



Attachment 5

Bushfire Management Plan



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Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Precinct 8 - East Wanneroo			
Suburb: Wanneroo		State: WA	P/code: 6065
Local government area: City of Wanneroo			
Description of the planning proposal: Residential Development			
BMP Plan / Reference Number: QPGEP8BW		Version: Final	Date of Issue: 28 March 2024
Client / Business Name: Qube Property Group			

Reason for referral to DFES	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Strategic planning proposal (including rezoning applications)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Minor development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High risk land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vulnerable land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>


If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name Sue Brand	Accreditation Level Level 2 BPAD Practitioner	Accreditation No. 36638	Accreditation Expiry 30 April 2024
Company MBS Environmental		Contact No. 0439 435 110	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct

Signature of Practitioner		Date	28 March 2024
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BUSHFIRE MANAGEMENT PLAN

PRECINCT 8, EAST WANNEROO

PREPARED FOR:

QUBE PROPERTY GROUP



MARCH 2024

PREPARED BY:

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Precinct 8, East Wanneroo
Bushfire Management Plan

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Document Control for Job Number: QPGEP8BW

Document Status	Prepared By	Authorised By	Date
Draft Report	Sue Brand	Matt Todd	27 March 2024
Final Report	Sue Brand	Matt Todd	28 March 2024

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APPENDICES

Appendix 1: Landscape Master Plan



1. BACKGROUND INFORMATION

Qube Property Group (QPG) is the lead organisation progressing the development of Precinct 8 East Wanneroo as per the general provisions of the District Structure Plan. A bushfire management plan (BMP) is required to support the Local Structure Planning (LSP) process that will see many of the current rural Lots developed as an urban residential area. MBS Environmental (MBS), has been commissioned by Qube Property Group to prepare the BMP for the Precinct (the Site, the Precinct). The broad aim of the assessment process was to identify potential bushfire risks to future properties and their management when the Site is developed.

The Site is located within a designated bushfire prone area as determined by the Fire and Emergency Services Commissioner, Office of Bushfire Risk Management (OBRM), Department of Fire and Emergency Services (DFES) (2021). Accordingly, there is a requirement for landowners to undertake an assessment to determine the risks and identify appropriate management strategies such that the development does not increase the inherent bushfire risk.

Any portions of the nominated Lots being developed by QPG and its alliance members that will be located within 100 m of vegetation designated as being bushfire prone (classified vegetation) will mean the need for a bushfire attack level assessment (BAL-assessment) and assigning a BAL-rating that will determine appropriate construction standards as per *AS 3959:2018 Construction of Buildings in Bushfire-prone Areas (AS 3939:2018)*. The BAL-assessment component of this document considers current subdivision design and site conditions. It has also considered the provisions of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning and the Western Australian Planning Commission (WAPC), 2015) and *Guidelines for Planning in Bushfire Prone Areas* (the *Guidelines*) (Department of Planning, Lands and Heritage (DPLH) and the Western Australian Planning Commission (WAPC), V1.4, 2021).

1.1 LOCATION

Precinct 8 East Wanneroo is approximately 262.03 ha within the City of Wanneroo, and is bounded by (Figure 1):

- Pinjar Road and Mornington Drive to the west.
- Coogee Road to the north.
- The future extension of Mariginiup Road to the east.
- Private property and a portion of Lake Mariginiup to the south.

It currently comprises 40 Lots and Reserves in private ownership, the State of Western Australia, and the Western Australian Planning Commission.

1.2 AIMS AND OBJECTIVES

The aim of the BMP is to outline the bushfire management methods and requirements that will be implemented within the Precinct. Accordingly, broad aims include:

- To reduce the occurrence of and minimise the impact of bushfire to the life and property of future residents and the environment.
- Allow easy access of firefighters if a fire does occur.
- Protect the landscape within the site as far as is possible.
- Document fire prevention requirements of the area to which it relates.



The objectives of this BMP are to:

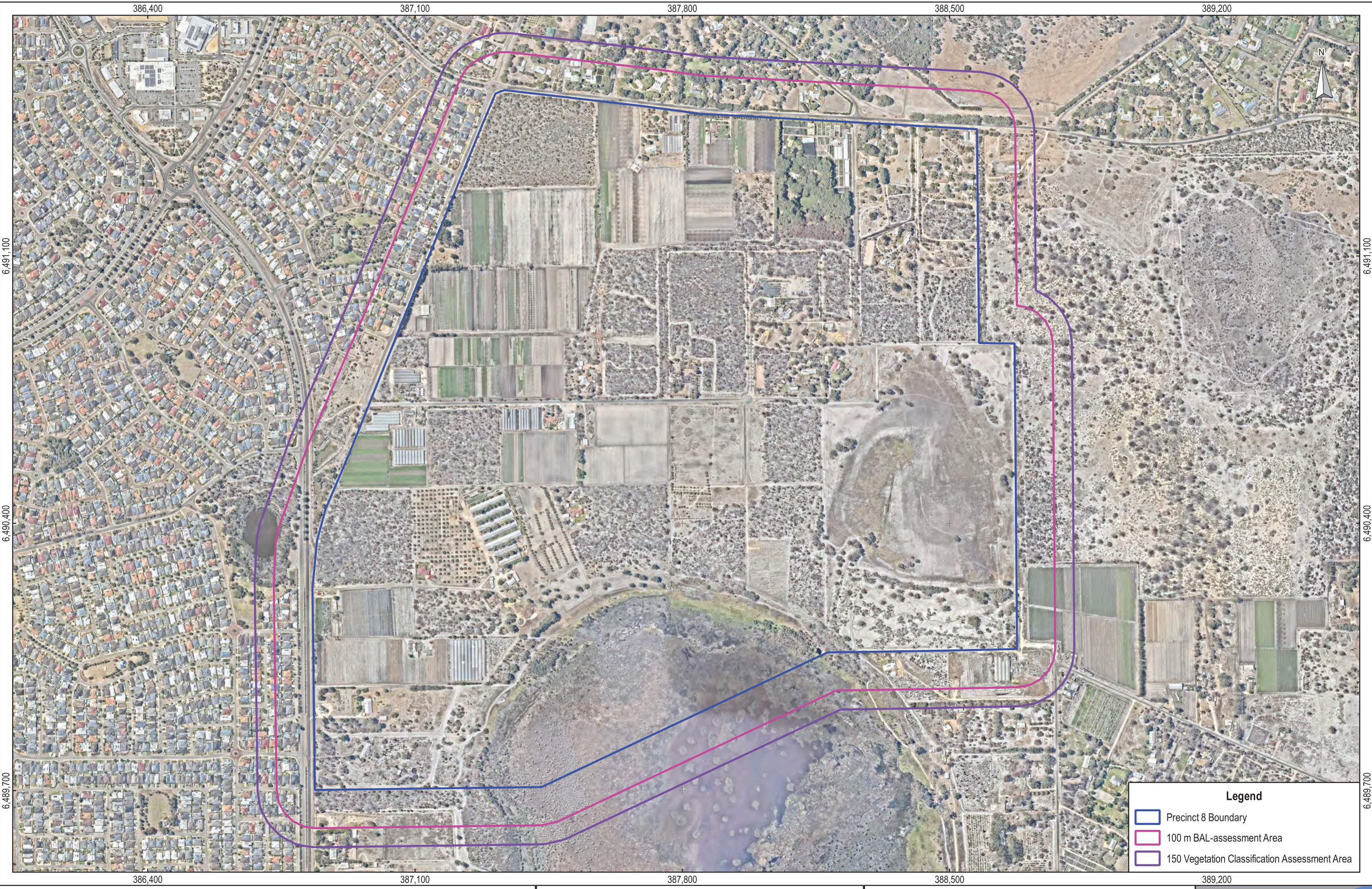
- Define land use areas and values within the subdivision, with the entire subdivision being developed as urban residential Lots except for the proposed Sports Amenities Building and primary school along Ranch Road, vegetated areas associated with Lake Mariginiup, other remnant bushland areas to be retained, and various public open space (POS) areas that will be landscaped and retained in a low-threat state as defined by Clause 2.2.3.2 of *AS 3959:2018*.
- Define and rank bushfire hazard areas according to the vegetation type and fire fuels present.
- Outline the roles and responsibilities of individuals and organisations in relation to bushfire management within the subdivision.
- Document bushfire management strategies for the subdivision, taking into consideration:
 - Vegetation to be retained in various locations within the Precinct, including in the vicinity of Lake Mariginiup and nominated bushland Lots.
 - The need for building construction standards where vegetated areas interface with the urban development.
 - Identify access for firefighting operations and maintenance in and around vegetated areas and stages of development.
 - Define an assessment procedure that will evaluate the effectiveness and impact of existing and proposed fire prevention activities and strategies.
 - Document the performance criteria and acceptable solutions adopted for the Site.

1.3 DOCUMENT PREPARATION

This document has been prepared by Sue Brand, an accredited Level 2 Bushfire Planning and Design (BPAD) practitioner with the Fire Protection Association Australia. Activities involved with the plan preparation process included:

- Assessing the vegetation type and class present within and adjacent to the proposed development site using descriptions provided in *AS 3959:2018*.
- Assessing the slope that could influence bushfire spread within the Precinct.
- Assigning hazard ratings based on the vegetation types present on and offsite.
- Determining bushfire attack level (BAL) contours for locations that will be within 100 m of classified vegetation within the Precinct boundary or in proximity to the Site.
- Suggesting management strategies that could be implemented based on current and projected site considerations.
- Preparing this BMP.

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Precinct 8, East Wanneroo
Local Structure Plan
Qube Property Group

Figure 1

Location

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2. CONSIDERATION OF BUSHFIRE THREAT

2.1 SITE CHARACTERISTICS

2.1.1 Regional Context

Perth is located within the Swan Coastal Plain region of the Interim Biogeographical Regionalisation of Australia (IBRA). The Swan Coastal Plain comprises of two major divisions, namely the Swan Coastal Plain 1 — Dandaragan Plateau and Swan Coastal Plain 2 — Perth Coastal Plain. The Site is in the Perth subregion, which is broadly characterised as including areas of Jarrah and Banksia woodlands on sandy soils in a series of sand dunes, along with wetland areas, often within the interdunal swales (Mitchell, Williams, and Desmond, 2002).

2.1.2 Vegetation

Vegetation within and in proximity to the Site includes a mix of remnant native bushland, market gardens, areas of grassland, and gardens associated with residences. The remnant bushland is primarily scrub vegetation dominated by Banksias and other shrubs, with the occasional taller tree present (Figure 2). Other vegetation includes a remnant pine plantation and areas of grassland associated with cleared areas and around the perimeter of Lake Mariginiup.

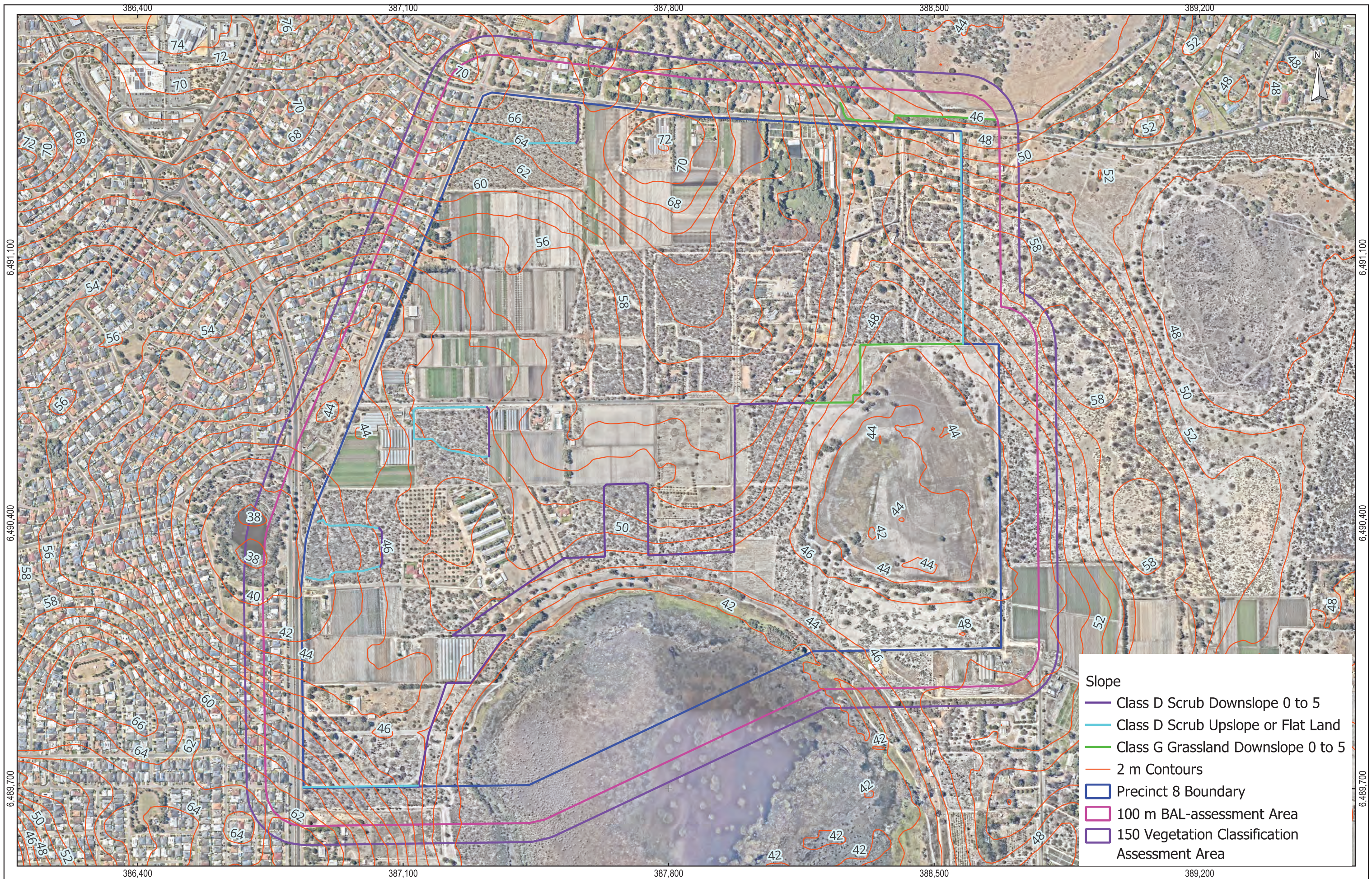


Figure 2: Vegetation within the Precinct

2.1.3 Contours and Slope

As a generalisation, the site slopes downward from north (72 m Australian Height Datum (AHD)) to south towards Lake Mariginiup (42 m AHD). However, as the Site is located on the Swan Coastal Plain that is dominated by a series of dunal formations including the Bassendean Dune System and the Spearwood Dune System, there are higher patches associated with dune ridges to the southwest, southeast, and towards the west. For the purposes of the bushfire assessment process, the slope was assessed for patches of vegetation that would be retained in the longer term, and included areas that are upslope or flat land as well as those that are downslope 0 to 5° (Figure 3).

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Figure 3

Contours and Slope

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2.1.4 Land Use

The dominant land use within the Precinct is market gardening and remnant vegetation (Figure 4). As the development progresses over time, the land use will change to include residential development and areas of public open space (POS) with varying levels of remnant vegetation.



Figure 4: Current Land Use

2.1.5 Environmental Considerations

The planning process has considered the various environmental values, with the identification of remnant bushland to be retained in areas of POS, along with retention of the riparian vegetation around the perimeter of Lake Mariginiup. Several assessments were carried out to support the District Structure Plan preparation process including:

- *Environmental Assessment Study — East Wanneroo District Structure Plan* (Emerge Associates, 2018a).
- *Preliminary Environmental Assessment of Planning Investigation Areas — East Wanneroo District Structure Plan* (Emerge Associates, 2018b)
- *Assessment of Proposed Environmental Outcomes — East Wanneroo District Structure Plan* (Emerge Associates, 2019).

Recent environmental assessment activities were carried out by PGV Environmental in 2023 that characterised current Site conditions, including those relating to flora, vegetation, fauna, and wetlands:

- *Environmental Assessment Report — East Wanneroo Precinct 8* (2024a).
- *Wetland Buffer Assessment and Foreshore Strategy — East Wanneroo Precinct 8* (2024b).

The outcomes of these assessments have been considered during preparation of this BMP.

2.1.6 Landscaping

The Landscape Master Plan for Precinct 8 was developed by Considered Space (2024), with four public open space types defined (Figure 5):

- Pocket parks — small areas that allow for passive recreation, shade trees, and irrigated turf.
- Local parks — larger areas with some active and passive recreation opportunities, shade trees, and irrigated turf.
- Neighbourhood parks — larger parks that include medium scale active and passive recreation opportunities, large areas of irrigated turf, and patches of remnant bushland.
- Parkland — includes wetland areas, bushland vegetation and conservation areas, open spaces, and revegetation and restoration options to enhance biodiversity.

A copy of the Landscape Master Plan is provided in Appendix 1.

For the purposes of preparing this BMP, it was assumed that the pocket and local parks will meet the definition of low-threat vegetation as per *AS 3959:2018* and will not contribute to BAL-ratings in nearby areas. The extent of retained native vegetation within the neighbourhood parks has informed the BMP according to the extent of vegetation to be retained and its proximity to other patches of classified vegetation to determine the impact on BAL-ratings in nearby areas.

Parkland areas are those with the greatest amount of retained vegetation and are classified vegetation as per *AS 3959:2018*. As the area surrounding the lakes has been subject to various threatening processes and were assessed as being Degraded or Completely Degraded by PGV Environmental (2024a). These locations also have the potential to undergo restoration/revegetation activities to improve biodiversity and other values, so have been considered from a 'worst-case' scenario perspective, with the entire buffer area restored to Class D Scrub typical of the Banksia woodland recorded within portions of Precinct 8, noting that restoration/revegetation plans will be included in the Foreshore Management Plan when it is prepared. It is expected that as plans are finalised and adjustments to the subdivision design occur over time, assumptions will be refined and implications for the management of bushfire will be adjusted accordingly.

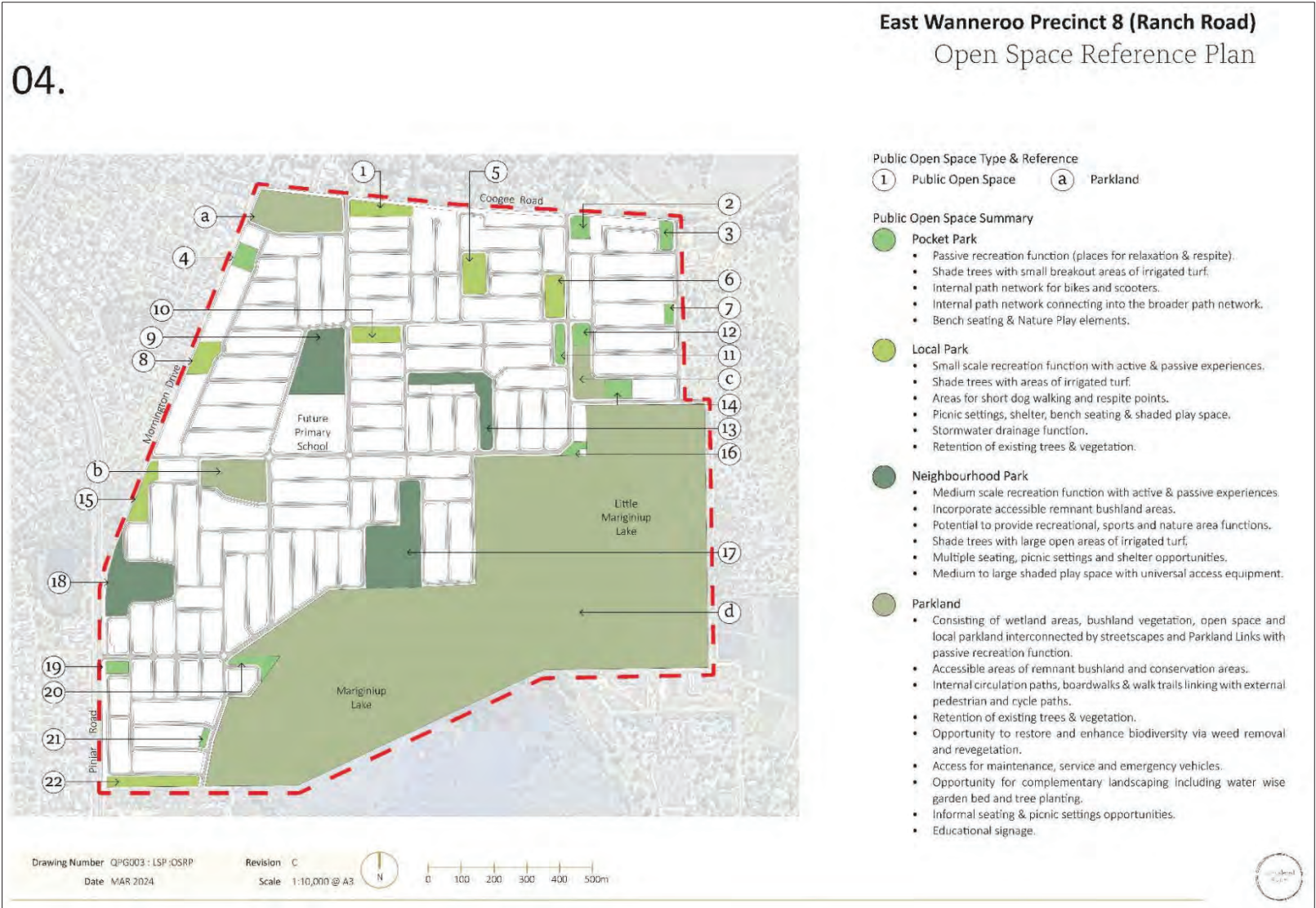


Figure 5: Open Space Reference Plan

2.2 VEGETATION CLASSIFICATION

Vegetation on and within 150 m of the Site were assessed during the site visit on 11 March 2023 using descriptions provided in Table 2.3 and Figure 2.4 of *AS 3959:2018* and each vegetation class is discussed. The assessment was carried out using a combination of ground-level assessment and the use of a drone. The pre-development vegetation classifications for the Site are shown in Figures 6, 7, 8, 9, and 10, and collectively in Figure 11, with post-development classifications shown in Figure 12.

2.2.1 Patch 1: Class A Forest

Class A forest includes open forest with trees to 30 m and a 30% to 70% foliage cover, with many dominated by Eucalypts. It also includes pine plantations with trees reaching 30 m at maturity. Both forms of forest are present within Precinct 8 with some remnant pines present within Lot 21 Coogee Road (Figure 6), noting that those present within Lot 24 Coogee Road are sporadic with a grassy understorey and do not fit the general description of Class A Forest vegetation (Figure 6). Both patches of pine trees will be cleared to accommodate the subdivision.

Forest vegetation is also present around the perimeter of a wetland in Da Vinci Park across Pinjar Road to the west (Figure 6), and these trees will be retained into the future and contribute to the ongoing bushfire risk.



Figure 6: Class A Forest

2.2.2 Patch 2: Class D Scrub

Class D Scrub is dominated by scrub vegetation that is 2 to 4 m high and usually tends to have a continuous canopy from ground level into the tree crown; the occasional taller tree is also present within this vegetation class. This vegetation class is characteristic of the dominant vegetation across the Site with the potential to influence the bushfire hazard, namely the various patches of Banksia Woodland (Figure 7).





Photo ID 5 — Pinjar Rd



Photo ID 6 — Ranch Rd

Figure 7: Class D Scrub

2.2.3 Patch 3: Class G Grassland

Class G Grassland includes all forms, including pasture and cropland areas, along with locations where the occasional tree and/or shrub is present if the foliage cover is less than 10%, noting that it is considered for 50 m rather than the 100 m of other vegetation classes. Managed and unmanaged grassland estimated to be more than 200 mm is present across Coogee Rd to the north of Precinct 8, as well as within Little Mariginiup Lake (Figure 8). As grassland includes wetland vegetation such as sedges and rushes, it is also present around the perimeter of Lake Mariginiup; however, as this is surrounded by a band of shrubs it will have limited impact on BAL-ratings for proposed Lots (Figure 8).

The *Wetland Buffer Assessment and Foreshore Strategy* (PGV Environmental, 2024b) indicates that rehabilitation of Lake Mariginiup and Little Lake Mariginiup (southern Parkland area) should focus on filling the gaps in existing vegetation, the core lake areas, and the bed of Little Mariginiup Lake without increasing the bushfire hazard levels for current and future residents. Based on current knowledge levels, it is likely that the current width of the wetland buffer along with the presence of perimeter roads around the development area is likely to be sufficient to ensure that the bushfire hazard will be consistent with that currently envisaged for the southern Parkland area.

Patch: 3	Classification or Exclusion Clause:	Class G Grassland
----------	-------------------------------------	-------------------



Photo ID 7 — Coogee Rd



Photo ID 8 — Little Mariginiup Lake

Figure 8: Class G Grassland

2.2.4 Patch 4: Low-Threat Vegetation

AS 3959:2018 indicates that there are several exclusion clauses that can be applied to vegetation patches in and within 100 m of the interest area that means they can be classified as low threat and will not contribute to BAL-ratings within a site. Of these, Clause 2.2.3.2 (f) allows exclusion of patches of vegetation that are low threat due to their flammability, moisture content, and/or fuel load, with examples including grassland managed in a minimal fuel condition, maintained lawns and gardens, landscaped parkland areas, market gardens, golf courses, and playing fields, for example. Low-threat vegetation present within Precinct 8 to which Exclusion Clause 2.2.3.2 (f) applies include (Figure 9):

- Delamare Park along Nambi Pwy, Banksia Grove, and Castledene Park in Castledene Way, Tapping, to the west of Pinjar Rd.
- Market gardens within the Site boundary.
- Gardens and lawns associated with residential properties within and in proximity to the Site.



Figure 9: Low-Threat Vegetation

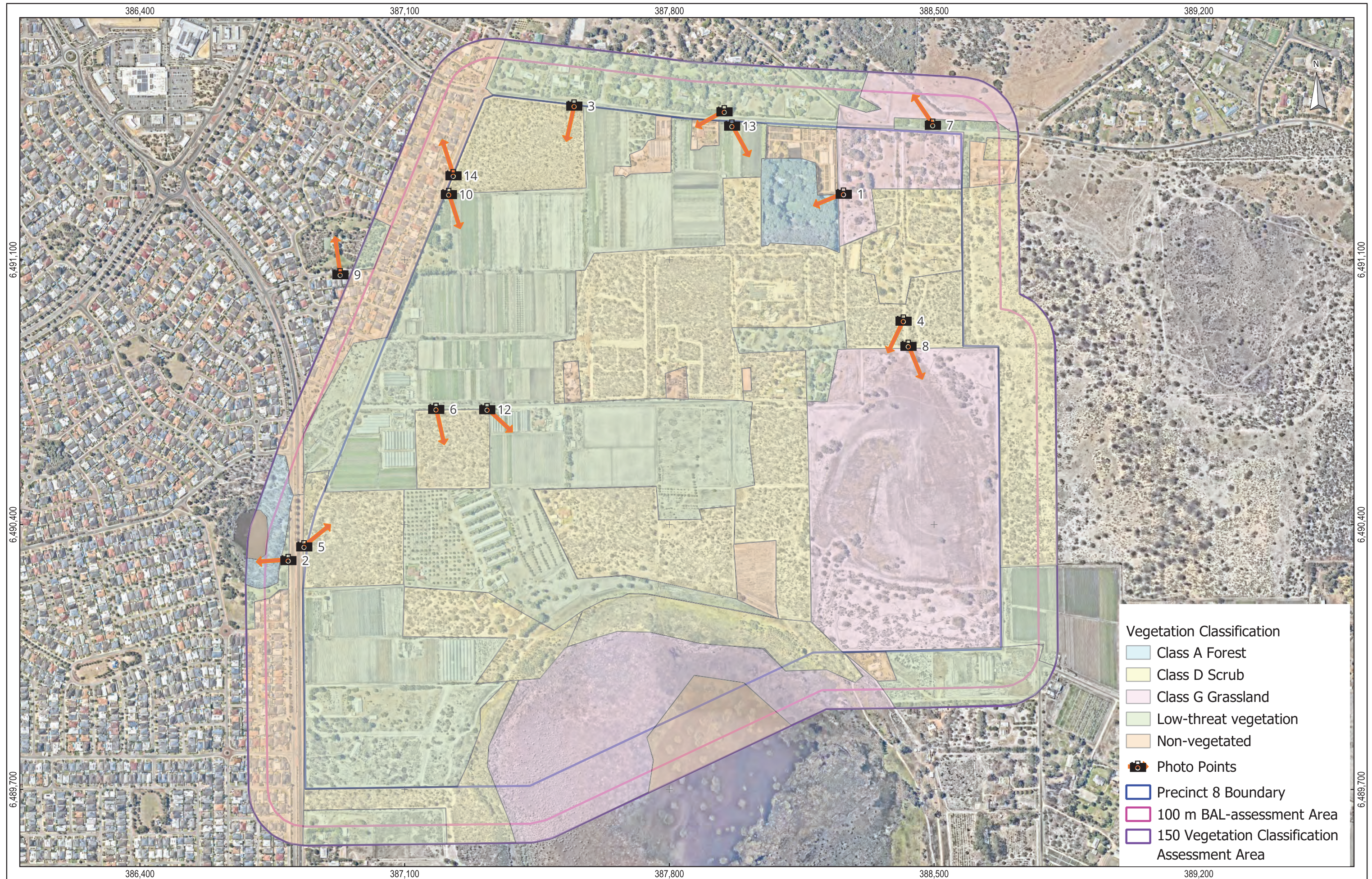
2.2.5 Patch 5: Non-vegetated Areas

Non-vegetated areas are subject to exclusion clause 2.2.3.2 (e) of *AS 3959:2018*, and are present in the form of cleared areas and existing buildings, including (Figure 10):

- The presence of roads and footpaths within or in proximity to the site.
- Existing residences and buildings associated with market garden operations.
- Cleared areas.



Figure 10: Non-vegetated Areas



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\\mbssvr\working\Qube Property Group\Wanneroo Precinct 8 Bushfire Works\GIS\Precinct 8 BMP.qgz 23/03/2024 F11 Pre-development Vegetation Classification

Precinct 8, East Wanneroo
Local Structure Plan
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Figure 11

Pre-development Vegetation Classification
as per AS 3959:2018

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Figure 12
Post-development Vegetation Classification

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2.3 BUSHFIRE HAZARD LEVEL

2.3.1 Bushfire Hazard Assessment

Depending on the vegetation type, a hazard rating of low, moderate, or extreme is assigned as per the *Guidelines*. The nature of the vegetation in and around the development area means that the pre-development bushfire hazard rating ranges from Low to Extreme due to the presence of the Class A Forest and the Class D Scrub (Figure 13), with all locations within 100 m of vegetation patches with an Extreme bushfire risk having a Moderate bushfire hazard rating due to the increased risk in those locations. Other locations within and in proximity to the Site will have a low hazard rating if they are Grassland or located more than 100 m from any classified vegetation.

2.3.2 Fire Danger Index

The fire danger index (FDI) for the Site is FDI 80, as documented in Table 2.4.3 of *AS 3959:2018*, and which is the nominated FDI for Western Australia.

2.3.3 Potential Fire Impacts

Potential fire impacts within the Site include smoke and ember attack. A summary of the vegetation patches that will influence the BAL-ratings within the Precinct are provided in Table 1.

Table 1: BAL-analysis

Patch	Vegetation Class	Slope	Distance (m)	Maximum BAL-rating
1	Class D Scrub	Upslope	16	BAL-29
		Downslope 0 – 5°	22	BAL-19
2	Class D Scrub	Downslope 0 – 5°	0	BAL-FZ*
3	Class D Scrub	Upslope	16	BAL-29
		Downslope 0 – 5°	22	BAL-19
4	Class D Scrub	Upslope	16	BAL-29
		Downslope 0 – 5°	16	BAL-40**
5	Class D Scrub	Upslope	48	BAL-12.5
6	Class D Scrub	Downslope 0 – 5°	16	BAL-29
7	Class D Scrub	Downslope 0 – 5°	16	BAL-29
8	Class G Grassland — North	Downslope 0 – 5°	20	BAL-12.5
	Class G Grassland — West	Downslope 0 – 5°	0	BAL-FZ***
9	Class G Grassland	Downslope 0 – 5°	15	BAL-19

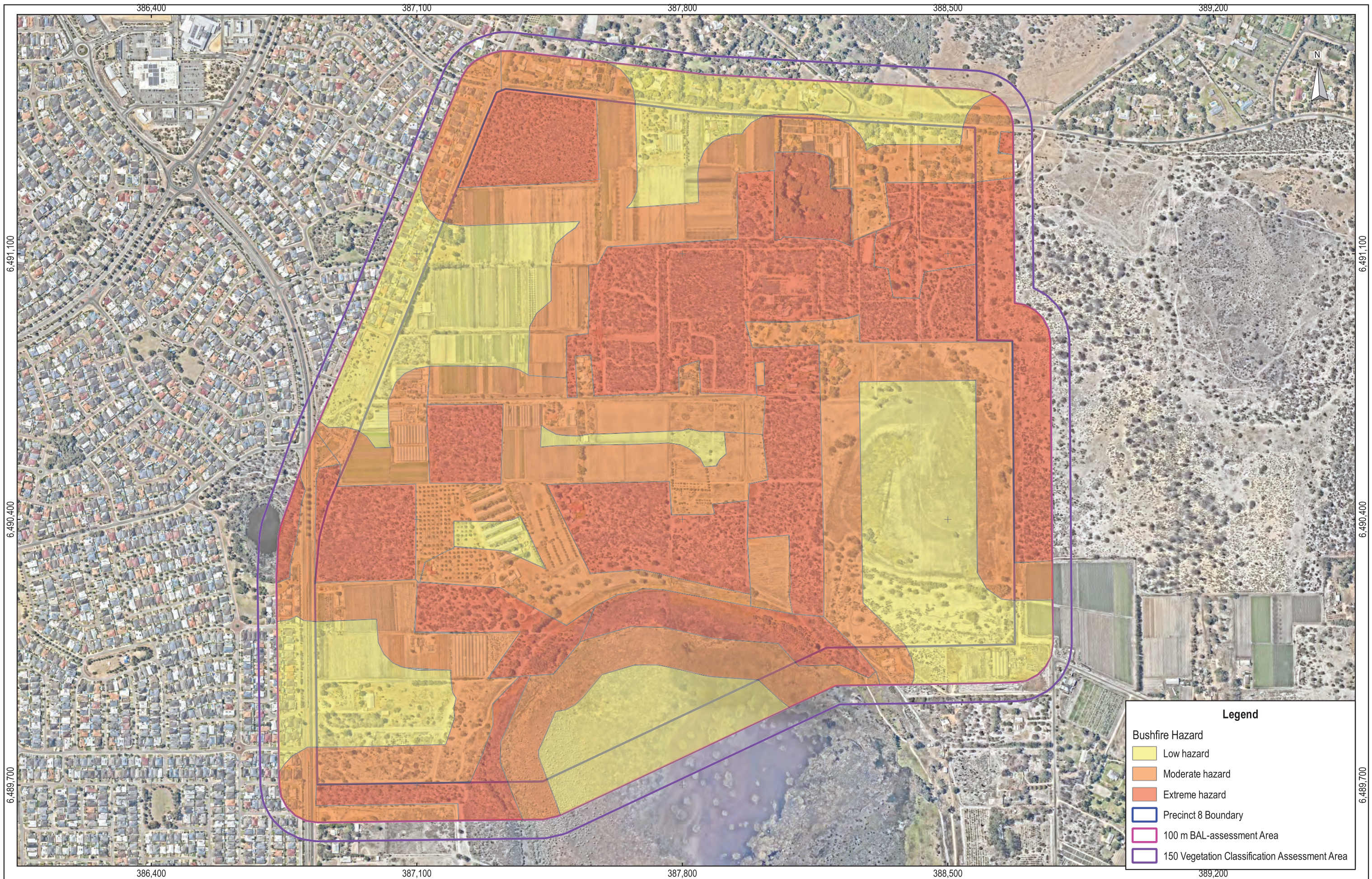
* Note: this will be a temporary rating until Mariginiup Road to the immediate east is constructed, after which the maximum is expected to be BAL-29 or less.

** Note: this will be a temporary rating as it does not consider the width of the planned footpath around the edge of the POS, with the expected maximum BAL-rating to be BAL-29.

*** Note: this rating is applied as it extends into the rear of Lots adjacent to Little Mariginiup Lake, however, the depth of the Lots are likely to be sufficient to enable dwelling construction within a nominated building envelope outside the BAL-FZ/BAL-40 zones.

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Precinct 8, East Wanneroo
Local Structure Plan
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Figure 13

Pre-development Bushfire Hazard

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2.4 BAL-ASSESSMENT

At this stage of the development process the design of the subdivision is limited to the delineation of indicative development cells rather than the identification of individual Lots. As a result, the BAL-assessment process is confined to identifying the extent of BAL-contours for the subdivision area and demonstrating that the bushfire risk can be managed. As the key vegetation that will influence BAL-ratings is the Class D Scrub that will be retained in various POS areas, including around Mariginiup Lake, along with the grassland within some areas of Little Mariginiup Lake. Each patch that will contribute to BAL-ratings is discussed. The indicative BAL-contour diagram for Precinct 8 is provided in Figure 14.

2.4.1 Patch 1 — Lot 5 Coogee Road

Lot 5 Coogee Road is vegetated with a patch of Class D Scrub, with the northern portion of this vegetation to be retained as a parkland area in perpetuity due to the environmental values associated with the Woodland present. The presence of this vegetation will result in an ongoing bushfire risk with BAL-ratings to be applied to Lots to the east and south, with a perimeter road providing sufficient separation distance to ensure a maximum BAL-29 rating.

2.4.2 Patch 2 — East of Lots 3 and 4 Coogee Road

Patch 2 is private property to the east of Lots 3 and 4 Coogee Road within the area that will be developed as Precinct 15 of the District Structure Plan. There is a stand of Class D Scrub along the boundary line that is located within the gazetted road reserve of what will become the extension of Mariginiup Road in time, with patchy vegetation in private property beyond that stand.

The vegetation within what will become the extension of Mariginiup Road represents an ongoing bushfire hazard for nearby Lots until the road is constructed, with Lots immediately adjacent to the road reserve currently located within the BAL-FZ/BAL-40 zones and thus not able to be developed in the shorter term. When the Class D Scrub is cleared, there will be a minimum of 22 m between the eastern Lot boundaries and any vegetation remaining in property to the east of the road reserve that may influence BAL-ratings.

2.4.3 Patch 3 — Lot 2 Ranch Road

Patch 3 is also Class D Scrub, of which approximately half will be retained as parkland area in perpetuity due to the environmental values associated with the vegetation that is present. The retained vegetation represents an ongoing bushfire risk to surrounding Lots to the north, east, south, and west. A perimeter road will be constructed around the parkland area ensuring a suitable separation distance is provided between the remnant bushland and future Lots to achieve a maximum BAL-rating of BAL-29 for closest Lots.

2.4.4 Patch 4 — Lot 39 Pinjar Road

Patch 4 is a Class D Scrub that will include areas of low threat vegetation to the north, south, and west in the vicinity of Pinjar Rd, and will include a footpath around the perimeter close to the perimeter road that will be constructed. The presence of the footpath and the perimeter road will ensure a maximum BAL-rating of BAL-29 for closest Lots.

2.4.5 Patch 5 — Lot 3 Pinjar Road

Patch 5 is Class D Scrub on land in private ownership to the immediate south of Lot 3 Pinjar Road. The construction of a local park that is landscaped in a manner that meets the definition of low threat vegetation along with a perimeter road between Lots and the POS will ensure that the maximum BAL-ratings for Lots facing the south will be BAL-12.5.

2.4.6 Patch 6 — Lot 5 Ranch Road

Patch 6 is the Class D Scrub located on a portion of Lot 5 Ranch Road, and which will be retained as native vegetation within a neighbourhood park. A perimeter road to the north and west, along with a landscaped area that will meet the definition of low threat vegetation to the east will ensure that the maximum BAL-ratings for Lots to the north, east, and west will be BAL-29.

2.4.7 Patch 7 — Mariginiup Lake Buffer

Patch 7 is primarily Class D Scrub along with some clearer patches that are present in the Mariginiup Lake Buffer zone around the perimeter of the lake body within:

- Lots 39, 42, 302, and 303 Pinjar Road.
- Lots 5, 6, 10, and 11 Ranch Road.
- Lot 11142 Ranch Road.

The Class D Scrub has been considered from a 'worst-case' scenario perspective assuming it extends to the Lot boundaries, thus allowing for future rehabilitation/restoration within the buffer zone and demonstrating that bushfire risk associated with the lake can be managed on an ongoing basis. The construction of a perimeter road around the buffer zone and the vegetation to be retained within Lot 5 demonstrates that the maximum BAL-rating for closest Lots will be BAL-29.

At present, the extent of restoration/revegetation within the wetland buffer zone has not been determined other than to indicate that it should not result in an increased bushfire hazard levels for existing and future residents (PGV Environmental, 2024b), and would be detailed in the foreshore management plan that would be developed in the future. Depending on the extent of revegetation within the buffer zone along with the presence of cleared areas and/or areas landscaped such that they meet the definition of low threat vegetation means that there is the potential for the separation distance between the classified vegetation and Lots to be increased, and thus BAL-ratings in nearby Lots could decrease.

2.4.8 Patch 8 — Little Mariginiup Lake

Patch 8 is the grassland associated with Little Mariginiup Lake within Lot 802 Mariginiup Road. This vegetation has also been treated as a 'worst-case' scenario assuming that it may not always be maintained in a minimal fuel condition and thus always considered low threat vegetation. The perimeter road that will be constructed to the north and west of the Mariginiup Road reserve will ensure that Lots will have a maximum BAL-12.5 rating, as will those in the western portion of Lot 801.

However, a planned residential cell to be constructed within the eastern portion of Lot 801 and to the immediate west of the most northwesterly portion of Lot 802 is immediately adjacent to grassland within Lot 802 and without a perimeter road, meaning that the BAL-FZ/BAL-40 zones extend into the rear of these Lots. There are several options for dealing with the increased bushfire risk at this location, including:

- Creating larger Lots that can accommodate a suitable setback from the rear Lot boundary and nominating an indicative building envelope that avoids the BAL-FZ/BAL-40 zones.
- Creating a low threat area as defined by AS 3959:2018 within that north-westerly portion of Lot 802 that would enable the entire extent of Lots to be built on.

It is recognised that restoration/rehabilitation will occur within the Little Lake Mariginiup bed, with the extent of those works yet to be defined in the proposed foreshore management plan. Depending on the extent of the proposed works, changes to the indicative BAL-ratings to the north and west of Lot 802 may need to be adjusted.

2.4.9 Patch 9 — Grassland North of Coogee Road

Patch 9 is grassland associated with the broader reserve of Lake Adams across Coogee Road to the north of Lots 3, 23, and 24. Adopting a 'worst-case' scenario approach in relation to this grassland as the ongoing management in a low-threat condition cannot be guaranteed, Lots abutting Coogee Road will have a maximum BAL-19 rating.

2.5 ASSET PROTECTION ZONE

The asset protection zone (APZ) for the Site is that area that provides the separation distance between the classified vegetation and building walls, with a preferred width of 100 m. For locations where a 100-m APZ width cannot be achieved, a reduced APZ can be implemented when a BAL rating is determined for the building, as is the case for some of the Lots that are the subject of this BMP. The reduced APZ commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones shown in Figure 14, and will extend to the building walls as that is the point where the potential radiant heat impact of a bushfire does not exceed 29 kW/m². A suitable separation distance can be demonstrated for each of the Lots that will be created, indicating that the bushfire risk can be managed within the subdivision area.

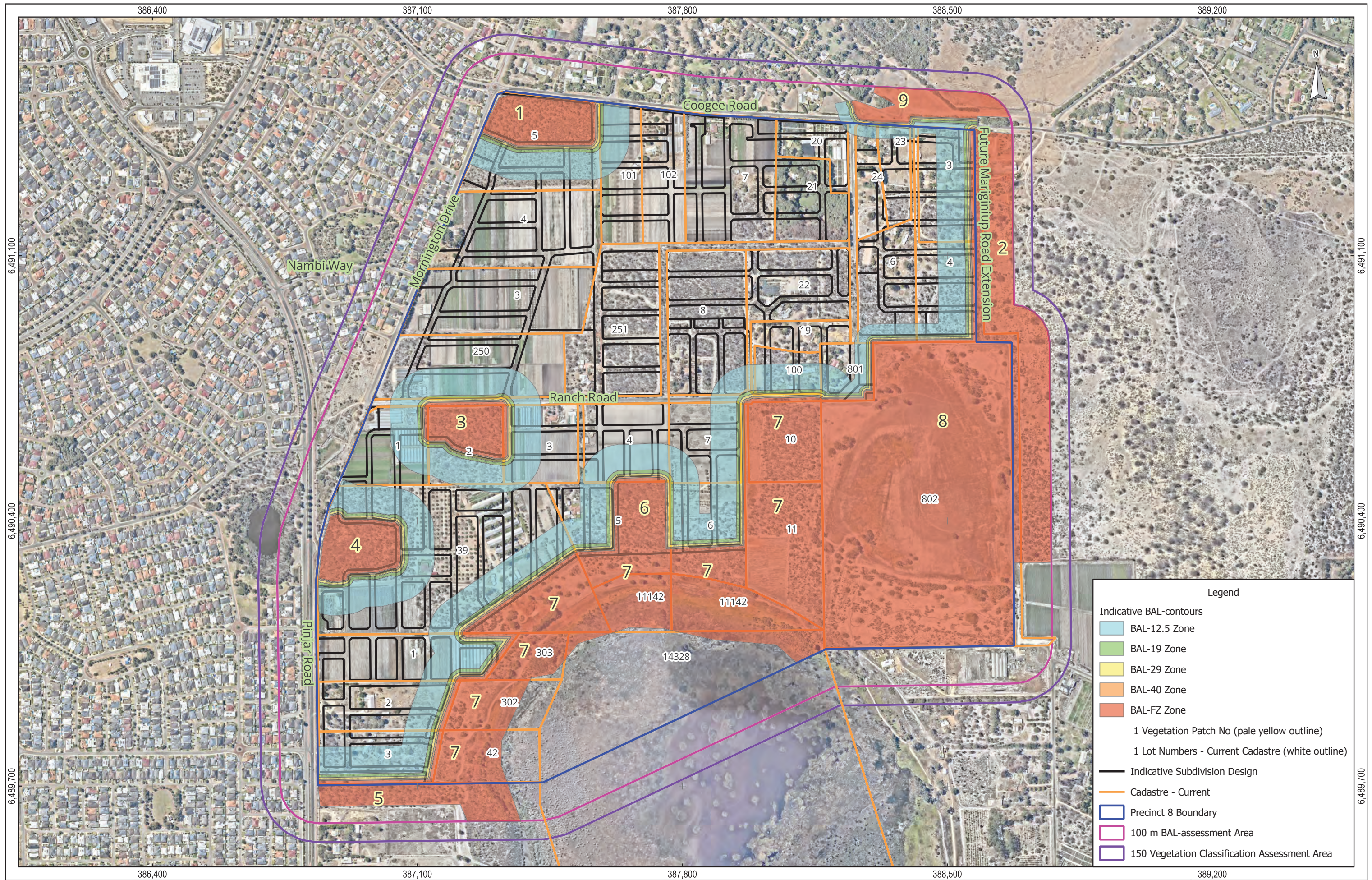
2.6 SHIELDING

Clause 3.5 of AS 3959:2018 allows for a reduction in the nominated construction standard for a building in bushfire prone area where the elevation is not exposed to the source of the bushfire attack, noting that the reduction in building standard cannot reduce below BAL-12.5. For Lots rated BAL-29 or BAL-19, elevations that are not exposed to the source of the bushfire attack may be reduced to BAL-12.5.

2.7 OTHER BUSHFIRE PROTECTION MEASURES

As the planning for the Site is high level planning that will inform the structure planning process, current bushfire protection measures will be limited and will change as approvals are achieved and designs evolve over time. At present, no bushfire protection measures are required for the Site other than those documented in this BMP.

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Scale: 1: 9,000
Original Size: A3
Aerial Imagery: NearMap February 2024
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 250 500 m

\\mbssvr\working\Qube Property Group\Wanneroo Precinct 8 Bushfire Works\GIS\Precinct 8 BMP.qgz 23/03/2024 F14 BAL-contours

Precinct 8, East Wanneroo
Local Structure Plan
Qube Property Group

Figure 14

Indicative BAL-contours

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MBS
ENVIRONMENTAL

2.8 RESPONSIBILITIES

During the early phases of the planning process, the responsibility for bushfire preparedness and response within the development area rests with Qube Property Group and its development partners.

2.9 IMPLEMENTATION

Implementation of this BMP will commence immediately and will be the responsibility of the Developer, Qube Property Group and its development partners for those land parcels that are under its control for installation and ongoing maintenance until Lots are eventually created and sold, and POS areas are ceded to the City of Wanneroo. Thus, in time, the Developer will be responsible for ensuring that Lot purchasers receive a copy of this BMP during the sale process. Activities that will be involved with the implementation of this plan are described in Table 2, which also includes an indication of maintenance responsibilities associated with each. As the planning process progresses, the implementation responsibilities will be adjusted to reflect the planning and development phase.

Note that when ownership arrangements change over time, the responsibility for the maintenance of fire management measures will devolve to the new owner or managing organisation, noting that landowners or managers are responsible for land under their direct control only. For example, Lot owners will be responsible for ensuring asset protection zones within their property are maintained. Activities that will be involved with the implementation of this plan are described in , which also includes an indication of maintenance responsibilities associated with a particular activity.

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Table 2: Implementation Schedule

Item	Activity	Responsibility	Maintenance	Responsibility
1	The proposed subdivision design is reviewed at future planning phases to ensure the bushfire risk remains manageable.	Developer	As required at future planning phases and/or changes in the indicative design occur.	Developer
2	<p>Hydrant design requirements will be in accordance with the Water Corporation Design Standard 63 for hydrants:</p> <ul style="list-style-type: none"> Installation of markings to indicate the presence of hydrants, including: <ul style="list-style-type: none"> A blue 'cat's eye' reflective indicator in the centre line of the road. A small blue 'H' painted on the curbing. A white and red stripe around the pole nearest to the hydrant. Clearance on the placement of hydrants will be required from Department of Fire and Emergency Services (DFES) and the Water Corporation. Hydrants will need to be clearly identifiable, with markings installed by the developer prior to sign off. 	Developer	As required during various future planning approval phases.	Developer
3	The design and installation of roads will be in accordance with requirements specified in Table 6, Column 1 on page 76 of the Guidelines, with approval required from the City of Swan before installation can commence.	Developer	As required during various future planning approval phases.	Developer
4	When development of the Site progresses, either a 50 m low-fuel zone will be installed around active stages in the vicinity of Class G Grassland, or a 100 m low-fuel zone in the vicinity of Class D Scrub or Class A Forest to prevent temporary or higher BAL-ratings on Lots under construction.	Developer or owner/occupier as appropriate	As required to ensure the designated low-fuel zones remain in low-fuel state as defined by <i>AS 3959:2018</i> .	Developer
5	If required, undertake slashing of any long grass or other low vegetation to 100 mm and other weed control to reduce fuel load within any proposed POS areas and low-fuel zones.	Developer	As required to ensure the designated low-fuel zones remain in low-fuel state as defined by <i>AS 3959:2018</i> .	Developer
6	Comply with the City of Wanneroo's annual fire hazard reduction notice.	Developer	As per the requirements of the City of Wanneroo annual fire hazard reduction notice.	Developer

Table 4: Compliance with Bushfire Protection Criteria

Intent	Acceptable Solutions	Solution
Element 1: Location		
Ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.	A1.1 Development Location	
	Bushfire hazard assessment is or will on completion be moderate or low.	<ul style="list-style-type: none">The subdivision is in an area where the bushfire hazard level is manageable or will become so during later planning and development phases when activities expected to occur on land owned by others will facilitate the development of adjacent land within Precinct 8.
	BAL-rating is BAL-29 or lower.	<ul style="list-style-type: none">The retention of vegetation within various Precinct 8 locations will mean that those Lots within 100 m of that vegetation will require a BAL-rating, with the maximum expected BAL-rating being BAL-29.Those Lots adjacent to the Mariginiup Road reserve will not be developed until the vegetation within the road reserve is cleared and suitable separation distance to ensure a maximum BAL-29 rating can be achieved.Lots adjacent to the most north-westerly portion of Little Mariginiup Lake are likely to be sufficiently large to enable a building envelope to be specified that avoids the BAL-FZ/BAL-40 zones of the Grassland to the east.
Element 2: Siting and Design of Development		
To ensure that the siting and design of development minimises the level of bushfire impact.	A2.1 Asset Protection Zone (APZ)	
	<p>Every habitable building is surrounded by, and every proposed lot can achieve an APZ depicted on plans that meets the following:</p> <ul style="list-style-type: none">Width – bushfire radiant heat does not exceed radiant heat of 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances.Location – APZ contained solely within the boundaries of the Lot on which the building is situated, except in instances where the neighbouring lot(s) will be managed in a low-fuel state on an ongoing basis, in perpetuity.	<ul style="list-style-type: none">The APZ coincides with the boundary between BAL-40 and BAL-29 zones (Figure 14) and includes roads and cleared areas.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.Some Lots within the Site will have a BAL rating, with none expected to be higher than BAL-29 based on the current

Intent	Acceptable Solutions	Solution
	<ul style="list-style-type: none"> Management – the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (Schedule 1 on page 71 of the Guidelines). 	design or the application of later planning measures (Section 2.4).
Element 3: Vehicular Access		
<p>Ensure that the vehicular access serving a subdivision/ development is available and safe during a bushfire event.</p> <p>To achieve the intent, all applicable acceptable solutions must be addressed:</p> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known.</p> <p>Sb – Structure plan where the lot layout is known and subdivision application.</p> <p>Dd – Development application for a single dwelling, ancillary dwelling, or minor development.</p> <p>Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development.</p>	A3.1 Public Roads (SP Sb Do)	
	<ul style="list-style-type: none"> Public roads are to meet the minimum technical requirements in Table 6, Column 1 on page 76 of the Guidelines. The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area. 	<ul style="list-style-type: none"> Public roads associated with the planned subdivision area will be constructed in accordance with the technical requirements outlined in Column 1 of Table 5 on page 76 of the Guidelines and be consistent with those constructed in nearby locations.
	A3.2a Multiple Access Routes (SP Sb Do)	
	Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access).	<ul style="list-style-type: none"> The design of the subdivision provides a range of two-way access options to the north, east, south, and west. Access/egress will be available to Coogee Road to the north, Mornington Drive and Pinjar Road to the west, and Mariginiup Road to the east when the extension through to Coogee Road is constructed. The presence of Lake Mariginiup constrains access to the south, with a perimeter road provided that will direct traffic to the west, north, and east. Planned exits to Mariginiup Road to the east may be temporary no-through roads (cul-de-sacs) until the construction of the extension through to Coogee Road is complete.
	If the public road access is via a no-through road that cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 m from the subject lot(s) boundary to an intersection where two-way access is provided.	<ul style="list-style-type: none"> The temporary cul-de-sacs that will eventually connect to Mariginiup Road are more than 200 m, however, only the first 100 m of those roads are located within areas that are rated BAL-12.5 or higher (Figure 14). The remainder of the road travels towards a suitable destination, with options available to the north and west.

Intent	Acceptable Solutions	Solution
	<p>A no-through road may exceed 200 m if it is demonstrated that an alternative access way cannot be provided due to site constraints and the following requirements are met:</p> <ul style="list-style-type: none"> The no-through road travels towards a suitable destination. The balance of the no-through road that is greater than 200 m from the subject site is wholly within BAL-Low or is in a residential built-out area (Figure 23 on page 81 of the guidelines). 	<ul style="list-style-type: none"> As above – the no-through roads will be temporary no-through roads that will eventually connect to Mariginiup Road when it is constructed. Until Mariginiup Road is constructed, the length of those no-through roads will be more than 200 m, however, only the first 100 m of those roads are located within areas that are rated BAL-12.5 or higher (Figure 14). The remainder of the road travels towards a suitable destination, with options available to the north and west.
	A3.2b Emergency Access Way (SP Sb Do)	
	<p>Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution. An emergency access way is to meet all the following requirements:</p> <ul style="list-style-type: none"> Requirements in Table 6, Column 2 on page 76 of the guidelines. Provides a through connection to a public road. Be no more than 500 m. Must be signposted and if gated, gates must open the whole trafficable width and remain unlocked. 	<ul style="list-style-type: none"> Not required, emergency access will be via the planned internal road network. No-through roads will be temporary until the construction of Mariginiup Road to the east is completed.
	A3.3 Through roads (SP Sb)	
	<p>All public roads should be through roads. No-through roads should be avoided and should only be considered as an acceptable solution where:</p> <ul style="list-style-type: none"> It is demonstrated that no alternative road layout exists due to site constraints, and The no-through road is a maximum length of 200 m to an intersection providing two-way access, unless it satisfies the exemption provisions in A3.2a. 	<ul style="list-style-type: none"> When the construction of Mariginiup Road to the east is complete, all roads within Precinct 8 will be through roads. The length of the temporary through-roads satisfies the exemption provisions of A3.2a.
	<p>A no-through road is to meet all the following requirements:</p> <ul style="list-style-type: none"> Requirements of a public road (Table 6, Column 1, Page 76). Turn-around area as shown in Figure 24 on page 81 of the <i>Guidelines</i>. 	<ul style="list-style-type: none"> The temporary no-through roads will be constructed in accordance with the requirements for public roads specified in the <i>Guidelines</i>, including the requirement for turn-around areas.

Intent	Acceptable Solutions	Solution
	A3.4a Perimeter Roads (SP Sb)	
	<p>A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed, including as part of a staged subdivision, with the aim of:</p> <ul style="list-style-type: none">• Separating areas of classified vegetation under AS 3959 that adjoin the subject site from the proposed lots, and• Removing the need for battle-axe lots that back onto areas of classified vegetation.	<ul style="list-style-type: none">• The subdivision design has included perimeter roads between classified vegetation and the Site.• When constructed, Mariginiup Road to the east will act as a perimeter road between Precinct 8 and Precinct 15.
	<p>A perimeter road is to the meet the requirements contained in Table 6, Column 1 on page 76 of the <i>Guidelines</i>.</p>	<ul style="list-style-type: none">• The perimeter roads will comply with the requirements specified in the <i>Guidelines</i>.
	<p>A perimeter road may not be required where:</p> <ul style="list-style-type: none">• The adjoining classified vegetation is Class G Grassland.• Lots are zoned for rural living or equivalent.• It is demonstrated that it cannot be provided due to site constraints.• All lots have frontage to an existing public road.	<ul style="list-style-type: none">• Not applicable — a perimeter road has been planned for the Site.
	A3.4b Fire Service Access Route (SP Sb)	
	<p>Where proposed lots adjoin classified vegetation under <i>AS 3959</i> (excluding Class G Grassland) and a perimeter road is not required in accordance with A3.4a, a fire service access route can be considered as an acceptable solution to provide firefighter access, where access is not available, to the classified vegetation. A fire access route is to meet all the following requirements:</p> <ul style="list-style-type: none">• Requirements in Table 6 Column 3 on page 76 of the <i>Guidelines</i>.• Be through-routes with no dead-ends.• Linked to the internal road system at regular intervals, every 500 m.• Must be signposted.• No further than 500 m from a public road.• If gated, gates must open the required trafficable width and be locked by the local government and/or emergency services, if keys are provided for each gate.• Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 m.	<ul style="list-style-type: none">• Not applicable — a perimeter road has been planned for the Site.

Intent	Acceptable Solutions	Solution
	A3.5 Battle-axe Access Legs (Sb)	
	Where it is demonstrated that a battle-axe access leg cannot be avoided due to site constraints, it can be considered as an acceptable solution. There are no battle-axe technical requirements where the point of the battle-axe access leg joins the effective area of the battle-axe lot is less than 50 m from a public road in a reticulated water area.	<ul style="list-style-type: none">Not applicable — Lot layout is yet to be determined.
	In circumstances where the above condition is not met, or the battle-axe lot is in a non-reticulated water area, the battle-axe access leg is to meet all the following requirements: <ul style="list-style-type: none">Requirements in Table 6, Column 4 on page 76 of the Guidelines.Passing bays every 200 m with a minimum length of 20 m and minimum additional trafficable width of 2 m (i.e. the combined trafficable width of the passing bay and constructed driveway to be a minimum 6 m).	<ul style="list-style-type: none">Not applicable — Lot layout is yet to be determined.
	A3.6 Private Driveways (Dd Do)	
	There are no private driveway technical requirements where the private driveway is: <ul style="list-style-type: none">Within a lot serviced by reticulated water.No greater than 70 m in length between the most distant external part of the development site and the public road as measured as a hose lay.Accessed by a public road where the road speed limit is not greater than 70 km/h.	<ul style="list-style-type: none">Not applicable – Lot layout is yet to be determined.
	In circumstances where all the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following requirements: <ul style="list-style-type: none">Requirements in Table 6, Column 4 on page 76 of the Guidelines.Passing bays every 200 m with a minimum length of 20 m and minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed driveway to be a minimum six metres).Turn around areas as shown in Figure 28 on page 86 of the Guidelines and within 30 m of the habitable building.	<ul style="list-style-type: none">Not applicable – Lot layout is yet to be determined.

Intent	Acceptable Solutions	Solution
Element 4: Water		
<p>Ensure that water is available to enable people, property, and infrastructure to be defended from bushfire.</p> <p>To achieve the intent, all applicable acceptable solutions must be addressed:</p> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known.</p> <p>Sb – Structure plan where the lot layout is known and subdivision application.</p> <p>Dd – Development application for a single dwelling, ancillary dwelling, or minor development.</p> <p>Do – Development application for any other development that is not a single dwelling, ancillary dwelling, or minor development.</p>	A4.1 Identification of Future Water Supply (SP)	
	Evidence that a reticulated or sufficient non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2 on Page 90 of the Guidelines.	<ul style="list-style-type: none">The subdivision is in an urban area and will be connected to scheme water.
	Where the provision of a strategic water tank(s) is required in a suitable area within a road reserve or a dedicated lot the location should be identified on the structure plan to the satisfaction of the local government.	<ul style="list-style-type: none">Not applicable – the subdivision will be connected to scheme water.
	A4.2 Provision of Water for Firefighting Purposes (Sb Dd Do)	
	<p>Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority. Where these specifications cannot be met, then the following applies:</p> <ul style="list-style-type: none">The provision of a water tank(s) in accordance with the requirements of Schedule 2 on page 90 of the guidelines.Where the provision of a strategic water tank(s) is applicable, then the following requirements apply:<ul style="list-style-type: none">Land to be ceded free of cost to the local government for the placement of the tank(s).The lot or road reserve where the tank is to be located is identified on the plan of subdivision.Tank capacity, construction, and fittings provided in accordance with the requirements of Schedule 2 on page 90 of the Guidelines.A strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). <p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s) in accordance with the requirements listed above.</p>	<ul style="list-style-type: none">Not applicable – the subdivision will be connected to scheme water.

Intent	Acceptable Solutions	Solution
Element 5: Vulnerable Tourism Land Uses		
Provide for bushfire protection for tourism land uses relevant to the characteristics of the occupants and/or the location, to preserve life and reduce the impact of bushfire on property and infrastructure. All applicable acceptable solutions must be addressed.	Habitable buildings are sited and designed to: <ul style="list-style-type: none">Minimise clearing of existing vegetation.Provide hazard separation between classified vegetation and a development site that is managed in perpetuity to protect life, prevent the spread of, and manage the impacts of fire.	<ul style="list-style-type: none">Not applicable — urban subdivision is planned.
	Suitable access/egress is provided for users of tourism sites.	<ul style="list-style-type: none">Not applicable — urban subdivision is planned.
	Adequate water is available for firefighting purposes in the event of a bushfire.	<ul style="list-style-type: none">Not applicable — urban subdivision is planned.

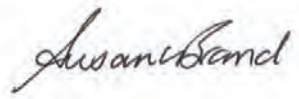


3.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 3.1 and 3.2 demonstrate how the development of Precinct 8 complies with State Planning Policy 3.7 (Department of Planning and WA Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning and the WA Planning Commission, V1.4, 2021). Site owners/occupiers must comply with relevant sections of the annual firebreak notice and bushfire information prepared by the City of Wanneroo, such as total fire ban and hazard reduction programs.

3.4 COMPLIANCE STATEMENT

This BMP has been prepared in accordance with the requirements of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (DPLH and WAPC, V1.4, 2021). The information contained in this document represents current site conditions based on a site visit on 11 March 2023 and associated planning.

Signed: 
 Date: 28 March 2024
 Accreditation Number: BPAD 36638
 Accreditation Expiry Date: 30 April 2024



4. REFERENCES

Australian Standard, AS 3959:2018, Construction of Buildings in Bushfire-Prone Areas, Standards Australia, NSW.

Bush Fires Act 1954 (WA)

Considered Space, (2024), Local Structure Plan – Landscape and Open Space Master Plan, unpublished report prepared for Qube Property.

Department of Planning, Department of Fire and Emergency Services, Western Australian Planning Commission, (V1.3, Dec 2017), *Guidelines for Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Western Australia.

Department of Planning and Western Australian Planning Commission, (2015), *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Western Australia.

Emerge Associates, (2018a), *Environmental Assessment Study – East Wanneroo District Structure Plan*, unpublished report prepared for the Department of Planning, Lands and Heritage.

Emerge Associates, (2018b), *Preliminary Environmental Assessment of Planning Investigation Areas – East Wanneroo District Structure Plan*, unpublished report prepared for the Department of Planning, Lands and Heritage.

Emerge Associates, (2019), *Assessment of Proposed Environmental Outcomes – East Wanneroo District Structure Plan*, unpublished report prepared for the Department of Planning, Lands and Heritage.

Lush Fire & Planning, (2018), *Strategic Bushfire Hazard Level Assessment Bushfire Management Plan – East Wanneroo District Structure Plan*, unpublished report prepared for the Department of Planning, Lands, and Heritage.

Mitchell, Williams and Desmond, (2002), *Swan Coastal Plain 2 (SWA2 – Swan Coastal Plain subregion)*, Department of Conservation and Land Management, accessed February 2023 via: https://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/swan_coastal_plain02_p606-623.pdf.

PGV Environmental (2024a), *Environmental Assessment Report – East Wanneroo Precinct 8*, unpublished report prepared for Qube.

PGV Environmental (2024b), *Wetland Buffer Assessment and Foreshore Strategy*, unpublished report prepared for Qube.

APPENDICES

APPENDIX 1: LANDSCAPE MASTER PLAN



Local Structure Plan
Landscape & Open Space Master Plan

Document Control

Date	Revision	Author	Version Description	Reviewer	Review Date
19.01.2024	A	C.Taylor	Internal Review- DRAFT	C.Taylor	19.01.2024
07.03.2024	B	C.Taylor	Client Issue	C.Taylor	07.03.2024
15.03.2024	C	C.Taylor	Final	C.Taylor	15.03.2024

considered
[kən'sɪdəd]
ADJECTIVE
having been thought about carefully

space
[speɪs]
NOUN
the dimensions of height, depth, and width within which all things exist and move

Contents

01. Landscape Principles

02. Landscape Intent

03. Opportunities & Constraints

04. Landscape Strategy

- Landscape Master Plan
- Street Tree Master Plan
- Open Space Reference Plan
- Landscape Facilities Plan

05. Landscape Concept Plans

06. Streetscapes

07. Softscape Planting



01. Landscape Principles

The Ranch Road (Precinct 8) Structure Plan in East Wanneroo has been planned to provide a network of interconnecting parklands, which connects to and enhances ecological & cultural corridors, wetlands, lakes, bushland and aims to contribute to the ecological and social fabric of the Ranch Road precinct and greater East Wanneroo community.

Being strategically located, the proposed public open space areas will provide accessibility and connectivity through the development whilst also playing an important role in protecting the sites natural assets which are unique to the Ranch Road locale.

The key Landscape Principles to be explored during the design phase shall be:

- 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 Lake Mariginiup 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.



02. Landscape Intent

Proposed Planting in the Public Realm

The provision of planting in public open space areas and streetscapes serves to provide character, shade, interest, habitat and a point of reference in major streets or feature locations.

The locations of planting and types of vegetation will include;

- Predominantly native tree species are to be nominated throughout the Ranch Road Precinct.
- Exoticspecimen, shade and historical/cultural reference trees are to be nominated in Pocket, Local and Neighbourhood parks as well as high profile street or entry locations.
- Smaller scale exotic trees may be nominated in feature locations and avenue plantings to secondary residential streets,
- Bushland and habitat regeneration in disturbed areas,
- Shrub planting to screening and to provide spatial definition,
- Groundcover planting to medians, verges and areas requiring clear views,
- Sedge planting to swales and basins,
- Irrigated grass to informal usable space and recreation areas,

The proposed mix of native species and exotic cultural plantings in feature locations will provide a variation of character and define feature points. In general POS planting shall be composed of no less than 95% native vegetation.

The selection and placement of species shall consider adjacent elements so as to limit future maintenance and public health and safety issues. It will promote the survival and health of the existing vegetation while also provide ongoing social and visual benefits. Items of consideration may include;

- Proximity to traffic sightlines to ensure suitable view corridors,
- Proximity and alignment to underground services to ensure no adverse impact,
- Seasonal influence of shade on adjacent facilities and areas,
- Passive solar benefits influencing adjacent built form and residential dwellings,
- Provision of seasonal visual colour,
- Provision of a seasonal food source to local fauna,
- Plant selection based on suitability to local climate, soils, rainfall and temperatures,
- Selection based on reduced maintenance, trimming, pruning, fertilising and watering.
- Develop a species palette with subtle variations through the development to tie in with identifiable communities and existing streetscapes.
- Buffer screening will be provided to residential or sensitive areas where required.
- Fringing vegetation to the surrounding areas is to be retained and protected.

Refer to section 07 for proposed species lists (note final species to be confirmed during the landscape subdivision approval process with the City of Wanneroo).

Street trees

Street trees are a desirable design element to increase shade, promoting walkability and a pedestrian orientated Ranch Road precinct. The selection and placement of street trees shall vary dependant of the road hierarchy. Along major roads, street trees will form a strong visual avenue, and not impede traffic flow, safety or sightlines.

In residential streets, the roads may vary in character throughout the precinct; however, they are characterised as smaller scale pedestrian friendly environments. Therefore, street trees will be of a smaller scale, and take advantage of passive solar principles allowing summer shade and winter sun. As the road reserve widths may vary to allow for the retention of existing vegetation and the interconnection of the retained parklands and public open space network, it may be possible to allow for clustering or grouping of trees in the road reserve. This will be reviewed at the detailed design phase.

Water Wise Planting

It is intended that local species shall be used where suitable to maximise local habitat advantage and minimise water dependence. Soil amendments will be used in order to reduce leaching and increase soil moisture holding capacity. All garden beds will be mulched to reduce water loss through evaporation.

Irrigation Strategy

In general terms the project is committed to undertaking water sensitive urban design with minimal impact on existing groundwater and the preservation of water quality. The project is also committed to minimising the volume of water used for irrigation. The following principles are held.

- Minimise the extent of irrigation and the volume of water consumed
- Minimise the extent of irrigated turf
- Minimise the extent of long term irrigation usage to planted beds
- Use of hydrozoning
- Use of xeriscaping where practical.

Water application shall be based on seasonal need and be constructed of reliable, readily available and cost effective fittings, infrastructure and materials. Hydrozoning principles shall be incorporated at the detailed design stage.

All irrigation shall be installed to the local authority’s standard specifications and industry best practice. Maintenance minimisation processes will apply in all circumstances. Irrigation shall be designed to incorporate stations that can be terminated as agreed upon planting establishment and maintenance handover to the City of Wanneroo in accordance with relevant policies.

02.

Drainage/Stormwater

The development aims to utilise water sensitive urban design principles covering the following:

- Stormwater treatment in POS areas.
- Treatment areas to collect stormwater runoff.
- Dedicated first flush areas to capture sand and silt from development areas.
- Sedge and fringing vegetation to swales to provide a nutrient stripping function.

It is important that proposed treatment areas provide for multiple uses including recreation, storm water management and both the retention and creation of natural habitat.

Drainage Treatments

All stormwater from the development will be directed into a system of treatment areas integrated and constructed within the public open space and / or adjacent road reserves. These devices will be sized to treat the flows from the small rainfall event in accordance with the principles of the Department of Water and Environmental Regulation (DWER) and greater stormwater strategy provided within the Ranch Road Local Water Management Strategy (Pentium Water, 2024).

As the East Wanneroo District Structure Plan (EWDSP) identifies all Conservation Category Wetlands (CCW) as Parklands, it is anticipated that the CCW’s will be integrated with the drainage network incorporated into local open space areas, providing the opportunity to restore and enhance the biodiversity of these areas.

The following general principles will be adopted wherever possible in the landscape design to assist the drainage treatment of stormwater and preservation of groundwater for irrigation purposes.

- Promote the use of native plants with low water and fertiliser requirements.
- Promote landscape treatments sympathetic to climate conditions and prevailing site conditions – e.g. soil types, topography, environment, wetlands etc.
- Utilise “cluster or clump” plantings to provide useable shade areas and better use of reticulated water in preference to single item or symmetrical planting regimes.
- Irrigate grass and garden areas at appropriate time so as to reduce evaporative loss.
- Ensure that irrigation regime is responsive to prevailing weather conditions.



Retained Vegetation

A key goal in the Ranch Road Local Structure Plan is the retention and protection of existing vegetation. Detailed flora surveys have been undertaken to assess the type and condition of the remnant vegetation across the precinct, with the results summarised within the East Wanneroo Precinct 8 Environmental Assessment Report (PGV Environmental, 2024) and the East Wanneroo Precinct 8 Wetland Buffer Assessment and Foreshore Strategy (PGV Environmental, 2024). This assessment has been utilised in determining the suitability of these areas as Parklands and areas of vegetation identified for retention within public open space. The retention of existing vegetation in defined locations caters for existing habitat, preserves natural assets and provides visual relief against the broader development area.

Whilst areas of the vegetation on site has suffered through the effect of the various past land uses and management, the areas of remnant vegetation offer positive outcomes if the development can be engineered to protect these areas. The retention of vegetation shall be maximised through the proposed location of public open space and the considered alignment of road reserves and lot boundaries.

Vegetation proposed for retention includes (but not limited to):

- Banksia Woodland TEC (Threatened Ecological Communities)
- TEC Floristic Community Type 20a (‘Banksia attenuata woodlands over species rich dense shrublands’)
- Vegetation rated as ‘Good’ condition or better

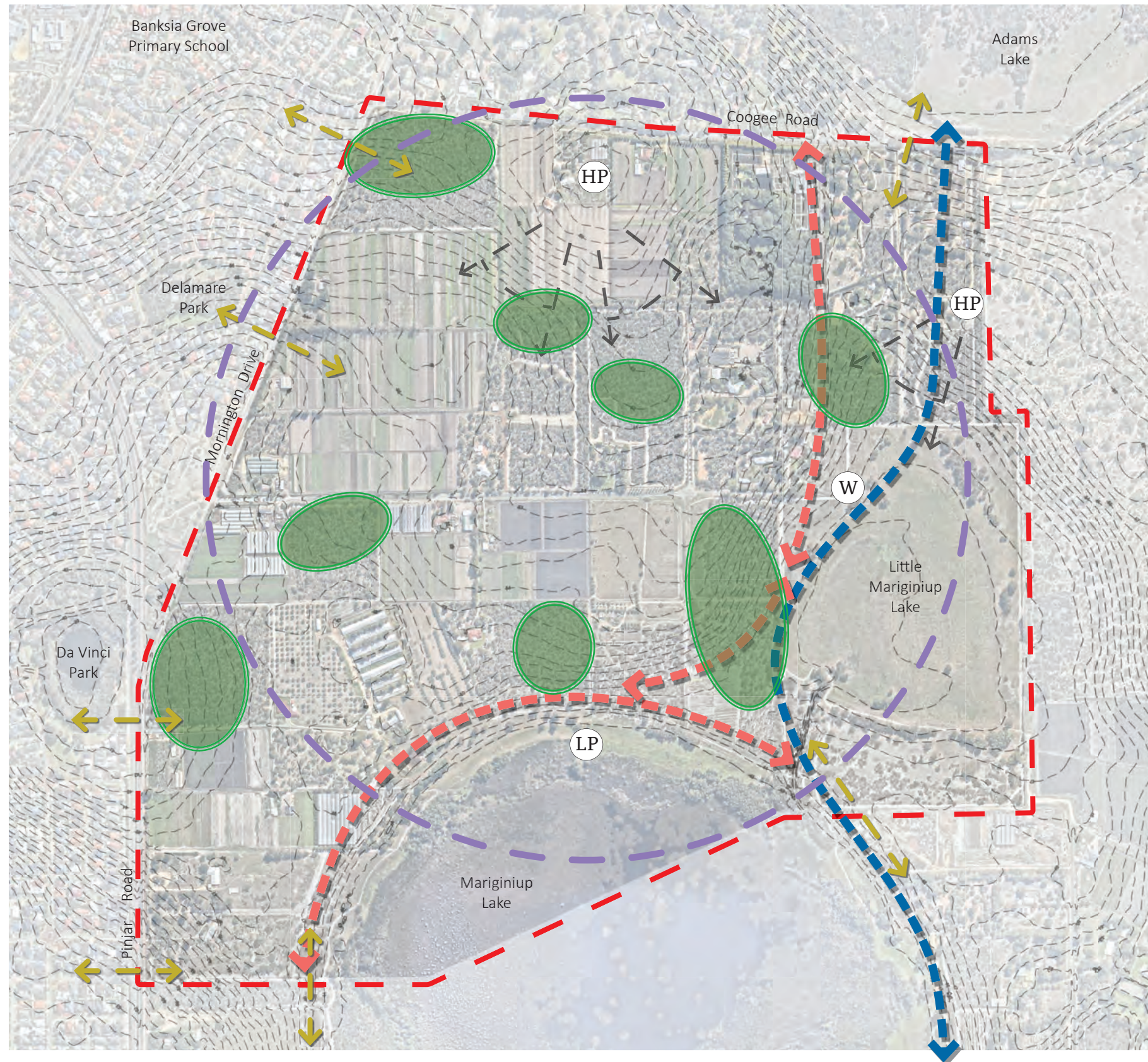
Retention and Protection

The retention and protection of defined existing vegetation shall occur during construction, following building works and in conjunction with maintenance. Retention and protection strategies shall include;

- Temporary fencing and signage to all retained areas and individual specimen trees
- Ripping or compaction within 3m of the drip line of existing trees to be prohibited.
- In order to restrict the spread of exotic weeds, the construction of clearly defined and easily maintained boundaries between retained vegetation and ornamental landscape may include such methods as footpaths, roads, trails and permanent fencing.



03. Opportunities & Constraints



Legend

- Precinct 8 Boundary
- HP High Point
- LP Low Point
- W Future Waste Water Pump Station
- EWDSP Proposed Parkland Link
- Proposed Parkland Link Realignment / Extension
- 800m Walk
- Pedestrian Desire Connections
- Key Views / Sightlines
- Retained Vegetation



Drawing Number	QPG003 : LSP:O&C	Revision	C
Date	MAR 2024	Scale	1:10,000 @ A3



04. Landscape Strategy



Drawing Number	QPG003 : LSP:MP	Revision	C
Date	MAR 2024	Scale	1:10,000 @ A3





Agonis flexuosa
WA Peppermint Tree



Corymbia ficifolia
Red flowering gum



Eucalyptus torwood
Hybrid Coral Gum



*Eucalyptus gomphocephala**
Tuart



Eucalyptus tottiana
Coastal blackbutt



Eucalyptus victrix
Little ghost gum



Eucalyptus marginata
Jarrah



Eucalyptus torquata
Coral gum



Eucalyptus woodwardii
Lemon-flowered gum

* located in median island only

Drawing Number	QPG003 : LSP:STMP	Revision	C
Date	MAR 2024	Scale	1:10,000 @ A3



0 100 200 300 400 500m

East Wanneroo Precinct 8 (Ranch Road)

Open Space Reference Plan



Public Open Space Type & Reference

- ① Public Open Space a Parkland

Public Open Space Summary

- Pocket Park**
 - Passive recreation function (places for relaxation & respite).
 - Shade trees with small breakout areas of irrigated turf.
 - Internal path network for bikes and scooters.
 - Internal path network connecting into the broader path network.
 - Bench seating & Nature Play elements.
- Local Park**
 - Small scale recreation function with active & passive experiences.
 - Shade trees with areas of irrigated turf.
 - Areas for short dog walking and respite points.
 - Picnic settings, shelter, bench seating & shaded play space.
 - Stormwater drainage function.
 - Retention of existing trees & vegetation.
- Neighbourhood Park**
 - Medium scale recreation function with active & passive experiences.
 - Incorporate accessible remnant bushland areas.
 - Potential to provide recreational, sports and nature area functions.
 - Shade trees with large open areas of irrigated turf.
 - Multiple seating, picnic settings and shelter opportunities.
 - Medium to large shaded play space with universal access equipment.
- Parkland**
 - Consisting of wetland areas, bushland vegetation, open space and local parkland interconnected by streetscapes and Parkland Links with passive recreation function.
 - Accessible areas of remnant bushland and conservation areas.
 - Internal circulation paths, boardwalks & walk trails linking with external pedestrian and cycle paths.
 - Retention of existing trees & vegetation.
 - Opportunity to restore and enhance biodiversity via weed removal and revegetation.
 - Access for maintenance, service and emergency vehicles.
 - Opportunity for complementary landscaping including water wise garden bed and tree planting.
 - Informal seating & picnic settings opportunities.
 - Educational signage.

04. Landscape Strategy



04.

Public Open Space Typologies

The areas of public open space within the Ranch Road (East Wanneroo Precinct 8) Structure Plan have been separated into broad categories as identified withing the EWDSP and the City of Wanneroo Local Planning Policy (LPP) 4.3: Public Open Space. Refer LPP 4.3 for specific treatments and design requirements.

The Ranch Road public open space typologies are as follows:

- Pocket Park
- Local Park
- Neighbourhood Park
- Parklands
- Streetscapes

These are described in detail as follows:

Pocket Park:

Pocket parks are small parcels of POS (under 5,000m2) located throughout neighbourhoods that primarily serve an amenity and passive recreation function, while also providing valuable functions as community meeting places and places for relaxation & respite.

Pocket parks provide for a public ‘backyard’ and act as a shared open space extension for the residents within their catchment. They are open air respite points which are designed to function as small open space pocket that allows for green relief in residential scale passive spaces of shade trees with small breakout areas of irrigated turf for children to play, path network for bikes and scooters, areas for short dog walking and respite points for lunch breaks, fresh air and stretching.

Pocket parks are generally low maintenance, can in incorporate significant trees and/or retained vegetation, may contain drainage infrastructure, and provide an important connectivity role as part of the greater POS network.

Treatment and infrastructure within a Pocket Park can typically include bench seating, small shaded play space, internal circulation paths, tree & existing vegetation retention (where possible), complete landscaping including areas of turf, native revegetation, water wise garden bed and tree planting. Irrigated areas are to be hydrozoned via a groundwater production bore.



Local Park:

Local Parks provide open spaces (5,000m2 to 1Ha) which service the regular small-scale recreation needs of the immediate surrounding residential population. The proposed Local Parks will provide attractive public open spaces that cater for a variety of active and passive recreational experiences that will have a positive impact on the quality and efficiency of the public realm. Additionally, they provide resting places, shelter from the elements and allow for passive recreational activities such as dog walking, informal children’s play and relaxation.

Local Parks provide opportunities to reflect local character and create a sense of place through retention of significant trees and vegetation, cultural, ecological and physical landmarks.

They are typically located within 400m (5min walk) from other open space areas and can be located on the greater pedestrian path network to maximise access and pedestrian connectivity throughout neighbourhoods and with adjacent public open space. This along with their locations adjacent to residences, maximises passive surveillance in the surrounding area.

Local Parks often play a drainage function in the form of drainage basins and swales as part of the urban water management strategy and while performing a drainage function, these can also aid in the enhancement of a sense of place.

Treatment and infrastructure within a Local Park can typically include bench seating, a shaded play space, picnic shelter and settings, internal circulation paths, increased hardscape areas, tree & existing vegetation retention (where possible), complete landscaping including areas of turf, native revegetation, water wise garden bed and tree planting. Irrigated areas are to be hydrozoned via a groundwater production bore.



04.

Neighbourhood Park:

Neighbourhood Parks are located throughout the development (1 to 7ha in size) and are similar to local parks but are generally larger and able to provide for recreation & informal active pursuits simultaneously.

They are typically located central to the catchment (within 800m of most dwellings) to maximise accessibility, they are a destination for the local community and may incorporate accessible remnant bushland or conservation areas. They may also serve a recreational, sports or nature area function, provides local residents with areas of turf and planting for kick-about play and passive uses. Their locations adjacent to residences, maximise passive surveillance and may be collocated with primary school facilities to upgrade school playing field to senior capacity or create a community hub.

The Neighbourhood Parks within the Ranch Road precinct includes the integration of areas of retained vegetation and proposed drainage functions.

The landscape treatment and infrastructure within a Neighbourhood Park can typically include multiple seating opportunities, picnic settings and shelters, bbq facilities, drink fountains, medium to large shaded play space with Universal access play equipment, internal circulation paths linking with external pedestrian and cycle paths, security lighting and access for maintenance, service and emergency vehicles.

Neighbourhood Parks include tree & existing vegetation retention (where possible), complete landscaping including areas of turf, native revegetation, water wise garden bed and tree planting. Irrigated areas are to be hydrozoned via a groundwater production bore. Incorporating a single playing field maybe considered by the City of Wanneroo within a Neighbourhood Park.



Parkland:

The Ranch Road Precinct provides for a network of Parklands consisting of wetland areas, bushland vegetation, informal active open space and local Parkland interconnected by a Parkland Link to the east, connecting Mariginiup Lake and Little Mariginiup Lake with Adams Lake to the north. The Parklands are intended to be a network of multifunctional natural environments and landscaped spaces promoting nature and biodiversity conservation, active recreation, cultural and social interaction and educational functions.

Parkland areas within the Ranch Road Precinct consist of the following sub-categories:

- **Local Parkland** - land currently protected as Parks and Recreation reserves in the Metropolitan Region Scheme (MRS) and includes Conservation Category Wetlands (Lake Mariginiup and Little Lake Mariginiup)
- **Proposed Parks & Recreation Reserves**- new areas to be reserved for Parks and Recreation in the MRS.
- **Parkland Links**

Local Parkland

Local Parklands includes all existing local reserves as Parkland, as these areas are established reserves and contribute to the network of parkland links. These existing Parklands are located adjacent to the Lake Mariginiup and Little Lake Mariginiup Conservation Category Wetlands. They contain lake foreshore areas which are highly scenic environments, providing a range of environments from heavily forested wetland vegetation to open flat areas with long views.

There is the opportunity to restore and enhance their biodiversity via weed removal and revegetation and in addition to providing a nature area function with ecological and cultural links, they can also serve as an informal recreational function providing local residents with areas of turf and planting for kick-about play and passive uses.

The landscape treatment and infrastructure within a Local Parkland can typically include multiple seating opportunities, picnic settings and small shelters, bbq facilities, drink fountains, medium shaded play space with universal access play equipment, internal circulation paths linking with external pedestrian and cycle paths, boardwalks, walk trails, educational signage and access for maintenance, service and emergency vehicles.

Local Parkland includes tree & existing vegetation retention, complementary landscaping including areas of turf, native revegetation, water wise garden bed and tree planting. Pockets of irrigated areas are to be hydrozoned via a groundwater production bore.



Proposed Parks and Recreation Reserves

Proposed Parks and Recreation Reserves are various pockets of remnant vegetation which have been identified as a high priority for protection as these sites are likely to contain:

- Threatened (or potentially threatened) Ecological Communities
- Carnaby Cockatoo foraging habitat
- Representation of the regional vegetation complexes of Karrakatta Central and South and Pinjar

The landscape treatment and infrastructure within these Parks and Recreational Reserves will be of a conservation intent with external pedestrian paths, walk trails along existing tracks, educational signage and access for maintenance, service and emergency vehicles.

Key design outcomes in Parklands include;

- Bushland vegetation is protected and enhanced in designated MRS reservations or as part of local reservations, carefully integrated with the surrounding urban environment.
- Walk trails through bushland provide for public enjoyment of the natural environment.
- Significant wetlands are protected and enhanced for their environmental and biodiversity value, and serve an important drainage function.
- Lake foreshore areas are open to public enjoyment with access from the road network.
- Key foreshore areas are enhanced and appropriately treated to provide for recreational activity.
- Regional vegetation complexes are rehabilitated and extended as part of the management of foreshore areas.
- Appropriate areas are utilised for environmental education.
- Aboriginal heritage values are protected as part of the regeneration of wetlands.



Parkland Links

Parkland Links are identified as ecological and cultural linkages throughout the Ranch Road precinct (and greater East Wanneroo Development Area). The proposed subdivision provides an opportunity to create a link connect the lakes, wetlands, remnant vegetation and proposed POS & Road Reserves.

The amenity and connectivity of these corridors provides for district-wide cycling, pedestrian movement and nature-based education. The Parkland Links comprises of a mixture of Bush Forever, Public Open Space and landscaped streetscapes that provide within the urban environment a neighbourhood promoting a mature tree canopy and extensive landscaping within the corridor or road reserve.

The proposed Parkland Link through the eastern extent of the site (the Pinelake Trail Parkland Link), provides for an important connection linking the Ranch Road precinct with the Lake Mariginiup precinct (07) to the south, Lake Adams precinct (09) to the north and Central Mariginiup precinct (15) to the east. The north / south Parkland Link provides an interconnected pedestrian and cycle path network between Lake Mariginiup, Little Lake Mariginiup and Adams Lake.

Key design outcomes in Parkland Links include;

- Parkland Links are connected by Bush Forever sites, public open space & landscaped boulevards and accommodate uninterrupted pedestrian/ cyclist movement.
- They maintain and enhance ecological linkages through the area.
- Linear parks follow topographic features and link up patches of remnant vegetation.
- Landscaped Boulevards contain mature tree canopy and landscaping within a wide median or verge.



05. Landscape Concept Plans

East Wanneroo Precinct 8 (Ranch Road) POS 2 (Pocket Park)

OPEN SPACE TYPOLOGY

Pocket Park

SIZE (Excluding Road Reserve)
4,028m2

FUNCTIONS

Include by not limited to;

- Passive recreation function (places for relaxation & respite).
- Shade trees with small breakout areas of irrigated turf.
- Internal path network for bikes, scooters and connecting into the broader path network.
- Areas for short dog walking and respite points.
- Bench seating & Nature Play elements.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees and vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.

DRAINAGE INFORMATION

BASIN ID - B3

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	50
Top Area (m2):	190

20% AEP Basin

Side Slopes:	1:6
Total Depth (m):	0.54
Volume (m3):	191
Top Area (m2):	680

1% AEP Basin

Side Slopes:	1:6
Total Depth:	1.2
Volume (m3):	785
Top Area (m2):	1142



Drawing Number	QPG003 : LSP:POS2	Revision	C
Date	MAR 2024	Scale	1:500 @ A3





- Bench Seating
- Retained Tree(s)
- Nature Play
- Dog Walking
- Drainage Basin
- Passive Kickabout

OPEN SPACE TYPOLOGY

Pocket Park

SIZE (Excluding Road Reserve)
3,498m2

FUNCTIONS

- Include by not limited to;
- Passive recreation function (places for relaxation & respite).
 - Shade trees with small breakout areas of irrigated turf.
 - Internal path network for bikes, scooters and connecting into the broader path network.
 - Areas for short dog walking and respite points.
 - Bench seating & Nature Play elements.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees and vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.

DRAINAGE INFORMATION

BASIN ID - B4

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	43
Top Area (m2):	164

20% AEP Basin

Side Slopes:	1:6
Total Depth (m):	0.54
Volume (m3):	148
Top Area (m2):	550

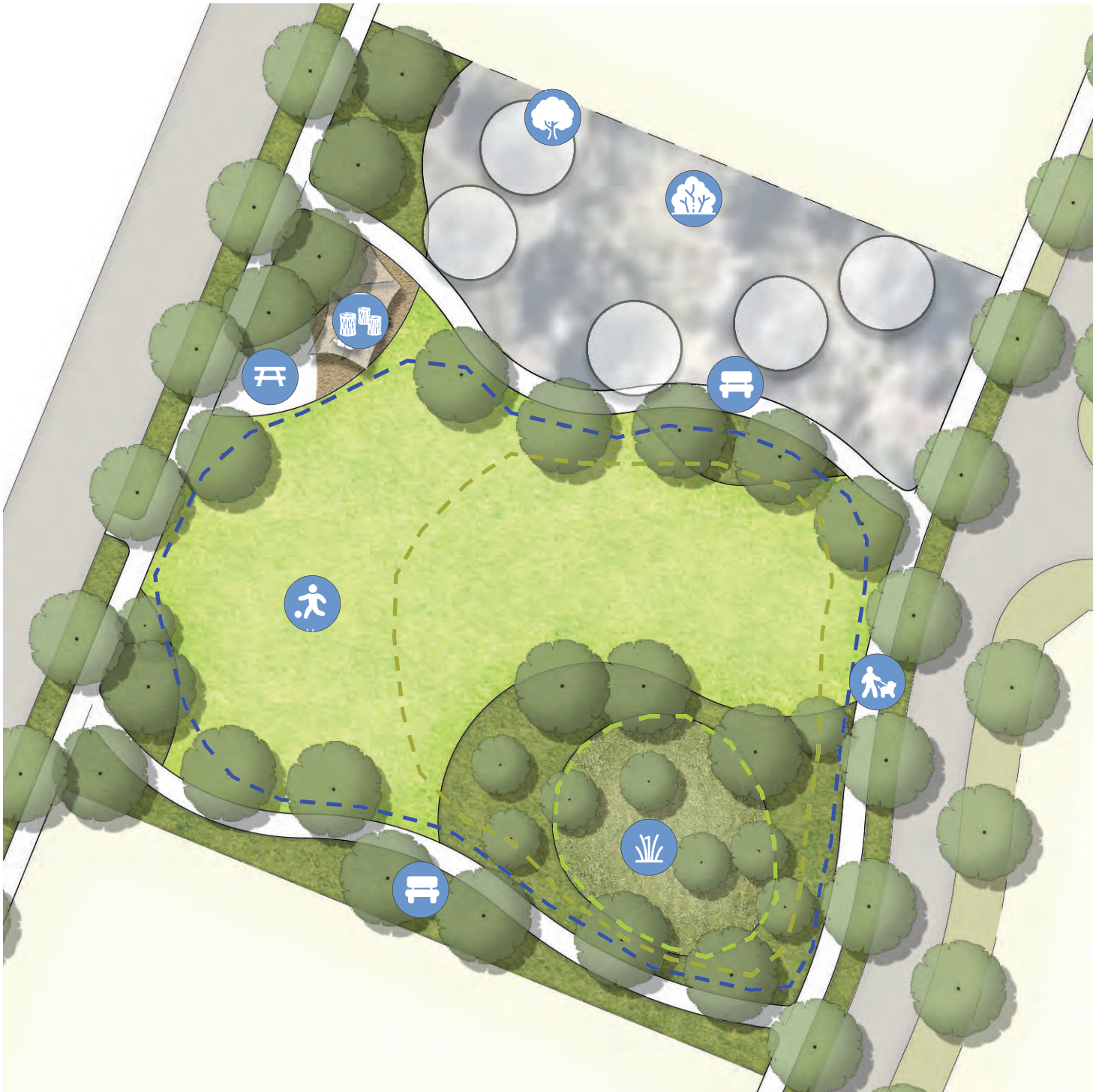
1% AEP Basin

Side Slopes:	1:6
Total Depth:	1.2
Volume (m3):	633
Top Area (m2):	950



Drawing Number	QPG003 : LSP:POS3	Revision	C
Date	MAR 2024	Scale	1:500 @ A3





- Picnic Setting
- Bench Seating
- Nature Play
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)
- Retained Vegetation

OPEN SPACE TYPOLOGY

Pocket Park

SIZE (Excluding Road Reserve)
4,591m²

FUNCTIONS

Include by not limited to;

- Passive recreation function (places for relaxation & respite).
- Shade trees with small breakout areas of irrigated turf.
- Internal path network for bikes, scooters and connecting into the broader path network.
- Areas for short dog walking and respite points.
- Bench seating & Nature Play elements.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees and vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.

DRAINAGE INFORMATION

BASIN ID - B2

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	76
Top Area (m ²):	282

20% AEP Basin

Side Slopes:	1:6
Total Depth (m):	0.52
Volume (m ³):	360
Top Area (m ²):	1,450

1% AEP Basin






Side Slopes:	1:6
Total Depth:	1.2
Volume (m ³):	1,554
Top Area (m ²):	2,098



Drawing Number	QPG003 : LSP:POS4	Revision	C
Date	MAR 2024	Scale	1:500 @ A3





-  Picnic Setting
-  Bench Seating
-  Nature Play
-  Dog Walking
-  Passive Kickabout

OPEN SPACE TYPOLOGY
Pocket Park

SIZE (Excluding Road Reserve)
4,591m²

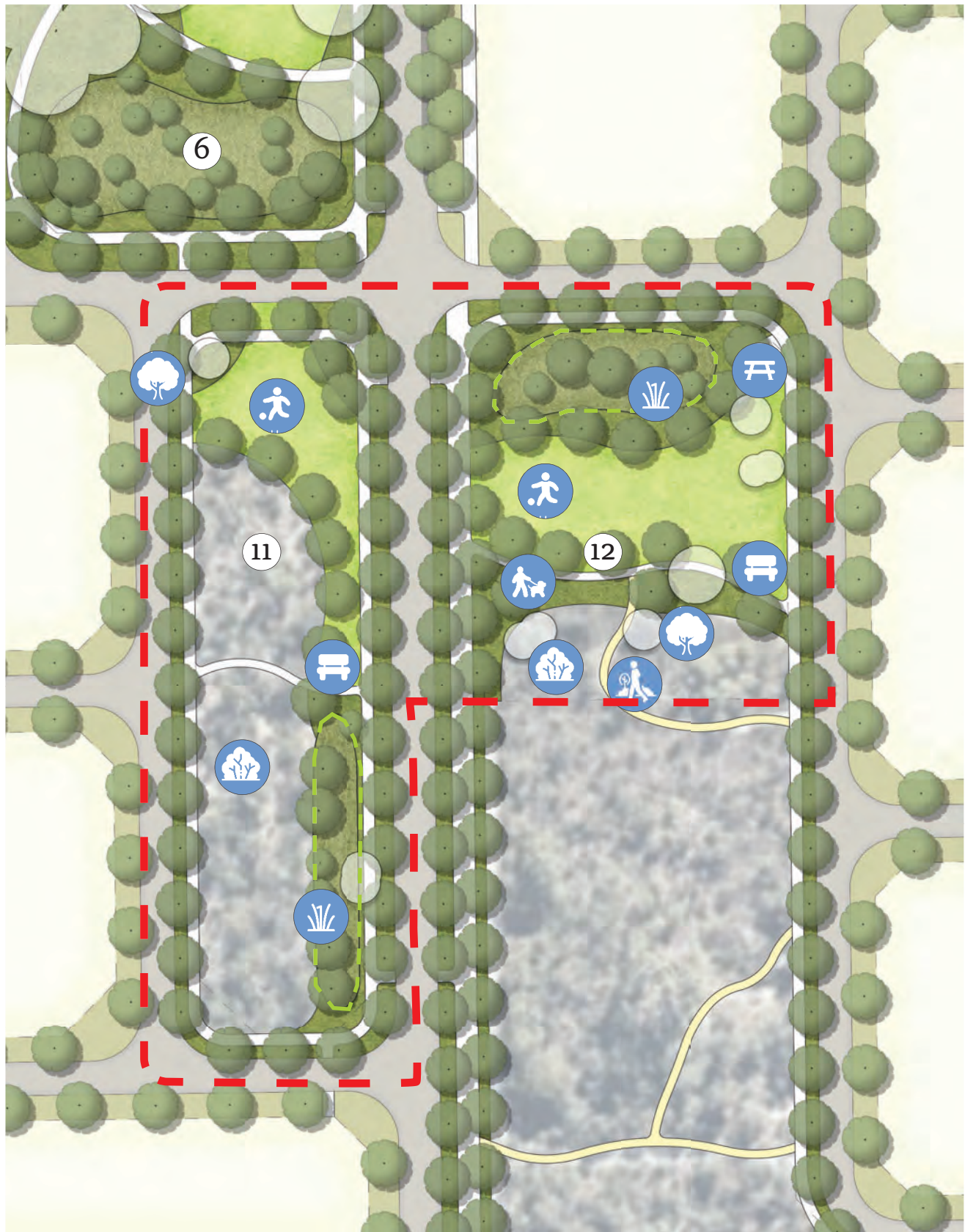
- FUNCTIONS**
Include by not limited to;
- Passive recreation function (places for relaxation & respite).
 - Shade trees with small breakout areas of irrigated turf.
 - Internal path network for bikes, scooters and connecting into the broader path network.
 - Areas for short dog walking and respite points.
 - Bench seating & Nature Play elements.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees and vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.

DRAINAGE INFORMATION
BASIN ID - N/A



Drawing Number	QPG003 : LSP:POS7	Revision	C
Date	MAR 2024	Scale	1:500 @ A3





- Picnic Setting
- Bench Seating
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Vegetation Retention
- Retained Tree(s)
- Walking Trail

OPEN SPACE TYPOLOGY

Pocket Park

SIZE (Excluding Road Reserve)

3,646m² - POS 11

3,679m² - POS 12

FUNCTIONS

Include by not limited to;

- Passive recreation function (places for relaxation & respite).
- Shade trees with small breakout areas of irrigated turf.
- Internal path network for bikes, scooters and connecting into the broader path network.
- Areas for short dog walking and respite points.
- Bench seating & Nature Play elements.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees and vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
- Walk trails connection to adjacent Parkland.

DRAINAGE INFORMATION - POS 11

BASIN ID - B10

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	96
Top Area (m2):	353

DRAINAGE INFORMATION - POS 12

BASIN ID - B26

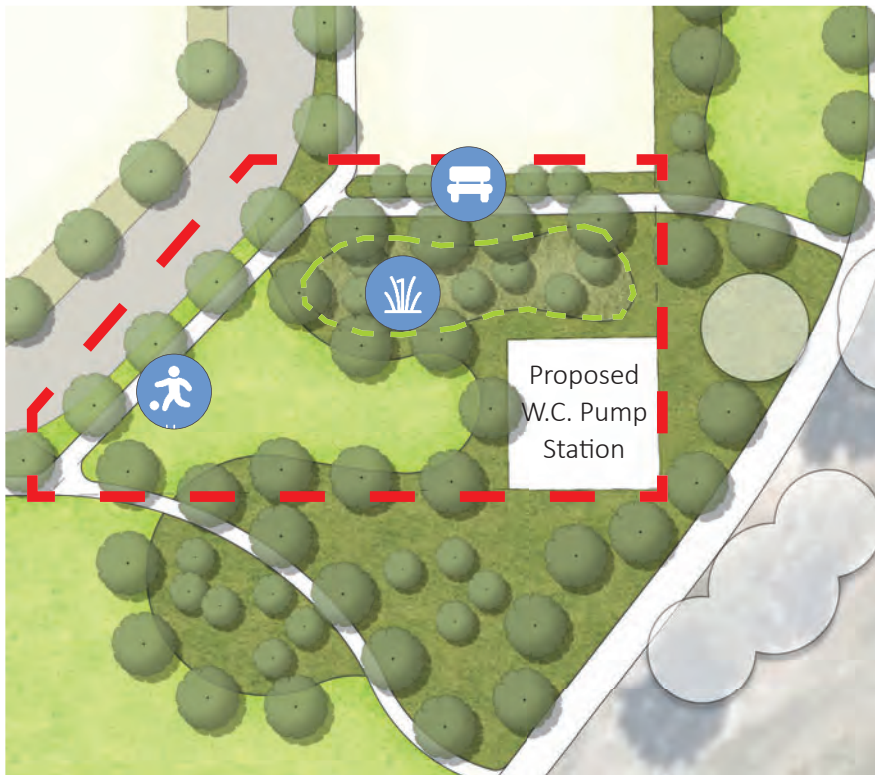
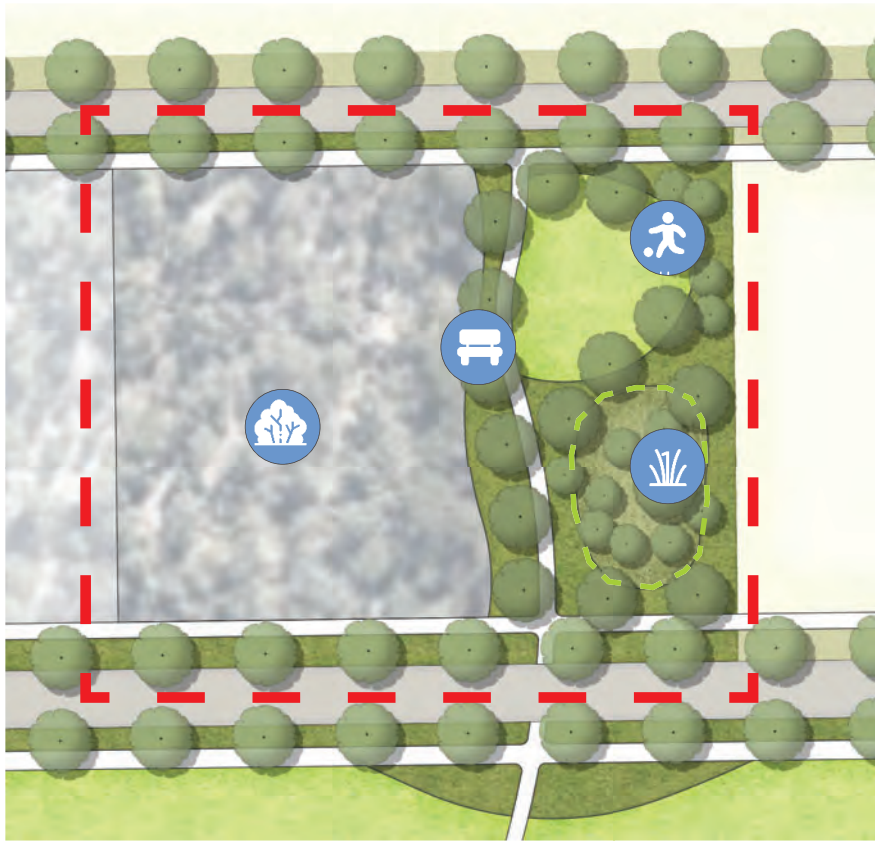
FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	138
Top Area (m2):	497



Drawing Number	QPG003 : LSP:POS11_12	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





- Picnic Setting
- Bench Seating
- Drainage Basin
- Passive Kickabout
- Vegetation Retention

OPEN SPACE TYPOLOGY
Pocket Park

SIZE (Excluding Road Reserve)
4,920m² - POS 14
2,116m² - POS 16

- FUNCTIONS**
Include by not limited to;
- Passive recreation function (places for relaxation & respite).
 - Shade trees with small breakout areas of irrigated turf.
 - Internal path network for bikes, scooters and connecting into the broader path network.
 - Areas for short dog walking and respite points.
 - Bench seating & Nature Play elements.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees and vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.

DRAINAGE INFORMATION - POS 14
BASIN ID - B11

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	102
Top Area (m ²):	372

DRAINAGE INFORMATION - POS 16
BASIN ID - B13

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	131
Top Area (m ²):	475



Drawing Number	QPG003 : LSP:POS14_16	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3



05.

East Wanneroo Precinct 8 (Ranch Road)

POS 19, 20 & 21 (Pocket Park)



- Picnic Setting
- Bench Seating
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Vegetation Retention
- Nature Play

OPEN SPACE TYPOLOGY

Pocket Park

SIZE (Excluding Road Reserve)

2,693m² - POS 19

2,693m² - POS 20

1,225m² - POS 21

FUNCTIONS

Include by not limited to;

- Passive recreation function (places for relaxation & respite).
- Shade trees with small breakout areas of irrigated turf.
- Internal path network for bikes, scooters and connecting into the broader path network.
- Areas for short dog walking and respite points.
- Bench seating & Nature Play elements.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees and vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.



DRAINAGE INFORMATION - POS 19

BASIN ID - B16

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	76
Top Area (m ²):	282

20% AEP Basin

Side Slopes:	1:6
Total Depth (m):	0.48
Volume (m ³):	328
Top Area (m ²):	1540

1% AEP Basin

Side Slopes:	1:6
Total Depth:	1.2
Volume (m ³):	1703
Top Area (m ²):	2285

DRAINAGE INFORMATION - POS 20

BASIN ID - B20

FIRST 15mm BASIN

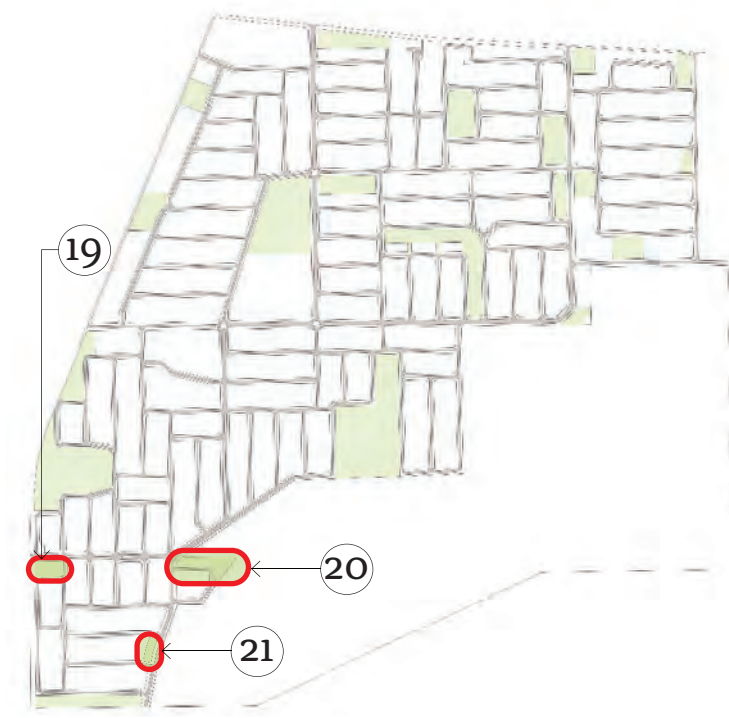
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	459
Top Area (m ²):	1607

DRAINAGE INFORMATION - POS 21

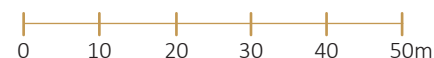
BASIN ID - B18

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m ³):	119
Top Area (m ²):	433



Drawing Number	QPG003 : LSP:POS19_20_21	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3



Considered Space



- Shelter & Picnic Setting
- Bench Seating
- Play Space (minor)
- Nature Play
- Dog Walking
- Drainage Basin
- Passive Kickabout

OPEN SPACE TYPOLOGY
Local Park

SIZE (Excluding Road Reserve)
8,910m2

- FUNCTIONS**
Include by not limited to;
- Small scale recreation function with active & passive experiences.
 - Shade trees with areas of irrigated turf.
 - Areas for short dog walking and respite points.
 - Internal path network connecting into the broader path network.
 - Bench seating & shaded play space.
 - Picnic setting & shelter.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access

DRAINAGE INFORMATION - POS 1
BASIN ID - B1

FIRST 15mm BASIN

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	50
Top Area (m2):	190

20% AEP Basin

Side Slopes:	1:6
Total Depth (m):	0.5
Volume (m3):	190
Top Area (m2):	830

1% AEP Basin

Side Slopes:	1:6
Total Depth:	1.2
Volume (m3):	946
Top Area (m2):	1354



Drawing Number	QPG003 : LSP:POS1	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





DRAINAGE INFORMATION - POS 5
BASIN ID - B5

FIRST 15mm BASIN ---	
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	86
Top Area (m2):	317

- Shelter & Picnic Setting
- Bench Seating
- Play Space (minor)
- Nature Play
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)

OPEN SPACE TYPOLOGY
Local Park

SIZE (Excluding Road Reserve)
8,927m2 - POS 5
6,786m2 - POS 8

- FUNCTIONS**
Include by not limited to;
- Small scale recreation function with active & passive experiences.
 - Shade trees with areas of irrigated turf.
 - Areas for short dog walking and respite points.
 - Internal path network connecting into the broader path network.
 - Bench seating & shaded play space.
 - Picnic setting & shelter.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access



DRAINAGE INFORMATION - POS 8
BASIN ID - B29

FIRST 15mm BASIN ---	
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	234
Top Area (m2):	829

20% AEP Basin ---	
Side Slopes:	1:6
Total Depth (m):	0.39
Volume (m3):	141
Top Area (m2):	3390

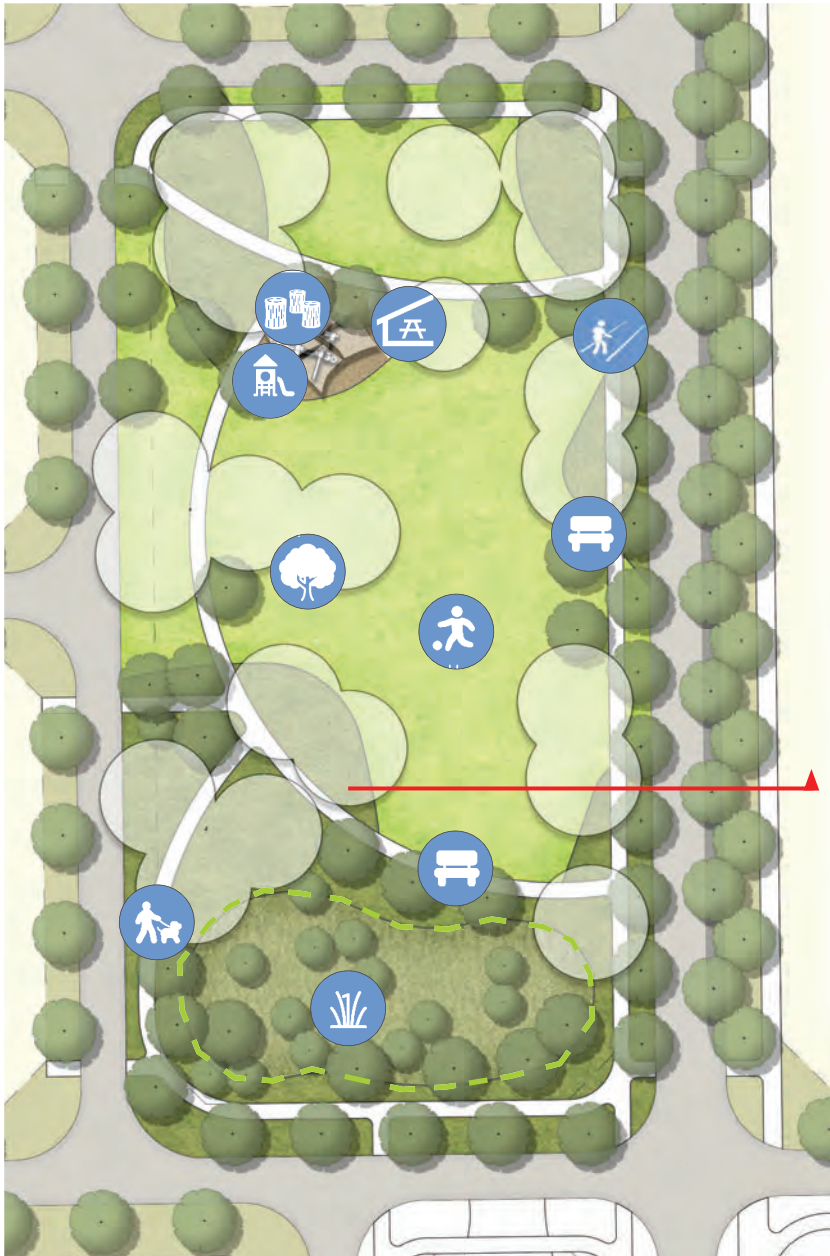
1% AEP Basin ---	
Side Slopes:	1:6
Total Depth:	1.2
Volume (m3):	3747
Top Area (m2):	4597



Drawing Number	QPG003 : LSP:POS5_8	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3



East Wanneroo Precinct 8 (Ranch Road)
POS 6 (Local Park)



- Shelter & Picnic Setting
- Bench Seating
- Play Space (minor)
- Nature Play
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)
- Parkland Link

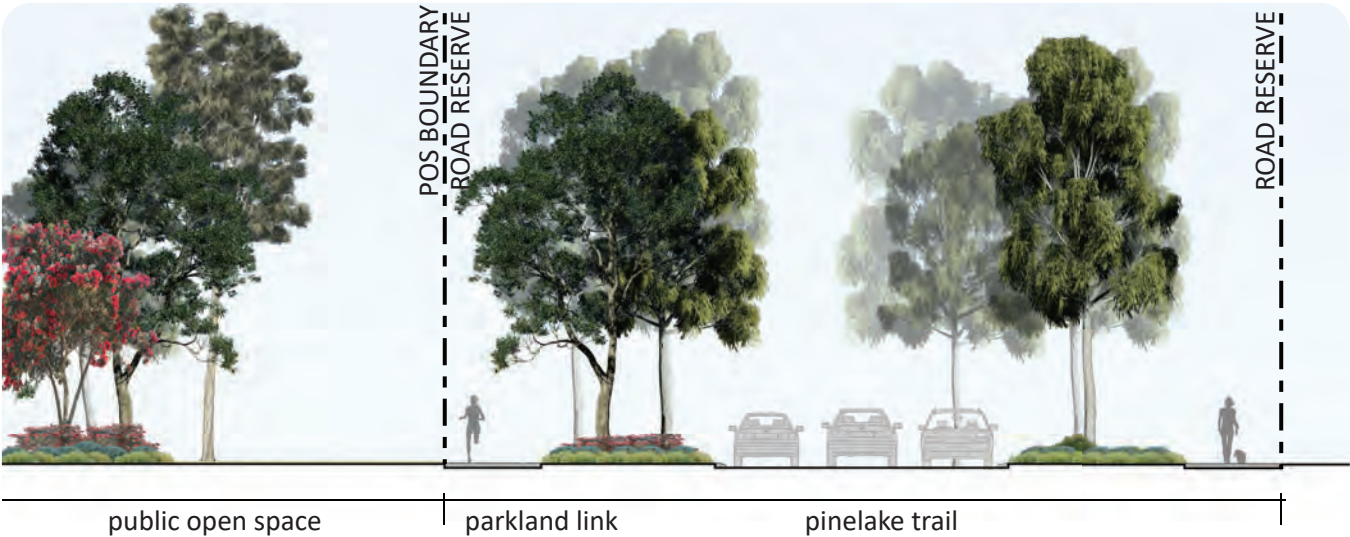
OPEN SPACE TYPOLOGY
Local Park

SIZE (Excluding Road Reserve)
7,538m2

- FUNCTIONS**
Include by not limited to;
- Small scale recreation function with active & passive experiences.
 - Shade trees with areas of irrigated turf.
 - Areas for short dog walking and respite points.
 - Internal path network connecting into the broader path network.
 - Bench seating & shaded play space.
 - Picnic setting & shelter.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access

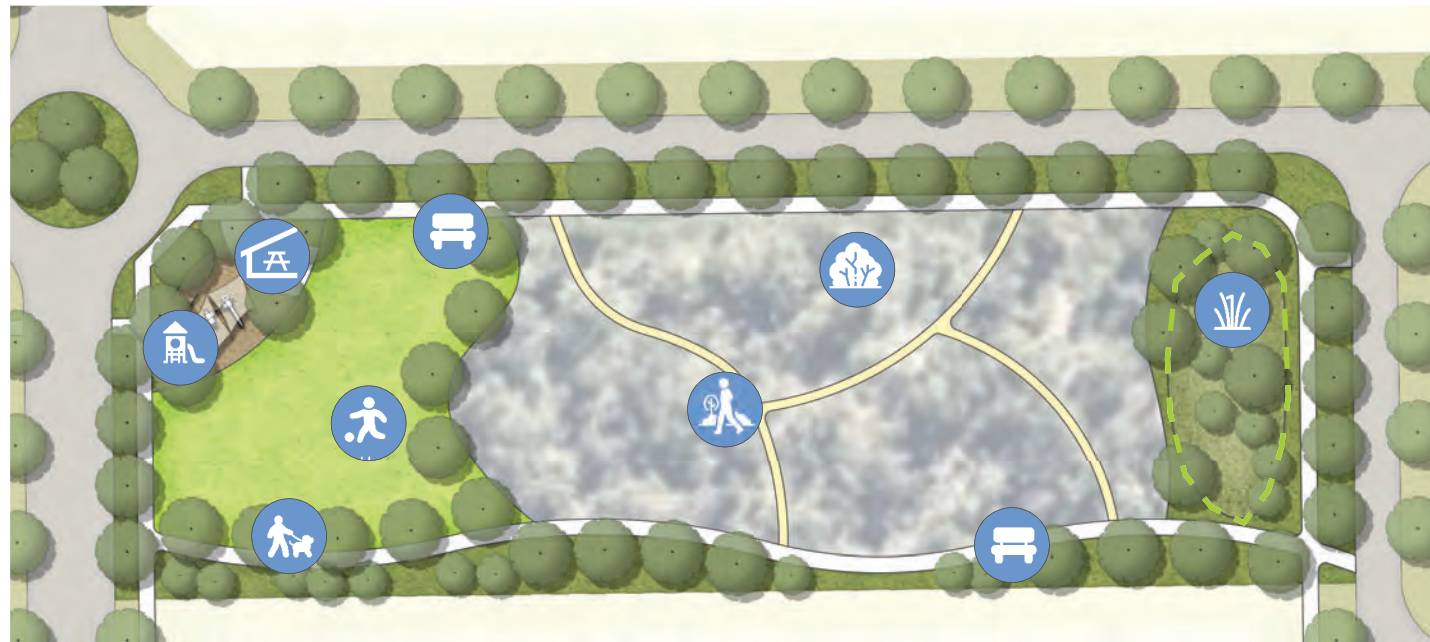
DRAINAGE INFORMATION - POS 6
BASIN ID - B6

FIRST 15mm BASIN	
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	268
Top Area (m2):	949



Drawing Number	QPG003 : LSP:POS6	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





DRAINAGE INFORMATION - POS 10
BASIN ID - B7

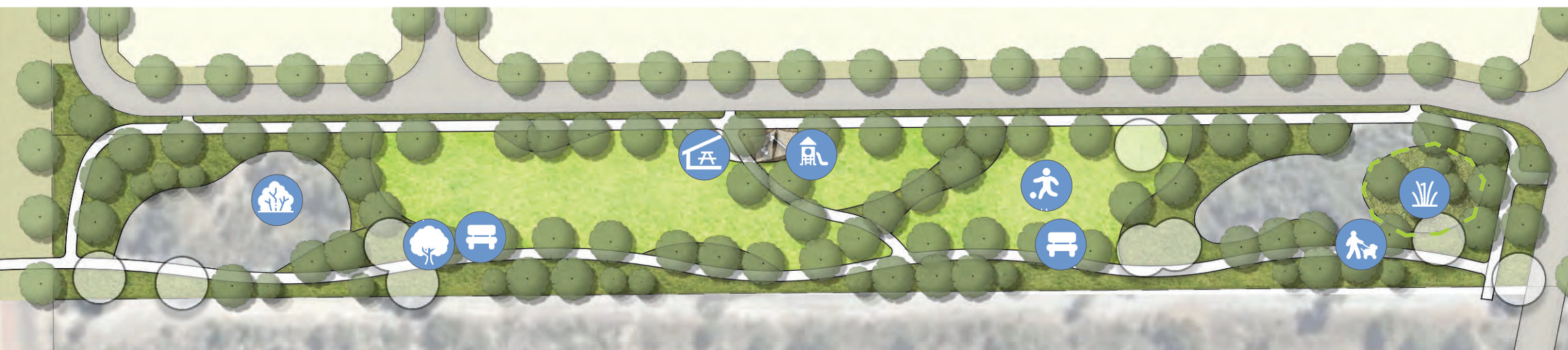
FIRST 15mm BASIN ---

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	131
Top Area (m2):	475

DRAINAGE INFORMATION - POS 22
BASIN ID - B19

FIRST 15mm BASIN ---

Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	76
Top Area (m2):	282



- Shelter & Picnic Setting
- Bench Seating
- Play Space (minor)
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)
- Vegetation Retention
- Walking Trail

OPEN SPACE TYPOLOGY

Local Park

SIZE (Excluding Road Reserve)
7,559m2 - POS 10
8,902m2 - POS 22

FUNCTIONS

Include by not limited to;

- Small scale recreation function with active & passive experiences.
- Shade trees with areas of irrigated turf.
- Areas for short dog walking and respite points.
- Internal path network connecting into the broader path network.
- Bench seating & shaded play space.
- Picnic setting & shelter.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees & vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
- Maintenance & emergency vehicle access.
- Walk trails connection to adjacent path network.



Drawing Number	QPG003 : LSP:POS10_22	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





- Shelter & Picnic Setting
- Bench Seating
- Play Space (minor)
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)
- Vegetation Retention
- Walking Trail

OPEN SPACE TYPOLOGY
Local Park

SIZE (Excluding Road Reserve)
5,958m²

- FUNCTIONS**
Include by not limited to;
- Small scale recreation function with active & passive experiences.
 - Shade trees with areas of irrigated turf.
 - Areas for short dog walking and respite points.
 - Internal path network connecting into the broader path network.
 - Bench seating & shaded play space.
 - Picnic setting & shelter.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access

DRAINAGE INFORMATION - POS 15
BASIN ID - B24

FIRST 15mm BASIN	
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	201
Top Area (m2):	718
20% AEP Basin	
Side Slopes:	1:6
Total Depth (m):	0.47
Volume (m3):	1114
Top Area (m2):	5920
1% AEP Basin	
Side Slopes:	1:6
Total Depth:	1.2
Volume (m3):	6028
Top Area (m2):	7362



Drawing Number	QPG003 : LSP:POS15	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





- Shelter & Picnic Settings
- Bench Seating
- Play Space (major)
- Retained Tree(s)
- Drainage Basin
- Multipurpose Sports Oval
- BBQ
- Fitness Node
- Drinking Fountain

OPEN SPACE TYPOLOGY
Neighbourhood Park

SIZE (Excluding Road Reserve)
28,020m²

FUNCTIONS

- Include by not limited to;
- Medium scale recreation function with active & passive experiences.
 - Potential to incorporate accessible remnant bushland and conservation areas.
 - Potential to provide recreational, sports and nature area functions.
 - Shade trees with areas of irrigated turf.
 - Internal path network connecting into the external pedestrian and cycle path network.
 - Multiple seating, picnic settings and shelter opportunities.
 - Furniture to include bins, drink fountains, BBQ facilities & lighting.
 - Medium to large shaded play space with universal access equipment.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access.
 - Fitness Node.

DRAINAGE INFORMATION - POS 9

BASIN ID - B8	
FIRST 15mm BASIN	
Side Slopes:	1:3
Total Depth (m):	0.3
Volume (m3):	107
Top Area (m2):	392



Drawing Number	QPG003 : LSP:POS9	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3



East Wanneroo Precinct 8 (Ranch Road)
POS 13 (Neighbourhood Park)



- Shelter & Picnic Setting
- Bench Seating
- Play Space (major)
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)
- Vegetation Retention
- Educational Signage
- BBQ
- Drinking Fountain



Drawing Number	QPG003 : LSP:POS13	Revision	C
Date	MAR 2024	Scale	1:1000 @ A3





- Shelter & Picnic Setting
- Bench Seating
- Play Space (major)
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Vegetation Retention
- BBQ
- Drinking Fountain

OPEN SPACE TYPOLOGY
Neighbourhood Park

SIZE (Excluding Road Reserve)
40,562m²

FUNCTIONS

- Include by not limited to;
- Medium scale recreation function with active & passive experiences.
 - Potential to incorporate accessible remnant bushland and conservation areas.
 - Potential to provide recreational, sports and nature area functions.
 - Shade trees with areas of irrigated turf.
 - Internal path network connecting into the external pedestrian and cycle path network.
 - Multiple seating, picnic settings and shelter opportunities.
 - Furniture to include bins, drink fountains, BBQ facilities & lighting.
 - Medium to large shaded play space with universal access equipment.
 - Stormwater drainage function.
 - Sense of Place, capturing historical and cultural character.
 - Retention of existing trees & vegetation.
 - Revegetation of native planting.
 - Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
 - Maintenance & emergency vehicle access.

DRAINAGE INFORMATION - POS 17

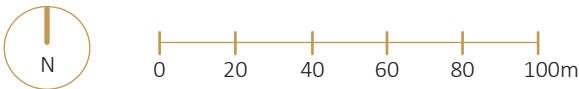
BASIN ID - B21
FIRST 15mm BASIN ---
Side Slopes: 1:3
Total Depth (m): 0.3
Volume (m³): 268
Top Area (m²): 949

BASIN ID - B22
FIRST 15mm BASIN ---
Side Slopes: 1:3
Total Depth (m): 0.3
Volume (m³): 155
Top Area (m²): 562

BASIN ID - B27
FIRST 15mm BASIN ---
Side Slopes: 1:3
Total Depth (m): 0.3
Volume (m³): 34
Top Area (m²): 134



Drawing Number	QPG003 : LSP:POS17	Revision	C
Date	MAR 2024	Scale	1:2000 @ A3





- Shelter & Picnic Setting
- BBQ
- Drinking Fountain
- Vegetation Retention
- Walking Trail
- Educational Signage
- Bench Seating
- Dog Walking
- Drainage Basin
- Passive Kickabout
- Retained Tree(s)

DRAINAGE INFORMATION - POS 18

BASIN ID - B14		BASIN ID - B17	
1% AEP Basin		FIRST 15mm BASIN	
Side Slopes:	-	Side Slopes:	1:3
Total Depth:	0.39	Total Depth (m):	0.3
Volume (m3):	2565	Volume (m3):	76
Top Area (m2):	7000	Top Area (m2):	282
BASIN ID - B15		20% AEP Basin	
FIRST 15mm BASIN			
Side Slopes:	1:3	Side Slopes:	1:6
Total Depth (m):	0.3	Total Depth (m):	0.6
Volume (m3):	67	Volume (m3):	380
Top Area (m2):	250	Top Area (m2):	1129
20% AEP Basin			
Side Slopes:	1:6		
Total Depth (m):	0.6		
Volume (m3):	334		
Top Area (m2):	999		

OPEN SPACE TYPOLOGY

Neighbourhood Park

SIZE (Excluding Road Reserve)
40,562m2

FUNCTIONS

Include by not limited to;

- Medium scale recreation function with active & passive experiences.
- Potential to incorporate accessible remnant bushland and conservation areas.
- Potential to provide recreational, sports and nature area functions.
- Shade trees with areas of irrigated turf.
- Internal path network connecting into the external pedestrian and cycle path network.
- Multiple seating, picnic settings and shelter opportunities.
- Furniture to include bins, drink fountains, BBQ facilities & lighting.
- Stormwater drainage function.
- Sense of Place, capturing historical and cultural character.
- Retention of existing trees & vegetation.
- Revegetation of native planting.
- Waterwise native planting with planting design to be hydrozoned according to irrigation requirements.
- Maintenance & emergency vehicle access.
- Walk trails connection to adjacent path network.








Drawing Number	QPG003 : LSP:POS18	Revision	C
Date	MAR 2024	Scale	1:2000 @ A3



05.

East Wanneroo Precinct 8 (Ranch Road) Park A, B & C (Parkland)



-  Bench Seating
-  Dog Walking
-  Vegetation Retention
-  Walking Trail
-  Educational Signage

OPEN SPACE TYPOLOGY

Parkland

SIZE (Excluding Road Reserve)

30,100m² - PARK A

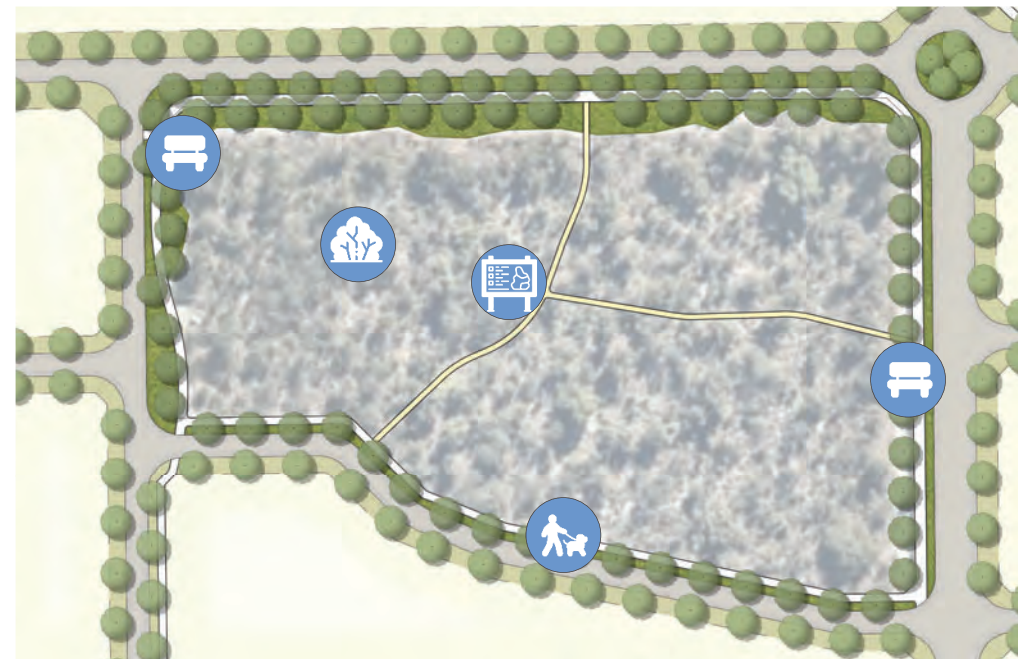
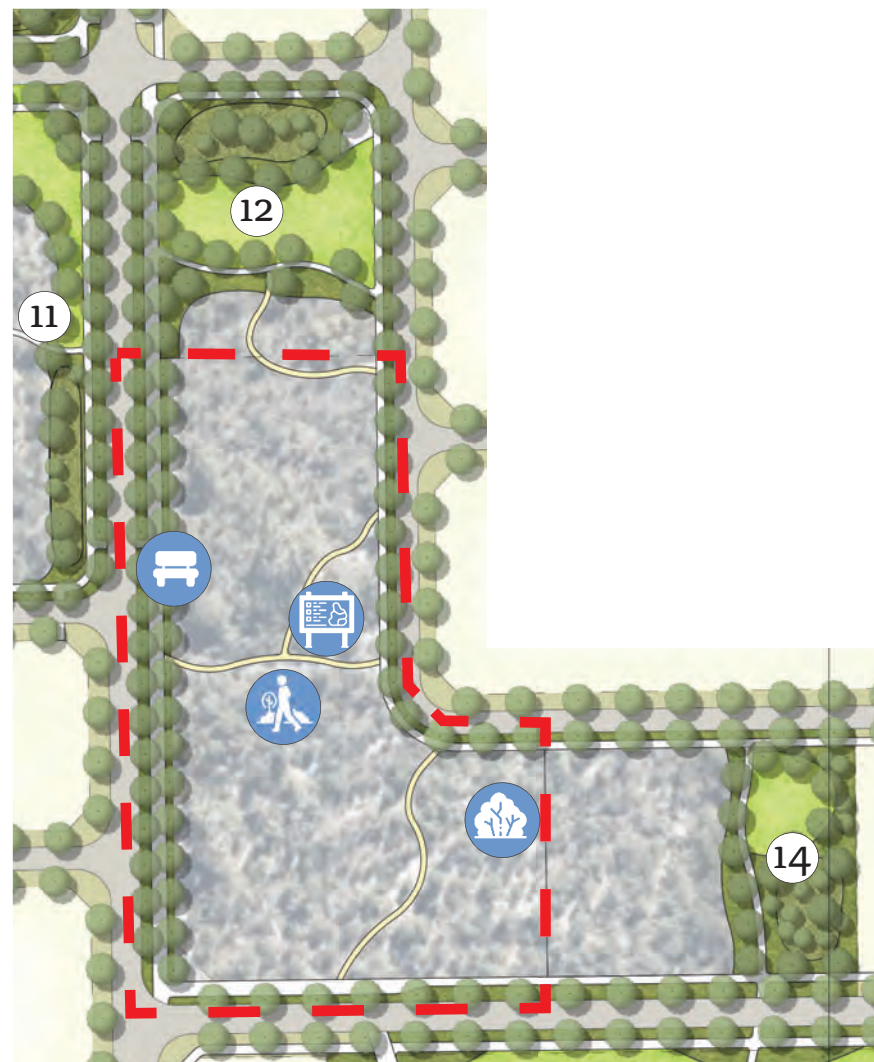
21,300m² - PARK B

11,700m² - PARK C

FUNCTIONS

Include by not limited to;

- Accessible areas of remnant bushland and conservation areas.
- Internal circulation paths & walk trails linking with external pedestrian and cycle paths.
- Sense of Place, capturing historical and cultural character including ecological and cultural links.
- Educational signage.
- Retention of existing trees & vegetation.
- Opportunity to restore and enhance biodiversity via weed removal and revegetation
- Access for maintenance, service and emergency vehicles.
- Opportunity for complementary landscaping including areas of native revegetation, water wise garden bed and tree planting.
- Informal seating & picnic settings opportunities.
- Walk trails connection to adjacent path network.



Drawing Number	QPG003 : LSP : PARK A,B,C	Revision	C
Date	MAR 2024	Scale	1:2000 @ A3



0 20 40 60 80 100m

Considered Space

East Wanneroo Precinct 8 (Ranch Road)

Lake Mariginiup & Little Lake Mariginiup (Parkland)

- | | | | |
|---|--------------------------|---|---------------------|
|  | Shelter & Picnic Setting |  | Walking Trail |
|  | Bench Seating |  | Educational Signage |
|  | Dog Walking |  | Parkland Link |
|  | Passive Kickabout |  | BBQ |
|  | Retained Tree(s) |  | Fitness Node |
|  | Vegetation Retention |  | Drinking Fountain |
|  | Revegetation |  | Dog Park |
|  | Play Space (minor) | | |



OPEN SPACE TYPOLOGY

Parkland

SIZE (Including Mariginiup Lake and Little Mariginiup Lake)
87.5731 ha

FUNCTIONS

Include by not limited to;

- Accessible areas of remnant bushland and conservation areas.
- Internal circulation paths, boardwalks & walk trails linking with external pedestrian and cycle paths.
- Parkland Link provides an interconnected pedestrian and cycle path network between Lake Mariginiup, Little Lake Mariginiup and Adams Lake to the north.
- Sense of Place, capturing historical and cultural character including ecological and cultural links.
- Educational signage.
- Retention of existing trees & vegetation.
- Opportunity to restore and enhance biodiversity via weed removal and revegetation
- Access for maintenance, service and emergency vehicles.
- Opportunity for complementary landscaping including areas of native revegetation, water wise garden bed and tree planting.
- Informal seating & picnic settings opportunities.
- Walk trails connection to adjacent path network.
- Fitness Nodes.



Drawing Number	QPG003 : LSP :MAR	Revision	C
Date	MAR 2024	Scale	1:2500 @ A3



0 25 50 75 100 125m

Considered Space

06. Streetscapes

Streetscapes

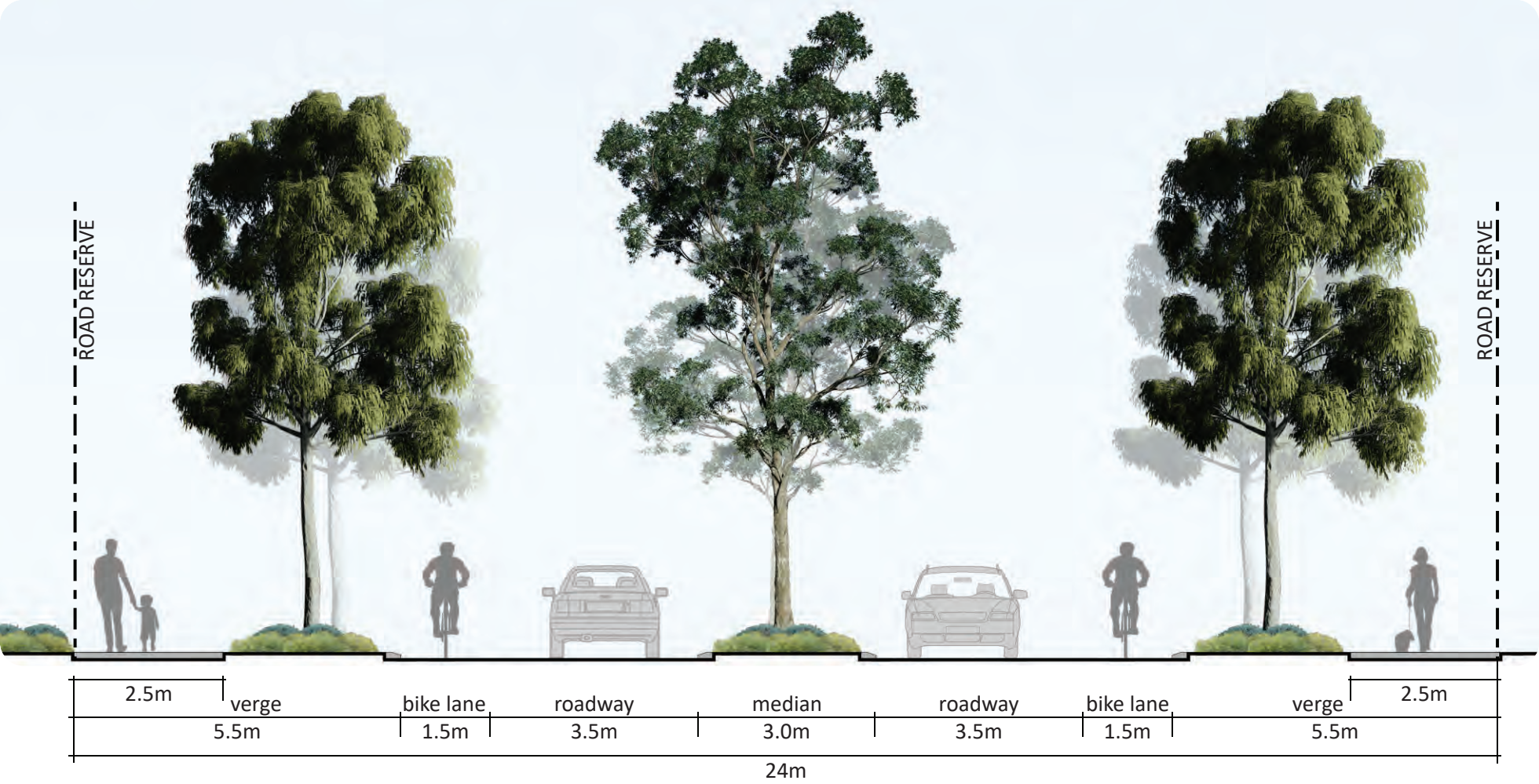
The street will become the principal means of integration for activities within the Ranch Road precinct, with street design of primary importance for place making and the activation of land use across the precinct and greater East Wanneroo. It will be responsive to existing vegetation, topography, function and cater appropriately for pedestrians and cyclist and in doing so, providing an equitable balance between pedestrians, private vehicles, and public transport in a safe and efficient manner.

Internal streets throughout the precinct will have a suburban neighbourhood character with appealing, highly integrated pedestrian pavements, seating, lighting, interpretive & educational information and where possible an established, continuous tree canopy.

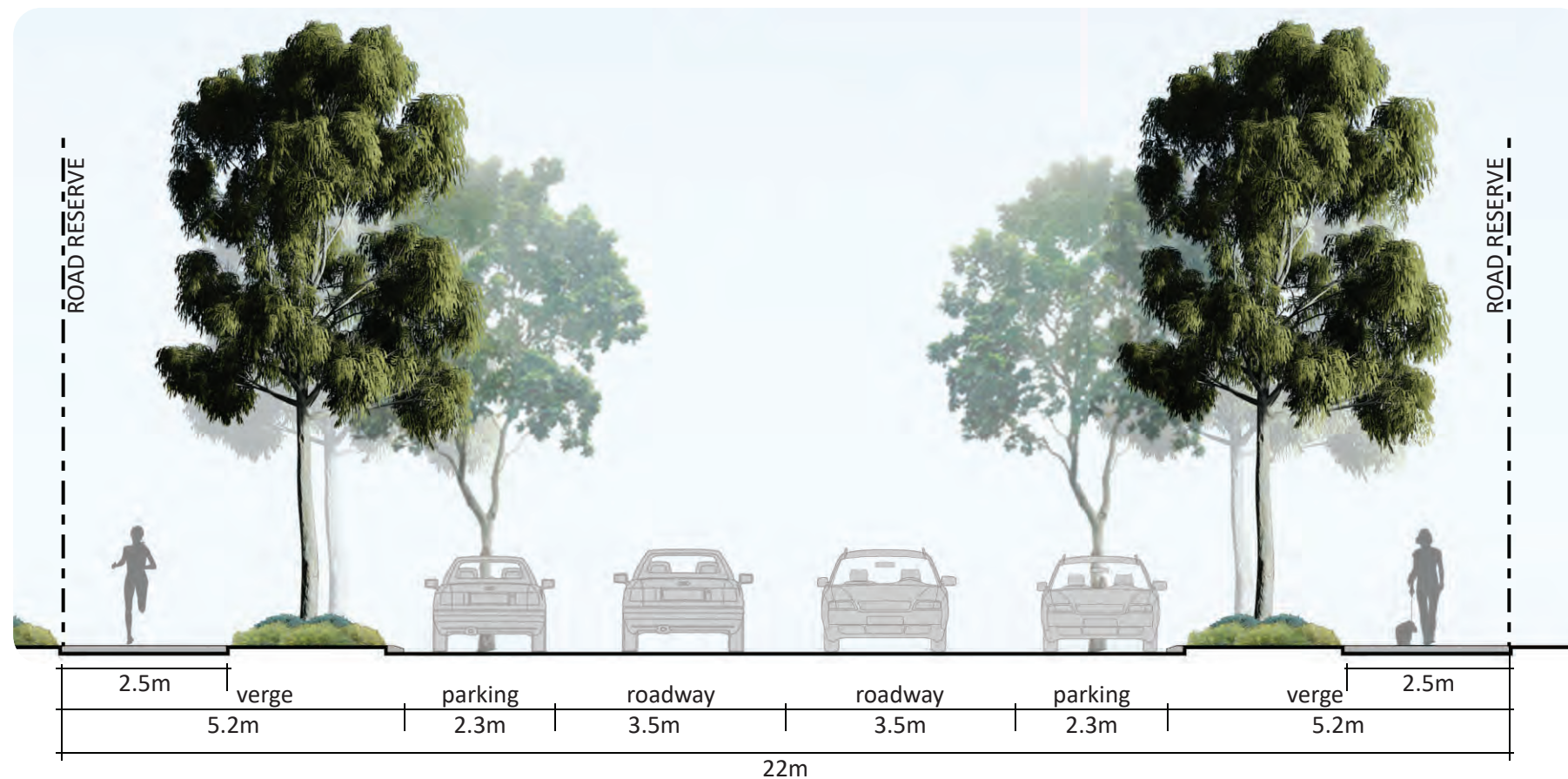
Streetscapes throughout the development shall incorporate a variety of treatments in response to the road hierarchy system. In all cases, landscape works shall incorporate tree planting in accordance with the accepted traffic standards and the City of Wanneroo’s East Wanneroo Street Tree Guidelines. Treatments may include soft works such as street trees, smaller shrubs and groundcovers. It is envisaged that the stormwater runoff from residential roads will be contained within a system of bio-retention basins distributed along road reserves and the public open space network.

Tree, shrub and groundcover species used throughout the streetscapes will predominantly be native species. It is proposed that species selection for streetscapes will also include species which reference the historic and cultural influences in the area and as outlined in the East Wanneroo District Structure Plan Street Tree Schedule. Deciduous exotic species historically used around homesteads may be used throughout the precinct.

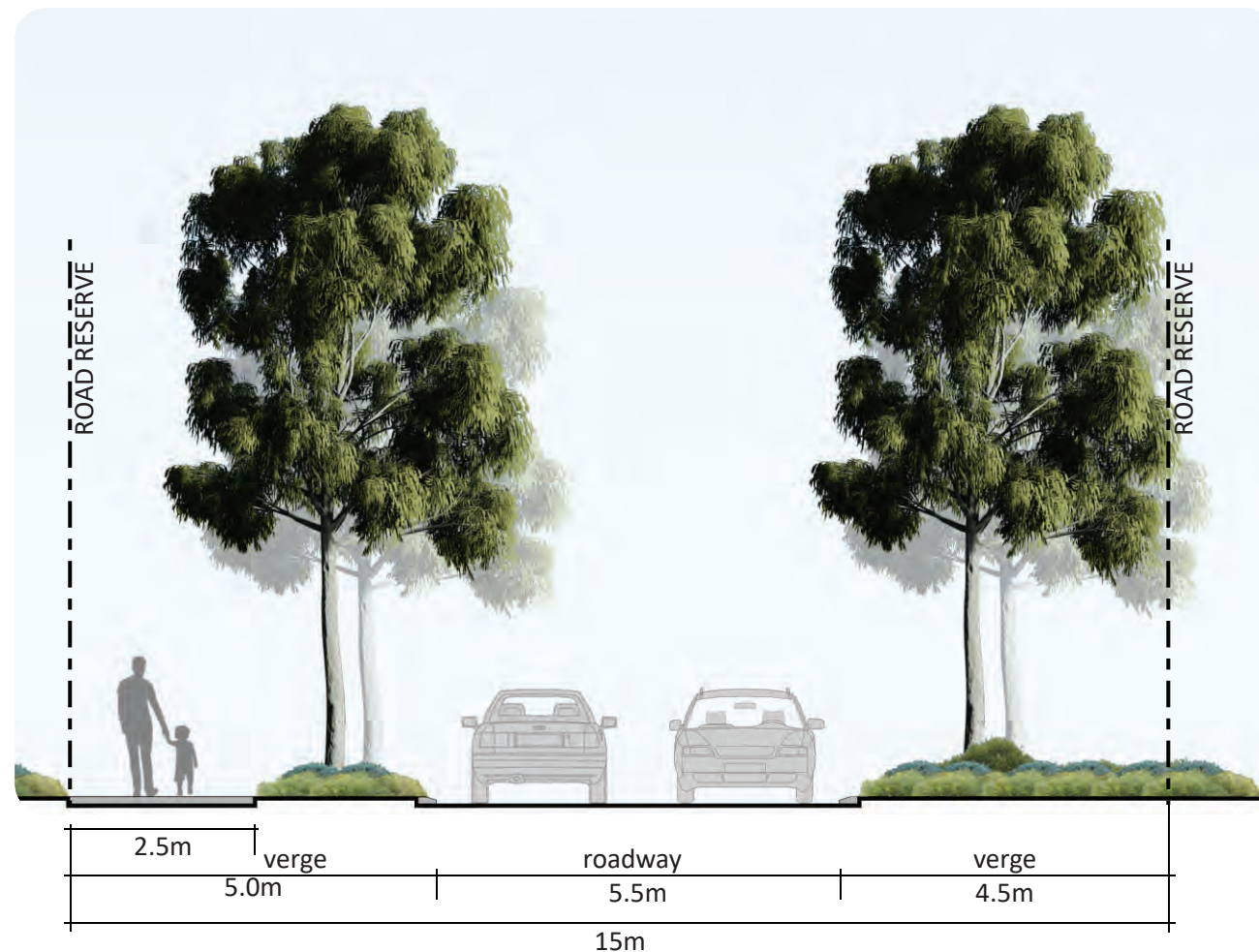
The below cross-sections are indicative only and will be subject to further detailed design at the subdivision stage.



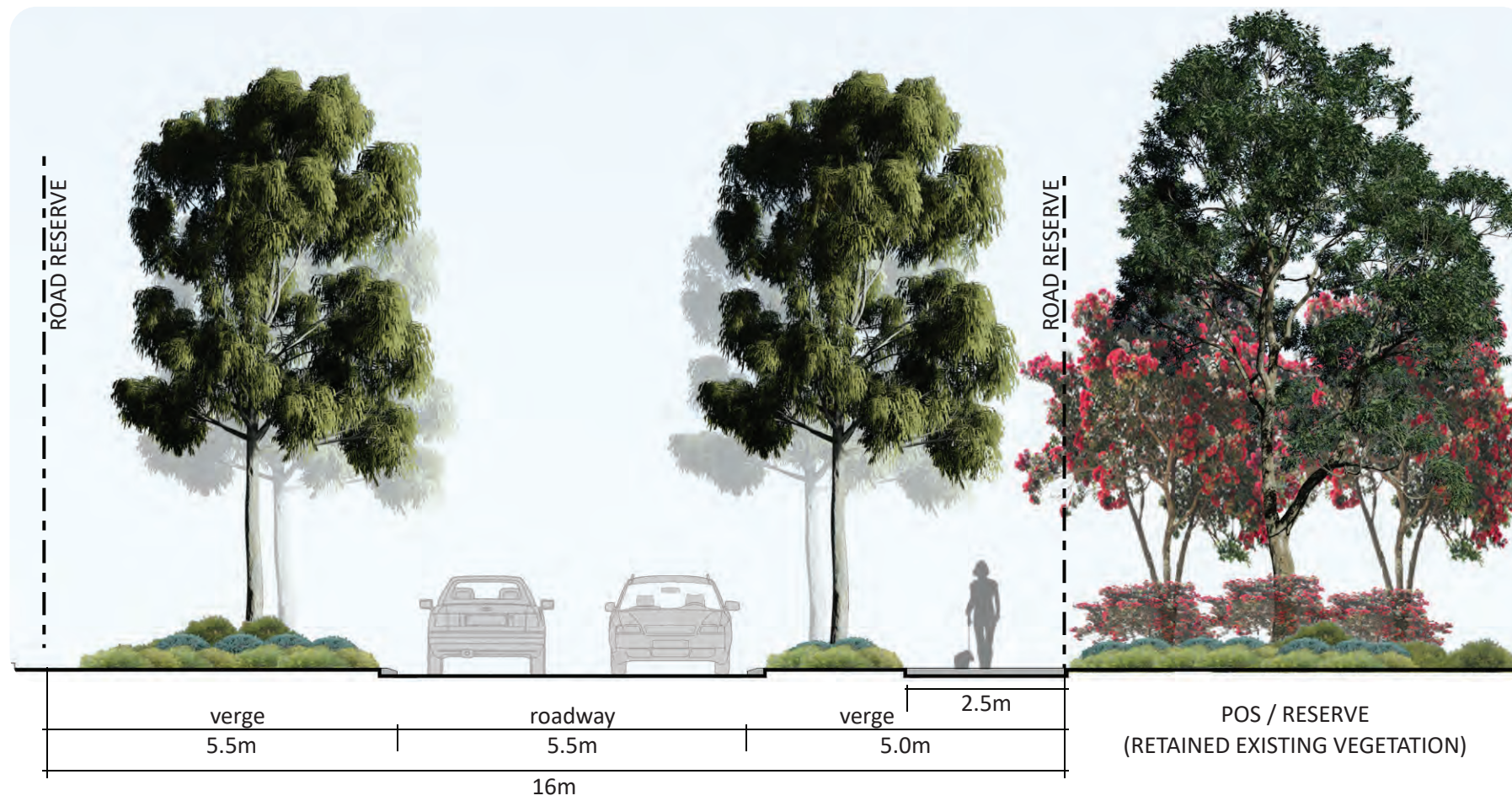
NEIGHBOURHOOD CONNECTOR A (24m)



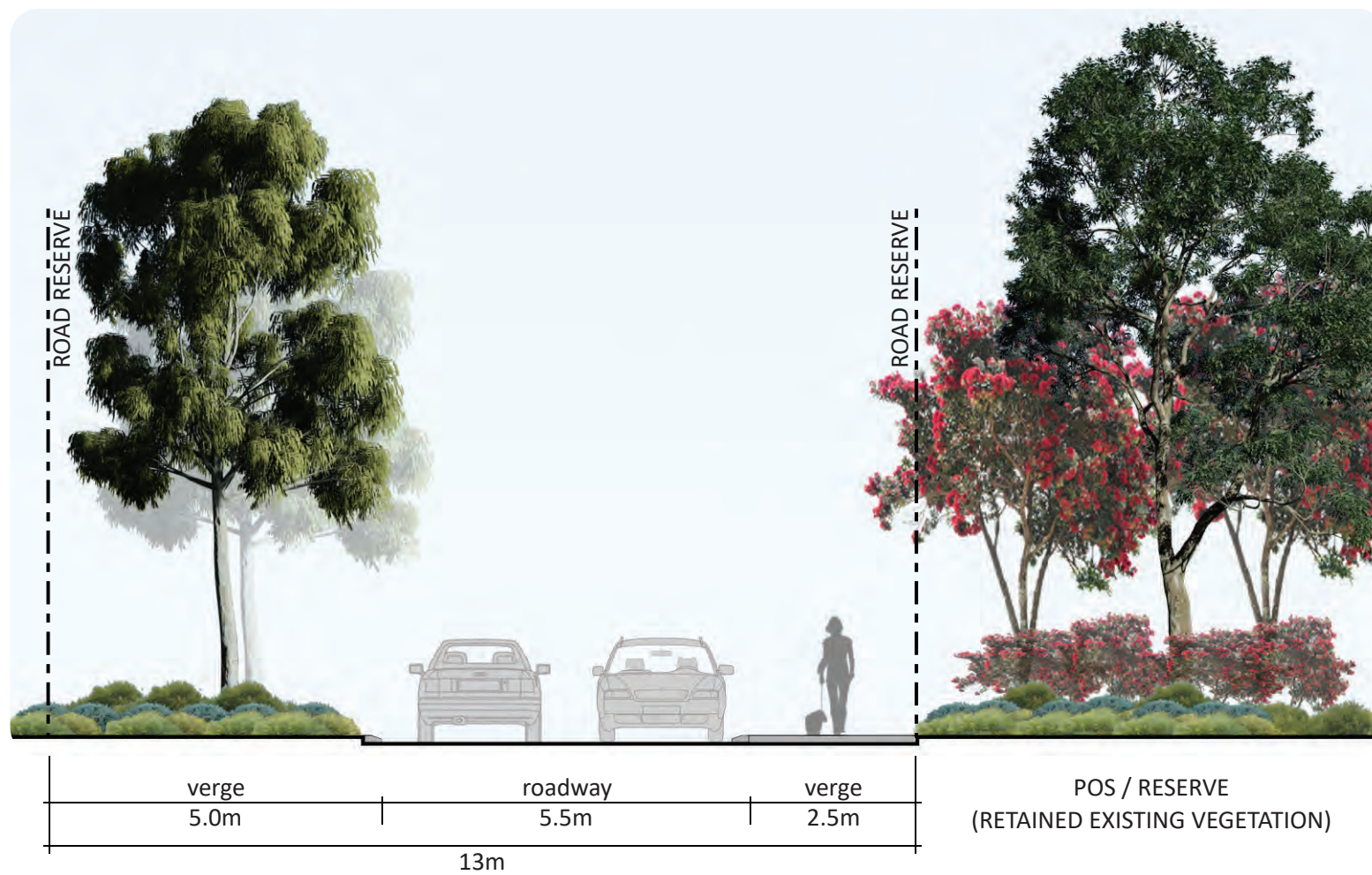
NEIGHBOURHOOD CONNECTOR B



ACCESS STREET C/D (15m)



ACCESS STREET C/D (16m)



ACCESS STREET C/D (13m)

07. Softscape Planting

Plant Species

POS & Street Trees

(Indicative Species)

- Agonis flexuosa
- Allocasuarina fraseriana
- Bauhinia blakeana
- Callistemon citrinus
- Callistemon viminalis
- Corymbia callophylla
- Corymbia ficifolia
- Cupaniopsis anacardioides
- Delonix regia
- Erythrina sykesii
- Eucalyptus drummondii
- Eucalyptus erythrocorys
- Eucalyptus erythronema
- Eucalyptus forrestiana
- Eucalyptus gomphocephala
- Eucalyptus lehmannii
- Eucalyptus todtiana
- Eucalyptus torquata
- Eucalyptus torwood
- Eucalyptus utilis
- Eucalyptus victrix
- Eucalyptus woodwardii
- Jacaranda mimosifolia
- Melaleuca lanceolata
- Xanthorrhoea preissii



Shrubs

(Indicative Species)

- Banksia ashbyi dwarf
- Banksia attenuata
- Banksia hookeriana
- Beaufortia aestiva
- Calothamnus hirsutus
- Conostylis candicans
- Dianella revoluta
- Eremophila nivea
- Grevillea preissii
- Hakea lissocarpa
- Hibbertia spp
- Hypocalymma robustum
- Kunzea baxteri
- Leucophyta brownii
- Lomandra longifolia
- Lomandra tanika
- Melaleuca conothamnoides
- Melaleuca huegelii
- Melaleuca incana (Little form)
- Melaleuca seriata
- Pimelea ferruginea
- Scaevola nitida
- Thryptomene baeckeacea
- Westringia dampieri

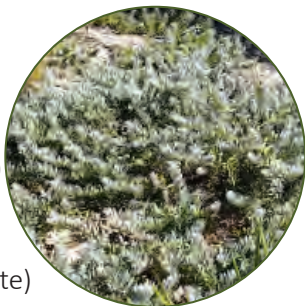


Plant Species (cont.)

Groundcovers

(Indicative Species)

- Acacia saligna (prostrate)
- Carpobrotus virescens
- Eremophila glabra (prostrate)
- Grevillea 'Gin Gin Gem'
- Grevillea thelemanniana
- Grevillea crithmifolia (prostrate)
- Hemiantra pungens
- Hibbertia spp
- Kennedia prostrata
- Myoporum parvifolium



Sedge & Rushes

(Indicative Species)

- Baumea articulata
- Baumea juncea
- Carex appressa
- Ficinia nodosa
- Juncus subsecundus
- Lepidosperma gladiatum
- Lomandra maritima



Revegetation

(Indicative Species)

- Adenanthos cygnorum
- Agonis flexuosa
- Alexgeorgea nitens
- Allocasuarina fraseriana
- Banksia attenuata
- Banksia ilicifolia
- Banksia menziesii
- Calytrix fraseri
- Desmocladius flexuosus
- Eucalyptus marginata
- Eucalyptus rudis
- Hibbertia hypericoides
- Jacksonia furcellata
- Jacksonia sternbergiana
- Kunzea glabrescens
- Lechenaultia floribunda
- Melaleuca preissiana
- Mesomelaena pseudostygia
- Verticordia densiflora
- Xanthorrhoea preissii

