



**ROWE**  
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DESIGN

# LAKE ROAD PRECINCT C STRUCTURE PLAN

Lot 101 Lake Road and  
Lots 102 - 105 Arabian Court  
Champion Lakes

SPN2337

# Document Control

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This report has been authorised by;



**Rod Dixon**  
Director



**Madison Mackenzie**  
Senior Urban Planner



**Jamie Baxter**  
Quality Control

## CONTACT PERTH OFFICE

**p** 9221 1991 **e** info@rowegroup.com.au **w** rowegroup.com.au

**a** 3/369 Newcastle Street, Northbridge 6003

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# Record of Endorsement

This structure plan is prepared under the provisions of the City of Armadale Town Planning Scheme No.4.

It is certified that this structure plan was approved by resolution of the Western Australian Planning Commission on:

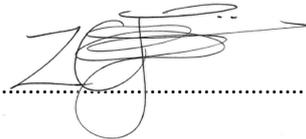
..... **20 July 2023** ..... Date

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

..... **21 July 2023** ..... Date

..... **21 July 2033** ..... Date of Expiry

## Table of Amendments

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC

## Executive Summary

This Structure Plan applies to Lot 101 (No.356) Lake Road and Lots 102 – 105 Arabian Court, Champion Lakes (‘the subject land’), comprising approximately 14.5 hectares of land adjacent to existing residential development south of Lake Road. The land is zoned ‘Urban’ under the Metropolitan Region Scheme (‘MRS’) and wholly contained within the ‘Development’ zone under the City of Armadale Town Planning Scheme No.4 (‘TPS 4’).

The Structure Plan area is located approximately 4.3 kilometres north-west of the Armadale District Centre and approximately 23 kilometres south of the Perth Central Business District. The land forms part of the identified Lake Road Precinct C Development zone area. Adjoining Lots 1 – 3 Bay Court, located to the immediate west of the subject land, are identified as ‘Precinct C1’, with the two precincts having been planned collaboratively.

The objective of this Structure Plan is to facilitate the development of the Precinct C Structure Plan area for residential purposes. The Structure Plan is therefore prepared to satisfy the requirements of TPS 4 and the *Planning and Development (Local Planning Schemes) Regulations 2015* to facilitate subdivision and development of the Structure Plan area.

The Structure Plan will provide for the logical extension of residential development along the northern side of Lake Road and includes a significant area of public open space / foreshore reserve to be developed for use by the broader Champion Lakes population.

## Structure Plan Summary

Item	Data	Section Reference
Total area covered by the Structure Plan	14.5 hectares	1.2
Area of each land use proposed:		
- Residential	- 8.21 hectares	4.3
Total estimated lot yield	221 lots	4.3
Estimated number of dwellings	221 dwellings	4.3
Estimated residential site density	26.9 dwellings per site hectare	4.3
Estimated population	596 people	4.3
Estimated area and percentage of public open space given over to:		
- Public Open Space	- 1.0633 hectares	4.2.1
- Foreshore Reserve	- 1.1488 hectares	4.2.2

**Note:** All information and areas are approximate only and are subject to survey and detailed design.

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Table 2: Schedule 8 Additional Provisions

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Table 4: Public Open Space Schedule

Table 5: Proposed Road Classifications.

## Technical Appendices

Appendix Number	Document Title	Nature of Document	Referral/Approval Agency	Approval Status & Modifications
1	Certificates of Title	Supporting	-	-
2	Advertised Structure Plan	Supporting	-	-
3	Lake Road Precinct C Context Plan	Supporting	-	-
4	Bushfire Management Plan	Requires Approval	Department of Fire and Emergency Services	Approved
5	Environmental Assessment Report & Tree Survey	Supporting	-	-
6	Targeted Vegetation Survey	Supporting	-	-
7	Feature Survey	Supporting	-	-
8	Due Diligence Risk Assessment Report	Supporting	-	-
9	Landscape Master Plan	Supporting	-	-
10	Foreshore Management Plan	Supporting	-	-
11	Indicative Subdivision Layout	Supporting	-	-
12	Traffic Impact Assessment	Supporting	-	-
13	Local Water Management Strategy	Requires Approval	City of Armadale and Department of Water and Environmental Regulation	Approved
14	Engineering Servicing Report	Supporting	-	-



# PART ONE

Implementation



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# 1. Structure Plan Area

This Structure Plan shall apply to Lot 101 Lake Road and Lots 102 – 105 Arabian Court, Champion Lakes, being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Refer Plan 1 situated at the end of Part 1 of this Structure Plan report).

# 2. Operation

In accordance with Schedule 2, Part 4 of the *Planning and Development (Local Planning Schemes) Regulations 2015* ('Regulations'), this Structure Plan comes into operation when it is approved by the Western Australian Planning Commission ('WAPC'), pursuant to Schedule 2, Part 4, Clause 22 of the Regulations.

# 3. Staging

Staging of the Structure Plan is anticipated to occur from the entry to Arabian Court (Lot 102) extending north to the Wungong River and then west.

# 4. Subdivision & Development Requirements

## 4.1 Land Use & Zones

The Structure Plan Map (Plan 1) outlines land uses, zones and reserves applicable to the Structure Plan area. Land use permissibility within the Structure Plan area shall be in accordance with the corresponding zone or reserve under the City of Armadale Town Planning Scheme No.4.

## 4.2 Residential Density

Subdivision within the Structure Plan area is to be in accordance with the residential density code prescribed by the Structure Plan.

In accordance with the Liveable Neighbourhoods and Directions 2031 targets, the Structure Plan area shall provide for a minimum average of 22 dwellings per site hectare and 15 dwellings per gross urban hectare.

## 4.3 Public Open Space

- a) The Structure Plan is to provide a minimum 10% public open space, in accordance with the WAPC's Liveable Neighbourhoods requirements.
- b) Public open space is to be provided generally in accordance with the Structure Plan Map (Plan 1).
- c) The remanent vegetation within the south-western corner of Public Open Space 2 should be reviewed to include additional retention at subdivision stage.



## 5. Other Requirements

### 5.1 Fire Management

This Structure Plan is supported by a Bushfire Management Plan. Any development on land shall be constructed in accordance with the recommendations made by the Bushfire Management Plan and shall comply with the requirements of the Australian Standard 3959 – Construction of Buildings in Bushfire Prone Areas, under the Building Code of Australia.

- a) At the time of subdivision, a condition of subdivision approval is to be imposed requiring a notification to be placed on the Certificate(s) of Title, to advise the land or lots are located within a Bushfire Prone Area.

### 5.2 Access

- a) Restrictive Covenants restricting direct access from Lake Road and Champion Drive shall be placed on the Certificate(s) of Title of those sites with direct frontage to Lake Road and the Champion Drive road reserve.
- b) Vehicle barriers and verge planting to be installed where proposed road abuts the Lake Road reserve.
- c) Arabian Court is to be upgraded to an urban standard, in a matter sensitive to the environmental values within the road reserve.

## 6. Additional Information

At the time of subdivision, the following technical studies and plans will be required, via conditions of approval:

- a) Landscape and Streetscape Plan;
- b) Midge and Mosquito Management Plan; and
- c) Urban Water Management Plan.



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LEGEND	
	STRUCTURE PLAN BOUNDARY
<b>RESERVES</b>	
	PUBLIC OPEN SPACE
	PUBLIC OPEN SPACE - RESTRICTED
	FORESHORE RESERVE
<b>ZONES</b>	
	RESIDENTIAL R25
	RESIDENTIAL R40
<b>OTHER</b>	
	CONSERVATION CATEGORY WETLAND (CCW)
	50M CCW BUFFER
	INDICATIVE ALIGNMENT OF SHARED PATH
	ACCESS STREET- LOCAL ROAD
	AREA SUBJECT TO ROAD CLOSURE

DETAILED TRUNCATION AND WIDENING REQUIREMENTS TO BE DETERMINED AT SUBDIVISION STAGE

**LAKE ROAD PRECINCT C LOCAL STRUCTURE PLAN**  
 LOT 101 LAKE ROAD, LOTS 102-105 ARABIAN COURT  
 CHAMPION LAKES



0 50 m  
 SCALE @ A3: 1:2000  
**9297-FIG-07-I**



9297-FIG07-20230501 Champion Lakes (Structure Plan) - DRAWN: V.R. - DATE CREATED: 2023.05.01 - PROJECTION: MGA50 GDAS4 - CADASTRE LANDGATE



# PART TWO

Explanatory Section



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# 1. Planning Background

## 1.1 Introduction & Purpose

This Structure Plan has been prepared on behalf of Arabian Court Pty Ltd and Masada Property Pty Ltd, in respect to Lot 101 Lake Road and Lots 102 - 105 Arabian Court, Champion Lakes ('the subject land' or 'Precinct C'). Precinct C is bound by Wungong River to its north, Lake Road to the east, Champion Drive to the north-east and Arabian Court to the south.

The purpose of this Structure Plan is to facilitate the subdivision and development of the subject land for residential purposes. The Structure Plan has been prepared in accordance with the City of Armadale Town Planning Scheme No.4 ('TPS 4'), the *Planning and Development (Local Planning Schemes) Regulations 2015* ('Regulations'), and the WAPC's Liveable Neighbourhoods operational policy.

The objectives of the Structure Plan are to:

- Provide a framework to guide the use, subdivision and development of the land to create a high quality, liveable urban precinct;
- Protection and improvement to the Wungong River foreshore environs;
- Provide for a range of lot products and sizes to facilitate the creation of a diverse housing mix of typologies and range of affordability to cater for a varied demographic;
- Encourage the use of pedestrian and cyclist networks.

## 1.2 Land Description

### 1.2.1 Location

The subject land is located in Champion Lakes, approximately 1 kilometre south-east of Tonkin Highway, 23 kilometres south-east of the Perth Central Business District and approximately 4 kilometres north-west of the Armadale District Centre. The Champion Lakes Regatta Centre is located approximately 500-metres north-east of the site.

**Refer Figure 1 – Regional Location.**

The Structure Plan has frontage to Lake Road to its south-east boundary, Arabian Court to its south-west boundary and the Wungong River to its north-west boundary. Land south-west of Arabian Court (Lots 1 – 3 Bay Court) comprise the 'Lake Road Precinct C1' area.

**Refer Figure 2 – Local Location.**

### 1.2.2 Area & Land Use

The Structure Plan Area comprises five separate landholdings, with an area of approximately 14.5 hectares. The land has historically been used for rural residential development and low intensity equestrian uses. Lots 101 and 103 – 105 accommodate existing single dwellings and associated outbuildings.

**Refer Figure 3 – Site Plan.**



Land south of Lake Road generally comprises an established residential estate, while land south of Arabian Court has historically been developed for Rural Residential purposes, though is earmarked for future development subject to detailed planning. Champion Lakes Regatta Centre is located approximately 350-metres north of Champion Drive.

### 1.2.3 Legal Description & Ownership

The Structure Plan area comprises five land parcels with a total land area of approximately 14.5 hectares, legally described in **Table 1** below.

#### Refer Attachment 1 – Certificates of Title.

Lot No.	Deposited Plan	Address	Volume / Folio	Proprietor/s	Area
101	P13615	356 Lake Road, Champion Lakes	1607/325	Jane Fiona London	2.061ha
102	P13615	Lot 102 Arabian Court, Champion Lakes	1607/326	Arabian Court Pty Ltd	4.102ha
103	P13615	34 Arabian Court, Champion Lakes	1607/327	Yvonne Hellen Pallier; Francis Gregory Smith	2.566ha
104	P13615	35 Arabian Court, Champion Lakes	1607/328	Anthony John Brickwood; Beverley Ann Brickwood	3.320ha
105	P13615	29 Arabian Court, Champion Lakes	1607/329	Kenneth Brian Littlewood Anita Jean Littlewood	2.450ha
					14.499ha

**Table 1: Land Ownership.**

## 1.3 Background

The subject land forms a portion of 'Lake Road Precinct C', as identified under the City of Armadale Town Planning Scheme No.4 ('TPS 4'). Lake Road Precincts A – C were rezoned from 'Rural' to 'Urban' under the Metropolitan Region Scheme ('MRS') in May 2008 (MRS Amendment 1140/57). A subsequent proposal to rezone Precinct C from 'Rural Living 2' to 'Urban Development' under TPS 4 was initiated by the City of Armadale at its Ordinary Council Meeting of 22 May 2018 (Amendment No.88).

Amendment No.88 was supported by a concurrent Local Structure Plan process, which sought to identify the land for Residential purposes with densities between R25 and R40, in addition to the areas of Public Open Space and Recreation reserves. The Local Structure Plan and Amendment No. 88 were advertised concurrently in September 2018. The proponent did not proceed with the project; however, Amendment 88 to TPS 4 was approved by the Minister for Planning and gazetted on 19 March 2019.

#### Refer Attachment 2 – Advertised Local Structure Plan.

Rowe Group, on behalf of the contracted purchasers of Lot 101 Lake Road and Lots 102 – 104 Arabian Court, Champion Lakes, have subsequently met with the City of Armadale regarding the



original (advertised) Structure Plan proposal. At a meeting held on 27 April 2021, the City agreed that a sub-precinct approach to structure planning would be acceptable in this location. Accordingly, the following sub-precinct structure plans have been determined:

- **Lake Road Precinct C** – Lot 101 Lake Road and Lots 102 – 105 Arabian Court, Champion Lakes.
- **Lake Road Precinct C1** – Lots 1 – 3 Bay Court, Champion Lakes.

Despite separate Local Structure Plan processes being prepared by separate proponents, the following key principles have been agreed:

- Integrated water management – both structure plans are to be supported by Local Water Management Strategies based on consistent groundwater monitoring and stormwater modelling information, to ensure an integrated stormwater solution.
- Foreshore management – consistent revegetation and foreshore setbacks are to be applied within each structure plan area.
- Bushfire management, access considerations and the provision of public open space should be reviewed and coordinated within each structure plan.

We can confirm that collaboration has, and continues to occur, with respect to the preparation of each sub-precinct structure plan. To assist in best addressing the above principles, a number of technical consultants are engaged to assist with both sub-precincts. In this regard, both Structure Plans have been designed to ensure a coordinated approach to development.

The landowner of Lot 105 Arabian Court, Champion Lakes has been consulted as part of the preparation of this Structure Plan, and the Proponent has designed the Structure Plan in such a way that respects the existing residence, while providing for subdivision in a coordinated manner.

**Refer Attachment 3 – Lake Road Precinct C Context Plan.**



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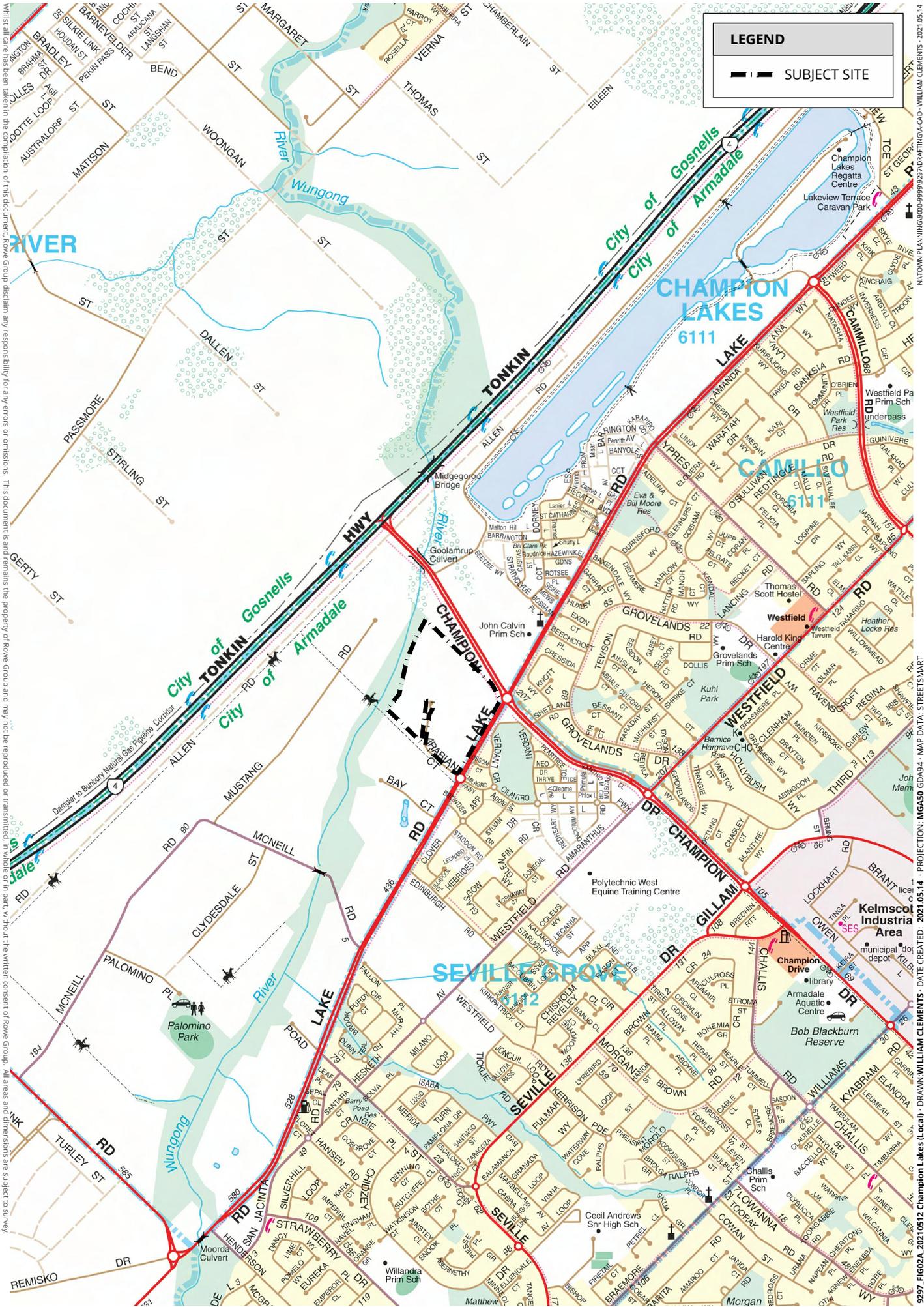
9297\_FIG01A\_20210512 Champion Lakes (Regional) - DRAWN: WILLIAM CLEMENTS - DATE CREATED: 2021.05.14 - PROJECTION: MGA50 GDAS4 - NATOWN PLANNING\9000-9999\9297\DRAWING\CAO - WILLIAM CLEMENTS - 2021.05.14



0 1250 m  
SCALE @ A4: 1:50,000



FIGURE 1  
REGIONAL LOCATION

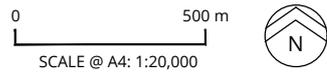


**LEGEND**

— ■ — SUBJECT SITE

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NITOWN PLANNING\9000-9999\9297\DRAWING\CAO - WILLIAM CLEMENTS - 2021.05.14  
9297\_FIG02A\_20210512 Champion Lakes (Local) - DRAWN: WILLIAM CLEMENTS - DATE CREATED: 2021.05.14 - PROJECTION: MGA50 GDA94 - MAP DATA: STREETSMART



**FIGURE 2**  
**LOCAL CONTEXT**



## 2. Town Planning Framework

### 2.1 Zoning & Reservations

#### 2.1.1 Metropolitan Region Scheme

The subject land was zoned 'Urban' under the Metropolitan Region Scheme ('MRS'), following the gazettal of MRS Amendment 1140/57 in 2008.

Land to the north, east and south of the site is zoned 'Urban' under the MRS. Both Lake Road and Champion Drive are reserved as 'Other Regional Roads' under the MRS. The Wungong River (east of the site) is contained within a 'Parks and Recreation' reserve, and subject to Bush Forever Site No.260.

**Refer Figure 4 - MRS Zoning Plan.**

#### 2.1.2 City of Armadale Town Planning Scheme No.4

The subject land is zoned 'Urban Development' under the City of Armadale Town Planning Scheme No.4. The objectives of the 'Urban Development' zone are stated in Clause 3.2.10 of TPS 4, as follows:

- a) *To provide for the orderly planning of large areas of land for residential and associated purposes through a comprehensive Structure Plan which is able to respond to changing circumstances throughout the developmental stages of the area.*
- b) *To promote the sustainable development of new urban communities in accordance with the social, environmental and economic goals of the local government of Armadale.*

The subdivision, use and development of land within the 'Urban Development' zone is to be generally in accordance with a Structure Plan that has been prepared and approved by the WAPC. This Structure Plan therefore satisfies this requirement.

The land is included as Development Area No.49 within Schedule 8 - Development (Structure Planning) Areas of TPS 4, which sets out the applicable additional subdivision and development provisions applicable to the land. These have been summarised overleaf, in **Table 2**.

**Refer Figure 5 - TPS 4 Zoning Plan.**

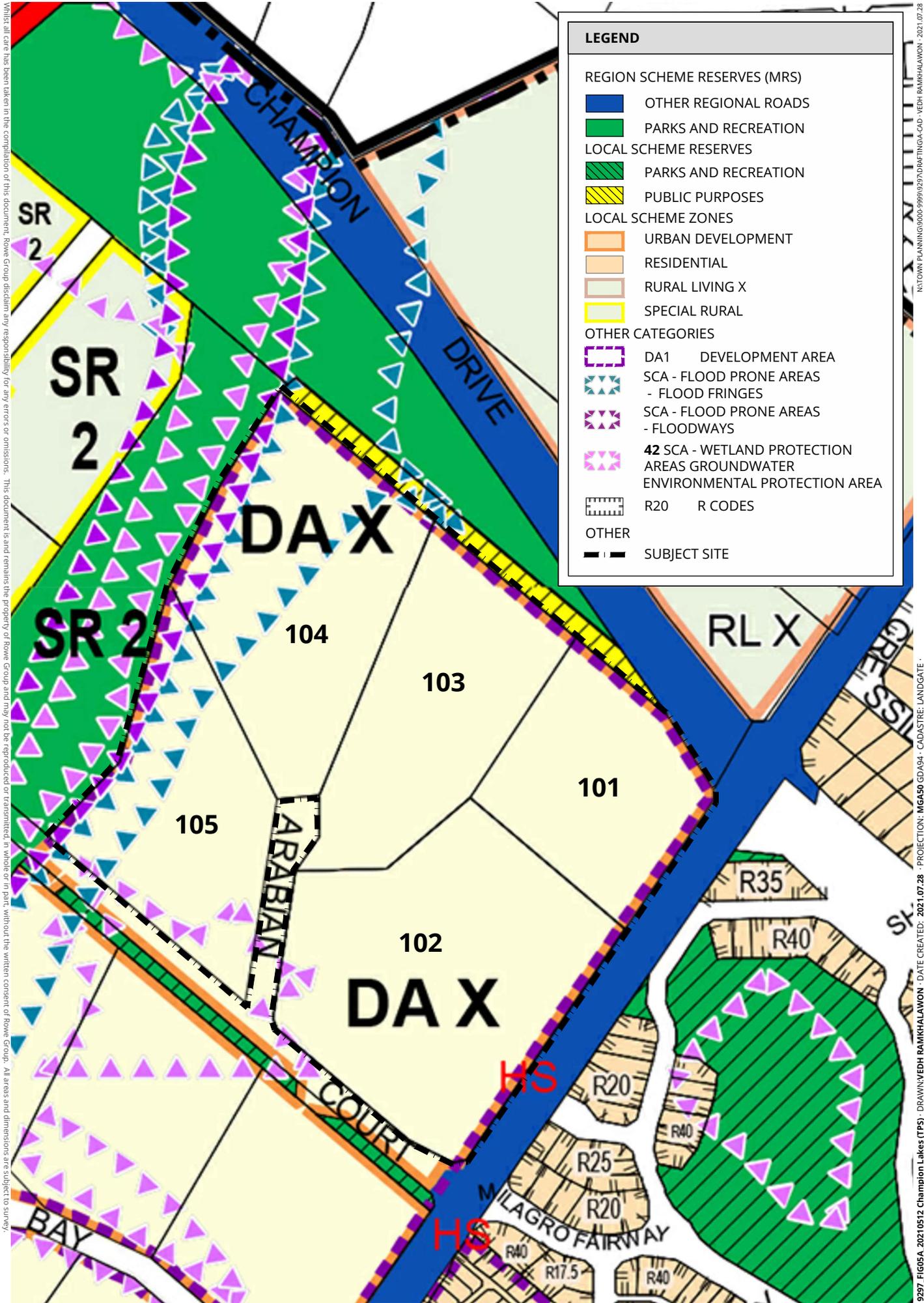


No.	Description of Land	Additional Provisions
DA 49	Lots 1 – 3 Bay Court, Lot 101 Lake Road and Lots 102 – 105 Arabian Court (Precinct C)	<ol style="list-style-type: none"> <li>1. Comprehensive planning for the area shall be undertaken by preparation of a Structure Plan to guide subdivision and development.</li> <li>2. Prior to Structure Plan approval, the following plans shall be prepared and approved by the City. The plans shall be implemented by a suitably qualified person at the expense of the subdivider or developer, and to the satisfaction of the City, prior to subdivision: <ol style="list-style-type: none"> <li>a) Local Water Management Strategy;</li> <li>b) Bushfire Management Plan;</li> <li>c) Foreshore Management Plan; and</li> <li>d) Wetland Management Plan.</li> </ol> </li> <li>3. As part of subdivision or development of the land, a Landscaping Plan for Public Open Space, drainage features and Road Reserves shall be prepared and implemented by a suitably qualified person at the expense of the subdivider or developer to the requirements and satisfaction of the City. The Landscaping Plan shall include the following: <ol style="list-style-type: none"> <li>a) The design and construction of Public Open Space and Road Reserves shall make provision for the retention of existing trees and vegetation considered worthy of retention by the City;</li> <li>b) A connected pedestrian footpath network shall be provided and constructed as follows: <ol style="list-style-type: none"> <li>i. On at least one side of every street;</li> <li>ii. Adjacent to Lake Road Reserve;</li> <li>iii. Adjacent to the Wungong River Foreshore;</li> <li>iv. Connection to Champion Drive; and</li> <li>v. The paths required under the points i) to iii) above shall be connected.</li> </ol> </li> </ol> </li> <li>4. The closure and/or rededication of existing road and parks and recreation reserves shown on any approved Structure Plan and required at subdivision stage shall be undertaken at the subdivider's cost. Any rededication of Parks and Recreation Reserve area shall be offset by the ceding and construction of an identical area of Public Open Space free of cost to the City.</li> <li>5. As part of any subdivision of Lots 1 and 3 Bay Court, the developer shall make arrangements with the City to the City's satisfaction for the ceding and construction of POS on Lot 2 Bay Court.</li> </ol>

**Table 2: Schedule 8 Additional Provisions**







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9297\_FIG05A\_20210512 Champion Lakes (TPS) - DRAWN:VEDH RAMIKHALAWON - DATE CREATED: 2021.07.28 - PROJECTION: MGA50 GDAS4 - CADASTRE: LANDGATE .



SCALE @ A4: N.T.S



FIGURE 5  
CITY OF ARMADALE TOWN PLANNING SCHEME No. 4 ZONING

## 2.2 Planning Strategies

### 2.2.1 South Metropolitan Peel Sub-Regional Planning Framework

The South Metropolitan Peel Sub-Regional Planning Framework (‘the Framework’) represents a whole of State Government approach to managing the future urban form within the sub-region and identifies sufficient land to meet the increased demand for residential dwellings. The South Metropolitan Peel sub-region is proposed to accommodate more than 1.26 million people, over 507,000 homes and approximately 430,000 jobs, with a projected additional dwelling target of 15,020 (33,040 people) within the City of Armadale.

The subject land, and the majority of the properties between Lake Road and the Wungong River have been identified as ‘Urban’, consistent with the existing residential development to the east. Land located west of the Wungong River reserve has been identified for ‘Urban Expansion’. In this regard, the Champion Lakes precinct is identified as a location where urban consolidation is required to ‘round off’ the existing urban area.

The subject land is identified for residential land uses by the Local Structure Plan and is therefore consistent with the South Metropolitan Peel Sub-Regional Planning Framework.

### 2.2.2 City of Armadale Local Planning Strategy

The City of Armadale Local Planning Strategy (‘the Strategy’) was endorsed by the WAPC in December 2016, for the purpose of setting out the long-term planning direction for the City. The Strategy makes specific reference to the Lake Road Precinct in Champion Lakes, envisaging the progression of local structure plans in the area on a sub-precinct basis according to the conclusions of further environmental investigations.

The Strategy provides that areas of public open space shall be located with the foreshore reserve, providing a buffer protection between the river environment and urban land uses.

The proposed Structure Plan is consistent with the intention of the Local Planning Strategy and has been prepared having regard to the above considerations.

### 2.2.3 Wungong River Champion Drive to Armadale Road Management Plan 2010 – 2015

The Wungong River Champion Drive to Armadale Road Management Plan 2010 – 2015 (‘Management Plan’) includes a number of strategic directions and associated actions to address the Swan River Trust objectives of revegetation and public use and enjoyment of the foreshores. The actions identified are general and relate to the Management Plan area in its entirety.

The proposed Structure Plan is consistent with the Management Plan, as it:

- Is supported by a Local Water Management Strategy, which has been prepared in accordance with the Better Urban Management Framework;
- Facilitates the provision of a long-term multi-use trail system, as contemplated between Poad Street and Lake Road, consistent with Figure 8 of the Management Plan. The Structure Plan reflects the indicative multi-use trail proposed by the Management Plan;



- Is supported by a Foreshore Management Plan, which facilitates improvements to riparian vegetation, weed control and fire management measures required at subsequent planning stages (i.e., via a condition of subdivision approval);
- Provides for the ceding of land as public open space adjacent to the existing MRS reserve.

Accordingly, it is considered that the Structure Plan can be implemented with due consideration to the Wungong River Management Plan.

## 2.2.4 Wungong River Concept Plan

The City of Armadale adopted the Wungong River Concept Plan in 2019 for the purpose of providing the technical guidance for the future protection of and development surrounding the Wungong River. The specific area of focus for the Wungong River Concept Plan is the foreshore area between Armadale Road and Champion Drive, and accordingly, is a driving consideration for the development of the subject land.

The key strategic directions of the Wungong River Concept Plan are:

- Uniform land governance of land abutting the Wungong River;
- Improvement to riparian vegetation within foreshore reserve;
- Improvement to the water quality of the Wungong River;
- Management of the bushfire hazard by managing fuel loads through revegetation; and
- Implementation and coordination of a multiple use trail along the Wungong River.

The Structure Plan area is identified as 'Area 5' of the Concept Plan, which provides for the foreshore furnishings and multiple use trail alignment.

The supporting environmental and foreshore reporting, drainage management, landscaping planning and bushfire assessment has been prepared having regard to the objectives of the Wungong River Concept Plan, resulting in a responsive and integrated management approach to the Wungong River foreshore. In this regard, the proposed Structure Plan satisfactorily addresses each of the strategic directions set out in the Concept Plan.

Further, the attached Foreshore Management Plan and Landscape Master Plan are entirely consistent with the Wungong River Concept Plan.

## 2.3 State Planning Policies & Guidelines

### 2.3.1 State Planning Policy 2.9 – Water Resources

Given Precinct C directly abuts the Wungong River foreshore reserve, State Planning Policy 2.9 – Water Resources ('SPP 2.9') is a relevant consideration.

Schedule 2 of SPP 2.9 provides guidance for the determination of appropriate buffering of waterways and advises a foreshore reserve width of 30-metres is generally required. Development Control Policy 2.3 – Public Open Space ('DCP 2.3') reiterates the general requirement for a 30-metre reserve.



The Foreshore Reserve as proposed by this Structure Plan is consistent with SPP 2.9 and DCP 2.3. Further details are included at Section 3 of this report.

### 2.3.2 State Planning Policy 3.0 – Urban Growth & Settlement

State Planning Policy 3.0 – Urban Growth and Settlement ('SPP 3.0') sets out the principles and considerations which apply to planning for urban growth and settlement.

SPP 3.0 refers to the requirement for urban areas to be identified in Regional and Local Planning Strategies, and development of identified urban areas to be facilitated by Structure Plans. Precinct C is zoned 'Development' under TPS 4, and the proposed Structure Plan will ensure orderly and proper planning is achieved, consistent with the requirements of the Development zone and the Planning Regulations.

### 2.3.3 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas ('SPP 3.7') seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. SPP 3.7 applies to strategic planning proposals, including Structure Plans, over land identified as 'Bushfire Prone' by the Map of Bushfire Prone Areas prepared by the Department of Fire and Emergency Services.

Accordingly, this Structure Plan is supported by a Bushfire Management Plan prepared by Smith Consulting. The outcomes of the Bushfire Management Plan indicate the proposed development is capable of achieving a Bushfire Attack Level ('BAL') rating of BAL-29 or below. This is further discussed in Section 3.4 of this report.

**Refer Attachment 4 – Bushfire Management Plan.**

### 2.3.4 Liveable Neighbourhoods

The WAPC's Liveable Neighbourhoods is an operational policy that guides the design and assessment of Structure Plans (regional, district and local) and subdivision for new urban neighbourhoods in the metropolitan area and country centres, on greenfield and large urban infill sites. Liveable Neighbourhoods includes the following principle aims which are particularly relevant to the Precinct C:

- To foster a sense of community and strong local identity and sense of place in neighbourhoods and towns.
- To ensure the avoidance of key environmental areas and the incorporation of significant cultural and environmental features of a site into the design of an area.
- To provide for a more integrated approach to the design of open space and urban water management.
- To ensure cost-effective and resource-efficient development contributing to affordable housing.
- To maximise land efficiency wherever possible.
- To provide a variety of lot sizes and housing types to cater for the diverse housing needs of the community at a density that can ultimately support the provision of local services.



## 2.4 Local Planning Policies

The following City of Armadale Local Planning Policies have been considered and responded to during the preparation of this Structure Plan:

### ■ **Local Planning Policy 2.4 – Landscape Feature and Tree Preservation**

The City's Local Planning Policy 2.4 ('LPP 2.4') was prepared for the purpose of providing a framework to promote the retention of significant trees or landscape features through the development process. In this regard, a Feature Survey was undertaken identifying specific locations of trees within the site. In preparing the Environmental Report (refer Attachment 5), Bowman & Partners Environmental undertook site visits accompanied by Landscape Consultants, Plan-E and the City's Environmental officers to identify and confirm the status of on-site vegetation. This was informed by the Tree Survey undertaken for the earlier 2018 draft Structure Plan.

In this regard, the design of the Structure Plan has been proposed to ensure the retention of 'good' condition mature trees in areas of public open space. The supporting landscape planning has been prepared to further enhance the habitat of the retained trees.

### ■ **Local Planning Policy 2.6 – Water Sensitive Design**

The City's Local Planning Policy 2.6 – Water Sensitive Design ('LPP 2.6') was prepared setting out the guiding principles to protect the Canning River and its associated waterways. In this regard, it seeks to provide guidance for the drainage management and revegetation practices for land adjoining waterways.

The supporting Local Water Management Strategy (refer Attachment 12) has been prepared having regard to LPP 2.6, the Wungong River Concept Plan and the Better Urban Water Management guidelines.

### ■ **Local Planning Policy 2.9 – Landscaping**

The City's Local Planning Policy 2.9 ('LPP 2.9') has been prepared for the purpose of ensuring future development sites positively contribute to the landscape amenity of the City of Armadale.

A Landscape Master Plan (refer **Attachment 8**) has been prepared by Plan-E in support of the Structure Plan detailing the indicative revegetation within the foreshore reserve, treatment of public open spaces and street trees.



## 3. Site Conditions & Constraints

The following provides a summary of the environmental site conditions and constraints, based on the findings of the Environmental Assessment Report prepared by Bowman Partners Environmental ('BPE').

**Refer Attachment 5 – Environmental Assessment Report.**

### 3.1 Biodiversity & Natural Area Assets

#### 3.1.1 Flora & Vegetation

Precinct C1 is located adjacent to the Wungong River. The fringing vegetation within the foreshore reserve represents the principal habitat area for fauna in the locality. These environmental features are located outside of the Structure Plan area.

The land has historically been cleared of native vegetation and fauna, with scattered individual trees and small copses of marri and paperbark trees across the site. Larger marri trees have been retained in the south-west portion of the site, which retains a low, near closed woodland canopy. Ground level vegetation is predominantly pasture and weeds with sparse native regrowth.

A Tree Survey was undertaken in October 2017 by Arboricultural Consultants Paperbark Technologies, concluding that the trees within the Structure Plan area comprise predominantly purpose-planted trees around property lines, following fencing and homestead boundaries. Many trees were recorded to be of good to fair health, though many were in fair to poor condition due to lack of maintenance and high amounts of dead wood held within the trees. No trees were considered to be of significance under Clause 80A of the City of Armadale Town Planning Scheme No. 4 and Local Planning Policy 2.4 – Tree Preservation.

**Refer Attachment 5a – Tree Survey.**

#### 3.1.2 Fauna

Given the sparsity of habitat species present on site, Precinct C1 is considered to have a very low carrying capacity to support native fauna. This was consistent with the fauna surveys undertaken on site, from 2014 to present, which recorded only small populations of avian fauna attracted to the present vegetation type (open pastured fields and non-indigenous tree habitats).

Vegetation within the Wungong River foreshore reserve, albeit outside of the Structure Plan area, provide the principal habitat area for local fauna. This land will be subject to a Foreshore Management Plan, which will set the requirements for revegetation, management and the inclusion of recreational facilities, which will ensure the improvement of local fauna habitat.

#### 3.1.3 Wetlands

The subject site is mapped as being partially within a Multiple Use Wetland (Palusplain) on the Department of Biodiversity, Conservation and Attractions ('DBCA') geomorphic wetlands database, with a small portion of Lot 105 and the adjacent constructed Arabian Court road reserve containing a Resource Enhancement Wetland ('REW'). The mapping over a minor portion of Lot



105 and the Arabian Court road reserve is not reflective of the ground assessment and condition of vegetation.

The Wungong River and associated foreshore (outside of the subject land) is a mapped Conservation Category Wetland ('CCW'). However, the attached EAR concludes that the condition of the riparian vegetation within the Wungong River banks as being extremely degraded. Notwithstanding the conclusion reached within the supporting Environmental Assessment Report, a default 50-metre buffer to the existing CCW has been retained on the Structure Plan, however, seeks a minor variation to the buffer area by including drainage basins and two (2) 14.2-metre roads within the buffer area. This is further discussed at Section 4.4.2 of the report.

**Refer Figure 6 – Wetlands Mapping.**

## 3.2 Landform & Soils

The subject land is generally flat, sloping gently in a north-westerly direction towards the Wungong River and associated foreshore reserve, which forms the south-western boundary of the subject land. The elevation of the land varies between approximately 26.8m AHD (south-east corner to Lake Road) and 24.9m AHD (southern corner adjacent Arabian Court) to approximately 21m AHD adjacent the Wungong River foreshore reserve.

**Refer Attachment 6 – Feature Survey.**

The Environmental Assessment Report concludes the land is mapped at a regional scale as Guildford Formation and forms part of the flood fringe of the Wungong River. Soils are identified as comprising:

- Sand in the eastern part of the site – white to pale grey at surface.
- Sandy Clay in the western portion of the site – white grey to brown in low lying parts of the site.

During the installation of bores for groundwater investigations, it was found that shallow sediments comprise a surface layer of grey to orange sand between approximately 0.1-metres to 2.5-metres thick, underlain by sandy clays, gravely clay and sandy gravelly clay to the maximum depth of drilling of approximately 5-metres below ground surface.

Landgate mapping shows the site as having a moderate to low risk of Acid Sulphate Soils or Potential Acid Sulphate Soils occurring within 3-metres of the natural surface. The on-site drilling confirmed no significant occurrences of Acid Sulphate Soils within the site. In addition, the civil works required to develop the Structure Plan will require the addition of fill within the site, in order to meet the necessary clearance between the highest groundwater levels and development levels for roads and buildings. Accordingly, significant excavation works are not anticipated and there is negligible risk of acid sulphate soils being disturbed.

A Geotechnical Report prepared by Brown Geotechnical is included as part of the Local Water Management Strategy ('LWMS') documentation supporting the Structure Plan for Precinct C. The Geotechnical Report estimates a total sand thickness of 1.8m will be required above the clayey subgrade soil to achieve a Class "A" site classification, or 0.9m to achieve a Class "S" site.



The Geotechnical Report advises that a sand layer was at its thickest abutting Lake Road, being greater than 1.8m adjacent to Bay Court and Champion Drive, reducing to approximately 0.9m in the centre of the site near Arabian Court.

The site is not identified as being contaminated on the Department of Water and Environmental Regulation ('DWER') Contaminated Sites Database, and groundwater quality analysis accompanying the Environmental Report confirmed the absence of contamination.

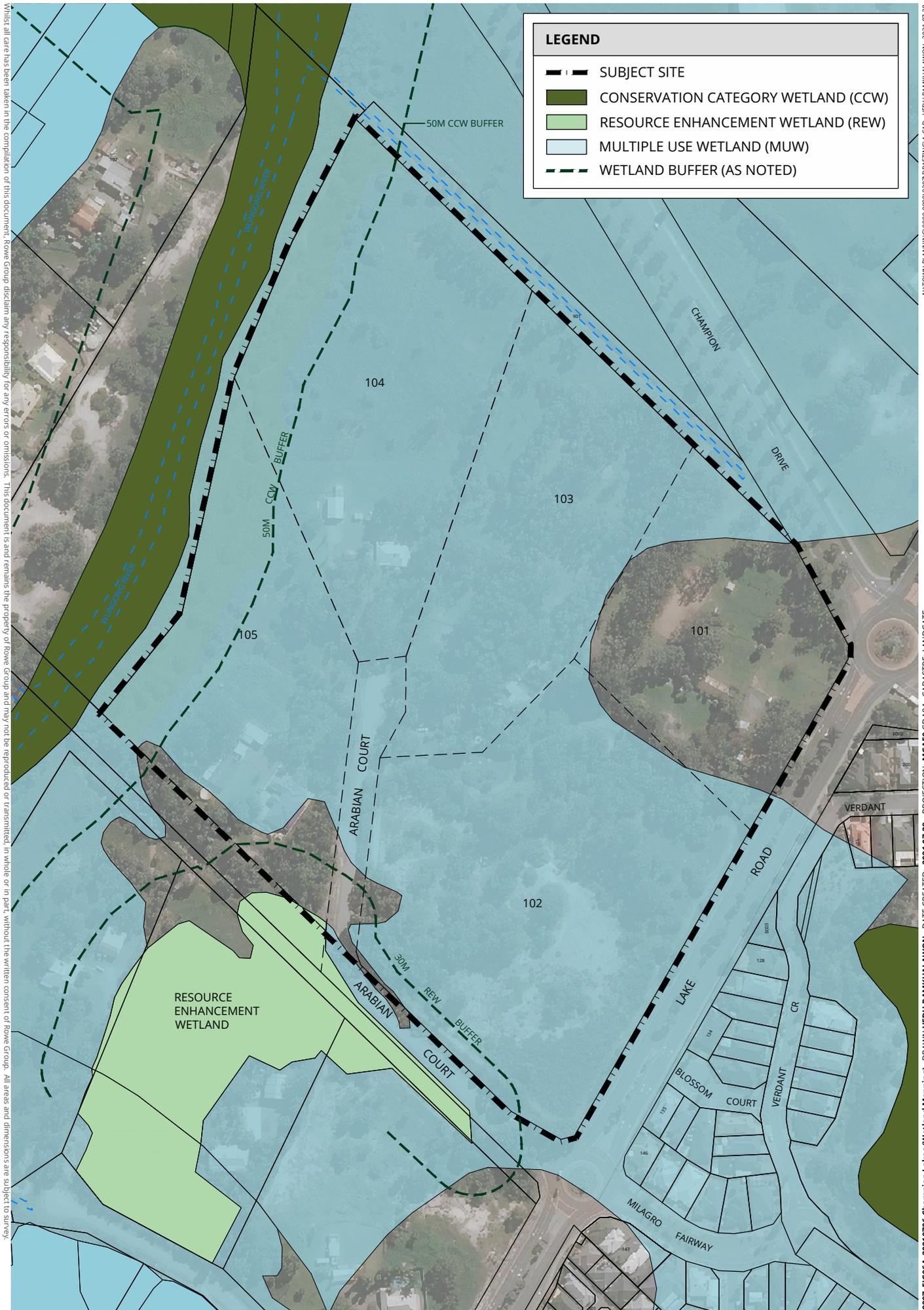
### 3.3 Groundwater

Groundwater flow is generally directed towards the Wungong River, in a north-westerly direction. The Environmental Report confirms the presence of a perched aquifer beneath the surface, resulting in the water table ranging from less than 1-metre below ground level ('mbgl') to approximately 3mbgl. The groundwater elevation at the site ranges between 21-metres AHD to 24.5-metres AHD.

The Groundwater Report included at Appendix 1 of the Environmental Assessment Report provides groundwater levels and quality from monitoring bores which were established in September 2014. These bores were monitored to inform the preparation of the supporting Local Water Management Strategy ('LWMS') prepared by Environnivate. These shallow water table levels indicate that development over the majority of the site would need to be filled to meet an adequate water table separation distance, as required by urban engineering standards.

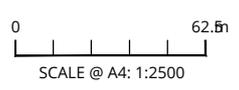
**Refer Attachment 12 – Local Water Management Strategy.**





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9297\_FIG06A\_20210706 Champion Lakes (Wetland Mapping) · DRAWN: VEDH RAMKHALAWON · DATE CREATED: 2021.07.28 · PROJECTION: MGA50 GDA94 · CADASTRE: LANDGATE · NATOWN PLANNING 9000-9999/9397/DRAFTING-A-CAD · VEDH RAMKHALAWON · 2021.07.28



**FIGURE 6**  
**WETLAND MAPPING**

## 3.4 Bushfire Hazard

The subject land is identified as 'Bushfire Prone' on the Department of Fire and Emergency Services ('DFES') Map of Bushfire Prone Areas. Accordingly, this Structure Plan is supported by a Bushfire Management Plan ('BMP') prepared by Smith Consulting. The BMP has been prepared to address the requirements of State Planning Policy 3.7 – Planning in Bushfire Prone Areas ('SPP 3.7') and the associated Guidelines for Planning in Bushfire Prone Areas (v1.4).

### **Refer Attachment 4 – Bushfire Management Plan.**

The Bushfire Management Plan has been prepared following consultation with the City of Armadale's Environmental and Parks officers, having particular regard to the Wungong River Concept Plan and the proposed Foreshore Management Plan. In addition, the BMP has been informed by the advice received from DFES with respect to similar Structure Planning proposals in the area (i.e., Lake Road Precinct A1).

The BMP confirms bushfire risk is capable of being appropriately mitigated to achieve compliance with the Guidelines. The main considerations relating to bushfire management within the Structure Plan area are set out in **Table 3** (overleaf).

Having regard to the above and the information provided within the BMP, Smith Consulting consider the bushfire hazards within and adjacent to the Structure Plan area and associated bushfire risks are readily manageable through the standard management responses outlined within the Guidelines and Australian Standard 3959 – Construction of Buildings in Bushfire Prone Areas ('AS3959'). These responses have informed the Structure Plan design to ensure a suitable, compliant and effective bushfire management outcome is achieved for the protection of future life, property and environmental assets.



<b>Bushfire Protection Criteria</b>	<b>Proposed Bushfire Management Strategies</b>
Element 1: Location	Based on the indicative subdivision layout, all future dwellings constructed within the Structure Plan Area can be located such that the maximum BAL ratings within the site are BAL-29 or less. A large portion of the site has a post development rating of BAL-LOW due to the expansive residential areas and managed public open space.
Element 2: Siting and Design	Based on the indicative subdivision layout, all future dwellings constructed within the Structure Plan Area can be located such that the maximum BAL ratings within the site are BAL-29 or less.  A perimeter Asset Protection Zone (APZ) is not required to support the individual BAL ratings for future dwellings, with sufficient separation provided by the proposed road network.
Element 3: Vehicular Access	The site will have good access both internally and to the existing road network when all roads have been constructed. Arabian Court provides a direct connection with Lake Road, which provides egress in a north-east and south-west direction. An emergency access way to Lake Road will be provided within the Lot 102 boundary as part of the Stage 1 development.  Further to this, the development of the Lake Road Precinct C1 LSP area will provide an additional egress route to Lake Road, further south of the development area. (Refer Attachment 3 – Lake Road Precinct C Context Plan).
Element 4: Water	Future residential lots within the site will be serviced by a reticulated water supply and water hydrant network. Fire hydrants will be spaced according to Water Corporation and DFES standards and provide emergency services with access to adequate water supply.

**Table 3: Bushfire Protection Criteria – Compliance Table.**



## 3.5 Heritage

### 3.5.1 Indigenous Heritage

The Structure Plan area abuts a registered Aboriginal Heritage site (Site ID: 13511) which relates to the Wungong River and is identified on the Department of Indigenous Affairs Register of Aboriginal Sites.

A Due Diligence Risk Assessment Report was prepared by Brad Goode and Associates – Consulting Anthropologists and Archaeologists, in support of the previously advertised version of the Local Structure Plan. The report was prepared to consider the implications of residential development within the Structure Plan Area, having regard to the requirements set out in the *Aboriginal Heritage Act 1972*.

#### **Refer Attachment 7 – Due Diligence Risk Assessment Report.**

The Due Diligence Report concludes that the Wungong River is a place of mythological significance, and maintaining access is of importance. The report recommends a multiple use path be included adjacent the foreshore reserve. Provided the path is located outside of the mapped extent of Site ID 3511 (nominally 30-metres from the high-water mark of the Wungong River), no further investigation would be required. The alignment of the path as indicated on the attached Structure Plan is consistent with this finding and located on the outer edge of the 30m buffer to the high water mark, though it is acknowledged that in some areas, the path will encroach on the mapped extent of Site 3511.

The Wungong River Concept Plan is supported by an Aboriginal Cultural Heritage Management Plan (October 2019), which includes an approval under Section 18 of the *Aboriginal Heritage Act 1972* for landscaping works (including footpaths and signage works) within the 'Parks and Recreation' reserve adjoining the Structure Plan Area.

For the land within the Structure Plan area, works within identified Foreshore Reserve (POS 3) will be subject to a separate Aboriginal Cultural Heritage Management Plan prepared and approved under Section 137 of the *Aboriginal Cultural Heritage Act 2021*, prior to any activities occurring on site. This would be a requirement of a condition of subdivision/development approval for Lot 104 and / or Lot 105.

### 3.5.2 European Heritage

Desktop review of the State and Local Government heritage databases does not identify any heritage places within the Structure Plan Area or immediate proximity.



## 4. Land Use & Subdivision Requirements

### 4.1 Land Use

The Structure Plan sets out land use, residential densities, public open space, vehicle and pedestrian access and servicing requirements.

The Structure Plan comprises residential development with a base density code of R25, strategically identified R40 pockets, with associated areas of public open space and movement network. The Structure Plan has been designed recognising the works previously undertaken on the advertised Structure Plan (2018), and in recognition of and response to the amenity provided by the Wungong River foreshore.

The following describes the design response proposed under the Structure Plan and addresses the relevant elements of Liveable Neighbourhoods. Refer to the land use summary provided within the Executive Summary on page iii) of this report.

**Refer Plan 1 – Structure Plan.**

### 4.2 Public Open Space

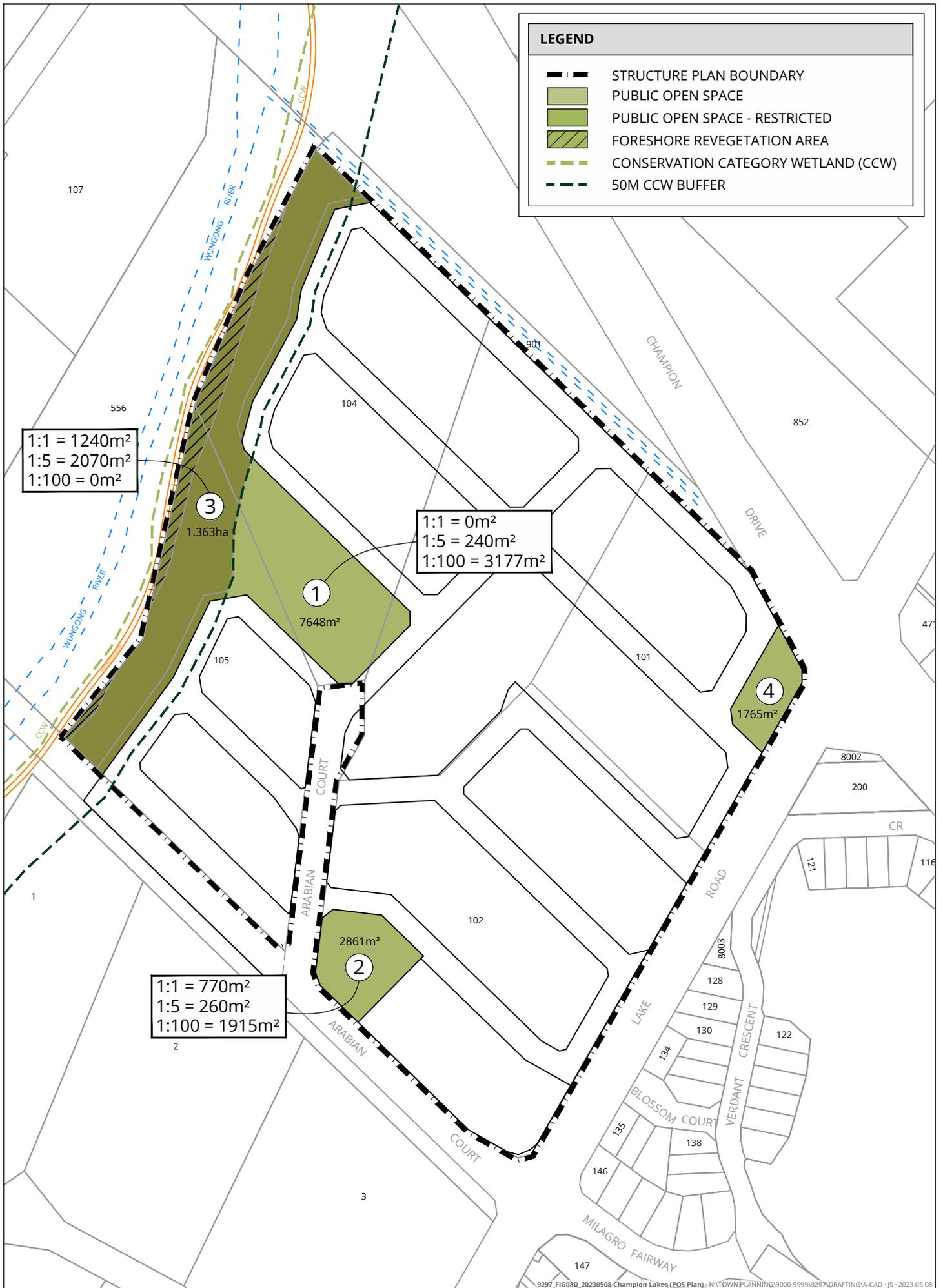
The Structure Plan is currently well serviced by both regional and local open space/ recreational opportunities:

- The Wungong River foreshore is located directly adjacent the north-western boundary of the Structure Plan area. The Wungong River foreshore is being progressively developed to provide a continuous linear public open space, extending from Armadale Road through to the Champion Lakes Regatta Centre. This Structure Plan will contribute to the development of this public open space (Refer Section 4.2.2 of this Report).
- The Champion Lakes Regatta Centre is located approximately 500-metres north of the Structure Plan area. The regatta centre is a major recreational/sporting attraction in the South-East metropolitan region comprising a purpose-built water sport venue. The centre provides opportunities for passive and active aquatic recreation and an extensive dual use path system.
- The Bob Blackburn Reserve, containing the Armadale Aquatic Centre and a number of sporting fields, is located approximately 1.65 kilometres south-east of the subject site.
- The Verdant Court local open space is located directly south of Lake Road, comprising an area of retained vegetation with walking trails throughout and a children's playground.

In addition to the existing public open space in the area, this Structure Plan proposes the addition of four (4) areas of Public Open Space, comprising a total of 10,633m<sup>2</sup> and 8 per cent of the gross subdivisible area, in addition to an area of 1.15 hectares as an extension to the Wungong River foreshore reserve (refer Section 4.2.1 and Section 4.2.2 of this Report).

**Refer Figure 7 – Public Open Space Plan and Table 4 – Public Open Space Schedule.**





0 75 m  
SCALE @ A4: 1:3000



**FIGURE 7**  
**PUBLIC OPEN SPACE PLAN**

Site Area (Structure Plan Boundary) 14.50ha

### Deductions

Dedicated Drainage (1:1 Year)	0.2ha	
Foreshore Reserve (Revegetation Area)	0.22ha	
Total		0.43ha
<b>Gross Subdivisible Area (GSA)</b>		<b>14.07ha</b>
Public Open Space @ 10%		1.41ha

### Public Open Space Contribution

#### Public Open Space May Comprise:

Min 80% Unrestricted POS	1.13ha
Min 20% Restricted Use POS	0.28ha
<b>Total Public Open Space Required</b>	<b>1.41ha</b>

#### Public Open Space Provided:

POS Reference	Total POS Area	Drainage (1:1)	Unrestricted POS	Restricted POS
1 – Riverside	7,648m <sup>2</sup>	-	7,408m <sup>2</sup>	240 m <sup>2</sup>
2 – Arabian Court	2,861m <sup>2</sup>	770m <sup>2</sup>	1,831m <sup>2</sup>	260 m <sup>2</sup>
3 – CCW Buffer	11,488m <sup>2</sup>	1240m <sup>2</sup>	-	10,248 m <sup>2</sup>
4 – Lake Road	1,394m <sup>2</sup>	-	1,394m <sup>2</sup>	-
<b>Total</b>	<b>23,391m<sup>2</sup></b>	<b>2,010m<sup>2</sup></b>	<b>10,633m<sup>2</sup></b>	<b>10,478m<sup>2</sup></b>
<b>% GSA</b>	<b>15.19%</b>		<b>7.55%</b>	<b>7.64%</b>

### Additional Deductions

Restricted POS Surplus	0.79ha
Revised Gross Subdivisible Area	13.28ha
Revised POS @ 10%	1.33ha

### Final Public Open Space Contribution

#### May Comprise:

Min 80% Unrestricted POS	10,625m <sup>2</sup>	
Min 20% Restricted Use POS	2,700m <sup>2</sup>	
<b>Total POS Provided</b>	<b>10,633m<sup>2</sup></b>	<b>2,700m<sup>2</sup></b>
	<b>8%</b>	<b>2%</b>

#### Note:

- This public open space schedule is based on the Structure Plan prepared by Rowe Group (Plan ID: 9297-FIG-07-J).
- This public open space schedule is based on the LWMS prepared by Environnivate (27 February 2023).

**Table 4: Public Open Space Schedule.**



## 4.2.1 Public Open Space

The Structure Plan proposes four (4) areas of public open space areas, described as follows:

### ■ 1 – Riverside Public Open Space:

Public Open Space Area 1 comprises a “Neighbourhood Park” for the Structure Plan area, with an area of 7,648m<sup>2</sup>. This area is intended to accommodate both passive and active recreational uses including a kick-about space, playground, walking tracks and the like.

Consistent with the aspirations set out within the Wungong River Concept Plan, Public Open Space Area 1 provides for a continuation to the Wungong River foreshore reserve. The Concept Plan identifies an ‘Activity Node’ being located in this location in connection to the broader shared use trail network.

### ■ 2 – Arabian Court Public Open Space:

Public Open Space Area 2 comprises a “Local Park” under the Liveable Neighbourhoods framework, with an area of 2,861m<sup>2</sup>. Area 2 has been located in an area of ‘Good’ quality vegetation and accordingly, will retain existing vegetation as appropriate and serve as an amenable entry statement to the development. In addition to the retained vegetation, POS area 2 will accommodate a vegetated drainage basin and walking loop with a nature-based playground area.

### ■ 3 – CCW Buffer Open Space:

Public Open Space Area 3 comprises the Wungong River Foreshore Reserve, providing for approximately 1.3 hectares of ‘restricted’ public open space. This area will ultimately link to the rehabilitated Wungong River reserve both north and south of the Structure Plan area to form a contiguous ‘regional’ level public open space trail.

The Foreshore Reserve is further discussed at Section 4.2.2 of this Report.

### ■ 4 – Lake Road Public Open Space:

The Lake Road Public Open Space area is approximately 1394m<sup>2</sup> in area and therefore constitutes a “local park” under the Liveable Neighbourhoods framework. POS 4 will also provide a “sense of arrival” for the estate, being located at a predominant intersection.

Based on the provision of existing and proposed public open space, all of the proposed lots are situated within 300-metres of an area of public open space. The distribution, size and treatment of all public open space within the Structure Plan is consistent with the parkland requirements of Liveable Neighbourhoods.

**Refer Attachment 8 – Landscape Master Plan.**



## 4.2.2 Foreshore Reserve

Public Open Space Area 4 comprises approximately 1.49 hectares adjacent the Wungong River reserve. This area is technically classified 'restricted' public open space in accordance with the Liveable Neighbourhoods Framework but will ultimately provide for a contiguous open space corridor consistent with the aspirations set out in the Wungong River Concept Plan. The Foreshore Reserve comprises the inner line of the 50-metre buffer to the edge of the mapped CCW.

Notwithstanding the 'restricted' classification of the Foreshore Reserve, the supporting Landscape Master Plan and Foreshore Management Plan have been prepared in accordance with the amenity and management aspirations for the area set out within the Wungong River Concept Plan. This includes retention of existing 'good' quality vegetation and revegetation works, a multiple use path, wayfinding and cultural interpretation nodes, exercise equipment and additional pathways providing direct access to the Wungong River flow channel. It is noted that approximately 2,241m<sup>2</sup> of the area will be dedicated to rehabilitation of remnant vegetation, ensuring the "foreshore buffer" (being 30-metres from the edge of the river bank) is re-established.

A number of indicative cross sections have been prepared and included within the Landscape Master Plan (**Attachment 8**), demonstrating that the proposed development and rehabilitation of the Foreshore Reserve is consistent with the objectives of the Wungong River Concept Plan, with particular reference to an improvement to riparian habitat, appropriate bushfire management and the implementation of a shared path system.

**Refer Attachment 9 – Foreshore Management Plan.**



## 4.3 Residential

The Structure Plan proposes a base residential density code of R25 be applied across the extent of the subject land, with pockets of R40 located in strategic locations of high amenity. The density code is proposed in response to an Indicative Subdivision Layout prepared to support the Structure Plan. The Indicative Subdivision Layout is designed to ensure an efficient configuration of lot sizes, with lot dimensions that are consistent with the market standard for project home builders and supply a diversity of lot product, therefore providing lots that are easier and more affordable to develop.

Based on subdivision design, consistent with the current market realities for the site, the proposed Structure Plan is more likely to achieve a density of 26.9 dwellings per residential site hectare and 15.24 dwellings per gross urban hectare. This is consistent with the targets specified under the Sub-Regional Planning Framework and Liveable Neighbourhoods, being 15 dwellings per gross urban hectare and 22 dwellings per residential site hectare.

Based on the indicative dwelling yield of 221 dwellings (based on the Indicative Plan of Subdivision), the Structure Plan area is likely to accommodate approximately 596 persons, based upon 2.7 persons per household (2016 Census).

The attached Indicative Subdivision Layout reflects a lot layout that enables the landowner of Lot 105 to retain their existing dwelling (recently constructed) on a separate title, without jeopardising the integrity of the broader subdivision layout. In this regard, the owners of this property are also able to commence a staged development should they wish.

**Refer Attachment 10 – Indicative Subdivision Layout.**



## 4.4 Movement Network

### 4.4.1 Existing Road Network

#### Arabian Court

Arabian Court is a local access cul-de-sac road which runs along the south-west boundary of the site, extending centrally within the subject land. Arabian Court comprises a constructed road width of approximately 8.5-metres with unsealed shoulders.

#### Lake Road

Lake Road is a 'Distributor B' classified road under the Main Roads WA Function Road Hierarchy, which abuts the Structure Plan area on its south-east boundary. Lake Road is reserved as an 'Other Regional Road' under the Metropolitan Region Scheme.

Traffic Counts undertaken and published on the Main Roads WA Traffic Map database indicate that approximately 2,500 vehicle movements per day were recorded on Lake Road in 2016/17.

### 4.4.2 Proposed Road Network

The proposed road hierarchy for the Structure Plan has been determined from the modelling based on the Indicative Subdivision Layout (Refer Attachment 10) and provides for simple and efficient vehicle movements throughout the site.

The proposed road network will be extended from the existing Arabian Court, which will be upgraded to serve as a 'Neighbourhood Connector B' classified road. The internal road reserve has been designed to ensure the creation of regular residential lots, and as such, the Structure Plan area generally comprises a grid network of 'Access Streets'. The indicative road network is proposed to comprise the following road classifications:

Road Classification	Indicative Upper Traffic Volume	Indicative Road Reserve Width
Neighbourhood Connector B (Arabian Court)	<3,000 vpd	18 metres
Access Street D	<1,000 vpd	15.4 metres

**Table 5: Proposed Road Classifications.**

The proposed road network comprises a road hierarchy generally consisting of 'Access Street Type D' roads, designed to a 15-metre cross section. Where services are only required to one side of the road, such as adjacent to public open space or adjoining the drainage/Lake Road reserve, a reduced cross-section of 13.2-metres is proposed.

The movement network, street block length and road widths are consistent with the requirements set out in Liveable Neighbourhoods, providing for connectivity and permeability through the site for both pedestrians and vehicles.

Traffic modelling for the Structure Plan area estimates the completed development will generate in the order of approximately 274 vehicles per hour in the afternoon peak period, with no

upgrades to the external road network (other than Arabian Court) required to facilitate the proposed development.

#### **Refer Attachment 11 – Traffic Impact Report.**

#### **4.4.2.1 Arabian Court Extension**

The advertised Local Structure Plan contemplated Arabian Court being extended within the existing road reserve, providing a direct vehicle route to the foreshore reserve. However, high-level environmental review of the existing values within the reserve indicated that there was high probability that the reserve contained a Threatened Ecological Community (‘TEC’) and a threatened flora species, and accordingly, federal approval for clearing under the *Environmental Protection and Biodiversity Conservation Act 1999* would be required.

To ensure the retention and protection of these environmental values within the existing reserve, the Arabian Court road extension is located wholly within the Structure Plan Area (within Lot 105). The attached Indicative Subdivision Layout indicates an 18-metre road reserve in this location for the purpose of achieving a suitable separation to the bushfire risk posed by the retained vegetation. This may be reviewed and refined at subdivision stage subject to the appropriate BAL ratings being achieved.

#### **4.4.3 Pedestrian & Cycle Network**

In accordance with the requirements of Liveable Neighbourhoods, footpaths will be provided on at least one side of every street.

Given the relatively low traffic volumes anticipated, no designated cycle paths are proposed within the Structure Plan area. It is proposed that the footpath network tie into the Wungong River shared use path, which, when completed, will provide a continuous connection from Armadale Road to Champion Lakes (and beyond).

The Department of Transport’s Bike Map for the Armadale locality identifies a Principal Shared Path (‘PSP’) network adjacent Tonkin Highway (north of the subject land). Both Lake Road and Champion Drive are identified as High-Quality Shared Path environments, which provide a direct connection to the Tonkin Highway PSP.

It is anticipated that the development of the Structure Plan Area as contemplated would require a pedestrian path be constructed on the northern side of the Lake Road reserve, which would be designed to integrate with both the internal path network and the Shared Use foreshore path.

#### **4.4.4 Public Transport**

The Structure Plan area is currently serviced by Transperth bus routes 243 (Grovelands Drive) or 245 (Westfield Road), providing services between the Armadale Station and the Kelmscott Station. The Challis Train Station is located approximately 2.5-kilometres east of the Structure Plan area.



## 4.5 Water Management

### 4.5.1 Local Water Management Strategy

A Local Water Management Strategy ('LWMS') has been prepared in support of this Structure Plan and is appended at **Attachment 12** to this report.

The LWMS has been prepared in support of the reconfigured Structure Plan and associated Indicative Subdivision Layout, providing for a refinement to the existing approved LWMS prepared by Development Engineering Consultants in support of the advertised Structure Plan (2018).

This LWMS has been prepared in accordance with the Water Sensitive Urban Design Principles as contained within DWER's Waterwise Perth Action Plan (2019), the WAPC's Better Urban Water Management (2008) and the DWER's Stormwater Management Manual (2007). In addition, the LWMS has been prepared in response to the City of Armadale's Wungong River Concept Plan (2018).

In accordance with the processes defined under Better Urban Water Management, an Urban Water Management Plan ('UWMP') will be required to be prepared and implemented as a condition of subdivision approval. The UWMP refine and implement the proposed drainage network, as proposed within the LWMS.

**Refer Attachment 12 – Local Water Management Strategy.**

### 4.5.2 Stormwater Management

The LWMS proposes the following stormwater management design criteria to ensure the proposed stormwater strategy is capable of managing a range of rainfall events, up to the 1% Annual Exceedance Probability ('AEP') event:

- Flood mitigation with Finished Site Levels (FSL) being a minimum of 0.5-metres above the mapped 1% AEP floor level for Wungong River;
- Landscape design measures to reduce applied nutrient loads;
- At source infiltration of at least small storm events (15mm);
- Water quality treatment systems and water sensitive urban design structures designed in accordance with the Stormwater Management Manual of WA (2009).

Based on the above criteria, the below provides a summary of the stormwater management for the Structure Plan area.

- **Small Storm Events (1 in 1 year ARI event):**

The small storm drainage plan will retain and treat the 1 in 100-year ARI event (the first 15mm of rainfall) on site by:

- On-site retention of the first 15mm of rainfall (1:1 year AEP event), water wise planting and encouragement of rainwater tanks;
- Overflow connection of soak wells to the street drainage system;
- Internal catchments will be directed to a network of vegetated swales, piped connections and detention storage areas within public open spaces.



- **Minor/Major Storm Events (1 in 5-year ARI to 1 in 100-year ARI events):**

The piped drainage system has been designed to accommodate all minor and major storm events (i.e., greater than 20% AEP events), by:

- Stormwater runoff from lots will be partially retained by soak wells, with excess stormwater conveyed to the street drainage system via overland flow.
- Stormwater runoff from internal roads will be conveyed by the pit and pipe drainage system. For rainfall events exceeding the capacity of the pipe system (nominally >20% AEP) excess stormwater will be conveyed by overland flow, with roads graded to the detention storage at the catchment low point.
- Internal catchments will be directed to a network of vegetated swales, piped connections and detention storage areas within public open spaces.

### 4.5.3 Groundwater Management

The design objectives of the groundwater management strategy are:

- Subsurface drainage to limit additional rainfall recharge to the water table and protect infrastructure.
- Manage fertiliser and pesticide application in streetscapes and POS areas by using appropriate application rates specified in maintenance operation plans.
- Favour local native plants and trees for garden beds.

To achieve the above objectives, the design philosophy for the Structure Plan area is as follows:

- Post-Development Groundwater Levels;
- Sub Surface Drainage;
- Lot Finished Levels.

### 4.5.4 Urban Water Management Plan

Consistent with the requirements of the LWMS and the Better Urban Water Management framework, an UWMP will be required as a condition of approval. The UWMP will refine and implement the proposed drainage system proposed by the LWMS.

While strategies have been provided within this LWMS that address planning for water management within the site, it is a logical progression that future subdivision designs and the supportive UWMP will clarify details not provided within the LWMS. In addition to the matters required to be addressed under the UWMP, the main areas that will require further clarification within future UWMPs include:

- Engineering landscape designs;
- Detail of the operation and maintenance of bio-retention systems; and
- Approaches to manage the impacts from construction.



## 4.6 Education Facilities

No educational facilities are proposed within the Structure Plan area.

Given the infill nature of the proposed development, the site is well catered for within the existing public education facilities within the surrounding areas. The site currently falls within the Grovelands Primary School local intake area (0.9 kilometres east of the site), however the Structure Plan area is also within relatively close proximity to the following other public schools:

- Kelmscott Senior Highschool (1.9 kilometres);
- Westfield Park Primary School (1.9 kilometres);
- Challis Primary School (2 kilometres);
- Willandra Primary School (2 kilometres);
- Sowilo Community High School (2.3 kilometres);
- Kingsley Primary School (2.7 kilometres).

There are also a number of private education facilities accessible from the subject site.

In accordance with Liveable Neighbourhoods criteria, the anticipated lot yield does not trigger the need for provision of any additional primary or high school facilities within the Structure Plan area.

## 4.7 Activity Centres & Employment

The Structure Plan area does not propose any activity centres or employment nodes.

The Armadale District Centre is situated approximately 3.9 kilometres south of the Structure Plan Area. Armadale is classified a Strategic Metropolitan Centre under State Planning Policy 4.2 – Activity Centre for Perth and Peel, which has an indicative service population of up to 300,000 persons. It is expected that the residents will utilise this centre, and thus, bolster its economic sustainability.

The City of Armadale have prepared and advertised the draft Activity and Retail (Commercial) Centres Strategy, which identifies a local centre within the Champion Lakes (North) precinct (development area 51). The available draft of the Lake Road Precinct C1 Structure Plan confirms the intent of the adjoining landowners to offer a small commercial area to address this requirement.

**Refer Attachment 3 – Lake Road Precinct C Context Plan.**



## 4.8 Infrastructure Coordination, Servicing & Staging

An Engineering Servicing Report has been prepared in support of the Structure Plan by Cossill & Webley. The findings of the Engineering Report are summarised below.

**Refer Attachment 13 – Engineering Servicing Report.**

### 4.8.1 Power & Telecommunications

The site is serviced by existing High Voltage (HV) and Low Voltage (LV) aerial power supplies located within Arabian Court and Lake Road. The aerial lines within the Arabian Court reserve would be removed as part of construction.

The existing transformer and switchgear located within Verdant Court will provide the network connection to the proposed development, with new infrastructure required within Public Open Space Area 2 and Foreshore Reserve areas. All residential lots are capable of being connected to the underground electricity grid.

### 4.8.2 Water

There is an existing Water Corporation water main located within the eastern verge of the Lake Road reserve, directly adjacent the eastern boundary of the site. Water Corporation have confirmed there is adequate capacity to service the proposed development as contemplated by the proposed Structure Plan.

### 4.8.3 Reticulated Sewer

The subject land falls within the Water Corporation's 'Westfield' sewer district. Water Corporation have confirmed that the existing Lake Road sewer main has limited available capacity of approximately 1.1L/s from the Structure Plan Area, equating to the first stage of the Structure Plan area (i.e., Lot 102). The balance of the Structure Plan area would be serviced by the ultimate wastewater strategy, which requires a new gravity sewer reticulation network directing effluent toward an existing Wastewater Pumping Station located approximately 900-metres south of the site on McNeill Road.

### 4.8.4 Reticulated Gas

There is an existing reticulated gas main within the eastern verge of Lake Road, abutting the Structure Plan area. All lots would be connected to the existing network, funded by ATCO and installed by a Contractor.

### 4.8.5 Telecommunications

The Structure Plan Area is located within the National Broadband Network Corporation's (NBN Co.) fixed line footprint and will be serviced with the optic fibre network. The developer will install pit and pipe infrastructure within the service corridor of road reserves that can accommodate a future high speed broadband network.



## 4.8.6 Siteworks & Earthworks

As the Structure Plan area remains generally undeveloped, the following works will be required:

- Demolition of existing structures;
- Stripping and clearing of areas of vegetation (excluding retained vegetation in public open space areas);
- Removing topsoil and storing for future use;
- Cut to fill earthworks to form flat building pads;
- Installation of retaining walls.

The engineering design of the roads and pedestrian paths will be designed and constructed to meet the requirements of Liveable Neighbourhoods and the City of Armadale. Final design of the road and path network will occur at the subdivision stage.

## 4.9 Developer Contribution Arrangements

The Structure Plan Area is not identified as being subject to a Developer Contribution Area (DCA) Special Control Area under the provisions of TPS 4. Accordingly, it is not anticipated the subject land will be subject to contributions toward the provision of new infrastructure.





# ATTACHMENT 1

Certificates of Title



**ROWE**  
GROUP  
DESIGN



# ATTACHMENT 2

Advertised Local Structure Plan



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# ATTACHMENT 3

Lake Road Precinct C Context Plan



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# ATTACHMENT 4

Bushfire Management Plan



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# ATTACHMENT 5

Environmental Assessment Report & Tree Survey



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# ATTACHMENT 6

Targeted Vegetation Survey



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# ATTACHMENT 7

Feature Survey



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# ATTACHMENT 8

Due Diligence Risk Assessment Report



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# ATTACHMENT 9

Landscape Master Plan



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# ATTACHMENT 10

Foreshore Management Plan



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# ATTACHMENT 11

Indicative Subdivision Layout



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# ATTACHMENT 12

Transport Impact Assessment



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# ATTACHMENT 13

Local Water Management Plan



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# ATTACHMENT 14

Engineering Servicing Report



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