Doley Road Precinct

LOCAL STRUCTURE PLAN

CLE Town Planning + Design

AEN GROUP

PART ONE | IMPLEMENTATION SECTION

February 2025



CLE Town Planning + Design

Title:	Doley Road Precinct Local Structure Plan Part One - Implementation Section
Prepared for:	Delfina Properties Pty Ltd
CLE Reference:	3410Rep28C
Cover Image:	Parcel Property
Date:	20 February 2025
Status:	Final
Prepared by:	Developer - Parcel Property Town Planning - CLE Town Planning + Design Environmental - Essential Environmental Hydrology - Essential Environmental Civil Engineering - Pritchard Francis Landscape Design - LD Total Bushfire - Essential Environmental Traffic & Transport - KCTT Retail - RPS

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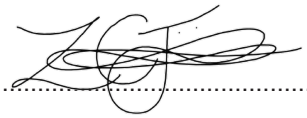
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IT IS CERTIFIED THAT AMENDMENT NO. 2 TO THE DOLEY ROAD PRECINCT LOCAL STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

21 AUGUST 2025

Signed for and on behalf of the Western Australian Planning Commission



.....

an officer of the Commission duly authorised by the Commission pursuant to section 24 of the *Planning and Development Act 2005* for that purpose.

TABLE OF AMENDMENTS

Amendment No.	Summary of the Amendment	Amendment type	Date approved by WAPC
1	Minor changes to Local Structure Plan in area bound by Lawrence Way, Warrington Road, Allanson Drive, and Orton Road.	Minor	14 March 2022
2	Minor amendment to the Structure Plan Map for Public Open Space within Lot 32 Doley Road. Update text to reflect gazettal of Shire of Serpentine - Jarrahdale Local Planning Scheme No. 3. Minor changes to Part 1 in accordance with the Planning and Development (Local Planning Schemes) Regulations 2015 and WAPC WA Planning Manual Guidance for Structure Plans (2023).	Minor	21 August 2025

TABLE OF DENSITY PLANS

Density Plan No.	Area of Density Plan Application	Date approved by WAPC
3410-51F-01	Area between Doley Road, Lawrence Way and Orton Road	30 September 2021
3410-97D-01	Parent Lot 131 Doley Road	20 October 2021
3410-111C-01	Area west of Warrington Road	11 May 2023
3410-123A-01	Parent Lot 33 Doley Road	20 December 2023

EXECUTIVE SUMMARY

The Doley Road Precinct Local Structure Plan (the Structure Plan) allows for the creation of a residential neighbourhood that integrates with its surrounding environment, whilst accommodating a range of residential dwelling opportunities consistent with State government density targets.

The Structure Plan area covers a total area of approximately 120.5 hectares, comprising 47 freehold lots which are generally located along and to the north of Orton Road, Byford, within the Shire of Serpentine-Jarrahdale.

The site has been set aside for urban development, zoned 'Urban' and 'Urban Development' under the Metropolitan Region Scheme (MRS) and the Shire of Serpentine-Jarrahdale Local Planning Scheme No.3 (LPS 3) respectively. The Structure Plan is lodged in accordance with the LPS 3 and Part 4 of Schedule 2 (Deemed Provisions) in the P*lanning and Development (Local Planning Schemes) Regulations 2015* (`the Regulations').

The Structure Plan draws on the key elements of the Byford Structure Plan which provides a high level framework for future land use and development in the area. The Structure Plan fulfils strategic planning for the area with *Perth and Peel @3.5 Million* and the South Metropolitan Peel Sub-regional Planning Framework recognising the Structure Plan area for urban development.

With densities allocated ranging from R25 to R60, the Structure Plan can deliver a residential target of around 28.2 dwellings per site hectare, achieving Stage government density targets. Medium density housing will be located around key areas of public open space, retail centres, the primary school site and key transport routes. The primary school and a neighbourhood centre are provided in accordance with the Byford Structure Plan.

A number of public open space areas will provide residents with a combination of passive and active spaces, including a multiple use corridor that will be delivered as a rehabilitated living stream. This multiple use corridor serves a local and district drainage function, consistent with the 'Byford Townsite Drainage and Water Management Plan'. An area of active open space collocated with the primary school is also provided, as encouraged by *Liveable Neighbourhoods*.

The site can be readily serviced, with essential infrastructure located within proximity and easily extended to the Structure Plan area. In preparation of the Structure Plan the following reports have been prepared, and are summarised in Part 2 of the Structure Plan report, with complete copies included as technical appendices:

- Environmental Report.
- Fire Management Plan.
- Local Water Management Strategy.
- Transport Impact Assessment.
- Servicing and Infrastructure Strategy.
- Landscape Master Plan and Descriptions.

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

Item	Data	Section number referenced within the Structure Plan Report
Total area covered by the structure plan	120.5 hectares	1.2.2
Area of each land use proposed Zones (as per the Scheme) - Residential - Commercial Reserves (as per the Scheme and MRS) - Road Reserves - Parks and Recreation - Public Purpose	 70.4 hectares 1.0 hectares 34.3 hectares 10.8 hectares 4.0 hectares	3.1
Total estimated lots yield	1850 - 1950 lots	3.3.1
Estimated number of dwellings	1875 - 1975 dwellings	
- Dwellings per gross urban zoned hectare (as per Perth & Peel@3.5 million) - Dwellings pre site hectare (as per *Liveable Neighbourhoods*)	16.4 dwellings per gross hectare 28.2 dwellings per site hectare	
Estimated Population	5250-5530 people @ 2.8 people/ household	
Number of Primary Schools	1 (4.0 hectares)	3.8
Number of High Schools	0	
Estimated commercial floorspace	1,500m^2	3.7
Amount of Public Open Space	10.65 hectares (total creditable POS) - 9.3% 10.41 hectares (unrestricted POS) 0.23 hectares (restricted POS)	

Table 1: Land Use Summary

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1. STRUCTURE PLAN AREA

The Doley Road Precinct Structure Plan Area is shown on Plan A: Local Structure Plan.

2. STRUCTURE PLAN CONTENT

This Local Structure Plan comprises:

- Part One – Implementation Section
- Part Two – Explanatory Report
- Appendices – Technical Reports

Part One of the Local Structure Plan comprises the structure plan map and planning provisions. Part Two of the Local Structure Plan is the Planning Report component which can be used to interpret and implement the requirements of Part One.

3. OPERATION

This Local Structure Plan comes into effect on the date that it is endorsed by the Western Australian Planning Commission.

4. INTERPRETATION AND RELATIONSHIP WITH STATUTORY PLANNING FRAMEWORK

This Local Structure Plan constitutes a Local Structure Plan in the Shire of Serpentine - Jarrahdale Local Planning Scheme No. 3 and has been prepared in accordance with Part 4 of Schedule 2 (Deemed Provisions) in the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations).

The Structure Plan Map (Plan A) outlines future land use, zones and reserves applicable within the structure plan area.

Pursuant to the *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 2 - Deemed provisions for local planning schemes, 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, including the Structure Plan Map, Implementation Report, Explanatory Report and Technical Appendices.

5. STAGING

Development staging will follow an orderly sequence and shall not exceed the extension of essential service infrastructure or constructed road access.

6. LAND USE AND SUBDIVISION

6.1 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.

6.2 Residential

6.2.1 Dwelling Target

In accordance with the requirements of Liveable Neighbourhoods, subdivisions are to achieve an average residential density of 22 dwellings per site hectare across the Structure Plan area.

6.2.2 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 6.2.3.

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 6.2.3.

f. A revised Residential Code Plan, consistent with Clause 6.2.2 (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 6.2.2 (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.

6.2.3 Locational Criteria

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

a. The R25 density code shall apply as the base code to all 'Residential' zoned lots, with the exception of those lots coded R40 or R60 as set out in (2) below.

b. The R40 density code may apply to all 'Residential' zoned lots where one or more of the following applies:

   i. The lot is located on a street corner or at the end of a street block; or

   ii. Considered to be in an area of high amenity including within 400m of a commercial centre / neighbourhoood node, around public open space, primary school and adjacent to major public transport routes.

c. The R60 density code may apply to 'Residential' zoned lots that meet one or more of the criteria set out in (b) above or where the lot measures 900m² or greater.

6.3 Public Open Space

a. The provision of a minimum 10% public open space is to be provided in accordance with *Liveable Neighbourhoods*. Public open space is to be provided generally in accordance with the structure plan map (Plan A) and the Public Open Space Schedule (refer Table 2).

b. As a condition of subdivision approval for Lot 61 Lawrence Way, Byford, the subdivider will be required to make payment to the Shire of Serpentine-Jarrahdale for the sum equivalent to 700sqm, being that portion of the land that would otherwise be provided as open space prior to Amendment 1 of the structure plan.

c. The landscape design of the Public Open Space within Lot 32 Doley Road, Byford is to include active recreational facilities in the form of 250m² of a parkour facility and 250m² of an exercise obstacle course.

Public Open Space Schedule (all areas in hectares)		
Site Area		**120.50**
Deductions		
Primary School	4.00	
Commercial Centre	1.04	
Orton Road widening land	0.43	
1:1 Drainage within POS	0.24	
Total Structure Plan Deductions		5.17
Gross Subdivisible Area		**114.79**
POS @ 10%		11.48
Public Open Space Requirement		
May Comprise:		
Min 8% unrestricted POS	9.18	
Max 2% restricted POS	2.30	
TOTAL POS REQUIRED		**11.48**
Public Open Space Provided	Unrestricted POS Area	Restricted POS Area
POS 1 (MUC West of Doley; Amd 2)	0.93	0.03
POS 2 (MUC East of Doley)	2.21	0.08
POS 3 (Beenyup Park)	1.23	0.00
POS 4 (Northern Local Park)	0.36	0.00
POS 5 (MUC West of Warrington; Amd 1)	2.25	0.09
POS 6 (North-Eastern Neighbourhood Park)	1.29	0.00
POS 7 (MUC East of Warrinton)	1.14	0.03
POS 8 (Turner Road Local Park)	0.54	0.00
POS 9 (South-Eastern Local Park)	0.46	0.00
TOTAL (ha)	**10.41**	**0.23**
Additional Deductions		
Restricted Open Space Surplus		0.00
Revised Public Open Space Contribution		
Mix 8% Unrestricted POS Provided	10.41	9.1%
Max 2% Restricted POS Provided	0.23	0.2%
Total Creditable POS Provided	**10.64**	**9.3%**

Notes

1. *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).*
2. *This Schedule is for plan CLE Ref. 3410-22B-01, with Amendments 1 and 2 incorporated.*

Table 2: POS Schedule

6.4 Roads

The road reserves should include the installation of street trees and landscaping, parallel street parking bays, shared-paths, stormwater retention and infiltration systems, and street lighting to the satisfaction of the Shire and their adopted policies and planning framework. The width of and number of crossovers shall be kept to a functional minimum in accordance with the R-Codes and the Shire's adopted Local Planning Policies, to minimise the extent of hard surface, and reduce vehicle conflict.

a. Orton Road, a future Other Regional Road, is to be widened from 20 metres to 32 metres (6 metres to be ceded by landholdings north and south of the road).

b. Soldiers Road, a future Other Regional Road, is to be widened from 20 metres to 30 metres (10 metres to be ceded by landholdings abutting Soldiers Road).

c. Land is required to accommodate a roundabout at the intersection of Orton and Soldiers Road. The land to be ceded and the design of the roundabout is to be to the satisfaction of the Shire on advice from the Department of Planning.

d. Direct access to Soldiers Road is not permitted and an internal road will be required between residential lots and Soldiers Road to provide appropriate access and frontage. Double storey, rear-loaded and dual frontage lots are not permitted in this location due to interface and noise attenuation objectives.

e. Notwithstanding the Shire's endorsed the Structure Plan Map, intersections to Orton Road shall be:

    i. restricted and rationalised where possible in accordance Development Control Policy 1.4 and Liveable Neighbourhoods,

    ii. reduced from six to three intersections between Warrington and Soldiers Roads, and

    iii. left-in-left-out only at the intersection with Road 82 unless a roundabout is coordinated with the Structure Plan area south of Orton Road (whichever is preferred by the Shire).

f. Direct lot access is not permitted to lots abutting Orton Road and Doley Road and rear laneway arrangements shall be provided.

g. The construction of Recreation Road is not supported due to BF 321 and TECs. Closure of Recreation Road is recommended and its management and restoration is expected to be outlined and ensured within the Draft Brickwood Reserve Management Plan (authored by the Shire of Serpentine-Jarrahdale) currently being assessed by the Department of Planning.

h. Road paving is not permitted to straddle lot boundaries unless a subdivision application is received that is signed by all landowners.

i. The lots fronting the proposed road which straddles Lot 50 (No. 124) Warrington Road and Lot 20 (No. 142 Warrington Rodd) will not be supported for creation (via subdivision) until such time as the entire road is created/constructed".

j. The land subject of the 'Mixed Use' classification shall not be created or developed until such time as the Orton Road realignment is finalised.

k. Doley Road is to be sufficiently widened to be designed as a boulevard, with a split carriageway and central median, which allows for the retention of trees.

6.5 Noise Attenuation

Noise attenuation treatments as per the recommendations outlined in the Lloyd George Acoustics Storer Acoustic Assessment dated 17 June 2016 including notifications on title, and quiet house design within Local Development Plans, but excluding the construction of a noise wall, shall be implemented as conditions of subdivision approval for any lots adjacent to Soldiers Road unless an updated and more accurate Acoustic Assessment is provided with, and approved for, any future subdivision application for the lots in closest proximity of the railway.

7. LOCAL DEVELOPMENT PLANS

The preparation of a Local Development Plan (LDP) may be required by the Western Australian Planning Commission (WAPC), on the advice of the Shire of Serpentine-Jarrahdale, as a condition of subdivision approval where deemed necessary for land comprising, but not limited to:

a. Lots abutting areas of Public Open Space.

Notwithstanding, the WAPC or Local Government may require the preparation of an LDP in accordance with Part 6, Schedule 2 (Regulation 47) of the P*lanning and Development (Local Planning Schemes) Regulations 2015*.

8. OTHER REQUIREMENTS

8.1 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

8.2 Bushfire Risk Management

The landowner / developer is to ensure compliance with State Planning Policy 3.7: Planning in Bushfire-Prone Areas and the related Guidelines, for each stage of subdivision and development.

This Local Structure Plan is supported by a Bushfire Management Plan (Essential Environmental, June 2016 and Linfire 2021), and a Bushfire Attack Level Assessment Report (Eco Logical 2023).

Applications for subdivision approval and development approval will be required to be accompanied by stage specific Bushfire Management Plans in accordance with the provisions of SPP 3.7.

8.3 Development Contributions

The Local Structure Plan is subject to the Byford Development Contribution Scheme pursuant to the Shire of Serpentine Jarrahdale *Local Planning Scheme No. 3*.

LEGEND

ZONES

- Residential R25-R40
- Residential R40-R60
- Residential R60
- Mixed Use R80

LOCAL RESERVES

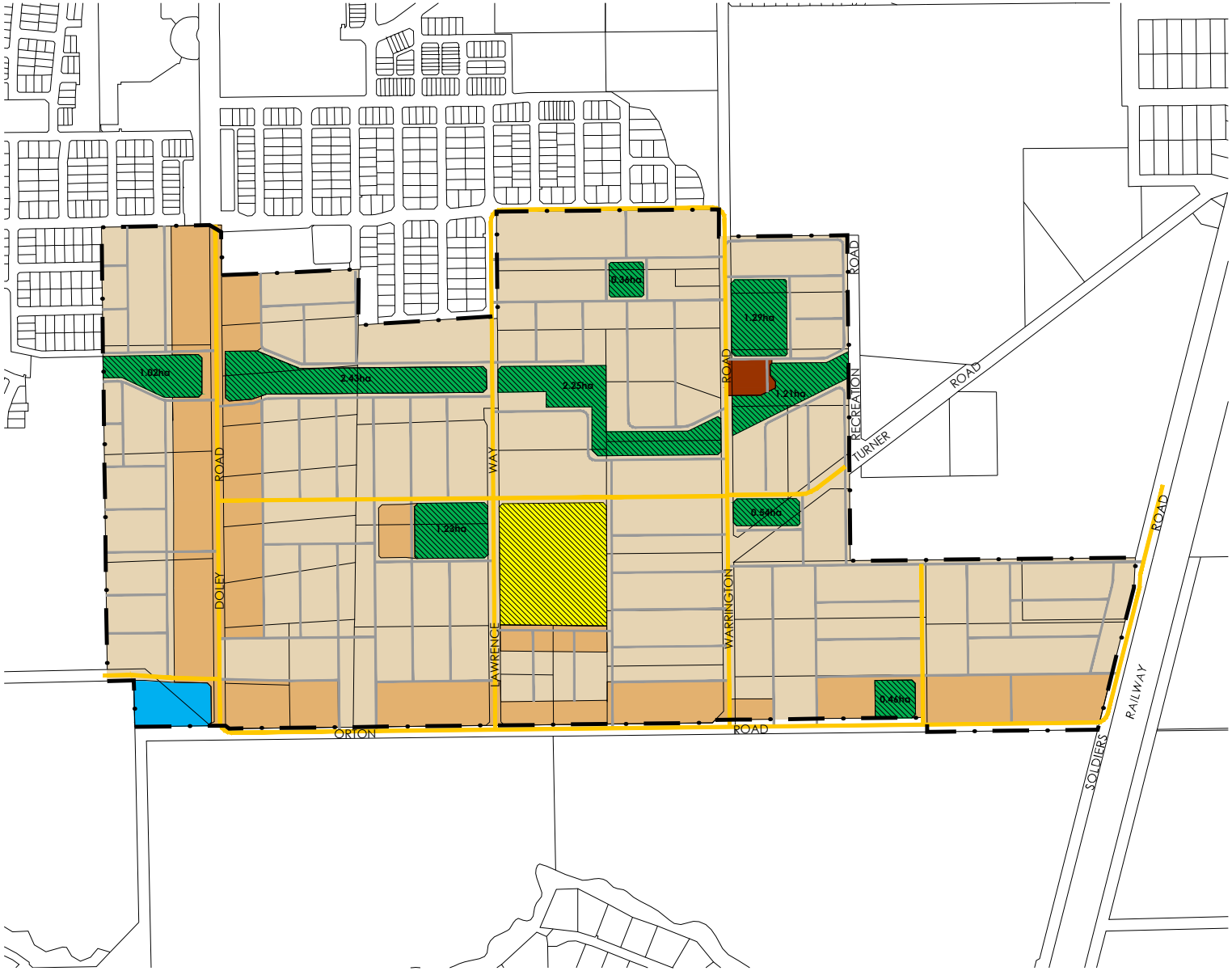
- Public Open Space
- Public and Community Purposes

OTHER

- Structure Plan Boundary
- Neighbourhood Connector
- Access Street

NOTES

1. Public Open Space areas are indicative only and subject to further detail design and drainage considerations.
2. All access streets are indicative only and are subject to refinement as part of the detailed subdivision process.
3. Orton Road, a future Other Regional Road, is to be widened from 20 metres to 32 metres (6 metres to be ceded by landholdings north and south of the road).
4. Soldiers Road, a future Other Regional Road, is to be widened from 20 metres to 30 metres (10 metres to be ceded by landholdings abutting Soldiers Road).
5. Land is required to accommodate a roundabout at the intersection of Orton and Soldiers Road. The land to be ceded and the design of the roundabout is to be to the satisfaction of the Shire on advice from the Department of Planning.
6. Direct access to Soldiers Road is not permitted and an internal road will be required between residential lots and Soldiers Road to provide appropriate access and frontage. Double storey, rear-loaded and dual frontage lots are not permitted in this location due to interface and noise attenuation objectives.



Source: Urbanista - Amendment 1 - Doley Road Precinct ALSP (15.02.2022)

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PLAN A: LOCAL STRUCTURE PLAN

Orton Road, Byford

Doley Road Precinct

LOCAL STRUCTURE PLAN

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PART TWO | EXPLANATORY REPORT

February 2025



CLE Town Planning + Design

Title:	Doley Road Precinct Local Structure Plan Part Two - Explanatory Report
Prepared for:	Delfina Properties Pty Ltd
CLE Reference:	3410Rep34D
Cover Image:	Parcel Property
Date:	20 February 2025
Status:	Final
Prepared by:	Developer - Parcel Property Town Planning - CLE Town Planning + Design Environmental - Essential Environmental Hydrology - Essential Environmental Civil Engineering - Pritchard Francis Landscape Design - LD Total Bushfire - Essential Environmental Traffic & Transport - KCTT Retail - RPS

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Aerial image of Doley Road Precinct Open Space (Source: Parcel Property)

1. PLANNING BACKGROUND

1.1. Introduction and Purpose

The Doley Road Precinct Local Structure Plan (the Structure Plan) has been prepared on behalf of Delfina Properties Pty Ltd (a subsidiary company of the ABN Group) over what is commonly referred to as the Doley Road Precinct, Byford. The Structure Plan constitutes a Local Structure Plan in the Shire of Serpentine - Jarrahdale *Local Planning Scheme No. 3* and has been prepared in accordance with Part 4 of Schedule 2 (Deemed Provisions) in the *Planning and Development (Local Planning Schemes) Regulations 2015* (`the Regulations').

The purpose of the Structure Plan is to provide a planning framework to guide future subdivision and development across the site. It draws on key land use elements of the Byford Structure Plan and reflects *Perth and Peel @ 3.5 million* and the South Metropolitan Peel Sub-regional Planning Framework.

The format of the Structure Plan follows that set out in the Western Australian Planning Commission's (WAPC) WA Planning Manual Guidance for Structure Plans (2023), consisting of three parts:

Part 1: Implementation Section: Contains the Structure Plan Map and outlines the requirements that will be applied when assessing subdivision and development applications.

Part 2: Explanatory Section: Discusses the key outcomes and planning implications of the background and technical reports and describes the broad vision and more detailed planning framework being proposed.

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

- Environmental Report (Essential Environmental);
- Fire Management Plan (Essential Environmental);
- Local Water Management Strategy (Essential Environmental);
- Transport Impact Assessment (KCTT);
- Retail Needs Assessment (RPS);
- Servicing and Infrastructure Strategy (Pritchard Francis Engineers); and
- Landscape Master Plan and Descriptions (LD Total).

Part 3: Technical Appendices: Includes the technical reports and supporting plans and maps as prepared by the project team.

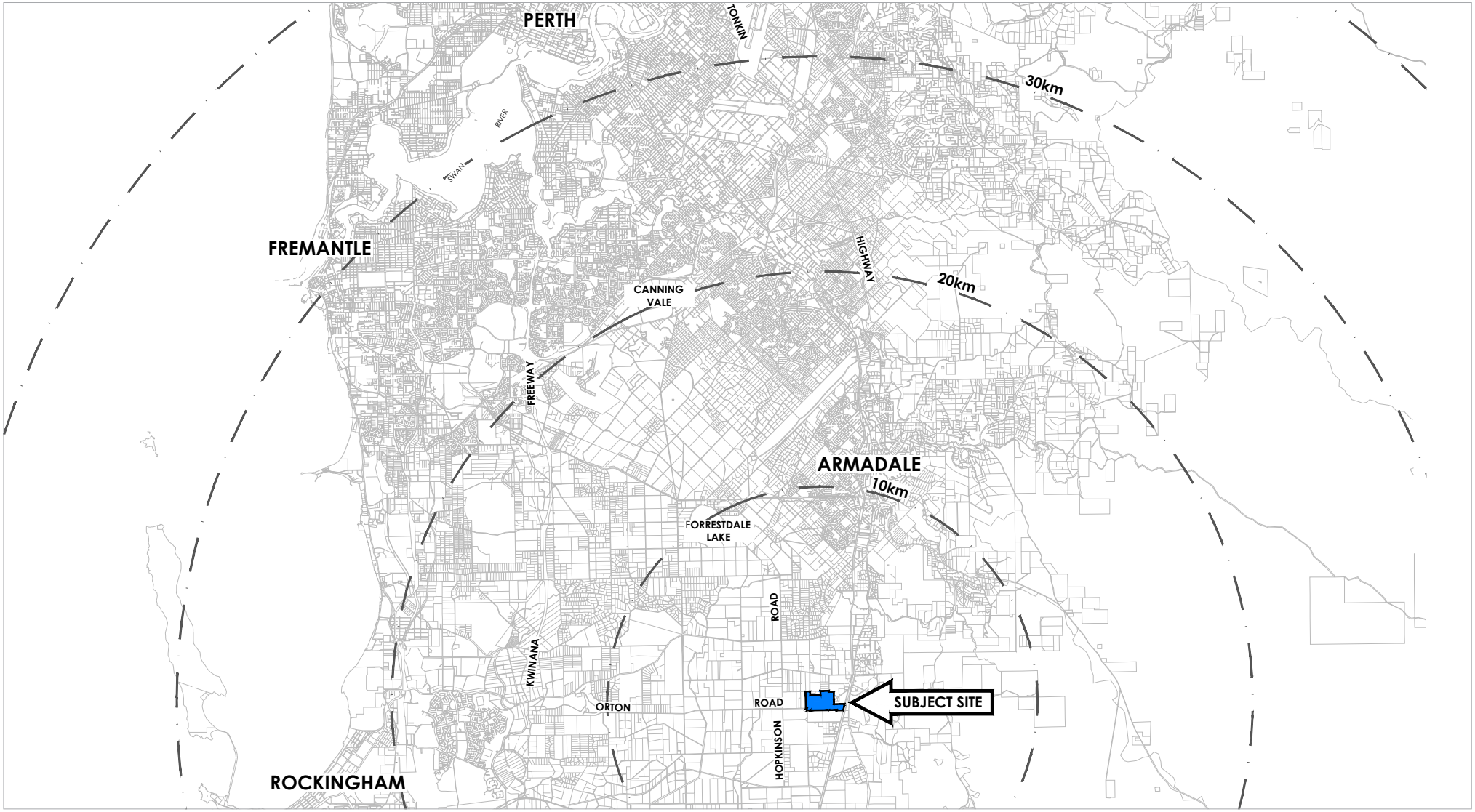


Figure 1: Location Plan

1.2. Land Description

The following section provides a brief summary of the location, land use and ownership within the Structure Plan area.

1.2.1. Location

The Structure Plan area is in the Shire of Serpentine-Jarrahdale, approximately 30km south-east of the Perth CBD, 9km south-west of the Armadale Town Centre and 2km south-west of the Byford Town Centre along Orton Road, Byford (Figure 1: Location Plan).

The Structure Plan area is generally bound by:

- Orton Road to the south;
- Brickwood Reserve (Bush Forever Site No. 351) and Soldiers Road to the east; and
- 'The Glades' residential estate to the north, south and west.

1.2.2. Area and Land Use

The Structure Plan comprises a total land area of 120.5ha. The lots have generally been cleared over the years for agricultural use with only small pockets of vegetation remaining.

In recent years many of the original holdings have been subdivided into single, albeit large rural-lifestyle lots with a number of dwellings constructed on these lots during the 1970's. These lots are still used for peri-agricultural activities (Figure 2: Site Plan).

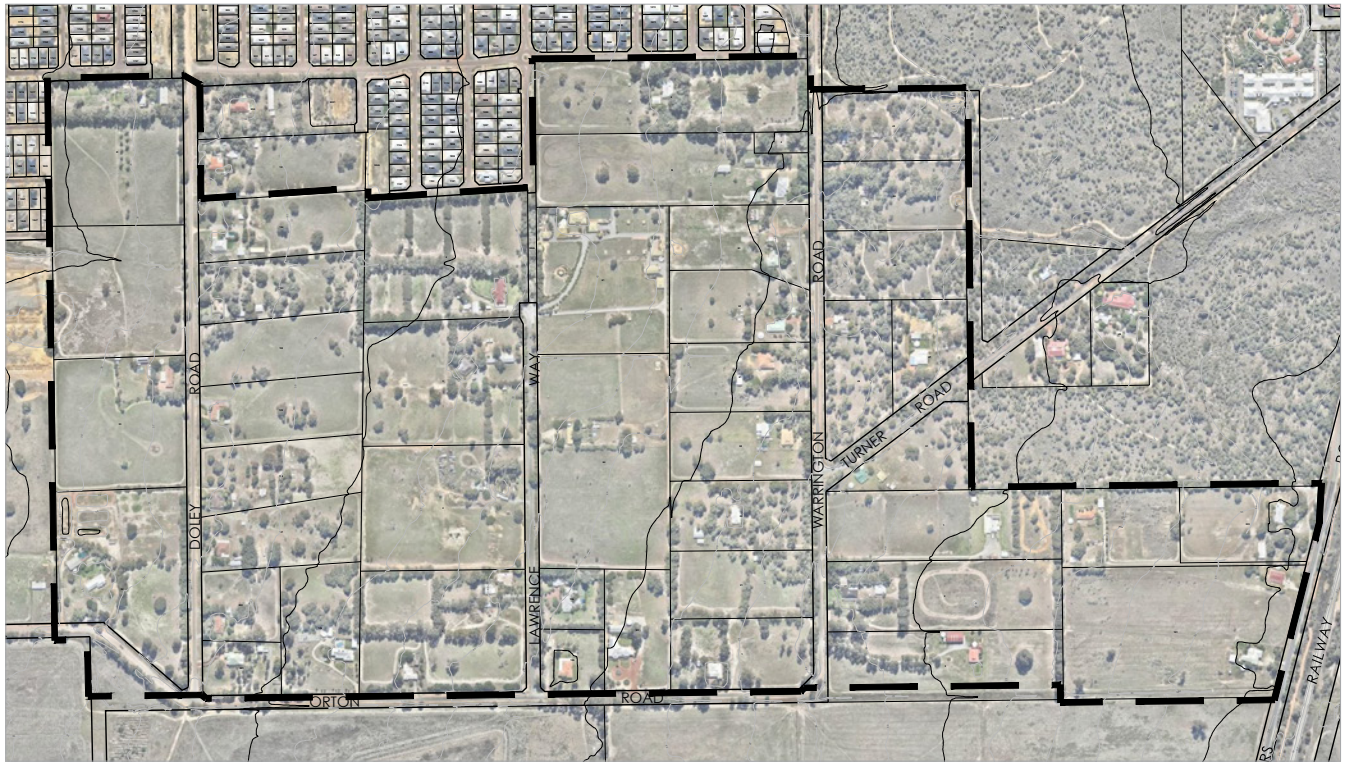


Figure 2: Site Plan (Source: Nearmap)

1.2.3. Ownership and Title Details

The Structure Plan area is comprised of 47 freehold lots.

This land is legally described as set out in Table 1.

Delfina Properties Pty Ltd has a controlling interest over lots 2 and 3 Lawrence Way, lots 1 and 126 Orton Road and lots 127-130 and 202 Doley Road, Byford making it a majority landowner. The Structure Plan has been prepared over all of the aforementioned properties at the request of the Shire of Serpentine-Jarrahdale, to ensure integrated planning over the entire site.

1.2.4. Surrounding Land Use and Context

The Structure Plan is located within the Byford Urban Growth Cell which is the rapidly developing residential front that surrounds the Byford town centre. The Structure Plan will bring this significant growth cell to a logical conclusion.

The following is a summary of the local context:

- Brickwood Reserve abuts the site to the east.
- 'The Glades' residential estate adjoins the Structure Plan area along the northern and western boundaries.
- Land on the southern side of Orton Road consists of cleared rural land. This land is approved for residential development as part of 'The Glades' estate.
- The Byford town centre is located 2km north-east of the Structure Plan, on the South Western Highway.
- The Metropolitan Redevelopment Authority's Forrestdale West Business Park Estate is located 10km to the north. It is a significant 190ha business and service commercial estate, which will support future population growth in the corridor.

Lot No.	Diagram/ Plan	Volume	Folio	Owner	Area
1	D049478	1425	578	Goff, Gay / Goff, Terence John	3.3662
1	D070480	1737	366	Goldcat Nominees Pty Ltd	2.0636
1	D053167	1484	726	Holder, Kylie Marie / Angelini, Ricardo Carlo	4.1715
2	D070480	1737	367	Alljoy Holdings Pty Ltd	1.9788
2	D053167	1484	727	Hahn, Anne Joyce / Hahn, Barry James	1.6303
2	S008478	S008478	S008478	N/A	2.0449
3	D070480	1737	368	Full Quiver Pty Ltd	2.0445
3	D053167	1484	728	Riseborough, Kerri Louise / Tiemann, Susan Ann / Tiemann, Elainea Joyce	2.0631
4	D053167	1484	729	Robinson, Angela Doreen / Robinson, Warren John	6.0865
8	D049045	1416	21	Planmar Pty Ltd / Gleneagle Securities Pty Ltd / 8 Warrington Road Pty Ltd	3.9780
9	D049045	SP8478	SP8478	N/A	5.7686
9	S008478	S008478	S008478	N/A	3.3662
20	D090157	2526	801	Ward, Margaret Elizabeth	2.0410
21	D090157	2526	802	Ward, Sean Reginald / Ward, William James	3.3659
31	P014324	1652	227	Mann, Graham Keith / Mann, Clara Anna / Mann, Nicola	2.0238
32	P014324	1652	228	Knapman, Kirk Randal / Knapman, Eliza Clara / Mann, Clara Anna	4.1543
34	P014324	1652	230	Bailey, Dorothy Mary / Bailey, Philip Patrick	1.9178
43	P206144	1229	807	Hadian, Payum	4.1410
44	P206144	1229	770	Marwick, Christopher Bevan / Marwick, Anthony Stanley	2.0934
45	P206144	1229	812	Vlasich, Vincent Richard Sunday / Vlasich, Katie Matilda	1.9883
46	P206144	1723	769	Harry, Douglas Albert	3.5369
47	P206144	1635	297	Prammowski, Carlos Alberto	3.5430
50	D055158	1521	356	Rensen, Jacobus / Rensen, Betty Suzanne	1.2970
51	D055158	1521	357	Bateman, Cameron James Philip / Bateman, Daniel John Neil	1.1512
51	P206144	2099	859	Moore, Julie-Anne	3.9404
52	D085692	1985	77	Mellor, Robert Philip / Mellor, Sandra Gail	2.0237
53	D085692	1985	78	Skycard Pty Ltd	1.9658
61	D061334	2204	394	Fitzpatrick, Greta / Fitzpatrick, Kevin Thomas	1.5010
63	D074223	1812	64	Benvenuti, Marino James / Benvenuti, Carolyn May	0.8626
64	D098206	2204	393	Fitzpatrick, Greta / Fitzpatrick, Kevin Thomas	0.8107
101	D054270	1528	248	Fanshaw Nominees Pty Ltd	4.0496
126	D074219	1826	802	Hutcheson, Eleanor Desley / Hutcheson, David Graeme	3.8185
127	D074220	1810	62	Ng, Jonathan Qiang Wei	0.2319
128	D074220	1810	63	Ng, Christopher Qiang Long	2.0850
129	D074221	1873	995	Coughlin, Pamela Betty / Coughlin, Dennis Wayne	2.0228
130	D074221	1873	996	Coughlin, Pamela Betty / Coughlin, Dennis Wayne	4.0494
131	D074222	1812	65	Bui, Le Thi Thu / Bui Nguyen & Sons Nominees Pty Ltd / Nguyen, Toi Van	1.3247
133	D086350	2013	683	Vo, Duong Anh Hoa / Vo, Tung Thoi	1.9806
134	D086350	2013	684	Zvi Raphael Pty Ltd / Lishane Pty Ltd / Lauzion Pty Ltd	4.1038
135	D091266	2076	997	Mottahedian, Mitra	4.1071
136	D091266	2076	998	Sperandio, Chris James / Sperandio, Carmen	1.9691
201	D094930	2532	605	Morley, Sharon / Morley, Craig Steven / Kelly, James Anthony / Kelly, Madeleine Ann	0.8004
202	P027354	2515	864	Jadeland Holdings Pty Ltd	2.0236
202	P014324	1652	229	Kc Nominees Pty Ltd / Mann, Clara Anna	2.0447
202	D094930	2532	606	Lyon, Margaret Ann / Lyon, Edward Donald Clarence	2.0240
203	P027354	2515	865	Ashley Brooke Pty Ltd	1.9615
9063	P404513	2879	591	Lwp Byford Syndicate Pty Ltd	2.0618

Table 1: Land Ownership

1.3. Planning Framework

1.3.1. Metropolitan Region Scheme Zoning

The Structure Plan area is zoned 'Urban' under the Metropolitan Region Scheme (Figure 3: Metropolitan Region Scheme Zoning).

The Blackwood Reserve abuts the Structure Plan area to the east. It reserved 'Parks and Recreation' (Bush Forever No. 352).

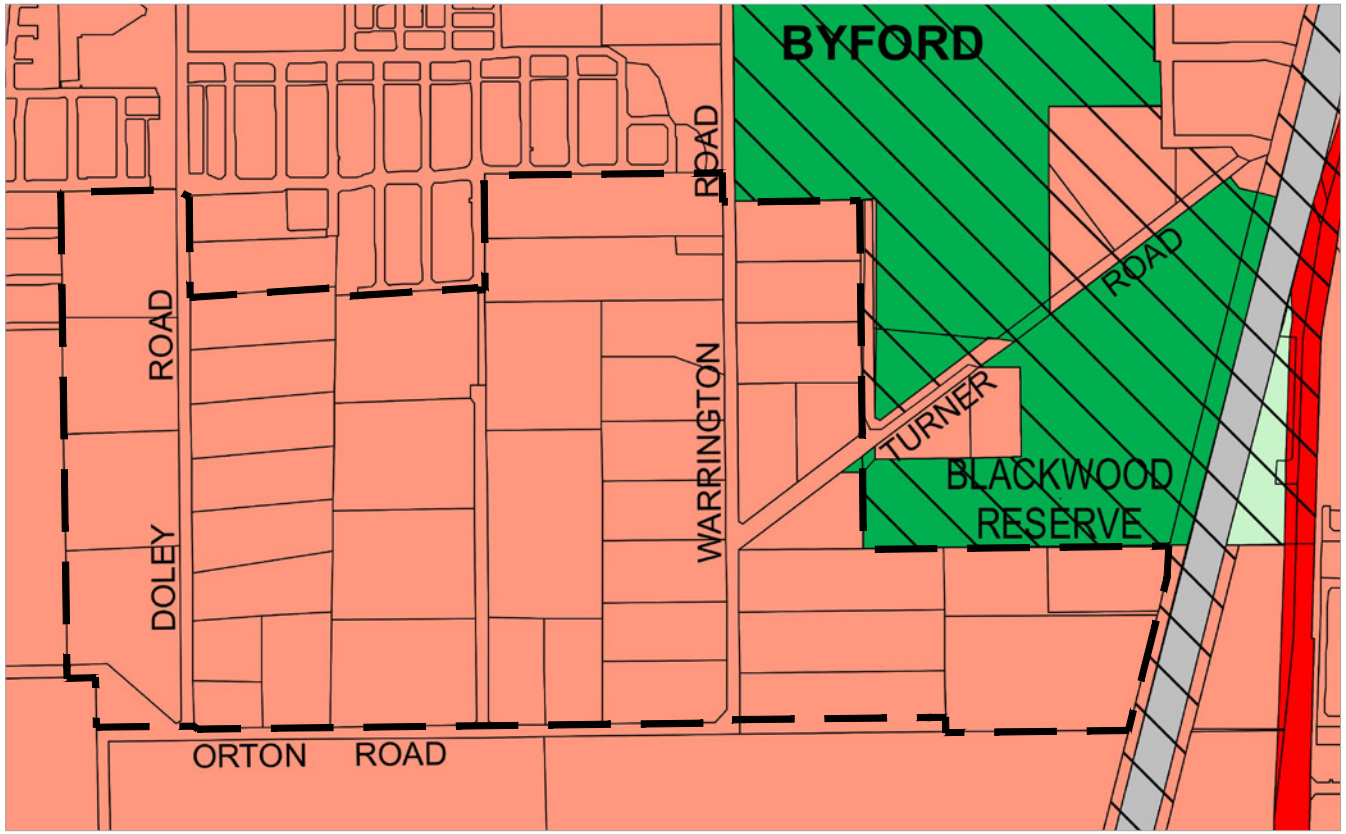


Figure 3: Metropolitan Region Scheme Zoning (Source: WAPC)

1.3.2. Shire of Serpentine-Jarrahdale Local Planning Scheme No. 3 (LPS 3)

The Structure Plan area is zoned 'Urban Development' (Development Area 3) under the Shire of Serpentine-Jarrahdale Local Planning Scheme No. 3 (LPS 3) (Figure 4: Local Structure Plan No. 3 Zoning). Pursuant to Clause 16 (2) of LPS 3, the 'Urban Development' zone is to provide for the 'intention of future land use and as a basis for more detailed structure planning in accordance with the provisions of this Scheme'.

The Structure Plan area is zoned 'Urban Development' in the Shire of Serpentine - Jarrahdale Local Planning Scheme No. 3 (LPS 3). Pursuant to Clause 16 (2) of the LPS 3, a primary objective of the 'Urban Development' zone is to provide for the 'intention of future land use and as a basis for more detailed structure planning in accordance with the provisions of this Scheme'.

The Structure Plan has been prepared in accordance with this LPS 3 objective and Part 4 of Schedule 2 (Deemed Provisions) in the *Planning and Development (Local Planning Schemes) Regulations 2015* (`the Regulations').

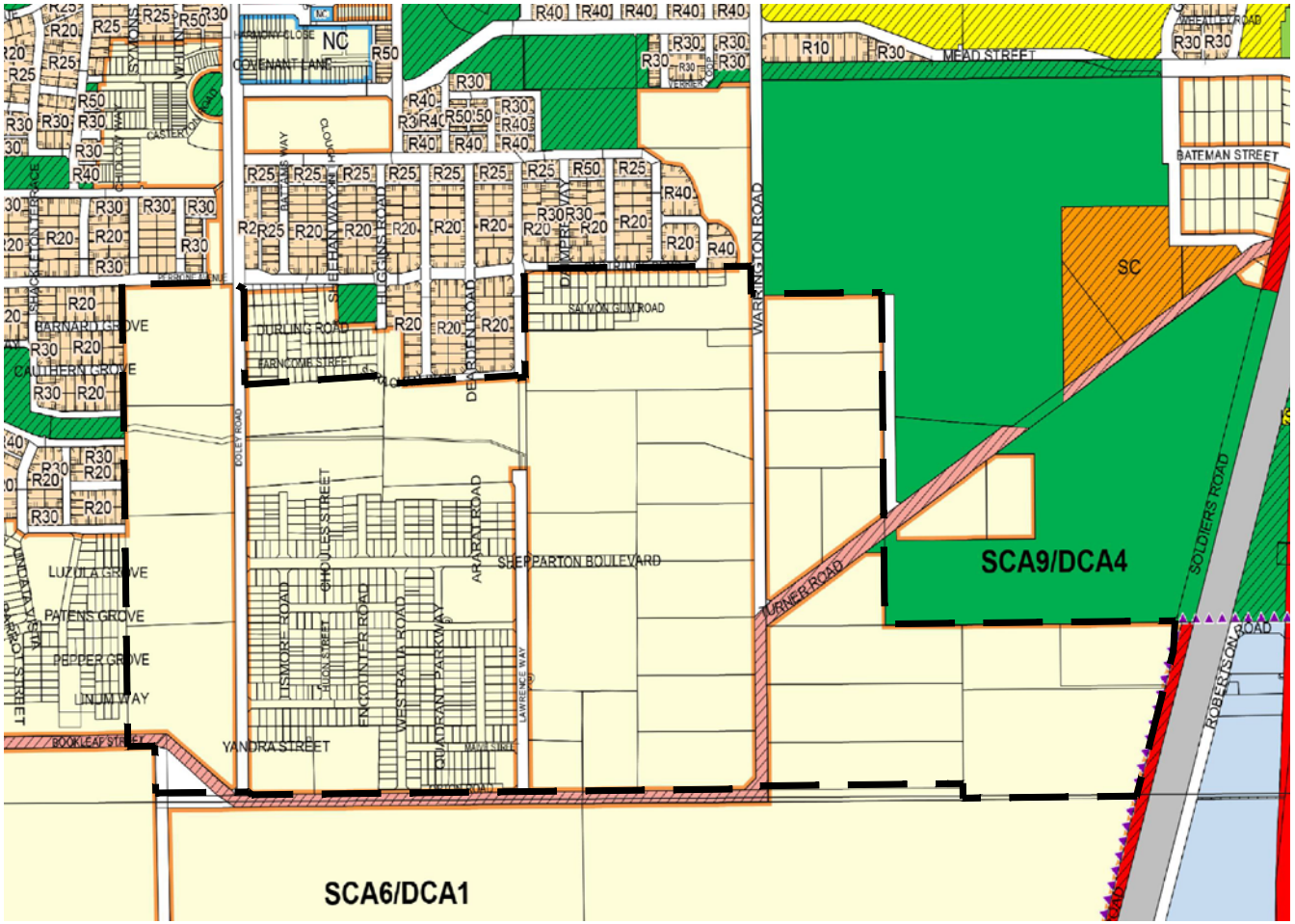


Figure 4: Shire of Serpentine-Jarrahdale Local Planning Scheme No. 3 Zoning (Source: WAPC)

1.3.3. Byford Structure Plan (2005)

The Structure Plan is within the Byford Structure Plan. This is the district level structure plan for the area generally bound by Thomas Road to the north, Hopkinson Road and the future Tonkin Highway extension to the west, Cardup Siding Road to the south and the Byford town centre and the Darling Range foothills to the east.

The Byford Structure Plan establishes 12 precincts, and allows for the preparation of individual local structure plans over any one of these precincts, in lieu of one large local structure plan covering the entire Byford Structure Plan area. The Structure Plan corresponds with Precinct 7 of the Byford Structure Plan (Figure 5: Byford Structure Plan).

The Structure Plan is consistent with Byford Structure Plan in that it:

- Proposes predominately residential development;
- Creates a primary school site in the general location identified by the Byford Structure Plan;
- Locates a neighbourhood centre at the corner of Orton and Doley Roads;
- Provides road interface between Brickwood Reserve and residential development;
- Creates a multiple use corridor through the site from the Brickwood Reserve, to accommodate an existing waterway; and
- Provides for the widening of Orton Road to accommodate stormwater drainage.

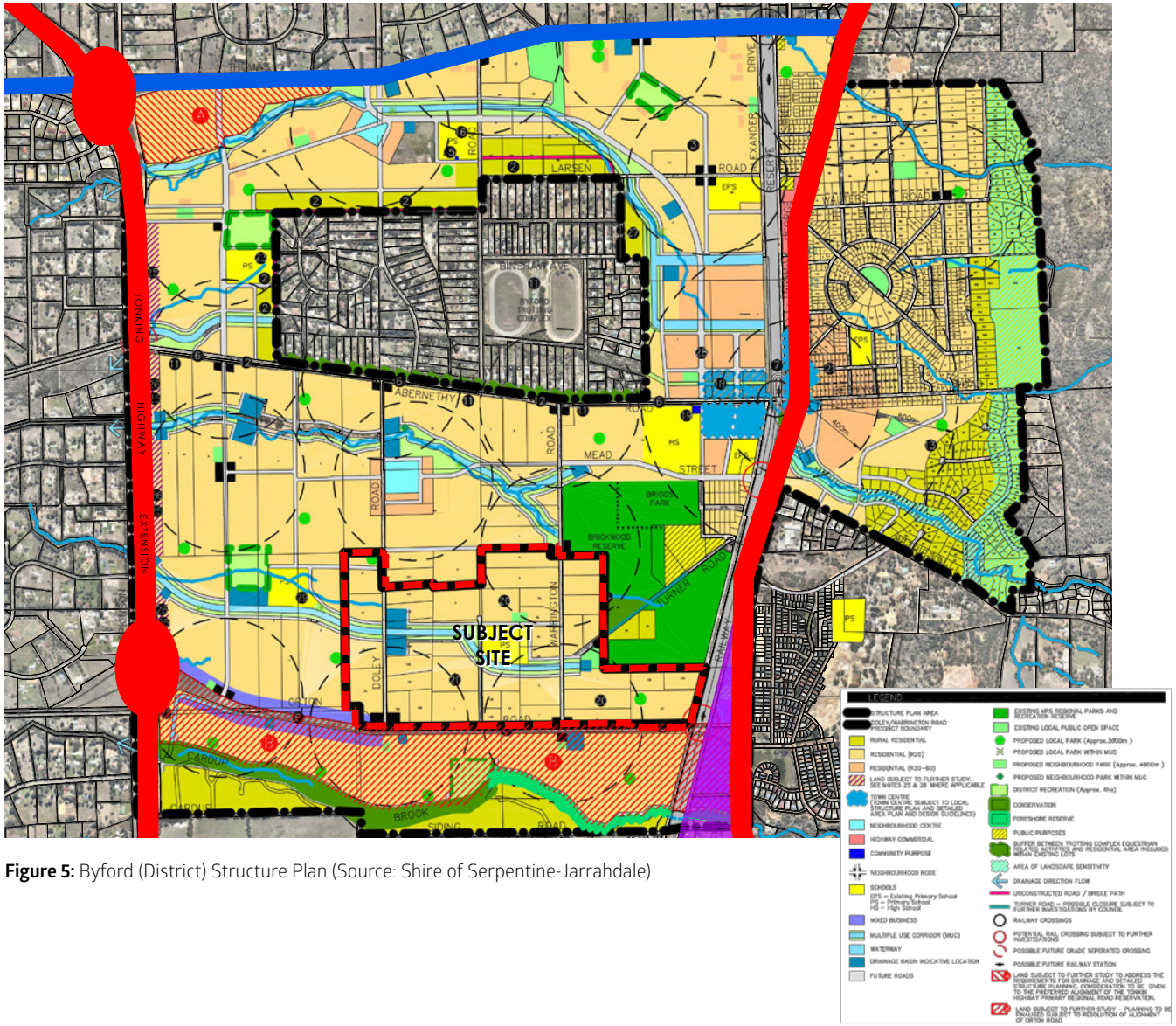


Figure 5: Byford (District) Structure Plan (Source: Shire of Serpentine-Jarrahdale)

1.3.4. The Glades Local Structure Plan (2011)

The Glades Local Structure Plan guides development and subdivision over land abutting the northern, western and southern boundaries of the Structure Plan area (Figure 6: The Glades Local Structure Plan).

The Structure Plan responds to the approved The Glades Local Structure Plan through:

- Connecting into approved road connections to adjacent landholdings.
- 'Bookending' a mixed use strip along Orton Road with a neighbourhood centre.
- Confirming the realignment of Orton Road.
- Extending the multiple use corridor into the Structure Plan area at the location established in 'The Glades'.

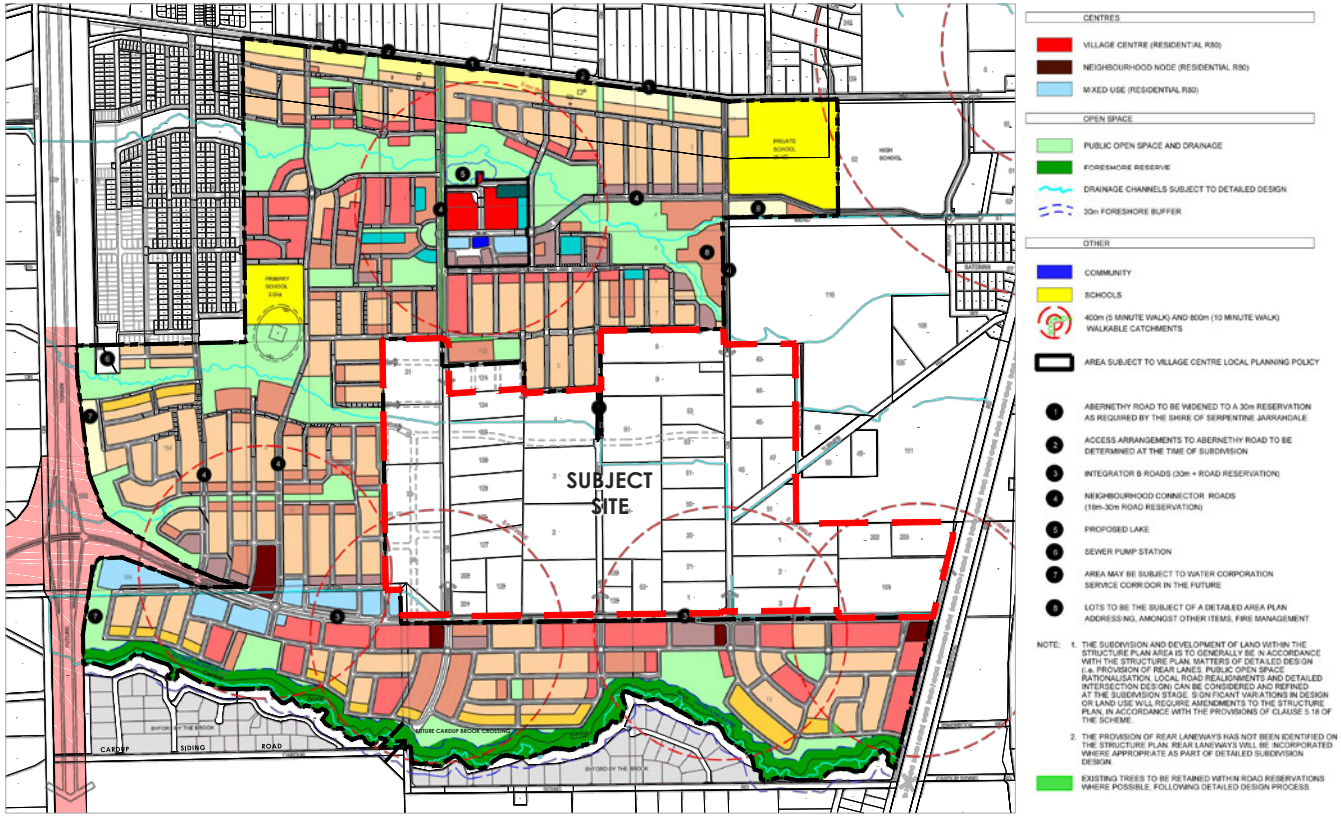


Figure 6: The Glades Local Structure Plan (Source: Taylor Burrell Barnett)

1.3.5. Strategic Planning Framework

Perth and Peel @ 3.5 million (2015) and the South Metropolitan Peel Sub-regional Planning Framework

Perth and Peel @ 3.5 million (draft) is a high level 'spatial framework' and strategic plan that manages the growth of the metropolitan region, and provides a framework to guide the planning and delivery of essential housing, infrastructure and services.

It includes the Structure Plan area within the South Metropolitan Peel Sub-region. This sub-region is expected to experience considerable economic and population growth, with population increase estimates of 44% (676,600 people) by 2050.

The draft South Metropolitan Peel Sub-regional Planning Framework (the Framework) supports the implementation of *Perth and Peel @ 3.5 million* at the sub regional level. It includes more information and detail about the level of expected population growth, servicing and infrastructure, housing demands, and importantly it highlights development opportunities throughout the sub region.

The Structure Plan area is identified in *Perth and Peel @ 3.5 million* and the draft Framework as 'Urban', reflecting the current zoning of the land under the MRS and the growth rates and infrastructure availability in Byford (Figure 7: South Metropolitan Peel Sub-regional Planning Framework).

The Structure Plan and the land use content is consistent with *Perth and Peel @ 3.5 million* and the draft Framework.

Shire of Serpentine-Jarrahdale Local Planning Policy 69 – Doley Road Precinct Planning Framework

The Shire of Serpentine-Jarrahdale Local Planning Strategy 69 - Doley Road Precinct Planning Framework (LPP 69) provides for the orderly and proper planning of Precinct 7 of the Byford Structure Plan. This Structure Plan covers all of Precinct 7.

LPP 69 establishes a further 4 sub-precincts within the Doley Road Precinct (simply referred to as Sub-precincts A to D) and allows for the preparation of individual local structure plans over any one of these sub-precincts.

Landholdings currently in the control of the ABN Group fall exclusively within 'Sub-precinct B'.

The Structure Plan has been prepared over the entire Doley Road Precinct at the request of the Shire of Serpentine-Jarrahdale, notwithstanding that LPP 69 allows for individual local structure plans to be prepared over any one of the aforementioned sub-precincts.

1.3.6. Other Planning Considerations

The following section summarises other government policies relevant to the development of the Structure Plan area.

Liveable Neighbourhoods

Liveable Neighbourhoods is the WAPC's 'operational policy' for greenfields development in Western Australia. *Liveable Neighbourhoods* sets out the key considerations for the planning of new communities including subdivision layout and movement networks, the location of open space, community facilities, schools and activity centres.

The Structure Plan has been prepared reflecting the principles and specific objectives of *Liveable Neighbourhoods* and best practice urban design principles. The design provides for the creation of a walkable neighbourhood supported by an interconnected network of local roads and pathways. An integrated approach to the design of public open space and urban water management has been adopted. These aspects of the Structure Plan are described in more detail in Section 3.

State Planning Policy 3.7 (SPP 3.7) – Planning in Bush Fire Prone Areas

SPP 3.7 – Planning in Bushfire Prone Areas was initially gazetted in December 2015 and sets out a range of matters that need to be addressed through the planning process to provide an appropriate level of protection of life and property from bushfires.

The Structure Plan is accompanied by a Bushfire Management Plan which includes a Bushfire Hazard Assessment as per the Guidelines. The manner in which the Structure Plan responds to bushfire risk is discussed in further detail in Section 3.4.

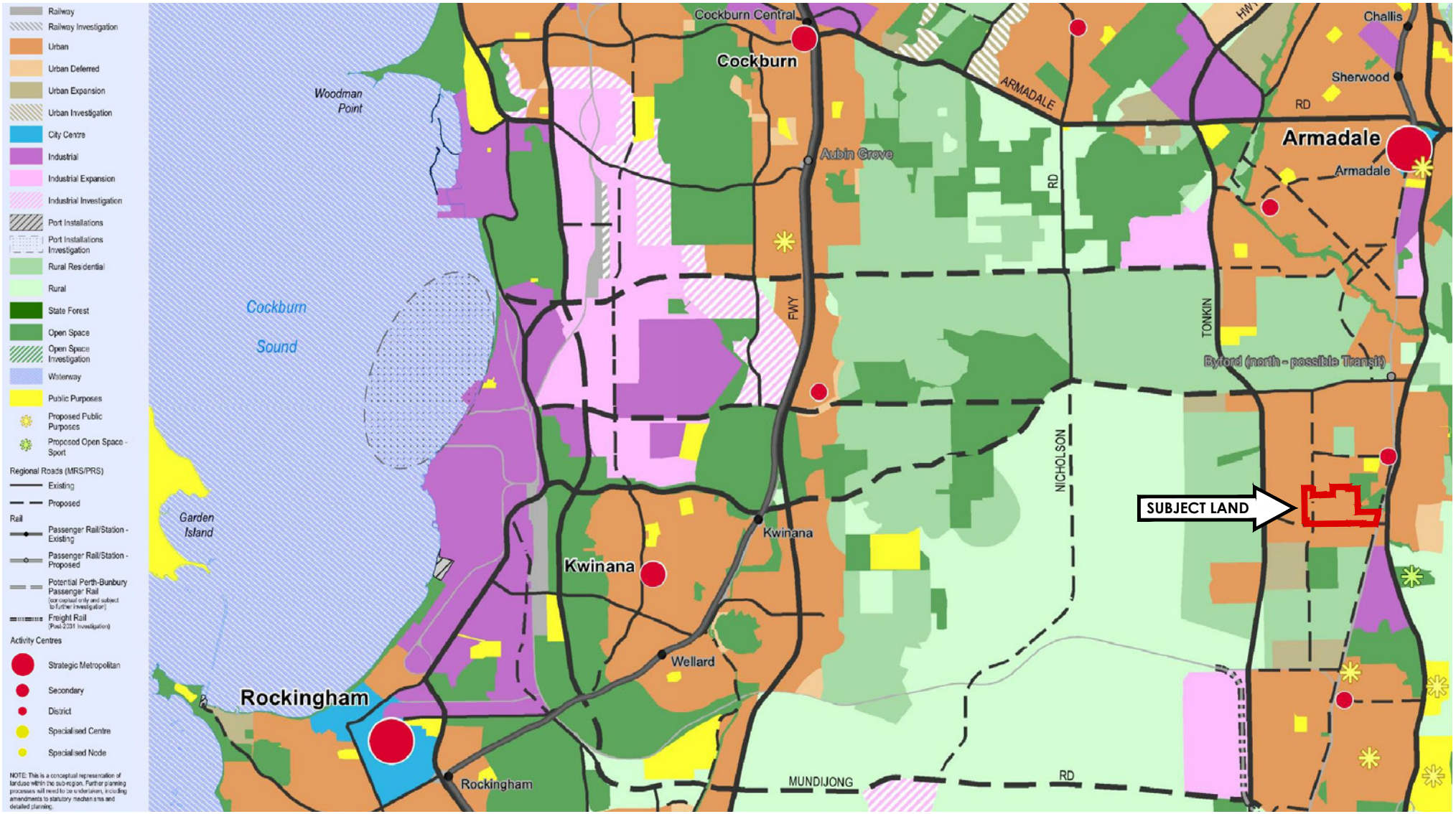


Figure 7: South Metropolitan Peel Sub-regional Planning Framework

2. SITE CONDITIONS AND CONSTRAINTS

The Environmental Report prepared by Essential Environmental demonstrates that the Structure Plan area is environmentally unconstrained and that all environmental factors affecting the site, including groundwater, drainage and bushfire management can all be addressed through the planning approval process. A complete copy of the Environmental Report is included as Appendix 1.

The following section summarises the key findings of the Environmental Report.

2.1. Topography and Geology

The topography and soils within the Structure Plan area are suitable for urban development.

The Structure Plan area is relatively flat, grading from 43m Australian Height Datum (AHD) in the east to 37.5m AHD in the west.

Regional geology mapping broadly describes the Structure Plan area as 'Guildford Formation'. This is further classified as Sandy Clay, comprising white grey to brown, fine to coarse grained sand and clay of moderate plasticity gravel and silt layers. A preliminary earthworks strategy responding to the geology of the Structure Plan area is discussed further in Section 3.9.

2.1.1. Acid Sulphate Soils

The Department of Environment and Regulation (DER) Acid Sulphate Soil (ASS) Risk Map shows the majority of the site as 'low to moderate risk of ASS occurring within 3m of the natural soils surface'. The Structure Plan area is therefore suitable for urban development with an ASS investigation (if necessary) and management plans to be prepared in the usual manner, prior to any excavation as part of the subdivision, as set out in the WAPC's Planning Bulletin 64/2009 – Acid Sulphate Soils.

2.1.2. Contamination

The Structure Plan area is not located within any DER listed contaminated sites, with the past and present use of the site not generating a high risk of contamination.

2.2. Biodiversity and Natural Assets

2.2.1. Flora and Vegetation

The land has been subject to long periods of clearing and agricultural activity and has little remaining ecological value.

In accordance with the EPA (2003) 'Guidance Statement No. 51 – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment', a Level 1 (desktop) Flora and Vegetation Survey was undertaken to identify flora species of conservation significance.

The survey found:

- Past clearing of the Structure Plan area for agriculture has adversely affected the biodiversity rating and ecological value , making the site suitable for development.
- Vegetation onsite is degraded and does not contain any areas with an intact understorey.
- There are no declared rare flora or priority species found within the Structure Plan area.

2.2.2. Fauna

A Level 1 Fauna Impact Assessment and Black Cockatoo site assessment was undertaken by 360 Environmental, identifying fauna values of the site. The Fauna Impact Assessment is included as part of the Environmental Report.

The Assessment found:

- No recorded species of conservation significance in the Structure Plan area.
- No quality Black Cockatoo foraging habitat, with no evidence of roosting.
- Extensive clearing and the significant degradation of remnant vegetation has resulted in any potential habitat being of low value to native fauna.

The Fauna Impact Assessment concludes that development of the Structure Plan area has the potential to increase the ecological value of the site through the provision and treatment of the multiple use corridor and public open space.

2.3. Hydrology

The management of ground and surface water is comprehensively addressed in the Local Water Management Strategy (LWMS) prepared by Essential Environmental that clearly demonstrate hydrology is not a constraint to development.

The LWMS was prepared in accordance with the 'Byford Townsite Drainage and Water Management Plan' (GHD and Department of Water, 2008) which is the district water management strategy for the locality.

The existing hydrological conditions of the Structure Plan are summarised below, while the key principles of the LWMS are discussed further in Section 3.6 of this report.

2.3.1. Surface Water

The Department of Parks and Wildlife Swan Coastal Plain geomorphic wetlands database classifies the Structure Plan area as Multiple Use Wetland (Armadale Palusplain: seasonally waterlogged flat land), a low management category that has little ecological value, making it suitable for development.

Surface water from northern portion of the Structure Plan area is conveyed to a minor watercourse that flows through the site in a westerly direction. The Structure Plan has this watercourse being modified into a 'living stream' embedded in a multiple use corridor, consistent with the 'Byford Townsite Drainage and Water Management Plan'.

Surface water from the southern portion of the Structure Plan area flows to a drain located in the Orton Road reserve. The Structure Plan provides a 5m road widening of Orton Road, allowing for Shire of Serpentine-Jarrahdale planned upgrades to this drain, accommodating surface water requirements.

There are no mapped *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* wetlands located within or in proximity to the Structure Plan area.

2.3.2. Ground Water

Water modelling carried out by the Department of Water as part of the Lower Serpentine hydrological studies in 2010 found that groundwater levels are close to the natural surface throughout the Structure Plan area. Groundwater monitoring carried out as part of the adjacent 'The Glade' Structure Plan confirmed the findings of the Department of Water hydrological studies.

Ground water levels can be managed through importing clean fill and the use of subsoil drainage.

2.4. Heritage

The Department of Aboriginal Affairs Aboriginal Heritage Enquiry Systems lists no registered sites within or adjacent to the Structure Plan Area. There are no listed European sites of heritage significance located within the subject site.

3. LAND USE AND SUBDIVISION REQUIREMENTS

3.1. Land Use

A Development Concept Plan has been prepared for the site to demonstrate how development could occur based on the principles and requirements of the Structure Plan (Figure 8: Development Concept Plan).

It is important to note that this Development Concept Plan represents only one way development could occur and that it will be refined at the time of subdivision.

The key principles of the Development Concept Plan are as follows:

- Enable the creation of a diverse range of high quality housing choices that appeal to a wide market segment.
- Provide an urban form that responds to the local context.
- Recognise the natural amenity and value of the area through interfacing with the adjacent Brickwood Reserve.
- Provide for the existing watercourse that flows through the site, originating from Brickwood Reserve.
- Create accessible and integrated multi-functional public open spaces that offer a range of active and passive recreational opportunities.
- Extend all necessary services and infrastructure in a timely and efficient manner.
- Establish a legible and permeable road network.
- Provide the primary school site planned for in the Byford Structure Plan.

Building on these broader key principles, the Structure Plan provides for the following:

- Approximately 1850-1950 lots across the Structure Plan area, with residential densities of R25, R40 and R60. The R40 and R60 densities are focused around key access roads, primary school, neighbourhood centre and areas of high local amenity. R60 will also be allocated to grouped or multiple dwelling development sites.
- Approximately 10.64ha of open space distributed throughout the Structure Plan area, meeting active and passive recreational needs.
- Rehabilitation of the existing waterway that originates from the Brickwood Reserve, to accommodate local and district storm water drainage.
- Construction of a permeable movement network that connects into existing regional and local road networks and provides for pedestrian and cycling infrastructure, and future public transport services.
- Appropriate separation between Brickwood Reserve and all future dwellings to minimise potential risk from bushfire.
- Creation of 4ha primary school site collocated with an area of active open space.
- Provision a Neighborhood Centre at the intersection of Orton and Doley Roads, providing residents with convenient access to retail.

A Public Open Space Schedule is included as Table 2, and should be read in conjunction with the Landscape Masterplan (Figure 9).

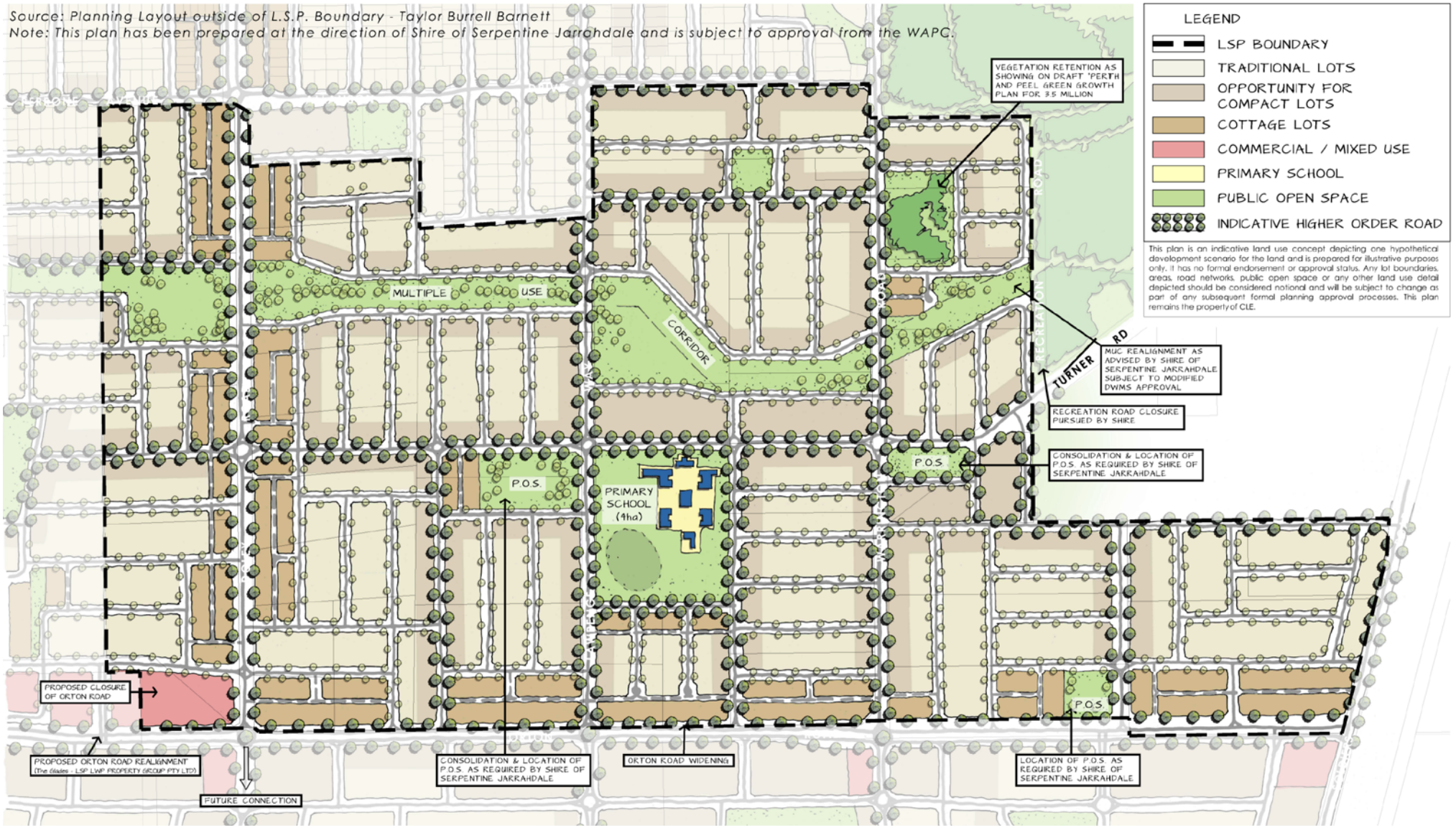


Figure 8: Development Concept Plan (Source: Essential Environmental)

Public Open Space Schedule (all areas in hectares)		
Site Area		**120.50**
Deductions		
Primary School	4.00	
Commercial Centre	1.04	
Orton Road widening land	0.43	
1:1 Drainage within POS	0.24	
Total Structure Plan Deductions		5.17
Gross Subdivisible Area		**114.79**
POS @ 10%		11.48
Public Open Space Requirement		
May Comprise:		
Min 8% unrestricted POS	9.18	
Max 2% restricted POS	2.30	
TOTAL POS REQUIRED		**11.48**
Public Open Space Provided	Unrestricted POS Area	Restricted POS Area
POS 1 (MUC West of Doley; Amd 2)	0.93	0.03
POS 2 (MUC East of Doley)	2.21	0.08
POS 3 (Beenyup Park)	1.23	0.00
POS 4 (Northern Local Park)	0.36	0.00
POS 5 (MUC West of Warrington; Amd 1)	2.25	0.09
POS 6 (North-Eastern Neighbourhood Park)	1.29	0.00
POS 7 (MUC East of Warrinton)	1.14	0.03
POS 8 (Turner Rd Local Park)	0.54	0.00
POS 9 (South-Eastern Local Park)	0.46	0.00
TOTAL (ha)	**10.41**	**0.23**
Additional Deductions		
Restricted Open Space Surplus		0.00
Revised Public Open Space Contribution		
Mix 8% Unrestricted POS Provided	10.41	9.1%
Max 2% Restricted POS Provided	0.23	0.2%
Total Creditable POS Provided	**10.64**	**9.3%**

Notes

1. *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).*
2. *This Schedule is for plan CLE Ref. 3410-22B-01, with Amendments 1 and 2 incorporated.*

Table 2: Pubic Open Space Schedule

3.2. Residential

The Structure Plan provides for the delivery of a range of lot types, housing products and lifestyle options in a manner that satisfies state density targets. The delivery of quality housing and streetscapes is one of the primary objectives of the Structure Plan.

3.2.1. Dwellings Yields and Density Targets

The Structure Plan has the potential to create approximately 1850-1950 residential lots, with a density range of R25 to R60. This is based around the following principles:

- A base density code of R25 applies.
- Medium density R40 areas are typically located adjacent areas of public open space (where a higher level of amenity exists), in proximity to the school and neighbourhood centre, or at the end of street blocks. This coding provides the opportunity to deliver 'cottage' style housing (single or double storey, front of rear loaded) or for contemporary 'compact' lots that typically bookend street blocks. Single lots sizes will generally range from 180m^2 to 300m^2.
- The R60 code will be applied adjacent areas of public open space and in proximity to the school or neighbourhood centre, similar to the aforementioned R40 criteria. This coding provides opportunities for smaller cottage lots that can accommodate contemporary two storey residential development. This coding will also be allocated to grouped or multiple dwelling sites, providing for an efficient built form response on these sites.

The Structure Plan has the potential to achieve 16.4 dwellings per gross urban zoned hectare, meeting the 15 dwellings per gross urban zoned hectare density target set out in *Perth & Peel @ 3.5 million*. Similarly, the Structure Plan achieves a target of approximately 28.2 dwellings per site hectare (being the pure residential area, excluding open space, roads and other non-residential uses), exceeding the density requirement of 22 dwellings per site hectare required by *Liveable Neighbourhoods*.

3.2.2. R-Code Variations

Local Development Plans (LDPs, formerly known as Detailed Area Plans) will be required for a select number of circumstances where specific development requirements are needed to deliver a suitable built form response.

These LDPs will be imposed as a condition of subdivision.

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

3.2.3. Lots Abutting Areas of Public Open Space

Liveable Neighbourhoods supports residential lots directly abutting open space under particular circumstances and where the functionality of the POS is not compromised, and where the dwelling addresses the open space providing adequate visual surveillance.

Typically the interface to public open space at the time of subdivision will be via roads, however, in some instances direct lot frontage is an appropriate design response to provide greater product diversity, address amenity and increase surveillance of the public spaces.

To ensure these public open spaces are not compromised by such a design initiative subsequent subdivision design and engineering detail will ensure that visitor parking is provided along adjacent streets, and the adjacent residential lots are elevated a minimum of 500mm above the POS ground level to create a visible separation between the private and public realm.

Where lots interface with open space, LDPs will need to be prepared to control built form. These LDPs will address:

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

3.2.4. Lots Within a Designated Bushfire Prone Area

LDPs will be prepared for lots identified as located within a designated bushfire prone area, discussed further in Section 3.4. These LDPs will ensure that landowners will be notified of bushfire risk, and that dwellings must be constructed to an appropriate Building Attack Level (BAL) standard. Mandatory boundary setbacks can also form part of any required building protection zone (if applicable).

3.3. Public Open Space

The Landscape Masterplan (Figure 9) prepared by LD Total Landscaping describes the intended function and design principles of each open space area.

The Structure Plan ensures that public open space can serve a variety of functions throughout the Structure Plan area, balancing active and passive recreational pursuits, whilst allowing for the rehabilitation of the 'living stream' that conveys surface water through the site from Brickwood Reserve.

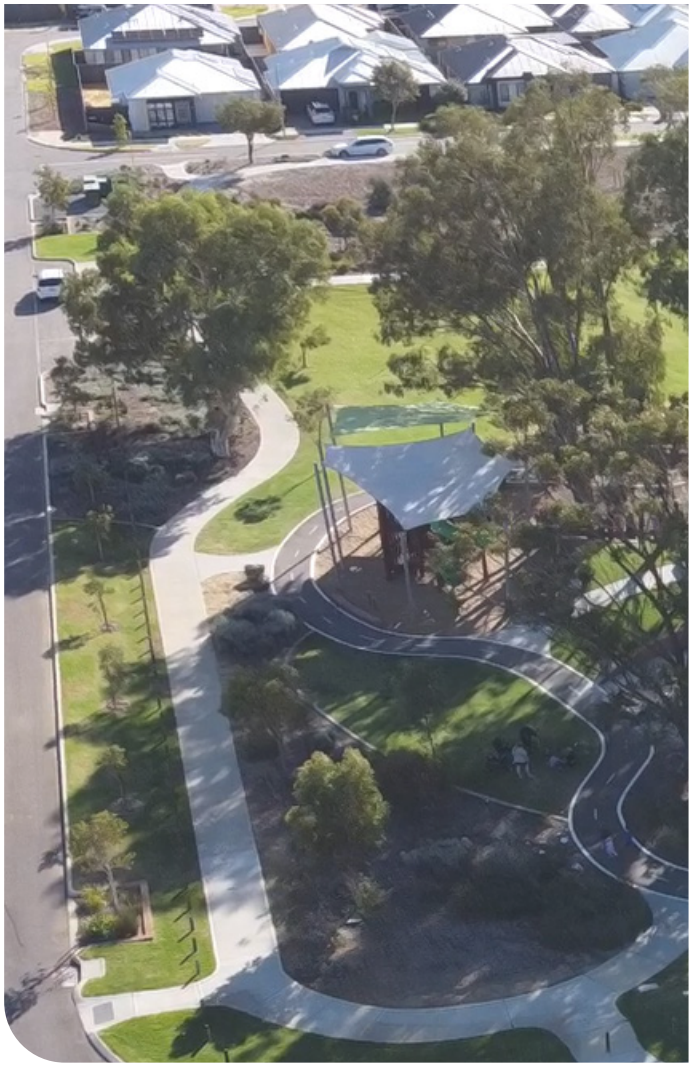
The Landscape Masterplan is included as Appendix 3. The following is a summary of the key characteristics of the three open space types:

Local Parks

Local parks of between 3,000m² and 8,000m² are provided to ensure all dwellings are within a 400m walk, in accordance with *Liveable Neighbourhoods*.

The design of local parks is based on the following principles:

- Retention of remnant trees wherever appropriate.
- Comprising native or low water use shrubs and grasses, for easy and low cost maintenance.
- Open turfed areas will provide an informal play and a kick-about spaces within selected local parks.
- Opportunities to provision shelter and picnic facilities.
- Potential for fitness nodes and play equipment.



Doley Road Precinct Open Space (Source: Parcel Property)



Figure 9: Landscape Masterplan (Source: LD Total)

Multiple Use Corridor (Living Stream)

The Structure Plan provides for a 30m wide multiple use corridor that passes through the Structure Plan area, incorporating an existing waterway originating from Brickwood Reserve.

In accordance with the 'Byford Townsite Drainage and Water Management Plan', this is to be landscaped as a 'living stream' and can potentially provide the following:

- Native or low water use shrubs and grasses for easy and low cost maintenance.
- Opportunities for pedestrian pathways and seating, including a respite area for passive recreation outside areas affected by frequent storm events.
- Viewing nodes for viewing opportunities over the 'living stream'.

This multiple use corridor is critical in that it conveys local and district drainage for all rainfall events as well as providing a high quality landscaped space for passive recreation and local amenity. The multiple use measures approximately 30m in width.

There are opportunities to further the amenity of this space through the inclusion of pedestrian pathways, along with seating and shaded areas, refer Figure 10: Multiple Use Corridor Cross Section.

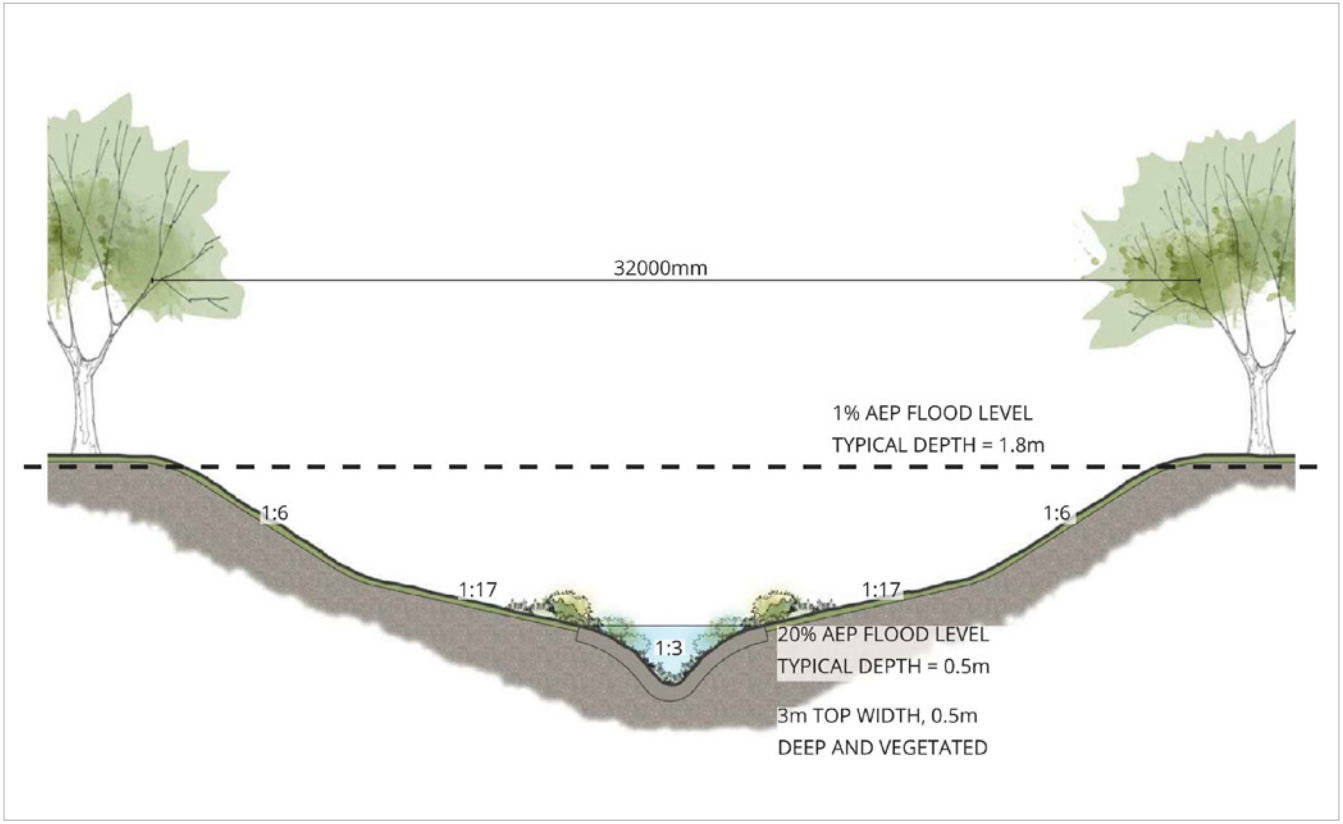


Figure 10: Multiple Use Corridor Cross Section (Source: LD Total)

3.4. Bushfire Management

The Structure Plan provides a design response and the planning framework to address potential bushfire risk. It demonstrates that bushfire risk is not an impediment to development as this can be managed through a combination of Asset Protection Zones (APZ) and appropriate construction standards in accordance with AS3959 `Construction of buildings in bushfire prone areas'.

In accordance with the WAPC's State Planning Policy 3.7: Bushfire and the Guidelines, Essential Environmental has prepared a Bushfire Management Plan (BMP) (refer Appendix 2) that includes a Bushfire Hazard Assessment identifying bushfire prone areas (a bushfire prone area is defined as any land that has the potential to impact development) of low, moderate and extreme bushfire risk - refer Figure 11.

Much of the site is designated as a Bushfire Prone Area.

Relevant Bushfire Management Plans and Bushfire Attack Level Assessments have been prepared over Lot 61 Lawrence Way, Byford and Lot 32 Doley Road, Byford in regard to Amendments 1 and 2 to the Local Structure Plan.

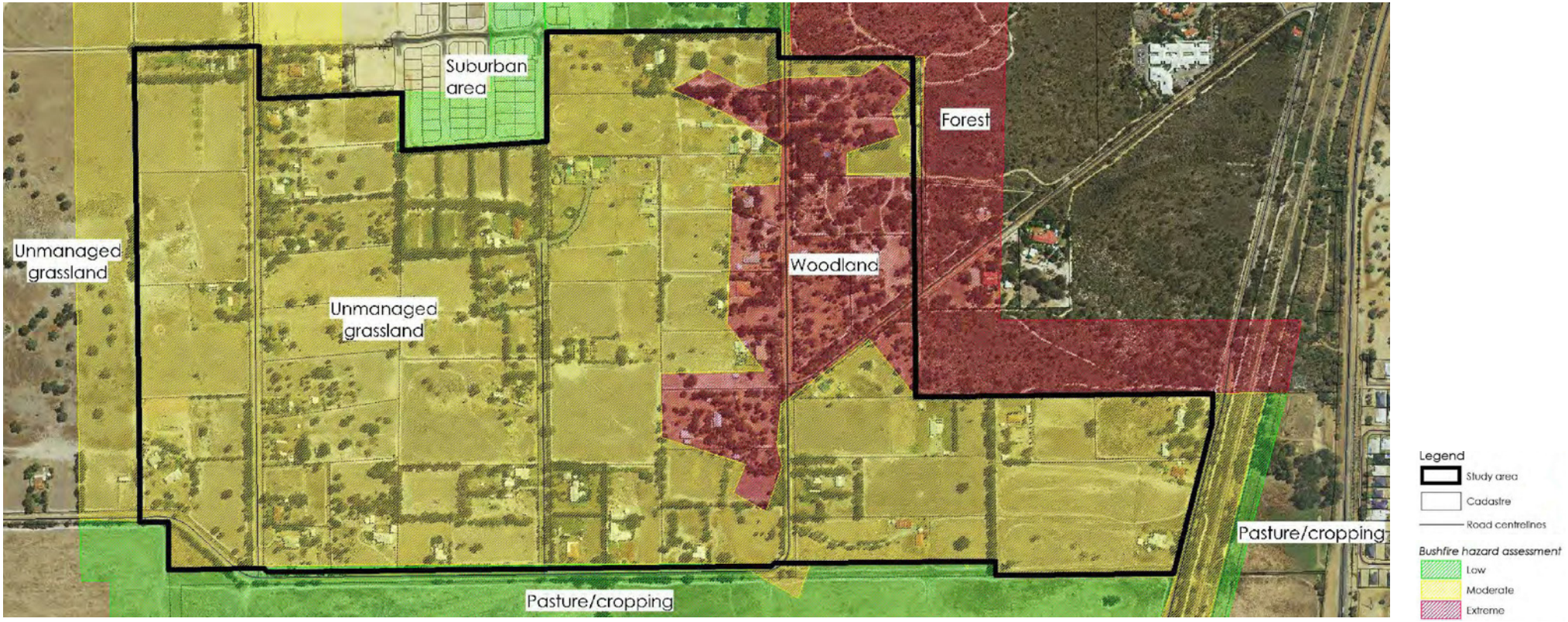


Figure 11: Bushfire Hazard Assessment (Source:Essential Environmental)

3.5. Movement Network

A comprehensive Transport Impact Assessment has been prepared by KCTT traffic engineers, included as Appendix 4.

The following section discusses the key elements of the Assessment, including existing and planned movement network, road hierarchy classification and an overview of the cyclist and pedestrian network.

3.5.1. Existing Movement Network

The Structure Plan is supported by a road network that allows for excellent connections to local, district and regional destinations. Key aspects of this existing road network are:

- Hopkinson Road runs in a north-south direction, approximately 1.3km west of the Structure Plan area.
- Orton Road abuts the southern edge of the Structure Plan area, intersecting with Hopkinson Road to the west and Soldiers Road to the east.
- Doley Road passes through the Structure Plan area, connecting The Glades development to the north with Orton Road to the south.
- Warrington Road provides local access to the area, connecting to Orton Road.
- Soldiers Road abuts the eastern most edge of the Structure Plan.
- Perrone Avenue, Allanson Drive, Patridge Bend, Haliday Road and Lawrence Way provide local traffic connections to adjacent development.
- Recorded weekday traffic flows (MRWA) are as follows:
  - Hopkinson Road (south of Abernathy Road) : 3,097 vpd
  - Doley Road (south of Abernathy Road) : 2,743 vpd.
  - Orton Road: 449 vpd
  - Soldiers Road (south of Abernathy Road) : 2,158 vpd.
- Public bus service 254 connects to Armadale Train Station and runs along Doley Road, approximately 400m north of the Structure Plan area, providing an quarter hour service Monday to Friday, with an hourly service on Saturdays.
- Abernathy Road, located approximately 2.3km north of the Structure Plan area, is considered a good riding environment in accordance with Perth Bike Map series (Department of Transport; 2009).

Main Roads WA planning shows the future Tonkin Highway extension replacing Hopkinson Road with a full interchange at Orton Road. No timeframe has been established for this infrastructure works. Once complete this will dramatically improve regional access for the Structure Plan area.

3.5.2. Proposed Movement Network

Road Network

The road network reflects the principles and standards of *Liveable Neighbourhoods* and has been designed to provide a permeable and legible movement structure. Road alignments also reflect the constraints imposed by surrounding land uses and existing road connections.

The KCTT Road Hierarchy Plan shows the hierarchy of the movement network planned for the area and the external connections to the existing network (Figure 13: Road Hierarchy Plan). The road network has been planned and modelled on known and forecast traffic volumes and will be refined further at the time of subdivision to relevant Shire of Serpentine-Jarrahdale standards.

The key aspects of the planned road network are as follows:

- **Orton Road** – to be classified as an Other Regional Road, is to be widened from 20 metres to 32 metres (6 metres to be ceded by landholdings north and south of the road).
- **Soldiers Road** – to be classified as an Other Regional Road, is to be widened to 30 metres with 10 metres to be ceded by landholdings abutting Soldiers Road.
- **Turner Road** – is to be extended westwards to connect to Doley Road and classified as a neighbourhood Connector B, with a reservation width of 19.4m.
- **Doley and Warrington Roads** – to be classified as Neighbourhood Connector A road, with a reservation width of 24.4m.
- **Doley Road** - to be classified as a Neighbourhood Connector A road, with a sufficient reservation width to be designed as a boulevard, with a split carriageway and central median, which allows for the retention of trees.



Figure 12: Road Hierarchy Plan (Source: KCTT)

- **Lawrence Way** – to be classified as Neighbourhood Connector B roads, with a reservation width of 19.4m.
- **Access Streets** – these will range in width from 14.2 to 17.9m road reserves with the majority to be constructed as 15.4m road reserves with a 6-7.2m carriageway. These road reserve widths will be reduced by 1m when the access street is adjacent to public open space as set out in *Liveable Neighbourhoods.*
- **Laneways** – to be a minimum width of 6m to accommodate two way movements and rubbish collection.

This proposed local road network will be refined further at the time of subdivision.

Pedestrian and Cyclist Facilities

The Structure Plan provides an excellent level of accessibility and permeability for pedestrians and cyclists, both within the site and via connections to surrounding areas (Figure 14: Pedestrian and Cyclist Facilities).

The pedestrian and cyclist facility network will be provided in accordance with the following key principles:

- Footpaths on at least one side of all access roads, constructed to a minimum width of 1.8m.
- Neighbourhood Connector (A and B) roads will be provided with a 2.3m wide footpath to one side, in addition to a 1.8m footpath on the opposite side.
- Orton Road will be provided with a 2.3m wide footpath to the northern side.
- Roads adjacent to the primary school site will be provided with a dual use path.
- Shared paths will be provided, connecting to the existing 'Trails Network' located within Brickwood Reserve.

The precise location, alignment and design of foothpaths and shared paths will be determined in consultation with the Shire of Serpentine-Jarrahdale, consistent with the Shire's endorsed Long Term Cycle Network Plan, as part of the detailed engineering stage following subdivision approval

Public Transport

It is common for development to precede public transport services as these are not provided until there is a critical population mass to demand and warrant such services. Presently bus route 254 connects to Armadale Train Station and runs along Doley Road, approximately 400m north of the Structure Plan area. It is anticipated that existing bus routes will be extended to service the Structure Plan area once local population mass warrants these services. Doley Road, Lawrence Way and Warrington Road are planned as Neighbourhood Connectors and will be capable of accommodating a public bus route.

3.5.3. Transport Network Analysis

KCTT have undertaken comprehensive traffic modelling for the movement network proposed by the Structure Plan. It demonstrates that the proposed network and associated reserve widths have the capacity to accommodate expected traffic volumes in the year 2036. This is consistent with the long term planning horizon in *Perth and Peel @ 3.5 million* and Main Roads regional modelling.

All vehicle movements fall within the acceptable limits outlined by *Liveable Neighbourhoods* for the respective road categories proposed by the Structure Plan.

It is important to note that the traffic modelling undertaken incorporates all land anticipated for future urban development, as identified by the Byford Structure Plan and *Perth and Peel @ 3.5 million*. This has ensured a transparent and robust model.

Internal Intersections

The precise nature and function of all internal intersections will be determined once the location and alignment of access streets have been finalised as part of the subdivision approval. All intersection spacing and treatments will be designed to *Liveable Neighbourhoods* standards.

The Paramics Model and SIDRA capability analysis carried out for the site confirms that uninterrupted traffic flows can be expected at all internal intersections during typical operating conditions.



Figure 13: Pedestrian & Cyclist Facilities Plan (Source: KCTT)

3.6. Water Management

In accordance with the WAPC's Better Urban Water Management Guidelines, Essential Environmental has prepared a Local Water Management Strategy (LWMS) that establishes key principles for the management of stormwater runoff and groundwater quality.

Pursuant to Schedule 7 (DCP 1) of LPS 3, the LWMS is consistent with the 'Byford Townsite Drainage and Water Management Plan' and has been prepared in consultation with the Shire of Serpentine-Jarrahdale and the Department of Water.

The management principles set out in the LWMS will be refined and implemented as part of subsequent Urban Water Management Plans (UWMP) which will be prepared at the time of subdivision.

A complete copy of the LWMS is provided as Appendix 5.

3.6.1. Stormwater Management

The LWMS proposes stormwater management and groundwater recharge in a manner that is consistent with 'Byford Townsite Drainage and Water Management Plan' and water sensitive design practices:

- Soak wells on individual lots will allow onsite infiltration for the small stormwater event (first 15mm of rainfall).
- Rainwater from street pavements and commercial sites for the small stormwater event will be infiltrated as close to source as practicable, via bio-retention structures and tree pits located in the road reserves.
- Rainwater exceeding the small stormwater event (5 year ARI) will be conveyed through a series of pipes and overland drains to either the multiple use corridor that passes through the Structure Plan area, or the drain located in the Orton Road reserve.
- Rainwater from major flood events (100 year ARI) will be conveyed via drains and road reserves to join flow paths leading to the multiple use corridor or the Orton Road reserve drain.

Interim Stormwater Solution

Land under the ownership of Delfina Properties Pty Ltd is proposed to be developed in advance of the remainder of the Structure Plan area. The multiple use corridor where the majority of stormwater flows are to be discharged, falls outside this initial area of development.

An interim stormwater solution is proposed to allow this initial stage of development to proceed. This involves the northern boundary of the Delfina Properties land being retained in the ownership of Delfina Properties, with a cut-off drain conveying stormwater towards Doley Road being placed in this land. An open drain within the Doley Road reserve will then convey flows northwards, into the multiple use corridor located in the adjacent 'The Glades' (Figure 15: Interim Drainage Solution).

Once development to the north of the Delfina Properties land proceeds, stormwater flows will be redirected to the multiple use corridor as set out in the 'Byford Townsite Drainage and Water Management Plan'.

3.6.2. Groundwater Management

A preliminary earthworks strategy has been prepared over the Structure Plan area in order to achieve adequate separation to groundwater. Minimum separation between finished lot levels and groundwater will be achieved by a combination of clean fill and subsoil drainage to protect against any post-development groundwater rise.

Finished lot levels and fill requirements will be confirmed and reported during the Urban Water Management Plan stage, given the level of detailed engineering design involved.

3.6.3. Implementation and Delivery

The LWMS establishes the strategy in which development within the Structure Plan can occur in a water sensitive manner. It will be the responsibility of the developer to construct and maintain the stormwater drainage system at subdivision stage.

A post-development monitoring programme will be designed in cooperation with the Shire of Serpentine-Jarrahdale and the Department of Water. This will involve monitoring surface water during August to October to capture peak winter flows, and in March to capture the first baseline flows. Groundwater levels and quality will be carried out on a quarterly basis with samples being analysed at a NATA accredited laboratory.

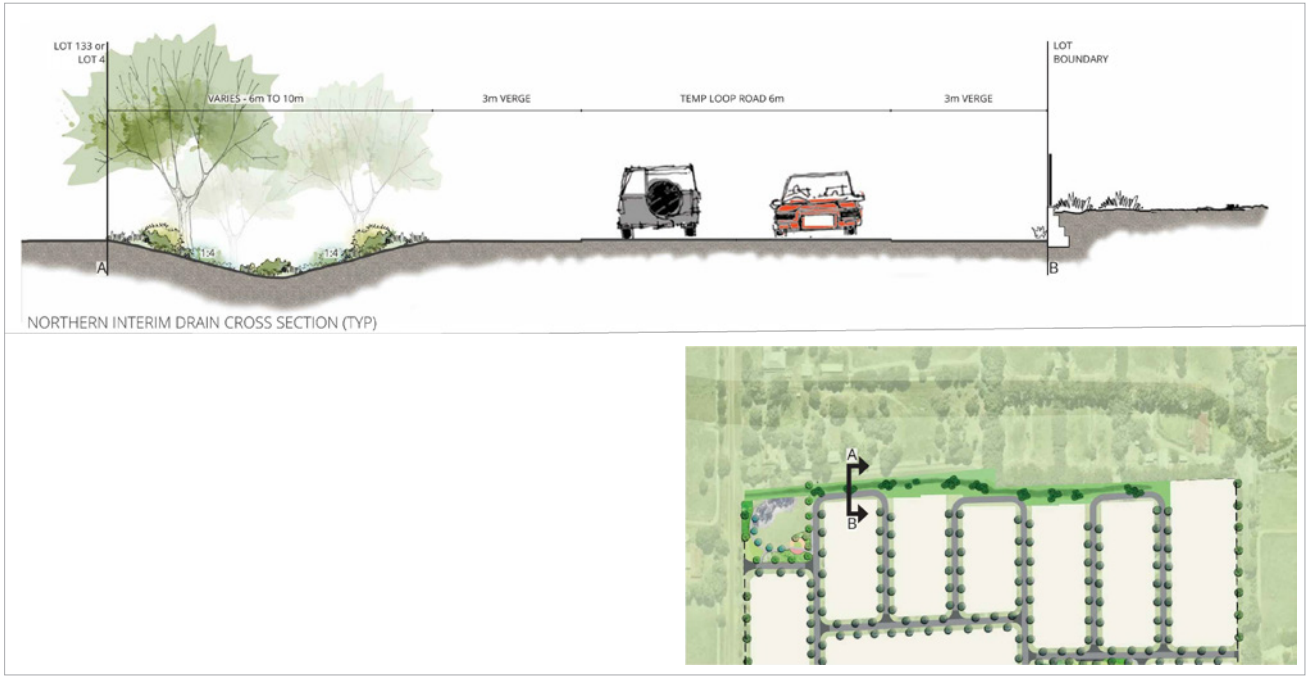


Figure 14: Interim Drainage Solution (Source: LD Total)

3.7. Activity Centres

The Structure Plan is located in close proximity to a number of existing and planned activity centres, ensuring excellent access to retail and employment opportunities:

- The Byford Town Centre is located 2km north-east of the Structure Plan area, identified as a district centre in 'State Planning Policy 4.2 – Activity Centres for Perth and Peel'.
- The 'Byford Village Centre' is a large neighbourhood centre located only 500m north of the Structure Plan area. Construction of the 'Byford Village Centre' is expected to commence in 2016.
- A neighbourhood centre and mixed use strip is situated immediately west of the Structure Plan area on Orton Road.

The Byford Structure Plan provides for a further neighbourhood centre at the intersection of Orton and Doley Roads, 'bookending' the mixed use strip on Orton Road. This Centre is included within the Structure Plan.

A Retail Needs Assessment was undertaken by RPS to confirm that the location and size of this neighbourhood centre was appropriate in its context. The Assessment concluded that the location of the neighbourhood centre allowed for excellent customer exposure via its dual frontage to Orton and Doley Roads. The Assessment forecast at ultimate development, the neighbourhood centre can support 1,500m² of retail floor space. A copy of the Retail Needs Assessment is provided as Appendix 6.

3.8. Education

The Structure Plan is well serviced by existing and planned education facilities as established by the Byford Structure Plan.

Three primary schools currently serve the Byford Structure Plan area, with an additional four primary schools and one high school planned for the Structure Plan area. The Byford Structure Plan has located each school so as to be centrally located within its surrounding catchment.

The Structure Plan delivers one of the planned primary school sites, at the location shown in the Byford Structure Plan.

The school is provided with excellent access and circulation consistent with the principles of *Liveable Neighbourhoods,* surrounded by Lawrence Road to the west, Turner Road to the north and two local access roads to the south and east.

The Department of Education supports the size and location of the primary school site.

3.9. Infrastructure Coordination, Servicing and Staging

The following section summarises the engineering considerations in the Engineering Servicing Report prepared by Pritchard Francis Engineers. A copy of the Engineering Services Report is provided as Appendix 7.

3.9.1. Earthworks Strategy

A preliminary earthwork strategy has been prepared for the Structure Plan. Key aspects of the Strategy are:

- Provide at least 1.2 m of clean permeable sand in order to provide adequate clearance for onsite drainage (i.e. soakwells).
- Provide minimal retaining due to minimal fall across the Structure Plan area.
- Match into the ground levels found on adjoining landholdings, including Brickwood Reserve abutting the eastern boundary of the Structure Plan.
- Earthwork the multiple use corridor to allow for free water flows across the site, originating from Brickwood Reserve.
- Create finished levels that accommodate gravity-reliant infrastructure that facilitates sewer and drainage services.

3.9.2. Waste Water

The Water Corporation planning shows waste water from Structure Plan being gravity fed southwards to a proposed main along Orton Road. This line feeds to the Byford pump station located adjacent to Hopkinson Road within ‘The Glades’. A small northern portion of the Structure Plan will feed into existing catchments to the north through connections to existing reticulated sewer systems within ‘The Glades’.

3.9.3. Water Supply

The Water Corporation has confirmed reticulated water will be provided via a 250P main within the Orton Road reserve, turning north into Doley Road and ultimately connecting into the existing mains along Soldiers Road

3.9.4. Power Supply

Existing overhead HV power lines within the Structure Plan area have capacity to service future development. These power lines will be placed underground as part of Western Power development requirements. Any incremental demand increases will be considered by Western Power as normal network growth which may require additional HV feeder cables being extended into the area.

3.9.5. Gas Supply

The Structure Plan will be serviced via medium pressure 100PVC gas mains which exists within the Doley, Lawrence, Orton and Turner Road reserves. These mains have the capacity to service future development.

3.9.6. Telecommunications

The size and expected yield of the Structure Plan means that the National Broadband Network (NBN Co.) will be the telecommunications provider, with NBN connected developments already existing to the north-west of the Structure Plan area and within the nearby Byford town centre. The design and installation of a ‘pit and pipe’ network will be undertaken as development of the site progresses, with optic fibre to be provided by the NBN Co.

3.9.7. Staging and Timing

The Structure Plan will be staged to ensure the efficient supply of infrastructure and to meet market demand. The first stage of development is planned to be centrally located within the land controlled by the Delfina Properties Pty Ltd, with the subsequent stage moving southward towards Orton Road (Figure 16: Indicative Staging Plan).

Initial lot release is expected in early 2017, subject to subdivision design and approvals being in place.

The remainder of the Structure Plan area will be staged as demand grows, planned around the logical and efficient connection to services.

This planned staging should be taken as indicative only is subject to change depending on market demand, landowner timeframes and other variables.

3.10. Developer Contributions

The Structure Plan area is located within Development Contribution Plan 1 (DCP1) under Schedule 7.1 of LPS 3 and is subject to the Byford Development Contribution Plan.

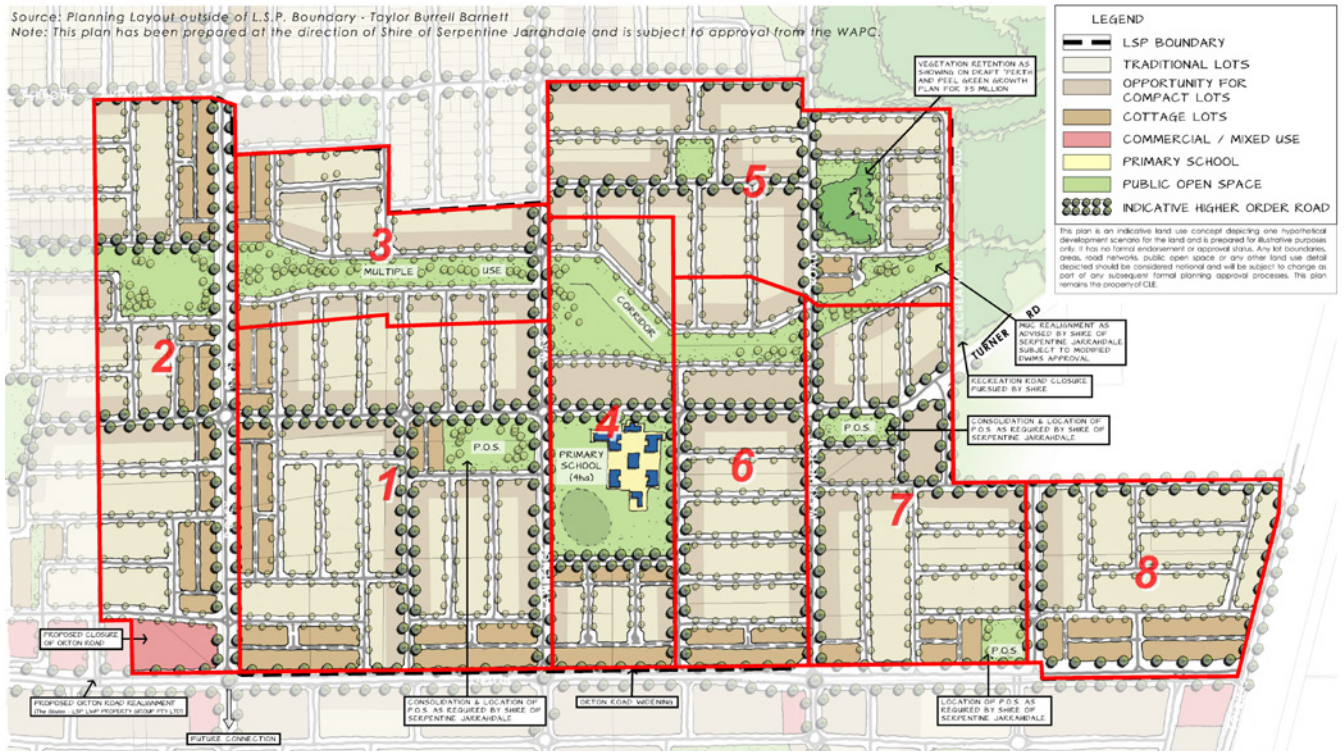


Figure 15: Indicative Staging Plan

CLE Town Planning + Design

APPENDIX 1

Environmental Report