enabling provisions (clauses 3 and 4) to align with the *Planning and Development (Local Planning Scheme) Regulations 2015* and *Structure Plan Framework (2015)*.
- Modify clause 5.3 and sub clauses to recognise the Special Use - District Centre zone and replace the requirement for a Local Development Plan (clause 5.3.3) with an Activity Centre Plan;
- Delete clause 5.3.2 Table 1 – Land Use Permissibility and defer land use designations to a future Activity Centre Plan;
- Modify clause 5.4 Table 2 to recognise the modified POS provision; and
- Delete Table 3 – Single House (RMD) Standards for Medium Density Housing, recognising the City's recently adopted Local Planning Policy POL-LP-11 *Variation to Deemed-to-Comply Requirements of the R-Codes – Medium density single house development standards (R-MD Codes)*.

The amended LSP Map is Figure 3 and is included as part of the modified Part 1 Implementation Report.





Current Special Use - Neighbourhood Centre



Proposed Special Use - District Centre



### 3.0 PLANNING CONSIDERATIONS

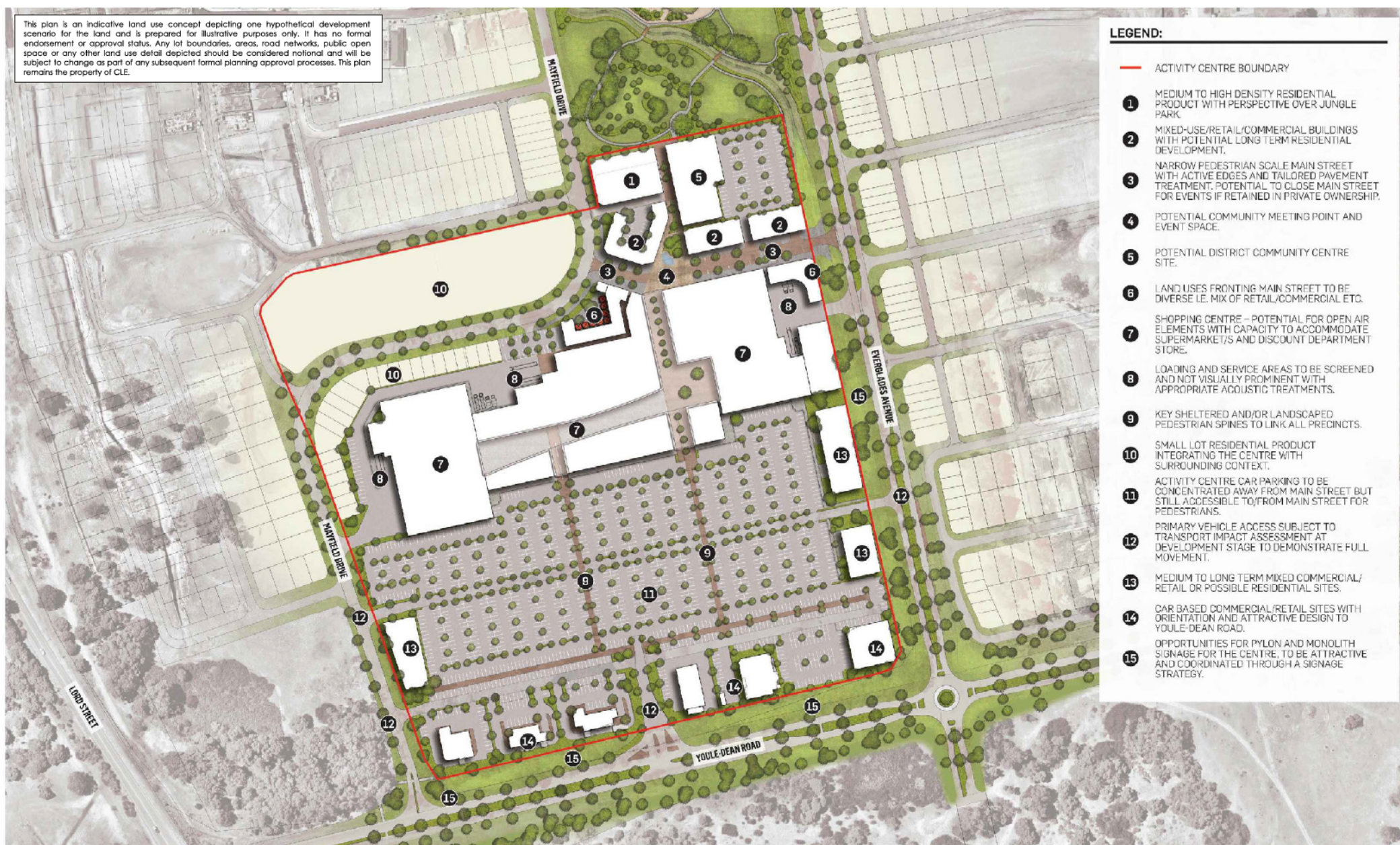
The following sections provide analysis and justification for the proposed amendments to LSP1C. The justification is limited to those planning considerations that have been modified as a result of the proposed amendment, and / or where there have been significant changes to the policy framework that warrant further assessment.

#### 3.1 Centre Size, Classification and Zoning

The amendment proposes to increase the footprint of the nominated centre area from approximately 3.5ha to approximately 11ha, recognising the need to accommodate the larger retail centre as well as a broader mix of land uses consistent with SPP 4.2. In addition, the amendment changes the zoning to 'Special Use – District Centre' zone on the LSP map, and introduces a requirement for an Activity Centre Plan as a pre-requisite to subdivision and development. The amendment also removes the land use permissibility table from the Part 1 Implementation Report on the basis that it will be incorporated as part of the Activity Centre Plan.

A plan depicting the proposed changes to the centre area is Figure 4.







The justification for the increased capacity and classification of the centre is well documented in the DSP Amendment report (CLE ref 2142Rep750) and accompanying Retail Sustainability Assessment, and is supported by a comprehensive range of strategic state and local planning strategies / policies including:

- State Planning Policy 4.2 – Activity Centres for Perth and Peel;
- Perth & Peel @3.5 Million and Sub-regional Framework Plan;
- City of Swan Retail Needs Assessment – 2011; and
- City of Swan draft Local Commercial and Activity Centres Strategy (2016 draft).

Consistent with the current LSP1C, the Special Use zone is deemed to be the most appropriate zone for the activity centre, as it allows a finer grain of planning including specific zones / precincts and land use permissibility to be determined as part of more detailed planning of the centre in the form of an Activity Centre Plan.

The size and configuration of the 'Special Use – District Centre' zone is informed by a detailed concept plan for the centre, refer Figure 5. The concept plan informs key aspects such as the location of the main street and retail core, the realignment of Mayfield Drive and intersection locations to both Youle Dean Road and Everglades Avenue. The concept plan will be further refined as part of more detailed planning for the centre via the Activity Centre Plan and subsequent development applications.

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



### 3.2 Traffic and Transport

The current LSP1C is supported by a detailed traffic strategy prepared by Arup in 2015. Due to the increase in the capacity of the centre and consequential modifications to the local road network, a revised assessment is warranted. As such, Stockland has engaged Transcore to re-examine the overall road network for the LSP1C area, with a particular focus on the higher order local road network, major intersections and any additional traffic arising from the increased centre. Transcore concludes that the forecast traffic arising from the amended LSP will not adversely impact on the planned road hierarchy, or the operational function of key intersections. A full copy of Transcore's traffic analysis is Appendix 1, and a summary of the key findings is set out below.

#### 3.2.1 Traffic Volumes, Road Network and Cross Sections

Transcore's analysis and modeling concludes that although some volumes have changed, and in some instances increased slightly, the overall road hierarchy and planned reserve widths as identified in the current LSP1C will not change significantly as a result of the proposed modifications.

The higher order road hierarchy, comprising Lord Street, Youle Dean Road and Everglades Avenue is analysed at length in the DSP Amendment report and for the sake of brevity is not repeated in this report.

Woolcott Avenue (west of Everglades) is an Access Street, carrying a relatively low volume of traffic in the order of 2,500 vehicles per day.

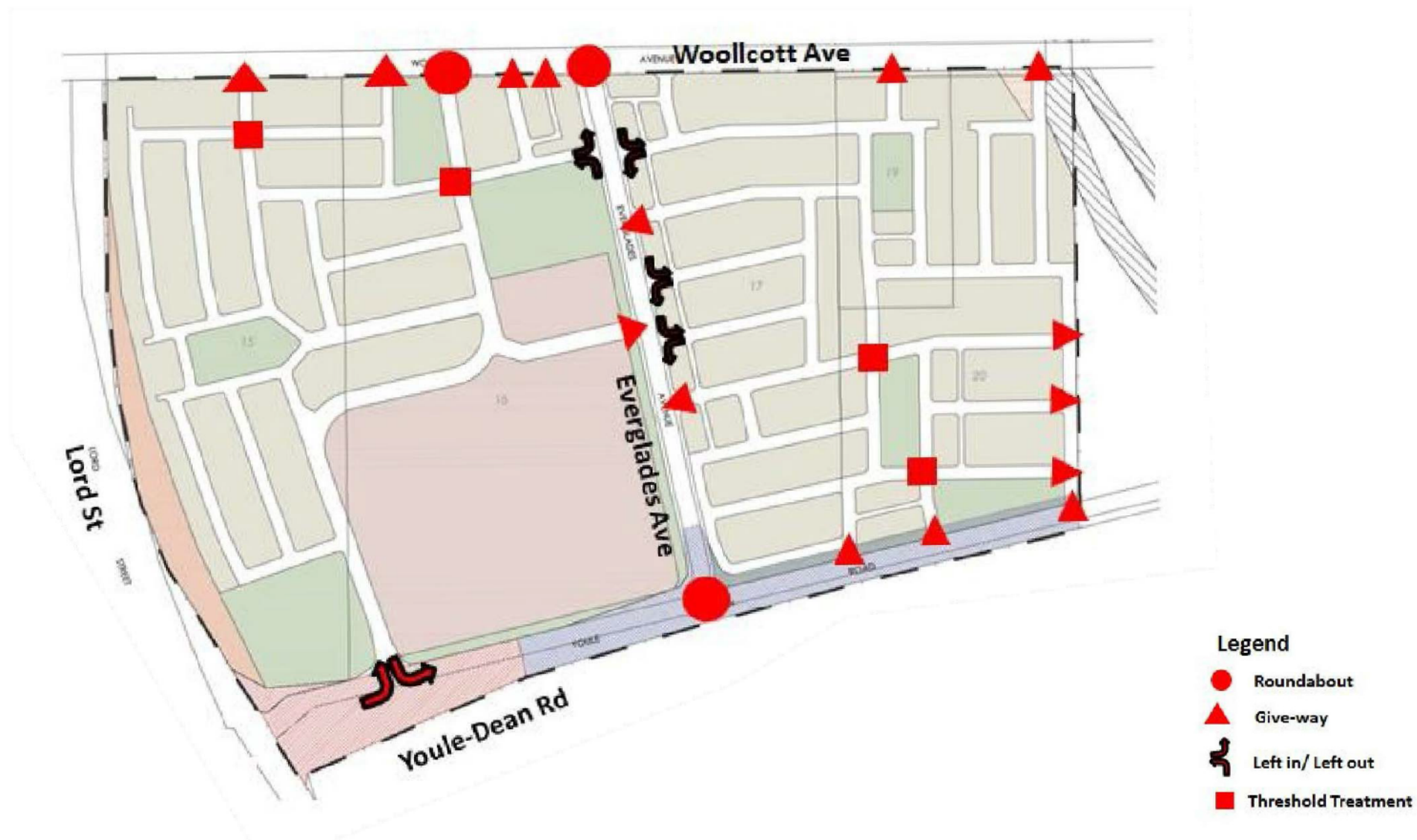
Volumes are forecast to increase slightly on Mayfield Drive – particularly the southern portion adjacent to the centre. The current LSP identifies Mayfield Drive as a 'Special Purpose Street', recognising that it doesn't neatly fit within any of the categories of road identified in the Liveable Neighbourhoods hierarchy by virtue of its proximity to the centre and the desire for a high amenity, low speed environment. Transcore supports the continuation of this designation as the most appropriate classification for this portion of road.

In keeping with the current LSP, all other roads are classified as local access streets, and are intended to service local traffic only. As such, no changes are proposed to the LSP in this regard.

A plan depicting Transcore's recommended road hierarchy and classification is Figure 6.



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### 3.2.2 Key Intersections

As part of the traffic analysis, Transcore has undertaken a SIDRA analysis of key intersections within and adjacent to the LSP area in order to demonstrate that no further modifications to key intersections are required as a result of the changes to the LSP. A brief summary of the findings of the SIDRA analysis is set out below, and a plan depicting the recommended treatments for these intersections is Figure 7.

#### Woolcott Avenue / Everglades Avenue

The SIDRA analysis confirms that the existing intersection (single lane roundabout) can continue to function with an acceptable level of service, and that no further modifications to this existing intersection are required.

#### Everglades Avenue / Youle Dean Road

The current LSP shows this key intersection as a single lane roundabout. Through the preparation of the original LSP, it was agreed that a single lane roundabout achieves the most appropriate balance between efficient traffic flow, and walkability adjacent to the activity centre. Walkability becomes even more critical with the expansion of the centre, however it is understood that Main Roads WA does not support traffic signals in this location and that a roundabout remains the preferred option from a traffic management perspective. Transcore's SIDRA analysis tests a single lane roundabout at this intersection and confirms that traffic queuing and level of service remains within acceptable limits. As such, the planned single lane roundabout remains the most appropriate form of traffic management in this location, achieving a reasonable balance between efficient traffic flow and pedestrian walkability.

#### Mayfield Drive / Youle Dean Road

The amended LSP proposes to move the intersection of Mayfield Drive and Youle Dean Road further to the west than what was originally proposed in the current LSP1C. In response to this change, the intersection is now proposed to be a left-in, left-out intersection.

Ultimately, upon development of the land to the south it may be desirable to create a 4<sup>th</sup> leg from the south into this intersection, at which point a roundabout would most likely be required. It is important to note that this amendment, and the proposed changes to the traffic network do not give rise to the need for a roundabout in this location, and that at full development, a left-in, left-out intersection is sufficient to service the LSP1C area.

#### Youle Dean Road / Lord Street

It is understood that this intersection is planned and designed as a dual circulatory roundabout. The proposed amendments to LSP1C will not have any significant impact on this intersection and as such, no further changes are required.

#### Main Street / Everglades Avenue

Transcore's analysis concludes that the intersection of the activity centre's main street and Everglades Avenue can operate as a priority T intersection. The current LSP showed an uncontrolled 4-way intersection however due to the expansion of the centre

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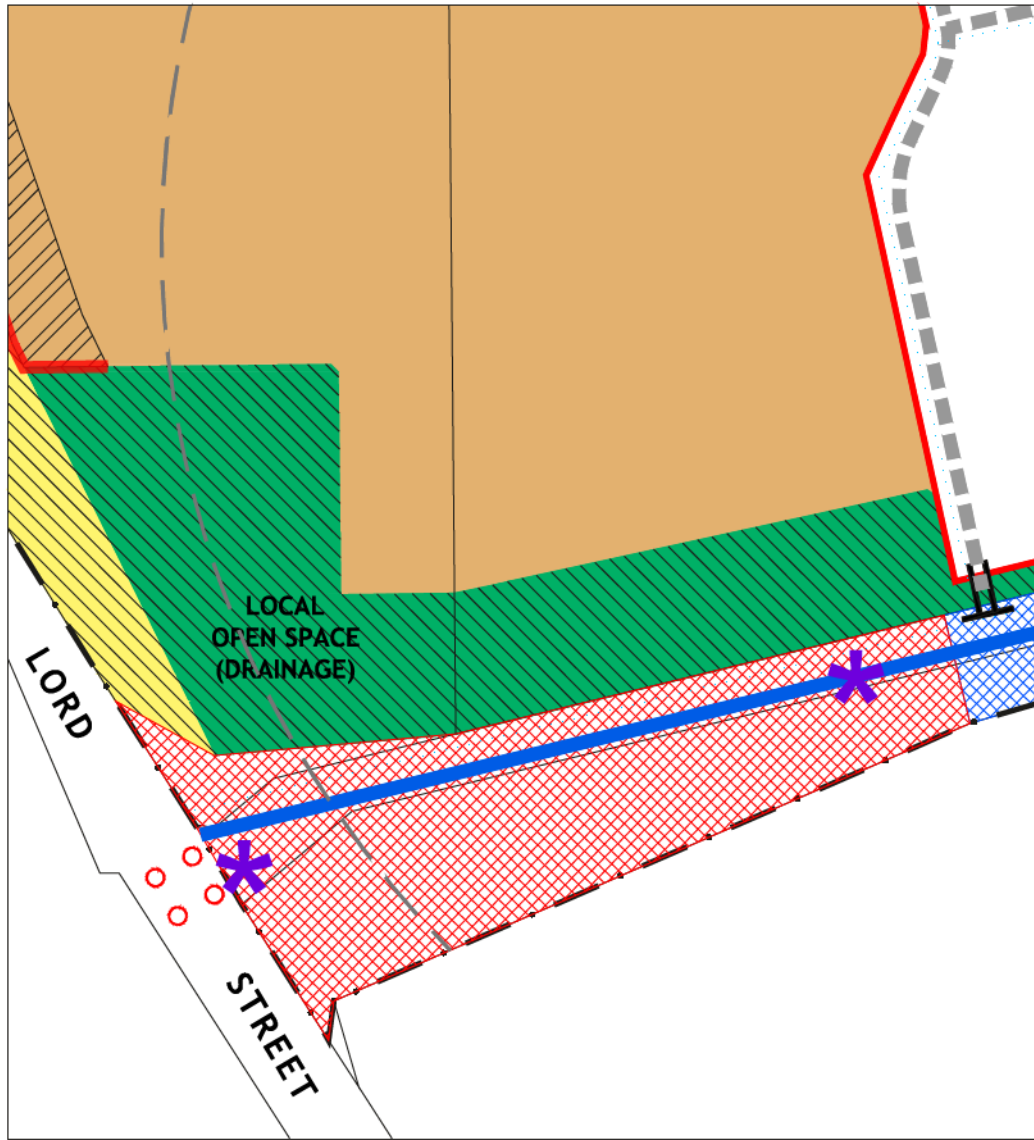


to the north, the main street has also been moved further to the north, resulting in a T-intersection in lieu of the 4-way. This is an improved outcome from a traffic perspective as it will avoid traffic seeking to cross Everglades Avenue.

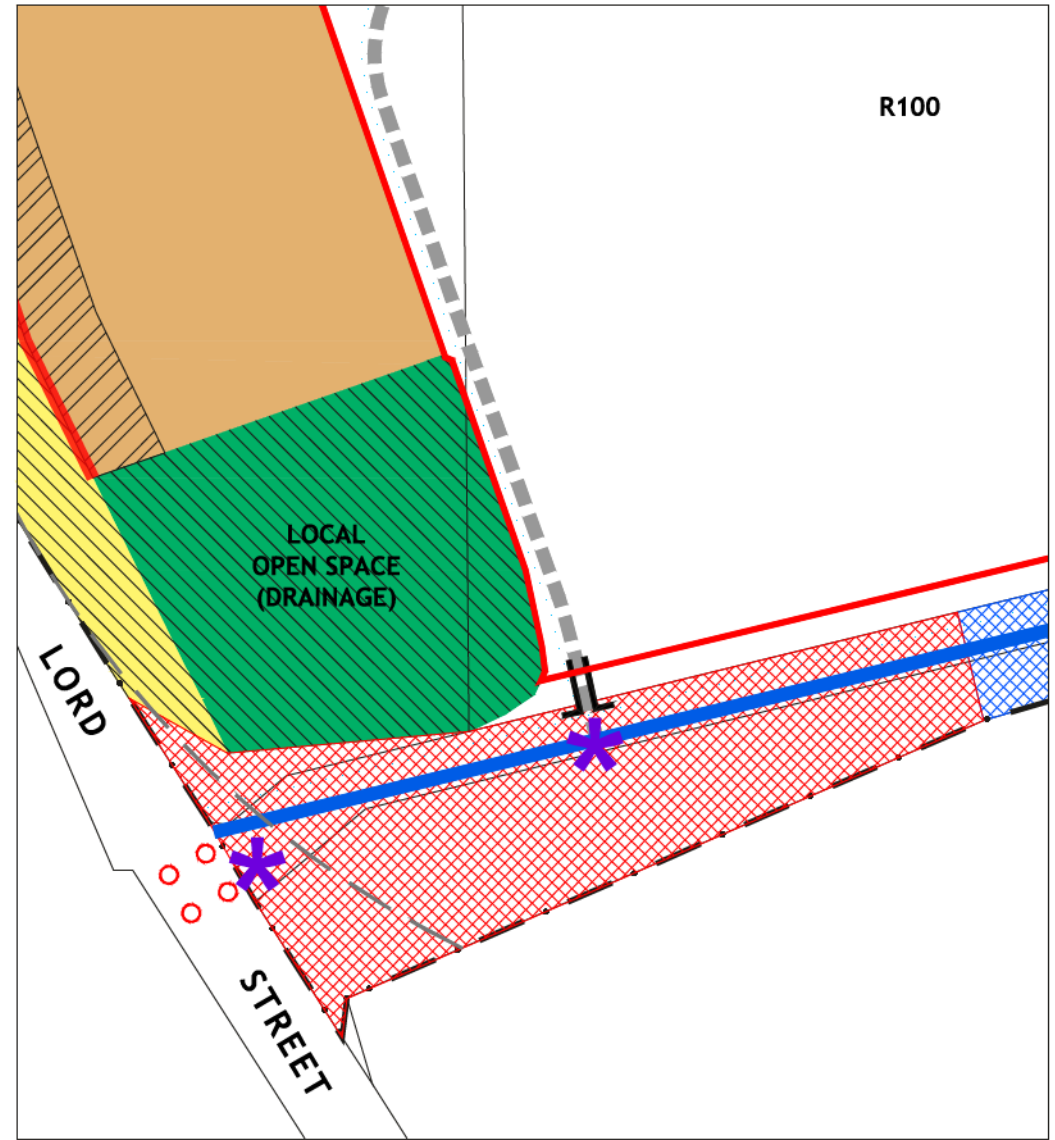
Liveable Neighbourhoods requires a minimum intersection spacing of 40 metres for Integrator Arterial roads. The proposed main street alignment is less than 40 metres from two local access street intersections on the opposite side of Everglades Avenue, and Transcore has recommended that these two intersections be designated as 'left in – left out' intersections in order to avoid conflict with turning vehicles. It is anticipated that the nature of Local Access Street intersections will be confirmed at subdivision stage.

### 3.2.3 Public Transport

The State Government has recently announced the possible Ellenbrook rail line (under investigation), which involves the construction of a dedicated bus corridor between Lord Street and the LSP1C area, and with a station planned to the south of Youle Dean Road. The possible Ellenbrook rail line (under investigation) has been recognised and considered as part of the overall traffic modeling, however has no material implications for this LSP amendment, as it is understood that all possible Ellenbrook rail line (under investigation) infrastructure is to be contained within the designated corridor. The LSP continues to provide future opportunities for a feeder bus network, as outlined in the current LSP1C explanatory report.



### Current Public Open Space



### Proposed Public Open Space

### 3.3 Public Open Space and Drainage

The proposed amendments to LSP1C, and in particular the expansion of the District Centre area, has resulted in some minor changes to the POS and drainage strategy for LSP1C. The changes are as follows:

- Although its core functions of passive recreation, vegetation retention and drainage have not changed, the 'Local Open Space (Drainage)' area in the south western corner of the LSP area has reduced from 2.5ha down to 1.9ha in order to accommodate the expanded District Centre site; and
- The Multiple Use Corridor, identified as MUC2 and MUC3 in the current LSP, although retained, is now receiving more runoff and as such, has now been treated entirely as a deduction for the purposes of calculating POS credits.

All other POS areas throughout the LSP1C area retain the same size and function as per the current LSP, and for the purpose of calculating open space credits, the same drainage areas have been applied to these POS areas.

A plan depicting the changes to the POS network is Figure 8.



**Table 1: Public Open Space Schedule** (all areas are in hectares)

Site Area		71.74
Deductions		
Everglades Avenue	1.08	
Everglades Avenue Widening	0.49	
PP Reserve	1.60	
PRR Reserve	2.21	
ORR Reserve	2.99	
DBNGP Easement	0.28	
Non-creditable MUC	0.53	
1:1 Year Drainage within POS	0.55	
District Centre	11.44	
Restricted Use (above 2%)	0.16	
Total Deductions	21.33	
Gross Subdivisible Area		50.41
POS @10%		5.04
Public Open Space Requirement		
May Comprise:		
Min 8% unrestricted POS	4.03	
Max 2% restricted POS	1.01	
TOTAL POS REQUIRED		5.04
Public Open Space Provided	Unrestricted POS Area	Restricted POS Area
1. Local Park Central	1.39	0.13
2. Neighbourhood Park 1	0.35	0.23
3. Neighbourhood Park 2	0.14	0.19
4. Neighbourhood Park 3	0.31	0.22
5. Neighbourhood Park 4	0.44	0.09
6. Local Open Space (drainage)	1.50	0.31
7. MU Corridor 1	0.68	0.00
TOTAL	4.81	1.17

Additional Deductions		
Restricted Open Space Surplus		0.16
Revised Public Open Space Contribution		
Min 8% unrestricted POS provided	4.81	9.5%
Max 2% restricted POS provided	1.01	2.0%
Total Creditable POS Provided	5.82	11.55%

1. Site Area is the total area of Lots 15-17, 19 and 20, and the total area of the Everglades Avenue road reserve and Youle Dean Road Reserve, including lot 803.
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. Drainage areas are based on the revised LWMS (RPS Jan 2015).
4. The MUC is treated as restricted open space, with the exception of the 1:1 year storage area, which is a deduction.
5. All POS areas are indicative only and are subject to refinement and detailed design at subdivision stage.

### 3.3.1 Public Open Space Provision

In order to demonstrate that the overall LSP1C area can still achieve the minimum 10% creditable POS requirement, an updated POS Schedule has been prepared, refer Table 1.

The gross subdivisible area, as defined by Liveable Neighbourhoods, has decreased from 57.68ha down to 50.41ha due to the increased size of the district centre.

As demonstrated in Table 1, based on the new gross subdivisible area of 50.07ha, the 10% open space requirement for LSP1C is 5.01ha (previously 5.77ha).

The LSP allows for the provision of approximately 5.82ha of gross public open space, excluding the designated multiple use corridor / living stream.

Once Liveable Neighbourhoods credits are applied, the open space provision is 11.55% (increased from 10.2% under the current LSP).

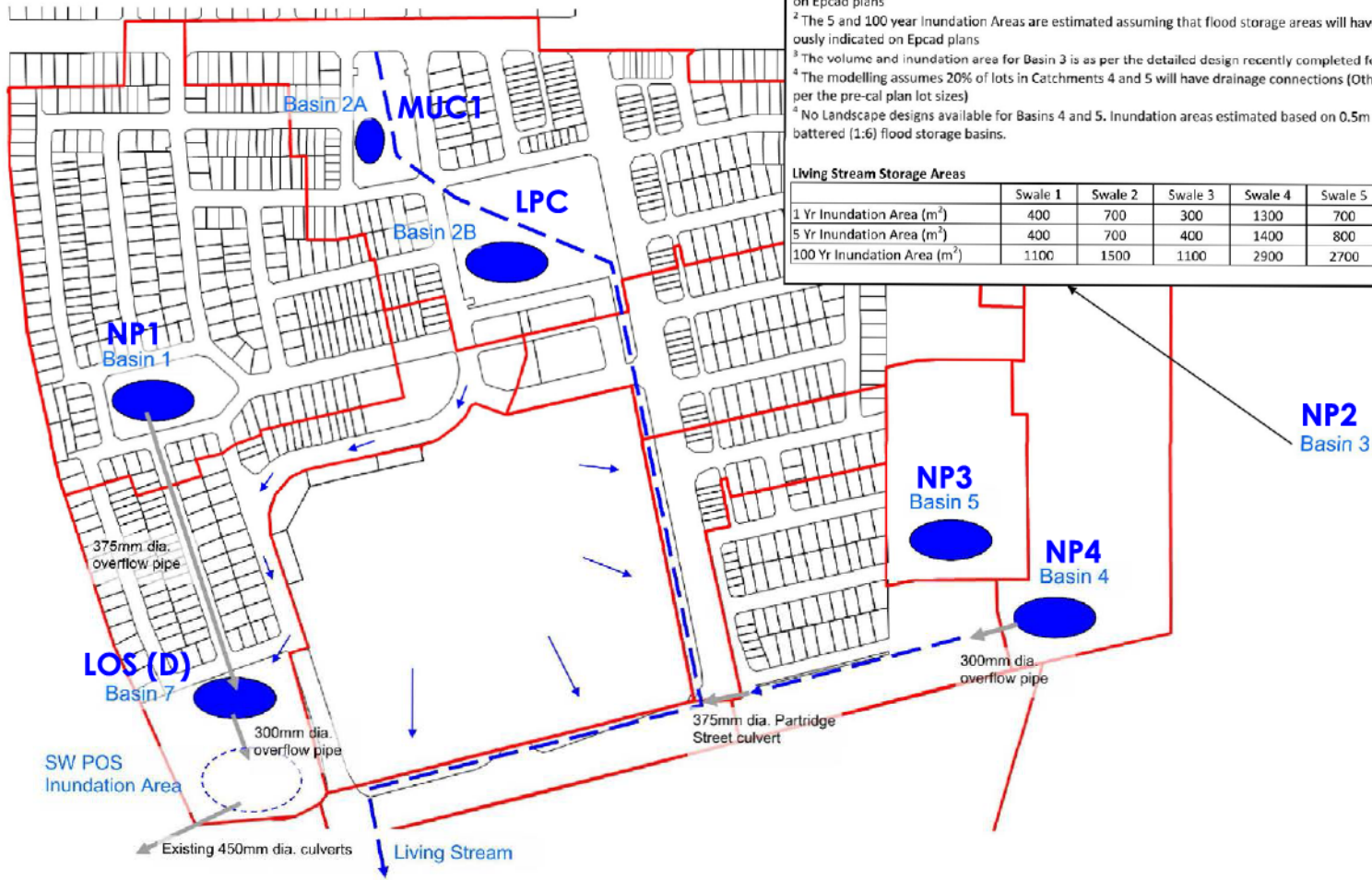
The following outlines the key aspects of public open space provision based on Liveable Neighbourhoods requirements.

- The Development Concept Plan provides 5.82ha of gross open space, with all open space areas serving a shared drainage function, without compromising the active and passive recreational uses.
- Approximately 0.55ha of open space (excluding the living stream / MUC area) will receive drainage for events

occurring more frequently than the 1 in 1 year (1 hour) event and as such are a deduction from the Gross Subdivisible Area in accordance with Liveable Neighbourhoods.

- The living stream / MUC areas are also treated entirely as a deduction.
- Liveable Neighbourhoods allows up to 2% of the 10% open space requirement to comprise of restricted use open space. Based on the requirements of Liveable Neighbourhoods, a maximum of 1.01ha can be creditable restricted use open space and a minimum of 4.03ha unrestricted open space.
- Approximately 1.17ha of open space will receive drainage from between the 1 in 1 year and 1 in 5 year drainage event in landscaped infiltration basins, swales and bio-retention areas, in accordance with water sensitive urban design principles. The 1 in 1 to 1 in 5 year drainage event is treated as restricted use open space in accordance with Liveable Neighbourhoods.
- All other POS areas are unrestricted open space, providing a range of passive and active functions as well as recognising the existing environment through the retention of mature trees and vegetation wherever possible.
- The total unrestricted use open space area is 4.81ha (previously 5.1 ha).
- The total creditable (unrestricted plus restricted open space) area is 5.82 ha or 11.55%.

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Basin Storage Areas								
	Basin 1	Basin 2A	Basin 2B	Basin 3 <sup>3</sup>	Basin 4 <sup>4</sup>	Basin 5 <sup>4</sup>	Basin 7	SW POS
1 Yr Volume (m <sup>3</sup> )	544	100	470	240	272	127	425	0
1 Yr Inundation Area (m <sup>2</sup> ) <sup>1</sup>	1088	210	1880	650	544	254	850	0
5 Yr Volume (m <sup>3</sup> )	990	190	2000	490	600	600	2100	140
5 Yr Inundation Area (m <sup>2</sup> ) <sup>2</sup>	3340	210	3130	2570	1490	2480	3970	1490
100 Yr Volume (m <sup>3</sup> )	2300	190	2000	1220	1020	1400	2250	900
100 Yr Inundation Area (m <sup>2</sup> ) <sup>2</sup>	3870	210	3130	2900	1740	2850	4020	5540

- <sup>1</sup> The 1 year Inundation Areas are estimated assuming that the bioretention (1 Yr) basins will be the same depth as previously indicated on Epcad plans
- <sup>2</sup> The 5 and 100 year Inundation Areas are estimated assuming that flood storage areas will have the same shape and depth as previously indicated on Epcad plans
- <sup>3</sup> The volume and inundation area for Basin 3 is as per the detailed design recently completed for that site.
- <sup>4</sup> The modelling assumes 20% of lots in Catchments 4 and 5 will have drainage connections (Other catchments have been modelled as per the pre-cal plan lot sizes)
- <sup>5</sup> No Landscape designs available for Basins 4 and 5. Inundation areas estimated based on 0.5m deep walled bio-basins and 0.5m deep battered (1:6) flood storage basins.

Living Stream Storage Areas							
	Swale 1	Swale 2	Swale 3	Swale 4	Swale 5	Swale 6	Swale 8
1 Yr Inundation Area (m <sup>2</sup> )	400	700	300	1300	700	700	700
5 Yr Inundation Area (m <sup>2</sup> )	400	700	400	1400	800	800	1000
100 Yr Inundation Area (m <sup>2</sup> )	1100	1500	1100	2900	2700	1800	2000





In addition to the public open space provision described above, it has previously been determined that the POS provision for LSP1C can also include an unspecified pro-rata contribution to the three neighbourhood parks and the community centre site identified in the Albion Development Contribution Plan. This contribution is over and above the provision of public open space within the structure plan area, and although not required in this instance, can be attributed towards the 10% provision.

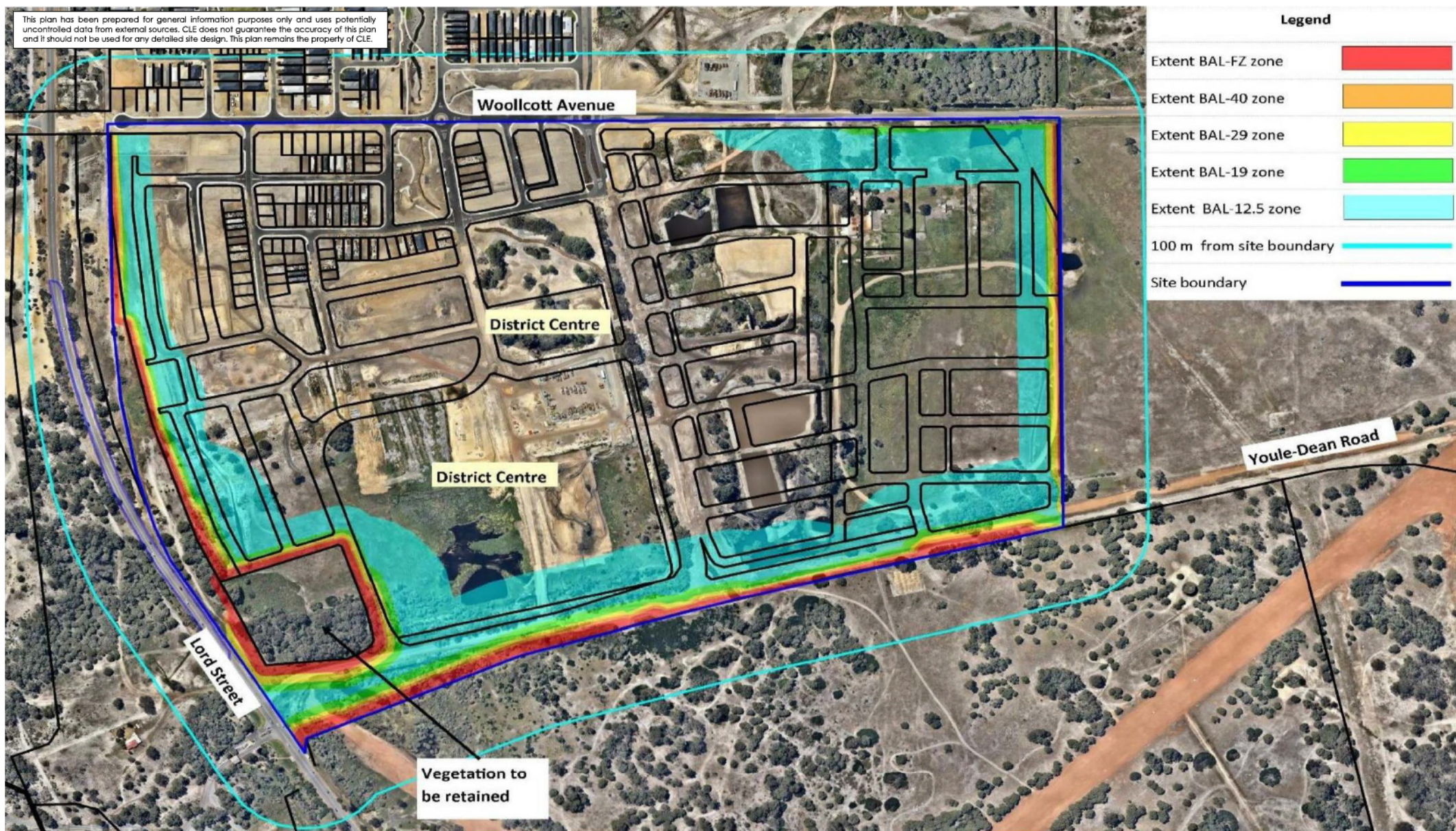
On this basis it is evident that the proposed modifications to LSP1C will not have any adverse impact on the structure plan's ability to achieve a minimum of 10% public open space in accordance with the requirements of Liveable Neighbourhoods.

### 3.3.2 Drainage

The fundamental drainage principles that were established for LSP1C via the Local Water Management Strategy remain current and will not change as a result of this amendment. Some minor changes have occurred to the catchment planning and flow path design as a result of the larger centre, however with the exception of some minor changes to POS credits as detailed above, these changes are of no planning consequence. A plan depicting the revised drainage catchments and strategy is Figure 9.

It has been discussed and agreed with the Department of Water that because of the very minor nature of the changes, there is no need to modify the endorsed Local Water Management Strategy and that the technical changes will be addressed in detail as part of an updated Urban Water Management Plan at subdivision stage.







### 3.4 Bushfire

Since the endorsement of LSP1C in 2015, the WAPC has gazetted State Planning Policy 3.7 *Planning in Bushfire Prone Areas* (SPP 3.7), along with accompanying guidelines and mapping. SPP3.7 and the associated bushfire mapping identifies the southern and western portions of the LSP1C area as 'Bushfire Prone', triggering the requirement for further investigation into the bushfire hazard and appropriate responses. This amendment is supported by an updated Bushfire Management Plan, refer Appendix 2, which includes a Bushfire Hazard Level (BHL) assessment, and an indicative Bushfire Attack Level (BAL) Contour Map. The BHL and BAL contour map demonstrate that bushfire risks are either within appropriate limits for urban development, or can be appropriately managed / mitigated through a combination of subdivision design and increased construction standards at building licence stage. The BAL Contour Map is Figure 10.

In addition to the recommendations of the updated Bushfire Management Plan, it is important to note that:

1. The bushfire hazards located to the south of the LSP1C area are temporary in nature and are likely to be removed within the next 3 -5 years as this land is developed for urban purposes; and

2. The majority of the affected area within the southern part of LSP1C forms part of the future car park area for the planned district centre, and as such, risk to life and property is considerably lower than if it were to be developed for more intense land uses such as residential. Furthermore, the types of commercial buildings and use classes within the district centre area are not subject to Australian Standard AS3959 – 2009. Commercial buildings will be expected to comply with the Building Code of Australia, which sets out very stringent requirements with respect to fire safety and prevention.

On this basis it is apparent that the proposed amendments to LSP1C will not result in any increased bushfire risk for future residents.



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### 3.5 Other Considerations

#### 3.5.1 Housing Density and Dwelling Yield

The increase in designation from a 'Large Neighbourhood Centre' to a 'District Centre' provides greater opportunities to deliver higher residential densities in and around the activity centre. Despite the substantial increase in the size of the activity centre from 3.5ha to 11ha, the structure plan still has the potential to deliver in excess of 1,000 dwellings at a rate of 15-16 dwelling units per gross urban hectare, or 30 dwellings per residential site hectare – well in excess of minimum density requirements for greenfields areas. Further detailed yield analysis, including an assessment against the density requirements of State Planning Policy 4.2 – *Activity Centres for Perth and Peel* is included in the Activity Centre Plan, which is being prepared in parallel with this amendment.

#### 3.5.2 R-Code Variations

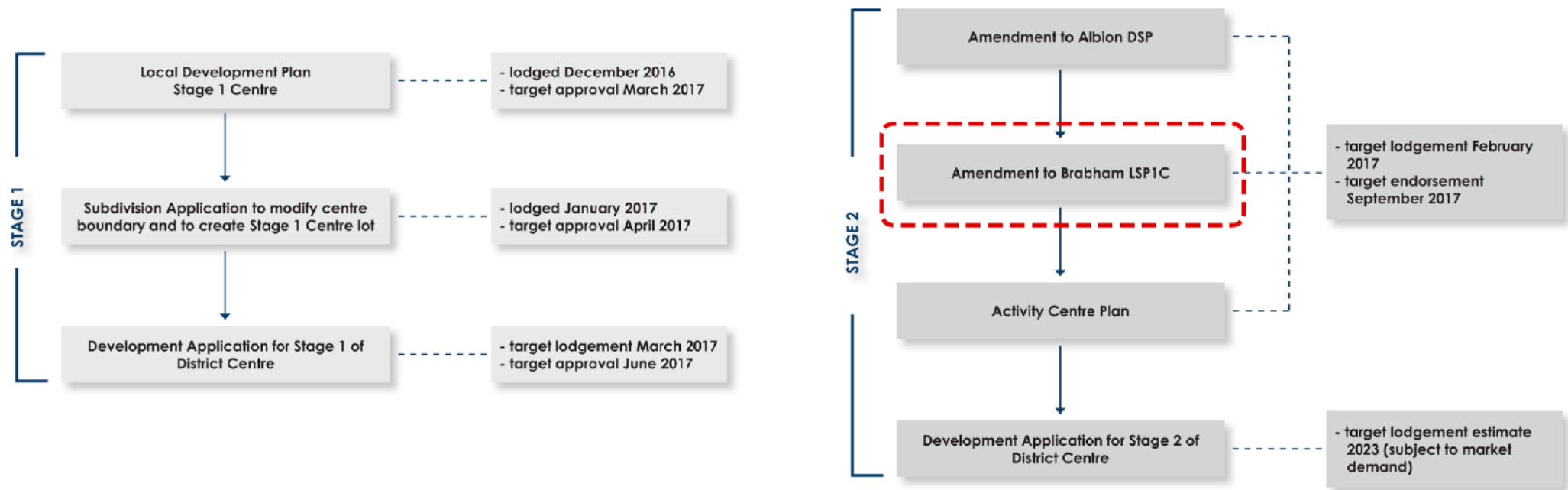
The current LSP1C incorporates a suite of R-Code variations for medium density single housing within the LSP area. Since the endorsement of LSP1C in 2015, the City of Swan has adopted local planning policy POL-LP-11 *Variation to Deemed-to-Comply Requirements of the R-Codes – Medium density single house development standards (R-MD Codes)*. The policy duplicates the variations that were previously incorporated into LSP1C, and as such, these variations are no longer required to be included within the structure plan. The Part 1 – Implementation Report has been modified accordingly to remove these variations.

#### 3.5.3 Servicing

The current LSP1C sets out a detailed servicing strategy which identifies likely timing and method of delivery for key service infrastructure. The principles of this servicing strategy remain current, and no further modifications to the LSP are necessary in this regard.

#### 3.5.4 Traffic Noise

LSP1C abuts Lord Street which is identified as an important regional road, carrying approximately 18,000 vpd at full development. The current LSP1C includes a strategy for mitigating traffic noise, including the construction of a 1.8 metre high noise wall and implementation of Quiet House Design requirements for the first row of houses abutting the noise source. These noise attenuation measures remain current, and no further modifications to the noise management plan are necessary as a result of this amendment.





#### 4.0 NEXT STEPS

This amendment to LSP1C introduces a requirement for an Activity Centre Plan (ACP), to inform key land use aspects of the district centre. It is intended that the ACP will also be lodged and progressed in parallel the DSP and LSP amendments.

A Local Development Plan for the first stage of the centre has been approved by the City of Swan, and a development application for stage one has been approved by the Metro East JDAP. The Local Development Plan was not dependent on amendments to the DSP or LSP1C, as stage one of the centre is a stand-alone centre that is entirely consistent with the current LSP1C.

It is intended that a further development application will be submitted for the second stage of the centre in due course.

A diagram depicting the various planning processes and their intended timing is shown at Figure 11.

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## 5.0 CONCLUSION

This amendment to LSP1C, along with the DSP Amendment which has been prepared in parallel, is a critical step in delivering the district centre to the Brabham area. As noted in the DSP amendment, the district centre has strong support from a range of studies, policies, and high level planning strategies such as SPP4.2 and the City's draft Local Commercial Activity Centres Strategy that was published in December 2016. This LSP amendment goes one step further and demonstrates that the district centre can be easily accommodated within the planned land use context - including the local road, public open space, and drainage networks - without substantial modification or adverse impact. This amendment also addresses other key land use considerations including the need to achieve appropriate housing densities outside of the centre, and the mitigation of bushfire risk.

This LSP Amendment is an essential step towards delivering a high quality district centre to the Brabham community. Stockland is a highly regarded developer of commercial activity centres across Australia, and intends to bring all of the experience and knowledge from previous projects into the delivery of the district centre at Whiteman Edge. The end result will be an integrated, diverse, and vibrant activity centre that will be a tremendous asset for Whiteman Edge and the Brabham community.