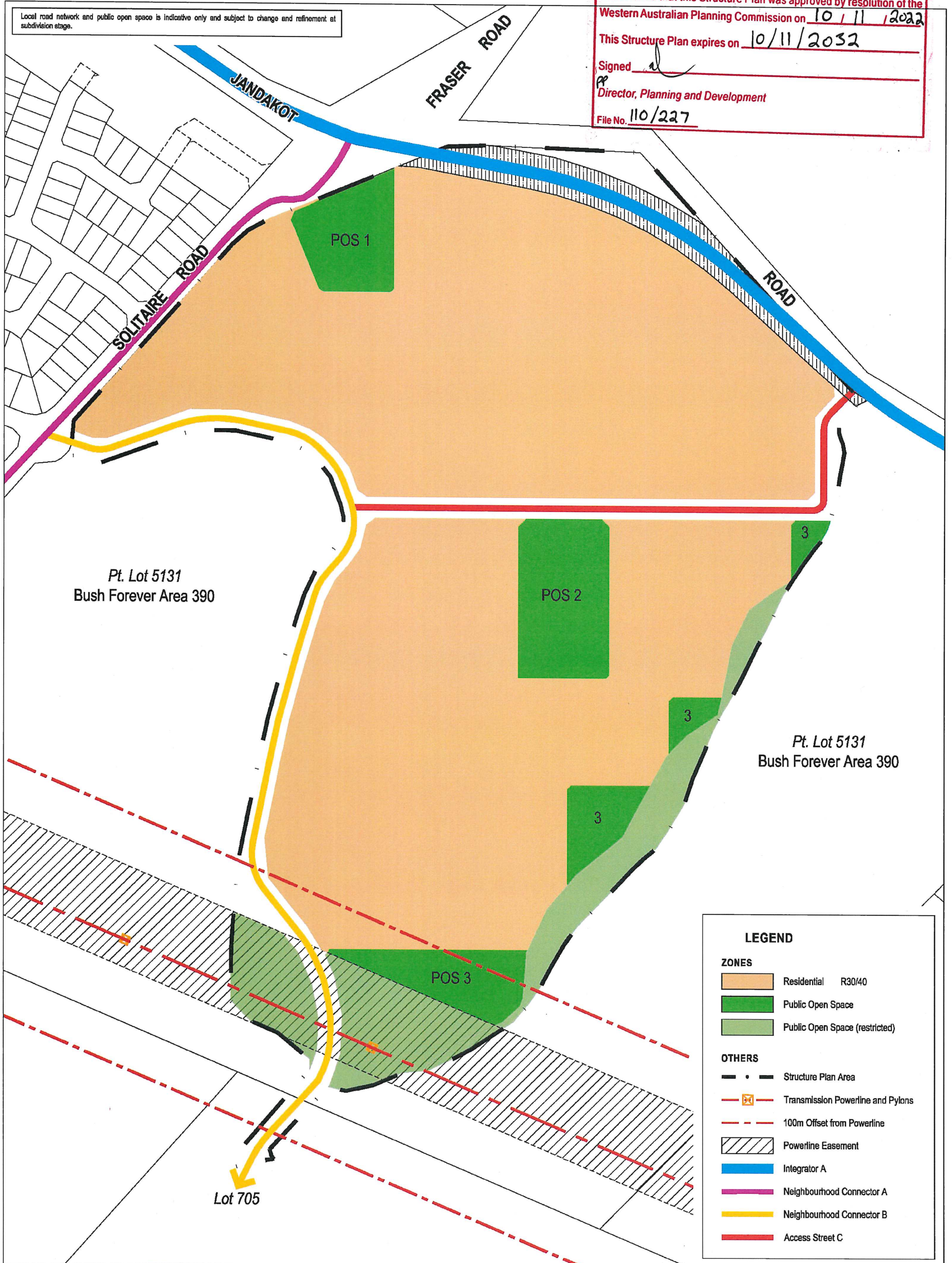


Local road network and public open space is indicative only and subject to change and refinement at subdivision stage.

It is certified that this Structure Plan was approved by resolution of the
Western Australian Planning Commission on 10 / 11 / 2022
This Structure Plan expires on 10/11/2032
Signed [Signature]
Director, Planning and Development
File No. 110/227



LEGEND

ZONES

- Residential R30/40
- Public Open Space
- Public Open Space (restricted)

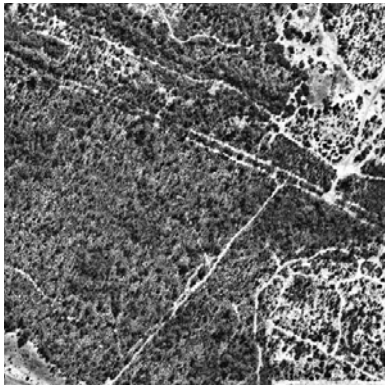
OTHERS

- Structure Plan Area
- Transmission Powerline and Pylons
- 100m Offset from Powerline
- Powerline Easement
- Integrator A
- Neighbourhood Connector A
- Neighbourhood Connector B
- Access Street C



LOT 5131 JANDAKOT ROAD, TREEBY

LOCAL STRUCTURE PLAN



**PART ONE
IMPLEMENTATION
SECTION**

OCTOBER 2022

Title: Lot 5131 Jandakot Road, Treeby
Local Structure Plan
Part One - Implementation Section

Prepared for: Perron Group

CLE Reference: 2366Rep107D

Date: 18 October 2022

Status: Final

Review date: 18 October 2022

Prepared by: CLE Town Planning + Design

Project team: CLE Town Planning + Design
360 Environmental
Bushfire Safety Consulting
EPCAD
JDA Consulting
Transcore
Stantec
Herring Storer Acoustics

This report is for the exclusive use of the Client, pursuant to Agreement between the Client and CLE Town Planning + Design. CLE accepts no liability or responsibility whatsoever in respect of any use of or reliance upon any information contained within this report by anyone who is not party to the Agreement and/or has come into possession of the Report through parties other than the Client or CLE.

CLE is not accountable for any information which may be contained within the Report which has been supplied by others and reproduced by CLE in this report.

Copyright and any other Intellectual Property arising from this report and the provision of the services in accordance with the Agreement belongs exclusively to CLE unless otherwise agreed and may not be reproduced or disclosed to any other person other than the Client without the express written authority of CLE.

Any reproduction by the Client is to reference CLE as the original author.

Plans and figures contained in this report have been prepared for general information purposes only and may inadvertently use uncontrolled data from external sources. CLE does not guarantee the accuracy of the plans and they should not be used for any detailed site design. The content of this report including all plans remains the property of CLE.

This structure plan is prepared under the provisions of City of Cockburn Town Planning Scheme No. 3 (incorporating Schedule 2 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015*).

IT IS CERTIFIED THAT THE LOT 5131 JANDAKOT ROAD TREEBY LOCAL STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

10 November 2022

Signed for and on behalf of the Western Australian Planning Commission

.....


an officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:

.....


Witness

10 November 2022 Date

10 November 2032

Date of Expiry

Table of Amendments

Amendment No.	Description of Amendment	Amendment Type	Date Approved by WAPC

Table of Density Plans

Density Plan No.	Area of Density Plan Application	Date Approved by WAPC

EXECUTIVE SUMMARY

The structure plan for Lot 5131 Jandakot Road, Treeby is prepared on behalf of Perron Developments, the joint venture partner of the landowner. It applies to a 30 hectare portion of Lot 5131, being the area recently zoned 'Urban' under the Metropolitan Region Scheme, and once developed will deliver approximately 400 single residential lots.

The structure plan area is ideally located between the established Calleya estate and the planned Lake Treeby estate, both of which offer commercial centres, schools and district-level community and recreational facilities. The structure plan area has historically been used for sand quarrying and as such is largely cleared of vegetation. Development of the site represents an outstanding opportunity to remediate the former quarry and deliver a well-located, well-designed residential estate.

The structure plan provides design and technical detail that builds upon the high-level framework provided by the approved Treeby District Structure Plan. In planning terms, the structure plan proposes:

- A base residential coding of R30, consistent with contemporary practice in greenfield estates, with provision for R40 development in particular locations;
- A permeable movement network that is responsive to the shape and attributes of the site and provides a defined interface to abutting Bush Forever land;
- Provision for a direct connection of the main north-south road into the existing Torwood Avenue roundabout, as envisaged in the Treeby DSP;
- 3.2 hectares of public open space, providing local-level recreational opportunities for residents in addition to the facilities planned at Lot 705 Armadale Road to the south and the Bush Forever areas;
- A comprehensive servicing and drainage strategy that ensures the site can be provided with essential infrastructure in keeping with development staging; and
- Provision for the planned realignment of Jandakot Road to ensure it can support projected traffic flows and volumes.

Further detail on the land use breakdown as proposed by this structure plan is provided in Table 1: Summary Table.

Table 1: Summary Table

Item	Data	Structure Plan Ref.
Structure Plan area (gross Urban-zoned, ha)	30.3	Part 1, s. 1 Structure Plan Map
Estimated lot yield	400	Part 1, s. 5.2.1
Estimated dwelling yield	400	Part 2, s.3.2.2
Estimated dwelling density	13.2 dph (gross Urban-zoned) 25.5 dph (Net Developable)	Part 1, s. 5.2.1; Part 2, s.3.2.1
Estimated population	1050	Part 1, s. 5.2.1
Number of secondary schools	Nil	Part 2, s.3.6
Number of primary schools	Nil	Part 2, s.3.6
Estimated commercial floorspace	0	Part 2, s.3.7
Open space (ha / %)	3.2 / 11.9%	Part 1, s.5.4 Part 2, s.3.4.1

CONTENTS

EXECUTIVE SUMMARY

1.0 STRUCTURE PLAN AREA

2.0 STRUCTURE PLAN CONTENT

3.0 STRUCTURE PLAN OPERATION

4.0 STAGING

5.0 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

5.1 Zones and Reserves

5.2 Residential Densities

5.2.1 Dwelling Target

5.2.2 Residential Density

5.2.3 Locational Criteria

5.3 Residential Design Code variations

5.4 Public Open Space

5.5 Bush Forever Interface

6.0 LOCAL DEVELOPMENT PLANS

7.0 OTHER REQUIREMENTS

7.1 Notifications on Title

7.2 Bushfire Hazard Management

7.3 Deceleration Lane

7.4 Fauna Underpass

8.0 ADDITIONAL INFORMATION

Plan A: Lot 5131 Jandakot Road, Treeby Local Structure Plan Map

Plan B: Staging Plan

1.0 STRUCTURE PLAN AREA

This structure plan applies to the land within the line identified as the 'Structure Plan Boundary' on Plan A: Lot 5131 Jandakot Road, Treeby Local Structure Plan ('the structure plan map').

2.0 STRUCTURE PLAN CONTENT

This structure plan consists of:

- Part One – Implementation Section (this section);
- Part Two – Explanatory Report (report reference 2366Rep107); and
- Appendices – technical reports supporting the structure plan.

Part One of the structure plan comprises the structure plan map and planning provisions. Part Two and all Appendices are a reference provided to guide the interpretation and implementation of Part One.

3.0 STRUCTURE PLAN OPERATION

This structure plan is prepared in accordance with Part 4 of Schedule 2 (Deemed Provisions) in the *Planning and Development (Local Planning Schemes) Regulations 2015* ('the Regulations'). It fulfills the requirements of City of Cockburn Town Planning Scheme No. 3 for the applicable 'Development' Zone.

The Regulations require decision-makers to have due regard for the provisions of this structure plan, which takes effect on the date on which it is approved by the Western Australian Planning Commission ('WAPC').

Unless otherwise specified in this Part, all words and expressions used in this structure plan have the same meaning as the same words and expressions in the Regulations and City of Cockburn Town Planning Scheme No. 3 (as amended).

4.0 STAGING

Subdivision and development of land within the structure plan area will be staged in an orderly fashion in response to service availability and market preferences. Development is likely to commence either from the north-west, obtaining access from the Torwood Avenue Road roundabout, or from the south, linking into the Lake Treeby estate being developed within Development Area 43. In the more likely scenario (commencement from the north-west), staging would proceed generally in accordance with the pattern illustrated in Plan B.

As advised in the Engineering Infrastructure Report submitted with this structure plan, the southern half of the structure plan area is within the catchment of a new Wastewater Pump Station within Lot 705 Armadale Road. This facility will need to be operational in order for sewer servicing to be extended to lots within the catchment area.

5.0 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

5.1 Zones and Reserves

Subdivision and development of land within the structure plan area should be in accordance with the structure plan and the corresponding zone or reserve under City of Cockburn Town Planning Scheme No. 3.

5.2 Residential Densities

5.2.1 Dwelling Target

It is the objective of this structure plan to provide a minimum of 375 lots within the structure plan area, generally consistent with the *Liveable Neighbourhoods* objective of 15 dwellings per gross Urban-zoned hectare in new urban areas. Assuming 2.6 people per household, this accommodates a population of approximately 975.

5.2.2 Residential Density

The residential density ranges applicable to the structure plan area are shown on the Structure Plan Map. Specific residential density codes will be applied at the subdivision stage through an Residential Density Code Plan assessed and approved by the WAPC.

The Residential Density Code Plan:

- a. Is required to be submitted with each subdivision application/s and shall be consistent with the density ranges and locational criteria in this structure plan.
- b. Is to include a summary of the proposed lot yield of the subdivision application to which it relates.
- c. Forms part of this structure plan once it has been approved by the WAPC (as part of its determination of the subdivision application).
- d. May be varied subject to the further approval of the WAPC. A varied Residential Density Code Plan will replace (entirely or partially) the previously-approved Residential Density Code Plan.
- e. May not be required if the WAPC considers that the subdivision application is for one or more of the following:
 - (i) Amalgamation of lots, including for land assembly;
 - (ii) Provision of access, services or infrastructure;
 - (iii) Non-residential use, with reference to the zone or reserve indicated on this structure plan; and
 - (iv) Is in accordance with an already-approved Residential Density Code Plan.

5.2.3 Locational Criteria

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

- a. A base residential density coding of R30 applies across the structure plan area.
- b. An R40 coding may be applied for lots that:
 - (i) Abut POS;
 - (ii) Are rear-loaded (obtain vehicular access from a laneway);
 - (iii) Have direct frontage to the Neighbourhood Connector B road; and/or
 - (iv) Are located at the end of a street block.

5.3 Residential Design Code Variations

The City of Cockburn Local Planning Policy 1.16: 'Single House Standards for Medium-Density Housing in the Development Zone' sets out acceptable variations to the deemed-to-comply provisions of the R-Codes for lots coded R25-R60. Except in a situation where an approved Local Development Plan ('LDP') imposes variations to the deemed-to-comply provisions of the R-Codes, the standards set out in Local Planning Policy 1.16 shall apply to this structure plan.

5.4 Public Open Space

A minimum of 10 per cent of the gross subdivisible area is to be provided as public open space, in accordance with the WAPC's *Liveable Neighbourhoods* policy. Public open space is to be provided generally in the locations shown on the Structure Plan Map and landscaped in accordance with the Landscape Masterplan Report appearing as an appendix to this structure plan. More detailed Landscape Plans are to be provided at the subdivision stage.

5.5 Bush Forever Interface

The interface to Bush Forever Area 390 is to be landscaped and managed in accordance with the Landscape Masterplan Report that appears as an appendix to this structure plan and more detailed Landscape Plans provided at the subdivision stage.

6.0 LOCAL DEVELOPMENT PLANS

At the subdivision stage, the WAPC may impose a condition/s of approval requiring Local Development Plan/s to be prepared, in accordance with Part 6 of the Regulations, for lots that:

- a. Abut POS;
- b. Are rear-loaded (obtain vehicular access from a laneway);
- c. May be affected by aircraft noise and require noise mitigation measures at the development stage; and
- d. May be affected by road noise and require noise mitigation measures at the development stage.

7.0 OTHER REQUIREMENTS

7.1 Notifications on Title

In respect of applications for the subdivision of land the City of Cockburn may recommend to the WAPC that a condition be imposed on the granting of subdivision approval for a notification to be placed on the Certificate(s) of Title(s) of affected lots to advise of the following:

- a. This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land.
- b. This lot is situated in the vicinity of Jandakot Airport, and is currently affected, or may in the future, be affected by aircraft noise. Noise exposure levels are likely to increase in the future as a result of increases in numbers of aircraft using the airport, changes in aircraft type or other operational changes. Further information about aircraft noise, including development restrictions and noise insulation requirements for noise-affected properties, are available on request from the relevant local government offices.
- c. This lot is situated in the vicinity of a transport corridor (Jandakot Road) and is currently affected, or may in the future be affected by transport noise. Additional planning and building requirements may apply to development on this land to achieve an acceptable level of noise reduction.

7.2 Bushfire Hazard Management

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

7.3 Deceleration Lane

The City of Cockburn may recommend to the WAPC that a deceleration lane on Jandakot Road be required on the granting of subdivision approval to ensure safe access to the site. The provision of this lane will affect the location of the proposed left-in left-out access point, and it shall be compatible with the future design for Jandakot Road and take into consideration the proximity of the adjacent Bush Forever Area 390.

7.4 Fauna Underpass

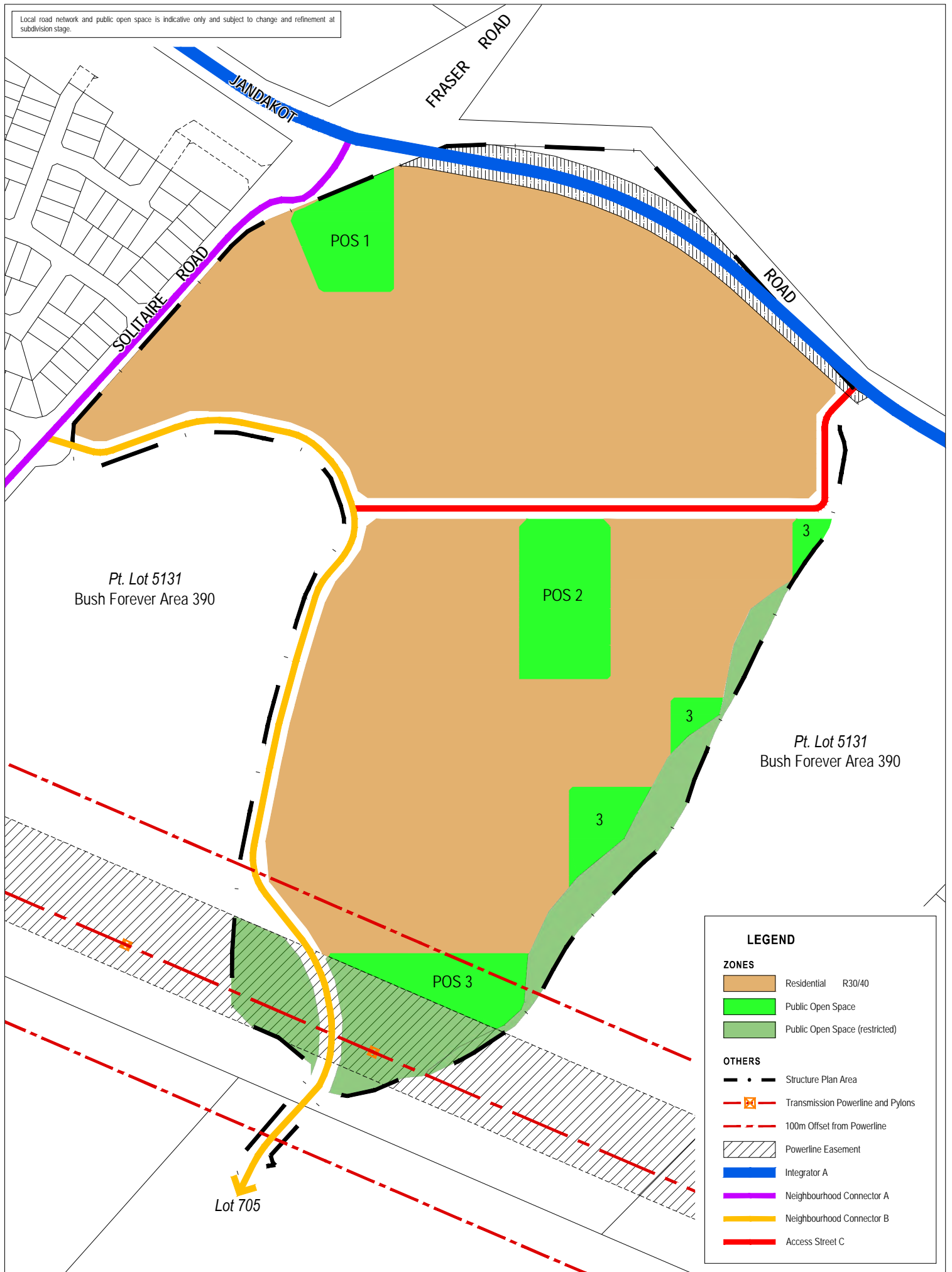
The City of Cockburn may recommend to the WAPC that a fauna underpass be required on the granting of subdivision approval within the proposed reserve between Lot 5131 Jandakot Road and Lot 705 Armadale Road, providing a link between the separated areas of Bush Forever Area 390.

8.0 ADDITIONAL INFORMATION

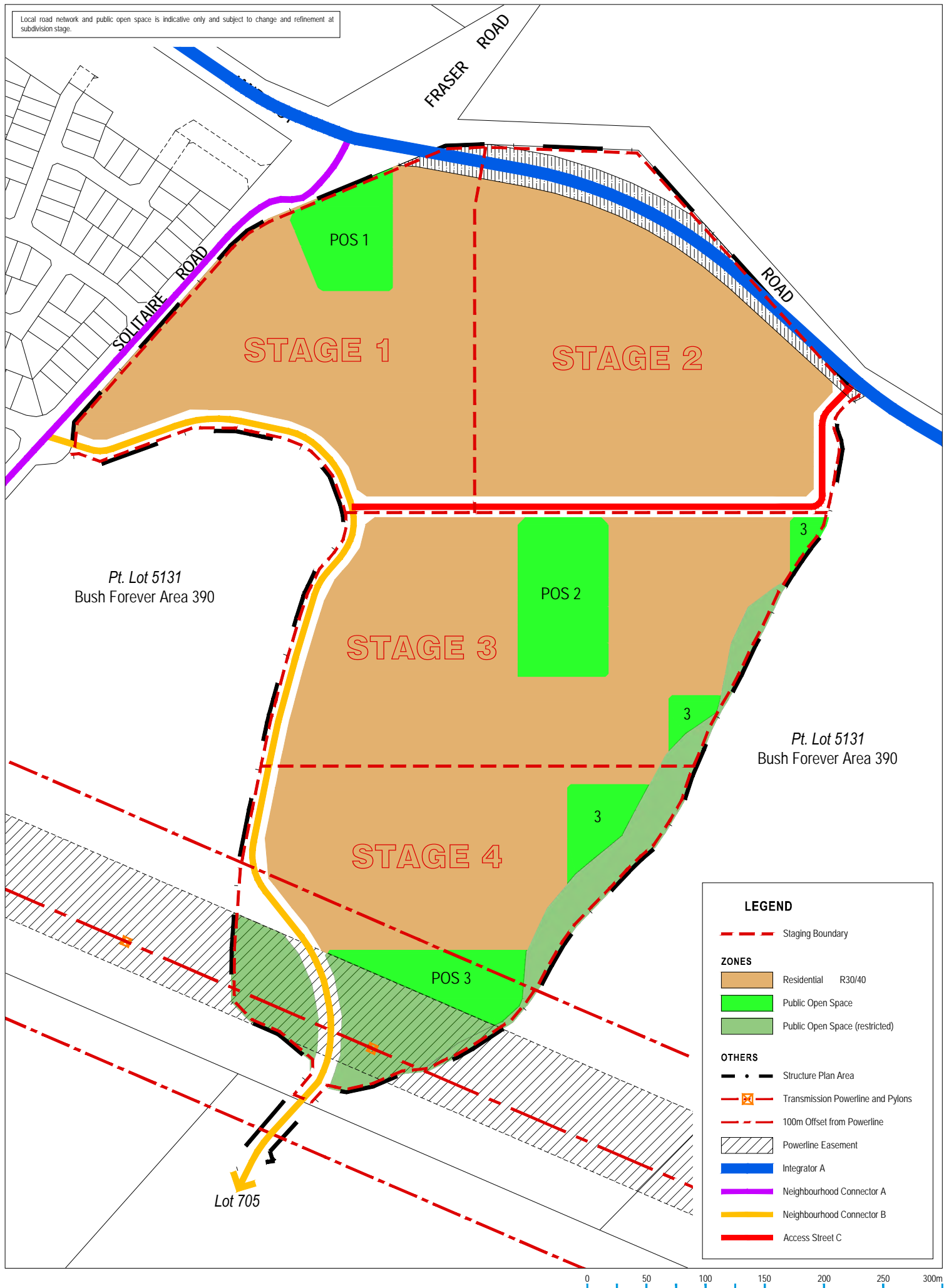
At the subdivision stage, the WAPC may require and/or impose a condition/s of approval requiring the preparation, submission and approval of the following technical reports:

- a. Bushfire Management Plan (BAL Contour Plan);
- b. Urban Water Management Plan;
- c. Public Open Space Schedule;
- d. Detailed Landscape Plans;
- e. Wetland Management Plan; and
- f. Environmental and Wildlife Management Plan for the Bush Forever interfaces.

Local road network and public open space is indicative only and subject to change and refinement at subdivision stage.



Local road network and public open space is indicative only and subject to change and refinement at subdivision stage.



LEGEND

--- Staging Boundary

ZONES

Residential R30/40

Public Open Space

Public Open Space (restricted)

OTHERS

Structure Plan Area

Transmission Powerline and Pylons

100m Offset from Powerline

Powerline Easement

Integrator A

Neighbourhood Connector A

Neighbourhood Connector B

Access Street C





2 Abbotsford Street, West Leederville, WA, 6007

PO Box 796, Subiaco, WA 6904

admin@cleplan.com.au

+61 8 9382 1233

LOT 5131 JANDAKOT ROAD, TREEBY

LOCAL STRUCTURE PLAN



PART TWO

**EXPLANATORY
SECTION**

OCTOBER 2022

Title: Lot 5131 Jandakot Road, Treeby
Local Structure Plan
Part Two - Explanatory Section

Prepared for: Perron Group

CLE Reference: 2366Rep108D

Date: 17 October 2022

Status: Final

Review date: 17 October 2022

Prepared by: CLE Town Planning + Design

Project team: CLE Town Planning + Design
360 Environmental
Bushfire Safety Consulting
EPCAD
JDA Consulting
Transcore
Stantec
Herring Storer Acoustics

This report is for the exclusive use of the Client, pursuant to Agreement between the Client and CLE Town Planning + Design. CLE accepts no liability or responsibility whatsoever in respect of any use of or reliance upon any information contained within this report by anyone who is not party to the Agreement and/or has come into possession of the Report through parties other than the Client or CLE.

CLE is not accountable for any information which may be contained within the Report which has been supplied by others and reproduced by CLE in this report.

Copyright and any other Intellectual Property arising from this report and the provision of the services in accordance with the Agreement belongs exclusively to CLE unless otherwise agreed and may not be reproduced or disclosed to any other person other than the Client without the express written authority of CLE.

Any reproduction by the Client is to reference CLE as the original author.

Plans and figures contained in this report have been prepared for general information purposes only and may inadvertently use uncontrolled data from external sources. CLE does not guarantee the accuracy of the plans and they should not be used for any detailed site design. The content of this report including all plans remains the property of CLE.

CONTENTS

1.0 PLANNING BACKGROUND

- 1.1 Introduction and Purpose
- 1.2 Land Description
 - 1.2.1 Location
 - 1.2.2 Area and Land Use
 - 1.2.3 Legal Description and Ownership
- 1.3 Planning Framework
 - 1.3.1 Metropolitan Region Scheme
 - 1.3.2 City of Cockburn Town Planning Scheme No. 3
 - 1.3.3 Strategic Planning Context
 - 1.3.4 State Planning Policies
 - 1.3.5 City of Cockburn Policies

2.0 SITE CONDITIONS AND CONSTRAINTS

- 2.1 Biodiversity and Natural Area Assets
 - 2.1.1 Flora and Vegetation
 - 2.1.2 Fauna
- 2.2 Landform and Soils
 - 2.2.1 Topography
 - 2.2.2 Soils
- 2.3 Groundwater and Surface Water
 - 2.3.1 Groundwater
 - 2.3.2 Surface Water
- 2.4 Bushfire
- 2.5 Heritage
 - 2.5.1 Aboriginal Heritage
 - 2.5.2 European Heritage
- 2.6 Environmental Constraints and Management

3.0 STRUCTURE PLAN

- 3.1 Plan Overview
- 3.2 Residential
 - 3.2.1 Dwelling Yields and Density Targets
 - 3.2.2 Lot/Dwelling Types
 - 3.2.3 Local Development Plans
 - 3.2.4 R-Codes Variations
- 3.3 Movement Network
 - 3.3.1 External Connections
 - 3.3.2 Proposed Structure Plan Roads
 - 3.3.3 Streetscape Landscaping
 - 3.3.4 Intersection Analysis
 - 3.3.5 Public Transport
 - 3.3.6 Cycling and Pedestrian Movement
- 3.4 Public Open Space and Drainage
 - 3.4.1 Public Open Space Provision
 - 3.4.2 Description of Open Space Areas
- 3.5 Water Management
 - 3.5.1 LWMS Approach
 - 3.5.2 Implementation of the LWMS
- 3.6 Schools
- 3.7 Activity Centres and Employment
- 3.8 Infrastructure Co-ordination, Servicing and Staging
 - 3.8.1 Earthworks
 - 3.8.2 Wastewater
 - 3.8.3 Water Supply
 - 3.8.4 Electricity Supply
 - 3.8.5 Telecommunications
 - 3.8.6 Gas
 - 3.8.7 Staging and Access
- 3.9 Bushfire Hazard Management
- 3.10 Developer Contributions
 - 3.10.1 Standard infrastructure
 - 3.10.2 Community infrastructure

Appendices

Appendix 1	Environmental Assessment Report
Appendix 2	Bushfire Management Plan
Appendix 3	Landscape Masterplan Report
Appendix 4	Local Water Management Strategy
Appendix 5	Transport Impact Assessment
Appendix 6	Engineering Infrastructure Report
Appendix 7	Noise Management Plan

Tables

Table 1	Treeby DSP - Accompanying Technical Information for Local Structure Plans
Table 2	Summary of EPA Themes, Factors and Objectives
Table 3	Performance of this structure plan against WAPC yield targets
Table 4	Typical lot products for the structure plan area outside the Urban Core
Table 5	POS Schedule

1.0 PLANNING BACKGROUND

1.1 Introduction and Purpose

The Lot 5131 Jandakot Road, Treeby Local Structure Plan ('structure plan') has been prepared by CLE Town Planning and Design on behalf of the landowner through their joint venture partner, Perron Developments. The structure plan is prepared in accordance with Clause 15 of Schedule 2 – Deemed Provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The structure plan provides a framework to guide the future subdivision and development of the part of Lot 5131 Jandakot Road that is zoned 'Urban' under the Metropolitan Region Scheme ('MRS', 'the structure plan area'). The structure plan refines and supplements the planning detail in the Treeby District Structure Plan ('the Treeby DSP'), ensuring that all relevant environmental, social and economic matters are appropriately addressed before urban development proceeds.

The format of the structure plan accords with the Western Australian Planning Commission (WAPC) Structure Plan Framework (2015). The structure plan consists of two parts and technical appendices:

Part 1: Implementation Section – contains the Structure Plan Map and the planning provisions and requirements that will facilitate implementation of the initiatives described in the Explanatory Section. These provisions will guide future subdivision and development applications in the structure plan area.

Part 2: Explanatory Section – discusses the key outcomes and planning implications of the background and technical reports and describes the vision and planning justification for the structure plan area.

Technical Appendices – includes the following technical reports, which have been prepared to demonstrate the conformance of the structure plan with all statutory requirements and inform key land-use elements. The appendices are as follows:

- Environmental Assessment Report (360 Environmental);
- Bushfire Management Plan (Bushfire Safety Consulting);
- Landscape Master Plan (EPCAD);
- Local Water Management Strategy (JDA Consulting Hydrologists);
- Transport Impact Assessment (Transcore); and
- Engineering Infrastructure Report (Stantec).

The project team is largely the same as that which prepared the Treeby DSP and the recent structure plan for Lots 705 and 707 Armadale Road, Treeby, and as such is familiar with the site and its context. The structure plan will play a significant role in the growth of the emerging Treeby community through the creation of approximately 400 residential lots.

The following figures are included with this report:

1. Location Plan
2. Context Plan
3. Site Plan
4. MRS Plan
5. TPS 3 Plan
6. Treeby DSP
7. Vegetation Associations
8. Topographic Map
9. Hydrography and Wetlands
10. Concept Plan
11. Road Hierarchy
12. Landscape Master Plan
13. Stormwater Management Plan
14. BAL Contour Map

1.2 Land Description

1.2.1 Location

The structure plan area is located in the City of Cockburn, approximately 3km east of the Cockburn secondary centre and 20km south of the Perth city centre (refer Figure 1: Location Plan and Figure 2: Context Plan).

The structure plan area is located on the southern side of Jandakot Road. It abuts Bush Forever land to the east and west, vacant land zoned 'Rural' under the MRS to the north and the area covered by the approved Lots 705 and 707 Armadale Road, Treeby Local Structure Plan to the south.

The Kwinana Freeway is located to the west of the subject land and can be accessed via the Armadale Road / North Lake Road interchange at Cockburn Central.

1.2.2 Area and Land Use

The structure plan area covers approximately 30 hectares and is largely cleared, having been used until recently as a sand quarry (refer Figure 3: Site Plan). Part of Bush Forever Area 390 ('BFA 390') covers land to the east and west, generally coinciding with remnant vegetation.

1.2.3 Legal Description and Ownership

The structure plan area consists of one title, being a portion of Lot 5131 on Deposited Plan 416564 and in Volume 2972, Folio 798.

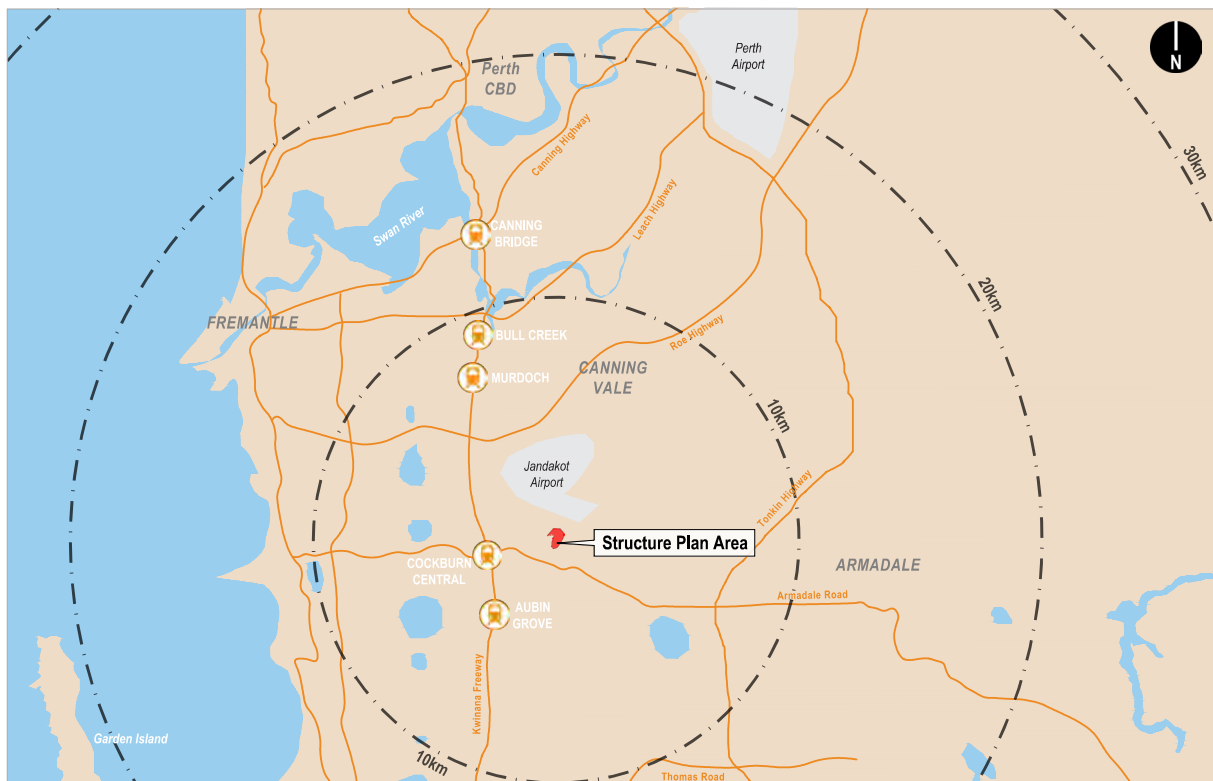


Figure 1 - Location Plan



Figure 2 - Context Plan



Figure 3 - Site Plan

Source: Nearmaps

1.3 Planning Framework

1.3.1 Metropolitan Region Scheme

The structure plan area is zoned 'Urban' in the MRS, reflecting its identification as an 'Urban Investigation' area in the South Metropolitan/Peel Sub-regional Planning Framework ('Framework'). The structure plan area was rezoned from 'Rural-Water Protection' to 'Urban' through MRS Amendment 1367/57, which was published in the Government Gazette in December 2020.

In the vicinity of the structure plan area:

- The parts of Lot 5131 that are not covered by this structure plan are zoned 'Rural-Water Protection' and form part of BFA 390;
- Lots 705 and 707 Armadale Road, south of the structure plan area, is another former quarry site. It is covered by an approved structure plan and is being developed by Perron Treeby Pty Ltd as the 'Lake Treeby' estate.
- East of Lot 5131 is the Skotsch Road rural-residential precinct. This is currently zoned 'Rural-Water Protection' and is identified for 'Planning Investigation' in the Framework;
- West of Lot 5131 is the 'Calleya' estate developed by Stockland and nearing completion; and
- North of Jandakot Road is a rural area zoned 'Rural-Water Protection' and identified for 'Planning Investigation' in the Framework. Urbanisation of at least part of this is anticipated in the medium- to long-term.

A plan depicting the MRS zones and reserves over and in the vicinity of the structure plan area appears as Figure 4.

1.3.2 City of Cockburn Town Planning Scheme No. 3

The structure plan area is zoned 'Development' under the City of Cockburn Town Planning Scheme No.3 ('TPS 3') (refer Figure 5: TPS 3 Plan).

The purpose of the 'Development' zone is to facilitate the co-ordinated planning of sites for subdivision and development through structure plans. Table 9 of TPS 3 sets out the requirements and special conditions for each 'Development' zone.

Ref. No	Area	Provisions
DA 44	Lot 5131 Jandakot Road, Treeby	1. An approved Structure Plan together with all the approved amendments shall be given due regard in the assessment of applications for subdivision, land use and development in accordance with Clause 27(1) of the Deemed Provisions.
	Lot 705 Armadale Road, Treeby	2. The Structure Plan is to provide for an appropriate mix of residential and compatible land uses.

This structure plan will fulfill the requirements of provisions 1 and 2 in the above-mentioned table.

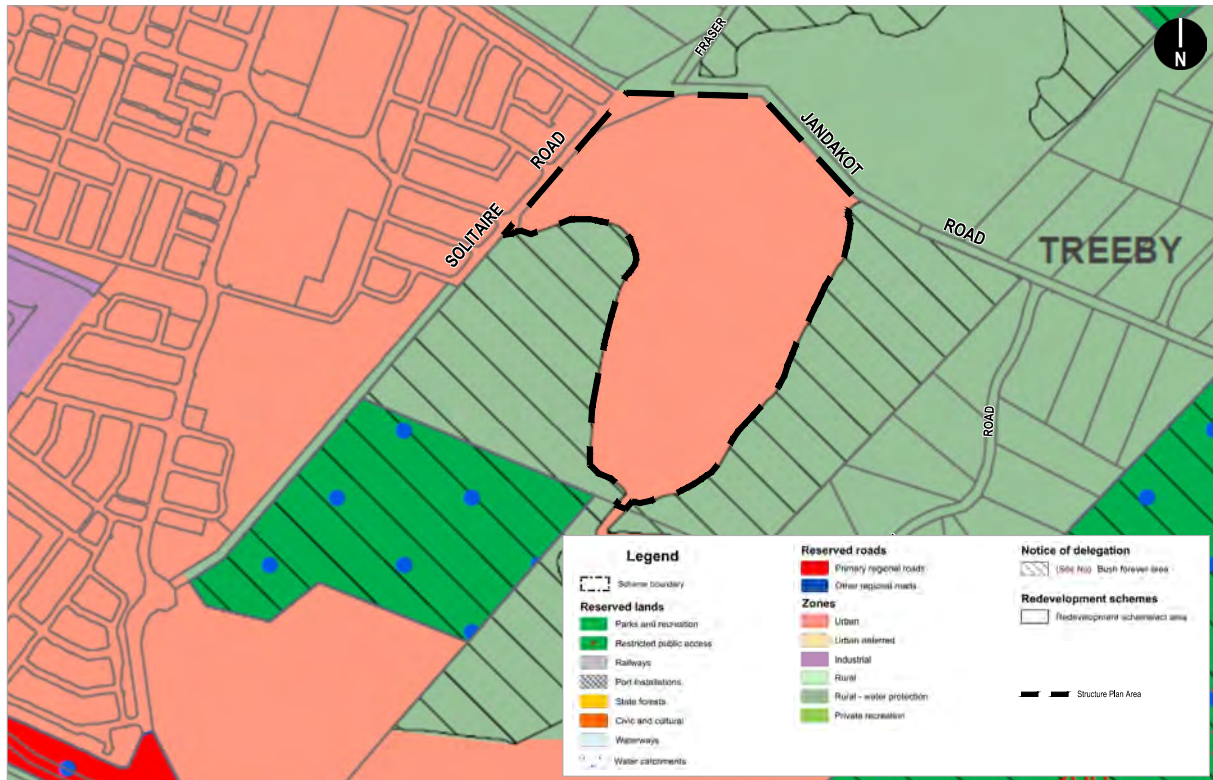


Figure 4 - MRS Plan

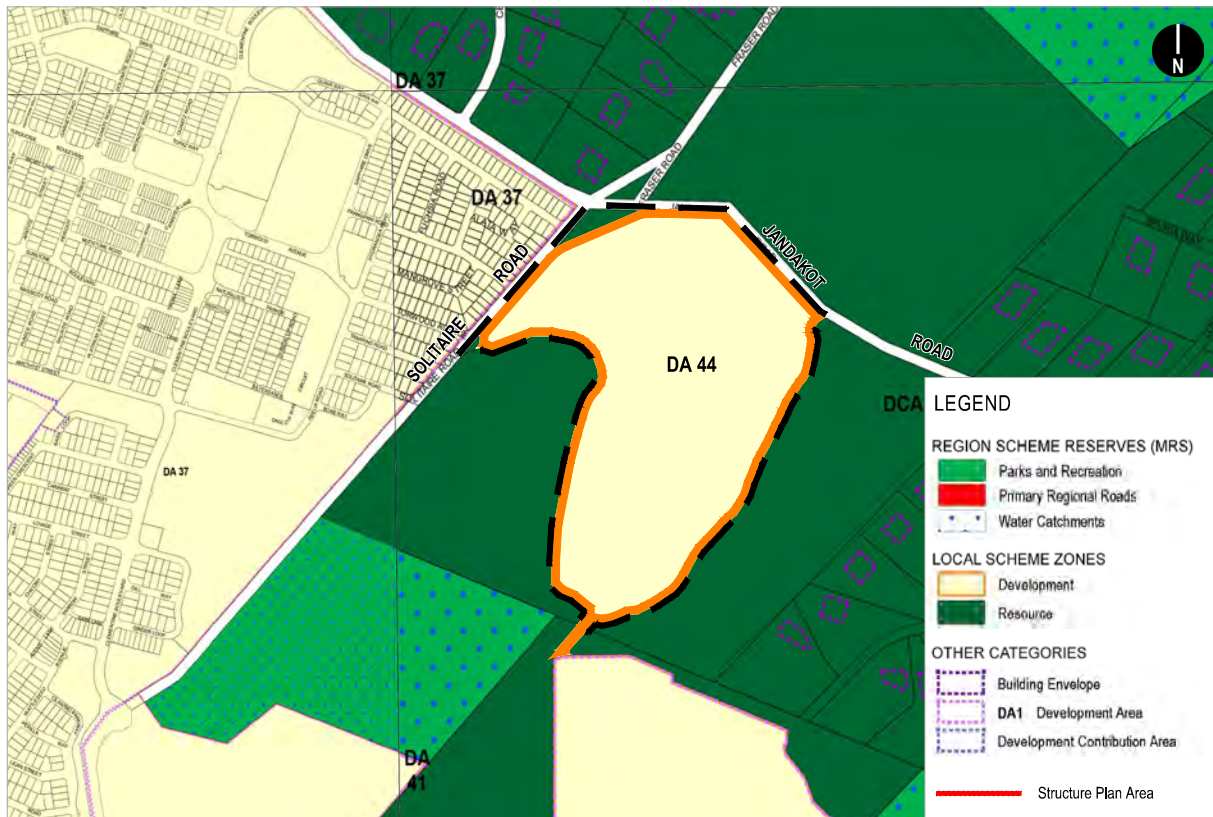


Figure 5- TPS 3 Plan

1.3.3 Strategic Planning Context

1.3.3.1 Perth and Peel @ 3.5 million

The *Perth and Peel @ 3.5 million* (March 2018) suite of policies forms the spatial framework and strategic plan for Perth and Peel. Its purpose is to establish a blueprint for supporting a population of 3.5 million by 2050 through the finalisation of four sub-regional planning frameworks. The structure plan area is within the South Metropolitan-Peel area (see Section 1.3.3.2 below).

1.3.3.2 South Metropolitan-Peel Sub-regional Planning Framework

The Framework is part of the *Perth and Peel @ 3.5 million* suite of documents and provides guidance at a sub-regional level for land use and infrastructure. Most of the structure plan area is within an area identified as being for 'Urban Investigation' for the period 2015-2031. This classification has been reflected in the MRS through the designation of the Urban zone in December 2020, and the subsequent designation of the 'Development' zone under TPS 3.

The balance of Lot 5131, within BFA 390, is identified as 'Open Space'. It is anticipated that this will be reserved in the MRS for 'Parks and Recreation' in due course, consistent with other parts of BFA 390.

1.3.3.3 Treeby District Structure Plan

The structure plan area is covered by the Treeby DSP (refer Figure 6: Treeby DSP), which was adopted by the City of Cockburn in September 2017 to provide guidance for more detailed structure planning, subdivision and development for individual sites within the area generally bound by Solomon Road, Jandakot Road, Warton Road and Armadale Road.

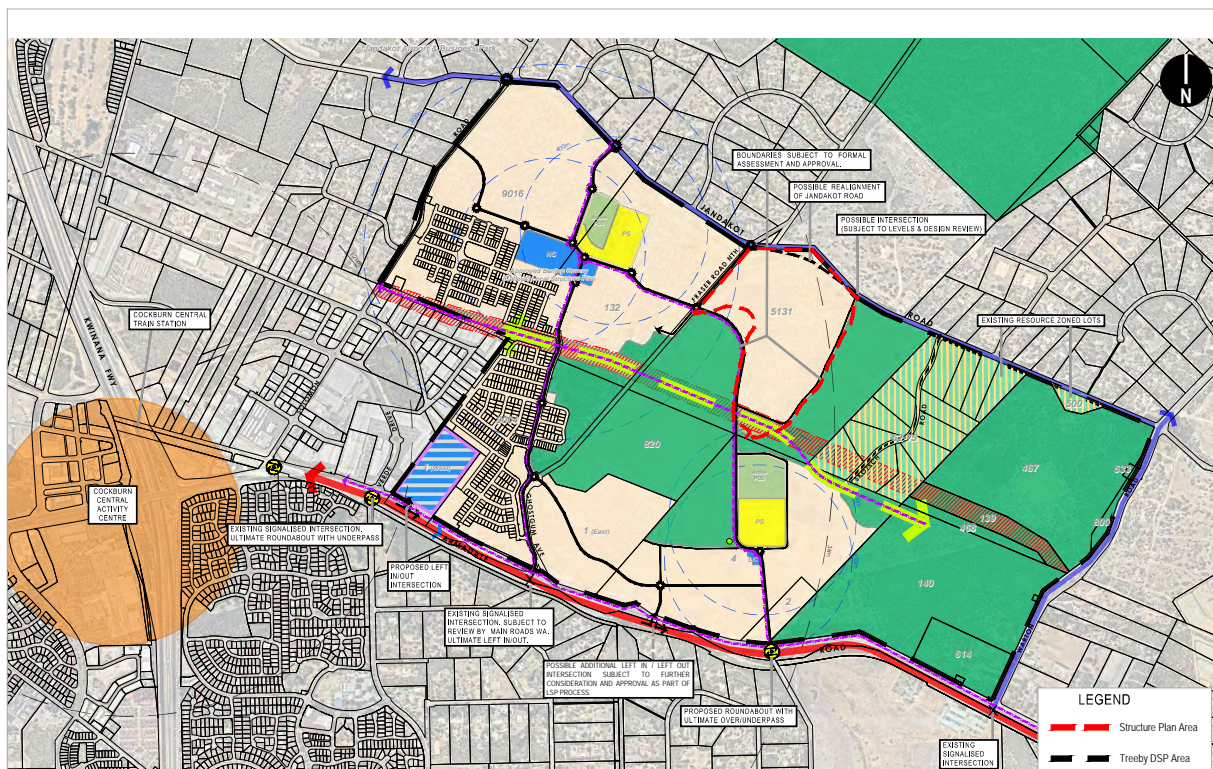


Figure 6 - Treeby DSP

Development activity within the DSP area is currently occurring in the following locations, listed with reference to their Development Area number from TPS 3:

- Development Area 37, covered by the Banjup Quarry Local Structure Plan and being developed (and substantially completed) by Stockland as the 'Calleya' estate.
- Development Area 41: covered by the approved Lot 703 Ghostgum Avenue, Treeby Local Structure Plan and being developed by the LWP Group and the Department of Communities as the 'Kara' estate.
- Development Area 43: covered by the approved Lots 705 and 707 Armadale Road, Treeby Local Structure Plan and being developed by Perron Treeby as the 'Lake Treeby' estate.

The Treeby DSP contains the following features within the structure plan area:

- Residential land across the structure plan area in its entirety;
- A District Distributor Road designation for Jandakot Road;
- A Neighbourhood Connector road from Fraser Road North (now Solitaire Road) southward into Lot 705 Armadale Road, along the edge of the western portion of BFA 390;
- A lower-order road along the edge of the eastern portion of BFA 390;
- A corridor accommodating the realignment of Jandakot Road across the northern boundary of the structure plan area;
- The high-voltage Western Power easement across the southernmost part of the structure plan area. A 'Green Linkage' and a 'major dual-use path / cycle path' are identified within the easement, making use of the land; and
- A small area of 'district-level POS' between the Western Power easement and BFA 390.

The DSP is supported by the following technical reports, which assist to define the key land use principles and inform subsequent stages of planning:

- Environmental Assessment Report (360 Environmental, September 2016);
- Transport Assessment (Transcore, February 2017);
- District Water Management Strategy (JDA Consulting Hydrologists, September 2016); and
- Engineering Infrastructure Report (Wood and Grieve [now Stantec], June 2016).

Part 1 of the Treeby DSP sets out the matters which subsequent local structure plans are expected to address. This includes an expectation that structure plans will generally conform with the layout illustrated within the DSP. In addition, the DSP sets out technical reporting requirements for subsequent local structure plans to include. These are summarised in Table 1 below.

Table 1: Treeby DSP – Accompanying Technical Information for Local Structure Plans

DSP Requirement	Report Section	Relevant Appendix
Local Water Management Strategy consistent with any approved District Water Management Strategy	Section 3.5	Appendix 4: Local Water Management Strategy (JDA Consulting Hydrologists)
Environmental Assessment Report	Section 2	Appendix 1: Environmental Assessment Report (360 Environmental)
Bushfire Hazard Assessment	Section 3.9	Appendix 2: Bushfire Management Plan (including Bushfire Hazard Assessment) (Bushfire Safety Consulting)
Other submission requirements consistent with Schedule 2 – Deemed Provisions of the <i>Planning and Development (Local Planning Schemes) 2015</i>	Section 3.3	Appendix 5: Traffic Impact Assessment (Transcore)
	Section 3.4	Appendix 3: Landscaping Masterplan Report (EPCAD)
	Section 3.8	Appendix 6: Engineering Infrastructure Report (Stantec)

The structure plan is generally consistent with the land use principles of the DSP. The structure plan refines and expands upon these principles to create a more specific plan for this particular area.

1.3.4 State Planning Policies

The following sections summarise the policies and strategies relevant to the structure plan area as urbanisation proceeds.

1.3.4.1 Liveable Neighbourhoods

Liveable Neighbourhoods is the WAPC's operational policy guiding urban design for greenfield development. *Liveable Neighbourhoods* sets out the key considerations for master-planning new communities including subdivision layout and movement networks, as well as the location of open space, community facilities, schools and activity centres.

This structure plan has been prepared in accordance with the principles and objectives of *Liveable Neighbourhoods*. Discussion about this structure plan in the context of the relevant Elements in *Liveable Neighbourhoods* appears in Section 3 of this report.

1.3.4.2 SPP 2.3: Jandakot Groundwater Protection

The structure plan area is within the Jandakot Groundwater Protection Area, which coincides with the Jandakot Underground Water Pollution Control Area declared under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*. The purpose of SPP 2.3 is to regulate land use and development over drinking water sources.

The recent transfer of the structure plan area to the 'Urban' zone, consistent with the Framework and the Treeby DSP was done following careful consideration of the likely hydrological impact of urban development and confirmation that the objectives of SPP 2.3 could be achieved.

SPP 2.3 seeks to ensure that all development within the Jandakot Groundwater Protection Area is compatible with the long-term protection and management of the resource. This is achieved through a three-tier classification system consisting of Priority 1, Priority 2 and Priority 3 (P1, P2 and P3) categories defined on the basis of hydrological factors and land tenure. In addition, Wellhead Protection Zones are designated around abstraction bores (none of which encroach on the structure plan area).

The structure plan area is classified as a P3* area. The acceptability of land uses in the Urban and Industry zones in standard P3 areas is, as stated in SPP 2.3, *"based on the objective of risk management. P3 areas provide for a range of urban, commercial and light industrial uses. Key elements in the protection of P3 areas include the need for reticulated sewerage and implementing best management practices."* P3* is a variation on the standard P3 classification used where there is a need to address increased risk to water quality arising from a separate, approved land use change, of which the above-mentioned MRS Amendment 1367/57 is an example. The structure plan area was formerly classified as P2 but has changed as a consequence of the recently-applied 'Urban' zone.

Information on the water management approach proposed for the structure plan area is provided in the Local Water Management Strategy (JDA, June 2021) included at Appendix 4.

1.3.4.3 SPP 2.7: Public Drinking Water Source Policy and SPP 2.9: Water Resources

These State Planning Policies provide high-level strategic guidance for policy-making and decision-making where water resources are a relevant consideration. Their policy measures seek to manage outcomes for water resources of all types and outline the WAPC's expectations for the protection of drinking water sources.

The only water resource that is relevant to this structure plan is the Jandakot Groundwater Protection Area, which is managed under SPP 2.3 (discussed above). SPP 2.3 encapsulates the objectives of SPPs 2.7 and 2.9, and as such, in complying with SPP 2.3, this structure plan also complies with SPPs 2.7 and 2.9.

It should be acknowledged that SPP 2.9 and its associated guidelines are in the process of being finalised and will replace a number of water-related policies, including SPPs 2.3 and 2.7. Draft SPP 2.9 is not proposing any significantly new requirements, rather, is consolidating and clarifying the policy requirements of SPPs 2.3 and 2.7.

1.3.4.4 SPP 3.7: Planning in Bushfire-Prone Areas

The structure plan area is identified in the mapping maintained by the Department of Fire and Emergency Services as being bushfire-prone. As such, SPP 3.7 is applicable. The purpose of this policy is to:

- Avoid any increase in the threat of bushfire to people, property and infrastructure;
- Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process;
- Ensure that strategic planning documents (which include structure plans) include specified bushfire protection measures; and

- Achieve an appropriate balance between bushfire risk management measures and: biodiversity conservation values, environmental protection and biodiversity management, and landscape amenity, with consideration of the potential impacts of climate change.

To ensure that residential development in the structure plan area achieves the objectives of SPP 3.7, a Bushfire Management Plan (Bushfire Safety Consulting, June 2021) has been prepared in accordance with the SPP 3.7 Guidelines. The recommendations of the Bushfire Management Plan are summarised in Section 3.9, and the report itself constitutes Appendix 2.

1.3.4.5 SPP 5.3: Land Use Planning in the Vicinity of Jandakot Airport

SPP 5.3 provides guidance for planning on land affected by aircraft noise on the basis of Australian Noise Exposure Forecast (ANEF) levels. Although relatively close to Jandakot Airport and the employment precinct surrounding it, the structure plan area is not affected by ANEF contours above 20, which is the threshold for zoning and development restrictions. However, SPP 5.3 notes that *“given noise nuisance may still be experienced below the 20 ANEF exposure level and that Jandakot Airport is a general aviation airport”*. As such, a ‘Frame’ area is defined, and this takes in the structure plan area.

There is no restriction on zoning or development within the ‘Frame’ area, and noise attenuation measures are not mandated. Nevertheless, this structure plan enables the WAPC, on the advice of the City of Cockburn, to require a Local Development Plan imposing noise mitigation standards on homebuilders at the subdivision stage and/or include a notification on the Certificate of Title of affected lots advising of the potential for noise nuisance. This is consistent with the approach required by the WAPC and the City for other local structure plans approved nearby in recent times.

1.3.4.6 SPP 5.4: Road and Rail Noise

The purpose of SPP 5.4 is to *“minimise the adverse impact of transport noise, without placing unreasonable restrictions on noise-sensitive residential development, or adding unduly to the cost of transport infrastructure”*. SPP 5.4 is applicable to this structure plan by reason of its location abutting Jandakot Road, which is a future District Distributor Road (shown as such in the Treeby DSP) likely to be reserved as an ‘Other Regional Road’ under the MRS in due course. An agreement for the upgrading of Jandakot Road has been struck between the owners of the structure plan area and the City of Cockburn, and works will proceed in the short- to medium-term.

To forecast traffic and assess the associated noise impact, a Noise Management Plan (Herring Storer Acoustics, December 2021; refer to Appendix 7) has been prepared. This confirms that although parts of the structure plan area are affected by transport noise, appropriate mitigation measures are available and that transport noise is not a constraint to development of the structure plan area for residential purposes.

1.3.4.7 SPP 7.3: Residential Design Codes

The Residential Design Codes (R-Codes) form the basis for assessment of all single, grouped and multiple-dwelling developments in Western Australia. They are applicable to the structure plan area by virtue of the proposed Residential zone.

The R-Codes can be varied through use of (relevantly) Local Planning Policies and Local Development Plans. Standard variations to the R-Codes will be available to the structure plan area through the reference to the City’s Local Planning Policy 1.16 in Part 1 of the structure plan (see also Section 1.3.5.1 of this report), and other variations may become active in future through Local Development Plans.

[1.3.5 City of Cockburn Policies](#)

The following sections summarise the City of Cockburn policies relevant to the structure plan area as urbanisation proceeds.

[1.3.5.1 LPP 1.16: Single House Standards for Medium-Density Housing in the Development Zone](#)

In April 2016, the WAPC released Planning Bulletin 112, which contains a set of standard variations (known as the R-MD Codes) to the deemed-to-comply provisions of the R-Codes for single houses in 'Development' zones where a coding of R25 to R60 applies.

To enable these to be implemented on an estate-wide basis through reference in a structure plan, the City of Cockburn has adopted a Local Planning Policy, LPP 1.16. This is referenced in Part 1 of this structure plan, making the R-MD Codes applicable within the structure plan area. These apply unless a Local Development Plan containing additional variations has been approved in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*.

[1.3.5.2 LPP 1.12: Noise Attenuation](#)

The purpose of LPP 1.12 is to:

1. *"Detail the noise attenuation and noise management reporting process when undertaking development within the City of Cockburn.*
2. *Provide details of the City's requirements for the different types of acoustic reports.*
3. *Provide guidance to applicants as to when an acoustic consultant should be engaged and provide information on the type of assistance an acoustic consultant might provide."*

LPP 1.12 makes recommendations for the provision of Acoustic Reports to demonstrate compliance of (relevantly) structure plans with SPP 5.3. To satisfy the requirements of LPP 1.12 and SPP 5.3, the structure plans approved for nearby Development Areas 37, 41 and 43 (all of which are also in the 'Frame' area for Jandakot Airport) have included provision for high-specification glazing for all residential windows to be required through Local Development Plans, which is the approach adopted for this structure plan (refer to Section 6.0 of Part 1).

[1.3.5.3 LPP 5.1: Public Open Space](#)

LPP 5.1 provides guidance additional to Liveable Neighbourhoods in respect of credits for public open space ('POS'). Its purpose is:

1. *"To specify land features that will not be accepted by the City as part of the public open space requirement.*
2. *To clarify how bushfire protection zones and hazard separation zones will be considered in relation to public open space."*

The provisions of LPP 5.1 are relevant to, and have been accommodated in, the POS Schedule that appears at Section 3.4 of this report.

1.3.5.4 LPP 5.2: Incorporating Natural Areas in Public Open Space and/or Drainage Areas

LPP 5.2 provides guidance for the use of natural areas, defined as wetlands (including their buffers) and bushland, within POS and drainage reserves that will, in due course, be handed over to the City to manage.

Although this structure plan envisages some use of the abutting Bush Forever site in conjunction with POS located within the structure plan area, the project team understands that the Bush Forever site is proposed to be vested in the State Government to manage, rather than the City. As such, LPP 5.2 is of limited relevance, although its principles are met.

1.3.5.5 LPP 5.19: Structure Plans and Telecommunications Infrastructure

LPP 5.19 provides for the implementation of State Planning Policy 5.2: Telecommunications Infrastructure at the local level. In particular, it guides the process of considering wireless and mobile telephone system requirements at the urban design stage of the development process, ensuring that infrastructure is accommodated. This structure plan's response in this regard is detailed at Section 3.8.5 of this report.

2.0 SITE CONDITIONS AND CONSTRAINTS

The following sections outline the site conditions and constraints apparent within the structure plan area. This summary is informed by previous planning undertaken through the Treeby DSP and the technical reports prepared in support of both the DSP and this structure plan.

2.1 Biodiversity and Natural Area Assets

This structure plan area occupies land zoned 'Urban' under the MRS. This zone was designated pursuant to MRS Amendment 1367/57, the assessment of which gave extensive consideration to environmental matters. The outcome was an agreement between the WAPC and the landowner to set aside the majority of the parent lot (Lot 5131 Jandakot Road) as Bush Forever and donate it free of cost. The land to be donated covers approximately 34 hectares, with the balance (approximately 30 hectares) being zoned 'Urban' and available for development.

The Environmental Assessment Report (360 Environmental, June 2021; 'the EAR') that appears at Appendix 1 provides a comprehensive review of all environmental matters relevant to the structure plan area. A summary of the key items appears in the following sub-sections.

2.1.1 Flora and Vegetation

The EAR is informed by, inter alia, a number of Flora and Vegetation Surveys undertaken in recent years as part of previous planning initiatives. A plan showing the Vegetation Associations across the structure plan area appears in the EAR and is replicated as Figure 7 in this report.

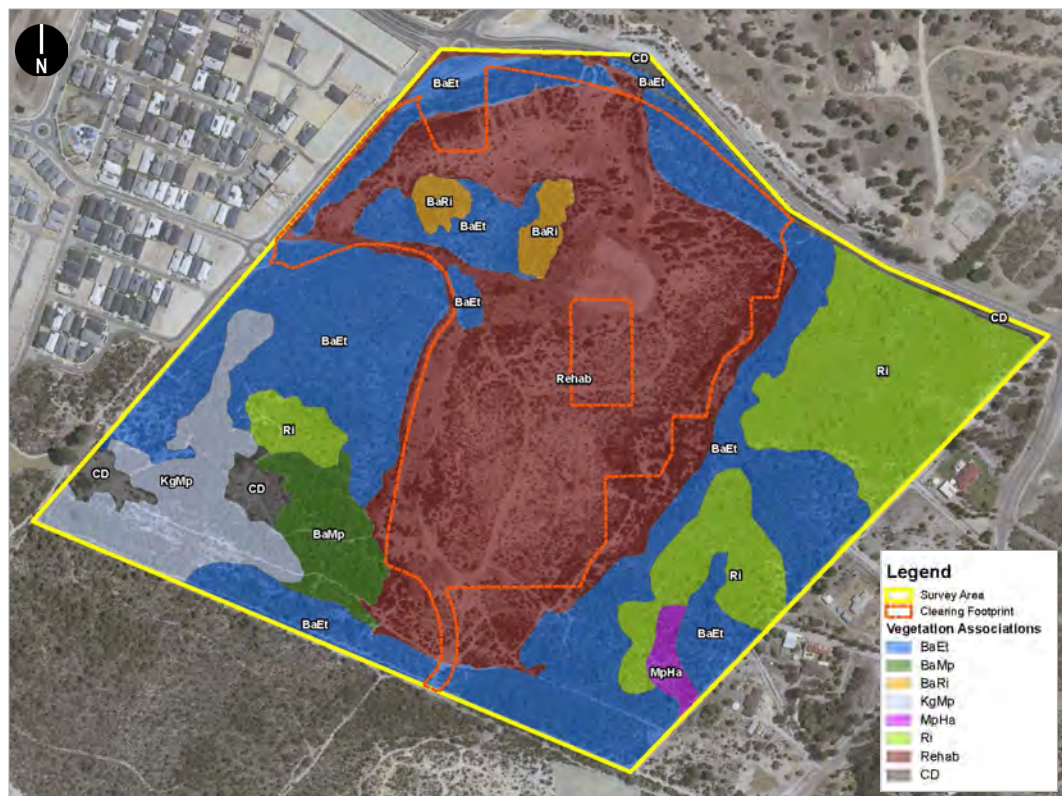


Figure 7 - Vegetation Associations

Source: 360 Environmental

The development area generally coincides with land that was used previously as a sand quarry and cleared of native vegetation. The regrowth vegetation in this area is in 'Degraded' to 'Completely Degraded' condition, exhibiting (as noted in the EAR) "*low diversity and density of native species*" and "*invasive weed species*". It has been classified as Open Regrowth Shrubland and is not of any environmental value.

There remains an island of banksia woodland in the northern part of the development area and a limited area along the northern boundary. These areas were identified to be cleared in the above-mentioned MRS amendment request. Banksia woodland is a Threatened Ecological Community and therefore a Matter of National *Environmental Significance* ('MNES') under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act'). As such, a referral to the Commonwealth Department of Agriculture, Water and Environment ('DAWE') has been undertaken, and the action has been deemed a 'Controlled Action'. Discussions between DAWE and the project team are facilitating a resolution in this regard.

The only other significant environmental features relevant to the structure plan are a number of *Caladenia huegelii* (Grand Spider Orchid) specimens within BFA 390. This is a Threatened species listed under the EPBC Act and a Declared Rare Flora species under the *Wildlife Conservation Act 1950*. A minimum of 10 metres of separation between any specimen and the development area is available and the specimens will be protected by virtue of the measures to be taken to protect BFA 390 more broadly, including a perimeter road and conservation fence.

[2.1.2 Fauna](#)

The EAR is informed by, inter alia, a Fauna Survey and, recognising the presence of potential habitat, a Black Cockatoo Habitat Assessment. No conservation-significant fauna have been directly recorded within the structure plan area. Factors such as the following make the structure plan area generally unsuitable as habitat for native fauna:

- The degraded condition of the vegetation;
- The prevalence of non-native flora;
- The lack of understorey; and
- The isolated nature of the island of banksia woodland.

The most suitable fauna habitat local to the structure plan area is BFA 390, 34 hectares of which is within the same parent lot and will be donated to the Crown by the landowner. Discussion on the structure plan's intended response to management of the interface to this appears in Section 3.4 of this report.



Figure 8 - Topographic Map
 Source: 360 Environmental

2.2 Landform and Soils

2.2.1 Topography

The structure plan area has previously been used as a sand quarry. As such, it is generally lower than the surrounding Bush Forever area and is generally flat, having been levelled off following the cessation of sand extraction (refer Figure 8: Topographic Map).

The structure plan area varies in elevation from RL28 on the eastern boundary to RL40 on the northern boundary, with undulation evident. Fixed levels are evident to all external boundaries – at the Bush Forever interface to the east, south and south-west, Solitaire Road to the north-west and the future Jandakot Road alignment to the north. The earthworks and drainage concept prepared with this structure plan has been prepared in this context (refer to the Local Water Management Strategy at Appendix 4 and the Engineering Infrastructure Report at Appendix 6).

2.2.2 Soils

The structure plan area comprises Bassendean dunes in a heavily modified form, given the previous sand extraction activities. The soils associated with Bassendean dunes are generally suitable for urban development.

The structure plan area is within an area identified as being at 'moderate to low risk' of acid sulphate soil (ASS) disturbance within 3 metres of the soil surface and 'high to moderate' risk beneath 3m. This does not pose a constraint to urban development as envisaged in this structure plan, however, any work (e.g. installation of deep sewer) involving excavation beyond 3m may necessitate an ASS Management Plan.

A search of the Contaminated Sites Database administered by the Department of Water and Environmental Regulation ('DWER') has confirmed that there are no registered contaminated sites within the site. Further, no local factors suggest that any significant unreported contamination is present.

2.3 Groundwater and Surface Water

2.3.1 Groundwater

The structure plan sits over a superficial aquifer known as the Jandakot Mound. The Local Water Management Strategy ('LWMS') prepared by JDA (June 2021) to support this structure plan indicates that depth to this groundwater resource exceeds 3m across the structure plan area, fluctuating by 1-1.5m over the course of the year as a consequence of the winter-dominated rainfall pattern. Groundwater flow is generally from east to west, which does not necessarily reflect surface water flows. As discussed in Section 3.5 of this report, separation to groundwater will be provided through the use of fill, and the fluctuation is not a constraint to development.

Three geological formations – Bassendean Sand, Gnangara Sand and Ascot Formation – are evident within the superficial aquifer, which exhibits a thickness of approximately 40 metres. The highest formation (the Bassendean Sand) contains ferruginous (iron-rich) sand. In order to avoid staining of irrigated areas from groundwater, abstraction will need to occur from below this layer. The superficial aquifer overlies the confined Leederville and Yarragadee aquifers, which are drinking water sources for Perth.

Full details of the water quality protection measures proposed to be implemented through the structure plan are provided at Section 3.5 of this report.

2.3.2 Surface Water

There are no natural surface water features in the structure plan area. There is a Resource Enhancement Wetland (UFI 13328) within BFA 390 to the east that will be unaffected by the structure plan (refer Figure 9). The buffer for this is roughly coincident with the Bush Forever boundary. Where it extrudes from the Bush Forever boundary, the buffer area is proposed to be incorporated into Public Open Space.



Figure 9 - Hydrology and Wetlands

Source: 360 Environmental

2.4 Bushfire

As noted in Section 1.3.4.4 of this report, the structure plan area is identified as being bushfire-prone in the map database administered by the Department of Fire and Emergency Services. In accordance with the requirements of State Planning Policy 3.7: Planning in Bushfire-Prone Areas, a Bushfire Management Plan (Bushfire Safety Consulting, June 2021; 'the BMP') incorporating a Bushfire Attack Level (BAL) contour map forms part of this structure plan. This is described at Section 3.9 of this report and confirms that all bushfire hazards affecting the structure plan area can be managed through subdivision design and built form controls, and is therefore not a constraint to subdivision and development.

2.5 Heritage

2.5.1 Aboriginal Heritage

The structure plan area contains no sites listed on the Aboriginal heritage register maintained by the Department of Aboriginal Affairs under the *Aboriginal Heritage Act 1972*.

2.5.2 European Heritage

The structure plan area contains no sites listed on the State Heritage Register maintained by the Western Australian Heritage Council under the Heritage of Western Australia Act 1990.

2.6 Environmental Constraints and Management

The EAR provides a summary of the measures incorporated into this structure plan (including recommendations for later stages) arranged around the relevant themes, factors and objectives used by the Environmental Protection Authority to assess proposals. These are listed in Table 2 below and cross-referenced with the sections of this structure plan report that address them.

Table 2: Summary of EPA Themes, Factors and Objectives

Theme	Factor	Objectives	Report Section	Appendix
Land	Flora and Vegetation	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.	3.4: Public Open Space and Drainage	1: Environmental Assessment Report
	Terrestrial Fauna	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.	3.4: Public Open Space and Drainage	1: Environmental Assessment Report
Water	Hydrological Process	To maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.	3.4: Public Open Space and Drainage	1: Environmental Assessment Report
			3.5: Water management	4: Local Water Management Strategy
	Inland Waters Environmental Quality	To maintain the quality of groundwater and surface water so that environmental values are protected.	3.4: Public Open Space and Drainage	1: Environmental Assessment Report
			3.5: Water management	4: Local Water Management Strategy

3.0 STRUCTURE PLAN

3.1 Plan Overview

The structure plan proposes a site-responsive and permeable urban form. It facilitates legible internal access and provides connections to neighbouring estates and external amenities. Through implementation of this structure plan, the structure plan area will become an integral part of the Treeby urban precinct that delivers a diverse choice of housing in a natural setting.

The Structure Plan Map contained in Part 1 is the framework that will guide subdivision design and development. It is based on the following key principles:

- Enable the provision of a location-appropriate mix of housing that is consistent with planning requirements and responsive to market preferences.
- Provide a robust urban form that responds to the site's location within the wider Treeby urban precinct and integrates with nearby development.
- Foster sense of place through celebration of the natural amenity that is inherent to the site in the form of BFA 390.
- Provide accessible, attractive and multi-functional open space that addresses drainage requirements as well as offering a range of opportunities for active and passive recreation.
- Identify appropriate uses for the land within the Western Power easement that crosses the southern part of the site.
- Extend service infrastructure in a timely and co-ordinated manner to support development.

Based on these key principles, the structure plan provides the framework for:

- Approximately 400 lots, with a base coding of R30 and R40 in specific locations;
- Creation of the north-south Neighbourhood Connector road shown in the Treeby DSP and the provision of a legible modified grid network of local streets.
- POS areas that deliver an appropriate interface to BFA 390, facilitate a range of recreational activities and accommodate drainage.
- Appropriate management of interfaces to BFA 390 in terms of access, delineation and bushfire hazard, through the strategic placement of streets and POS.
- Appropriate use of the Western Power easement for POS, drainage and pedestrian movement purposes.

These features are incorporated into the conceptual master plan included with this report as Figure 10. This is not intended to be a rigid concept; it demonstrates one development scenario and will be refined at the subdivision stage in response to contemporary market preferences. The intent of the conceptual master plan is to provide direction on how the development will respond to the opportunities and constraints inherent to the structure plan area. It also underpins the Structure Plan Map in Part 1.



Figure 10 - Concept Plan

Source: Neamanps

3.2 Residential

The recently-approved structure plan for Lots 705 and 707 Armadale Road, also prepared for Perron by CLE, included an Urban Core comprising densities of R60 and R80. The justification for this related to an adjacent Local Centre, retained lake, district-level playing fields and primary school. Lot 5131 is beyond the walkable catchment of those features and residential densities will be lower as a consequence.

3.2.1 Dwelling Yields and Density Targets

The *Perth and Peel @3.5 million* planning framework sets an overall residential density target of 15 dwellings per gross hectare of urban-zoned land. This target was carried over from the previous planning framework, *Directions 2031 and Beyond*, and its purpose is to ensure efficient use of urban-zoned land in the metropolitan region. Site-specific constraints and geographic characteristics influence the distribution of density; some areas are suitable for higher densities, whilst in other areas it will only be feasible to provide lower densities.

The above-mentioned gross-hectare target is reflected in *Liveable Neighbourhoods*. This also contains a yield target per hectare of net developable area, being the land area available to the developer for sale for residential purposes. Table 3 summarises the performance of the development concept shown at Figure 10 against these objectives:

Table 3: Performance of this structure plan against WAPC yield targets

Metric	Min. Dwellings per Hectare	No. Lots Provided (est)	Structure Plan Area	Resultant Yield
Gross urban-zoned hectare	15	400	30.3	13.2
Gross hectare of Net Developable Area	22	400	15.7	25.5

The development concept shown at Figure 10 is subject to change at the subdivision stage, in which case the Net Developable Area would also change. The lot yield of 400 is an estimate based on a realistic average lot size of approximately 390sqm.

Table 3 indicates that the structure plan provides a framework for the achievement all applicable yield targets specified in *Liveable Neighbourhoods* and reflected in other planning strategies. The minor shortfall in terms of gross urban-zoned hectare is a product of the over-provision of POS (refer to Section 3.4 below) and the land required to widen Jandakot Road and Fraser Road.

3.2.2 Lot / Dwelling Types

The residential densities permissible under this structure plan enables the development of a diverse mix of lot and housing product. Even within only two density codes, traditional home sites, smaller contemporary front-loaded lots, and rear-loaded cottage lots are envisaged. Table 4 summarises the characteristics of each proposed code.

Table 4: Typical lot products for the structure plan area outside the Urban Core

	Contemporary Front-loaded	Rear-loaded Cottage
R-Code	R30	R40
Typical location	Base code for the structure plan area	As per R30, where access is obtained from a rear laneway
Typical width (m)	10.5 to 15	6 to 10.5
Typical depth (m)	25 to 30	25 to 30
Approx. area (sqm)	260+	180+
Primary built form control	R-Codes varied via R-MD Codes	R-Codes varied via R-MD Codes; LDPs
Built form	Single dwellings; single or double-storey; sold as either land-only or house-and-land packages	<ul style="list-style-type: none"> • Single and grouped dwellings • Lots less than 10m wide typically built out and sold as a house- and-land package • Opportunities for terrace housing

This structure plan is being progressed concurrently with finalisation of the Medium-Density Code component of the R-Codes, which will apply by virtue of the proposed R30 and R40 codings. This will result in changes to the lot depths and widths mentioned in Table 2 and different building designs relative to those currently considered standard.

3.2.3 Local Development Plans

Local Development Plans (LDPs) can be prepared for select lots at the subdivision stage to mandate appropriate noise and bushfire mitigation measures, ensure quality built form and facilitate variations to the deemed-to-comply criteria of the Residential Design Codes, as applicable. For this structure plan area, LDPs may be prepared for the following types of lots requiring more detailed planning:

- Abut POS;
- Are rear-loaded (obtain vehicular access from a laneway);
- May be affected by aircraft noise and require noise mitigation measures at the development stage; and
- May be affected by road noise and require noise mitigation measures at the development stage.

3.2.4 R-Codes Variations

The Regulations do not include provision for structure plans to vary the deemed-to-comply provisions of the R-Codes. Local Development Plans, Local Planning Policies and scheme amendments are the means by which such variations can be made.

The City of Cockburn has a Local Planning Policy, namely, LPP 1.16: *Single House Standards for Medium-Density Housing in the Development Zone* that introduces the R-Codes variations specified in the WAPC's Planning Bulletin 112: *Medium-Density Single House Development Standards – Development Zones* (usually referred to as 'the R-MD Codes') for all land zoned 'Development' within the City. The process of zoning the structure plan area 'Development' is complete. This will automatically enable implementation of the R-MD Codes at the development stage.

3.3 Movement Network

A Transport Impact Assessment has been prepared by traffic consultants Transcore to identify projected traffic volumes, specify road hierarchies and confirm that the proposed movement network is appropriate (refer Appendix 5). Assuming a lot yield of up to 440, the Transport Impact Assessment concludes that the structure plan area will generate up to 3,500 vehicle movements per day, which is within the capacity of all external and internal intersections and streets.

The Transport Impact Assessment is consistent with the WAPC's Transport Impact Assessment Guidelines (August 2016) and reflects the principles of the Treeby DSP. The modelling assumes that the neighbouring Calleya estate and Lots 703, 705 and 707 Armadale Road are fully developed and that all external roads are carrying forecast 2031 volumes.

[3.3.1 External Connections](#)

The structure plan area obtains access to the external road network at the three points identified in the Treeby DSP, which are:

- The existing roundabout at Torwood Avenue/Solitaire Road;
- A connection southward into the Lake Treeby estate and ultimately to Armadale Road; and
- A left-in, left-out intersection onto Jandakot Road at the north-eastern corner of the structure plan area.

The Torwood Avenue / Solitaire Road roundabout and the southward connection into Lake Treeby are linked by the Neighbourhood Connector road shown in the DSP along the eastern boundary of a portion of BFA 390. The eastern intersection onto Jandakot Road is shown on the DSP as connecting to a lower-order road along the western boundary of a portion of BFA 390.

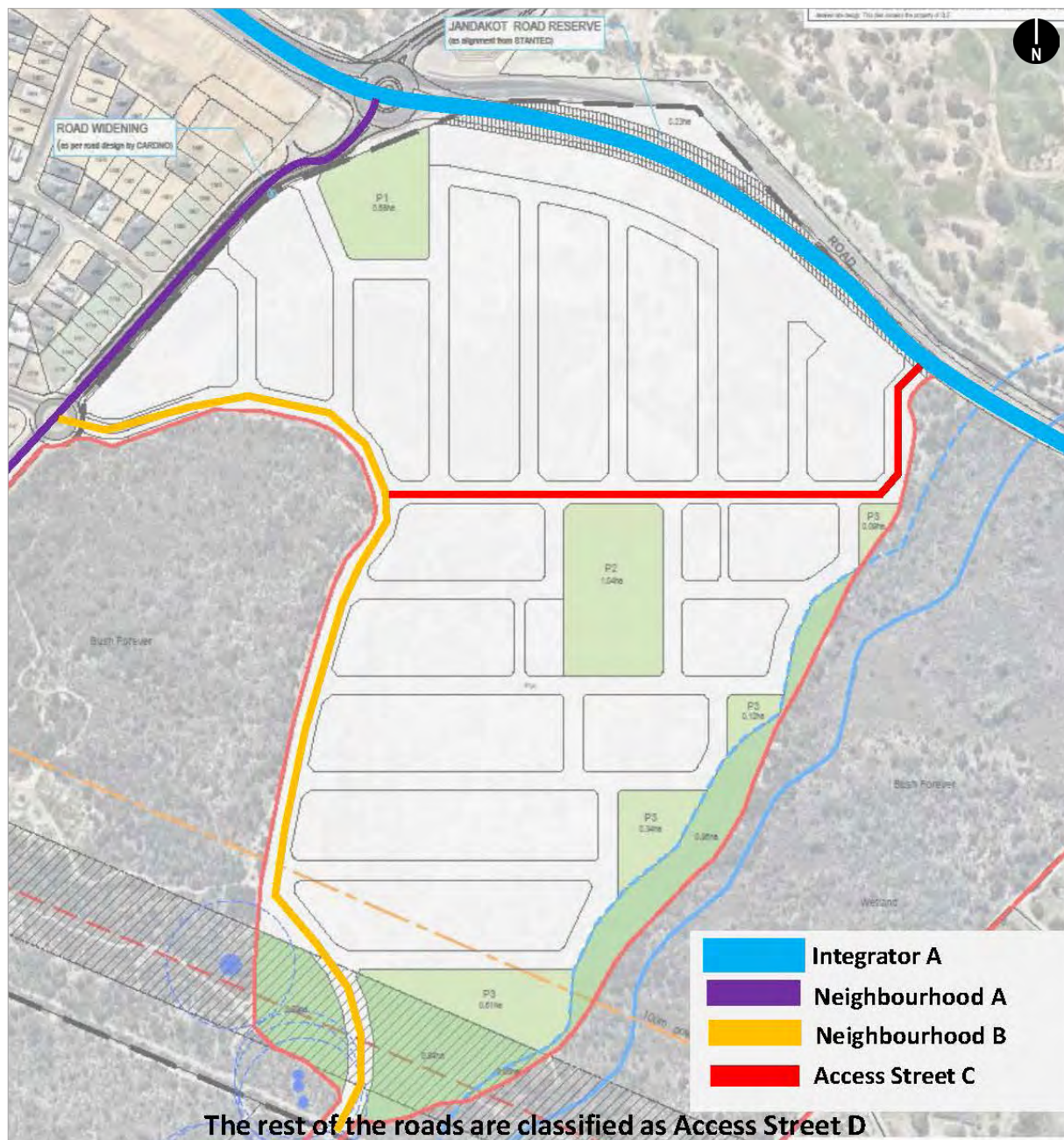
Although zoned 'Urban' under the MRS, the northern portion of the structure plan is required for the realignment and widening of Jandakot Road, which is being funded by the developer pursuant to a pre-existing legal agreement with the City of Cockburn. Only one direct access is proposed onto Jandakot Road, being the eastern intersection mentioned above, and it will also be accessible via the northern leg of the Torwood Avenue/Solitaire Road roundabout. Jandakot Road provides access to Piara Waters at Warton Road and the Kwinana Freeway via Berrigan Drive.

[3.3.2 Proposed structure plan roads](#)

The structure plan adopts the two DSP roads mentioned in Section 3.3.1 above and uses them as a framework for lower-order access streets. This network has been designed on the basis of the following principles:

- A permeable and legible modified grid pattern of access streets with reserve widths of 15-18 metres, consistent with *Liveable Neighbourhoods*. The precise location and alignment of these will be determined at subdivision stage;
- Orientation of streets in a manner that creates view corridors into BFA 390, where relevant, fostering a natural aesthetic and sense of place, and in a north-south direction in the northern part of the site to facilitate drainage;
- Provision of clear delineation between urban areas and BFA 390, assisting in interface and bushfire hazard management; and
- Additional connections to Solitaire Road to reduce demand on the Torwood Avenue/Solitaire Road roundabout.

All streets are proposed to be at Access Street D standard except the 'Neighbourhood Connector B' road along the western boundary of the structure plan area and the 'Access Street C' road linking to Jandakot Road at the eastern end of the structure plan area. The Transport Impact Assessment contains a plan showing the proposed road hierarchy, which is replicated in this report as Figure 11.



Note: The local road network is indicative only and subject to change and refinement at the subdivision stage.

Figure 11 - Road Hierarchy
Source: Transcore

The Transport Impact Assessment confirms that none of the streets proposed in the structure plan will carry more than 5,000 vehicles per day. Above this number, *Liveable Neighbourhoods* recommends that egress in forward gear be enabled. The highest-trafficked street in the structure plan area is expected to be the 'Neighbourhood Connector B' road off the Torwood Avenue/Solitaire Road intersection, which is forecast to carry up to 3,000 vehicles per day.

[3.3.3 Streetscape Landscaping](#)

Providing safe and beautiful streets is a key objective of this structure plan, in the interest of delivering a distinctive estate and encouraging pedestrian activity. Landscape design will capitalise on the permeability of the movement network and create legible connections between private homes and public spaces. The Landscape Masterplan Report prepared by EPCAD (June 2021; refer to Appendix 3) contains a full section on streetscapes.

This structure plan has been designed to accommodate 'Safe Streets' principles into its movement network. The objective of the 'Safe Streets' principles is to encourage lower vehicle speeds and improve the pedestrian experience, fostering streets as a shared-use space rather than one dominated by cars. This is achieved using design techniques such as:

- A focus on grouped tree plantings to create shade and visual interest;
- Entrance ('throat') treatments at intersections, where the lower-order road has a narrower opening than the carriageway beyond; and
- Offset carriageways, creating wider verges on one side to accommodate plantings and encouraging lower speeds by creating meanders.

The structure plan area is being designed with close attention to how best to adopt the character of the bushland setting and introduce it as a consistent theme. Native plantings are important to this, and new trees are a key tool for implementing 'Safe Streets' principles. There are synergies between the two.

[3.3.4 Intersection Analysis](#)

Internally, the network of Neighbourhood Connector roads and Access Streets has been designed in accordance with *Liveable Neighbourhoods* in terms of reserve widths, intersection spacing and treatments. The Transport Impact Assessment confirms that all intersections will function satisfactorily as priority T-intersections. The only roundabouts relevant to the structure plan area are those existing at the Torwood Avenue/Solitaire Road and Jandakot Road/Solitaire Roads intersections. Analysis of both these roundabouts in the TIA confirms that they currently operate satisfactorily and will continue to operate satisfactorily at the completion of development of the structure plan area.

The precise nature and function of all internal intersections will be confirmed at detailed design stage following confirmation of lot yields.

[3.3.5 Public Transport](#)

The structure plan area is within 3km of the Cockburn Central railway station, which is on the Perth-Mandurah line. Cockburn Central will also, from the mid-2020s, provide access eastward to the Armadale line via Thornlie, following completion of the 'Thornlie-Cockburn Link' component of the Metronet initiative.

The Transport Impact Assessment indicates that the Public Transport Authority is likely to provide a bus

route along the north-south Neighbourhood Connector proposed in this structure plan, connecting to Cockburn Central railway station, in future. The timing of such a service is dependent on the rate and location of development across the DSP area, but it should be noted that the route (No. 523) has been initiated already, currently linking the Neighbourhood Centre at Calleya with the Cockburn Central railway station via Ghostgum Drive and Clementine Boulevard. Extension of this route through the structure plan area is a potential outcome.

In the longer term, the Perth and Peel @ 3.5 million – The Transport Network report proposes a “high-priority transit corridor” along Armadale Road, linking Cockburn Central and Armadale. This is expected to further improve public transport connections for the structure plan area through associated adjustments to the above-mentioned bus route.

[3.3.6 Cycling and Pedestrian Movement](#)

The structure plan proposes a permeable, legible road network, creating a welcoming environment for pedestrians and cyclists. The Structure Plan Map illustrates the proposed shared path network for the structure plan area. The network will consist of a shared path and footpath along the Neighbourhood Connector road and a shared path along Jandakot Road, once upgraded. Footpaths will be provided on at least one side of all Access Streets at the subdivision stage, and all laneway lots (where provided) will be provided with footpath access to nearby visitor parking bays.

The precise location and alignment of all paths will be determined in consultation with the City of Cockburn as part of detailed civil design following subdivision approval.

[3.4 Public Open Space and Drainage](#)

[3.4.1 Public Open Space Provision](#)

The structure plan makes provision for approximately 3.2 hectares of creditable POS in addition to the 34.1 hectares of BFA 390 that is being retained within Lot 5131. The POSs has been distributed and designed in accordance with the following principles:

- Provide spaces for passive and active recreation incorporating high-quality landscaping;
- Create an appropriate interface with BFA 390, which provides a distinctive natural backdrop for the structure plan area;
- Make use of the Western Power easement and setback as a linear open space providing connectivity to neighbouring landholdings and space for drainage;
- Provide local open space in strategic locations to ensure a high degree of accessibility for local residents; and
- Accommodate drainage in a manner that positively enhances the locality.

Detail on the style and function of each open space is provided in the Landscape Master Plan (EPCAD, June 2021; refer to Appendix 3). A summary of this document is provided at Section 3.4.2 below.

Liveable Neighbourhoods requires 10% of the gross subdivisible area of the structure plan area to be ceded for POS. Provision for POS in the structure plan is 11.9% as described in the POS Schedule appearing as Table 5.

Table 5: POS Schedule.

Public Open Space Schedule (all areas are in hectares)		
Lot 5131 - Total Site Area		64.36
Existing Deductions		
Bush Forever Area #390	34.10	
Total Existing Deductions	34.10	
Gross Urban Area		30.3
Structure Plan Deductions		
Jandakot Road widening land	1.02	
Balance triangular land north of Jandakot Road	0.23	
Fraser Road widening land	0.05	
Transmission Easement inc. southern pockets	1.48	
1:1 Drainage within POS	0.18	
Restricted Use POS Surplus (>2% of total)	0.46	
Total Structure Plan deductions	3.42	
Gross Subdivisible Area		26.84
POS @ 10%		2.68
Public Open Space Requirement		
May Comprise:		
Min 8% unrestricted POS	2.15	
Max 2% restricted POS	0.54	
TOTAL POS REQUIRED		2.68
Public Open Space Provided	Unrestricted POS Area	Restricted POS Area
Park 1	0.68	0.00
Park 2	0.86	0.03
Park 3	1.13	0.97
TOTAL (ha)	2.67	1.00
Additional Deductions		
Restricted Use POS Surplus (>2% of total; accounted above)		0.46
Revised Public Open Space Contribution		
Min 8% unrestricted POS provided	2.67	9.9%
Max 2% restricted POS provided	0.54	2.0%
Total Creditable POS Provided	3.20	11.9%

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. 2366-93B.

3.4.2 Description of Open Space Areas

This section provides an overview and description of the proposed location, function and design of each open space area proposed in the structure plan. Design of the open space areas is being guided by a Landscape Analysis prepared by EPCAD with the objective of celebrating the natural setting of the structure plan area and promoting a theme of community health and wellbeing.

The Landscape Analysis observes that the structure plan area is in a landscape that is in transition from rural to urban. The structure plan area itself is fringed with remnant native vegetation on relatively high ground, providing a prominent green backdrop. This assists to create a sense of sanctuary within the structure plan area, particularly where considered in the context of the busy roads and significant infrastructure that dominate the built environment nearby.

The urban design approach for the structure plan sought to open viewlines to the Bush Forever backdrop, and this objective is reflected in the landscape theme. A sense of permanence and maturity will be evident from the first impression, with all three of the main entrances abutting Bush Forever on at least one side. The Landscape Masterplan Report states that *“this narrative will continue through the street design and present a series of green path networks, bringing character to the streets and delivering the community to their parks and reserves.”*

The proposed parks and reserves are:

- Central Activity Park – the focal point for informal active recreation and gatherings;
- Northern Park – a green space providing separation to the busy roundabout beyond and a quiet space for local residents; and
- Park Interfaces with Bush Forever – a tailored treatment for the interface between the development area and BFA 390.

The Landscape Masterplan Report contains an overall landscape concept (replicated in this report as Figure 12) and place-specific concepts.



Figure 12 - Landscape Masterplan

Source: EPCAD

'sister' estate also being developed by Perron), the landscape approach for each of these parks and the streetscapes (refer to Section 3.3) espouses the following principles:

- Places, parks and streets, to instil wellbeing in the user;
- Street tree planting to ameliorate the urban heat island effect;
- Provide logical connections throughout all areas of residential development;
- Create highly utilised and valued open spaces that are venues and catalysts for community development;
- Provide a landscape environment that considers bushfire threat and is designed to minimise the bushfire threat to the community;
- Provide diverse spaces from highly naturalistic related to the retained bushland to managed parkland incorporating play, community and family facilities;
- Provide a hierarchy of walks and circuits, from short walks through the more manicured parklands and extending into longer walks through bushland for those more adventurous; and
- Integrate planned urban water management into valued open spaces in accordance with the LWMS."

In addition to these, the Landscape Masterplan Report conveys the project team's interest in fostering community health and wellbeing through landscape design. The Landscape Masterplan breaks this overarching intention into a series of tangible deliverables, all of which join the above-mentioned principles as guidance for each of the parks and reserves. The Landscape Masterplan's approach to each of these is summarised below.

3.4.2.1 *Central Activity Park*

The Central Activity Park is intended to be the focal point for the new community. It provides for a range of informal uses and seeks to facilitate group and family gatherings, accommodate active and quiet spaces and encourage walking and connectivity in shaded comfort. The layout is relatively formal. Indicatively, the following features are envisaged:

- Large open grass kick-about area.
- Shade structures with barbecue and picnic facilities.
- Multi-generational play area.
- Viewing deck.
- Relaxation areas.
- Shade trees.
- Drainage swales.

As recommended by the Bushfire Management Plan (refer Appendix 2), low- to mid-height ground covers and clear-stemmed trees are favoured in terms of species selection. Full irrigation will be provided by the developer.

3.4.2.2 Northern Park

The Northern Park is envisaged as a quieter, less formal park than the Central Activity Park, catering for residents in the immediate surrounds rather than the whole structure plan area. A vegetated buffer to the Jandakot Road roundabout nearby is proposed and a meandering path will tie together the various small spaces. Indicatively, the following features are envisaged:

- Shade structures with picnic facilities.
- Mini pump track.
- Bespoke, low key nature play for all ages.
- Fitness equipment along the track.
- Open grass areas for various activities.

The topographically high nature of the Northern Park is expected to enable views across the structure plan area to the Bush Forever areas to the south and east.

3.4.2.3 Park Interface with Bush Forever

There are two main Bush Forever interfaces for the structure plan area. The western interface is simpler in that the land rises from the development area up to the retained bushland, creating a clear delineation. Consistent with the Treeby DSP, a Neighbourhood Connector road is positioned along this boundary and provides a hard edge. The eastern interface is more complex in that it is:

- Roughly coincident with the edge of the 50m buffer to the REW located in the eastern part of the Lot 5131, which has its own management requirements;
- Located in an area that does not require a wide perimeter road – the adjacent streets are lower-order and pedestrian-focused;
- Topographically relatively level, presenting an opportunity for a park but also the need for bushfire hazard management, access management and drainage detention prior to infiltration into the REW.

The above-mentioned characteristics provide the opportunity to create a continuous green link from north to south. This linear park will perform a passive recreational function and provide an appropriate interface with BFA 390. The following features are envisaged:

- A footpath running the length of the park;
- Interpretive material to educate park users about BFA 390 and the REW;
- Lighting and directional signage, facilitating safety and legibility;
- Activity nodes at wider points, with, potentially, shade structures, seating, low-key play spaces (outside the REW buffer);
- Transitional planting comprising species that can be managed in a low-threat state in terms of bushfire hazard management;
- Conservation fencing along the Bush Forever boundary; and
- Outside the REW, bioretention areas for annual storm events and drainage basins for larger events, using natural low points in the east and south.

At the southern end, the interface park terminates at the Western Power easement. Any landscaping in this area would be subject to advice from Western Power and the agreement of the City of Cockburn.

3.4.2.4 Irrigation and Maintenance

The Landscape Masterplan Report includes a section covering the maintenance implications of its recommendations, broken into three regimes. Confirmation of these requirements will be agreed with the City of Cockburn at the subdivision stage in the normal manner.

The LWMS advises that the Jandakot Mound (the underlying superficial aquifer) is the most feasible irrigation supply for the structure plan area. A water allocation from this aquifer sufficient to irrigate all the proposed parks has been secured by the developer.

3.5 Water Management

3.5.1 LWMS Approach

A Local Water Management Strategy (JDA, June 2021; 'the LWMS', refer Appendix 4) forms part of this structure plan. This uses the District Water Management Strategy approved as part of the Treeby DSP, which was also prepared by JDA, as its basis, and it confirms that all surface and groundwater-related aspects of the proposed development can be managed appropriately. The LWMS demonstrates compliance with all relevant policies, including the *Stormwater Management Manual for Western Australia* (Department of Water, 2007) and *Better Urban Water Management* (WAPC, 2008).

Water management initiatives for the structure plan area are arranged in the context of four topics, being:

- Water supply and conservation.
- Stormwater management.
- Groundwater management.
- Water quality management.

Implementation measures are also listed and responsibilities allocated.

Water Supply and Conservation

The LWMS specifies the following criteria for the structure plan area in terms of water conservation and management:

- *"Consider alternative fit for purpose water sources, where appropriate and cost-effective.*
- *Use of non-potable groundwater for irrigation of POS.*
- *Aim to achieve the State Water Plan target for water use of 100 kL/person/yr.*
- *POS areas to be at least 50% native plants.*
- *Buildings are to comply with water efficiency standards introduced into the building code."*

These measures are generally relevant to the construction stage of the development process and the maintenance undertaken thereafter.

Stormwater Management

The LWMS specifies the following criteria for the structure plan area in terms of stormwater management:

- “Runoff from the ‘small’ event or first 15mm of rainfall is to be treated and infiltrated at-source where possible.
- Runoff for events up to the 1% AEP is to be retained and infiltrated within infiltration areas in POS.
- Manage surface water flows from major events to protect infrastructure from flooding and inundation. All lots to be minimum 0.3 m above 1% AEP flood level.
- All stormwater management structures located outside of Bush Forever and 50 m Resource Enhancement wetland buffer.”

The structure plan area is divided into 3 catchments for the purposes of stormwater management, as shown in Figure 13 (taken from the LWMS). Stormwater management for each catchment will be designed using a ‘major/minor’ approach incorporating.

- A ‘major’ drainage system comprising the roads, drainage reserve infiltration basins and open space, and designed to provide safe passage of stormwater during significant rainfall events (events less frequent than 20% AEP).
- A ‘minor’ drainage system comprising ‘pit and pipe’ infrastructure designed to facilitate on-site infiltration of stormwater for small storm events and bioretention infrastructure for at-source infiltration of larger events, up to the 20% AEP.

All stormwater drainage management infrastructure will be located outside BFA 390 and the Resource Enhancement Wetland buffer. Further detail is provided in the LWMS.

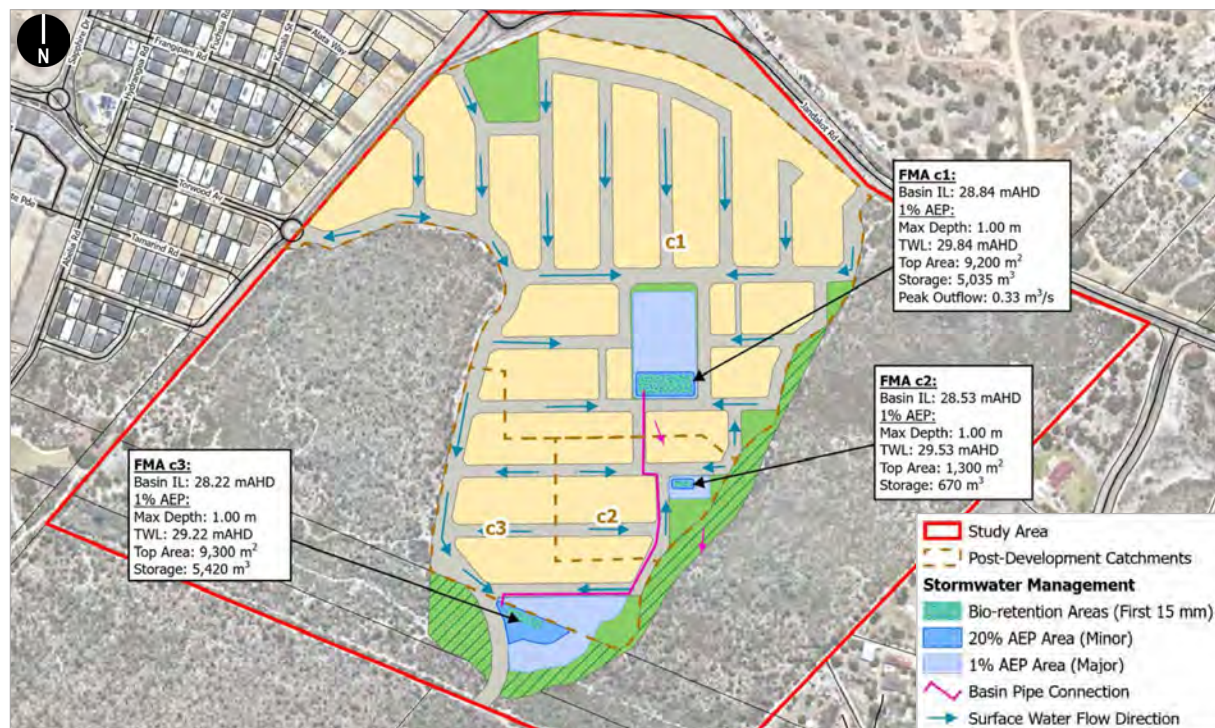


Figure 13 - Stormwater Management Plan

Source: JDA Consulting

Groundwater Management

The LWMS specifies the following criteria for the structure plan area in terms of groundwater management:

- “Manage and minimise changes in groundwater levels and groundwater quality following development, particularly from groundwater level increase from urbanisation within the Study Area and surrounds.
- All lots are to have a minimum 1.5m clearance to groundwater levels.
- No groundwater management infrastructure in Bush Forever and 50 m wetland buffer.”

Maintenance of groundwater levels and quality in the post-development scenario is dependent on the successful implementation of the above-mentioned stormwater management measures and the use of others such as sub-soil drainage infrastructure and/or fill. In this case, clearance to groundwater is sufficient to enable the structure plan area to achieve the required separation (1.5m) through the use of fill alone.

The LWMS notes that the groundwater monitoring bore adjacent to the Calleya estate has reported a rise in groundwater levels in recent years despite the long-term decline in average annual rainfall. This is probably a consequence of urbanisation, however, there is currently no regional modelling to confirm this or the potential longer-term trend. The LWMS notes that at the subdivision stage, when an *Urban Water Management Plan* is prepared in accordance with Better Urban Water Management, data from the relevant bore should be reviewed and the implications incorporated. Measures such as the installation of sub-soil drainage infrastructure could be used to manage the rising groundwater level if necessary.

Water Quality Management

The LWMS seeks to ensure that the objectives of SPP 2.3: *Jandakot Groundwater Protection* for Priority 3 Underground Water Pollution Control Areas (the anticipated future classification of the structure plan area) are met. These include use of native species requiring minimal irrigation and fertiliser and management of separation to groundwater. The LWMS proposes measures such as:

- Inclusion of a 50% target for native plant species;
- Community education to enable appropriate landscaping and fertiliser application rates;
- A schedule of street-sweeping and pit eductions;
- Installation of flush kerbing to enable stormwater to run directly into verges and parks;
- Installation of tree pits containing porous media;
- Incorporation of parklets and small bioretention basins (complementing the larger basins) to treat road runoff; and
- Maintenance of separation to groundwater through implementation of the stormwater and groundwater management measures mentioned above.

These measures will need be investigated further at the subdivision and development stage in the context of an Urban Water Management Plan.

[3.5.2 Implementation of the LWMS](#)

The LWMS advocates implementation of its recommendations in two stages; firstly, through an Urban Water Management Plan prepared as a condition of subdivision approval and secondly as part of subsequent development work. A 3-year monitoring program to confirm the efficacy of the management measures, using quantitative data, is also recommended. Full detail in this regard is provided at Section 9 of the LWMS.

3.6 Schools

The structure plan area forms part of the catchment for the primary school proposed within the Lake Treeby estate. The Lots 705 and 707 Armadale Road, Treeby Local Structure Plan shows the school on a 4ha site adjacent to the southern boundary of Lot 5131 and accessible via the Neighbourhood Connector road that links (in its overall form) Armadale Road with the Torwood Avenue/Solitaire Road roundabout.

For secondary schooling, the structure plan area forms part of the Atwell College catchment.

3.7 Activity Centres and Employment

Identification of the structure plan area for urbanisation in the Framework reflects its convenient location relative to employment opportunities within the Central sub-region and nearby parts of the South Metropolitan sub-region. Consistent with the relevant objective in the *Perth and Peel @ 3.5 million* report, the proposed estate will optimise the use of existing and planned facilities.

The City of Cockburn's *Local Commercial Activity Centre Strategy* (Pracsys, 2012) makes note of numerous activity centres readily accessible to the structure plan area. These include the Cockburn Secondary Centre and Jandakot Airport industrial area, and several lower-order centres including the Neighbourhood Centre within the Calleya estate. These will not only offer services and employment for the planned new community but also benefit from increased trade generated by a larger population base.

Further afield, the Harrisdale District Centre, Forrestdale Business Park, Maddington-Kenwick industrial area and Western Trade Coast provide diverse employment opportunities, and the Perth city centre is 20km north via the Kwinana Freeway or Perth-Mandurah railway.

Progression of this structure plan and the urban development that will follow will be a partial catalyst for the provision of the facilities envisaged elsewhere in the Treeby DSP, which include the above-mentioned primary school and Local Centre within the Lake Treeby estate.

3.8 Infrastructure Co-ordination, Servicing and Staging

Engineering consultants Stantec have prepared a detailed Engineering Infrastructure Report (June 2021; see Appendix 6) confirming that although upgrades and extensions to infrastructure in the local area will be required, there are no site-specific constraints to the structure plan area being serviced. Further, more detailed infrastructure planning and design will be undertaken as the development of the structure plan area proceeds.

The Engineering Report is summarised in the following sub-sections.

[3.8.1 Earthworks](#)

The objective of the earthworks design process is to provide flat building sites. This is to be achieved in the context of the need to provide clearance to drainage and groundwater, and provision of flood routes (within road carriageways) for major events. In addition, fixed levels are noted on all four boundaries.

The structure plan area varies in elevation from RL28 on the eastern boundary to RL40 on the northern boundary, with undulation evident. Cut and fill will be undertaken across the structure plan area to deliver co-ordination with external levels and meet internal design objectives. The undulating nature of the topography enables some fill material to be obtained on-site (from cut), which will be used in conjunction with imported fill. It is not anticipated that there will be any impediment to the achievement of a 'Class A' classification under the relevant Australian Standard (AS2870:2011 – *Residential Slabs and Footings*).

Final earthwork levels will be designed to accommodate market requirements, provide adequate clearance to groundwater and the 1:1 year Average Recurrence Interval storm event, and facilitate flood routing and a gravity-driven sewer network.

[3.8.2 Wastewater](#)

Wastewater disposal for all lots will be facilitated via a reticulated sewer network divided into two catchments, gravitating to:

- For the northern catchment, an existing wastewater pump station on Clementine Boulevard in Treeby; and
- For the southern catchment, a new wastewater pump station at the south-eastern corner of the Activity Park shown on the approved Local Structure Plan for Lots 705 and 707 Armadale Road, Treeby.

The urban structure proposed in this structure plan has been designed to be sympathetic to the existing landform whilst providing direct links, to the extent possible, to wastewater infrastructure.

[3.8.3 Water Supply](#)

The Engineering Report confirms that the Water Corporation has commenced conceptual water supply planning for the structure plan area. Water supply will be extended as part of the Thomson Lake Gravity Supply Scheme and a reticulated network will be constructed within road reserves in the normal manner. An external connection point to this network is already available at the Torwood Avenue/Solitaire Road intersection.

[3.8.4 Electricity Supply](#)

The Engineering Report confirms that electricity supply to the structure plan area can be obtained via extensions to the existing network from Jandakot Road and/or the Calleya estate. It is anticipated that when Jandakot Road is upgraded, the existing overhead lines will be replaced with underground infrastructure.

The provision of an electricity supply to each proposed lot will be achieved by the construction of an underground high-voltage network connecting into the above-mentioned infrastructure through switchgear and transformers. The installation of streetlights forms part of the electricity network installation program.

3.8.5 Telecommunications

The provision of a telecommunications connection to each proposed lot would be achieved by the construction of an extension to the National Broadband Network (NBN) installed within the Calleya estate. Installation of pipe and pit infrastructure would be funded and undertaken by the developer, and that infrastructure transferred to NBN Co via the execution of a Master Development Agreement in exchange for the provision of data infrastructure within the pit and pipe network.

The pit and pipe system will be installed in a common trench with the underground electricity network.

As required by the City's Local Planning Policy No. 5.19 (refer to Section 1.3.5.5 of this report), consideration of mobile telephone coverage and engagement with service providers has occurred. Telstra's online coverage mapping confirms that '4G' coverage is available over the structure plan area, and '5G' over the majority. With Optus and Vodafone, '4G' coverage is available. The project team has also been in discussion with Telstra during 2021 about the potential for a new tower to be erected within the structure plan area, augmenting existing infrastructure. After further consideration, Telstra has advised that it has identified an alternative site in Jandakot, where the visual impact of the tower would be less. There is therefore no need or intention for a tower within the structure plan area.

3.8.6 Gas

The Engineering Report confirms that a reticulated gas supply will be provided by ATCO Gas using a common trench with the water supply network provided by the developer. Installation of a pressure-reducing valve will be necessary to facilitate any direct connections of the reticulated network to any high-pressure lines.

3.8.7 Staging and Access

The structure plan will be implemented on a staged basis in response to commercial imperatives. It is currently anticipated that development could commence either at the Torwood Avenue/Solitaire Road entry, or from the south, depending on the progress of the Lake Treeby estate.

3.9 Bushfire Hazard Management

The Bushfire Management Plan (Bushfire Safety Consulting, June 2021; 'the BMP') confirms that the structure plan makes an appropriate response to bushfire risk. The BMP assigns responsibilities to various stakeholders to ensure that this remains the case during and after the upcoming development process.

The BMP indicates that the primary bushfire hazard affecting the structure plan area is Bush Forever Area 390, which abuts the structure plan area to the south, east and west, and unmanaged vegetation north of Jandakot Road. This has been classified as 'Forest', 'Woodland' and 'Scrub', with a limited area of 'Shrubland'. The other, less significant hazard is unmanaged vegetation (mainly 'Woodland' and 'Grassland') on rural and rural-residential properties north of Jandakot Road. All bushfire hazards within the structure plan area itself will be removed permanently when the land is developed.

All POS within the structure plan area has been designed to be suitable for maintenance in a low-threat state (refer to Appendix 3: Landscape Masterplan Report) through a combination of species selection, hardscapes and irrigation. Beyond the development period, the BMP recommends the following management measures:

- “Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level
- Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material.
- Keeping garden beds irrigated and turf areas mown and grass green.
- Pruning to keep clumps of trees and shrubs separated from one another.
- Removal of weeds and regenerating eucalypts, acacia and other native plants not intended to be included as part of the landscape plans.”

The above also applies to any landscaping introduced to the Jandakot Road corridor when the upgrade of that road proceeds.

The bushfire hazards mentioned above translate to Bushfire Attack Level (BAL) ratings of up to BAL-29, the highest permitted under SPP 3.7, for a limited number of lots (refer Figure 14, taken from the BMP). This is proposed to be achieved through the following design features and management measures:

- Provision of a permanent perimeter Asset Protection Zone ('APZ') along all Bush Forever interfaces using road reserves and POS.
- Landscaping of POS in accordance with the tailored approach advocated in the Landscape Management Plan and maintenance in the manner described above.
- Provision of more than two external access points (west, north-east and south).
- Provision of a reticulated water supply throughout and hydrants to facilitate a water supply to emergency vehicles.

To manage bushfire hazards on a stage-by-stage basis, the BMP recommends the creation of a 100 metre wide Asset Protection Zone ahead of the development front. Temporary Emergency Access Way/s may also be required to ensure that at least two access points are available at all times.

Update/s to the BMP will be required at the subdivision stage to confirm BAL ratings for individual lots ahead of final certification prior to the issue of titles. These steps will be taken in accordance with SPP 3.7 in the normal manner.

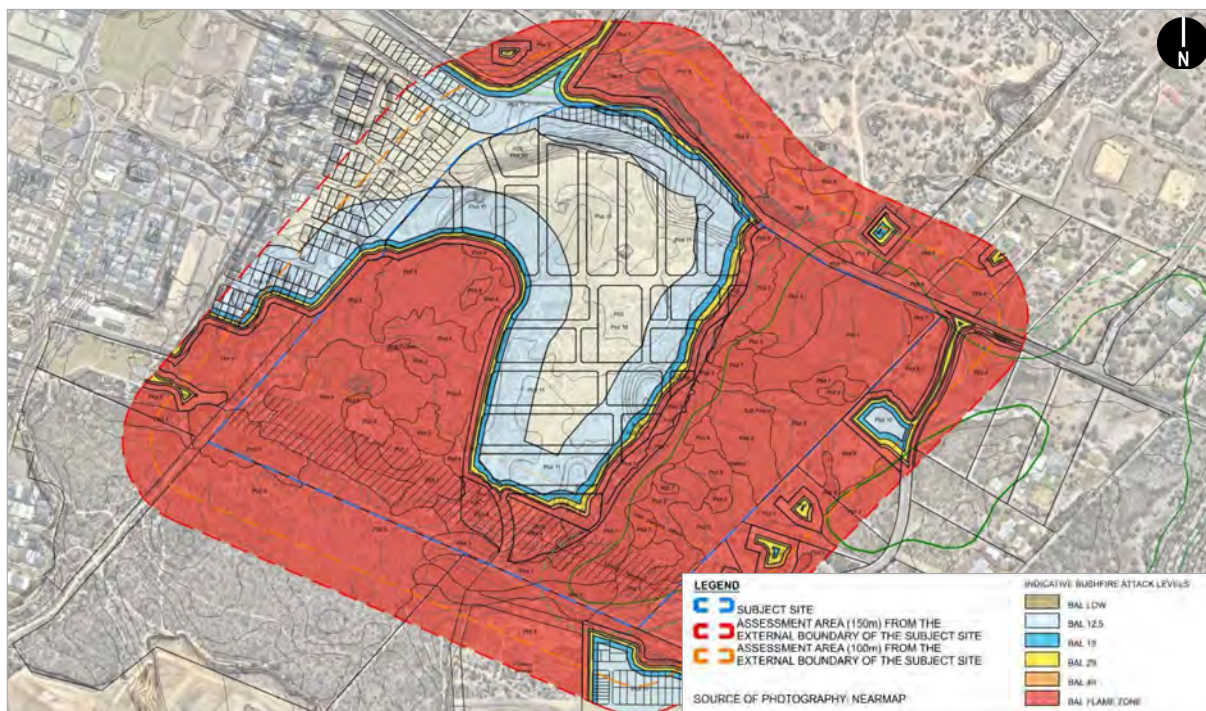


Figure 14 - BAL Contour Map

Source: Bushfire Safety Consulting

3.10 Developer Contributions

3.10.1 Standard infrastructure

The structure plan area is in single ownership, and the structure plan itself does not contain any standard infrastructure items (such as road intersections) that will be of sufficient shared benefit to warrant cost-sharing arrangements with neighbouring landowners. As mentioned above, the realignment and widening of Jandakot Road shown in the DSP is being funded by the developer pursuant to a pre-existing legal agreement with the City of Cockburn.

3.10.2 Community infrastructure

The structure plan area is within Development Contribution Area 13, which is a community infrastructure DCA covering most of the City of Cockburn. The facilities it covers are listed at Table 10 of the City's Local Planning Scheme No. 3. The structure plan area is liable for the Regional, Sub-regional (East) and selected Local items (Banjup Playing Field and Banjup Community Centre).

The structure plan area is also within Development Contribution Area 15, which is another community infrastructure DCA. It covers only Treeby and Jandakot and was prepared to fund the 'neighbourhood-level' playing fields and pavilion identified for a site within Lot 705 Armadale Road by the City's *Community, Sport and Recreation Facilities Plan* (2017-2031). This facility will be provided within the 'District Open Space' shown in the Lots 705 and 707 Armadale Road, Treeby Local Structure Plan and is scheduled for delivery between 2024 and 2027.

Contributions under both community infrastructure DCAs will be payable on a per-lot basis at the time of subdivision clearance.



2 Abbotsford Street, West Leederville, WA, 6007

PO Box 796, Subiaco, WA 6904

admin@cleplan.com.au

+61 8 9382 1233