



AMENDMENT No 1

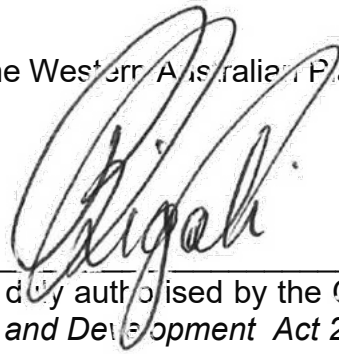
DOLEY ROAD PRECINCT LOCAL STRUCTURE PLAN

URBANISTA
TOWN PLANNING

IT IS CERTIFIED THAT AMENDMENT NO. 1 TO THE DOLEY ROAD PRECINCT STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

15 MARCH 2022

Signed for and on behalf of the Western Australian Planning Commission

A handwritten signature in black ink, appearing to read 'Rigali', is written over a horizontal line. The signature is enclosed within a light grey rectangular box.

an officer of the Commission duly authorised by the Commission pursuant to Section 16 of *the Planning and Development Act 2005* for that purpose.

TABLE OF AMENDMENTS

Each time a structure plan is amended, the amendment is to be recorded in the table of amendments at the front of the structure plan, including the amendment type (minor or major).

Amendment Number	Summary of the Amendment	Amendment type (minor / major)	Date approved by Western Australian Planning Commission
—	Original Structure Plan as approved by the WAPC	—	17 July 2017
1	Minor changes to LSP in area bound by Lawrence Way, Warrington Road, Allanson Drive, and Orton Road.	Minor	14 March 2022

TABLE OF DENSITY PLANS

Each time a density plan is approved, the plan is to be recorded in the table of density plans at the front of the structure plan.

Density Plan No.	Location of density plan	Total area of density plan application	Date endorsed by Western Australian Planning Commission

LEGEND

ZONES

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

LOCAL RESERVES

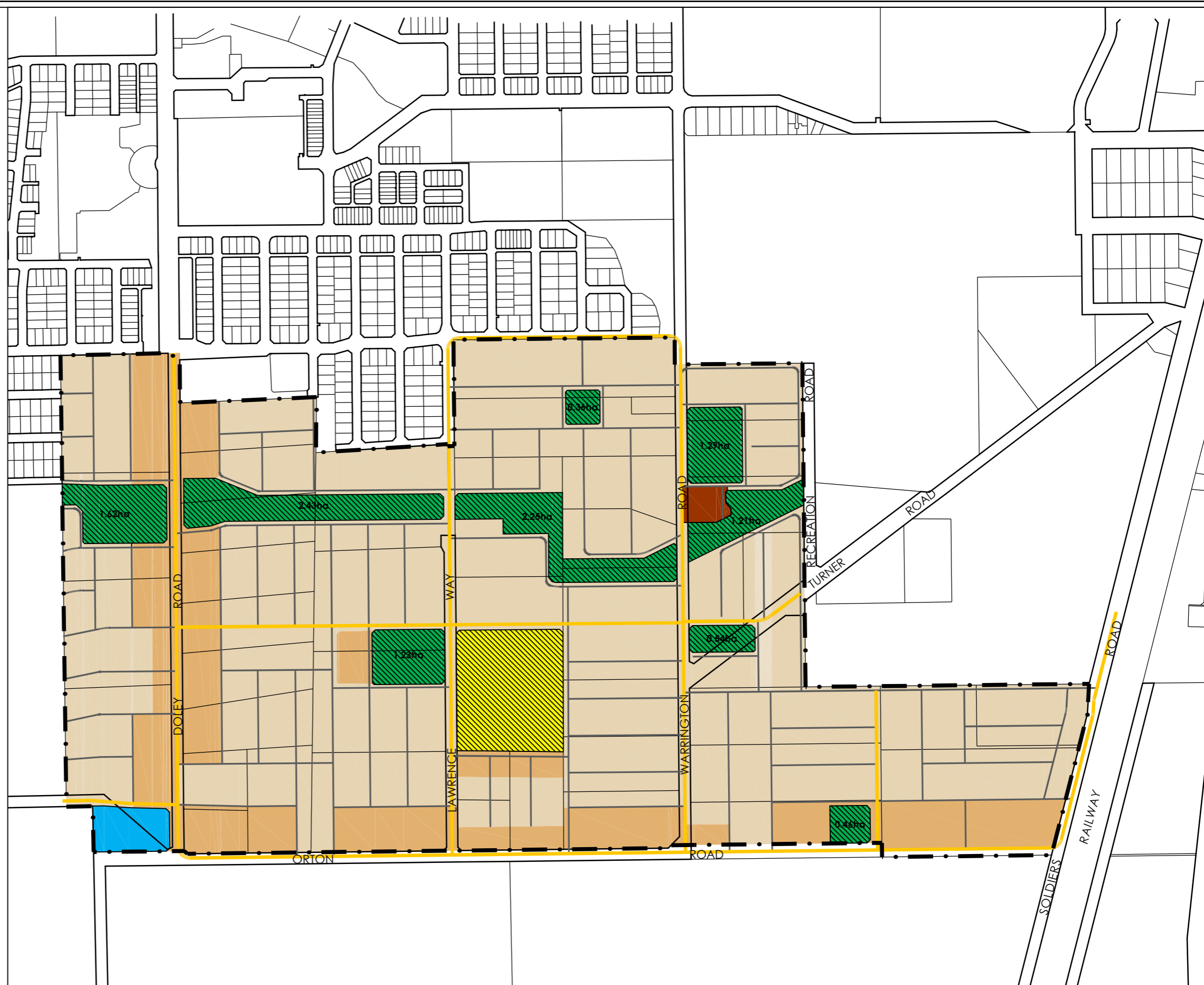
- Public Open Space
- Public and Community Purposes

OTHER

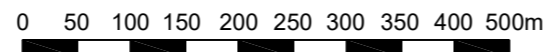
- Structure Plan Boundary
- Neighbourhood Connector
- Access Street

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.



LOCAL STRUCTURE PLAN MAP



SCALE 1:7000 @ A3



DOLEY ROAD PRECINCT AMENDMENT No. 1

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EXECUTIVE SUMMARY

The *Doley Road Precinct Local Structure Plan* was prepared to guide the built form outcome of the Local Structure Plan (LSP) area in the western part of the Byford townsite as it transitions from rural small holdings to medium and higher density residential housing. The LSP area covers a total area of approximately 120.5 hectares, originally comprising 47 freehold lots located along and to the north of Orton Road, Byford, within the Shire of Serpentine-Jarrahdale.

The Doley Road Precinct Local Structure Plan—prepared by CLE Town Planning + Design—was endorsed by the Western Australian Planning Commission (WAPC) on 17 July 2017 for a standard period of ten years. The purpose of a LSP is to guide the subdivision and subsequent development of land.

This “minor” LSP amendment (Amendment No. 1) for the Doley Road Precinct Local Structure Plan has been prepared to reconfigure indicative development outcome of residential and Public Open Space (POS) land at and around 55 Lawrence Way (Lot 61 on D61334). The LSP amendment is considered to be “minor” as, it is consistent with the objectives and purpose of the original endorsed LSP, and in accordance with WAPC’s 2015 *Structure Plan Framework*, the LSP amendment:

...does not materially alter the purpose and intent of the structure plan, ...change the intended lot / dwelling yield by more than 10 per cent or adversely impact upon the amenity of adjoining landowners and occupiers, restrict the use and development of adjoining land, or significantly impact on infrastructure provision or impact upon the environment.

The changes are summarised in Table 1, which show a change in POS (of with further discussion provided within this report. A comparison between the former Doley Road Precinct LSP map and the Amendment No. 1 map is shown in the image below and Appendix 1.



Current Doley Road Precinct LSP Map Extract
(as at 1 February 2020)

Doley Road Precinct LSP Amendment No. 1
(map extract showing area subject to amendment)

This amendment takes into account the statutory and strategic planning framework applicable to the subject site, and is supported by a comprehensive assessment and review of the development principles and assessments as they relate to environmental, engineering and servicing, transport impact and bushfire risk management issues.

Table 1—Land Use Summary

Item	Description	LSP Reference
Total area covered by the LSP	120.5ha	Part 2 — 1.2
<ul style="list-style-type: none"> • Residential • Commercial • Road Reserves • Parks and Recreation • Public Purpose 	68.2 hectares 1.0 hectare 35.7 hectares 11.2 hectares 4.0 hectares	Part 2 — 3.1
<i>Calculated using street type designations in Figure 19, Liveable Neighbourhoods, and other sources.</i>		
Total estimated lots yield	1,900–2,200 lots	Part 2 — 3.3.1
Estimated number of dwellings	1,900–2,200 dwellings	
Dwellings (as per Perth & Peel@3.5 million)	16.4 dwellings / gross hectare	
Dwellings (as per Liveable Neighbourhoods)	28.2 dwellings / site hectare	
Estimated Population	~5,390 people (+40) @ 2.8 people / household	
Number of Primary Schools	1 (4.0 ha)	Part 2 — 3.8
Number of High Schools	0	—
Estimated commercial floorspace	1,500sqm	Part 2 — 3.7
Public Open Space	11.241ha (total POS) 11.014ha (unrestricted POS) 0.227 (restricted POS)	Table 2, Part 2 — 3.3.

Table 2—Land Use Schedule

Gross Site Area	120.5ha
<i>Less</i>	
• Primary School Site	4.0ha
• Commercial Centre	1.04ha
• Orton Road widening	0.43ha
Sub-Total	5.47ha
Nett Site Area	115.03ha
<i>Deductions (Small Stormwater Events area (first 15mm of rainfall)) SEE NOTE 1</i>	
• POS 1	0.056ha
• POS 2	0.138ha
• POS 5	0.153ha
• POS 7	0.047ha
Sub-Total	0.394ha
Gross Subdivisible Area	114.64ha
Public Open Space Contribution (derived from the 2017 LSP)	
• <i>At least 10% Public Open Space</i>	<i>11.465ha</i>
<i>Comprising of:</i>	
• <i>at least 80% unrestricted POS</i>	<i>9.172ha</i>
• <i>up to 20% restricted POS</i>	<i>2.293ha</i>
Total Public Open Space Proposed	11.241ha (9.81%)
<i>Unrestricted POS</i>	
• POS 1 (Gross Area 1.62ha)	1.533ha
• POS 2 (Gross Area 2.43ha)	2.213ha
• POS 3 (Gross Area 1.23ha)	1.230ha
• POS 4 (Gross Area 0.36ha)	0.360ha
• POS 5 (Gross Area 2.34ha) (Subject of Amendment No. 1)	2.251ha
• POS 6 (Gross Area 1.29ha)	1.290ha
• POS 7 (Gross Area 1.21ha)	1.137ha
• POS 8 (Gross Area 0.54ha)	0.540ha
• POS 9 (Gross Area 0.46ha)	0.460ha
Sub-Total	11.014ha
<i>Restricted POS (1:5 ARI Rainfall Events area (excluding Small Stormwater Events area)) SEE NOTE 2</i>	
• POS 1	0.032ha
• POS 2	0.079ha
• POS 5	0.089ha
• POS 7	0.027ha
Sub-Total	0.227ha

Notes

1) Areas subject to inundation from the Small Stormwater Event (first 15mm of rainfall) are not included as restricted or unrestricted open space and are a deduction from the nett site area.

2) Areas for the detention of stormwater for a small stormwater event up to the 1:5 ARI are treated as restricted open space up to 20%.

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1 Implementation Section

1. STRUCTURE PLAN AREA

This Local Structure Plan (LSP) applies to the land identified in the approved Doley Road Local Structure Plan map in Byford, comprising of approximately 120.5ha of land.

Refer to Local Structure Plan Map.

2. OPERATION

This structure plan commences operation on the date it is approved by the Western Australian Planning Commission. The structure plan is valid for a period of ten years from such time, unless otherwise specified. The Doley Road Precinct LSP was originally approved on 17 July 2017.

3. STAGING

Development staging should follow an orderly sequence and should not exceed the extension of essential service infrastructure or constructed road access. Basic essential infrastructure including roads and utilities are to be provided prior to the release of land for residential or other development. An indicative staging plan is provided in Figure 22.

4. SUBDIVISION & DEVELOPMENT REQUIREMENTS

4.1 LAND USE ZONING

The land use zoning of LSP area is shown on the Local Structure Plan Map.

These land use zoning classifications have been prepared to guide the future subdivision and development of the land. Land Use permissibility (zoning table) is to be consistent with the Shire's current gazetted Local Planning Scheme. 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. Further details of land use composition are provided in Table 1—Land Use Summary.

4.2 R-CODE DENSITY

The density coding within the structure plan area consists of residential codings that provide a mix of medium density development. The proposed density codings remain as per the original endorsed structure plan and are R25-40, R40-60, R60 and R80. The code ranges allow for a responsive and flexible approach to development to suit market demand and allow for the built form to reflect the character of the area as the LSP area is built out over the next ten years.

The Structure Plan Map defines the broad residential density ranges that apply to specific areas within the Structure Plan area. 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.

Residential Code Plan

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 and locational criteria contained in Clause 5.2.3.

The Residential Code Plan is to include a summary of the proposed dwelling yield of the subdivision. 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.

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 Structure Plan Map and the locational criteria explained below.

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.

Locational Requirements

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 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 / neighbourhood 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

4.3 PUBLIC OPEN SPACE

Public open space is to generally be provided in accordance with Table 2 – Land Use Table and Plans 1 (Structure Plan Map).

As a condition of subdivision of Lot 61 Lawrence Way, Byford, the subdivider will be required to make payment to the Shire of Serpentine Jarrahdale for the sum equivalent to 700m², being that portion of the land that would otherwise be provided as open space prior to Amendment 1 of the SP.

4.4 ROAD TREATMENTS

The road reserves should include the installation of street trees and landscaping, parallel street parking bays, dual-use paths, 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.

Further information is provided below, and within the figures and technical appendices which guide, inform, and accompany this report—including the consultant traffic engineer's report.

- 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 LSP 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 LSP 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 Road) 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.

4.5 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.

4.6 DEVELOPMENT STANDARDS

Development of land within the subject site is to be consistent with TPS No. 2.

4.7 NOTIFICATIONS ON TITLES

Where an application proposes to create lots which include land with a bushfire attack level of 12.5 or above, the following notification on the certificate(s) of title of the proposed lot(s) may be required:

This land is within a bushfire prone area as designated by an order made by the Fire and Emergency Services Commissioner and is/may be subject to a bushfire management plan. Additional planning and building requirements may apply to development on this land.

Other standard conditions may be incorporated on the certificate(s) of title as appropriate.

5. LOCAL DEVELOPMENT PLANS

The preparation of a Local Development Plan in accordance with clause 5.18.5 of the TPS No. 2 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 to address specific site considerations for development where proposed lots or parcels:

- Abutting POS reservations; or
- Are subject to the development performance standards of State Planning Policy 3.7 Planning in Bushfire Prone Areas, and have a demonstratable bush fire risk; or
- At the discretion of the developer there are additional development considerations or site constraints that need to be addressed through a LDP to enable coordinated development of the site.

Notwithstanding, the WAPC or local government may require the preparation of a LDP in accordance with Part 6, Schedule 2 (Regulation 47) of the *Planning and Development (Local Planning Schemes) Regulations 2015* (W.A.).

The LDP shall demonstrate an additional level of detail to specify how development will achieve the objectives and development standards outlined in the previous section and other planning framework considerations. A LDP shall not vary the proposed land use permissibility or residential density, as detailed in the structure plan.

Local Development Plan Information Required

A LDP should draw on this Local Structure Plan to guide its preparation and shall consider other LDPs prepared and approved prior within this LSP area.

LDPs shall demonstrate a coordinated approach to development, and where possible a single LDP should encompass multiple contiguous development sites or lots, as opposed to individual sites and lots.

6. OTHER REQUIREMENTS

6.1 CONDITIONS OF SUBDIVISIONAL 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); and
- Acid Sulphate Soils Management Plan.

6.2 BUSHFIRE MANAGEMENT

This Local Structure Plan is supported by a Bushfire Management Plan (Appendices 3 and 6.2). Regardless of whether the land has been formally designated as bushfire prone, any building to be erected on land identified as falling within 100 metres of a bushfire hazard is designated as bushfire prone land and shall comply with the requirements of Australian Standard 3959 under the Building Code of Australia. Stage / subdivision applications will need to provide bushfire assessment documentation and relevant (self-contained) treatments at each subsequent level of planning in accordance with State Planning Policy 3.7—Planning in Bushfire Prone Areas.

6.3 DEVELOPMENT CONTRIBUTIONS

The Local Structure Plan is subject to the Byford Development Contribution Scheme pursuant to the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2.

2 Explanatory Section

1. PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

Part Two of this Local Structure Plan comprises an explanatory report that outlines site details, the applicable planning framework, site conditions and constraints and the design rationale for the structure plan. Part Two should be read in conjunction with the Local Structure Plan Map and any figures and appendices as they relate.

The purpose of the LSP is to guide the subdivision and subsequent development of the LSP area in the western part of Byford's townsite. This LSP has been prepared in accordance with the requirements for Development Areas under Part 5.4 of the Shire's Town Planning Scheme No. 2 (TPS No. 2) the "deemed provisions" of the *Planning and Development (Local Planning Schemes) Regulations 2015 (W.A.)*.

The Doley Road Precinct Local Structure Plan was endorsed by the Western Australian Planning Commission on 17 July 2017. In the time since, portions of the LSP area have been developed, generally west and south of the subject site. Based on the information presented in the LSP, the estimated post-development dwelling yield was for 1,875–1,975 dwellings, which has increased to 1,890–1,990 dwellings in Amendment No. 1 over the 120.5ha structure plan area (refer to Table 1—Land Use Summary). The LSP is lodged in accordance with Clause 5.18.1 of TPS2 where a structure plan is required prior to subdivision or development within a Development Zone.

1.2 LAND DESCRIPTION

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

1.2.1 Location

The LSP 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 10: Location Plan).

The LSP 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.

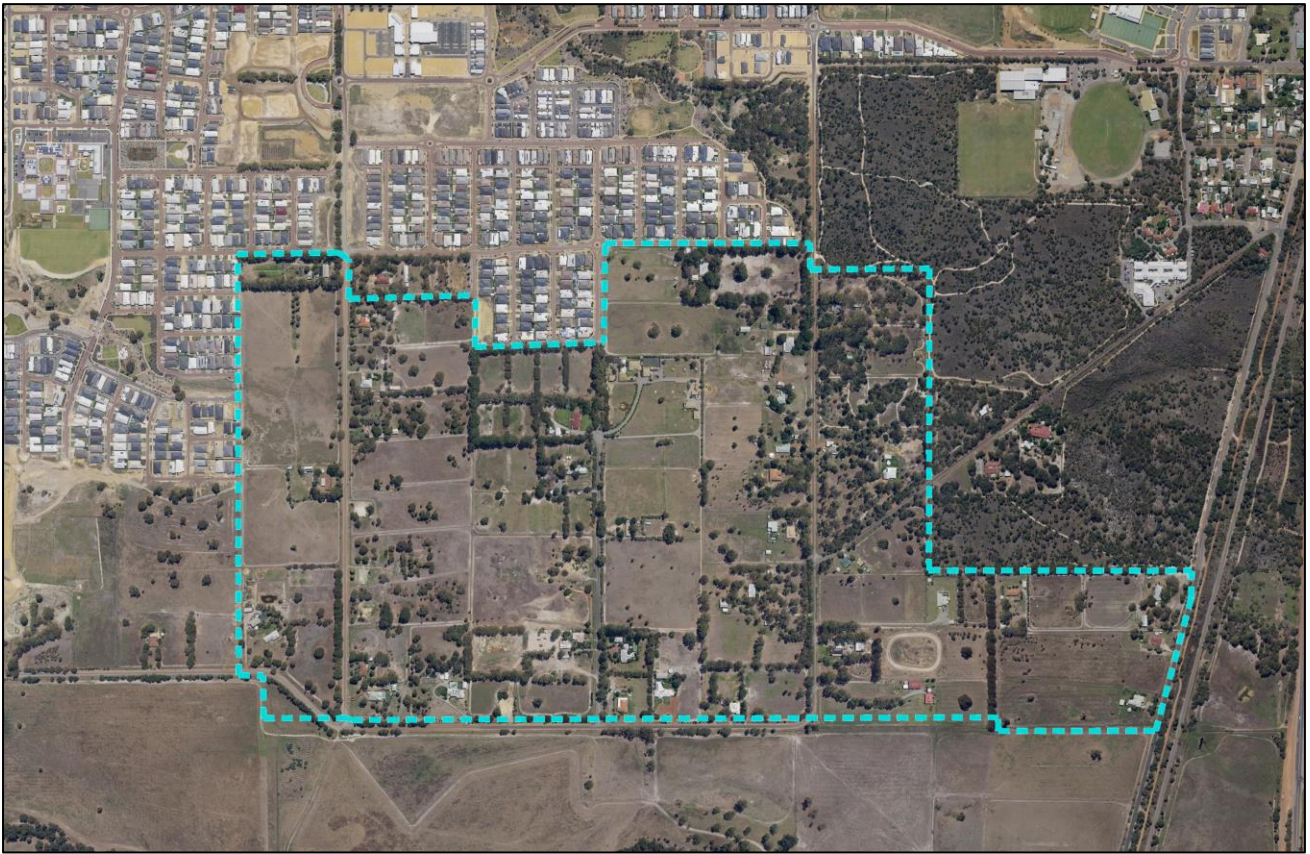


Figure 1 March 2017 aerial of the Doley Road Precinct LSP area.

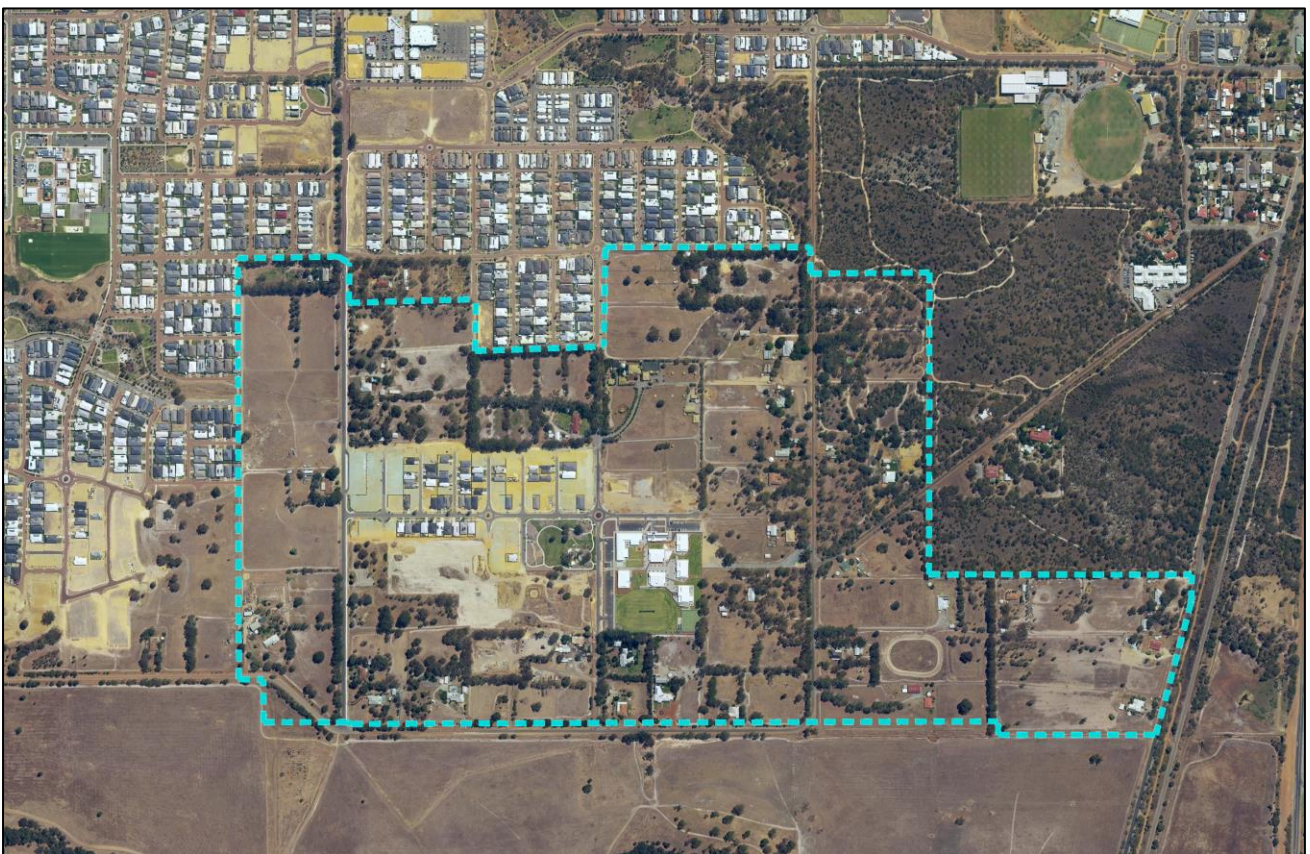


Figure 2 March 2020 Comparison aerial of the Doley Road Precinct LSP area.

1.2.2 Area and Land Use

The LSP 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 1 and 2 on the previous page demonstrate the increased development of the LSP area since 2017 when it was first approved. This new development includes Beenyup Primary School and a large number of houses.

1.2.3 Ownership and Title Details

The LSP area is comprised of 47 freehold lots.

The LSP 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 LSP is located within the Byford Urban Growth Cell which is rapidly developing residential front that surrounds the Byford town centre. The LSP 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 LSP 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 LSP, 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.

1.3 PLANNING FRAMEWORK

1.3.1 Metropolitan Region Scheme

The Metropolitan Region Scheme is a broad regional planning document which sets out the zoning and use of land in the Perth metropolitan area.

The SP area is zoned 'Urban' under the Metropolitan Region Scheme and the Blackwood Reserve abutting the SP area is reserved for 'Parks and Recreation'.

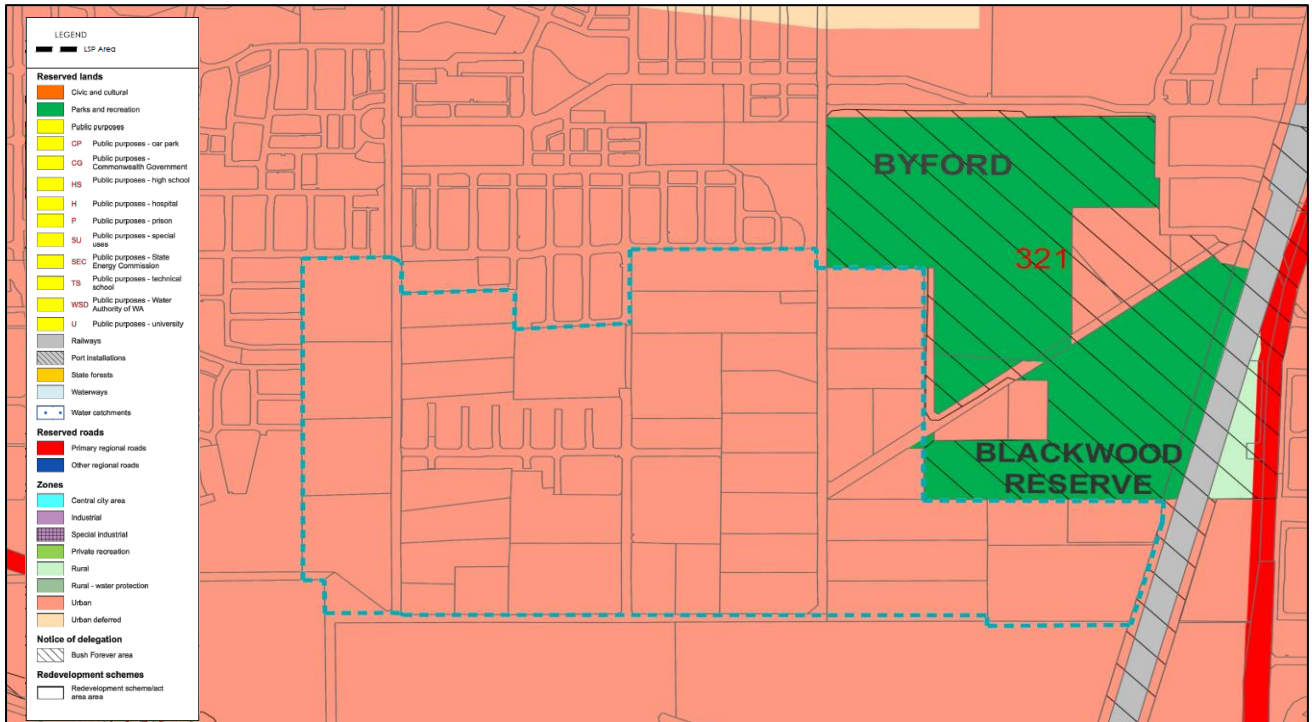


Figure 3: Metropolitan Region Scheme Map Sheet 28. Source: WAPC 2020.

1.3.2 Shire of Serpentine-Jarrahdale Town Planning Scheme No. 2

The structure plan area is zoned "Urban Development" under the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2.

The objectives and purpose of the Urban Development zoned land are as follows:

The purpose of the Urban Development zone is to provide for the orderly planning of large areas of land in a locally integrated manner and within a regional context, whilst retaining flexibility to review planning with changing circumstances. The zone will allow for the following:

- development of functional communities consistent with orderly and proper planning and the establishment and maintenance of an appropriate level of amenity;
- variety in the range of lot sizes and dwelling types within communities, consistent with a cohesive and attractively built environment;

- c) provision of retail, commercial, industrial and mixed use facilities to service the needs of residents within the communities, and integration of these facilities with social and recreational services, so as to maximise convenience;
- d) provision of retail, commercial, business park and industrial facilities to provide local employment opportunities;
- e) provision of open space and recreation networks, appropriate community services, school sites and other recreational facilities;
- f) establishment of multiple use corridors for drainage, nutrient control and recreational purposes, in association with the development of communities based on the principles of water sensitive urban design;
- g) optimisation of convenience in respect of rail, road, cycleway and other transportation means, to and within the communities;

The above components will be facilitated by means of:

- a) establishment of Structure Plans to ensure that development takes place in conformity with those Plans;
- b) establishment of a mechanism to coordinate the provision of infrastructure for subdivision and development to and within the communities;
- c) establishment of an equitable method for the distribution, between owners within area, of the costs of nominated infrastructure components required for subdivision and development of the areas into communities; and
- d) provision of administrative procedures to ensure the expedient and successful execution of the above matters.

It is considered that the proposed local structure plan amendment, and potential development as a result, is wholly consistent with the objectives of “Urban Development” zoned land, as elaborated on and detailed in the Planning Assessment and Justification section of this report. The proposed local structure plan is consistent with the existing approved structure plan insofar as its achievement and satisfaction of its objectives and site context.

The structure plan area is also located within Development Area 3, which is known as the Byford Development Area. The Byford Development Area covers an area of approximately 1370ha and is separated into 15 precincts as per Plan 9A of TPS2.

In addition, the structure plan area is also located within Development Contribution Area 1, which is known as the Byford Traditional Infrastructure Development Contribution Plan. This plan broadly requires a monetary contribution from landowners for:

- The upgrades and construction of existing and new roads.
- Improvements to the existing sporting facilities and playing fields within Byford as well as the provision for and development of new facilities.
- The development of land for local and neighbourhood parks, multiple-use corridors for recreation and drainage areas and land for purely for drainage.
- The compensation costs to acquire land for roads, public open space and drainage.

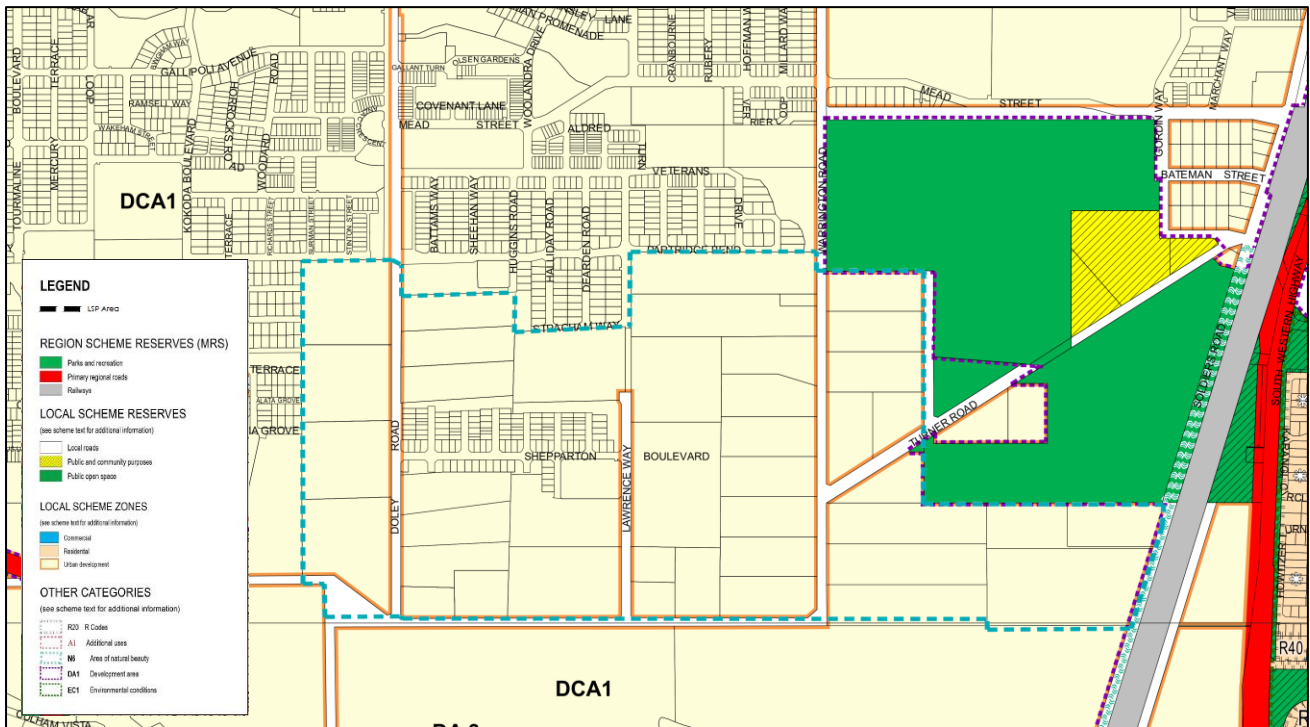


Figure 4: Shire of Serpentine-Jarrahdale TPS No. 2 Map 1 of 7. Source: WAPC 2020.

1.3.3 Byford District Structure Plan (2005)

The LSP 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 LSP corresponds with Precinct 7 of the Byford Structure Plan (Figure 5: Byford Structure Plan). The LSP 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.

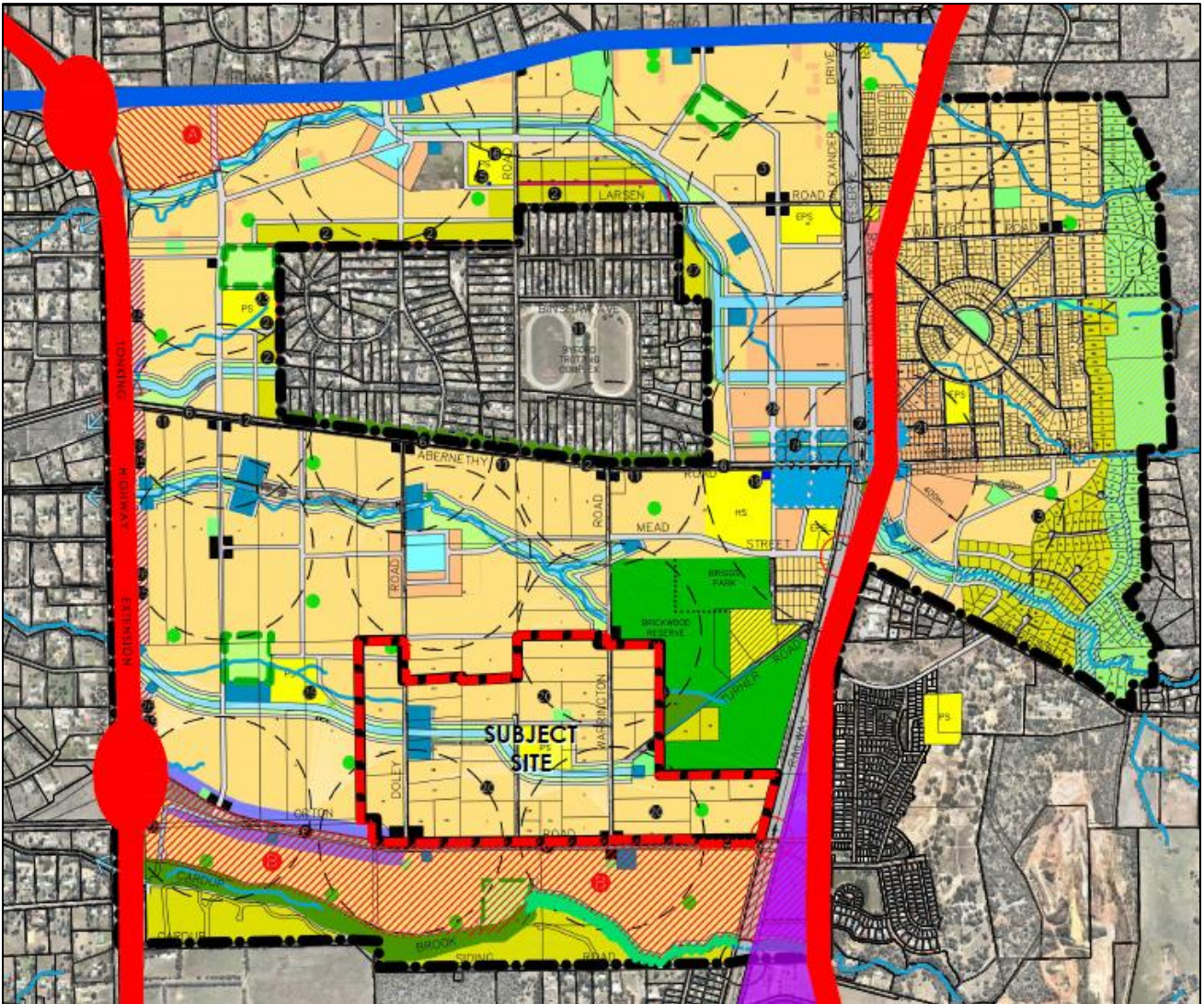


Figure 5: Byford District Structure Plan

1.3.4 Strategic Planning Framework

Perth and Peel@3.5million

Perth and Peel@3.5million is the overarching strategic planning framework for the Perth and Peel metropolitan regions. Perth and Peel@3.5million proposes five strategic themes for a liveable, prosperous, connected, sustainable and collaborative Shire. The framework aspires to a Shire that provides ‘...a network of connected activity centres which deliver employment, entertainment and high-density lifestyle choices’. The site is located within the South Metropolitan Peel Sub-Region. The framework further identifies that an additional 14,680 dwellings will be required to be accommodated in the Shire of Serpentine-Jarrahdale (urban infill) over the 35 years to 2050.

The structure plan responds to the objectives and intent of Perth and Peel@3.5million by achieving the following:

1. The site recognises the priority of public transport over the use of private vehicles, and will take advantage of future public transport options, as urban densification occurs;
2. The site provides for appropriate and responsive urban consolidation;

3. The site provides for higher-density residential development;
4. The site provides a minimal impact of the existing fabric of the surrounding local area; and
5. The site contributes to an increase in density and diversity of beneficial land-uses by allowing for a variety of complementary uses in the Local Centre zone.

Based on this information, and given the above, the structure plan is considered to achieve the intent and objectives of Perth and Peel@3.5million.

1.3.5 Other Planning Considerations

Liveable Neighbourhoods

Liveable Neighbourhoods is an operational policy, adopted by the WAPC, for the design and assessment of new structure plans and subdivisions. The elements of Liveable Neighbourhoods primarily relate to larger-scale structure plans and subdivisions and accordingly a detailed assessment of this structure plan against these elements is not considered necessary in this instance due to its small scale and simple nature. There are two versions of Liveable Neighbourhoods—the 2009 approved version and 2015 draft version.

Nethertheless, it is acknowledged that the general intent and objectives of Liveable Neighbourhoods are relevant in terms of addressing such elements as connectivity and walkability, provision of public parkland, urban water management and utilities. A detailed description of the design rationale for the LSP has accordingly been provided in Section 3 of this LSP report as a result.

State Planning Policy 3.7 (SPP3.7) – Planning in Bush Fire Prone Areas

SPP 3.7 – Planning in Bushfire Prone Areas was 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 LSP is accompanied by a Bushfire Management Plan which includes a Bushfire Hazard Assessment as per the Guidelines. The manner in which the LSP responds to bushfire risk is discussed in further detail in Section 3.4.

Shire of Serpentine-Jarrahdale Local Planning Policies

The following Shire of Serpentine-Jarrahdale Local Planning Policies (LPP) are applicable to the Doley Road Precinct Local Structure Plan area. Their relevance will depend on the proposed use/development of land within the Structure Plan Area and therefore should be considered in any future development or subdivision of the subject site:

- LPP 2.4 – Water Sensitive Urban Design Guidelines
- LPP 2.7 – Bio-Diversity Planning Policy
- LPP 2.8 – Public Open Space Policy
- LPP 4.7 – Placement of Fill in Non-Urban Areas
- LPP 4.13 – Revegetation Policy
- LPP 4.16 – Landscape and Vegetation Policy
- LPP 4.18 – Street Trees Policy

2. SITE CONDITIONS & CONSTRAINTS

2.1 TOPOGRAPHY & GEOLOGY

The topography and soils within the LSP area are suitable for urban development. The LSP 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 LSP 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 LSP 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 LSP 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 LSP 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 & NATURAL ASSETS

The subject site is primarily vacant with only open grassland and shrubbery existing on the site.

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 LSP 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 LSP 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 LSP 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 LSP 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 Urbaqua 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 LSP are summarised below, while the key principles of the LWMS are discussed further in Section 3.6 of this report.

The structure plan amendment is supported by an addendum (2021) to the LWMS (2016) to demonstrate the suitability of the realigned multiple use corridor.

2.3.1 Surface Water

The Department of Parks and Wildlife Swan Coastal Plain geomorphic wetlands database classifies the LSP 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 LSP area is conveyed to a minor watercourse that flows through the site in a westerly direction. The LSP 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 LSP area flows to a drain located in the Orton Road reserve. The LSP 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 LSP 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 LSP 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 BUSHFIRE MANAGEMENT

Linfire has prepared a Bushfire Management Plan (FMP) in accordance with WAPC's "Planning in Bushfire Prone Areas". The BMP includes a Bushfire Hazard Assessment that identifies bushfire hazards (post development) (Figures 8) in the amendment area. Figure 14 provides a complete BMP for the overall LSP area. A complete copy of the BMP is included in Appendices 3 and 6.2.

The BMP concludes that bushfire risk is not an impediment to development, subject to the implementation of building protection zones and the construction of dwellings within 100m of bushfire prone vegetation in accordance with AS3959 "Construction of buildings in bushfire prone areas".

The manner in which the LSP responds to bushfire hazards is discussed in further detail within Section 3.4 of this report.

2.5 HERITAGE

A desktop search of the Department of Aboriginal Affairs' Aboriginal Heritage Inquiry System has indicated that the subject site has no known European heritage or Indigenous Australian heritage significance.

3. LAND USE & SUBDIVISION REQUIREMENTS

3.1 PROPOSED LSP AMENDMENT

Local Structure Plan Amendment Proposal and Justification.

No change in density is proposed and the land which is zoned for residential purposes (subject to this amendment) will remain with a split density of R25 / 40.

The purpose of the proposed LSP amendment is to amend the configuration and location of the POS and the road layouts within No. 55 (Lot 61) Lawrence Way, Byford. The proposed amendment does not alter the POS locations or road network layout that adjoins Lot 61.

The original endorsed LSP illustrated the POS being located in the south-western corner of Lot 61, directly abutting Lawrence Way. Lawrence Way currently exists as a cul-de-sac road, which terminates alongside Lot 61. The endorsed LSP illustrated the POS extending beyond the cul-de-sac, effectively resulting in Lot 61 being landlocked, until such time adjoining lots developed.

The amendment proposes to include a residential area to the south and north of Lot 61 with the POS being situated through the centre of the site. This allows the Multiple Use Corridor (MUC) to connect to Lot 4 to the west and Lot 51/Lot 52 to the east, whilst providing a sizeable active open space area for the community.

3.2 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 LSP (Figure 15: 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 LSP provides for the following:

- Approximately 1,850–1,950 lots across the LSP 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 11.2ha of open space distributed throughout the LSP 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 Neighbourhood Centre at the intersection of Orton and Doley Roads, providing residents with convenient access to retail.

A Land Use Schedule has been included as Table 2, and should be read in conjunction with the Landscape Masterplan for the amendment area (Figure 5) and the overall LSP area (Figure 16). This is accompanied by the Public Open Space Schedule (Table 2).

3.3 RESIDENTIAL

The LSP 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 LSP.

3.3.1 Dwellings Yields and Density Targets

The LSP has the potential to create approximately 1,850–1,950 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 180m² to 300m².
- 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 LSP 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@3.5million. Similarly, the LSP 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.

3.3.2 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 and will be determined by the Shire of Serpentine-Jarrahdale in accordance with section 5.18.5 of TPS NO. 2.

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

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 LSPs will address:

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

3.3.3 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).

3.4 PUBLIC OPEN SPACE

The Landscape Masterplan prepared by LD Total Landscaping describes the intended function and design principles of each open space area, shown in the Landscape Master Plan in Figure 5 below. The overall Landscape Master Plan for the LSP area has been provided in Figures 6 and 16.

The LSP ensures that public open space can serve a variety of functions throughout the LSP 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.

Structure Plan Amendment 1 slightly reduces the POS component on Lot 61 Lawrence Way. The reconfiguration of POS5 has resulted in a relocation of a residential area to the south of POS5 that is able to connect to the public road network. This also allows development to commence prior to the construction of the section of Lawrence Way abutting Lot 61 that has not yet been ceded as road reserve by the respective landowner.

A cash-in-lieu component will be required upon subdivision of Lot 61, in respect of the POS shortfall of 700sqm, compared to the 2017 SP.

As illustrated and described below the POS design will include the following key elements:

- A living stream with natural vegetation within the MUC.
- An open, levelled lawn area to be used as an active POS area in the north-eastern portion of the POS. It is envisaged this space will act as a ‘kick-a-bout’ space that may include sporting goals/posts and/or a half basketball court or the like. The sporting equipment provided should target the age group of approximately

8+ years and should be contained to the western side of the active POS area as residential lots will abut in the eastern side in the future.

- ‘Turf pockets’ are also proposed to the north of residential block 4, which is abutting the proposed lots and to the south of the residential block 1. These spaces will include footpath connections to Lawrence Way as well as heavier landscaping directly abutting the lots for privacy.
- A smaller active space is also provided to the east of residential block 4 on the opposite side of the MUC to the larger active space. It is envisaged that this space would contain exercise equipment and a seating/rest node as well as a bridge connection over the living stream to connect the two active POS spaces.

The landscaping of the amendment area will include an attractive pedestrian friendly path network flowing alongside the living stream, interspersed with seating, grassed areas, and native and WaterWise plantings.

The Landscape Masterplan is included in Appendices 5 and 6.3.



Figure 5: Landscape Master Plan. Source: LD TOTAL 2021.



Figure 6: Landscape Master Plan. Source: LD TOTAL 2017.

3.4.1 Multiple Use Corridor (Living Stream)

The LSP provides for a 16m wide multiple use corridor that passes through the LSP 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 and WaterWise groundcover, plants, and trees for easy and low cost maintenance.
- 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”, including through visually permeable fencing.
- A design which achieves the principles and objectives of Water Sensitive Urban Design.

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, as per the detailed section Landscape Plans of Appendices 5 and 6.3.

3.4.2 Local Parks

Local parks of between 3000m² and 8000m² 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.

3.4 BUSHFIRE MANAGEMENT

A review of the Department of Fire and Emergency Services (DFES) dataset revealed that the subject site is designated as a Bushfire Prone Area.

A Bushfire Management Plan (BMP) has been prepared for Lot 61 (No. 55) Lawrence Way by Linfire for the Local Structure Plan Amendment No. 1 area, and accompanies the BMP which was previously prepared by Essential Environment which covered the whole Structure Plan area (refer to Appendices 3 and 6.2). These BMP have been prepared as a strategic document to guide the delivery of compliant development at future planning stages in accordance with the Guidelines.

In accordance with the WAPC's "Planning in Bushfire Prone Areas", the Bushfire Management Plan (BMP) includes a Bushfire Hazard Assessment identifying bushfire prone areas (a bushfire prone area is defined as any land that may experience a bushfire that has the potential to impact development). The images effectively show that the post-development bushfire hazard level is low, and ultimately there are no risks or concerns which have been identified which would otherwise limit or restrict residential development. The images shown below illustrate that Amendment No. 1 area will result in a "low" bushfire hazard level.

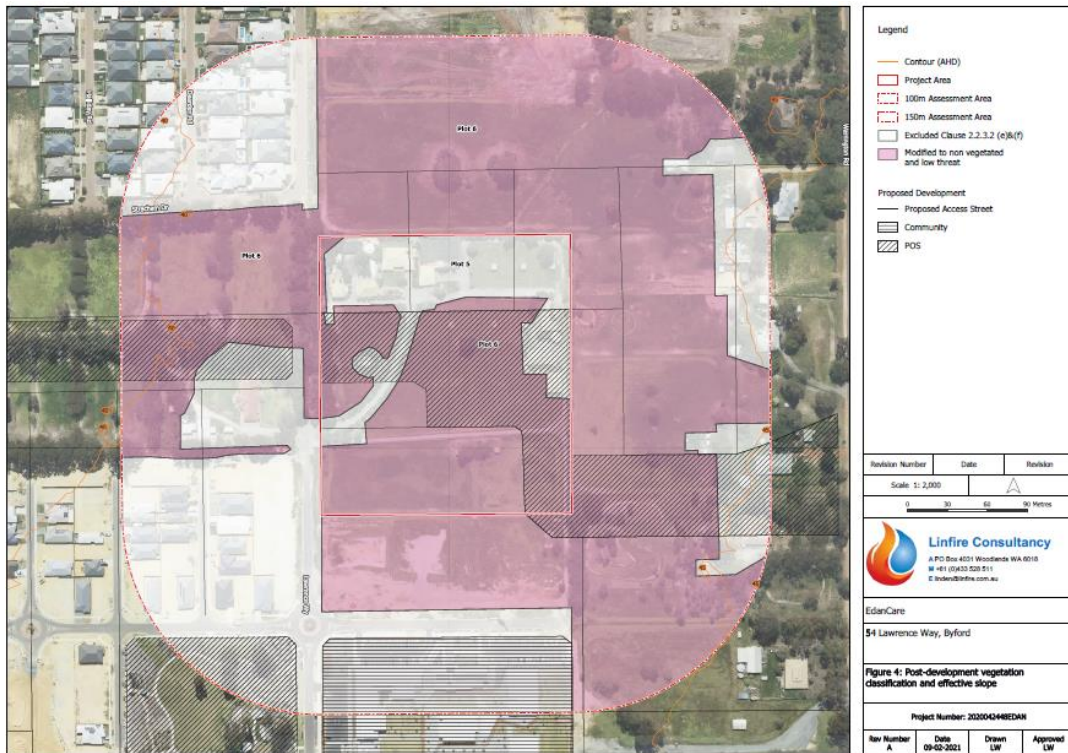


Figure 7: Post-development vegetation classification and effective slope. Source: Linfire Consultancy 2021.

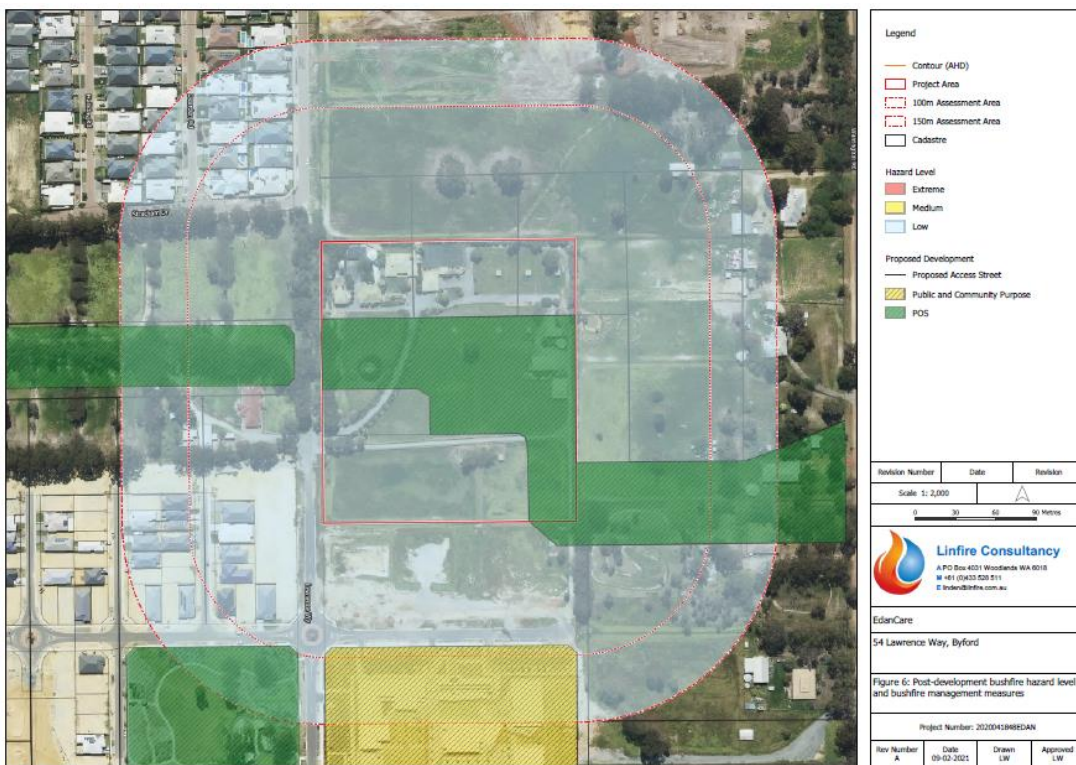


Figure 8: Post-development bushfire hazard level and bushfire management measure. Source: Linfire Consultancy 2021.

The low-risk nature of the post-development condition has been assigned to the Amendment No. 1 area by Linfire Consultancy as follows:

The bushfire hazard levels have been assigned on the basis of the vegetation discussed in Section 3.1.4 and the future expected vegetation extent within and surrounding the project area.

The LSP 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.

The FMP requires the APZ to be sufficient to achieve a Bushfire Attack Level (BAL) of 29 or less in accordance with AS 3959 “Construction of buildings within bushfire prone areas”. Fences constructed from non-combustible materials away from the vulnerable parts of the building such as windows and doors.

The LSP responds by creating an APZ to provide sufficient separation from surrounding classified vegetation and ensuring all landscaping within the project complies with the APZ standards. Proposed residential dwellings will also be constructed to the specifications of AS 3959 for the assessed BAL rating. All areas of POS will be landscaped and maintained to a “low hazard” standard within the LSP area.

Vehicle access to the proposed development will be configured to comply with the Guidelines and include any temporary access arrangements to ensure compliance during staged development. The northern and southern portions of Lawrence way will be linked, removing the cul-de-sac.

The existing town main and street hydrant connections will be extended to the project area in accordance with the requirements for reticulated water supplies of the Guidelines.

In light of the above, Linfire considers the associated bushfire risks to be manageable through standards bushfire management responses in compliance with the Guidelines and AS 3959 to combat any potential bushfire hazards within and adjacent to the project area.

Any future lots constructed to a BAL12.5 standard or greater needs to provide appropriate notifications on titles to inform landowners of the need to construct dwellings to higher (BAL) construction standard as a condition of subdivision. Any mandatory constructions standards will be implemented via Local Development Plans at the time of subdivision approval, as discussed in Section 3.2.2. In addition, the retention of vegetation within the Lawrence Way road reserve will occur where possible.

3.5 MOVEMENT NETWORK

A comprehensive Transport Impact Assessment has been prepared by KCTT traffic engineers, included as Appendix 6.4.

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 LSP 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 LSP area.
- Orton Road abuts the southern edge of the LSP area, intersecting with Hopkinson Road to the west and Soldiers Road to the east.
- Doley Road passes through the LSP 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 LSP.
- 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 LSP area, providing an quarter hour service Monday to Friday, with an hourly service on Saturdays.
- Abernathy Road located approximately 2.3km north of the LSP area, is considered a good riding environment in accordance with the Department of Transport's Perth Bike Map series.
- Main Roads Western Australia 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 LSP 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 19: 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 roads, with a reservation width of 24.4m.
- **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 6.0m–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 LSP provides an excellent level of accessibility and permeability for pedestrians and cyclists, both within the site and via connections to surrounding areas (Figure 20: 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.
- Dual use pathways will be provided, connecting to the existing “Trails Network” located within Brickwood Reserve.

The precise location and alignment of footpaths and shared paths will be determined in consultation with the Shire of Serpentine- Jarrahdale 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 LSP area.

It is anticipated that existing bus routes will be extended to service the LSP 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 LSP. 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@3.5million 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 LSP.

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@3.5million. 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.

3.6 WATER MANAGEMENT

In accordance with the WAPC's Better Urban Water Management Guidelines, Urbaqua has prepared a Local Water Management Strategy (LWMS) that establishes key principles for the management of stormwater runoff and groundwater quality for the subject site. The amended structure plan involves the realignment of the POS layout and area within Lot 55 and the increase of residential area. Therefore, this LWMS outlines the strategies which will be implemented to manage stormwater within the Multiple Use Corridor.

Pursuant to Schedule 15 (DCA1) of TPS NO. 2, 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.

This LWMS is supportable for approval of the structure plan by the City as the proposed stormwater and groundwater strategies are appropriate for the management of the project area. Any increase in surface runoff to the POS caused by the expansion of residential development will be limited through the extension of subsoil and stormwater drainage along Lawrence Road.

In addition, due to the increase in length of the main channel by 50m (approximately), the reconfigured layout of POS can provide an increased flood storage capacity, as well as within the MUC. Furthermore, as shown in the concept below, there is an adequate amount of POS available to accommodate the recommended meander length design and therefore avoid sharp bends in the live stream.

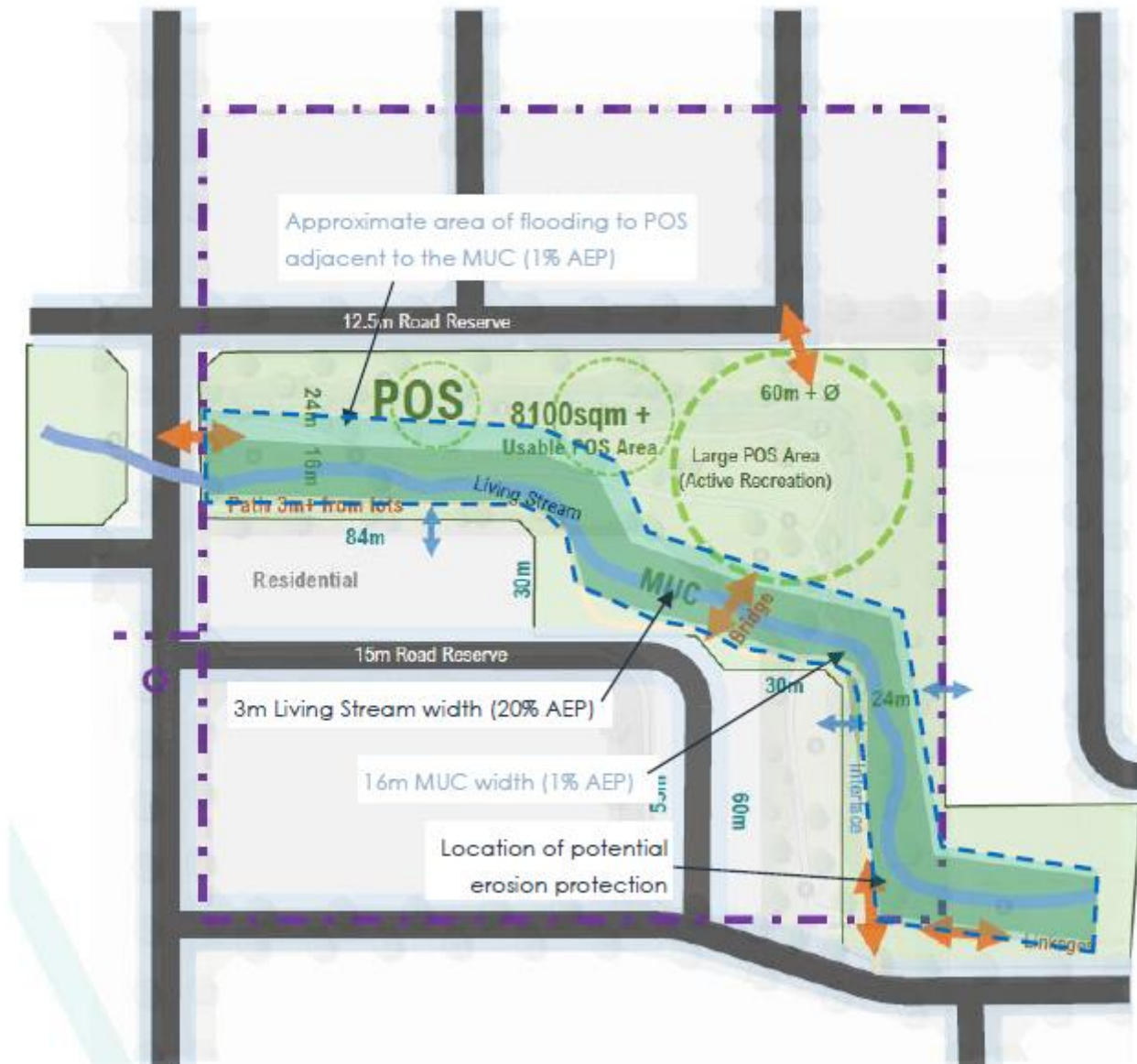


Figure 9: Living Stream and MUC Concept. Source: Urbaqua 2020.

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 copy of the LWMS is provided in Appendices 4 and 6.5.

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 LSP 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 LSP 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 21: 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 LSP 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 LSP 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.

3.7 ACTIVITY CENTRES

The LSP 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 LSP 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 LSP 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 LSP 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 LSP.

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 6.6.

3.8 EDUCATION

The LSP 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 LSP 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, & 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 6.7.

3.9.1 Earthworks Strategy

A preliminary earthwork strategy has been prepared for the LSP.

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 LSP area.
- Match into the ground levels found on adjoining landholdings, including Brickwood Reserve abutting the eastern boundary of the LSP.
- 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 LSP 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 LSP 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 High Voltage power lines within the LSP 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 High Voltage feeder cables being extended into the area.

3.9.5 Gas Supply

The LSP 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 LSP 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 LSP 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 LSP 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 22: Indicative Staging Plan).

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

The remainder of the LSP 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.

3.9.8 Development Contributions

The LSP area is located within Development Contribution Area 1 (DCA1) under appendix 16A (for Byford Development Contribution Area) within TPS No. 2 and is subject to the “Byford Townsite Development Contribution Plan”.

4. CONTEXT PLANS & FIGURES

4.1 CONTEXT PLANS

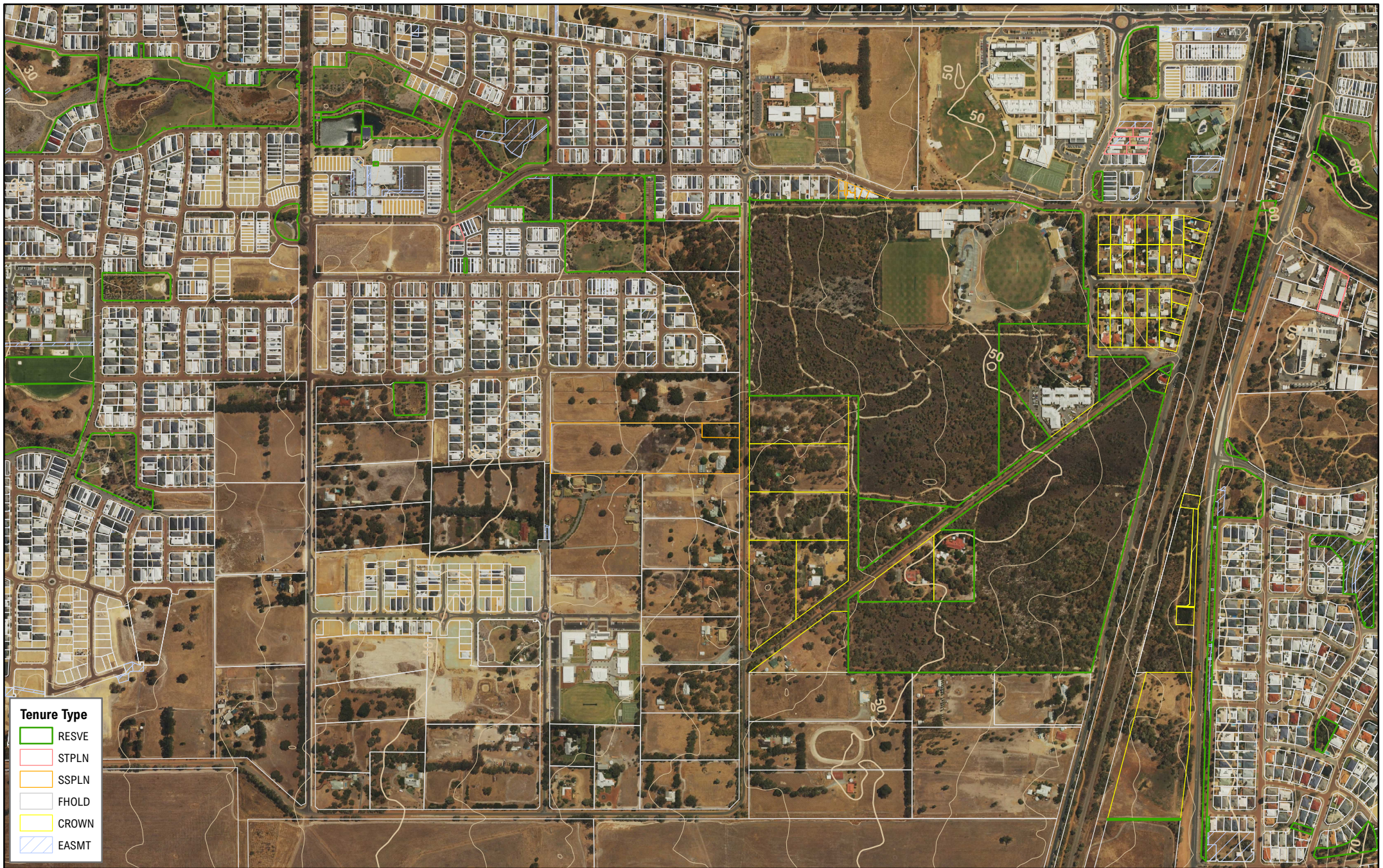
Context plans have been prepared for the LSP which provide a comprehensive overview of the site conditions and context. These context plans are accompanied and supported by the consultant’s reports and technical appendices. The provided context plans which are provided on the following pages include the following:

Context Plan 1:	Topography and Cadastre
Context Plan 2:	Public Transport
Context Plan 3:	Roads
Context Plan 4:	Cycling Network
Context Plan 5:	Heritage
Context Plan 6:	Bush Fire & Soils
Context Plan 7:	Flooding & Wetlands

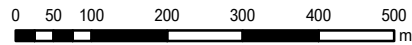
4.2 2017 DOLEY ROAD PRECINCT LSP FIGURES

In support of the Doley Road Precinct LSP Amendment No. 1, the figures of the 2017 LSP have been retained and are provided on the following pages for reference. Given the small area which has been affected by Amendment No. 1 these figures (like the associated technical appendices in Appendix 6) remain relevant, however their interpretation should be treated with a common-sense approach, with regard to the changes in the Amendment No. 1 area. These figures include:

Figure 10:	Location Plan
Figure 11:	Byford Structure Plan
Figure 12:	The Glades Local Structure Plan
Figure 13:	South Metropolitan Peel Sub-Regional Planning Framework
Figure 14:	Bushfire Hazard Assessment Plan
Figure 15:	Development Concept Plan
Figure 16:	Landscape Masterplan
Figure 17:	Multiple Use Corridor Cross Section
Figure 18:	Indicative BAL Ratings
Figure 19:	Road Hierarchy Plan
Figure 20:	Pedestrian and Cyclist Facilities
Figure 21:	Interim Drainage Solution
Figure 22:	Indicative Staging Plan



CONTEXT PLAN 1 TOPO (2m) + CADASTRE



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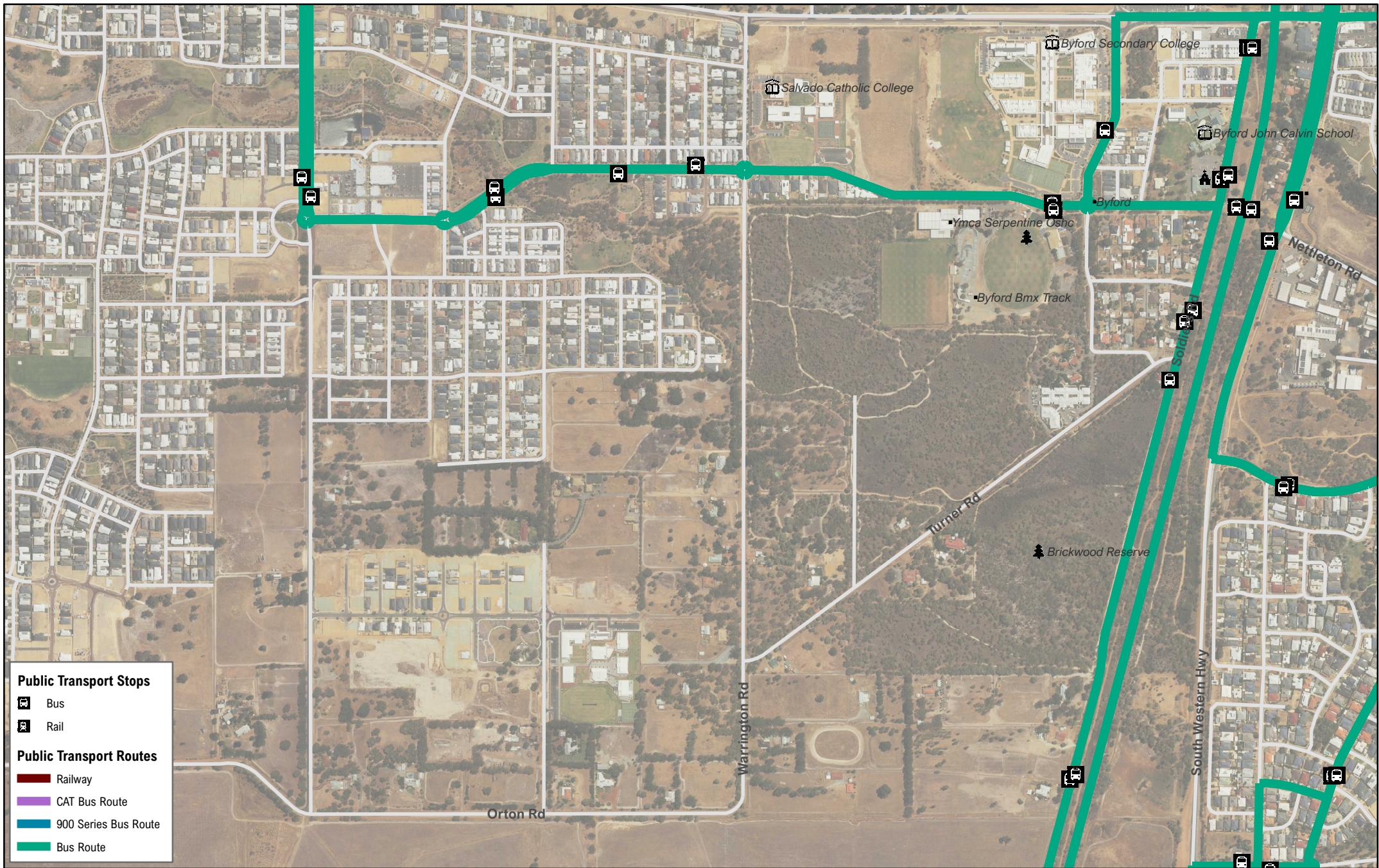
DOLEY ROAD PRECINCT LSP AMENDMENT No 1

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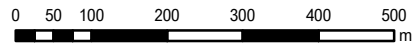
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CONTEXT PLAN 2 PUBLIC TRANSPORT

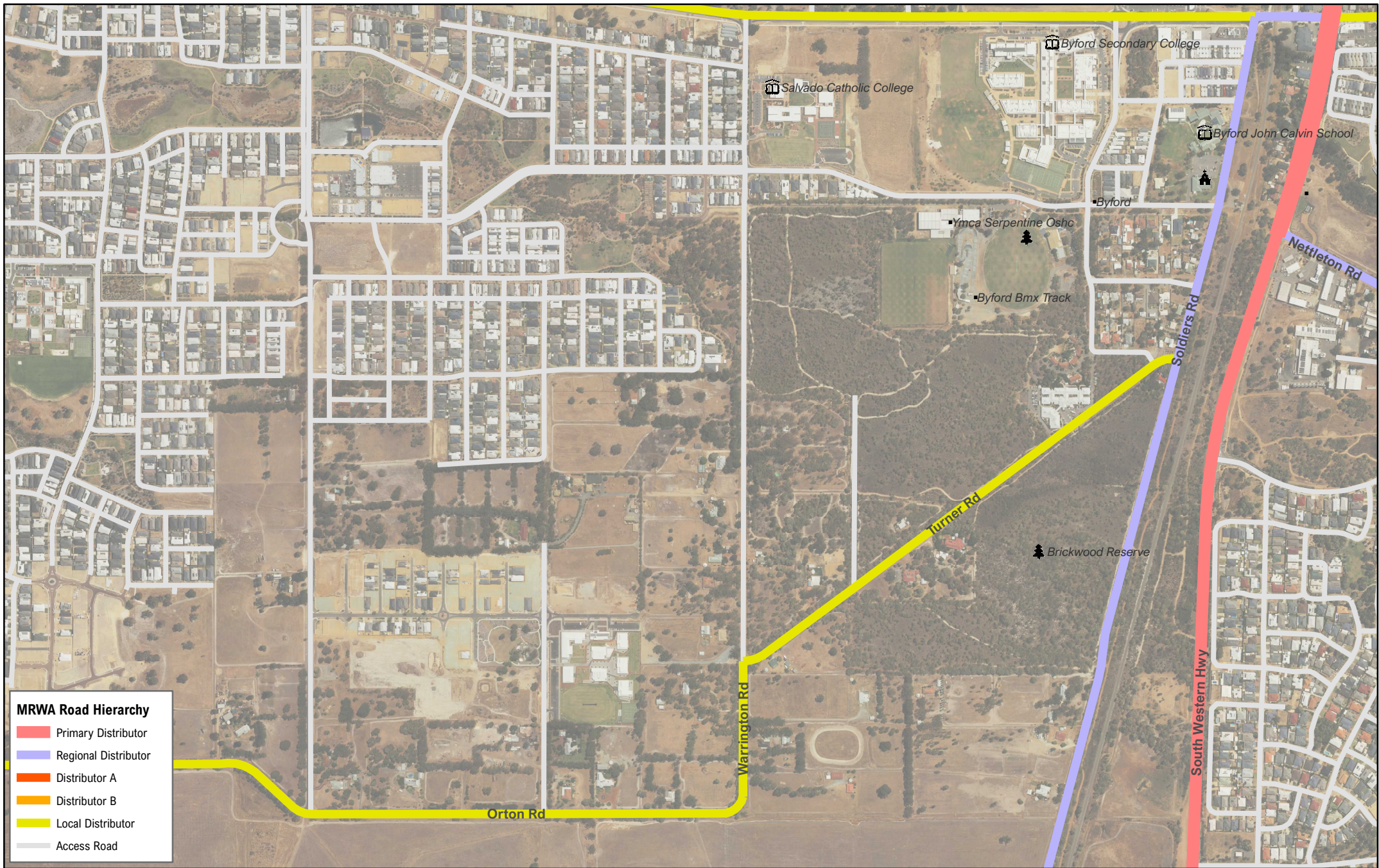


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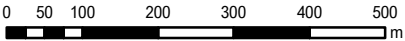




MRWA Road Hierarchy

- Primary Distributor
- Regional Distributor
- Distributor A
- Distributor B
- Local Distributor
- Access Road

CONTEXT PLAN 3 ROADS



SCALE 1:10,000 @ A4

DOLEY ROAD PRECINCT LSP AMENDMENT No 1

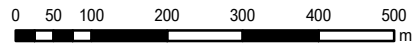
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CONTEXT PLAN 4 CYCLING NETWORK

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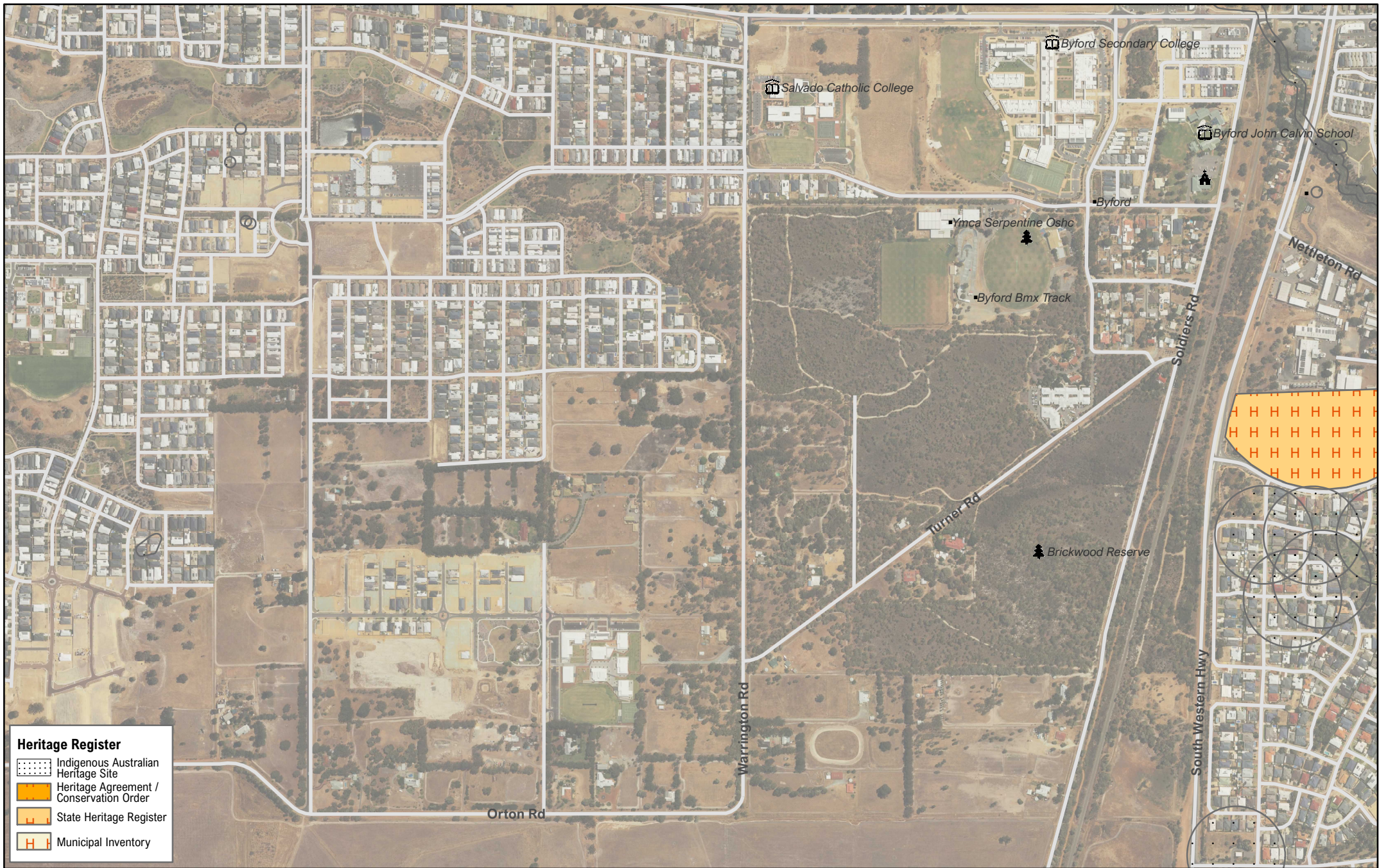
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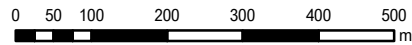
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CONTEXT PLAN 5 HERITAGE

DOLEY ROAD PRECINCT LSP AMENDMENT No 1



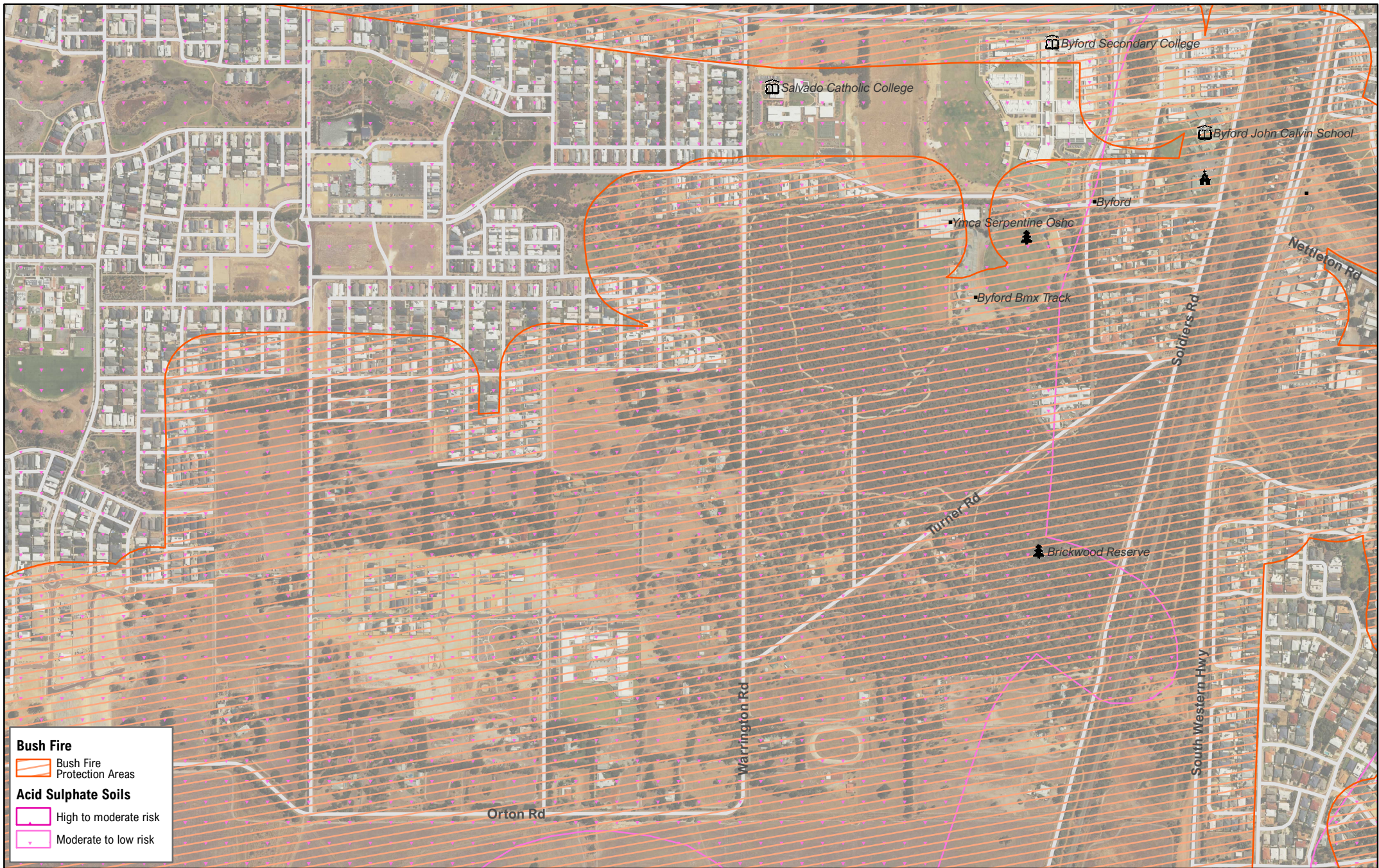
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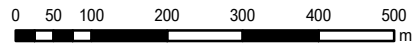
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CONTEXT PLAN 6 BUSH FIRE + SOILS



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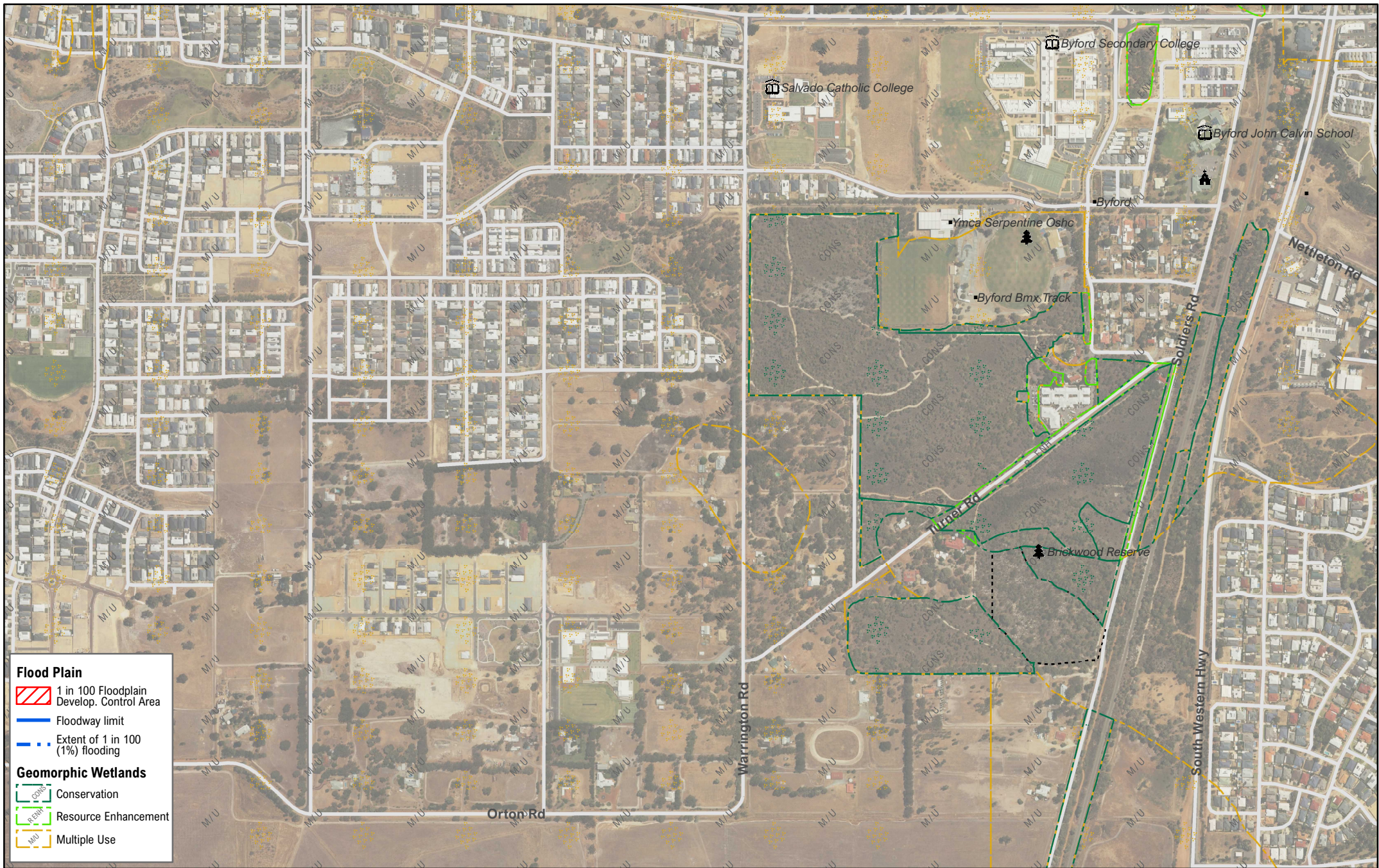
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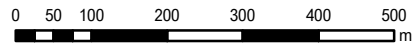
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CONTEXT PLAN 7 FLOODING + WETLANDS



SCALE 1:10,000 @ A4

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FIGURE 10

2017 Doley Road Precinct LSP Figures

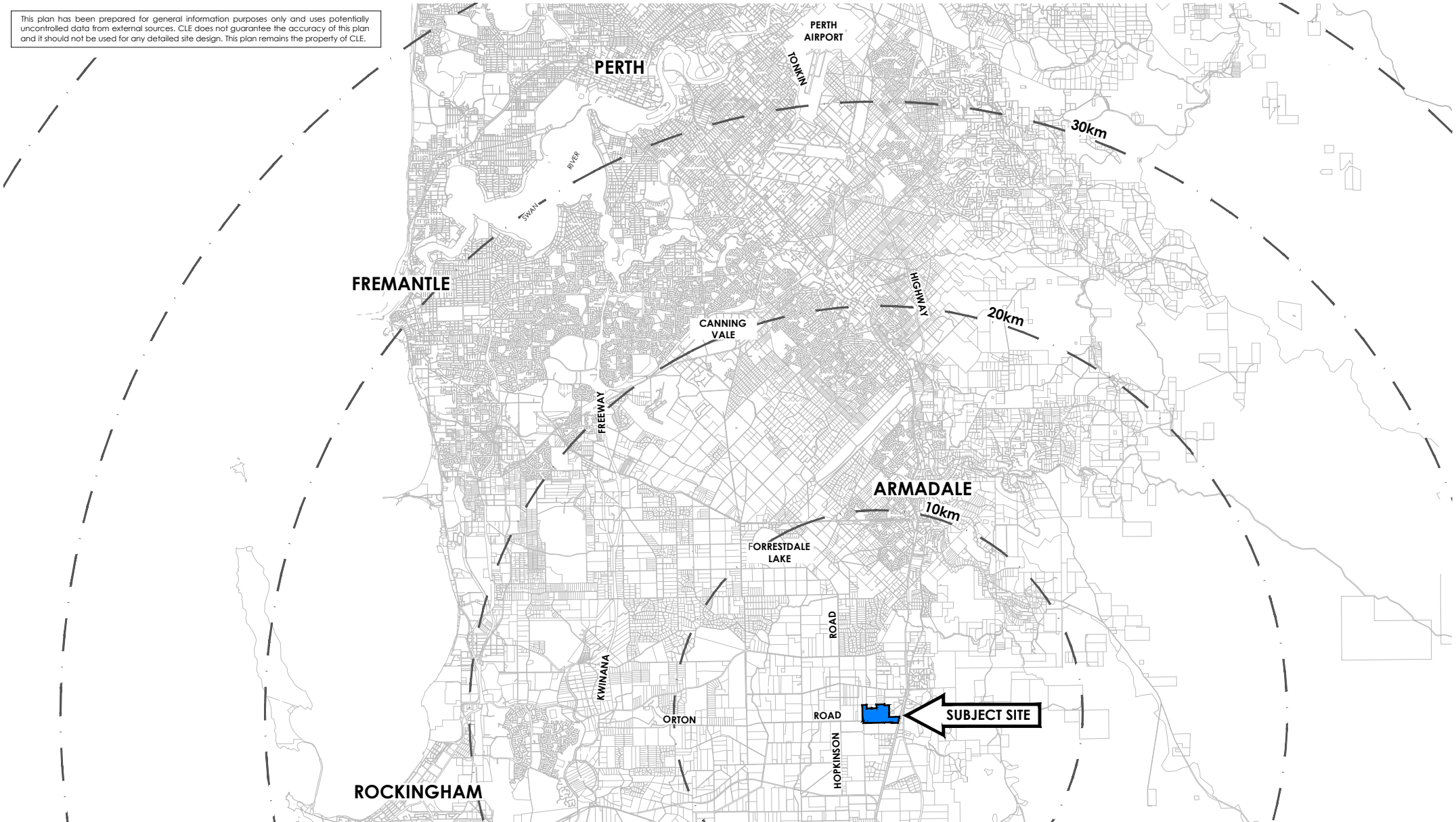


FIGURE 11

2017 Doley Road Precinct LSP Figures

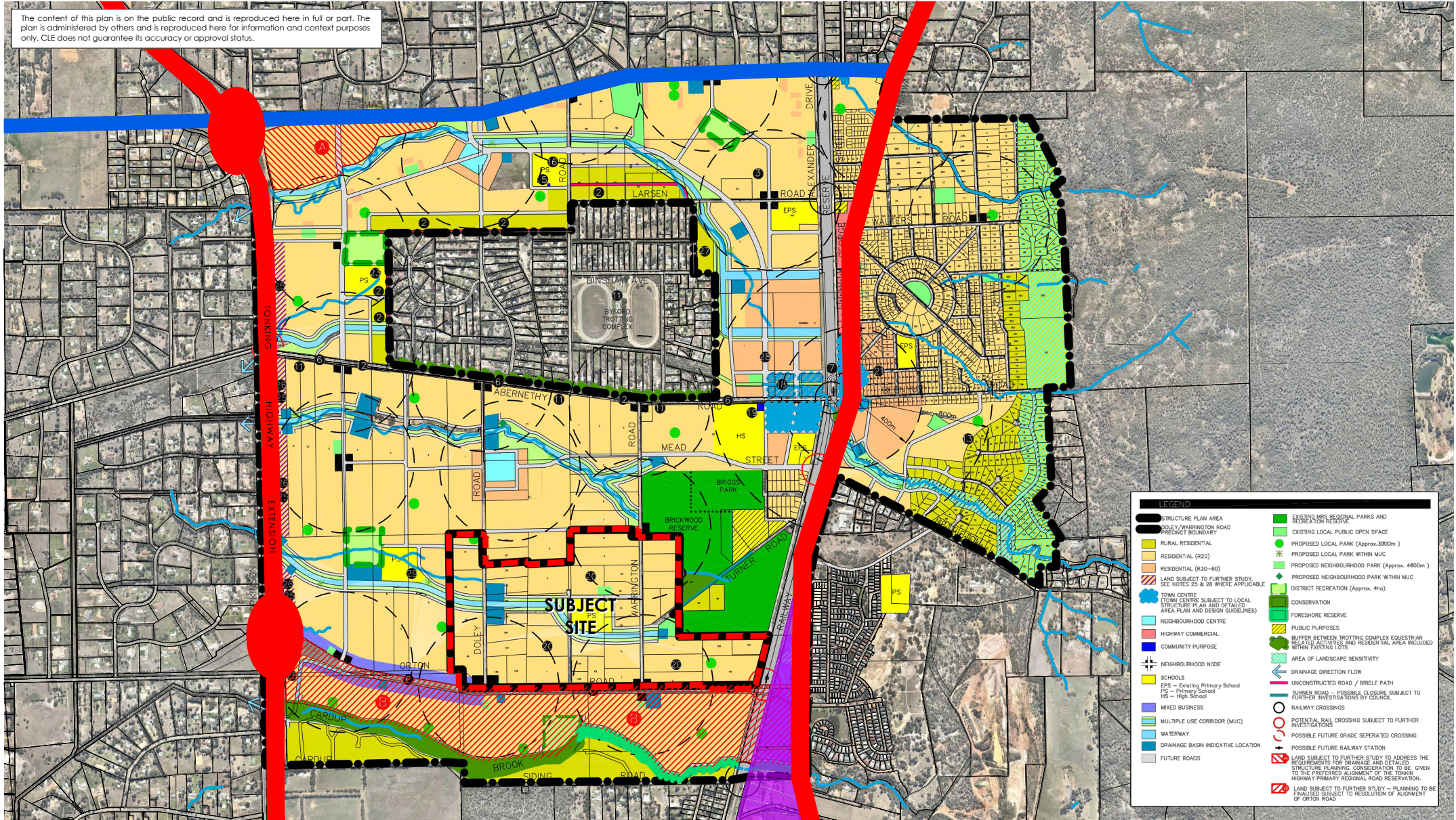


FIGURE 12

2017 Doley Road Precinct LSP Figures

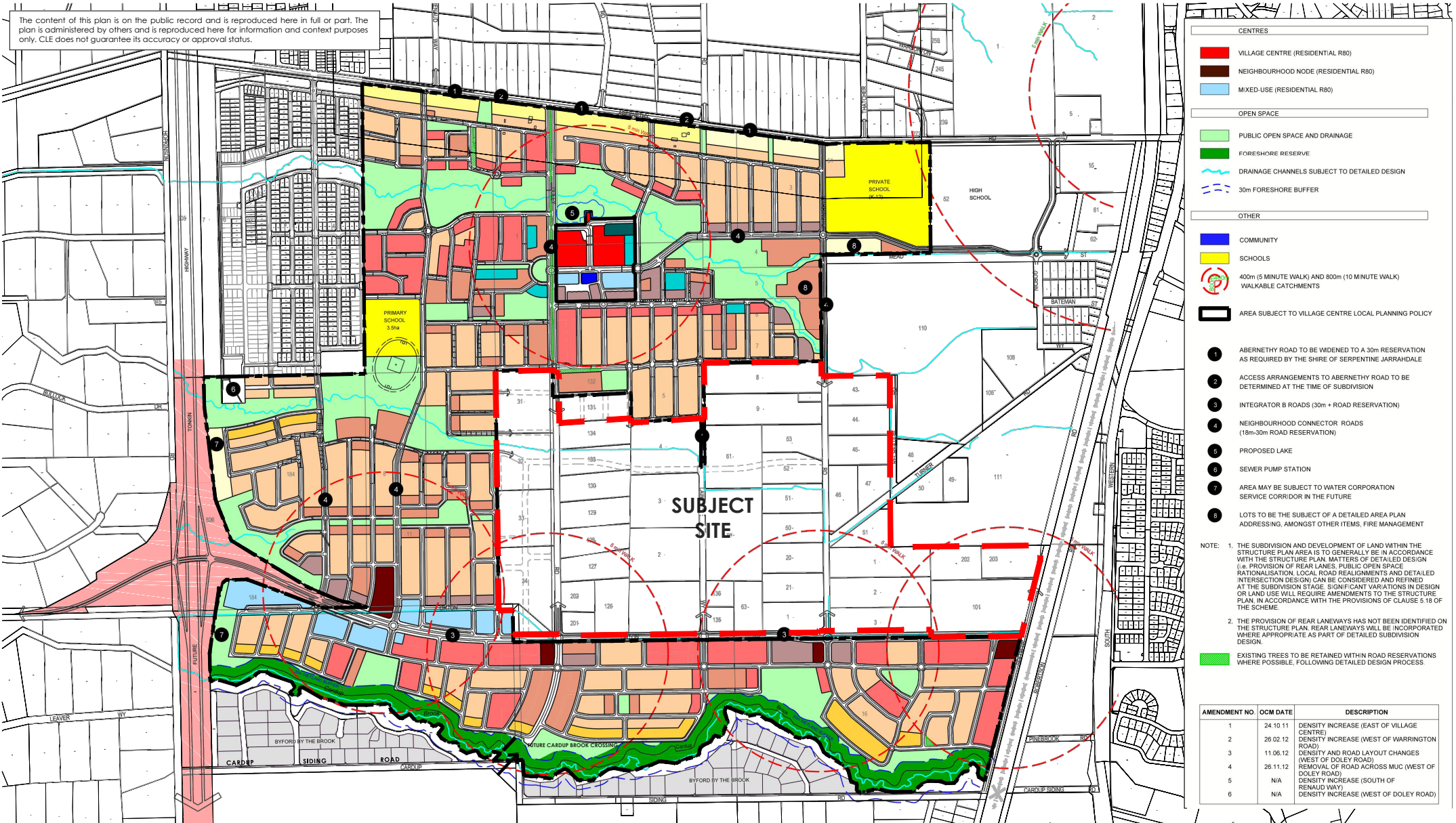


FIGURE 13

2017 Doley Road Precinct LSP Figures

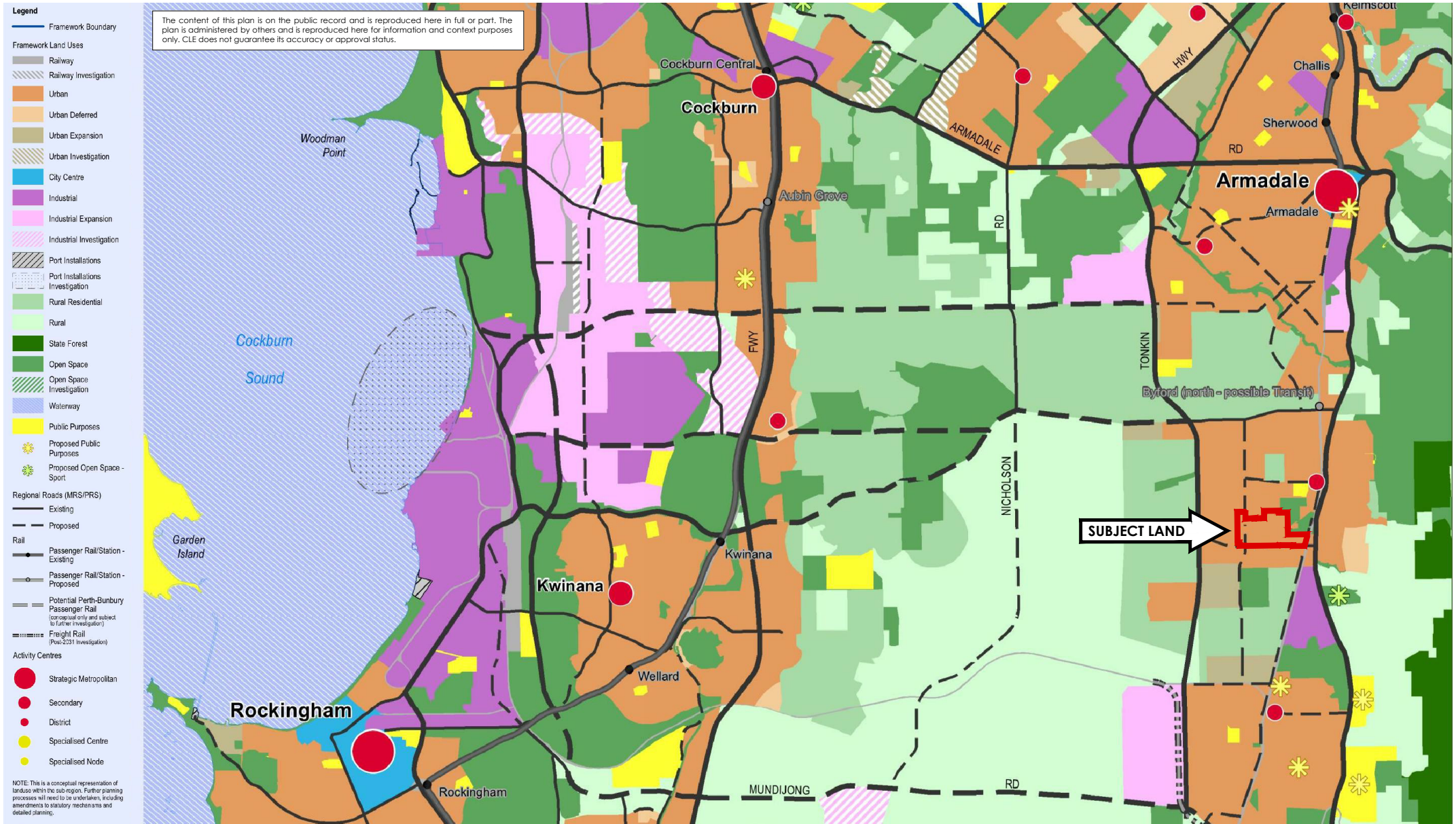


FIGURE 14

2017 Doley Road Precinct LSP Figures

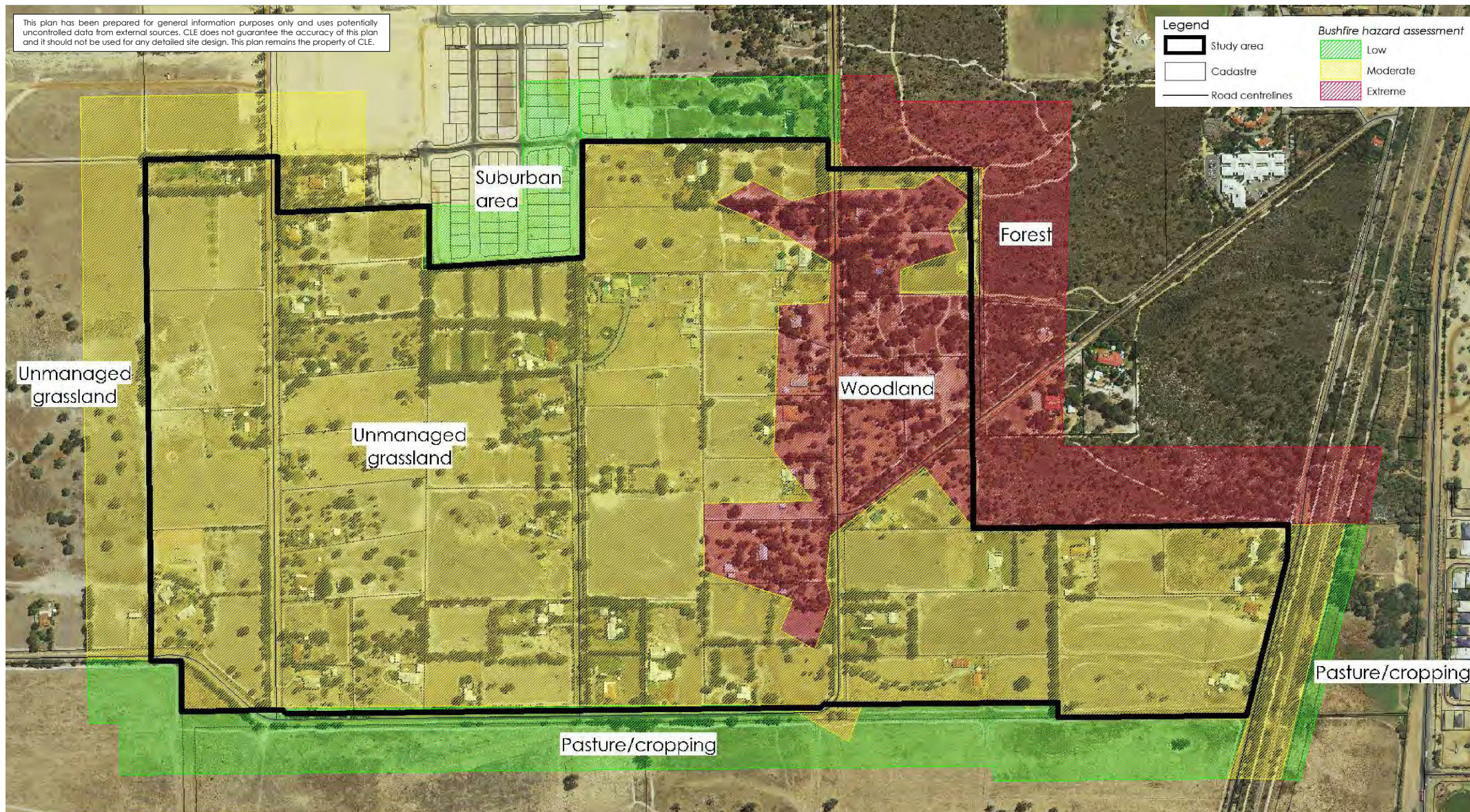


FIGURE 15

2017 Doley Road Precinct LSP Figures

Source: Planning Layout outside of L.S.P. Boundary - Taylor Burrell Barnett

Note: This plan has been prepared at the direction of Shire of Serpentine Jarrahdale and is subject to approval from the WAPC.

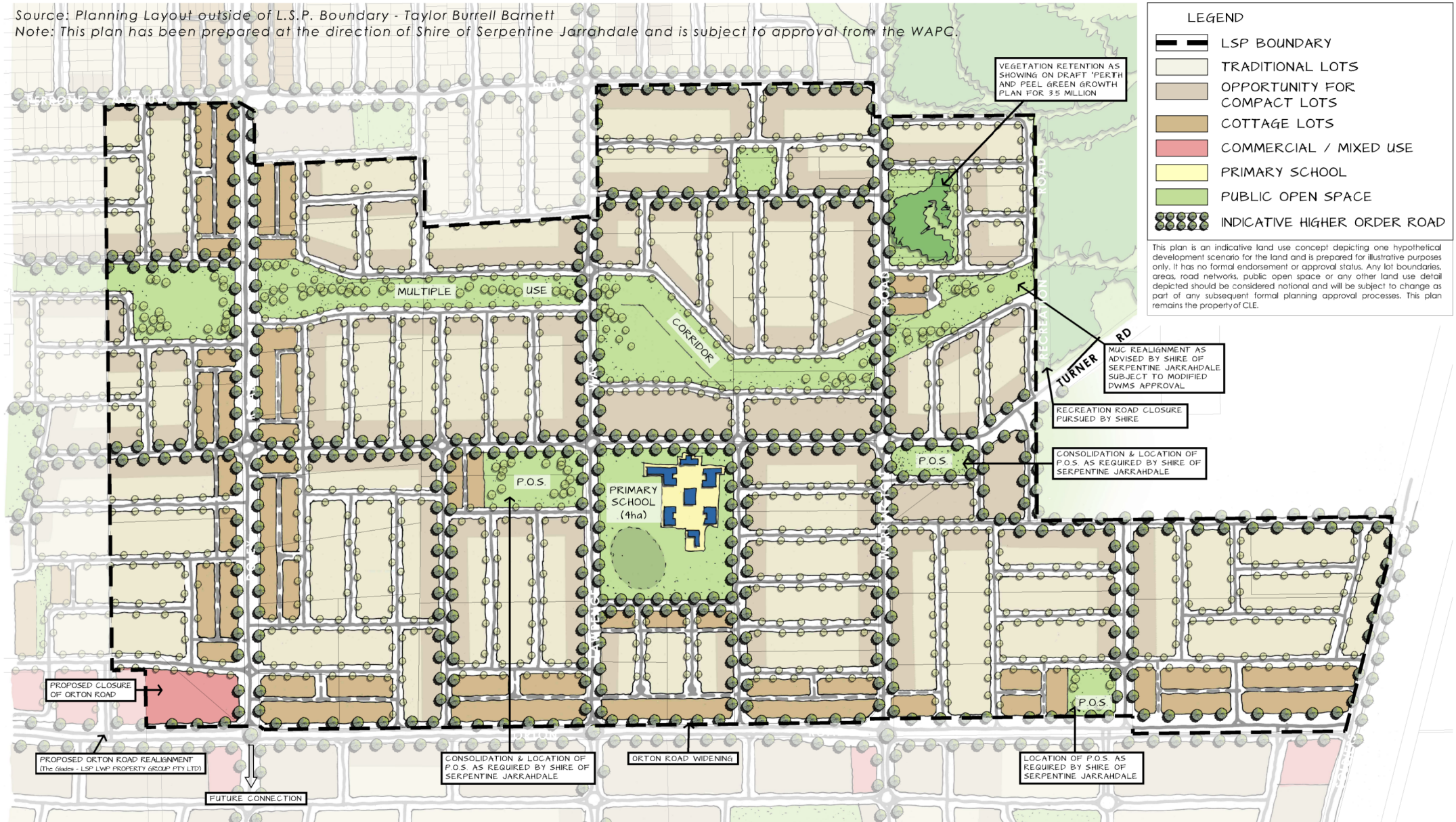


FIGURE 16

2017 Doley Road Precinct LSP Figures



FIGURE 17

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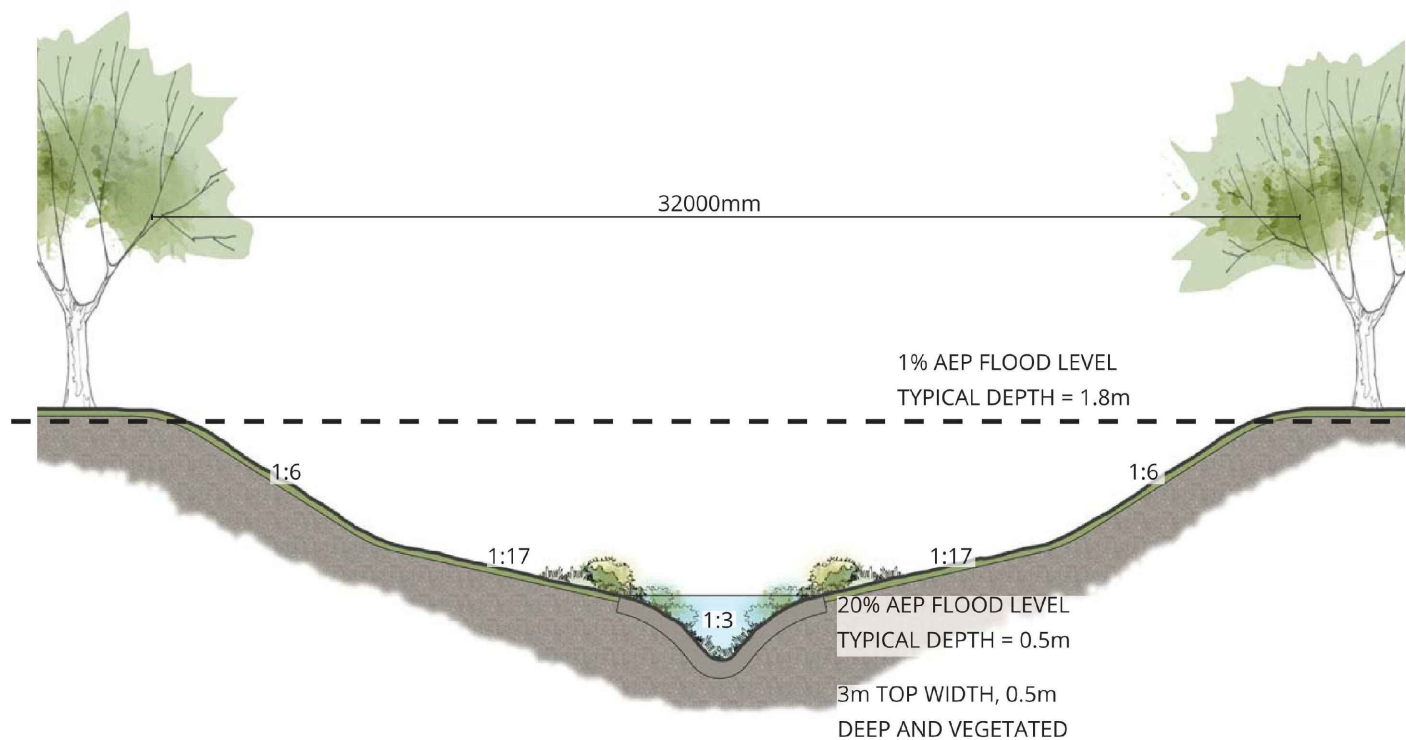
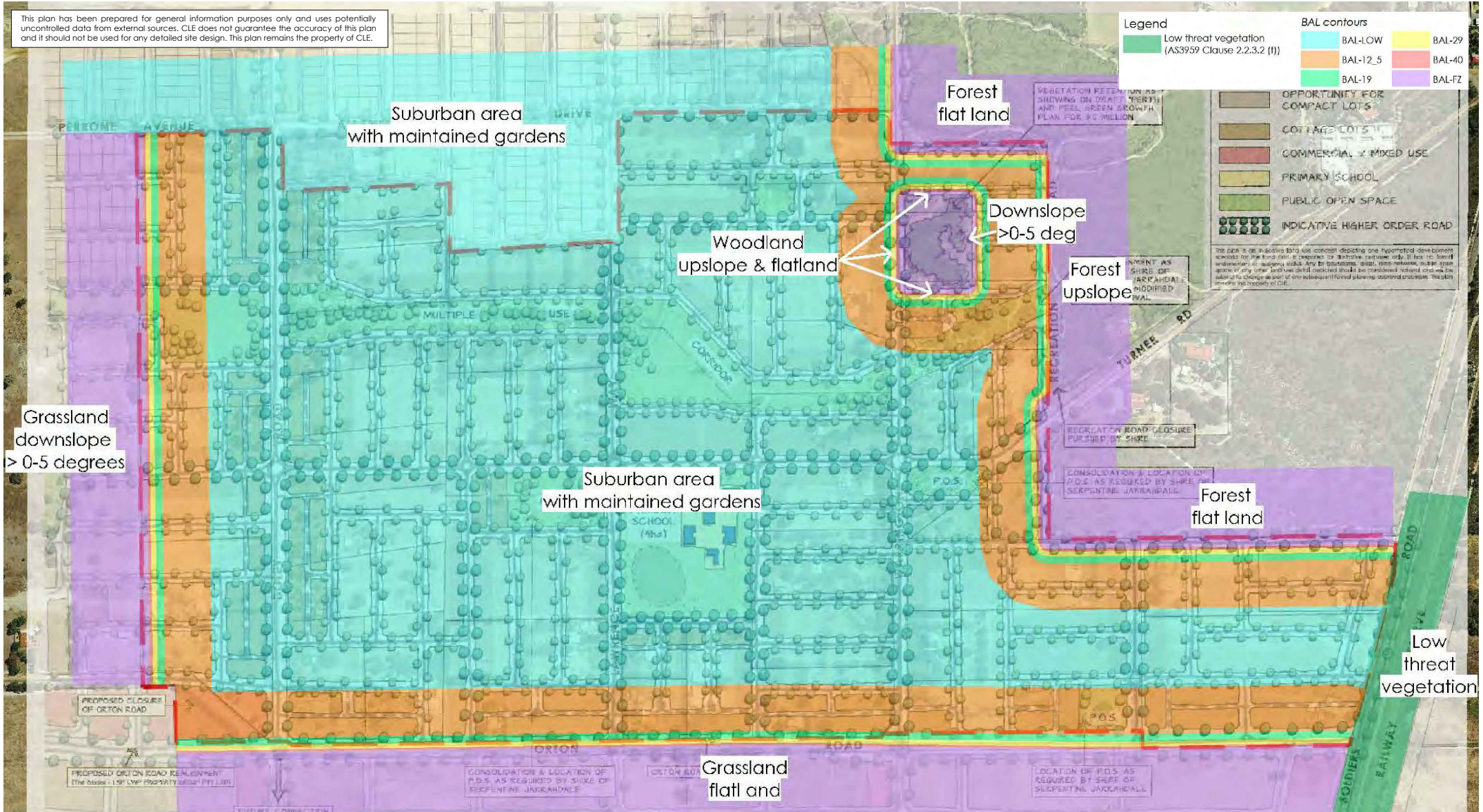


FIGURE 18

2017 Doley Road Precinct LSP Figures



DOLEY ROAD PRECINCT LOCAL STRUCTURE PLAN PART TWO: EXPLANATORY REPORT

FIGURE 19 Note: new roads (subject of Amendment No. 1) are to all be developed as "Access Street D" roads.

2017 Doley Road Precinct LSP Figures



DOLEY ROAD PRECINCT LOCAL STRUCTURE PLAN

PART TWO: EXPLANATORY REPORT

FIGURE 20 Note: new roads (subject of Amendment No. 1) are to all include a Proposed Pedestrian Path on One Side of the Road

2017 Doley Road Precinct LSP Figures



FIGURE 21

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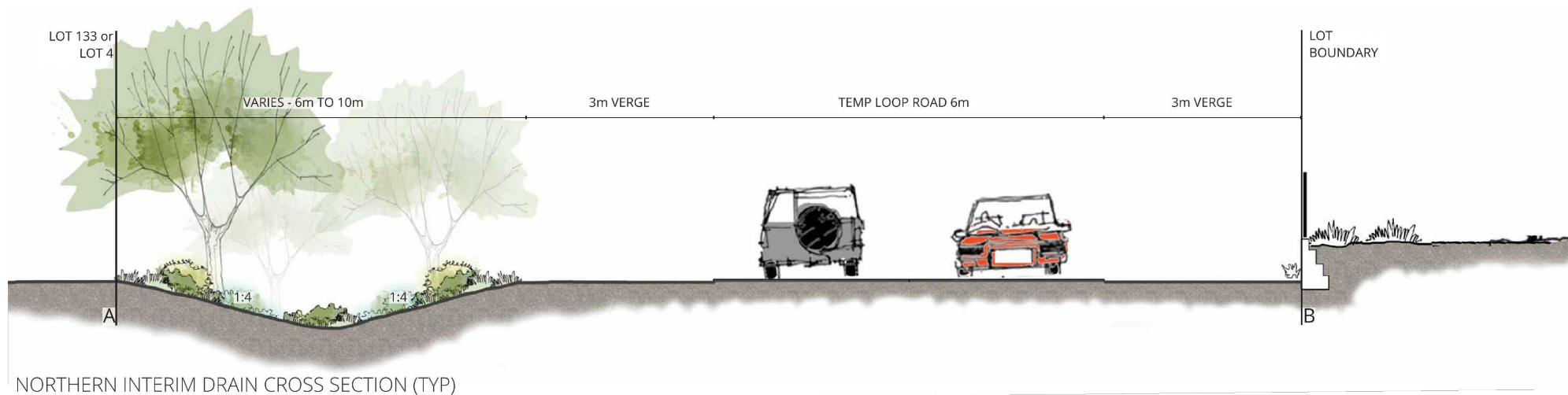
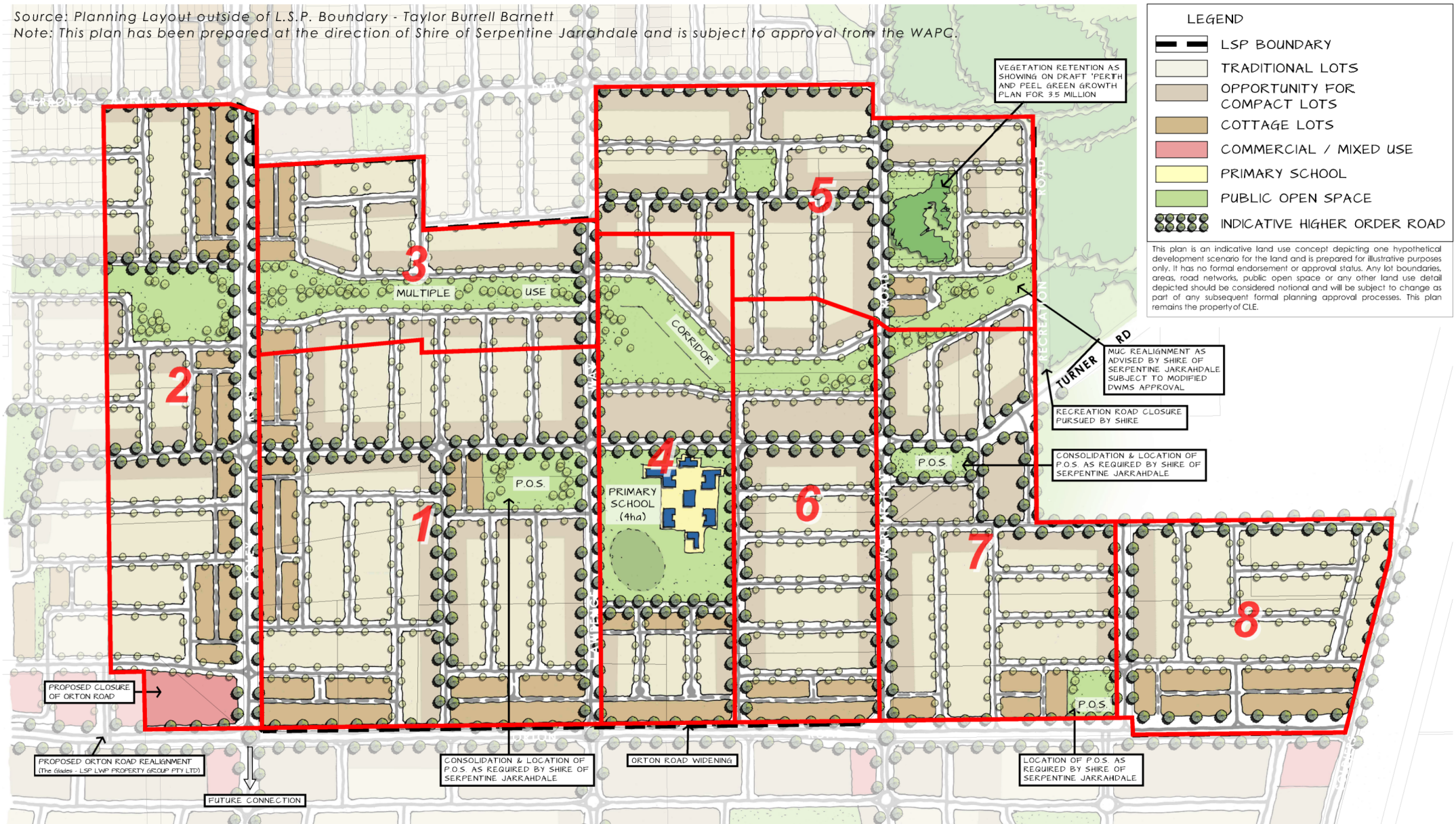


FIGURE 22

2017 Doley Road Precinct LSP Figures

Source: Planning Layout outside of L.S.P. Boundary - Taylor Burrell Barnett
 Note: This plan has been prepared at the direction of Shire of Serpentine Jarrahdale and is subject to approval from the WAPC.



Appendices

This section of the report provides appendices to accompany the structure plan. The appendices are as follows:

Amendment & Site Information

- **Appendix 1:** Doley Road Precinct LSP Amendment Comparison Map 64
- **Appendix 2:** Vision Surveys Consulting Site Survey Plan for Amendment No. 1 Area 67

Technical Appendices

- **Appendix 3:** Linfire Consultancy Bushfire Attack Level Certificate and BAL Assessment Report 70
- **Appendix 4:** Urbaqua Byford Doley Local Water Management Strategy Study 136
- **Appendix 5:** LD Total Landscape Master Plan 145
- **Appendix 6:** 2017 Doley Road Precinct LSP Consultant Reports and Technical Appendices 149
 - 6.1: Environmental Report 150
 - 6.2: Fire Management Plan 183
 - 6.3: Landscape Masterplan 232
 - 6.4: Transport Impact Assessment 241
 - 6.5: Local Water Management Strategy 325
 - 6.6: Retail Needs Assessment 392
 - 6.7: Engineering Servicing Report 418

2017 Doley Road Precinct LSP

- **Appendix 7:** 2017 Doley Road Precinct LSP 718