

# Part Two

## Explanatory Section





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# 1. Introduction and Purpose

This Structure Plan has been prepared on behalf of the Precinct 8 landowners to facilitate the development of ‘Precinct 8 - Ranch Road’ as identified by the East Wanneroo District Structure Plan (WAPC, 2018).

The Structure Plan has been prepared in accordance with the *Planning and Development (Local Planning Scheme) Regulations 2015*, the *Western Australian Planning Commission’s (WAPC) WA Planning Manual Guidance for Structure Plans*, and the *WAPC’s Liveable Neighbourhoods* operational policy. The Structure Plan will ultimately satisfy the requirements of the City of Wanneroo District Planning Scheme No.2.

The Structure Plan has been prepared in parallel with a request to lift the ‘Urban Deferred’ zoning of the land under the Metropolitan Region Scheme (MRS), providing further detail to support that request, and demonstrating the land is capable and appropriate for development.

Approval has been granted by the WAPC for the concurrent lodgement and assessment of the Structure Plan with the Urban Deferred lifting request.

Refer to **Appendix 10 – WAPC Approval to Concurrent Structure Plan**.

## 1.1. Objectives

The Structure Plan provides a framework for subsequent planning stages in accordance with the aims and objectives of the WAPC’s *East Wanneroo District Structure Plan (2021)* and the *Perth & Peel @3.5m North-West Subregional Planning Framework (2018)* to ultimately facilitate the development of a suburban-residential neighbourhood of approximately 2,500 lots.

The objectives of this Structure Plan are to:

- a) Create a distinct suburban neighbourhood that retains celebrates the sites natural features by sensitively connecting residential areas with the surrounding wetlands and bushland areas.
- b) Enhance connectivity between Mariginiup Lake, Little Mariginiup Lake and Lake Adams.
- c) Provide an efficient and environmentally responsive urban layout that maintains topography and natural drainage flows whilst maximising accessibility and opportunities for energy efficiency at the lot level through solar gain.
- d) Create a walkable neighbourhood with attractive and convenient connections between residential and non-residential land uses and maximising accessibility to public open space (POS) by ensuring the equitable distribution of POS throughout the Structure Plan area.
- e) Satisfy the EWDSP dwelling target of 2,300 lots for Precinct 8 and provide a range of residential lot typologies consistent with ‘suburban neighbourhood’ character identified by the EWDSP.
- f) Provide for the coordinated delivery of infrastructure and community services alongside development.
- g) Minimise the potential harm arising from natural hazards including bushfire, heatwaves and groundwater inundation.

# 1.2. Project Team

The following multidisciplinary team has been engaged by the development proponent, Qube Property Limited to progress the preparation of this draft Structure Plan:

DISCIPLINE	CONSULTANT
Planning and Urban Design	Rowe Group
Aboriginal Cultural Heritage	Urban plan
Bushfire Management	MBS Environmental
Engineering Services	JDSI consulting engineers
Environmental	PGV Environmental
Hydrological	Pentium Water
Landscape Masterplan	Considered Space
Movement Network	PJA

Table 3: Project Team

# 2. Site and Context Analysis

## 2.1. Physical Context

### 2.1.1. Location

Precinct 8, Ranch Road is located along the western boundary of the broader East Wanneroo DSP area, bound by Coogee Road to the north, Pinjar Road and Mornington Drive to the west, with Mariginiup Road to the east. The land is located approximately 27km north of the Perth Central Area, adjacent to the existing residential areas of Ashby, Tapping and Banksia Grove within the City of Wanneroo.

Refer **Figure 2 – Regional Location and Figure 3 – Local Context**.

### 2.1.2. Surrounding Area and Land Uses

The Structure Plan area comprises 39 lots with a total land area of approximately 262 hectares. Approximately one third of the Precinct is reserved for ‘Parks and Recreation’ which additional land comprising existing local road reserves. With these areas excluded the Precinct 8 net site area is 169.04 hectares. The majority of this land is held, or managed by a group of developers who are actively coordinating the organised planning and development of Precinct 8 in accordance with the aims and objectives of the EWDSP.

Refer to **Figure 5 - Precinct 8 Landowners Group**.

Extensive clearing of native vegetation within the Structure Plan area occurred during the 1970’s, continuing through into the early 1980’s. Current land use activity within the Structure Plan area is varied, with a variety of agricultural and associated land uses in operation including a number of market gardens. The poultry farm presently operating within part of Lot 39 Pinjar Road, will ultimately cease its operations and transition to the land use outcomes contemplated by this Structure Plan. Such uses are therefore not considered an impediment to the Structure Plan’s approval.

Existing land uses surrounding the subject site are varied. Land to the west is predominantly residential and contains a mixture of associated suburban uses and includes the Banksia Grove shopping centre which is located approximately 800m north-west of the site. Rural-residential lots are located to the north of the site's boundary with Coogee Road.

Land uses to the east are of a similar nature to that found within the Structure Plan area and contain a mixture of market garden and open paddocks. Mariginiup Lake occupies the majority of the site's southern boundary, which together Little Mariginiup Lake, and another small area 'Parks and Recreation' Reserve provide a natural boundary between Precinct 8 and the neighbouring EWDSP Precinct 7 to the south and Precinct 15 to the east.

The EWDSP proposes urban development for both neighbouring precincts, with Precinct 15 consisting of a higher density 'urban neighbourhood' surrounding the proposed Mariginiup Station and 'centre'. To the south, Precinct 7 is also proposed for urban uses, whilst the existing rural residential lots to the north (Precinct 9) of the site are proposed to be retained.

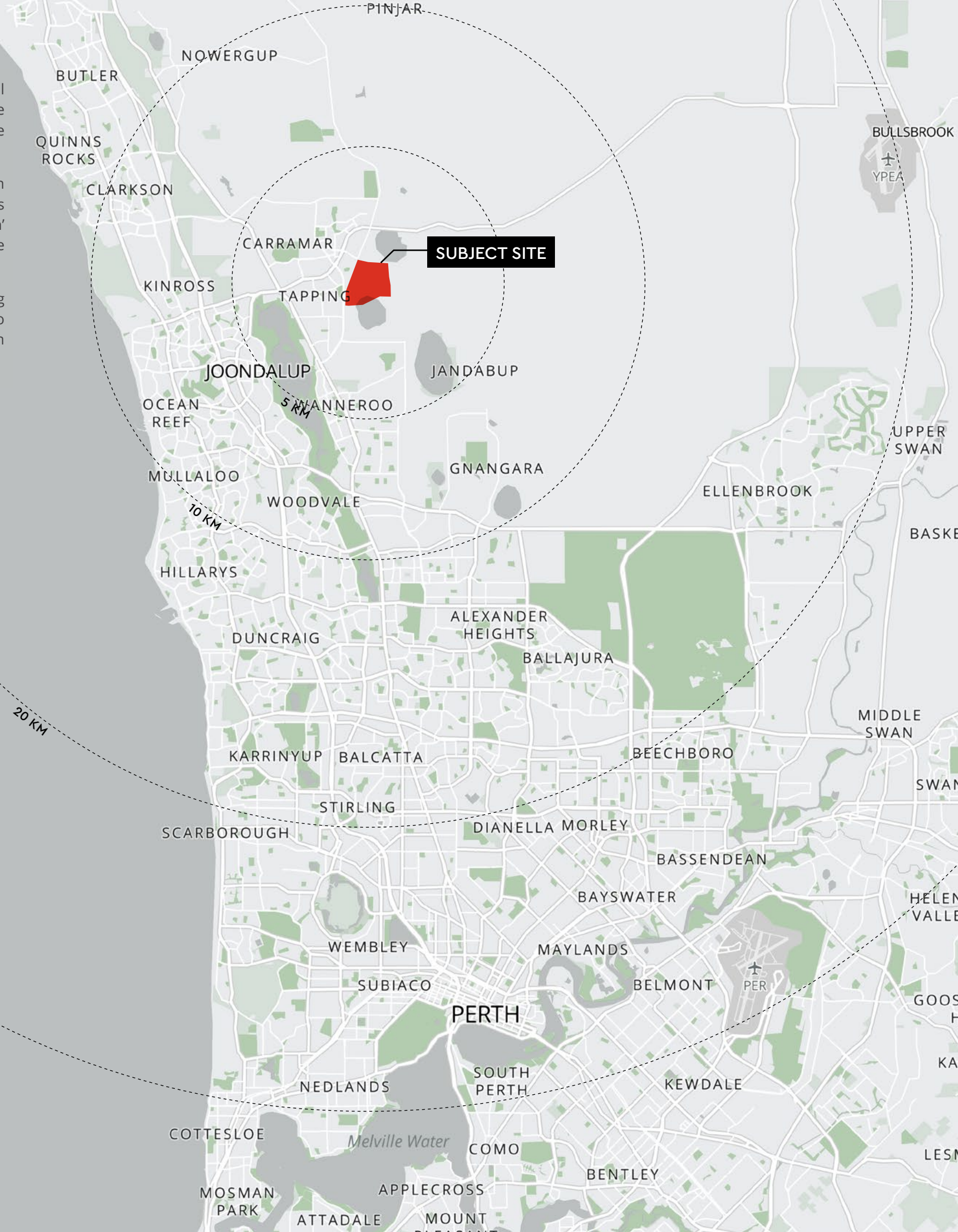


Figure 2 – Regional Location



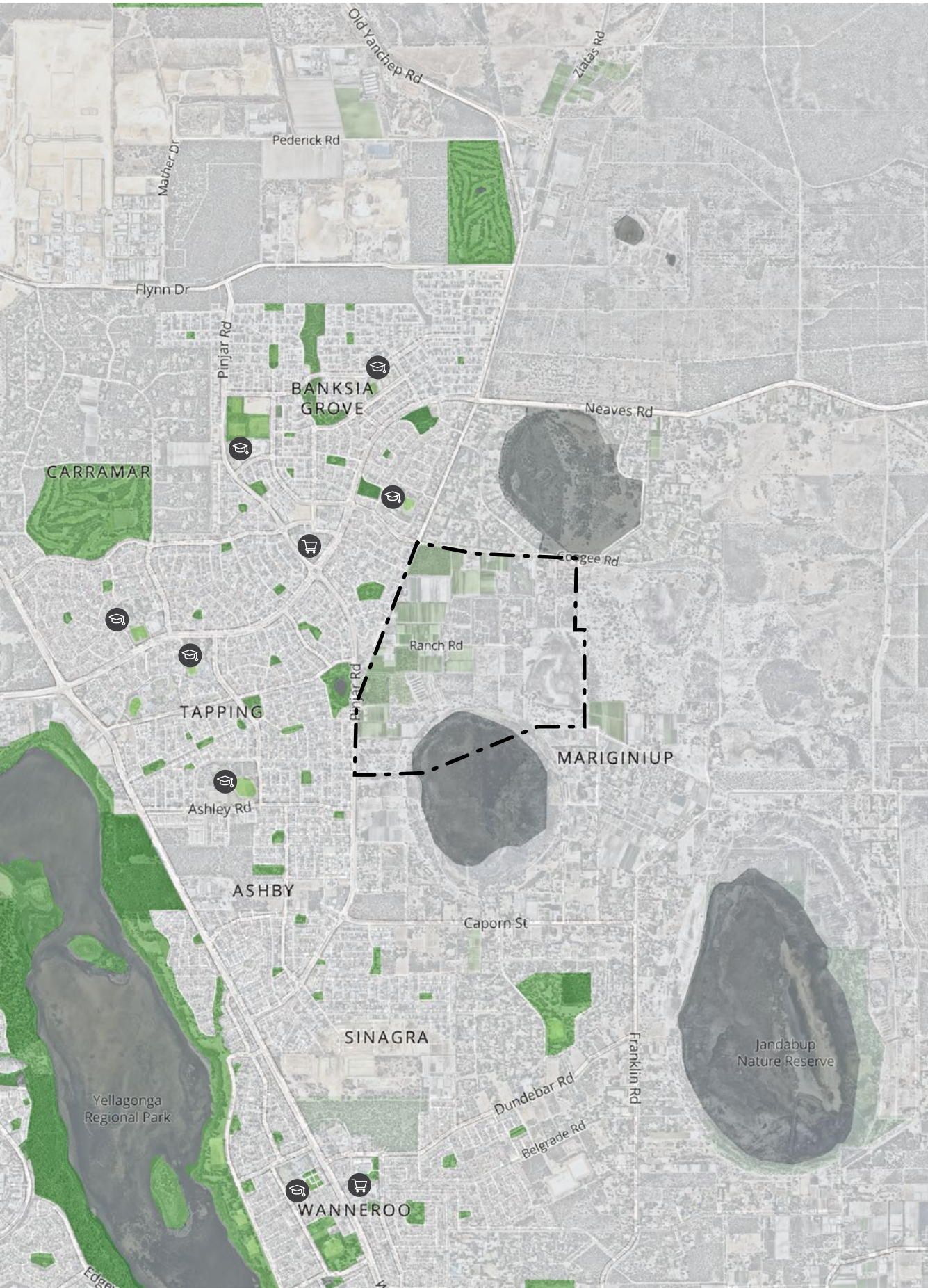


Figure 3 – Local Context

2.1.3. Tenure and Ownership

The Structure Plan comprises the following land parcels;

Lot Number	Address	Plan/ Diagram No.	Vol./Fol	Proprietor
3	118 Coogee Road	D055183	1551/466	Coogee Road Investments Pty Ltd
4	112 Coogee Road	D055183	1551/467	Mariginiup Investments Pty Ltd
6	110 Coogee Road	D060034	1610/394	Marion & Thomas Schad
23	104 Coogee Road	D089641	2057/438	Tangent 104 Coogee Pty Ltd
20	82 Coogee Road	D079588	2028/498	Qube Pinelake Development Pty Ltd
24	98 Coogee Road	D089641	2057/439	Jijiwa Holdings Pty Ltd
21	26 Pinelake Trail	D079588	1903/882	Sally Zanetic Edward Harken
7	62 Coogee Road	P013980	1629/762	Chrispi Investments Pty Ltd
102	40 Coogee Road	P029470	2520/389	Urban Capital Carramar Pty Ltd
101	32 Coogee Road	P029470	2520/388	Thanh Thinh Do, Thu van Thi Nguyen, Truc Kien Hoang
5	11 Mornington Drive	P013980	1629/760	Urban Capital Carramar Pty Ltd
4	39 Mornington Drive	P013980	1629/759	Urban Capital Carramar Pty Ltd
3	Mornington Drive	P013980	1851/672	Van Hua Tran Thuc Hue Ma
250	11 Ranch Road	P410648	2921/251	Duc Thanh Dinh, Le Thuong Do
251	55 Ranch Road	P410648	2921/252	Clive & Cheryl Stevens
8	91 Ranch Road	D073314	1797/718	Suk Mei Lau
22	101 Ranch Road	D079588	1903/883	Steven Loffman
19	111 Ranch Road	D075189	2050/793	Qube Pinelake Development Pty Ltd
100	113 Ranch Road	D087405	2050/792	Anja Annette Cherian
801	121 Ranch Road	P047697	2610/508	Stephen Neville Kevin Andrijich Ruth Andrijich
802	171 Mariginiup Road	P047697	2610/509	WA Planning Commission



Lot Number	Address	Plan/ Diagram No.	Vol./Fol	Proprietor
1	10 Ranch Road,	D071133	1771/849	Duc Thanh Dinh Le Thuong Do
2	26 Ranch Road	D072995	1787/772	Progress Developments Pty Ltd
3	46 Ranch Road	D072995	1787/773	John Marinovich Cheryl Susan Marinovich Brett John Marinovich Jaclan Nominees Pty Ltd Gian Trung Truyen
4	68 Ranch Road	D072995	1787/774	Aurora Staltari Silvana Staltari Graziella Staltari Giuseppe Staltari
5	56 Ranch Road	D072995	1787/775	Domenico Vincenzo Lenzo Gino Lenzo
6	100 Ranch Road	D073314	1797/716	Teresa Canciglia
7	90 Ranch Road	D073314	1797/717	Shirley Pui King Lau
10	112 Ranch Road	D073314	1797/720	Shirley Pui King Lau
11	102 Ranch Road	D073314	1797/721	WA Planning Commission
11142 / R40696	100I Ranch Road	D072995	LR3140/67	State of Western Australia
11142	100I Ranch Road	D073314	LR3140/68	State of Western Australia
14328	240I Pinjar Road		LR3125/368	State of Western Australia
1	274 Pinjar Road	P222778	1969/948	Thanh Thinh Do Thi Thu van Nguyen
303	274I Pinjar Road	D084523	1969/947	WA Planning Commission
2	264 Pinjar Road	P222778	2040/998	Globewest Corporation Pty Ltd
302	264I Pinjar Road	D088532	2040/990	WA Planning Commission
39	294 Pinjar Road	D025743	1241/916	Domenico Vincenzo Lenzo Gino Lenzo
41	252 Pinjar Road	P416012	2976/771	Douglas Jeffrey Quinn Antonia Christine Quinn
42	252I Pinjar Road,	P416012	2976/772	WA Planning Commission

Table 4: Cadastral Details

Refer to **Figure 4 - Site Plan** and **Figure 5 – Precinct 8 Landowners Group**.

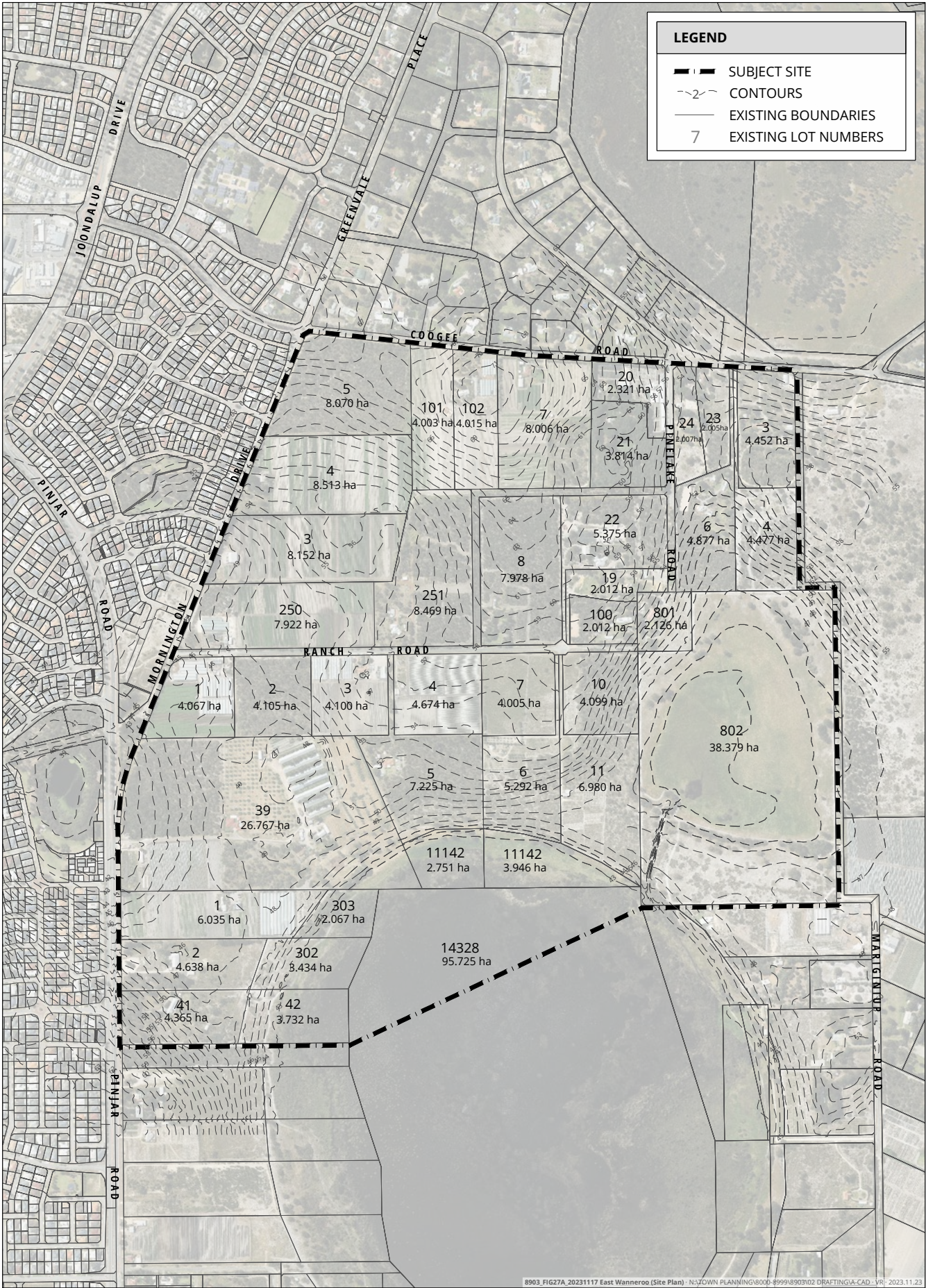


Figure 4 – Site Plan



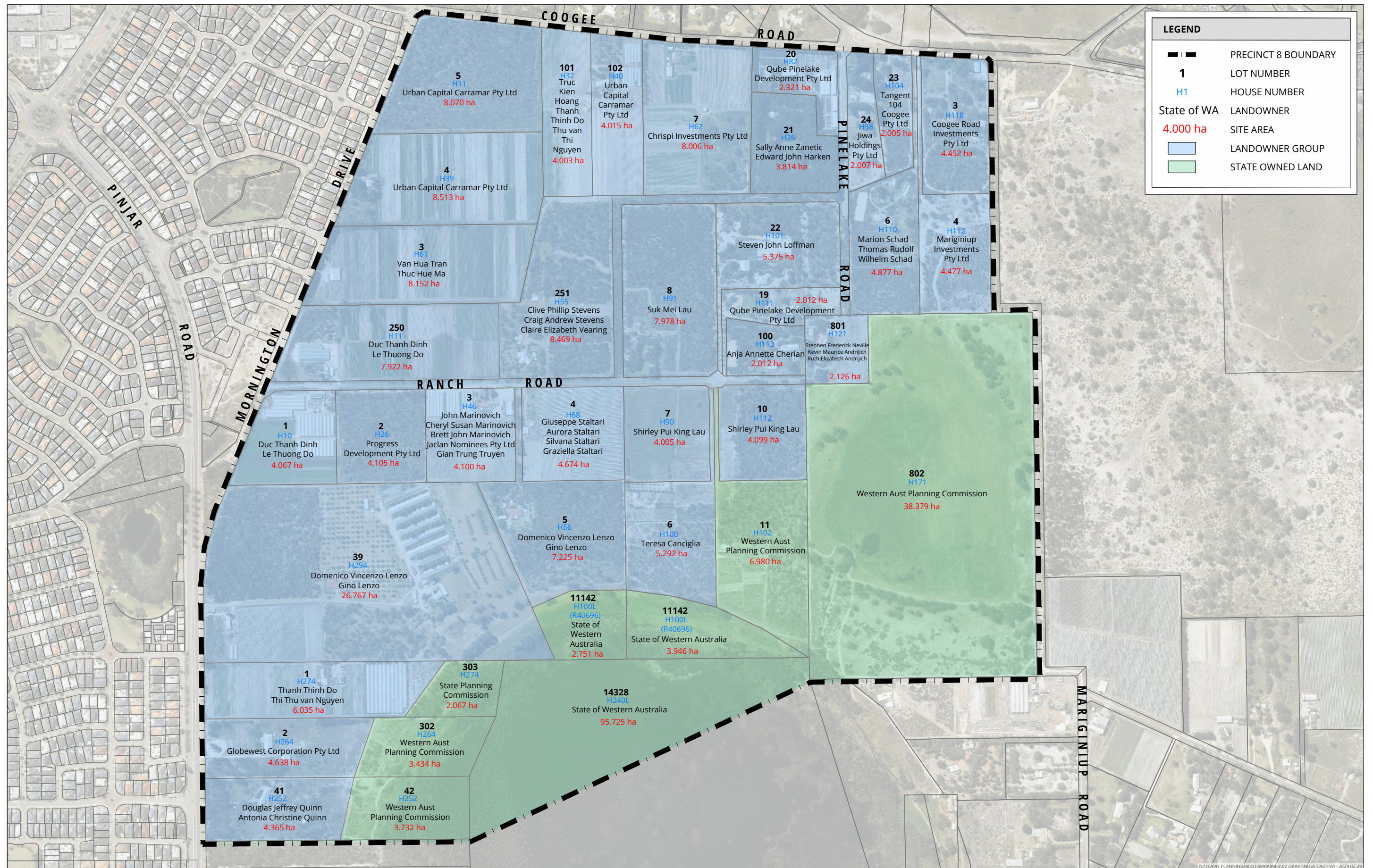


Figure 5 – Precinct 8 Landowners Group



2.1.4. Environment

2.1.4.1. Topography, Landform and Soils

The Structure Plan area gently slopes from its high point in the north at 72m Australian Height Datum (AHD), falling towards Mariginiup Lake and Little Mariginiup Lake in the south 42m AHD. Levels within the precinct generally fall from ridges along the sites northern and western boundaries towards the lakes to the south and east.

The site lies within the Spearwood System which has the highest relief of the dune systems within the Swan Coastal Plain. The site is characterised by Spearwood soils which consist of slightly calcareous Aeolian sand, with the system mapped described as Karrakatta Sand Yellow Phase.

2.1.4.2. Acid Sulphate Soils

The Department of Water and Environmental Regulation (DWER) Acid Sulphate Soil Risk Mapping, indicates that land identified for residential development by the Structure Plan is not subject to risk of acid sulphate soils.

Mariginiup Lake, Little Mariginiup Lake and their associated foreshores are identified as ‘High to moderate’ risk of ASS occurring with 3m of natural soil surface though no development is proposed within these areas.

2.1.4.3. Contaminated Sites

A review of DWER’s Contaminated Sites Database identified there are no registered contaminated sites within a 4 km radius of the Structure Plan area.

2.1.4.4. Groundwater and Surface Water

The subject site is situated on the Swan Coastal Plain and in the Wanneroo groundwater area. There are three groundwater sub-areas associated with the site: Wanneroo Confined, Mariginiup and Jandabup. This site is part of the Wanneroo groundwater system which comprises of the Unconfined Superficial aquifer, Confined Leederville aquifer and Confined Yarragadee aquifer.

Groundwater levels across the site are estimated to range from approximately 43mAHD on the eastern boundary of the site to 39m AHD in the south-westernmost corner of the site. Groundwater quality monitoring has found groundwater to be moderately acidic with high levels of nitrogen, potentially be a result of surrounding land uses where market farms highly populate the sites surrounding area.

Mariginiup Lake and Little Mariginiup Lake lie adjacent to the subject site. Surface water flows into these depression areas which are the only mapped natural waterways located within the broader Structure Plan area.

The Department of Biodiversity, Conservation and Attractions Geomorphic Wetland mapping identifies the following these lakes as wetlands within the Structure Plan area: UFI: 7953 Mariginiup Lake Conservation Category Wetland and UFI: 8161 Little Mariginiup Conservation Category Wetland. Both of these wetlands are reserved for ‘Parks and Recreation’ under the MRS with appropriate buffers provided.

Water quality results indicate that Mariginiup Lake is strongly acidic, with the average pH exceeding ANZECC (2000) Wetland guidelines for slightly – moderate disturbed ecosystems. All Total Nitrogen (TN) concentrations and the maximum Total Phosphorus (TP) concentration recorded at the lake exceeded the relevant guideline values. Ongoing sampling will be required in future development stages to ensure water quality is not further degraded by development.

Refer to **Figure 6 – Geomorphic Wetlands** and **Appendix 3 - Local Water Management Strategy**.

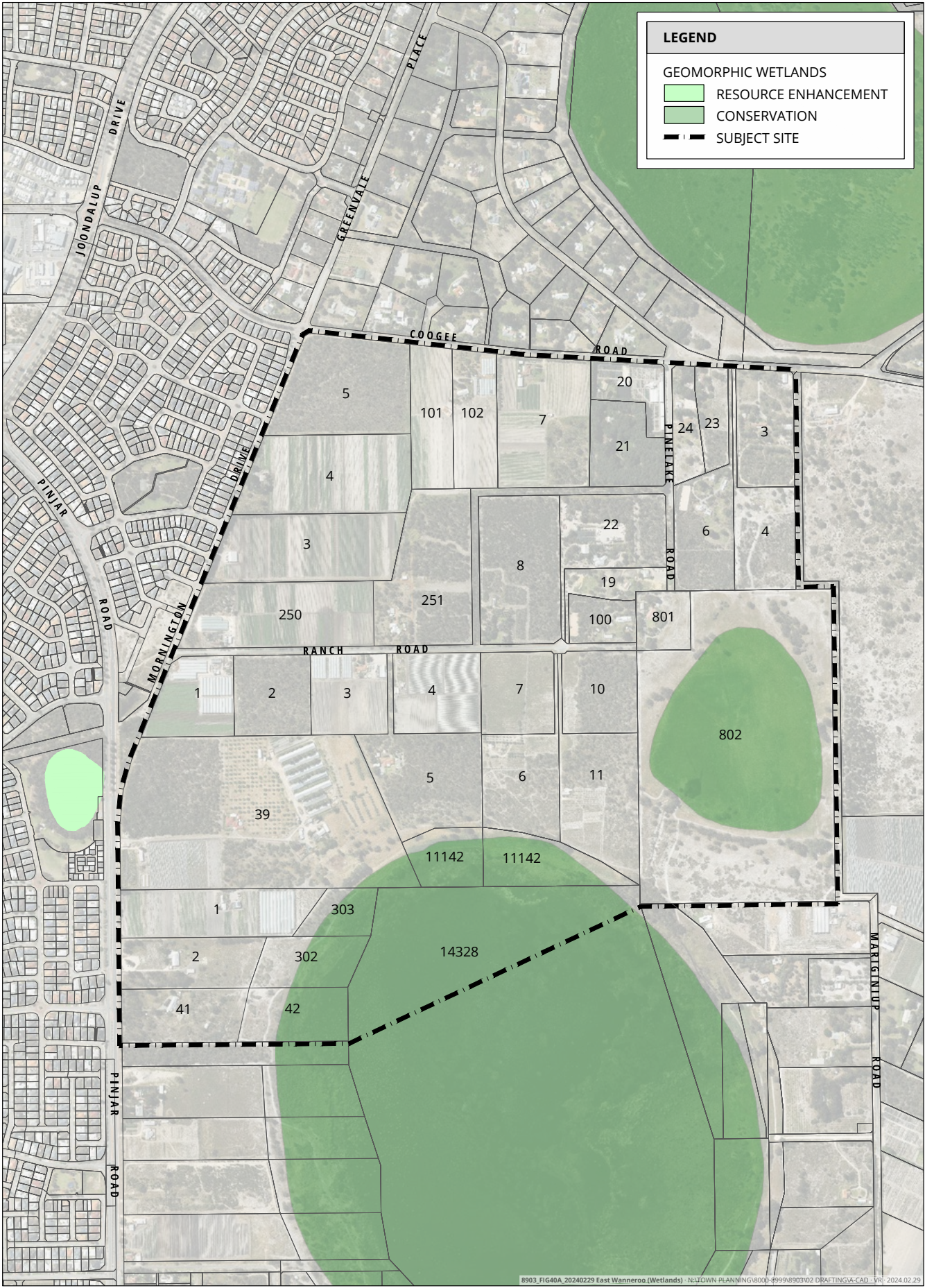


Figure 6 – Geomorphic Wetlands.



#### 2.1.4.5. Biodiversity and Natural Area Assets

##### 2.1.4.5.1. Flora and Vegetation

The subject site contains a variety of different land uses including market gardens and large lifestyle blocks. These land uses have resulted in the majority of lots being either fully, or partly cleared with very few environmental values, whilst lots with remnant vegetation or parkland have varying values. Detailed Flora and Vegetation surveys have identified a total of 275 flora species, of which 224 are native species and 56 (20.4%) are weed species. No significant species have been recorded on the site.

Vegetation within the precinct is split with the western part of the site part of the Karrakatta - Central and South Complex, with the vegetation on the eastern part of the site forming part of Pinjar Complex. Both of these complexes have greater than 10% remaining in the Metropolitan Region, and as such, are not considered regionally significant.

The condition of the remnants of intact native vegetation varies, however the majority of areas of remnant vegetation shows signs of disturbance, weed invasion and in some areas of potential dieback. There were no areas rated as pristine in the Structure Plan area.

FCT20a 'Banksia attenuata woodlands over species rich dense shrublands' is listed as a Critically Endangered Threatened Ecological Community (TEC) under State environmental legislation and is mapped on Lot 5 Coogee Road (not subject this amendment) and the northern part of Lot 2 Ranch Road. Vegetation on Lot 6 Coogee Road is likely to be representative of the Banksia Woodland TEC. Vegetation on a number of other lots was assessed and not found to meet the requirement to be the Commonwealth listed Banksia Woodland TEC

##### 2.1.4.5.2. Fauna

The Structure Plan area is mostly cleared with some fragmented remnants of vegetation that are generally open woodland habitats. This habitat is fragmented, much is impacted by invasive weeds and tracks and has limited connectivity. Therefore, the Environmental Assessment Report finds that there is likely to be a paucity of native mammals present as has been the case for most fragmented urban bushland remnants.

Endangered, conservation significant species identified as possibly present on the site by Emerge (2018) include Baudin's Carnaby's and Forest Red-tailed Black Cockatoos. No roosting or breeding by Black Cockatoo species have been recorded on the site with the nearest roosting is recorded approximately 1.4km to the north-east and 1.7km to the south-west.

#### 2.1.5. Physical Infrastructure and Services

An Engineering Servicing Report has been prepared in support of this Structure Plan by JDSI. The findings of the report are summarised below.

Refer **Appendix 2 – Engineering Servicing Report**.

##### 2.1.5.1. Sewer

The majority of the Structure Plan falls within an existing gravity catchment – the Pinjar Road Interim Wastewater Pump Station (WWPS) which has a design flow of 26.5 L/s. The balance of the site (eastern portion) will be serviced via a new WWPS. This will pump to the west and connect into the gravity sewer network that connects to the Pinjar Road WWPS. In addition to the proposed gravity sewer extensions (DN150 and DN225) it is expected there will be pump upgrades or reconfigurations to the existing Pinjar

Road WWPS to accept additional flows. Engagement with the Water Corporation's Headworks Delivery team will be undertaken to confirm funding and scheduling arrangements before the commencement of development.

##### 2.1.5.2. Water

Based on the WC EsiNET data, there is an existing 150P-12 water reticulation main running along the north side of Coogee Road and a 100P-12 water main located on the west side of Mornington Drive. A DN500 Steel main is also located on the western side of Mornington Drive which connects into the DN1000 Wanneroo Road – Yandella Promenade transfer main within Pinjar Road.

Appropriately sized water reticulation mains (DN100 - DN250) will need to be extended in a staged manner off the existing distribution mains that run along Pinjar Road (DN1000) and along Mornington Drive (DN500).

##### 2.1.5.3. Power

The total load for the ultimate development has been estimated to be 13.5MVA and has been calculated using Western Power's recommended Design After Diversity Maximum Demand (DADMD).

Existing HV Overhead and Underground network have been identified within the vicinity of the development, originating from the Wanneroo Zone Substation. Wanneroo Zone Substation is the existing bulk electricity supply with the closest point of connection to the development site, approximately 3km. Based on WP forecasts remaining capacity for 2028, it is estimated that 25-30MVA is available for this HV feeder for the Zone substation.

Based on the estimated load of the ultimate development, the site will require several HV feeders to cater for the anticipated 13.5MA. WP's design philosophy is that a single dedicated feeder should only be loaded up to 8MVA. Therefore, it is very likely that the development will require WP power network reinforcement/ augmentation. This will be identified and cost by WP, with the extent or works subject to network conditions at time of connection. Depending on the staging of the development, this may not be required immediately (ie at Stage 1).

##### 2.1.5.4. Telecommunications

Existing communication infrastructure provided by Telstra and NBN is currently available along Pinjar Road, Mornington Drive, Coogee Road, Mariginiup Road, Ranch Road and Pinelake Trail. It is anticipated that that this infrastructure will serve as connection points for the development of the Structure Plan area.

General communication services for the Site will consist of the installation of a standard pit and pipe network in accordance with NBNCo guidelines and standards. The pit and pipe system, and any internal cable routes, will be funded by the Developer with NBNCo funding the provision of installing cable into the Network Termination Device's (NTDs) or Communications Room located in the development.

##### 2.1.5.5. Gas

Existing gas networks are located adjacent to the site on Mornington Drive. Liaison with ATCO Gas is required to confirm whether this existing service is sufficient to service the proposed development. Reticulated gas is not considered to be an essential service and as such is generally not required as a condition of development. If the Developer wishes to connect to reticulated gas an extension to the nearest high-pressure main will be required. For commercial developments the cost of gas reticulation is typically borne by the Developer, however financial agreements can be arranged if gas usage is expected to be high.



2.1.6. People Movement

A detailed review of the existing movement network has been undertaken through the preparation of a Transport Impact Assessment ('TIA') by PJA, a summary of which is outlined below.

Refer to **Appendix 4 -Transport Impact Assessment**.

2.1.6.1. Existing Movement Network

The site is bound by Pinjar Road, Mornington Drive and Coogee Road. The current internal road is limited with partial access into the site provided by Ranch Road and Pinelake Trail. Pinjar Road immediately bounds the western boundary of the site at the south-western corner, providing access to Joondalup Centre and the Mitchell Freeway via Joondalup Drive. Both Pinjar Road and Joondalup Drive are Distributor A Roads (Main Roads WA Road Hierarchy) and are subject to a 70km/h speed limit. Joondalup Drive and Pinjar Road meet at a large 4-arm roundabout intersection which is priority controlled and forms a key strategic route for the area.

Coogee Road and Mornington Drive are categorised as a Local Distributor Roads (Main Roads WA Road Hierarchy). Both are single lane, two-way carriageways with minimal separation or hatching between the two lanes. Coogee Road and Mornington Drive meet at a 4-arm roundabout intersection which is located at the north-western corner of the site. Coogee Road continues east adjacent to the northern boundary of the site, and via Adams Road, eventually connects to Neaves Road (State Route 85 and Tourist Route 359).

Mornington Drive is subject to a 50km/h speed limit, default for a built-up area and connects with Ranch Road to provide access to the subject site. Pinelake Trail provides access to eastern portion of the Structure Plan area via Coogee Road. Both Pinelake Trail and Ranch Road are classified as Access Roads.

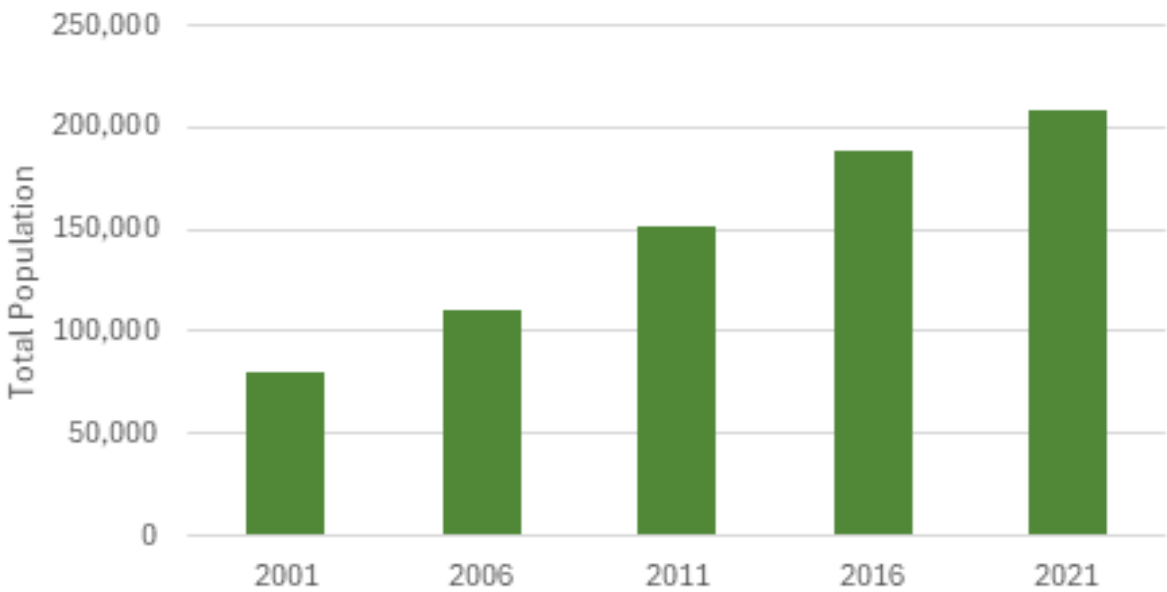
2.2. Community Context

2.2.1. People

The population of the City of Wanneroo has grown almost threefold over the past twenty years, increasing from 80,000 in 2001 to 209,000 in 2021. Whilst the population of Mariginiup has remained fairly stable during this period, its population is set grown substantially with the implementation of the EWDSP anticipating a future population of 150,000 for the broader East Wanneroo area.

The median age within Mariginiup is 43 years, which is significantly higher than the median age across the rest of Wanneroo (35 years), and slightly higher than the WA and national median age of 38. The proportion of families without children within Mariginiup is slightly higher than the Wanneroo average and the number of single parent families significantly less than the Wanneroo and state average.

City of Wanneroo, Total Population 2001 – 2021



Source: Australian Bureau of Statistics: QuickStats

Statistic	Mariginiup	City of Wanneroo	Western Australia	Australia
Population	876	209,111	2,660,026	25,422,788
Median Age	43	35	38	38
People per Household	3.1	2.8	2.5	2.5
Median Weekly Household Income	\$2,222	\$1,894	\$1,815	\$1,746
Family Composition				
▪ Couple family without children	42.3%	31.3%	38.8%	38.8%
▪ Couple family with children	48.5%	50.1%	44.6%	43.7%
▪ One parent family	9.2%	17.2%	15.1%	15.9%

Table 5: Population Profile



2.2.2. Housing

Housing within Mariginiup generally consists of large, single-family homes, with the average number of bedrooms per dwelling of 4.1, significantly higher than both the City of Wanneroo and Western Australia average. Perhaps reflective of this housing stock, which also typically occupies large, rural residential style lots, the percentage of households within Mariginiup spending more than 30% of their income on mortgage repayments is significantly higher than both the City and State average.

Statistic	Mariginiup	City of Wanneroo	Western Australia	Australia
Dwellings (Private)	285	78,029		
Dwelling Occupancy				
Occupied	93.5%	94%	89.1%	89.9%
Unoccupied	6.2%	6%	10.9%	10.1%
Dwelling Structure				
Separate House	97.3%	92.1%	79.7%	72.3%
Semi Detached, Townhouse, etc	0%	7.1%	13%	12.6%
Flat or Apartment	1.2%	0.4%	6.5%	14.2%
Ave No of Bedrooms (Dwelling)	4.1	3.6	3.3	3.1
Rental Stress (over 30% income)	26.1%	33.3%	28.3%	32.2%
Mortgage Stress (over 30% income)	23.1%	15.7%	14.9%	14.5%

Table 6: Housing Profile

2.2.3. Economy

The local economy in Mariginiup is closely associated with agricultural industries with the proportion of people employed in vegetable growing and gardening services well above Western Australia and national averages. Workforce participation rates remain generally consistent with rates across WA and nationally, however, the workforce participation rate is slightly less than that of the City of Wanneroo, perhaps reflective of the higher median age.

Statistic	Mariginiup	City of Wanneroo	Western Australia	Australia
Workforce Participation	64.7%	68.1%	63.9%	61.1%
Industry of Employment				
Hospitals (except Psychiatric Hospitals)	3.5%	4.0%	4.2%	4.5%
Electrical Services	3.3%	-	0.9%	0.9%
Vegetable Growing (Outdoors)	3.1%	-	0.1%	0.1%
Gold Ore Mining	2.4%	-	1.3%	0.2%
Gardening Services	2.4%	-	0.4%	0.4%

Table 7: Economy Profile

2.2.4. Culture, Values and Identity

A Local Sense of Place (‘LSoP’) has been prepared for Precinct 8, reflective of the vision and aspirations for the precinct as set out by the East Wanneroo District Sense of Place Statement (‘DSoPS’) and the East Wanneroo District Structure Plan (‘EWDSP’). Refer to **Appendix 9 – Sense of Place Statement**.

2.2.4.1. Local Identity

The City of Wanneroo is one of the fastest growing and largest local government authorities in Australia and is characterised by a diverse mix of urban, rural and industrial land uses, as well as significant areas of coastline, natural bushland, wetlands and state forest.

Mariginiup, as part of the broader East Wanneroo area, contains a mix of market gardens, equestrian activities and rural residential properties. However, the area is in transition and has long been identified for residential development, with the East Wanneroo District Structure Plan setting out plan to provide 50,000 homes to serve a population of 150,000.

2.2.4.2. History and Heritage

Mariginiup is an Aboriginal name said to possibly mean “to pull out flag leaved flax” and translates as a place for food gathering. The suburb is named after Mariginiup Lake, which was recorded by surveyors in 1844, and in 1904 a townsite was declared. The importance of the area for food production is further signified by the historical agricultural land uses and market gardening activities that have taken place within the locality. Other rural land uses have also left their mark with equestrian activities providing a network of bridal ways north of Precinct 8. More recently, the 2023 Wanneroo bushfire destroyed a number of homes and farm buildings within Mariginiup in November 2023.

2.2.4.3. Aboriginal Cultural Heritage

A search of the Department of Planning Lands and Heritage’s Aboriginal Heritage Inquiry System identified one (1) registered site and one (1) other heritage place within the development precinct:

- a) Aboriginal site 3741 – Lake Mariginiup
- c) 28616 Lake Mariginiup Scarred Tree (Other Heritage Place)

In addition to its listing on the Aboriginal Heritage Inquiry System, Mariginiup Lake is also identified as local heritage site by the City of Wanneroo for its importance as an Aboriginal Site.

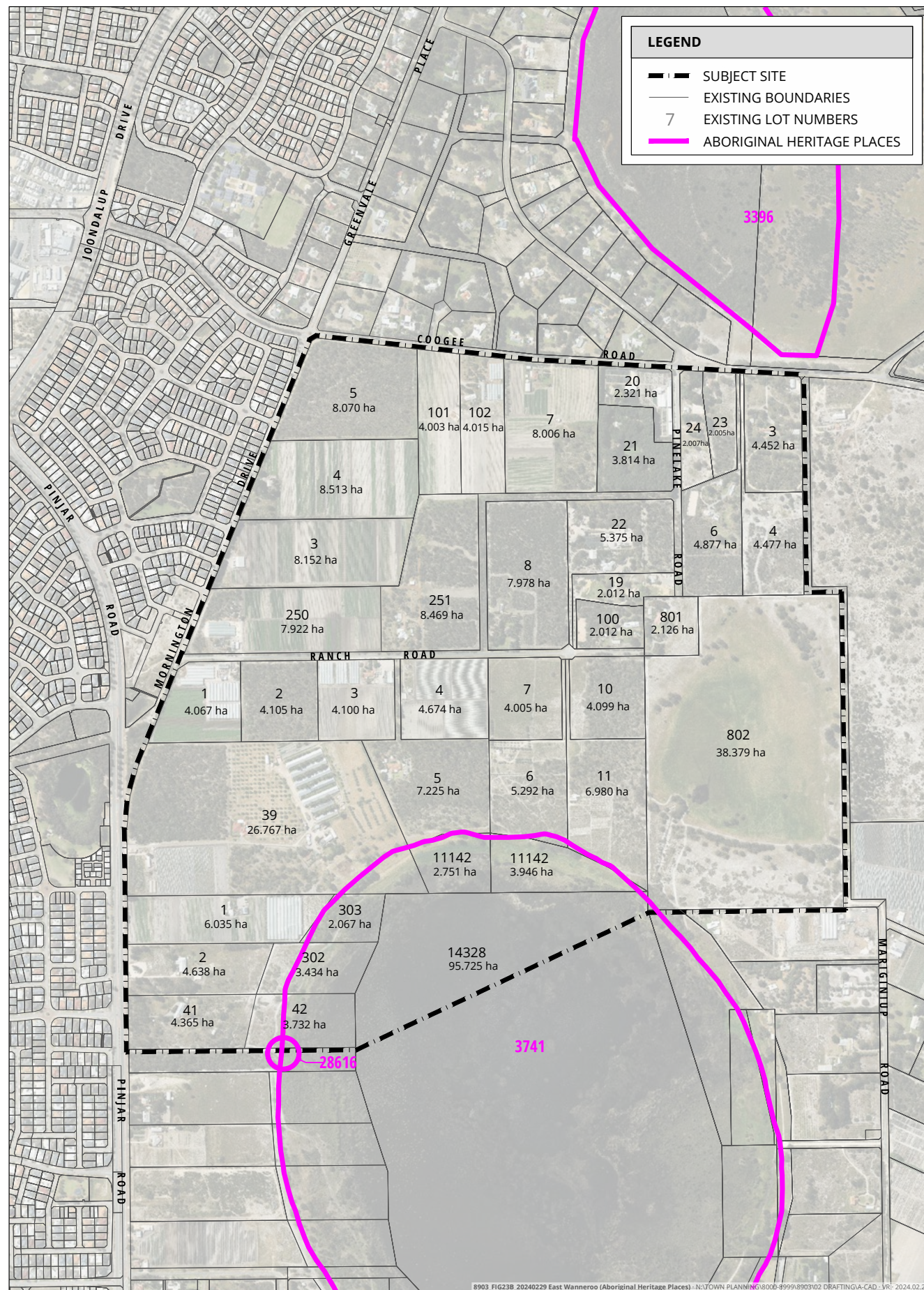
Both Lake Mariginiup (3741) and Lake Mariginiup Scarred Tree (28616) are located within existing Parks and Recreation Reserve and are therefore unaffected by the development of the precinct. In recognition of the cultural heritage within the precinct, this Structure Plan is supported by an Aboriginal Cultural Heritage Due Diligence Assessment – refer to **Appendix 6** which identifies opportunities to celebrate cultural heritage through attractive walking trails, information signs, landscaping and the naming of places.

Refer to **Figure 7 - Aboriginal Heritage Places**.

2.2.4.4. European Heritage

A search using the State Heritage Office ‘inHerit’ portal found no places listed within the State Register of Heritage Planes, local government inventories or other lists either within or adjacent to the Structure Plan area.





## 2.2.4.5. Community Values

In preparation of the *City of Wanneroo, Strategic Community Plan 2021-2031* the City undertook a range of community surveys, workshops and consultation to engage with the local Wanneroo community and establish a high-level vision for the City. Key themes identified through the community consultation process included:

- Future Growth - Building a thriving Wanneroo
- Sustainability - Protecting environmental assets
- Economic Development - A resilient and diverse economy
- Community - A citizen-centric Wanneroo
- Innovation - Future thinking and opportunity seeking

These community aspirations closely align with both the Structure Plan objectives and its urban design principles.

Figure 7 – Aboriginal Heritage Places



### 2.2.5. Social Infrastructure and Services

Existing community infrastructure and facilities within the East Wanneroo catchment as identified by the draft East Wanneroo Facilities Plan (2019) includes the following:

Suburb	Facility	Catchment
Banksia Grove	Banksia Grove Community Centre	Local
	Grandis Park Sports Amenities Building and Park Playing Fields	District
	Banksia Grove Skate Park	District
	Peridot Park Playing Fields and Hard Courts	District
Carramar	Carramar Community Centre	Local
	Houghton Park Sports Amenities Building and playing field	Local
	Houghton Park BMX track	Local
Tapping	Jimbub Reserve – playing field	Local
Ashby/Sinagra	-	-
Wanneroo Skate Park Wanneroo	Wanneroo Community Centre	District
	Wanneroo Skate Park Wanneroo	District
	Showgrounds (Sports Amenities Building and Playing Field)	District
	Edgar Griffiths Park - Sports Amenities Building and Playing Field	Local
	Lake Joondalup Park - Sports Amenities Building and Playing Field	Local
	Scenic Drive playing field	Local
	Rotary Park Playground	Regional
	Wanneroo Library and Cultural Centre	Regional
	Wanneroo Aquamotion	Regional
Hocking/ Pearsall	Pearsall Hocking Community Centre	District
Madaley	Kingsway Regional Sporting Complex	Regional
Darch	-	-
Landsdale	Warradale Community Centre	Local
	Warradale Sports Amenities Building and Park Playing Field	Local
	Warradale BMX track	Local

Table 8: East Wanneroo Existing Community Facilities

The draft East Wanneroo Facilities Plan identities a number of future facilities based on population growth estimates and a catchment analysis with the provisions of facilities met through the District Development Contribution Plan. The application of developer contributions to fund the above infrastructure is discussed further under section 2.3.2 of this Report.





## 2.3. Governance Context

### 2.3.1. Zoning and Reservations

#### 2.3.1.1. Metropolitan Region Scheme

The majority of Precinct 8 - Ranch Road is currently zoned 'Urban Deferred' in the Metropolitan Region Scheme (MRS) except for Lot 5, Mornington Drive in the north-western portion of the Structure Plan area, which is zoned 'Rural'. Mariginiup Lake and Little Mariginiup Lake and their surrounding foreshores are reserved for 'Parks and Recreation'.

Land immediately to the west of the Structure Plan area is zoned 'Urban', with Pinjar Road identified as an 'Other Regional Road'. Land to south and east of the Structure Plan area is zoned 'Urban Deferred' whilst land to the north is zoned 'Rural'.

Refer to **Figure - 8 MRS Zoning**.

#### 2.3.1.2. City of Wanneroo District Planning Scheme No.2

The structure plan area lies within the City of Wanneroo DPS2. Excluding land reserved under the MRS, the land within Precinct 8 is zoned 'Rural' under DPS2. Land to the west of the Structure Plan is zoned a mixture of 'Residential' and 'Urban Development' with land to the north zoned as 'Rural Residential'.

Refer to **Figure - 9 City of Wanneroo District Planning Scheme**.

### 2.3.2. Development Contributions

A District Development Contribution Plan (DDCP) for the entirety of the East Wanneroo District Structure Plan area is currently being prepared to fund the acquisition of land and construction of integrator arterial roads, district level community infrastructure, groundwater management systems and wetland and foreshore management plans.

This Structure Plan is located within the planned East Wanneroo Development Contribution Area and is therefore ultimately expected to be subject to contributions in accordance with that DDCP. This is recognised in the Part 1 provisions.

No Local Development Contribution Plan is proposed for the Structure Plan. Key neighbourhood roads are equitably distributed and can be delivered by affected landowners either as road extensions or road widening. Similarly, the Structure Plan provides for the equitable distribution of public open space within 'sub-precincts' across the Precinct 8 area. Landowners are expected to provide key road and open space infrastructure in accordance with the Plan 1 – Structure Plan Map. Accordingly, a Local Development Contribution Plan is not required to facilitate infrastructure coordination. Where necessary, landowners may enter into individual agreements to assist in localised staging and delivery.

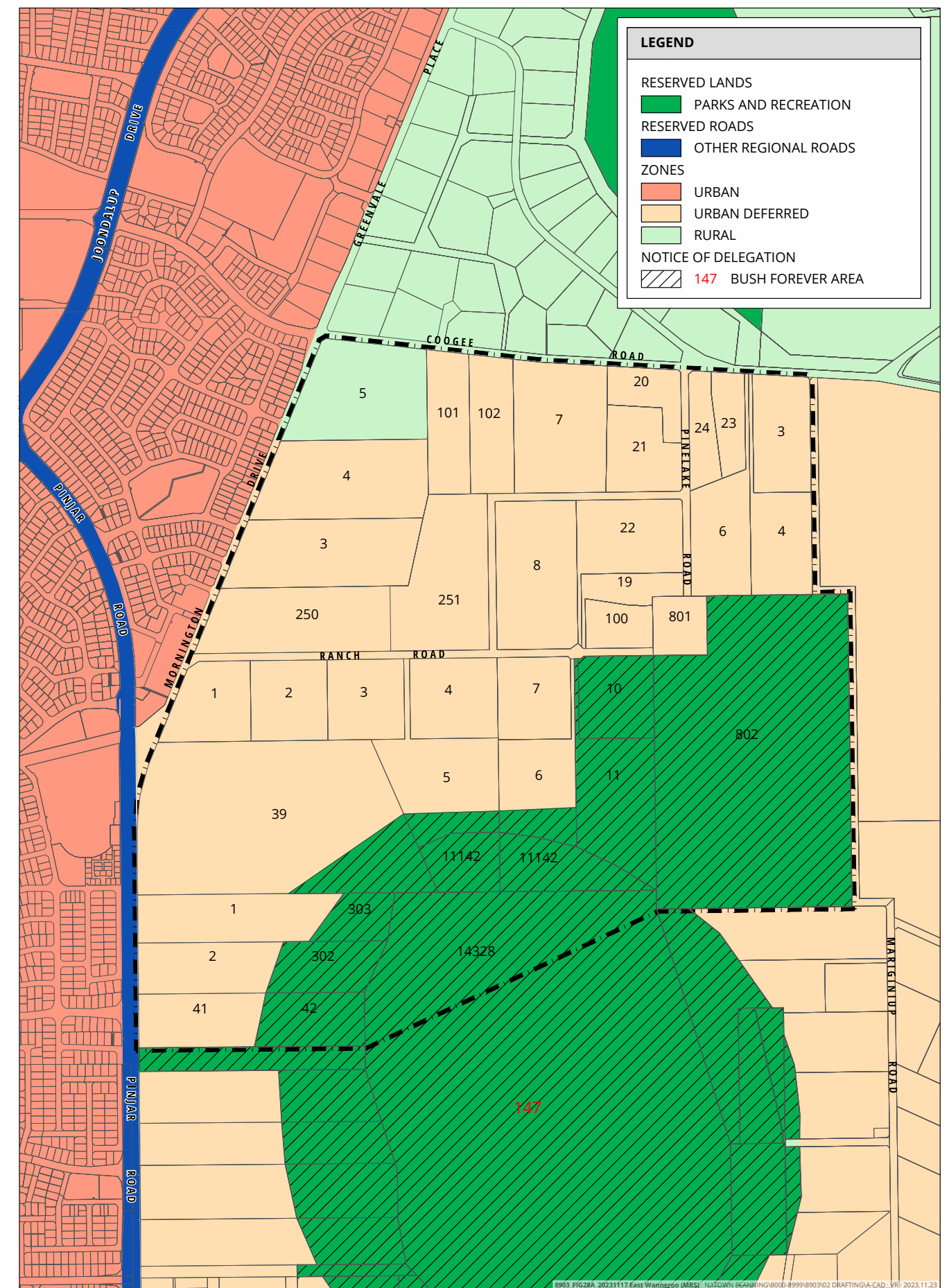


Figure 8 – MRS Zoning



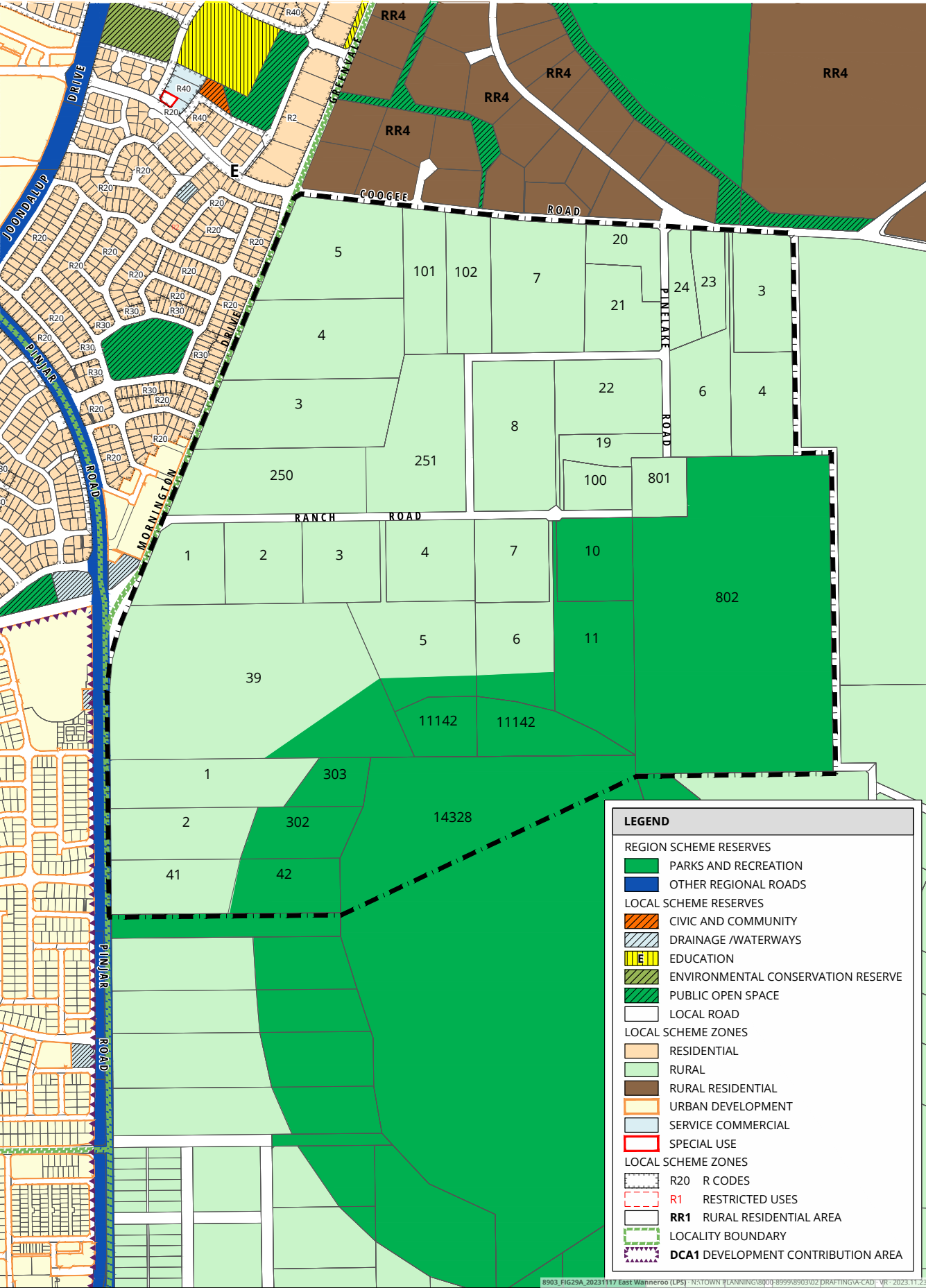


Figure 9 – City of Wanneroo District Planning Scheme

### 2.3.3. Planning Strategies

#### 2.3.3.1. Perth and Peel @3.5m, North-West Subregional Framework

The *Perth and Peel @ 3.5 Million (2018)* suite of documents provides a framework for the development of the Perth and Peel regions to accommodate a population of 3.5 million and sets out housing and employment targets for each of its four sub-regions. Wanneroo is located within the *North-West Sub-regional Planning Framework* which sets out plan to accommodate a predicted population increase from 322,490 people in 2011, to over 740,000 by 2050.

The *North-West Subregional Framework* identifies East Wanneroo for ‘urban expansion’ noting the area is ‘in close proximity to existing development and infrastructure within the Wanneroo locality and forms a logical consolidation of existing urban areas’. To enable development to occur, the Framework cites the need for further detailed planning work with investigations undertaken to protect environmental attributes, servicing, community and social infrastructure, movement networks and employment. At the ‘District’ level these investigations have been completed by the EWDSP which provides a framework for the coordination of land uses and infrastructure whilst also identifying areas that requiring further environmental investigation.

#### 2.3.3.2. City of Wanneroo Local Planning Strategy

In April 2023, the City of Wanneroo approved for advertising its first, draft Local Planning Strategy. The draft Strategy sets out a vision to accommodate an additional 150,000 people by 2041, taking the City’s population to 370,000, consistent with the WAPC’s *North-West Sub-Regional Planning Framework*, housing targets, activity centre hierarchy and infrastructure objectives. Building upon these aspirations the draft Strategy also outlines actions to protect the natural environment, facilitate green networks and increase urban tree canopy through a ‘place’ based land use planning approach.

More specifically for East Wanneroo, the Strategy sets out the following planning objectives:

Sense of place	Create an area that draws on its natural features, former land uses, culture and heritage to develop an enviable area in which people will want to live and visit.
Movement network	Enable people to move easily, efficiently and safely within and beyond the area through an extensive network of paths, parkland links, roads and public transport.
Design, landscaping and parkland links	Retain existing vegetation and provide additional landscaping to create a community recognised for its environmental attributes comprising linear parks or landscaped boulevards to promote continuous tree canopies and extensive landscaping.

Table 9: Local Planning Strategy Objectives

Consistent with the draft Planning Strategy, this Structure Plan proposes an urban layout that draws on its setting adjacent to Mariginiup Lake and Little Mariginiup Lake together with the other natural and heritage features located within and surrounding the Precinct to create an attractive residential community. The retention of bushland areas and provision of a network of public open space that includes parkland links will create development with a strong and distinctive sense of place.



2.3.4. East Wanneroo District Structure Plan

The East Wanneroo District Structure Plan (EWDSP) was adopted by the WAPC in August 2021, building upon the *Perth and Peel@3.5 million North-West Sub-regional Planning Framework* to set out a plan for East Wanneroo that provides 50,000 homes for 150,000 residents. The EWDSP vision is that,

*“East Wanneroo will be a place which offers housing and lifestyle choice for all generations, that supports, links and protects natural flora and fauna and wetland systems, and celebrates local historic and cultural values.”*

To support the achievement of its vision, EWDSP identifies a total of 28 individual development precincts which include a district centre and a mixture of urban neighbourhoods, suburban neighbourhoods, character areas, employment areas, as well as rural areas and state forest. Land subject to this Structure Plan is identified as Precinct 8, Ranch Road.

The development of the EWDSP is anticipated to occur in three broad stages which move progressively from west to east. Stage 1 is forecast to provide 10,000 dwellings between 2021-2031, Stage 2 provides 20,000 dwellings between 2031-2051 and Stage 3 provides 20,000 dwellings post 2051. The EWDSP identifies the development of the precinct as part of Stage 1 and notes that ‘*Precinct 8 is capable of being developed in the short term*’.

The EWDSP sets out a dwelling target of 2,300 lots for Precinct 8, with the development precinct characterised as a “*suburban neighbourhood carefully integrated with Parkland and well connected to the Lake Mariginiup foreshore.*” The EWDSP notes that remnant vegetation within the precinct is likely to warrant reservation as Parks and Recreation and that the management of the Mariginiup Lake foreshore must provide for the enhancement of the Pinjar vegetation complex.

As part of the Local Structure Plan process, the EWDSP identifies the following local structure plan outputs for Precinct 8:



Local Structrue Plan Outputs – Precinct 8 – Ranch Road

	Output	Relevant Section
Environment	<ul style="list-style-type: none"><li>Flora &amp; Fauna Survey</li><li>Foreshore Strategy</li><li>Wetland Buffer Assessment</li></ul>	<ul style="list-style-type: none"><li>Section 2 and Appendix 1</li><li>Appendix 8</li><li>Appendix 8</li></ul>
Movement	<ul style="list-style-type: none"><li>Road Cross Section (Neighbourhood connectors and Parkland links)</li><li>Integrator Arterial Noise Management Response</li></ul>	<ul style="list-style-type: none"><li>Appendix 7</li><li>Precinct not within SPP5.4 trigger distance of an Arterial Road.</li></ul>
Open Space	<ul style="list-style-type: none"><li>Bushland Interface</li><li>Foreshore or Wetland Interface</li><li>Stormwater Drainage Basin – Major Events</li></ul>	<ul style="list-style-type: none"><li>Section 2 and Appendix 1</li><li>Section 5.4.4 and Appendix 8</li><li>Section 5.5 and Appendix 3</li></ul>
Schools and Community Facilities	<ul style="list-style-type: none"><li>Primary School</li></ul>	<ul style="list-style-type: none"><li>Section 6.10</li></ul>
Activity Centres	<ul style="list-style-type: none"><li>Local Centre</li></ul>	<ul style="list-style-type: none"><li>Section 5.2.2</li></ul>
Miscellaneous	<ul style="list-style-type: none"><li>Buffers to Sensitive Land Uses</li><li>Bushfire Management</li><li>Staging</li><li>Aboriginal Heritage</li></ul>	<ul style="list-style-type: none"><li>Sections 2 &amp; 5 &amp; Appendices 1 and 8</li><li>Section 4.6 &amp; Appendix 5</li><li>Section 5.6.2</li><li>Section 2.2.4.3 &amp; Appendix 6</li></ul>
Development Contribution Items	<ul style="list-style-type: none"><li>Public Open Space</li></ul>	<ul style="list-style-type: none"><li>Section 6.3 and 6.13</li></ul>

Table 10: EWDSP Precinct 8, Local Structure Plan Outputs

The EWDSP identifies five land parcels as ‘Parklands subject to confirmation’. In accordance with environmental advice, the Structure Plan proposes areas of ‘Parklands’ for two of these lots, the northern portion of Lot 5 Coogee Road and the portion of Lot 2 Ranch Road above the 50m AHD contour which are identified as containing Floristic Community Type (FTC) 20a ‘Banksia attenuata woodlands’. ‘Parklands Subject to Confirmation’ status is retained for the relevant portion of Lot 6 Coogee Road, with public open space proposed for parts of Lot 39 and Lot 5 Ranch Road. As such, the Structure Plan provides for the protection a further 6.31 hectares of vegetation in addition to the 87.60 hectares of existing ‘Parks and Recreation’ reserves.

This Structure Plan addresses the key planning considerations identified by EWDSP facilitates the development of approximately 2,500 suburban lots and provides a centrally located primary school site.

Refer to **Appendix 1 Environmental Assessment Report** and **Figure 10 - East Wanneroo District Structure Plan**.







### 2.3.5.5. State Planning Policy 3.0 Urban Growth

The WAPC's State Planning Policy 3.0 ('SPP 3.0') was adopted in 2006 with the aim of facilitating sustainable patterns of urban growth and settlement across the State by building upon existing communities and promoting the development of sustainable and liveable neighbourhoods which reduce energy, water and travel demands.

In managing urban growth, the SPP states:

*"The orderly planning of urban growth and settlement should be facilitated by structure plans, which should take into account the strategic and physical context of the locality, provide for the development of safe, convenient and attractive neighbourhoods which meet the diverse needs of the community, and facilitate logical and timely provision of infrastructure and services"*

Consistent with the provisions of the SPP, the development of the Structure Plan forms a nature extension of the existing urban community and seeks to provide a range of lots which can accommodate different housing typologies. The Structure Plan area is located in close proximity to existing residential, commercial and employment uses and also to a proposed future public transport corridor.

### 2.3.5.6. State Planning Policy 3.7 Planning in Bushfire Prone Areas

The majority of the Structure Plan area is identified as a 'Bushfire Prone Area' and therefore subject to the provisions of *State Planning Policy 3.7 – Planning in Bushfire Prone Areas ('SPP 3.7')*. SPP 3.7 seeks to guide the implementation of risk-based planning to best mitigate the potential impact of bushfire on property and infrastructure. SPP3.7 is accompanied by the Guidelines for Planning in Bushfire Prone Areas version 1.4 (December 2021).

In accordance with the requirements of SPP 3.7 and the associated Guidelines, MB Environmental have completed a Bushfire Hazard Assessment (BHA) (refer to **section 4.6** and **Appendix 5 – Bushfire Hazard Assessment**). The BHA concludes that the proposed development is consistent with the aim and objectives of SPP 3.7 and the associated Guidelines and bushfire risks can be readily managed.

### 2.3.5.7. State Planning Policy 7.0 – Design of the Built Environment

SPP7.0 was gazetted in May 2019 and sets out the objectives, measures, principles and processes which apply to the design and assessment of built environment proposals. The SPP establishes a definition of 'good design' through ten design principles which include:

1. Responding to context and character
2. Recognizing landscape quality
3. Providing appropriate built form and scale
4. Balancing functional and built quality needs
5. Optimising sustainability
6. Providing amenity
7. Creating legible places
8. Optimises safety
9. Supporting community needs
10. Aesthetics – attractive buildings and places

These design principles have guided the preparation of the Structure Plan to ensure that the development of the Precinct provides a high quality built-form for its future community. Specific details of how the Structure Plan responds to the SPP's design objectives are set out in section 5.

### 2.3.5.8. Liveable Neighbourhoods

Liveable Neighbourhoods represents the WAPC's primary policy to guide the design and assessment of residential structure plans and subdivision. Liveable Neighbourhoods seeks to promote an urban structure based on walkable, mixed-use neighbourhoods with interconnected street patterns. It functions by drawing together key policy aspects into a single 'integrated planning and assessment policy' to provide for a performance-based approach to planning assessment.

Liveable Neighbourhoods identifies a series of objectives and requirements for structure plans that, when met, demonstrate compliance with the overall outcomes sought by Liveable Neighbourhoods. These objectives and requirements relate to items such as the layout of lots/housing, residential densities, road layout, open space provision, and urban water management.

Working with the site constraints, the Structure Plan has been prepared to satisfy the various objectives and requirements of Liveable Neighbourhoods, including road cross sections, to ensure subsequent subdivision design is also capable of satisfying the relevant criteria. Streetscapes throughout the Structure Plan will incorporate a variety of treatments in response to the road hierarchy system, cross sections detailing these treatments, consistent with the requirements of Liveable Neighbourhoods, are provided in the Landscape & Open Space Master Plan.

Refer to **Appendix 7 - Landscape & Open Space Master Plan**.



2.3.5.9. Operational Policy 2.4 Planning for School Sites

Operational Policy 2.4 Planning for School Sites, was adopted in December 2022 and requires one primary school (4 hectares) to be provided for every 1,500 dwellings, and one secondary school (8 hectares) for every four five primary schools. In accordance with these requirements, the EWDSP identifies the provision of one primary school within Precinct 8 and seeks to provide a high school site in the adjacent Precinct 15.

This Structure Plan satisfies these requirements by providing one, centrally located primary school site to service the development precinct consistent with the EWDSP. A large section of the northern portion of the Precinct is within 800m (10 minute walk) of the existing Banksia Grove Primary School which is accessible via a network of bridal ways.

Refer to **Figure 13 - School Catchment Plan**.

2.3.6. Local Planning Policies

2.3.6.1. LPP5.3 East Wanneroo

LPP5.3 was adopted by the City of Wanneroo in May 2022, to provide guidance on the consideration of planning proposals within the East Wanneroo District Structure Plan (EWDSP) area.

The LPP’s objectives are to ensure that development will not comprise the delivery of the EWDSP and ensure that the City’s ‘Place Framework’ is achieved. The LPP requires a ‘Sense of Place’ Statement to prepared and included as part of local structure plans following consultation with the City. These statements are required to outline how environmental and cultural assets will be protected and balanced against development objectives, to establish a sense of place aligned with the following principles:

- a) Context and character;
- b) Landscape quality;
- c) Built form and scale;
- d) Functionality and build quality;
- e) Sustainability;
- f) Amenity;
- g) Legibility;
- h) Safety;
- i) Community;
- j) Aesthetics

In November 2023, the City adopted changes to LPP5.3 that included the introduction of a District Sense of Place Statement for East Wanneroo and a series road cross-sections providing guidance on road design and landscaping requirements.

The District Sense of Place Statement has informed the Local Sense of Place Statement prepared in support of this Structure Plan, similarly, a Landscaping Masterplan has also been prepared consistent with the WAPC’s Liveable Neighbourhoods Policy and the aims of the LPP which seeks to provide a continuous tree canopy over footpaths.

Refer to **Appendix 9 – Local Sense of Place Statement and Appendix 7 – Landscape Masterplan**.

2.3.6.2. LPP4.1 Wetlands

LPP 4.1 was adopted in October 2022 with the objective of ensuring development appropriately protects and manages wetlands. The Policy requires a map illustrating the extent and classification of wetlands, a public open space schedule and concept strategy (including management framework) to be provided in support of Structure Plans and subdivision proposals. The LPP also notes a range of other information may also need to be provided, whilst also requiring wetland buffers to be determined in accordance with guidelines prepared by the WAPC and the DBCA.

In accordance with the information requirements of the LPP, please refer to;

- a) Figure 6 - Geomorphic Wetlands
- b) Appendix 8 - Wetland Buffer and Foreshore Strategy
- c) Section 6.3 - Public Open Space Schedule.
- d) Appendix 7 - Landscape Masterplan.

2.3.6.3. LPP4.3 Public Open Space

The City of Wanneroo’s LPP3.6 seeks to ensure that Public Open Space (POS) is delivered in a manner which optimises community benefit by providing a balance of spaces for sporting activities, recreation uses and natural areas.

The Policy includes a ‘Public Open Space Hierarchy’ with different scales of POS provided at local, neighbourhood and district levels. Details of how the Structure Plan’s network of POS responds to the LPP objectives are set out in section 6.3.

2.3.6.4. LPP 4.4 Urban Water Management

LPP4.4 seeks to ensure that development optimises the use and management of water resources consistent with State Planning Policy 2.9: Water Resources (WAPC, 2006) and Better Urban Water Management (WAPC, 2008). Consistent with the LPP’s requirements, a Local Water Management Strategy has been prepared in support of the Structure Plan. To ensure compliance with the strategy, the Structure Plan requires an Urban Water Management Plan (UWMP) to be prepared in support of subdivision proposals.

Refer to **Appendix 3. Local Water Management Strategy**.

A more detailed review and response to these and other policies will occur at subsequent subdivision and development stages.



3. Opportunities and Constraints Analysis

3.1. Analysis

The preparation of the Structure Plan has been informed by a detailed site analysis, supported by the various technical reporting. A SWOT (strengths, weaknesses, opportunities, threats) analysis is provided below.

For further information please refer to the following reports:

- Environmental Assessment Report, prepared by PGV Environmental (refer to **Appendix 1**)
- Civil Servicing Report, prepared by JDSI Consulting Engineers (refer to **Appendix 2**)
- Local Water Management Strategy prepared by Pentium Water (refer to **Appendix 3**)
- Bushfire Management Plan, prepared by MBS Environmental (refer to **Appendix 5**)
- Wetland Buffer and Foreshore Strategy prepared by PGV Environmental (refer to **Appendix 8**)



Strengths

- Strong sense of place closely linked with the sites natural features and in particular Mariginiup Lake and Little Mariginiup Lake.
- Pockets of remnant vegetation provide valuable habitat and an attractive natural backdrop.
- Rich Aboriginal Cultural Heritage.
- The site’s elevation location means it is unconstrained by high groundwater.
- The close proximity of existing infrastructure and services which include Banksia Grove retail centre and primary school.
- High level of cooperation and coordination between landowners.
- Availability of sewer and other key service infrastructure to facilitate early development



Weaknesses

- Limited existing public transport network surround the site.
- Current lack connectivity to Pinjar Road.
- Limited existing access and connectivity to Mariginiup Lake.



Opportunities

- Re-establishing ecological and cultural connectivity between Mariginiup Lake, Little Mariginiup Lake and Lake Adams.
- Establishing a walkable neighbourhood with attractive and convenient connections between residential and passive and active recreational areas.
- Creating a sustainable development that minimises need for imported fill and maximises lot orientation for solar gain and capturing cooling breezes.
- To provide leading servicing infrastructure, enabling the efficiency delivery of neighbouring development precincts.



Threats

- Limited sewer capacity to service adjacent development precincts and the potential reallocation of sewer capacity.
- Natural hazards including bushfire.
- Development timeframes constrained by finalisation of District DCP and potential impacts on housing affordability.

Table 11: SWOT Analysis

In addition to the above, the following considerations have been investigated by Structure Plan and are incorporated into the Opportunities and Constraints Plan, this includes:

- a) Existing and future land uses and transport corridors surrounding the site.
- b) Existing and planned utilities and infrastructure sites, buffers and corridors (including land required for water management).
- c) Regional and district open space and community infrastructure.

Refer to **Figure 11 - Opportunities and Constraints Plan**.





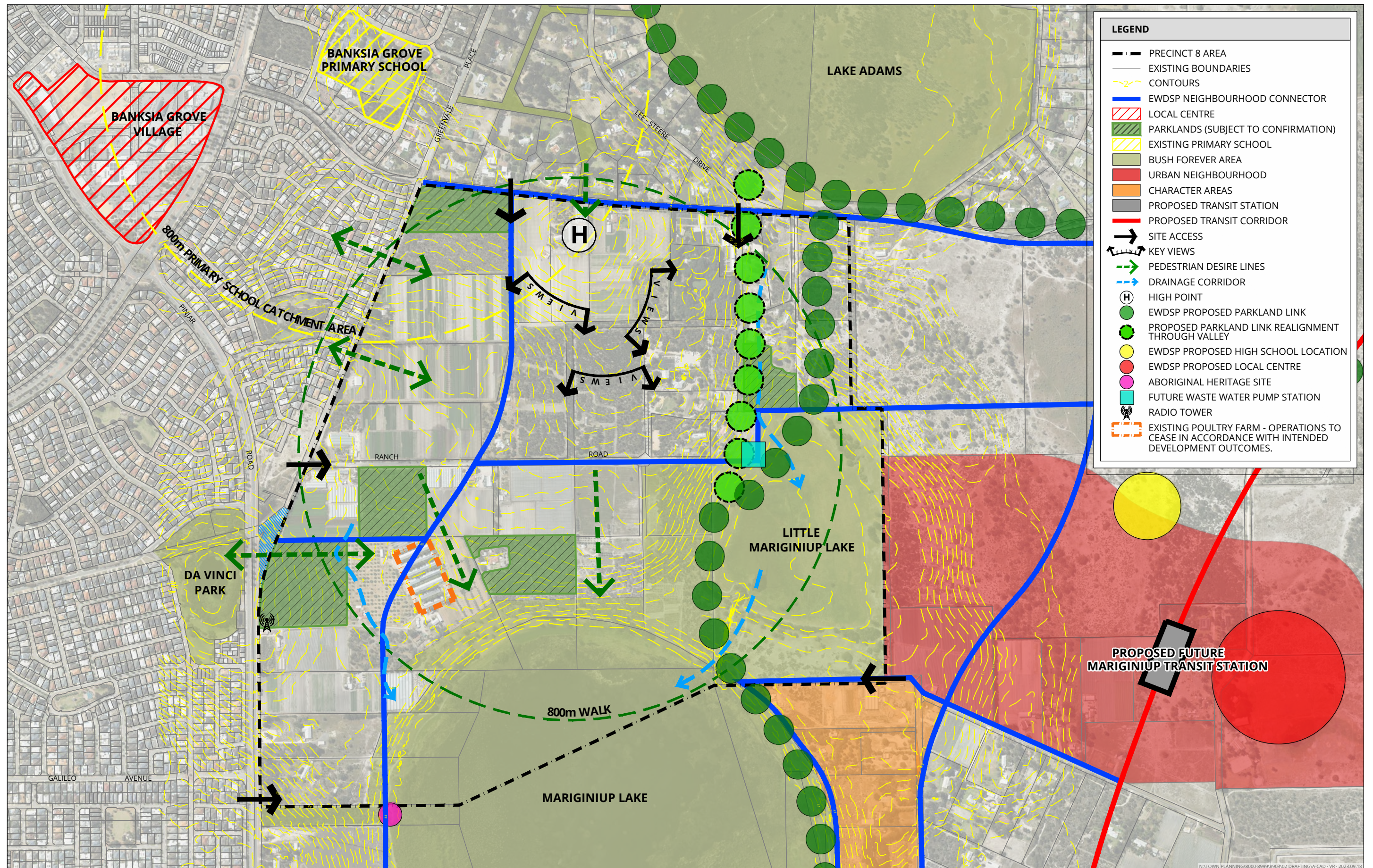


Figure 11 – Opportunities and Constraints Plan



3.2. Connectivity

Pinjar Road is located immediately west of the Structure Plan area, providing access to Joondalup Centre and the Mitchell Freeway via Joondalup Drive. Both Pinjar Road and Joondalup Drive are Distributor A Roads (Main Roads WA Road Hierarchy) and are subject to a 70km/h speed limit. Coogee Road and Mornington Drive are categorised as a Local Distributor Roads, with Coogee Road identified by the EWDSP as a ‘Neighbourhood Connector.’

In addition to the surrounding road network, a series of bridal ways north of Coogee Road provide potential attractive walking routes to Banksia Grove Primary School and Lake Adams from the subject site.

The Structure Plan proposes several access points to ensure the site is well-integrated to the existing surrounding area and neighbouring EWDSP local structure plan precincts as well as allowing the site to be permeable via all transport modes. Similarly, the proposed internal road network and public open space network have been designed to provide direct and attractive for routes for pedestrians and cycle connectivity.

A Transport Impact Assessment (TIA) has been undertaken by PJA Consultants in support of the Structure Plan and is enclosed at **Appendix 6**.



4. Stakeholder and Community Engagement

4.1. Pre-Lodgement Engagement

In preparation of this draft Structure Plan and MRS amendment request, the following consultation has been undertaken with the Department of Planning, Lands and Heritage, the City of Wanneroo and other agencies.

Date	Agency/ Stakeholder	Summary
28/2/23	City of Wanneroo & DPLH	Meeting to discuss the Structure Plan and the City’s ‘Place Making’ aspirations and the local and district planning policy framework.  Outcomes of the meeting helped inform the Structure Plan’s urban design and the response to key considerations such as environmental, heritage and water management.
18/8/23	City of Wanneroo & DPLH	Meeting to discuss the Structure Plan concept design and the urban design response to key considerations including: <ul style="list-style-type: none"><li>▪ The provision of public open space</li><li>▪ Landscape and streetscape treatments</li><li>▪ Foreshore and bushland management</li><li>▪ Access</li><li>▪ School site location and provision</li><li>▪ Infrastructure arrangements</li><li>▪ Structure Plan reporting and planning processes.</li></ul> The Structure Plan has been prepared in manner consistent with the advice provided by officers from the City of Wanneroo and the Department of Planning Lands and Heritage
23/10/23	City of Wanneroo, DPLH, DBCA, DoE, DWER, MRWA, & WAPC	East Wanneroo Technical Advisory Group (TAG) <ul style="list-style-type: none"><li>▪ Coordination of Precincts 7, 8 and 15</li></ul>
14/11/23	DPLH & Adjacent Precinct Landowners	Meeting to discuss coordination of development at the boundaries of Precincts 7, 8 and 15.

Table 12: Pre-Lodgement Consultation Summary



## 5. Design Response

### 5.1. Vision and Objectives

The subject site benefits from a high degree amenity as a result of its setting overlooking Mariginiup Lake and its close proximity to the existing Banksia Grove shopping centre, Joondalup centre and the proposed Mariginiup Centre and transit station. The lakes, together with the areas of natural bushland located within the development precinct provide a unique opportunity to create a distinctive and attractive residential community.

Consistent with the aims of the East Wanneroo DSP and the City's East Wanneroo Local Planning Policy and Sense of Place Statement, the urban design objectives guiding the preparation of the Structure Plan are to:

- a) Create an environmentally sensitive development, that retains areas of high-quality natural vegetation and existing topography to minimise the need for imported fill and fosters 'Water Sensitive Urban Design'.
- b) Promote an urban form and open space network that creates a unique sense of place that celebrates natural features within the site, maximising connecting to and between the lake system.
- c) Establish an efficient movement network that minimises traffic impacts on residential streets within the Structure Plan area and residential areas surrounding the site.
- d) Provide attractive walking routes with pathways that benefit from a high degree of shade and maximise the accessibility of public open space and the school site.
- e) Provide appropriate separation between residential areas and sensitive environmental areas and minimise the potential impacts of bushfire and flooding.

### 5.2. Urban Structure

In accordance with these principles, the Structure Plan layout has been carefully designed in manner responsive to the key environmental features of the site. The Structure Plan has been designed to maintain topography, minimising the need for imported fill and retaining, ensuring that natural drainage lines are retained and areas of public open space carefully located to maximise the retention of mature vegetation. Streets within the Structure Plan area are generally orientated north-south to maximise the sites elevated topography and viewing corridors towards of Mariginiup Lake and distant ridgeline views further to the south. The predominately north-south road network also enables the majority of lots to be orientated east-west in accordance with passive solar design principles, helping to create an environmentally sensitive development.

Landscaping of the movement network together with the interconnected public open space network provides attractive and direct linkages between residential areas, the school site and lakes. Similarly, the positioning of public open space and either side of Pinelake Trail together with landscaping treatments further enhance the 'Parkland Link' to re-establish connectivity between Mariginiup Lake, Little Mariginiup Lake and Lake Adams. Higher order roads are consistent with the DSP to maximise permeability whilst access street connections have been designed to limit through vehicle movements.

To enable the development of Structure Plan to respond to market demand, residential density code ranges are used with medium density codings subject to locational criteria set out in Part 1 to ensure that homes on these lots are situated in the most accessible areas of the Structure Plan. More specific details regarding the urban design response are addressed in the following sections.

### 5.2.1. Land Use and Density

The Structure Plan Map (Plan 1) outlines the 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 Wanneroo District Planning Scheme No. 2.

Gross Site Area	261.96 Hectares
Existing Parks and Recreation Reserves	87.60 hectares
Residential	97.25 hectares
Public Open Space	
Minimum unrestricted	17.97 hectares
Maximum restricted	1.33 hectares
Parklands (Proposed P&R reserves)	6.31 hectares
Drainage	1.20 hectares
Road Reserves	46.67 hectares
Primary School	3.5 hectares
Total Estimated Dwelling Yield	2,500 lots
Estimated Population*	7,000
*Based on average household size of 2.8 persons	
Note: All land areas subjected to detailed design at subdivision stage.	

Table 13: Land Use Summary

The Structure Plan (Plan 1) provides a range of residential densities to allow flexibility and adaptability at subdivisions stage ensure that evolving market expectations within the locality can be accommodated. The Structure Plan is supported by a Masterplan Concept which identifies medium density R30-R60 applied throughout the site. It is anticipated that the R30 density code will generally apply a base code with R40 and R60 density code in strategic locations, such as where lots abut public open space, are adjacent to transport links or frame the built-form.

It is anticipated that building heights within the Structure Plan area will be predominantly 1-2 storeys with development outcomes expected to remain consistent with the requirements of the Residential Design Codes. Where variations are required to facilitate particular development outcomes, it is likely that a Local Development Plan(s) will be implemented to guide built-form outcomes.

Refer to **Figure 12 - Indicative Concept Plan**.

In accordance with Liveable Neighbourhoods and Perth and Peel @3.5m density targets, the Structure Plan area shall provide for a minimum average of 22 dwellings per site hectare and 15 dwellings per gross urban hectare.

The proposed Structure Plan is anticipated to achieve a yield of approximately 2,500 single residential lots, which would be likely to accommodate a population of 7,000 based on the average number of 2.8 persons per household within the City of Wanneroo (ABS Census Data, 2021).



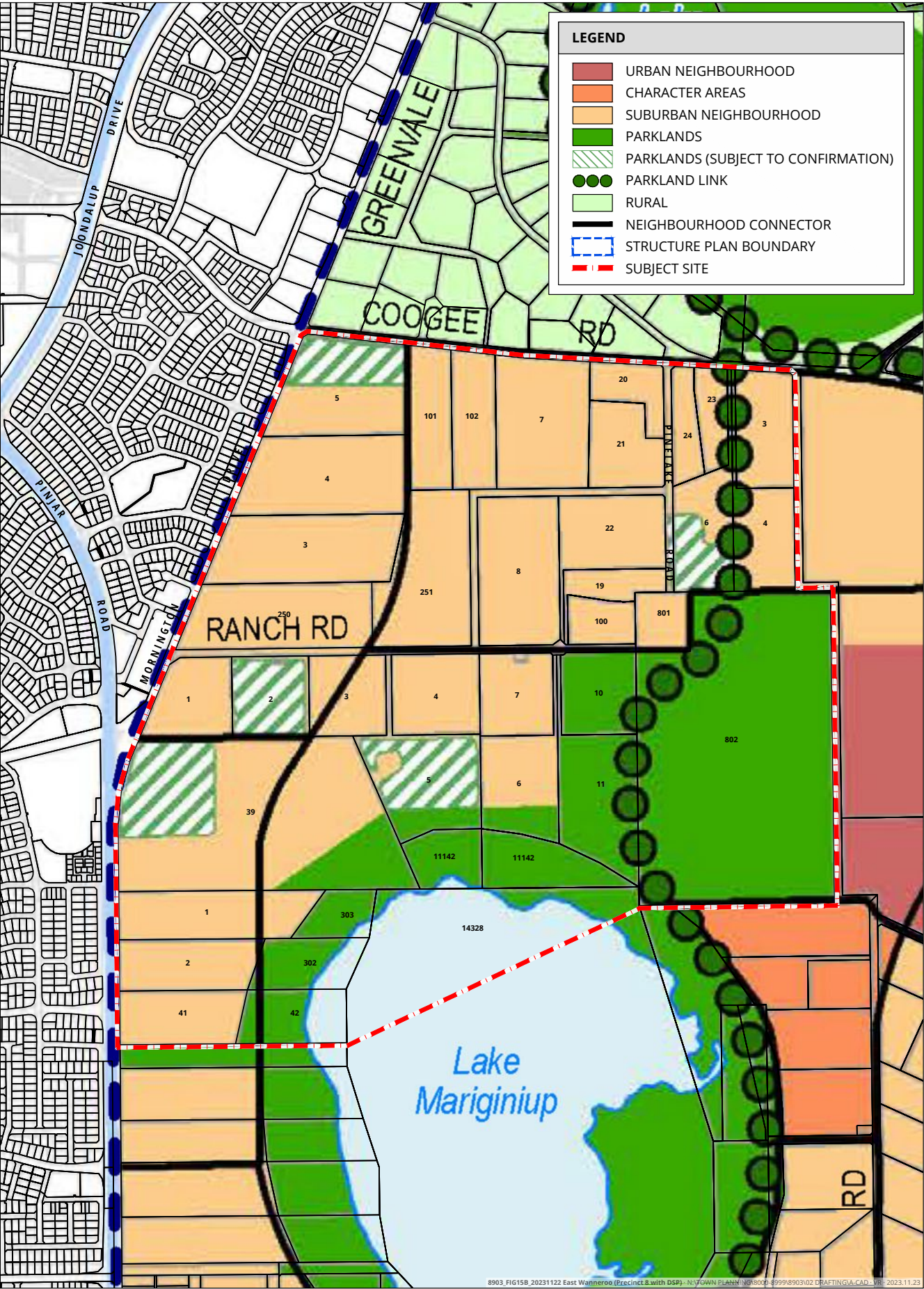


Figure 12 – Indicative Concept Plan

5.2.2. Schools

Consistent with the EWDS, the Structure Plan provides one primary school site, located centrally within the Structure Plan area. The proposed school site location ensures that the majority of the Structure Plan area is located within 800m (ten minutes’ walk) of the proposed school site.

A number of existing primary schools are situated within the local vicinity of the Structure Plan including Banksia Grove Primary School, Tapping Primary School and St. John Paul II Catholic Primary School. Given its close proximity, a large portion of the Structure Plan area lies within 800m of Banksia Grove primary school and is accessible via the network of bridal ways which extent north of Coogee Road.

Refer to **Figure 13 - School Catchment Plan**.

5.2.3. Activity Centres

The Structure Plan is well served by existing retail and commercial uses with the Neerabup (Banksia Grove) District Centre located approximately 1.5km away from the centre of the development precinct. A future centre is also proposed for ‘Central Mariginiup’ (Precinct 15) approximately 1.5km away. The close proximity of these adjacent centres, together with the suburban/low density nature of development within the Structure Plan area, limit the capacity of Precinct 8 to support any additional commercial activity.

5.2.4. Bushfire Management

The Department of Fire and Emergency Services (‘DFES’) online mapping system identifies the majority of the subject site as currently being ‘bushfire prone’. A Bushfire Hazard Level (‘BHL’) Assessment Report has been prepared by MBS Environmental demonstrating how a post development scenario would comply with the requirements of State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7).

The bushfire hazards within and adjacent to the subject site are readily manageable through standard management responses and compliance with acceptable solutions outlined in the Guidelines and AS 3959-2009 and SPP3.7.

Bushfire Protection Criteria	Proposed Bushfire Management Strategies
Element 1: Location	The post-development scenario for the Amendment Area is expected to demonstrate a moderate to low bushfire hazard, and capable of achieving a Bushfire Attack Level (‘BAL’) of BAL-29 or less (subject to future detailed design and bushfire mitigation strategy). In this regard, the development is consistent with the objectives of SPP 3.7.
Element 2: Siting and Design	Subdivision design ensures width is suitable to ensure radiant heat does not exceed 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances.
Element 3 Vehicle Access	The design of the subdivision provides a range of two way access options to the north, east, south, and west, with access available to Coogee Road, Mornington Drive, Pinjar Road and Mariginiup Road. When constructed, Mariginiup Road to the east will act as a perimeter road between Precinct 8 and Precinct 15.
Element 4: Water	The proposed development will be serviced by reticulated water supply.

Table 14: Bushfire Protection Criteria Compliance.



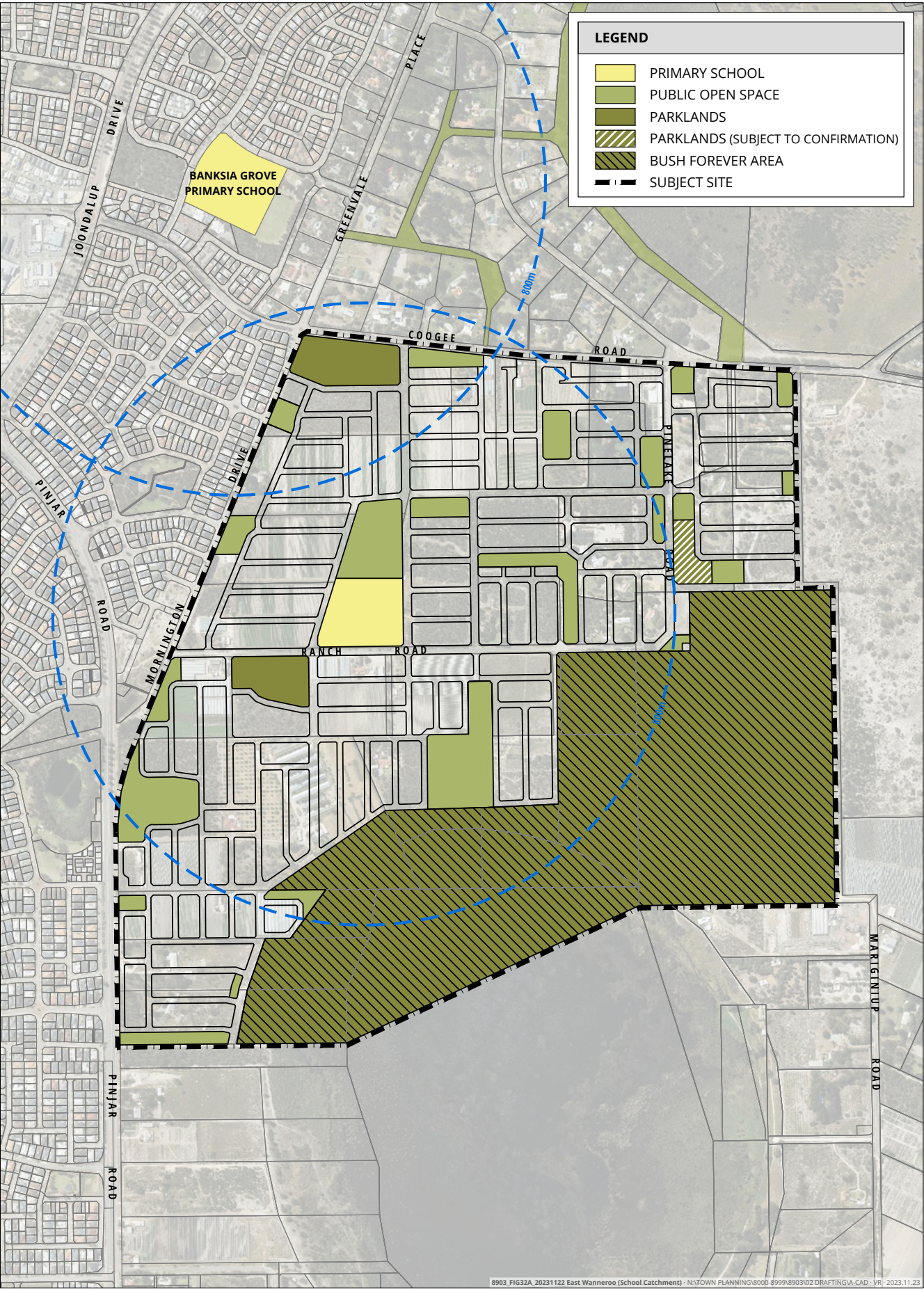


Figure 13 – School Catchment Plan

### 5.3. Movement Network

#### 5.3.1. Proposed Road Layout and Hierarchy

Several access points are proposed to allow the site to be permeable via all modes of transport and be highly integrated with both the neighbouring existing and future urban areas. Each access will accommodate vehicular traffic, as well as pedestrian and cycle movements and includes:

- Five vehicular accesses on the eastern side of Mornington Drive/Pinjar Road, along the western boundary, including the upgrades to Ranch Road;
- Two vehicular accesses on the southern side of Coogee Road, along the northern boundary, including the upgrades to Pinelake Trail;
- One vehicular accesses along the eastern boundary with an extension/formalisation of the existing Marignip Road;
- One vehicular access along the southern boundary with an onward connection to Pinjar Road and possible connections to the wider DSP south of the site; and
- A strong public open space green area and link in the south of the LSP area for pedestrians of all types on foot, on wheels or cycling.

Road	Road Reserve Width	Location Description	Street Type
Pinelake Trail	22m	North-south connection between Ranch Road and Coogee Road	Neighbourhood Connector B
Ranch Road / EW NC	20-22m	Connects from the North-south NC roadway through to the eastern boundary of the LSP and provides connectivity to other development to the east. The 20m road reserve is located north of Little Marignip Lake / South of the POS, near the eastern boundary of the LSP.	Neighbourhood Connector B
NS NC	22m	Connects from Coogee Road in the north through to the southern boundary of the LSP between Pinjar Road and Marignip Lake.	Neighbourhood Connector B
EW NC to Pinjar Road	24m	Provides the main connection of the LSP from Pinjar Road to the NS NC	Neighbourhood Connector A
Local Streets	15m	These streets are form the typical residential streets within the LSP	Access Street C or D

Table 15: Proposed Road Network

Due to the low traffic volume, low speed and residential nature of the Structure Plan, access street intersections are intended to be constructed as priority-controlled intersections. At intersections of the neighbourhood connectors will to be controlled by single lane roundabouts.

The design of primary access points will be considered in line the level of traffic forecast to use each access to ensure they are constructed as appropriate. Depending on the staging of delivery of the LSP, the final details of intersection control will be determined and may change from one stage to the next as traffic flows and intersection priorities changes.

Refer to **Figure 14 - Proposed Road Network**.



5.3.2. Public Transport

Public transport services surrounding the Structure Plan area are currently available via the 390 Bus Service which runs along Pinjar Road and Yandella Promenade providing a service every 20 minutes during peak hours between Joondalup Station and Banksia Grove. The closest existing railway stations are Currambine (7.2km) and Joondalup Stations (8.6km). The EWDSP includes a high frequency transit corridor which is intended to accommodate a future North-West Rail Line with a station proposed for Mariginiup in the adjacent Precinct 15, approximately 1.5km from the centre of Precinct 8.

5.3.3. Proposed Pedestrian and Cyclist Network

Pedestrian and cycle connections will be provided throughout the site to connect internally and externally to create a good level of permeability to the wider area. Traffic free routes will also be accommodated within the site area, particularly in the areas of public open space and Parks and Recreation adjacent to Mariginiup Lake in the south of the site and other areas throughout the rest of the subject site. Dropped kerb crossings will be provided as appropriate, including at intersections.

Cyclists can either use the footpaths, or cycle on the quiet streets within the Structure Plan where the speed of vehicles can be limited to 30km/h. Taking a Safe System approach, for the neighbourhood connectors, off-road shared paths or protected on-road cycle routes are proposed to be the provided to encourage riding and not mixing with traffic.

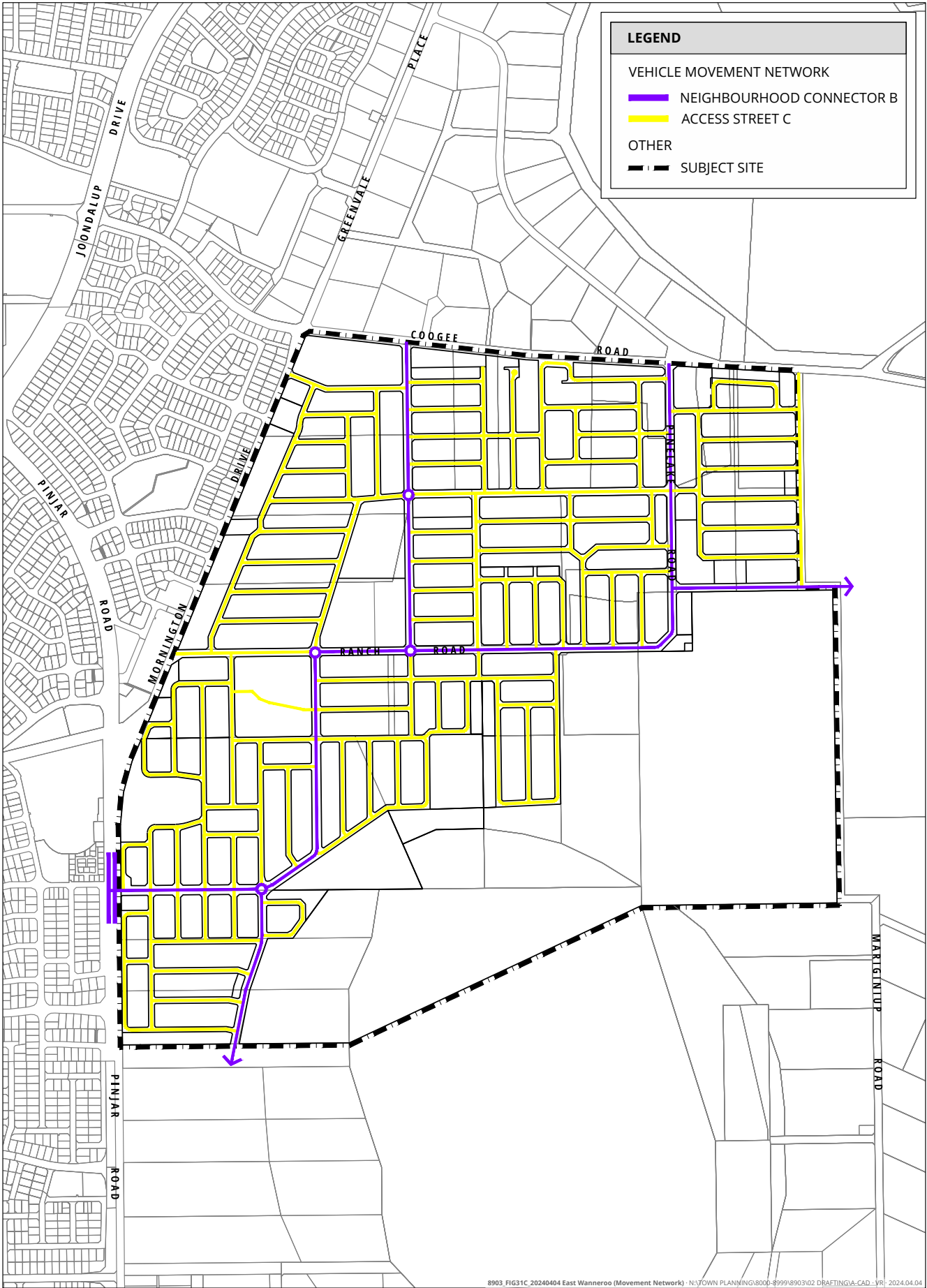


Figure 14 – Proposed Road Network



## 5.4. Public Realm and Open Space

### 5.4.1. Design Strategy

The landscape and public open space strategy for the Structure Plan area has been prepared in accordance with the provisions of the City’s LPP4.3 and seeks to ensure:

- Retained areas of bushland are consolidated and unaffected by earthworks or drainage infrastructure.
- Provide for a range of recreational opportunities; and
- Facilitate and promote the principles of water sensitive urban design in drainage areas and retain natural drainage lines.

### 5.4.2. Local Sense of Place Statement

A Local Sense of Place (‘LSoP’) has been prepared for Precinct 8, reflective of the vision and aspirations for the precinct as set out by the East Wanneroo District Sense of Place Statement (‘DSOPS’) and the East Wanneroo District Structure Plan (‘EWDSP’).

The Statement identifies the Precinct’s established identity which benefits from its elevated location above Mariginiup Lake and Little Mariginiup, which together with its pockets of remnant vegetation create a strong sense of place that is further enriched by its Aboriginal Cultural Heritage. The name Mariginiup means “*to pull out flag leaved flax*” and translates as a place for food gathering. The importance of food is further signified by the historical agricultural land uses and market gardening activities that have taken place within the locality. Other rural land uses have also left their mark with equestrian activities providing a network of bridal ways north of the Precinct. These bridal ways further add to the distinctiveness of Mariginiup and Precinct 8, providing unique connections to Lake Adams to the north and to the commercial and community activities within Banksia Grove to the west of the precinct.

The Local Sense Place sets out a framework for the development of the Precinct to celebrate and response to these attributes by ensuring future characteristics:

- Protect and connect to Environmental Assets
- Celebrate Cultural Heritage
- Create a Sustainable Community

Refer to **Appendix 9 – Sense of Place Statement**.

### 5.4.3. Landscape Masterplan

A Landscape Masterplan has been prepared by Considered Space in support of the Structure Plan, which provides details of the proposed landscaping response to various areas of open space, including drainage infrastructure and streetscape within the subject site.

Whilst landscaping treatments will ultimately be subject detailed design and approval of the City of Wanneroo, the Landscape Strategy establishes the following principles to be explored during the detailed design phase;

- A suburban neighbourhood carefully integrated within a parkland setting and environment, with the elements that define Ranch Road as a place, is an avenue that is to be explored and referenced in the design of the landscape.
- Respecting the cultural and ecological corridors and incorporating these into the Public Open Space (POS) network and adopting a programme of enhancement through revegetation and rehabilitation.
- Provide a highly legible network of walking and cycle paths linking the areas of public open space, schools, Mariginiup Lake, Little Mariginiup Lake within the Ranch Road precinct as well as connecting with the greater East Wanneroo district.
- Retention of existing vegetation via incorporation into public open space and Parklands.
- Create street environments that can contribute to placemaking and activation.
- Provision of street tree planting which provides amenity and upon maturity a continuous canopy of shade.
- Natural features are retained and enhanced within open space and streetscapes.
- Views to Mariginiup Lake & Little Mariginiup Lake to the south, and Adams Lake to the north are to be framed through the street layout, Parkland links and enhanced through sensitive and considered landscape design.
- Views into the site and outwards from the site are to be screened and framed where appropriate to retain a sense of parkland context.
- Appreciation that a balanced approach is required to ensure the social and recreational requirements of the future residents are balanced with the existing cultural & ecological site conditions and the engineering constraints imposed by the site.
- Provide connections to the existing Mariginiup Lake Bush Forever Parkland site to the south.
- Provide a balanced variety of outdoor public space for recreational and social opportunities appropriate to the size of the proposed community.
- Mitigate post development drainage flows through incorporation of upstream treatment within the open space network. Ensure drainage sites are treated in such a way so as to allow multiple public use.

Refer to **Appendix 7 – Landscape Masterplan**.



#### 5.4.4. Wetland Buffer and Foreshore Management Strategy

In support of the Structure Plan a Wetland Buffer and Foreshore Management Strategy has been prepared by PGV Environmental. The report confirms that the existing boundary of the Bush Forever and Parks and Recreation Reserve provides an appropriate wetland buffer for both Mariginiup Lake and Little Mariginiup Lake with the buffer distance generally between 50m to 100m.

The foreshore area of both Mariginiup Lake and Little Mariginiup Lake itself provide many opportunities to improve the ecological values by rehabilitating with native vegetation. The areas selected for rehabilitation should focus on filling in the gaps between existing areas of native vegetation and the core lake areas as well as the bed of Little Mariginiup Lake. Rehabilitation should also focus on improving the north-south ecological linkage proposed in the Structure Plan.

Refer to **Appendix 8 – Wetland Buffer and Foreshore Management Strategy**.

#### 5.4.5. Public Open Space

The Structure Plan provides a minimum 10 per cent public open space in accordance with the WAPC's Liveable Neighbourhoods requirements, which amounts to 15.8 hectares. The Structure Plan provides approximately 19.30 hectares of public open space which comprises of 17.97 hectares (11.37%) of unrestricted and 1.33 hectares (0.84%) of restricted public open space.

Consistent with LPP 4.3, the hierarchy and location of public open space has been designed to ensure that residents are generally within:

- a) 200m of a pocket park
- b) 400m of a local park / public open space
- c) 800m of the neighbourhood park

As a result, the Structure Plan provides a total of 22 areas of public open space area at sizes ranging from 1226m<sup>2</sup> to 2.9 hectares providing opportunities for both informal and active recreation. These areas of open space are further supported by the substantial areas of 'Parks and Recreation' reserve found within the subject site.

An area of public open space totalling 2.8 hectares is provided adjacent to the school site and configured in manner that allows for the provision of a full-size senior oval, changing rooms, cricket practice pitch, multi-use half court and a range of other facilities as listed in Schedule 3 of LPP 4.3.

Refer to **Figure - 15 Public Open Space Plan and Figure - 16 Public Open Space Network**.

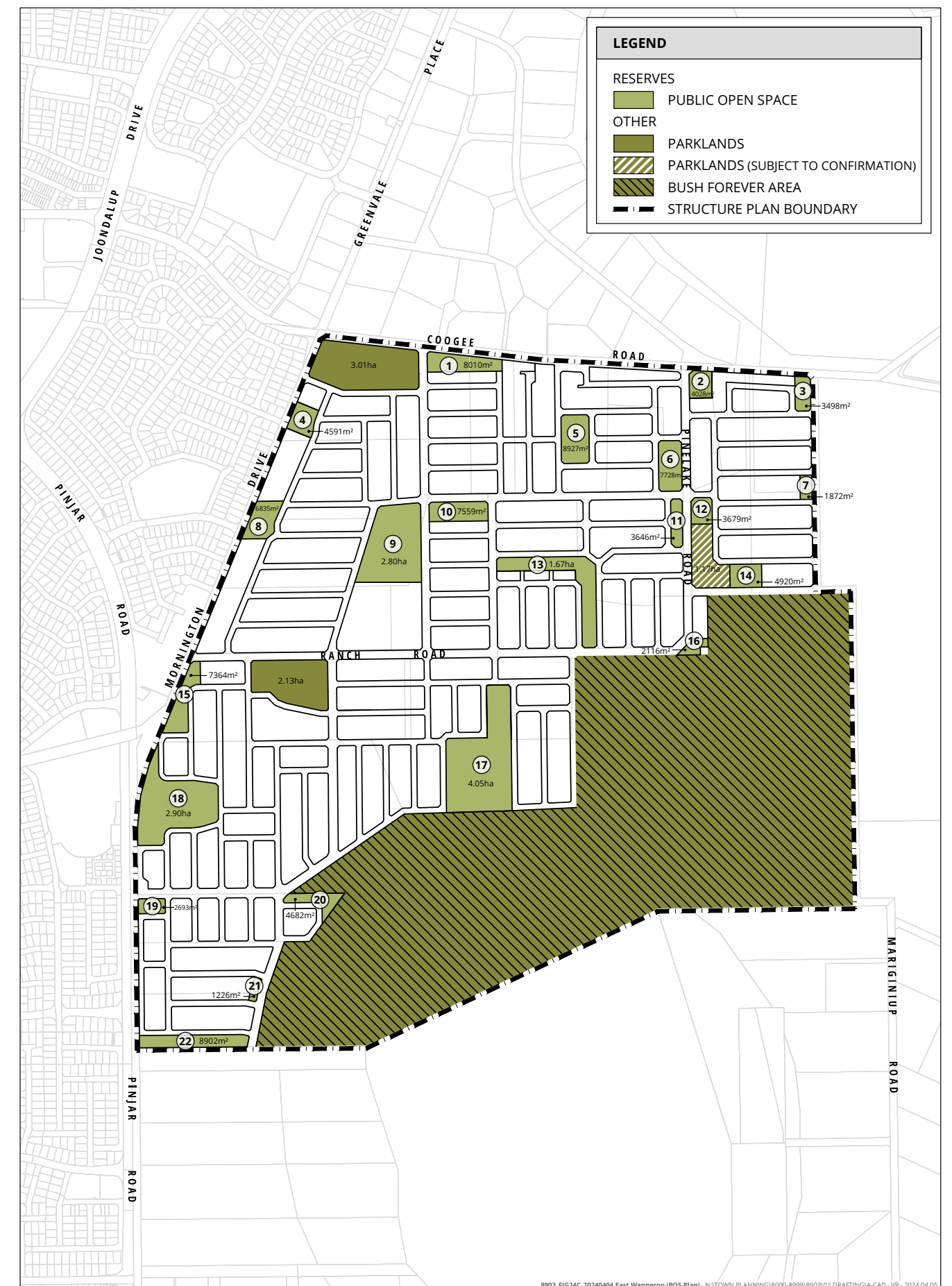


Figure 15 – Public Open Space Plan



**Precinct 8, East Wanneroo – Public Open Space Schedule**  
**Various Lots, Ranch Road, Mariginiup - East Wanneroo**

15.02.2024			
Site Area (Structure Plan Area Boundary)			<b>262.03</b>
Less			
<b>Existing P&amp;R Reserves</b>			
Lot 802 Mariginiup Road	38.35		
Lot 10 Ranch Road	4.10		
Lot 11 Ranch Road	6.98		
Portion of Lot 6 Ranch Road	1.50		
Portion of Lot 5 Ranch Road	1.44		
R 40696 Ranch Road (Western Lot)	2.75		
R 40696 Ranch Road (Eastern Lot)	3.94		
Portion of Lot 39 Pinjar Road	3.89		
Lot 303 Pinjar Road	2.07		
Lot 302 Pinjar Road	3.43		
Lot 42 Pinjar Road	3.73		
Portion of Lot 14328 Pinjar Road	15.42		
Total Existing P&R Reserves		87.60	
<b>Existing Road Reserves</b>			
Ranch Road	4.21		
Pinelake Trail	1.18		
<b>Total Existing Road Reserves</b>		<b>5.39</b>	
<b>Net Site Area</b>			<b>169.04</b>
<b>Deductions</b>			
Primary School	3.50		
Dedicated Drainage (1:1yr ARI / First 15mm)	1.20		
Parklands (Proposed P&R Reserve) Portion Lot 5 Mornington Drive	3.01		
Parklands (Proposed P&R Reserve) Portion Lot 2 Ranch Road	2.13		
Parklands Subject to Confirmation Portion of Lot 6 Coogee Road	1.17		
Wastewater Pump Station (Portion of Lot 801 Ranch Road)	0.04		
<b>Total Deductions</b>		<b>11.05</b>	
Gross Subdivisible Area			<b>157.99</b>
POS @10%			15.80
<b>Public Open Space Contribution</b>			
May comprise:			
Min 80% unrestricted POS		12.64	
Max 20% restricted use POS		3.16	
<b>Total Required POS</b>			<b>15.80</b>

POS Reference Number (area within urban zone/LSP boundary only)		1:1yr / First 15mm Drainage (m²) <i>Deduction from Net Area</i>	Unrestricted POS area (m²)	Credited Restricted POS area (m²)
1a	5090	190	4260	640
1b	2920		2920	
2	4028	190	3348	490
3	3498	164	2948	386
4	4591	282	3141	1168
5	8927	317	8610	
6a	190		190	
6b	7538	949	6589	0
7a	1300		1300	
7b	572		572	
8	6835	829	3445	2561
9a	3938	392	3546	0
9b	22038		22038	
9c	2047		2047	
10	7559	475	7084	0
11	3646	353	3293	
12	3679	497	3182	
13a	7521	372	7149	
13b	2210	372	1838	
13c	3655		3655	
13d	3317		3317	
14a	3360	372	2988	0
14b	1560		1560	
15	7364	718	1444	5202
16	2116	475	1641	
17a	4069	949	3120	
17b	4497	562	3935	
17c	26058	429	25629	
17d	5896		5896	
18	28986	532	26858	1596
19	2693	282	1153	1258
20	4682	1607	3075	
21a	804	433	371	
21b	421		421	
22	8902	282	8620	
<b>Total</b>	<b>206507</b>	<b>12023</b>	<b>181183</b>	<b>13301</b>
	<b>20.50</b>	<b>1.20</b>	<b>17.97</b>	<b>1.33</b>
<b>Percentage of gross subdivisible area</b>	<b>13.07%</b>	<b>0.76%</b>	<b>11.47%</b>	<b>0.84%</b>

Table 16: Public Open Space Schedule



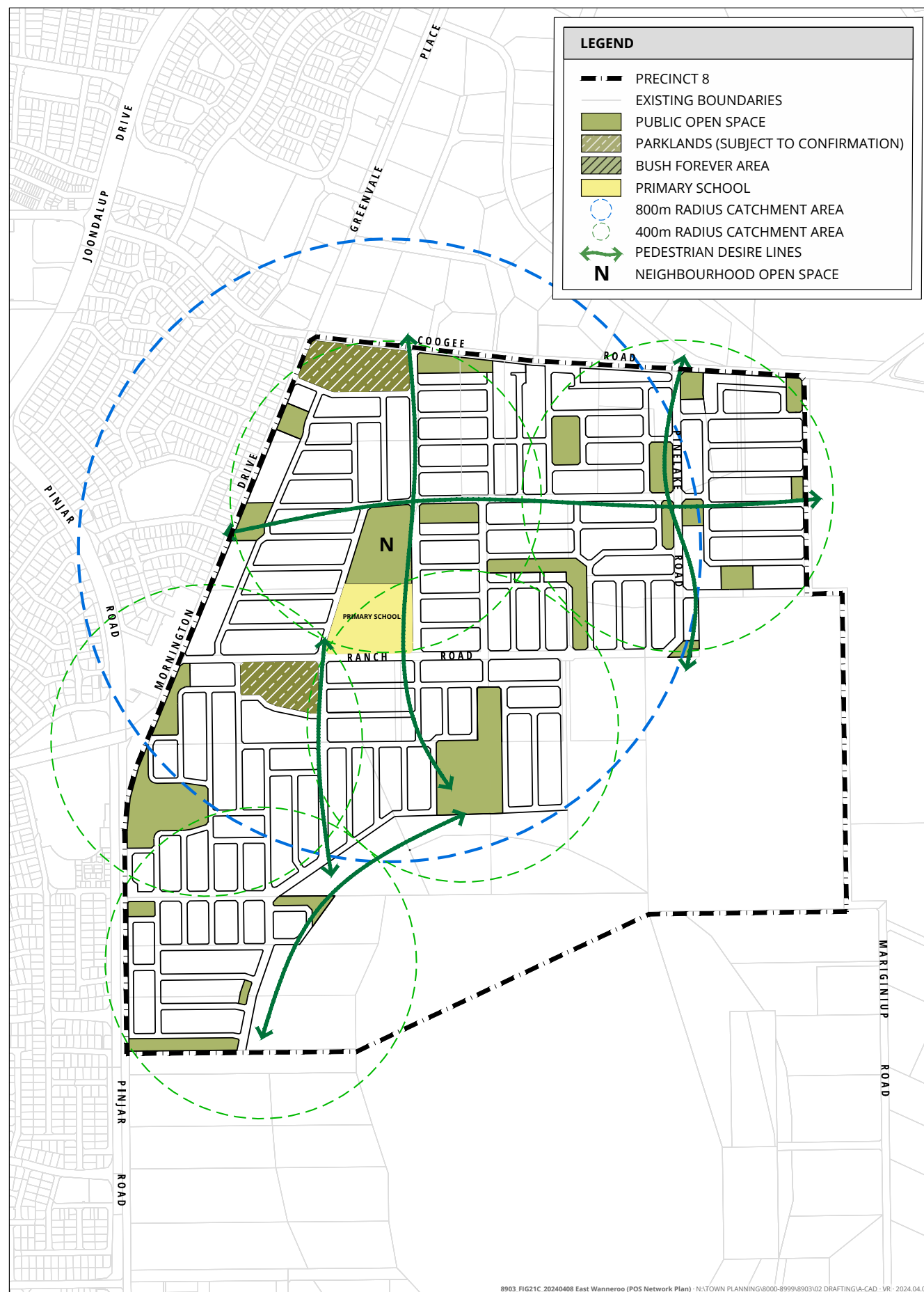


Figure 16 – Public Open Space Network

## 5.5. Water Management

### 5.5.1. District Water Management Strategy

A District Water Management Strategy (DWMS) prepared by Urbaqua, has been approved as part of the EWDSP. The key objectives and water management principles of the DWMS include:

- Create liveable and resilient communities;
- Protect important environmental assets and water resources;
- Deliver functional and integrated public open space;
- Manage flooding and inundation risks to human life and property, and;
- Ensure the efficient use and re-use of water resources.

The DWMS has been further refined for the subsequent preparation of a Local Water Management Strategy, in support of the Structure Plan.

### 5.5.2. Local Water Management Strategy

A Local Water Management Strategy has been prepared by Pentium Water in support of the Structure Plan. The LWMS demonstrates that the site has the capacity to support residential development with best practice water management outcomes in terms of water supply, stormwater, surface water and groundwater management.

The LWMS sets out requirements for Urban Water Management Plans (UWMPs) as a condition of subdivision approval, to include the following design measures in more detail:

- Compliance with this LWMS criteria and objectives to the satisfaction of the City and DWER.
- Detailed stormwater drainage design including final levels and dimensions for bioretention and flood storage areas.
- Specific detailed information on structural and non-structural Best Management Practices to be implemented within each subdivision.
- Final subdivision layout including final cut and fill levels, minor and major drainage layout, and overland flow paths.
- Management of subdivision works including details of licence application for dewatering or dust suppression if required
- Updated POS landscaping design drawings which will include design contours, cross-sections, storage areas, plant species, fertiliser regimes and irrigation scheduling
- Detailed monitoring program for both groundwater and surface water monitoring including sampling locations
- Finalised implementation plan including roles and responsibilities of all parties involved.



In managing groundwater, the DWMS notes where local structure planning is proceeding in advance of the detailed local groundwater modelling being available, the local structure plan must install groundwater management systems (subsoil drains). The LWMS reports that for Precinct subsoil drainage is highly unlikely to be required to control groundwater levels based on predicted groundwater level rise outputs from DPLH's groundwater modelling considering landuse change and future climate scenarios. Nevertheless, the urban design and engineering drainage design supports flexibility in response to the future groundwater management scheme and is consistent with the known design principles. The urban design responds to the likely infrastructure demands and land take of the groundwater management scheme.

The irrigation demand for Precinct 8 is estimated to total 100,575 kL/year, based on an irrigation rate of 6,750 kL/Ha/year for irrigated POS and school areas, and 10,000 kL/Ha/year for the school oval. Existing groundwater licences within the Precinct total 762,555 kL/yr. Given the land use change facilitated by the Structure Plan, it is expected that these groundwater licences will be made available for transfer to the Precinct's land development proponents or directly to the City of Wanneroo for future irrigation requirements.

### 5.6. Infrastructure Coordination, Servicing and Staging

An Engineering Servicing Report has been prepared by JDSI Consulting Engineers in support of the Structure Plan and is enclosed at Appendix 2. A summary of key findings is provided below:

#### 5.6.1. Bulk Earthworks

A concept earthworks design has been undertaken to inform master-planning and water management designs and has incorporated the following:

- Retention of stormwater drainage onsite.
- Drainage outfall levels for the stormwater drainage system and industry standard requirements for freeboard from the finished floor level to the 100-year flood level. This will be verified at detailed design stages.
- Interface and coordination with existing levels of the adjacent road network and areas of retained vegetation, including allowances for vehicle and pedestrian access.
- Rationalisation of any required retaining walls.

#### 5.6.2. Staging

The staged development of the Structure Plan area is anticipated to begin in 2025, with the development front moving progressively inwards from the sites western and northern boundaries. Development is anticipated to occur at a rate of approximately 250 lots per annum (subject to market demand).

Refer to **Figure - 17 Staging Plan**.

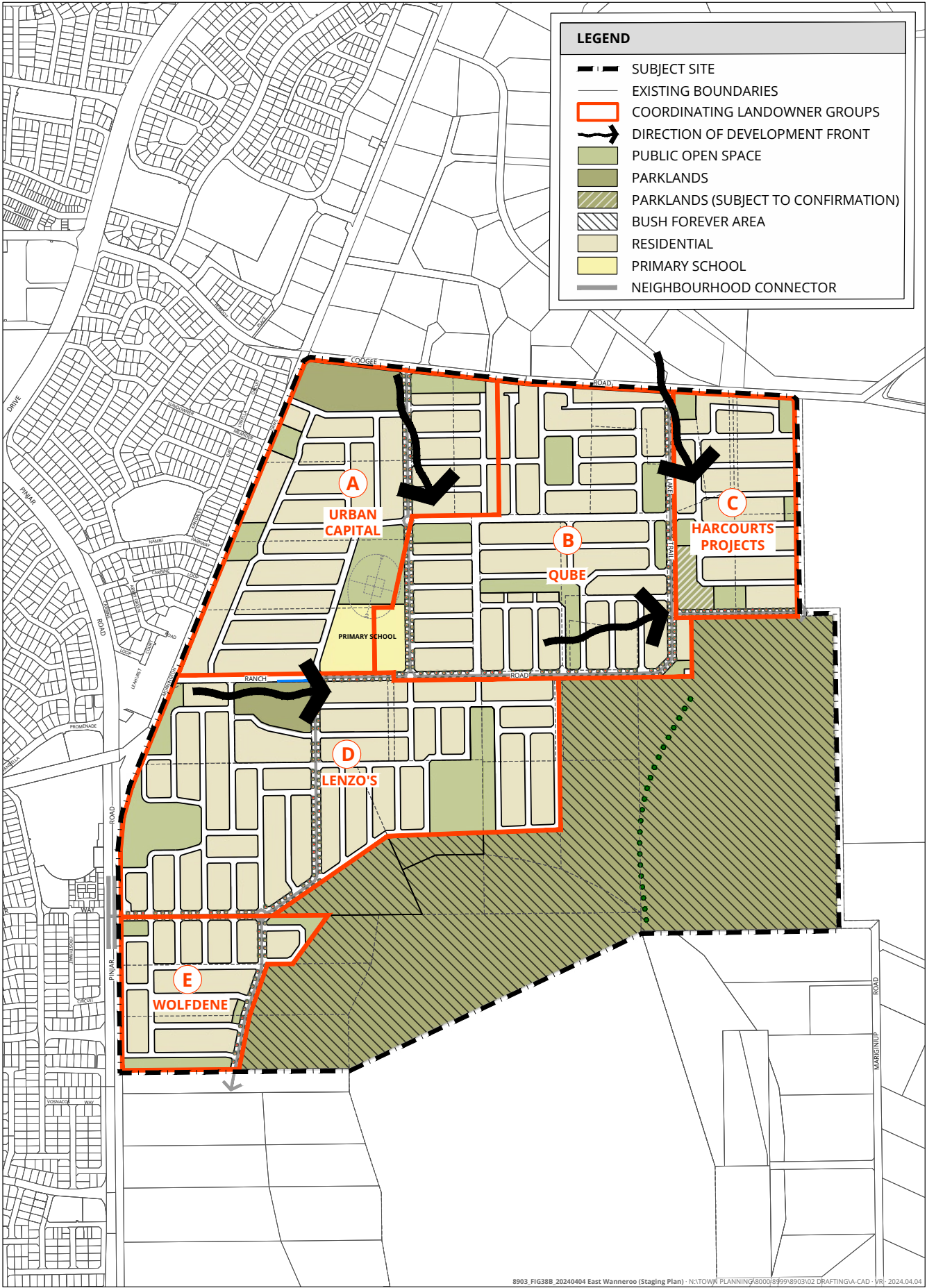


Figure 17 – Staging Plan



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