



HERITAGE PARK (PHASE 2) STRUCTURE PLAN

Lots 986 and 993 Baldvis Road, Baldvis

OCTOBER 2017

Rockingham Park Pty Ltd

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HERITAGE PARK (PHASE 2) STRUCTURE PLAN

LOTS 986 AND 993 BALDIVIS ROAD, BALDIVIS
OCTOBER 2017

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ENDORSEMENT PAGE

IT IS CERTIFIED THAT AMENDMENT NO. 1 TO THE HERITAGE PARK (PHASE 2) STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

05 JANUARY 2023

Signed for and on behalf of the Western Australian Planning Commission



A handwritten signature in black ink, appearing to read "A. K. Mead", is written above a horizontal line.

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

Table of Amendments

| AMENDMENT NO. | SUMMARY OF AMENDMENT | AMENDMENT TYPE | DATE APPROVED BY WAPC |
|---------------|---|----------------|-----------------------|
| 1 | Rezoning of the residential cell south of POS A from R60 to R25 and updating dwelling yields and targets. | Minor | 05 January 2023 |
| | | | |
| | | | |

Table of Density Plans

| DENSITY PLAN NO. | AREA OF DENSITY PLAN APPLICATION | DATE ENDORSED BY WAPC |
|------------------|----------------------------------|-----------------------|
| | | |
| | | |
| | | |

EXECUTIVE SUMMARY

The *Heritage Park (Phase 2) Structure Plan* has been prepared to guide the subdivision and development of some 18.8ha of land on Lots 986 and 993 Baldivis Road, Baldivis, within the City of Rockingham municipality.

Rockingham Park Pty Ltd is the sole landowner of the subject land.

The Structure Plan has been prepared on behalf of Rockingham Park Pty Ltd by the following specialist consultant team:

- Mortons Urban Solutions – *project management, engineering*
- Creative Design + Planning – *urban design, town planning*
- Emerge – *bushfire management*
- Strategen – *environmental*
- RPS – *hydrology*
- KCTT – *traffic and transport analysis*
- Lloyd George – *noise management*
- LD Total – *landscaping*

Purpose

This Structure Plan provides an overarching planning framework to guide and facilitate the development of 18.8ha land at Lots 986 and 993 Baldivis Road, Baldivis for urban purposes.

The Structure Plan provides for an integrated and coordinated approach to an appropriate mix of residential land uses and infrastructure, necessary to create a strong and vibrant community.

The Structure Plan has been submitted for approval by the Western Australian Planning Commission.

Design Approach

The design approach has been a rigorous multidisciplinary process with continuous reflection upon the purpose of the Structure Plan and improving project outcomes. Design principles and considerations which have informed the design approach include:

- Public Open Space allocation, including retention of quality remnant vegetation;
- Community creation;
- Urban structure and place making;
- Movement systems and connectivity;
- Leading and innovative built form; and
- Landform and environment.

Project Overview

The Structure Plan will create a framework for the future urban subdivision development of an anticipated 302 dwellings, which will ultimately house a new community in the vicinity of 845 people within a variety of lot product and dwelling types.

Executive Summary Table

| ITEM | DATA |
|---|--|
| Total area covered by the Structure Plan | 18.82ha |
| Area of each land use proposed (approx.): | |
| Residential (Nett) | 11.49ha |
| Roads | 5ha |
| Public Open Space | 2.208ha |
| Public Purposes | 0.122ha |
| Estimated lot yield | 264 lots |
| Estimated number of dwellings | 302 dwellings |
| Estimated residential density | ~ 17+ dwellings/gross urban zone ¹ ~ 25+ dwellings/site hectare ² |
| Estimated population (based on 2.8 persons per dwelling) | 845+ people |
| Estimated number and % of public open space given over to: Neighbourhood Parks (>3,000m ²) | 1 park @ 2.2 ha (100%) |

FOOTNOTES:

¹ 'Gross Urban Zone' refers to the definition under WAPC's Directions 2031 and supporting documents.

² 'Residential Site Hectare' refers to the definition under Element 1 of WAPC's Liveable Neighbourhoods.

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Figure 2: Metropolitan Region Scheme

Figure 3: City of Rockingham

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Regional Planning Framework

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Figure 6: Post Development Site Conditions –
Bushfire Attack Levels

Figure 7: Post Development Site Conditions –
Asset Protection Zones

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Figure 9: Road Hierarchy

Figure 10: Footpath Plan

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Appendix 1: Certificate of Titles

Appendix 2: Environmental Assessment Report (Strategen)

Appendix 3: Bushfire Management Plan (Emerge Associates)

Appendix 4: Landscape Master Plan (LD Total)

Appendix 5: Transport Assessment (KCTT)

Appendix 6: Transportation Noise Assessment (Lloyd George Acoustics)

Appendix 7: Local Water Management Strategy (RPS)

Appendix 8: Engineering Servicing Report (Mortons)

Appendix 9: Structure Plan Amendment 1 Report (CDP)

ABBREVIATIONS

| | |
|-----------|---|
| AAMGL | Average Annual Maximum Groundwater Level |
| AHD | Australian Height Datum |
| APZ | Asset Protection Zone |
| ASS | Acid Sulfate Soils |
| AS | Australian Standard |
| BAL | Bushfire Attack Level |
| BGL | Below Ground Level |
| BMP | Bushfire Management Plan |
| CBD | Central Business District |
| CoR | City of Rockingham |
| DCA 2 | Development Contribution Area No.2 |
| DPaW | Department of Parks and Wildlife |
| DP | Department of Planning |
| DoW | Department of Water |
| DUP | Dual Use Path |
| EAR | Environmental Assessment Report |
| EPP | Environmental Protection Policy |
| Ha | Hectare |
| LDP | Local Development Plan |
| LPP | City of Rockingham Local Planning Policy |
| LWMS | Local Water Management Strategy |
| MGL | Maximum Groundwater Level |
| MRS | Metropolitan Region Scheme |
| MRWA | Main Roads Western Australia |
| OBRM | Office of Bushfire Risk Management |
| OMSRS | Draft Outer Metropolitan Perth & Peel Sub Regional Structure Plan |
| POS | Public Open Space |
| PTA | Public Transport Authority |
| RMD Codes | Residential Medium Density Codes |
| SPP | State Planning Policy |
| TPS2 | City of Rockingham Town Planning Scheme No.2 |
| UWMP | Urban Water Management Plan |
| WAPC | Western Australian Planning Commission |



PART ONE

Implementation

HERITAGE PARK (PHASE 2) STRUCTURE PLAN

1. Structure Plan Area
2. Operation
3. Staging
4. Subdivision and Development Requirements
5. Local Development Plans
6. Other Requirements
7. Additional Information

PART ONE – IMPLEMENTATION

1 Structure Plan Area

This Structure Plan shall apply to Lots 986 and 993 Baldivis Road, Baldivis being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan (**Plan 1**). The Structure Plan is identified as the *Heritage Park (Phase 2) Structure Plan*.

2 Operation

This Structure Plan comes into effect on the date it is approved by the Western Australian Planning Commission (WAPC).

3 Staging

The development of the Structure Plan area will be implemented in multiple stages. It is expected that development will commence in the north, where it adjoins the existing Heritage Park Phase 1 and move south. The timing, location and composition of the future stages will be dependent on market demand.

4 Subdivision and Development Requirements

4.1 Land Use Permissibility

- a) Land use permissibility within the Structure Plan area shall be in accordance with the corresponding zone or reserve under the Scheme.

4.2 Hazards and Separation Areas

- a) Residential lots identified within the Transportation Noise Assessment (**Appendix 6**) as requiring construction standards to achieve higher noise standards will require a Detailed Noise Management Plan assessment to be undertaken at subdivision stage.

4.3 Public Open Space

- a) The Structure Plan (**Plan 1**) nominates an area of 2.208ha as Public Open Space. The proposed Public Open Space meets the minimum 10% requirement as outlined in Part Two of this report.

4.4 Residential Density Targets

- a) Density Targets within the Structure Plan area are:
 - The '*gross urban zone*' density target of 15 dwellings per hectare across the Structure Plan area; and
 - The '*site hectare*' density target of 25 dwellings per hectare across the Structure Plan area.

5 Local Development Plans

Local Development Plans will be prepared for the Structure Plan area pursuant to the WAPC's *Local Development Plan Framework* and the Schedule 2, 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

5.1 Prescribed Requirements

Local Development Plans will be prepared to inform applications for subdivision and development in regard to the following:

- a) Construction standards to achieve higher noise standards in accordance with State Planning Policy 5.4 *Road and Rail Noise*.

6 Other Requirements

6.1 Notifications on Title

Notifications are to be placed on titles of all affected lots to advise of:

- a) That the lot is located near a transport corridor and high construction standards may be required to reduce transport noise to acceptable levels in accordance with *State Planning Policy 5.4 Road and Rail Noise* (as amended);
- b) That the lot is located within an area which has been declared bushfire prone and may be subject to a bushfire management plan and additional construction requirements may apply in accordance with *Australian Standard AS3959: Construction of buildings in bushfire prone areas* (as amended).

6.2 Developer Contributions

- a) The Structure Plan area will be subject to the City of Rockingham Development Contribution Area No.2 (DCA) pursuant to the City of Rockingham Town Planning Scheme No.2.

7 Additional Information

| Additional Information | Approval Stage | Consultation Required |
|----------------------------------|--|--|
| Public Open Space Schedule | Subdivision application | City of Rockingham |
| Detailed Noise Management Plan | Subdivision condition for identified lots. | City of Rockingham |
| Bushfire Attack Level Assessment | Subdivision condition for identified lots. | City of Rockingham Department of Fire and Emergency Services |



AMENDED STRUCTURE PLAN MAP

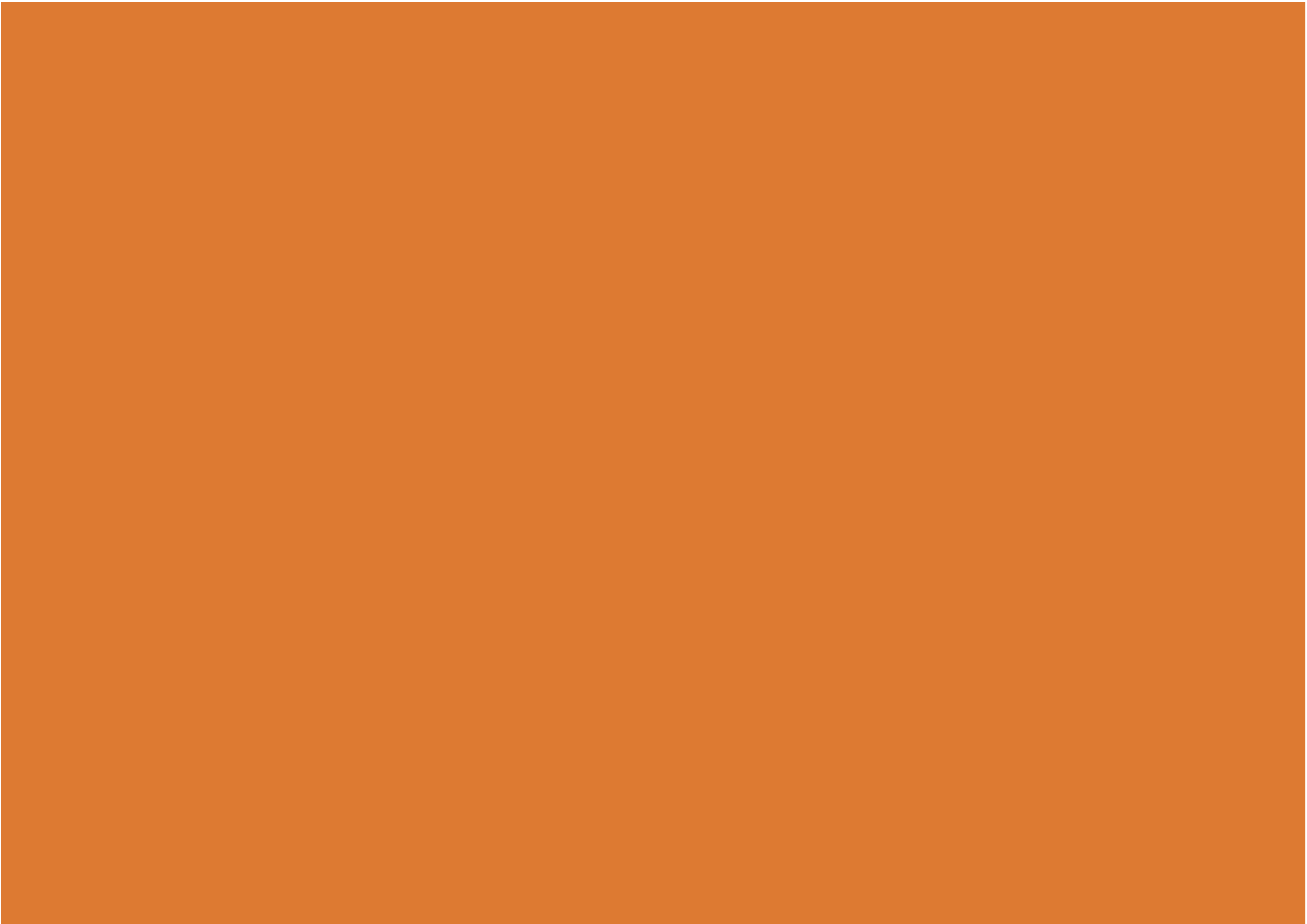
Lots 986 & 993 Baldvis Road, Baldvis

A Rockingham Park Project

Scale 1:2000 @ A3
 0 20 40 60m
 PLAN: 14/19/2021
 DATE: 07/12/2022
 PROJECT: 14/19/2021
 DRAWN BY: [Name]
 CHECKED BY: [Name]



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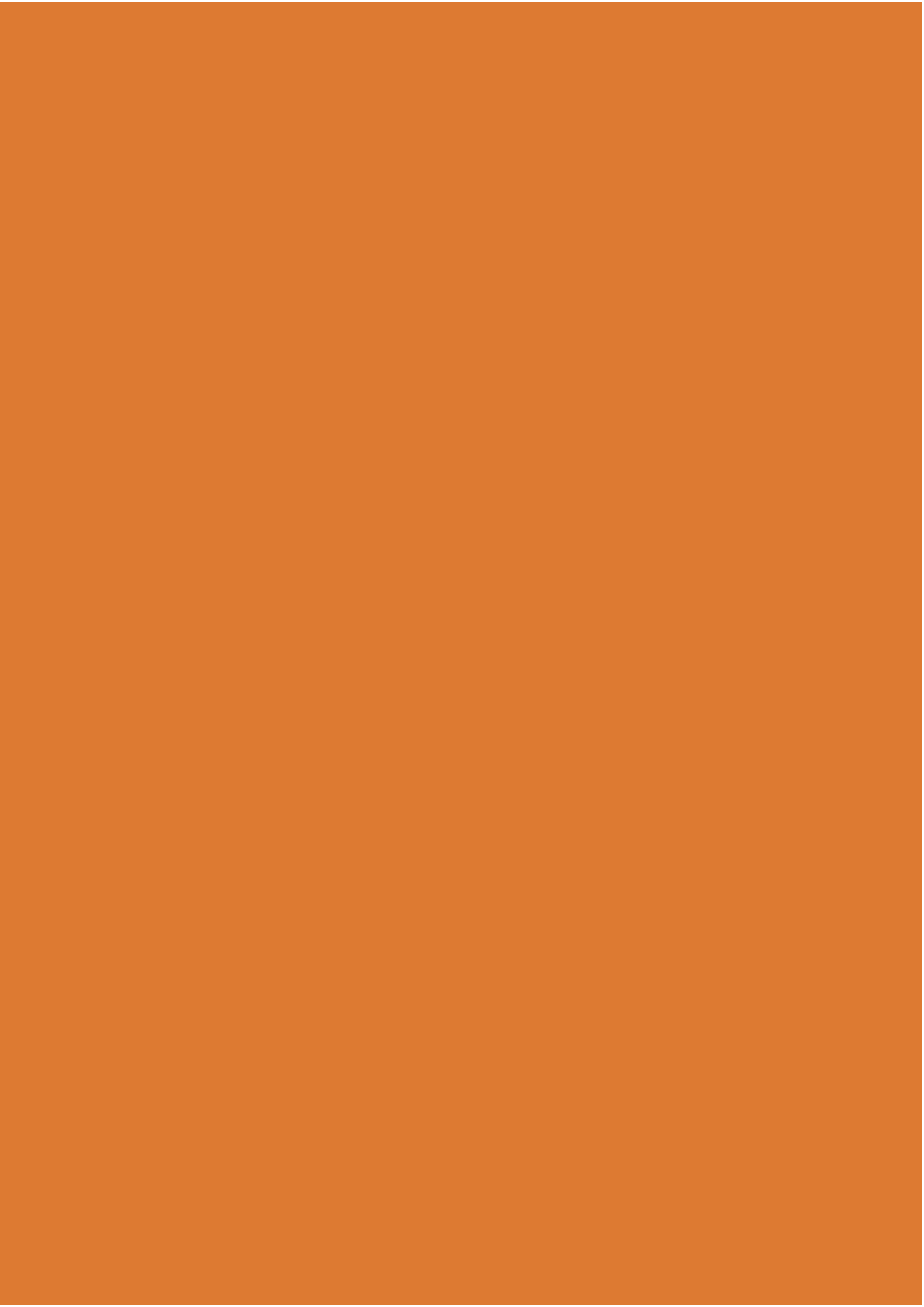
The background of the page is a detailed structure plan for Heritage Park (Phase 2). It features a grid overlay with various colored lines representing roads, boundaries, and infrastructure. The plan includes numerous numbered lots and blocks, with some areas highlighted in light blue and others in light green. The overall layout is complex, showing a mix of residential and commercial zones.

PART TWO

Explanatory Section

HERITAGE PARK (PHASE 2)
STRUCTURE PLAN

1. Planning Background
2. Site Conditions and Constraints
3. Land Use and Subdivision Requirements



PART TWO – EXPLANATORY SECTION

1 Planning Background

1.1 Introduction and Purpose

The purpose of the Heritage Park (Phase 2) Structure Plan report is to provide for the orderly and proper subdivision and development of the Structure Plan area for urban purposes.

The information contained in this section provides justification and support for the comprehensive and co-ordinated design response provided for the Structure Plan.

1.2 Land Description

1.2.1 Location

The Structure Plan area is bound by the Kwinana Freeway to the east, Baldivis Road and the Tramway Reserve to the west, Serpentine Road to the south and Heritage Park (Phase 1)/Furioso Green to the north. The Structure Plan area is approximately 2.5km south-east of the Baldivis Town Centre at Safety Bay Road, 10km south east of Rockingham Strategic Metropolitan Centre and 43km south of the Perth CBD (refer **Figure 1**).

1.2.2 Area & Land Use

The Structure Plan area is 18.8ha in area. The historical use for grazing activities has rendered the majority of the Structure Plan area completely cleared of vegetation.

1.2.3 Legal Description & Ownership

The Structure Plan area is identified as:

Table 1: Landownership

| Lot | Deposited Plan | Certificate of Title | Area (ha) |
|-------|----------------|----------------------|-----------|
| 986 | 202758 | 2128/381 | 9.5793 |
| 993 | 202758 | 2128/382 | 9.2455 |
| Total | | | 18.8248 |

The registered owner of both properties is Rockingham Park Pty Ltd. Copies of the certificate of titles are attached as **Appendix 1**.

1.3 Planning Framework

1.3.1 Zoning & Reservations

1.3.1.1 METROPOLITAN REGION SCHEME

The Structure Plan area is currently zoned 'Urban' under the MRS (refer **Figure 2**).

1.3.1.2 CITY OF ROCKINGHAM TOWN PLANNING SCHEME NO.2

The Structure Plan area is currently zoned 'Development' under TPS2 (refer **Figure 3**).

1.3.2 Regional & Sub Regional Structure Plans, Strategies and Policies

1.3.2.1 DIRECTIONS 2031

Directions 2031, the WAPC's strategic planning framework document for Metropolitan Perth and Peel, is a high level strategic plan that establishes a vision for the future growth of the Perth and Peel region. It provides a framework to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate that growth.

The Structure Plan area is identified within the 'South West Sub-region', which is expected to grow by 70,000 people, to a total population of 278,000 by 2031. Based on a 'Connected City' scenario, a growth target of 15 dwellings per gross urban zoned hectare is set by *Directions 2031*.

1.3.2.2 DRAFT OUTER METROPOLITAN PERTH & PEEL SUB-REGIONAL STRATEGY

The draft *Outer Metropolitan Perth and Peel, Sub-Regional Strategy* (OMSRS) provides a framework for delivering the objectives of *Directions 2031*. The document provides a more detailed analysis in terms of strategic plans of action, stakeholder responsibilities and timeframes for delivery of development within the metropolitan corridors.

Situated within the 'South West Sub-region', the Structure Plan area is identified as part of area BA2 which is 'urban zoned undeveloped' and forecast to provide approximately 7,900+ dwellings under the connected city scenario.

1.3.2.3 DRAFT SOUTH METROPOLITAN PEEL SUB REGIONAL PLANNING FRAMEWORK

This framework (refer **Figure 4**) provides high-level strategic guidance for the future development of the Metropolitan South-West, Metropolitan South-East and Peel sectors to accommodate part of the long-term growth of the Perth and Peel regions to 3.5 million people. It establishes a long term integrated planning framework for land use and infrastructure provision.

The Structure Plan area is identified as 'Urban Expansion'. These areas have been identified as such as they are strategically located, least constrained by physical considerations and have comparative proximity to the coast and strategic metropolitan centres. Proposed clusters of future urban development at Baldivis will be key components in the future urban structure extending generally between Rockingham–Kwinana and Mandurah–Pinjarra.

1.3.2.4 PLANNING BULLETIN 112/2016 – MEDIUM-DENSITY SINGLE HOUSE DEVELOPMENT STANDARDS

This Planning Bulletin, which was released in April 2016, provides the medium-density single house standards which can vary the 'Deemed to Comply' R-Code provisions of the Residential Design Codes.

1.4 Key Local Government Strategies and Policies

1.4.1 City of Rockingham Urban Growth Programme (2009)

The City of Rockingham *Urban Growth Programme* has been prepared by the City to assist in understanding the likely pattern of urban growth to 2031. The Urban Growth Programme recognises the subject land as being developed for urban purposes, with commencement of development forecast between 2017 and 2021.

1.4.2 City of Rockingham Developer Contribution Plan No. 2

The Structure Plan area falls within DCA2 which will assist in the funding of community infrastructure by requiring landowners to pay a contribution when their land is subdivided or developed. The introduction of developer contributions is provided for by *State Planning Policy No.3.6 - Developer Contributions for Infrastructure*.

The requirement for developer contributions is prescribed under Clause 5.6 and Schedule 12 of the City's Town Planning Scheme No.2. Under DCA2 the Structure Plan is located within the 'Baldivis North Sub-Area'. Developer contributions are to be addressed at the subdivision stage or before the construction of dwellings commences.

1.4.3 City of Rockingham Local Planning Policy 3.4.1 – Public Open Space

Local Planning Policy 3.4.1 – *Public Open Space* (LPP) has been prepared to address the design, location and maintenance of public open space (POS) to an acceptable standard.

In accordance with the City of Rockingham's requirements the crediting of restricted and unrestricted open space within the Parmelia Gas Pipeline Easement for Lot 306 has been calculated using the method as follows:

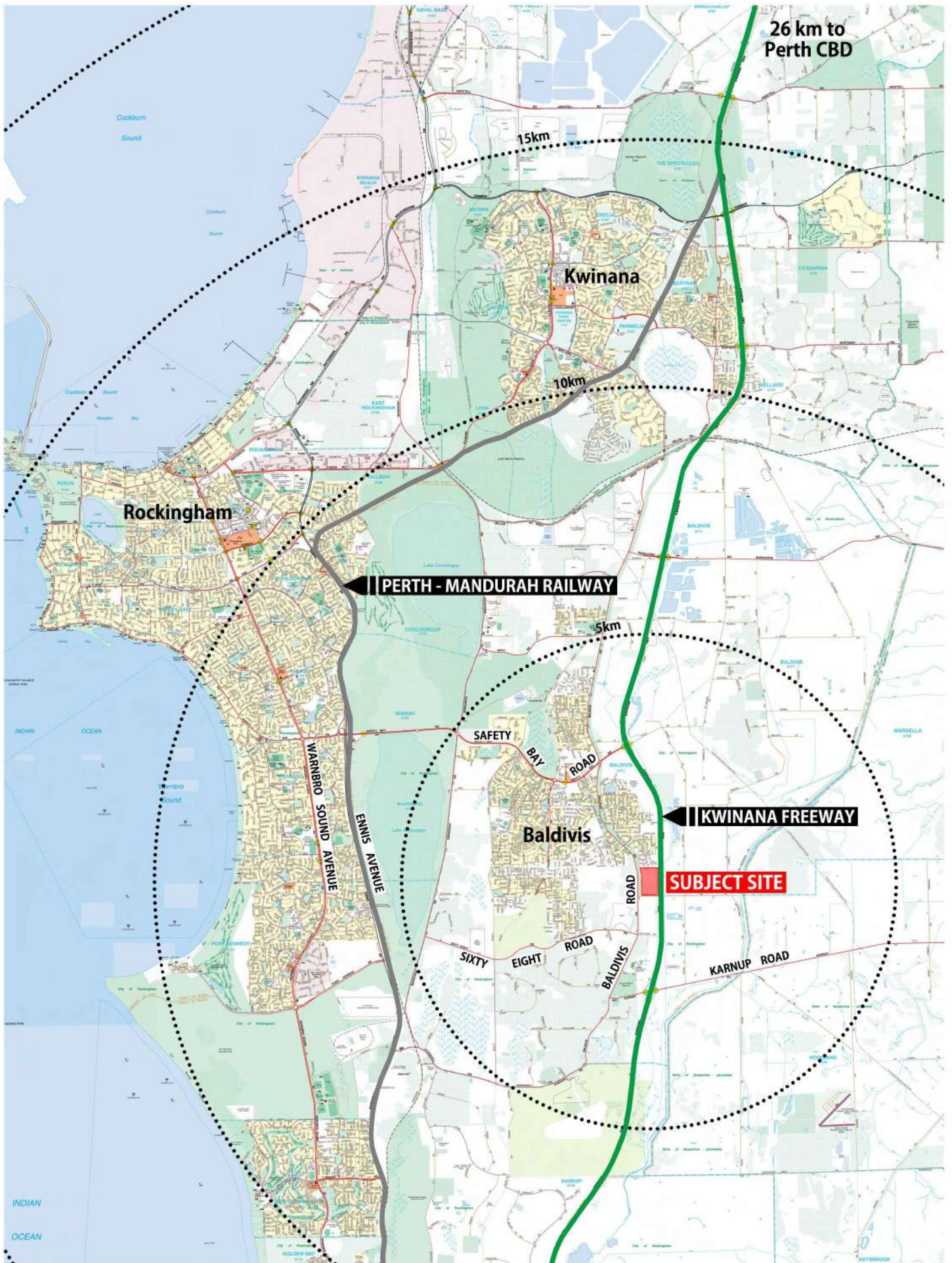
- Pipeline easement/core identified as restricted open space.
- Pipeline buffer identified as unrestricted open space (100% credit).
- Restricted open space to account for a maximum of 2% as per *Liveable Neighbourhoods*.
- Excess restricted POS applied as a deduction.

Section 5.7 addresses how the policy has been applied through the Structure Plan.

1.4.4 Relevant Local Planning Policies

The following LPPs and Procedures are considered relevant and applicable to the Structure Plan area:

- LPP 3.3.7 - Display Home Centres
- LPP 3.3.20 - Residential Design Codes
- LPP 3.4.2 - Subdivision Fencing
- LPP 7.2 - Local Bushland Strategy
- Procedure 1.9 - Detailed Area Plans



LOCATION PLAN

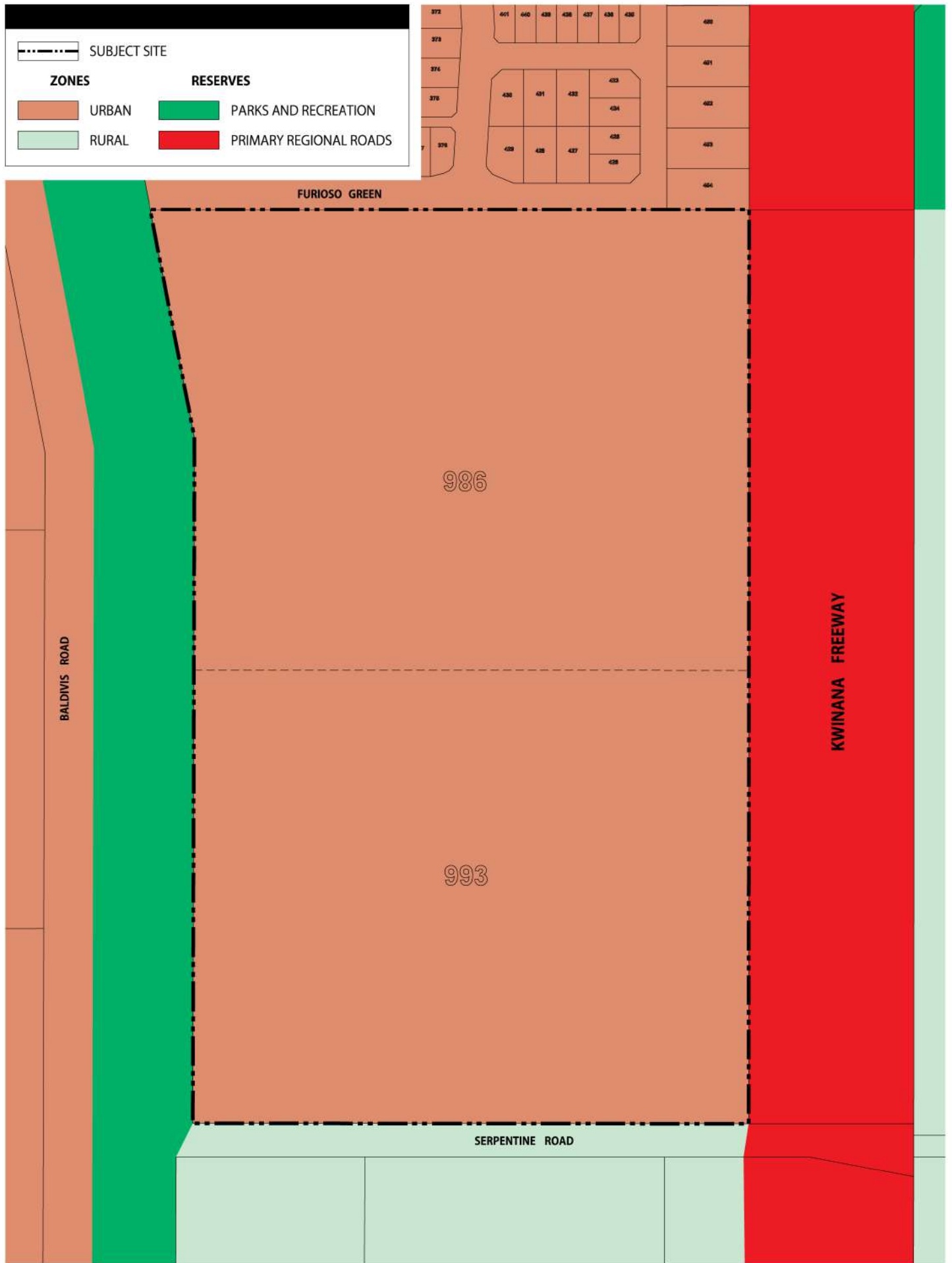
Figure 1



0 1 2 3km

Scale: 1:100 000@A4 Date: 15/03/2016 Plan: RHPHP-5-001





METROPOLITAN REGION SCHEME

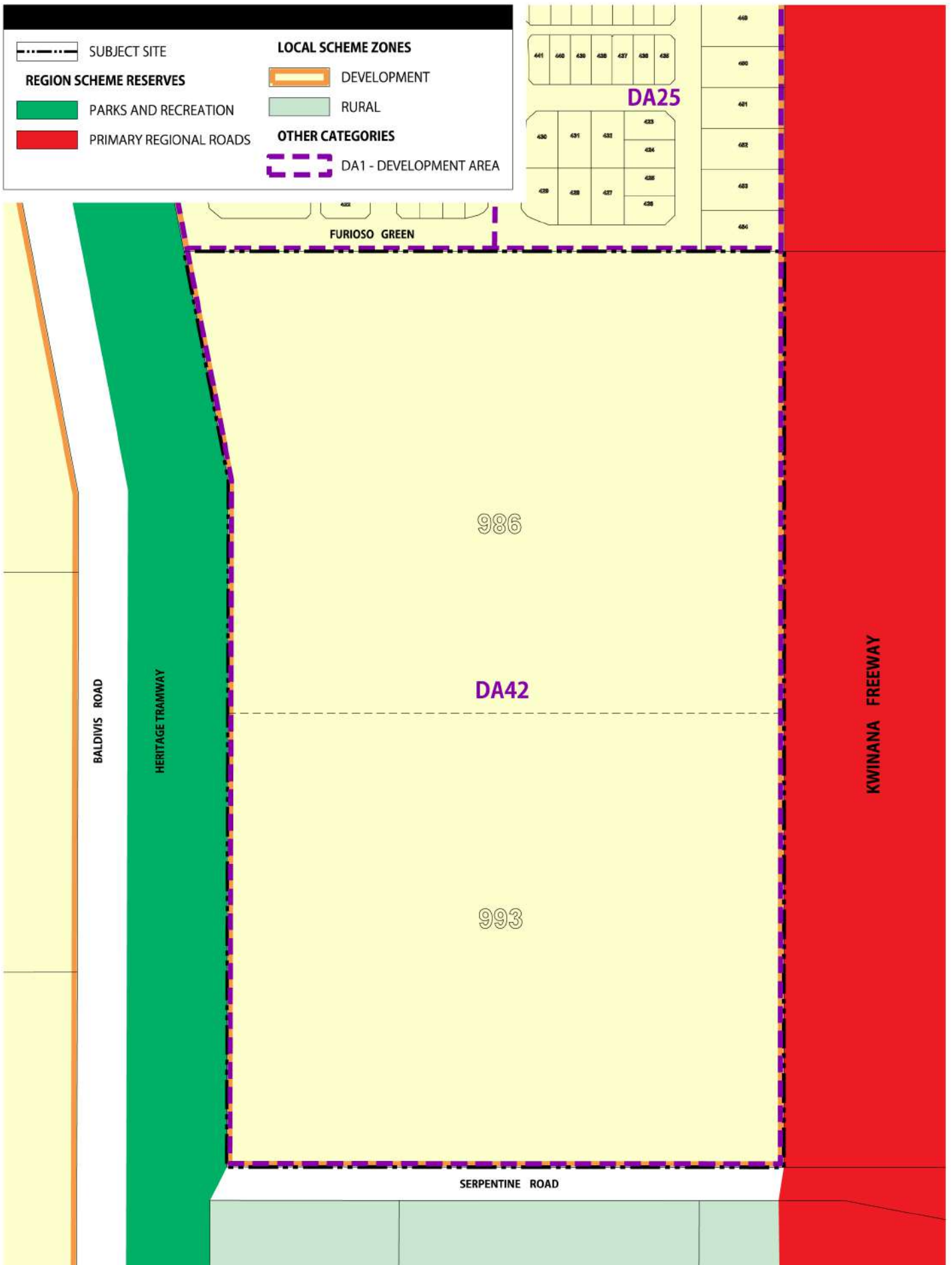
Figure 2



0 30 60 90m

Scale: 1:3000@A4 Date: 13/09/2016 Plan: RHPHP-5-003





TPS No. 2

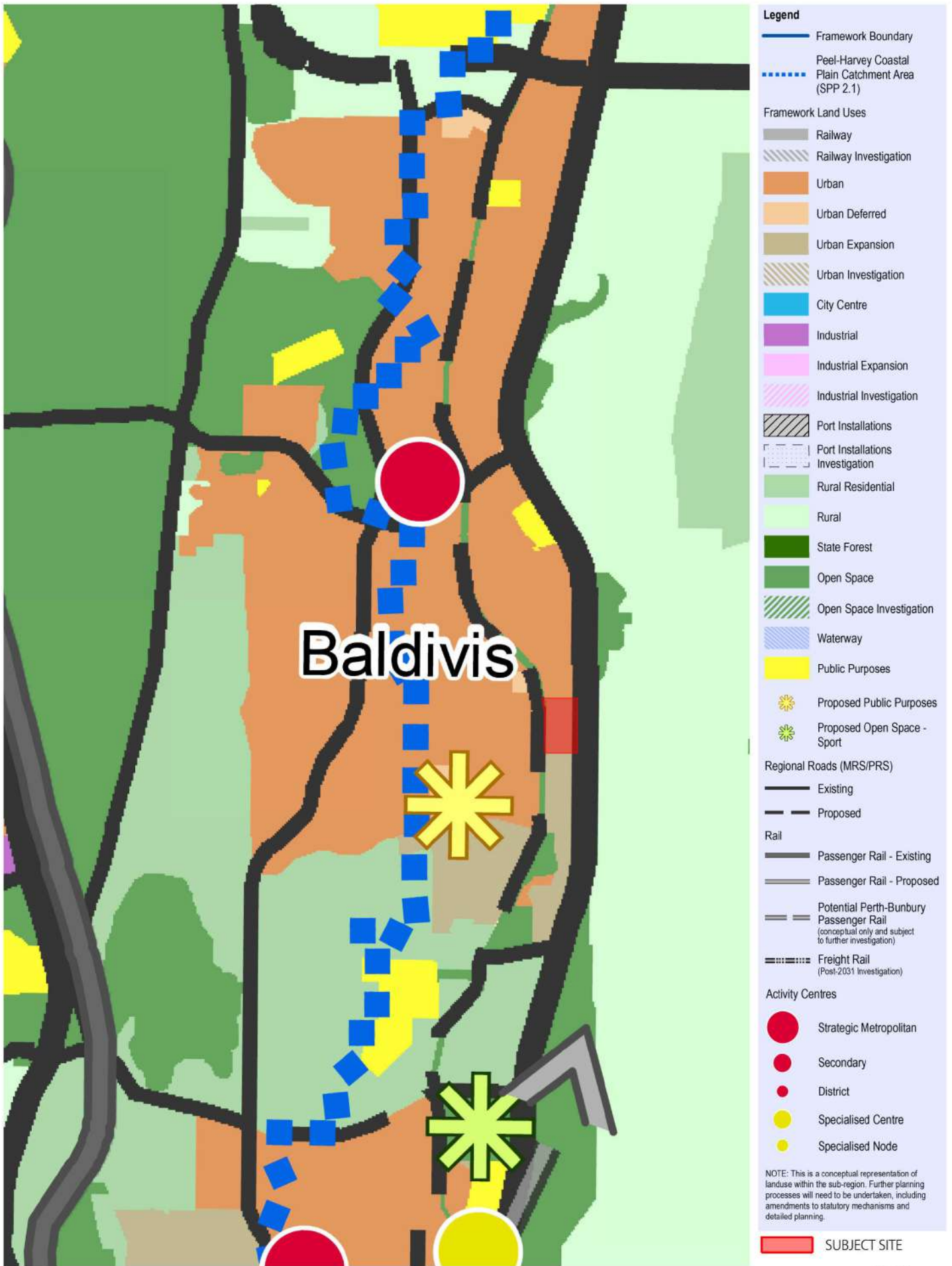
Figure 3



0 30 60 90m

Scale: 1:3000@A4 Date: 27/04/2016 Plan: RHPHP-5-009





DRAFT SOUTH METROPOLITAN PEEL SUB REGIONAL PLANNING FRAMEWORK

Figure 4



0 500 1000 1500m

Scale: 1:50 000@A4 Date: 17/03/2016 Plan: RHPHP-5-004



2 Site Conditions and Constraints

An Environmental Assessment Report (EAR) has been prepared by Strategen and is attached as **Appendix 2**. A summary of the EAR is provided below. An Orthophoto is included as **Figure 5**.

2.1 Biodiversity and Natural Area Assets

2.1.1 Flora

Patches of remnant vegetation occur across the Structure Plan area, generally made up of native scrub and trees over a dominant weedy grassland understorey. Vegetation surrounding the Structure Plan area is limited to the Tramway Reserve to the west, and within the Kwinana Freeway reserve east of the Structure Plan area.

Remnant vegetation within the Structure Plan area has been subject to extensive historic disturbance through clearing, grazing and subsequent weed invasion. An area of woodland occurs in the central portion of the Structure Plan area, consisting of an overstorey of *Eucalyptus rudis* with a near-surface layer of grassland. While there are some regenerating eucalypts on the perimeter of the woodland, the vegetation is considered to be degraded.

The Baldivis Tramway Reserve is adjacent along the length of the western boundary of the Structure Plan area. The Tramway Reserve supports intact but degraded native vegetation.

2.1.2 Fauna

A search of the DPaW's conservation-significant species databases in May 2013 to obtain information on Threatened and Priority Fauna occurring within a 6km radius of the Structure Plan area was undertaken. A total of 15 fauna of conservation-significance were recorded in the database searches.

Of the 15 fauna species recorded, four have been gazetted as 'Threatened' under the Wildlife Conservation Act, one has been gazetted as 'Other Specifically Protected Fauna', seven have been gazetted as 'birds under international agreement' and three are denoted as 'Priority' species.

The likelihood of these species having potential to occur within the Structure Plan area is presented in **Appendix 2**. Four species are considered 'likely' (being Forest Red-tailed Black Cockatoo, Carnaby's Cockatoo, Eastern Great Egret and Common Greenshank, seven other species are considered 'possible' and four species are considered 'unlikely' to have the potential to utilise the Structure Plan area (refer to **Appendix 2** for more information).

Based on the said assessment, it has been considered that development of the Structure Plan area will not have an impact on the survival of these species, as there are many other areas surrounding the Structure Plan area that they are able to inhabit. Also, the majority of the 'Open woodland of *Eucalyptus rudis* subsp. *rudis* over *Astartea fascicularis* and weeds' will be retained as part of the development within POS that will provide continued habitat should any fauna be currently utilising this area

2.1.2.1 BLACK COCKATOOS

A black cockatoo habitat survey was conducted by Greencap (2014). The Structure Plan area was assessed on three key functions that the black cockatoos undertake within the vegetation that includes: foraging, roosting and breeding.

A total of four large trees were classified as being potential roosting sites in the survey area as they were of suitable height (12-25m) and contained a dense canopy. However no roosting evidence (droppings or feathers) was recorded around the trees.

The survey area contains three Marri, three Jarrah and twelve Flooded Gum trees that have suitable dimensions to be classified as a potential breeding habitat (a total of 18 potential breeding trees). One Jarrah tree has a medium hollow that is considered to be of suitable breeding habitat.

Strategen undertook a black cockatoo habitat assessment of the Structure Plan area in October 2014, with particular emphasis on the Jarrah hollow identified by Greencap (2013). The hollow was inspected from ground level using appropriate magnification to identify any signs of recent black cockatoo use (i.e. chew marks, feathers or habitation). There was no evidence of black cockatoo utilisations of the hollow. There was also no evidence of black cockatoo utilisation for foraging or roosting purposes.

2.2 Landform and Soils

2.2.1 Topography

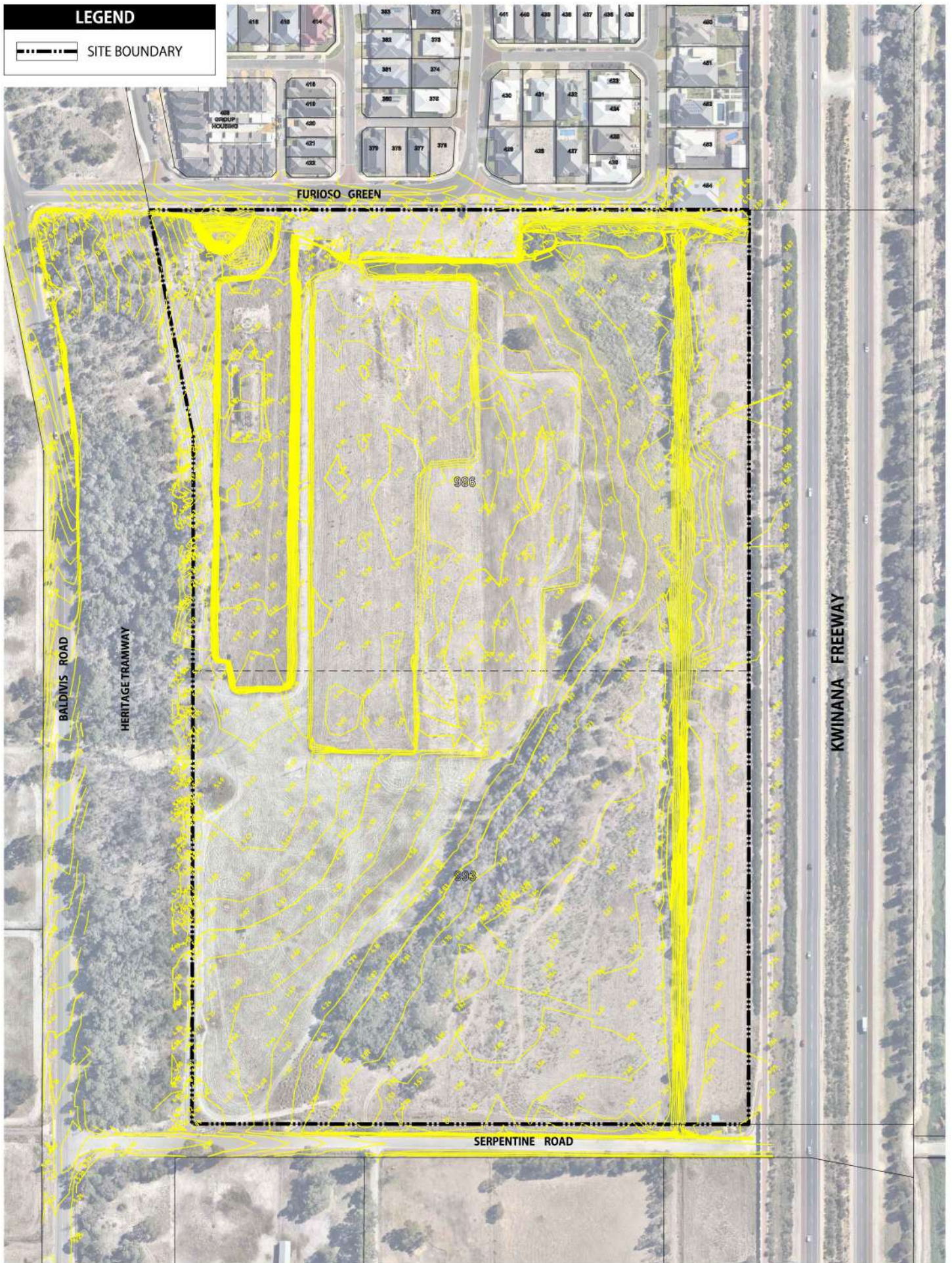
The Structure Plan area is low lying and flat. Pre-development elevation ranges from approximately 7m AHD in the north-west of the Structure Plan area, sloping down to 3m AHD in the south-east. A Water Corporation drain that runs the length of this Structure Plan area on the eastern boundary including embankments has an elevation of 4m AHD to 3m AHD (**Figure 5**).

2.2.2 Soils

The 1:50,000 geological mapping identified two geological units for the Structure Plan area, S8 SAND on approximately the western portion and Mc2 CLAYEY SILT on the eastern portion of the Structure Plan area.

LEGEND

--- SITE BOUNDARY



ORTHOPHOTO

Figure 5



0 30 60 90m

Scale: 1:3000@A4 Date: 15/03/2016 Plan: RHPHP-5-002



2.2.3 Acid Sulfate Soils

DER regional mapping has classified the whole of the Structure Plan area as having a 'moderate to low risk of Acid Sulfate Soil (ASS) occurring within three metres of the natural soil surface'.

2.3 Groundwater and Surface Water

2.3.1 Groundwater

Pre-development groundwater monitoring was undertaken between September 2009 and February 2011. This included monitoring monthly groundwater levels, quarterly in-situ water quality and quarterly laboratory analysis for nutrients and metals from seven bores on the Structure Plan area (MW11 to MW17). This monitoring was to determine baseline groundwater conditions and will be used as a benchmark to measure post-development monitoring results against.

Based on the Perth Groundwater Atlas (DoW, 2003), there is minimal information on historic groundwater levels for the Structure Plan area, but groundwater contours from May 2003 show groundwater levels on the Structure Plan area range from 3m AHD to under 2m AHD.

Average Annual Maximum Groundwater Levels (AAMGLs) across the Structure Plan area ranged from 2.87m AHD at MW17 (in the south-eastern corner) to 4.10m AHD at MW13 (central northern portion). Calculated Maximum Groundwater Levels (MGLs) ranged from 3.36 m AHD at MW17 to 4.6 m AHD at MW13.

Depth to groundwater for the Structure Plan area ranged from 2.98m below ground level (BGL) at MW11 (north-western) to ponding at the surface at MW12 (north-eastern).

Regional groundwater flow is in a westerly direction towards the Indian Ocean (DoW, 2003), however, from the monitoring that was undertaken for the Structure Plan area, local groundwater flow is in a south-easterly direction.

2.3.2 Surface Water

There are no permanent surface water bodies located within the Structure Plan area. The eastern portion of the Structure Plan area is low-lying, with a seasonally waterlogged area in the north-eastern section. This is connected to a man-made drainage line which runs north-south, parallel and approximately 50m west of the Kwinana Freeway. The surface hydrology of the Structure Plan area connects into a regional drainage system of wetlands and drainage lines, however, the linear drainage line has been disconnected hydraulically from the Peel Main Drainage system due to the presence of the Kwinana Freeway.

To the north of the Structure Plan area a subsoil pipe (300mm in diameter) drains from the POS located in Phase 1 of the Heritage Park development. This pipe discharges into the open drain in the north of Phase 2. The open drain discharges from the Structure Plan area through a 700mm diameter culvert under Serpentine Road to the south and then continues as a Water Corporation open drain and eventually connects to the Peel Main Drain over 3km south of the Structure Plan area near Boyanup Pool. The open drain located to the south of the Structure Plan area receives groundwater and surface water from the Structure Plan area and also subsoil drainage from the north.

2.3.3 Wetlands

The eastern half of the Structure Plan area is mapped by DPaW in the Geomorphic Wetlands of the Swan Coastal Plain dataset as 'Multiple Use' wetland. Multiple Use Wetlands are identified by DPaW in the then-Water and Rivers Commission's 'Position Statement: Wetlands (2001)' as '*Wetlands with few important ecological attributes and functions remaining*', whose '*use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare*'. Hill *et. al.* (1996) maps the area as a vegetated portion of the regional palusplain wetland.

Field observation confirms the portion of the Structure Plan area classified as 'Multiple Use' wetland has been largely parkland cleared, with a stand of *Melaleuca* sp. in the northeast and an open drainage line running north-south parallel to the eastern boundary of the Structure Plan area. The limited remaining upper storey vegetation present within this wetland area is indicative of typical wetland vegetation. The weed species present in the cleared areas of the Structure Plan area are not typical of seasonally inundated soils, though there were some that can be found in both seasonally inundated, as well as upland, sites.

No *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (EPP) lakes exist within the Structure Plan Area.

2.4 Bushfire Hazard

A Bushfire Management Plan (BMP) (**Appendix 3**) has been prepared by Emerge Associates.

Portions of the Structure Plan have been identified as "Bushfire Prone Areas" under the state-wide *Map of Bushfire Prone Areas* recently released by the Office of Bushfire Risk Management (OBRM), as shown in **Appendix 3**. The identification of Bushfire Prone Areas within any portion of the Structure Plan area requires a further assessment of the bushfire hazard implications on development proposed within the Structure Plan area, in accordance with the WAPC's *Guidelines for Planning in Bushfire Prone Areas* (2015).

Areas of classified vegetation occur within the Kwinana Freeway reserve east of the Structure Plan area that have not been mapped as bushfire prone under OBRM's state-wide *Maps of Bushfire Prone Areas*. The bushfire hazard assessment of the current conditions included in this BMP has identified this area as a relevant consideration for development within the Structure Plan area.

All areas within 100m of the Structure Plan area have been assessed to determine the presence of bushfire prone vegetation and, where this occurs, associated vegetation classification and bushfire hazard rating levels. Permanent long term bushfire hazard considerations are posed by remnant vegetation within the Tramway Reserve to the west, and within the Kwinana Freeway reserve east of the Structure Plan area.

Any new dwellings constructed within 100 m of classified bushfire prone vegetation will require consideration of the need for increased construction standards to address AS 3959. In order to pre-empt this requirement, a detailed and site specific BAL assessment will be undertaken as part of the subdivision process to understand the likely BAL ratings for each individual new lot created. Final BAL ratings should not be determined for future lots at the Structure Plan stage, as the ultimate lot locations/boundaries and dwelling setbacks will be determined through the subdivision process, and temporary hazards (or even hazards that were expected to be permanent) may not remain at that time.

An indicative BAL assessment has been undertaken as part of this BMP in order to demonstrate that with the provision of appropriate Asset Protection Zones (APZs), no areas within the proposed Structure Plan are exposed to an unacceptable level of bushfire risk (i.e. greater than BAL-29). This BAL assessment has incorporated a Method 1 assessment for the whole Structure Plan area and an additional Method 2 assessment for areas at the Kwinana Freeway interface. Refer to **Appendix 3, Figure 6** – Post Development Site Conditions – Bushfire Attack Levels and **Figure 7** - Post Development Site Conditions – Asset Protection Zones.

2.5 Context and Other Land Use Constraints and Opportunities

A Context Plan is included as **Figure 8** providing an illustration of the following section.

2.5.1 Local Context

The surrounding land uses adjacent the Structure Plan area include:

- Due west is land currently zoned for 'Urban' purposes, covered by the approved Structure Plan for Lots 635, 739 and 740 Baldivis Road. This Structure Plan includes a new primary school and local commercial centre.

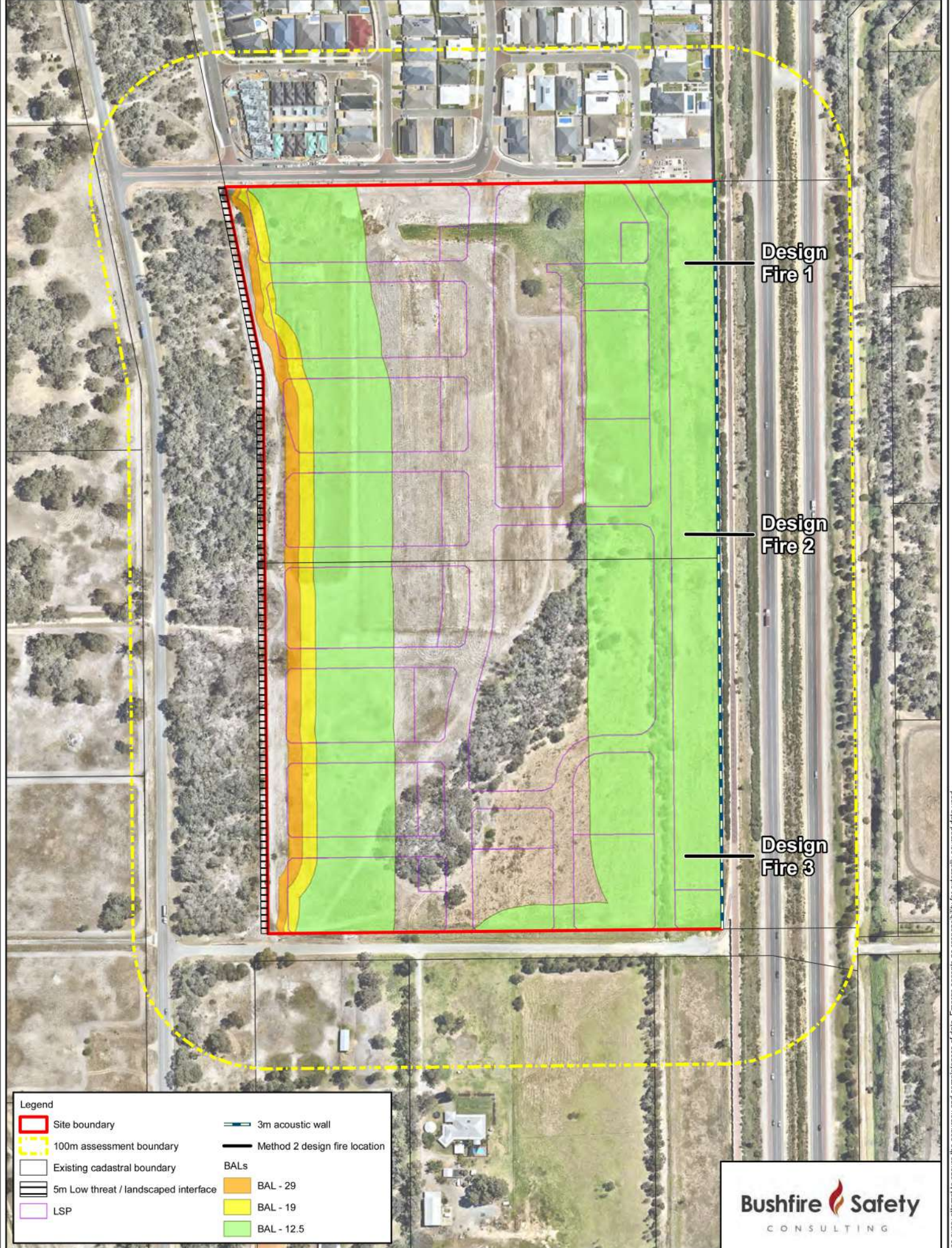
- The land directly north is the existing residential estate, known as Heritage Park Phase 1.
- East of the Structure Plan area is the Kwinana Freeway.
- Directly south of the Structure Plan area is the existing 'Rural' zoned land.

2.5.2 Activity and Employment Centres

The Structure Plan area is well located with regard to activity and employment centres.

- Baldivis Town Centre is located 2.5km to the north, on Safety Bay Road.
- Port Kennedy Service Industrial Service Commercial area is located 6km west of the Structure Plan area.
- Rockingham Strategic Metropolitan City Centre is located 10km north-west of the Structure Plan area.
- Mandurah Strategic Metropolitan City Centre is located 22km south west of the Structure Plan area.

In addition, the Structure Plan is 800m east of a future village centre as per the approved Local Structure Plan for Lots 635, 739 and 740 Baldivis Road.



Legend

- Site boundary
- 100m assessment boundary
- Existing cadastral boundary
- 5m Low threat / landscaped interface
- LSP
- 3m acoustic wall
- Method 2 design fire location

BALs

- BAL - 29
- BAL - 19
- BAL - 12.5

Bushfire Safety
CONSULTING

Figure 6: Post Development Site Conditions – Bushfire Attack Levels

Project: Bushfire Management Plan
Heritage Park Phase 2

Client: Rockingham Park



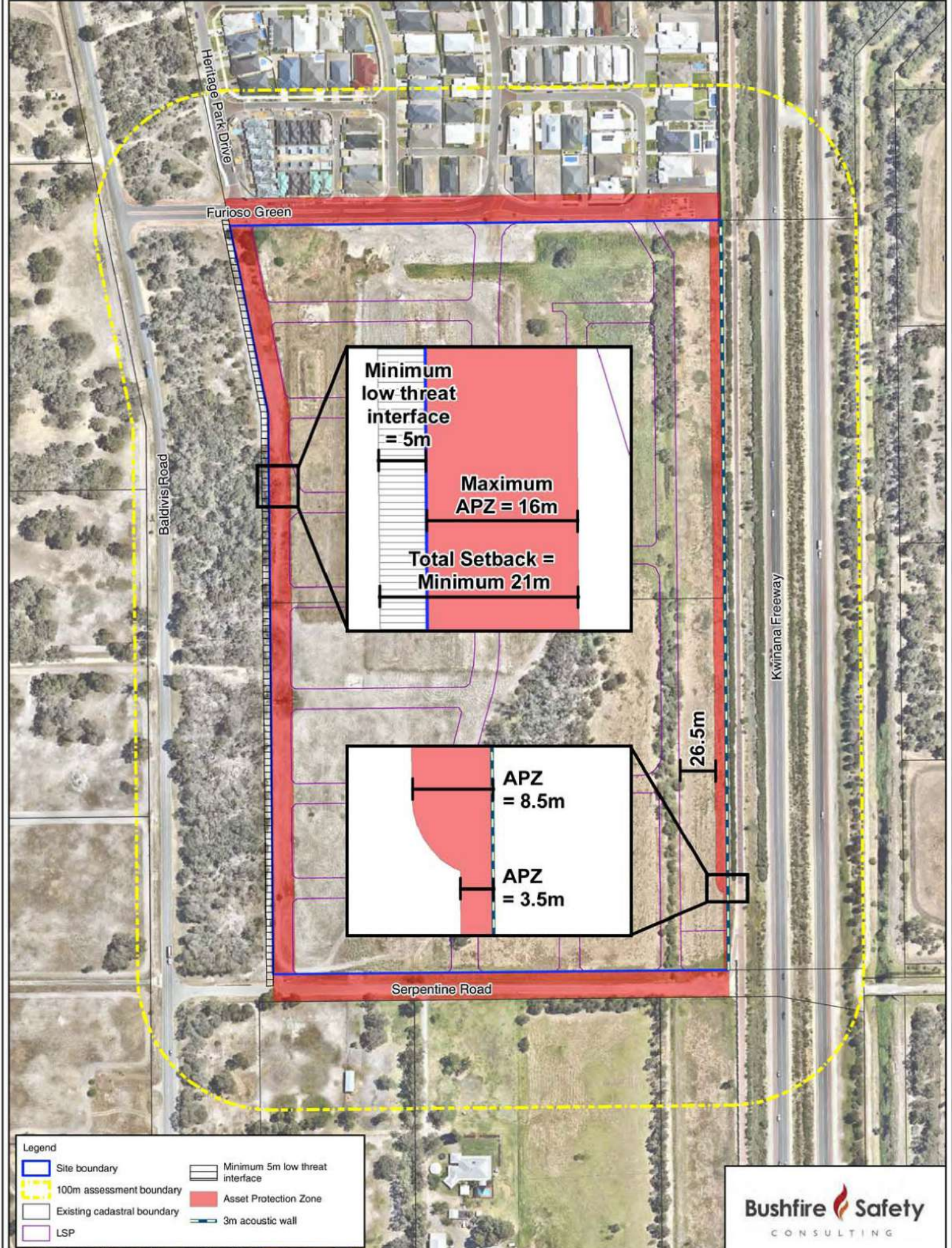
Plan Number: EP15-059(01)--F14b

| | |
|---------------|-------------------|
| Drawn: KNM | Date: 02/05/2016 |
| Approved: JDH | Date: 02/05/2016 |
| Checked: VMK | Scale: 1:3,500@A4 |

0 50 100 Metres

emerge
ASSOCIATES
Integrated Science & Design

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used.



| Legend | |
|--------|---------------------------------|
| | Site boundary |
| | 100m assessment boundary |
| | Existing cadastral boundary |
| | LSP |
| | Minimum 5m low threat interface |
| | Asset Protection Zone |
| | 3m acoustic wall |



Figure 1: Post Development Site Conditions – Asset Protection Zones

Project: Bushfire Management Plan
Heritage Park Phase 2

Client: Rockingham Park



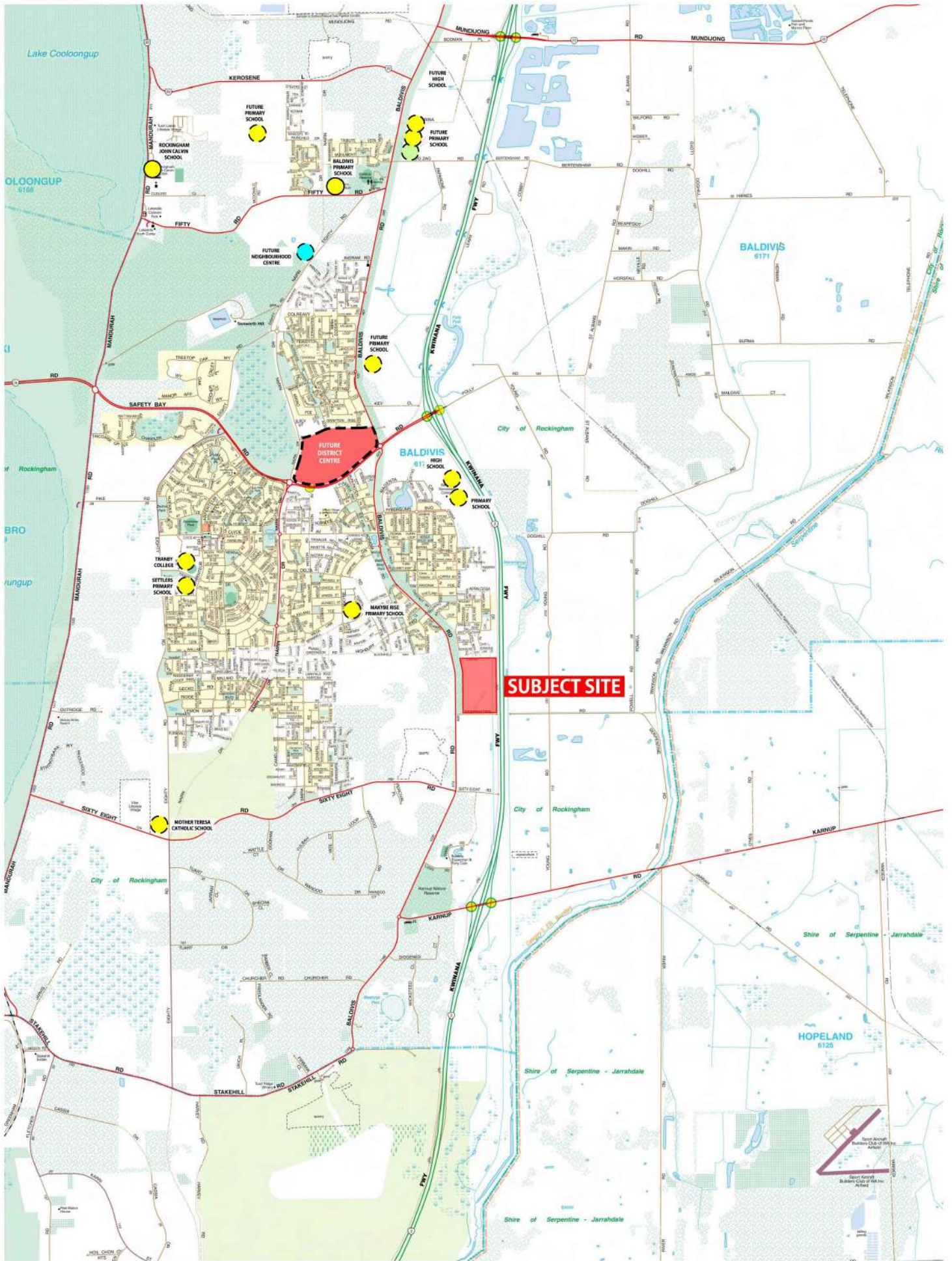
Plan Number: EP15-059(01)--F15e

| | |
|--------------|-------------------|
| Drawn: KNM | Date: 18/09/2017 |
| Approved: KK | Date: 18/09/2017 |
| Checked: VMK | Scale: 1:3,500@A4 |

0 50 100
Metres



While Emmerge Associates makes every attempt to ensure the accuracy and completeness of data, Emmerge accepts no responsibility for externally sourced data used



CONTEXT PLAN

Figure 8



0 0.5 1.0 1.5km

Scale: 1:50 000@A4 Date: 12/04/2016 Plan: RHPHP-5-005



2.5.4 Education

The Structure Plan area is well located with regard to education facilities.

2.5.4.1 PRIMARY SCHOOL

- Makybe Rise Primary School is located 1.2km north-west of the Structure Plan area.
- Rivergums Primary School is located 1.4km north of the Structure Plan area.
- Tuart Rise Primary School is located 1.6km west of the Structure Plan area.
- Mother Theresa Catholic School is located 3.7km south-west of the Structure Plan area.
- Tranby College is located 3.1km north-west of the Structure Plan area.

2.5.4.2 SECONDARY SCHOOLS

- Baldivis Secondary College is located 1.7km north of the Structure Plan area.
- Tranby College is located 3.1km north west of the Structure Plan area.

2.5.4.3 TERTIARY FACILITIES

- Murdoch University (Rockingham Campus) is located 11km north-west of the Structure Plan area within the Rockingham Strategic Metropolitan City Centre.
- Challenger TAFE (Rockingham) is located 11km north-west of the Structure Plan area within the Rockingham Strategic Metropolitan City Centre.

2.5.5 District and Regional Open Space

The Structure Plan area is located 3.5km east of the Rockingham Lakes Regional Park.

The linear Heritage Tramway reserve which follows along Baldivis Road immediately abuts the Structure Plan area.

Arpenteur Park, located 3.2km to the north west of the Structure Plan area contains a sports oval, club rooms and cricket nets for active sports and recreation.

3 Land Use and Subdivision Requirements

3.1 Land Use

The Structure Plan area will be developed for 'Residential' purposes.

The land use composition including Public Open Space (POS) provision is outlined below:

Table 2: Land Composition

| Land Uses | Area (Ha) | Percentage |
|-------------------|--------------|-------------|
| Residential | 11.49 | 61% |
| Public Open Space | 2.208 | 11.7% |
| Road Reserve | 5.00 | 26.6% |
| Public Purposes | 0.122 | 0.7% |
| Total | 18.82 | 100% |

3.2 Public Open Space

The Structure Plan proposes two areas of 'green space', with only one credited as POS, the other being a total deduction as a Drainage Basin. A POS table has been prepared for the Structure Plan area (**Table 3** refers) and illustrates compliance with the 10% creditable POS requirement in accordance with *Liveable Neighbourhoods* guidance and WAPC's Development Control (DC) Policy 2.3 *Public Open Space in Residential Areas*.

Table 3: Public Open Space

| Public Open Space | | Area (ha) |
|--------------------------------|------------------|--------------|
| Structure Plan Area | | 18.82 |
| Deduction | 1:1 Drainage | 0.1221 |
| | Drainage Reserve | 0.1041 |
| Total Deductions | | 0.2262 |
| Gross Subdivisible Area | | 18.59 |
| POS Requirement @ 10% | | 1.85 |
| Maximum Restricted POS (20%) | | 0.3719 |
| Minimum Unrestricted POS (80%) | | 1.4875 |

Table 4: Public Open Space Calculations

| Drainage Provisions and Creditable Open Space | | | | |
|---|------------|--------------------------|----------------------------|---------------------------|
| Land Area (ha) | Non Credit | Restricted POS (20% Max) | Unrestricted POS (80% Min) | Total Credited Open Space |
| | Deduction | >1:1 – 1:5 Yr | Above 1:5 Yr | |
| 1.9818 | 0.1221 | 0.1972 | 1.6625 | 1.8597 |

Based on the Structure Plan (**Plan 1**) the POS contribution meets the required 10%.

This POS contribution will be reviewed at the more detailed subdivision and engineering design stages, as drainage provision, earthworks and nett residential development cells are further adjusted.

A Landscape Masterplan has been prepared by LD Total in support of the Structure Plan (**Appendix 4**), supported by the following landscaping objectives for the area of POS and Tramway:

POS

- Provide a large open turf area for kick-a-bout active space;
- Provide shade trees to perimeter of kick-a-bout area;
- Retain large stand of predominantly Eucalyptus rudis. Level and mulch only to lower level - no planting or irrigation. Provide informal limestone path through stand of trees connecting to broader path network;
- Provide safe pedestrian and cycle links;
- Provide accessible play equipment area suitable for all abilities and all ages. Provide natural shade utilising existing trees, supplemented with proposed shade trees;
- Full irrigation to turf and proposed garden beds;
- Waterwise native garden areas; and
- Native wetland species planted to base of drainage basins with bio-filtration media and gravel mulch.

Tramway

- Retain and protect existing vegetation;
- Provide limestone bridal path and concrete DUP adjacent to eastern boundary of Tramway;
- Provide low threat planting maintained to APZ standard to proposed batters into Tramway;
- No irrigation; and
- Removal of weed species.

3.3 Residential

3.3.1 Dwelling Forecasts

3.3.1.1 DIRECTIONS 2031 DWELLING FORECASTS

Situated within the South West sub-region, the Structure Plan area is identified as 'Urban Zoned Undeveloped'. The Structure Plan area is part of the area referenced as 'BA2'.

The *Directions 2031* and accompanying OMSRS sets the following dwelling target rates for the broader Baldvis area:

Table 5: Directions 2031 Targets (Baldvis Area)

| Directions 2031 Scenario | Projected Dwellings: |
|---|------------------------|
| 'Connected City' @ 15 dwellings per gross urban zone | BA2: 7,900 + dwellings |
| 'Business as usual' @ 10 dwellings per gross urban zone | BA2: 6,300+ dwellings |

The Structure Plan area itself comprises 18.8ha. Based on the dwelling projections of *Directions 2031* and accompanying OMSRS, the Structure Plan is projected to generate the following dwelling yields:

Table6: Directions 2031 Dwelling Targets (Structure Plan)

| Directions 2031 Scenario | Projected Dwellings: |
|---|----------------------|
| 'Connected City' @ 15 dwellings per gross urban zone | 282 dwellings |
| 'Business as usual' @ 10 dwellings per gross urban zone | 188 dwellings |

The Structure Plan indicates in the order of 264 lots with 302 dwellings (including one grouped housing sites).

The dwelling yield projections thus exceed the 15 dwellings per gross urban zone targets of *Directions 2031* and will potentially accommodate a population in the order of 845+ people, at a rate of 2.8 persons per household.

The proposed forecast across the Structure Plan area is subject to the final design for respective subdivision stages; this based on detailed drainage and environmental constraints. Preferred lot mix and market demand at the time of land release will also influence final dwelling yields.

3.3.1.2 LIVEABLE NEIGHBOURHOODS FORECASTS

Based on the *Liveable Neighbourhoods* 'Site Hectare' definition, the Structure Plan's 'developable area' equates to 18.59ha, of which ~11.49ha relates to residential land. As such the overall Liveable Neighbourhoods density for the Structure Plan will be in the order of:

- 302 dwellings = 26 dwellings per site hectare.

The projected densities will fulfil the *Liveable Neighbourhoods* targets of average 22 dwellings per site hectare for the overall development.

The Structure Plan has been assigned a base coding of Residential R25, with portions of 'Residential R40' and 'Residential R60' which are proposed for a grouped housing site.

3.4 Movement Network

A Transport Assessment has been prepared by KTCC Consultants to identify projected traffic volumes and suggested road hierarchies in and adjacent to the Structure Plan area (**Appendix 5** refers). The key findings are summarised in the following section. **Figure 9** summaries the road hierarchy.

Based on KTCC's report recommendations, broad cross-section concepts have been prepared to establish a general road hierarchy, pedestrian network and preferred streetscape character.

3.4.1 External Road Network

The existing road network surrounding the Structure Plan area includes Serpentine Road to the south, Baldvis Road to the west, Kwinana Freeway to the east and the Furioso Green to the north.

3.4.1.1 KWINANA FREEWAY

The Kwinana Freeway located east of the Structure Plan area, is reserved under the MRS as a 'Primary Regional Road'.

Lloyd George Acoustics have prepared a *Transportation Noise Assessment* to assess the impact of Kwinana Freeway on the Structure Plan area (**Appendix 6** refers).

The assessment was undertaken in accordance with the WAPC's *State Planning Policy 5.4 Road and Rail Noise*, with the key findings below.

The assessment recognised that for development fronting or adjoining Kwinana Freeway:

- modelling indicated that future noise levels will exceed the SPP 5.4 Target criteria for all lots adjacent to Kwinana Freeway;
- the majority of lots in the second row would achieve the SPP 5.4 Target criteria.

LEGEND

-  SITE BOUNDARY
-  NEIGHBOURHOOD CONNECTOR B
-  ACCESS STREET D

108 TRAFFIC FORECAST



ROAD HEIRARCHY

Figure 9



0 30 60 90m

Scale: 1:3000@A4 Date: 26/10/2017 Plan: RHPHP-5-006



As noise levels exceed the SPP 5.4 *Target Criteria*, noise mitigation needs to be considered. The mitigation options considered appropriate under the assessment include a 3.0m noise wall along the Kwinana Freeway development boundary combined with 'Package A' architectural treatments and notifications on lot titles. The affected lots are illustrated under Figure 5.2 of the *Transportation Noise Assessment (Appendix 6)*.

3.4.1.2 BALDIVIS ROAD

Baldivis Road is a two-way, two-lane undivided road, classified as a Rural Local Road / Distributor B in the vicinity of the proposed Structure Plan Area, but increasing to Regional Distributer to the south of Serpentine Road. The legal speed limit is 80kph in the vicinity of the proposed Structure Plan Area, reducing to 70kph to the north approaching existing residential developments. There is no bus service running along this street in the vicinity of the Structure Plan area.

Baldivis Road provides north-south connections to residential developments south of Safety Bay Road and extends parallel with the Kwinana Freeway.

Access to the Structure Plan area from Baldivis Road is from Serpentine Road to the south and Furioso Green to the north.

3.4.1.3 SERPENTINE ROAD

Serpentine Road is a two-way, two-lane road and is classified as a Rural Local Road/Access Road by MRWA. The legal speed limit on Serpentine Road is 50kph. There is no bus service running along this street in the vicinity of the Structure Plan area. This road is a cul-de-sac to the east.

3.4.1.4 FURIOSO GREEN

Furioso Green is classified as an Urban Local Road/Access Road by MRWA. There are two bus services (Route No's 566 and 567) running along this street in the vicinity of the Structure Plan area. The legal speed limit on Furioso Green is 50kph.

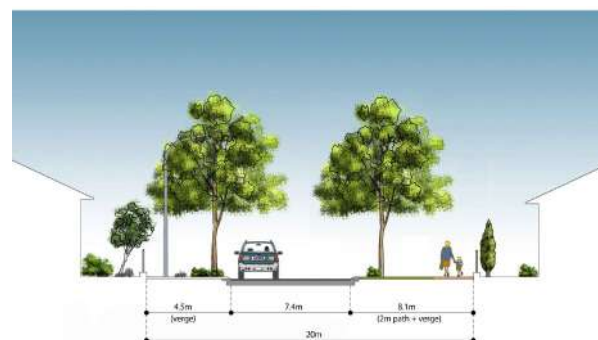
3.4.2 Internal Road Network

3.4.2.1 ACCESS STREETS

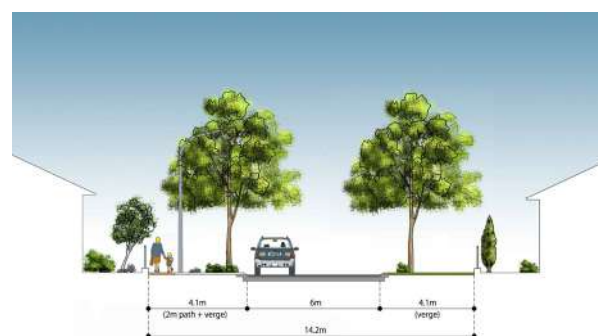
The roads within the Structure Plan Area will have the following classifications:

- Neighbourhood Connector B (20m reserve, 7.4m wide pavement, with a dual use path on the eastern side of the road), consistent with Campolina Avenue to the north – wider access street with target speed 50kph; and
- Access Streets D (6m wide pavement with a standard 2m wide footpath on one side of the road only) – give way street with target speed 30kph.

Neighbourhood Connector B – Typical Cross Section



Access Road D – Typical Cross-Section



Note: Roads Reserves will be reduced by 2m adjoining areas POS.

3.4.3 Public Transport

There are a number of public transport services available in the vicinity of the Structure Plan area, with two services having stops on the northern boundary of the Structure Plan area as summarised in **Table 7** below.

Table 7: Existing Public Transport Provision

| Bus Route /Description | Location of Nearest Stop |
|--|-----------------------------------|
| #566 Warnbro Station – Baldivis via Makybe Drive | Cnr of Furioso Green and Baldivis |
| #567 Warnbro Station – Baldivis via Rivergums Boulevard | Cnr of Furioso Green and Baldivis |

The existing bus routes service the existing established areas of Baldivis to the north of the Structure Plan area, namely the Settlers Hill development, the existing Stockland Shopping Centre and the local schools in the area. It is expected that as urban development continues south of these areas that local bus services will be extended.

3.4.4 Pedestrian and Cycle Infrastructure

In accordance with the requirements of *Liveable Neighbourhoods*, all *Access Streets* are to have a shared path or footpath on at least one side of the carriageway subject to locational demand (**Figure 10** refers).

3.5 Water Management

A Local Water Management Strategy (LWMS) has been prepared by RPS Environment and Planning Pty Ltd on behalf of Rockingham Park Pty Ltd to support the Structure (**Appendix 7** refers).

The LWMS demonstrates the water sensitive urban design and total water cycle management principles as identified in the *Better Urban Water Management Guidelines* (WAPC 2008), will be implemented in the proposed development for the site. Implementation of the strategy will be undertaken in accordance with BUWM through the development and implementation of Urban Water Management Plans for individual stages of development within the Structure Plan area.

3.6 Infrastructure Coordination, Servicing and Staging

An Engineering Servicing Report has been prepared by Mortons Urban Solutions, **Appendix 8** refers. A summary of the Engineering Servicing Report is provided below.

3.6.1 Roads

All roads will be designed and constructed to relevant standards and guidelines as and where applicable, including:

- City of Rockingham standards and requirements
- Austroads Guidelines
- Australian Standards
- MRWA standards and requirements; and
- Liveable Neighbourhoods

Internal roads and Serpentine Road upgrade will comprise:

- 30mm Asphalt AC10 wearing course
- 7mm Primer Seal
- 100mm compacted crushed rock basecourse
- 150mm compacted limestone subbase

3.6.1.1 EXISTING ROAD UPGRADE REQUIREMENTS

Baldivis Road (adjacent to the Structure Plan area) currently comprises a bi-directional undivided two-lane road in a 20m wide road reserve and is currently classified as a Rural Local Road/Distributor B by Main Roads WA (MRWA). The City of Rockingham (CoR) advised that Baldivis Road along the frontage of the Structure Plan area would be upgraded to a Boulevard standard by CoR in the future (Neighbourhood Connector A in accordance with *Liveable Neighbourhoods*) within a 24.4m road reserve. The CoR also advised that a Baldivis Road upgrade cost contribution to fund portion of the upgrade works would be levied against the Developer as a condition of WAPC subdivisional approval.

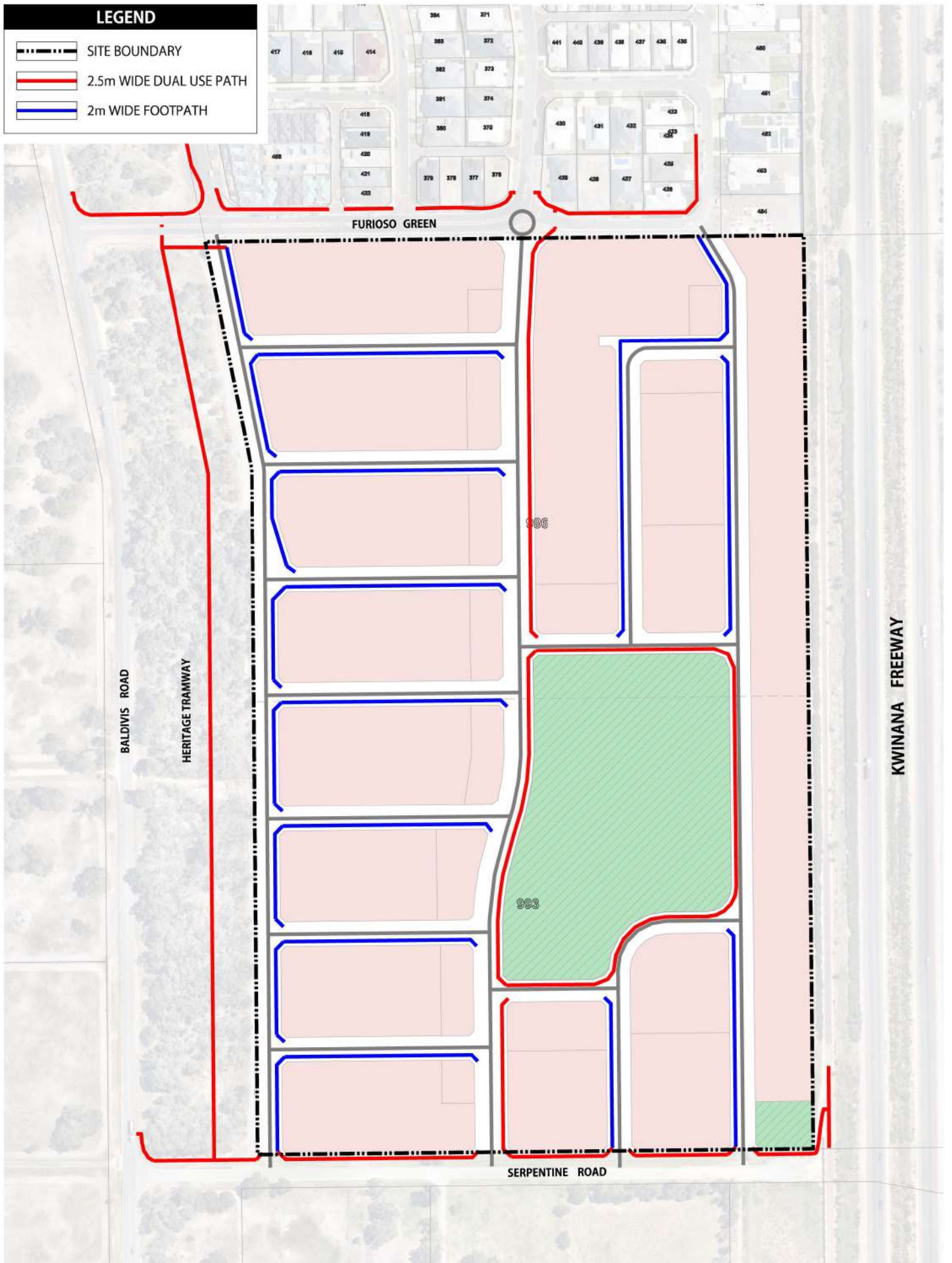
In line with future staged development of the Structure Plan area, Serpentine Road will require to be upgrading due to allotment levels within the development as follows (refer to drawings in **Appendix 8**):

- 7.2m wide pavement comprising 2 x 3.6m wide lanes within a 20m wide road reserve;
- Provision of kerbing, drainage and lighting to northern verge only;
- Southern verge will remain un-kerbed and undrained etc. (Rural Local Road) until such time the land to the south is developed at which time the developer would be required to upgrade Serpentine Road to suit.

Furioso Green has recently been upgraded as part of development of Heritage Park Phase 1 comprising 2 x 4.5m lanes, 2m median and a 2m wide path on the northern sides in 20.0m road. To facilitate safe traffic movements for vehicular traffic entering and exiting the Structure Plan area as well as from Campolina Avenue via future 4-way intersection in Furioso Green, it is proposed to construct a suitably designed and sized roundabout at the intersection of Furioso Green with the proposed central north/south 'spine road' in the Structure Plan area (refer to **Appendix 8**).

LEGEND

-  SITE BOUNDARY
-  2.5m WIDE DUAL USE PATH
-  2m WIDE FOOTPATH



FOOTPATH PLAN

Figure 10



0 30 60 90m

Scale: 1:3000@A4 Date: 26/10/2016 Plan: RHPHP-5-007



3.6.1.2 INTERNAL ROADS

Internal Roads proposed within the Structure Plan area will be constructed in accordance with geometric configurations, cross sectional properties and the like as prescribed in Transport Impact Assessment (**Appendix 5**).

3.6.2 Services

3.6.2.1 SEWERAGE

The Structure Plan area is currently within Water Corporation planning and as such, it can be serviced with sewer. The northern portion of the Structure Plan area is capable of being serviced by existing sewer infrastructure to the north via a connection to the existing DN150 sewer gravity main in Furioso Green. The remainder of the Structure Plan area will be required to gravitate approximately 550m south of Serpentine Road to a future Baldivis South Interim WWPS to be installed west of Baldivis Road on Lot 1263 in the near future by ABN Group. Current advice is that the WWPS is currently out to tender with construction planned to commence late 2016.

3.6.2.2 WATER RETICULATION

The Structure Plan area is currently not within Water Corporation's planning. Despite being outside the Tamworth Reservoir Zone that services landholdings to the north and west, given Water Corporation's latest preliminary planning advice, it is highly likely that an extension of this Zone to include the Structure Plan area is possible.

This will need to be confirmed once the Water Corporation has completed its remodelling and planning for the area east of Baldivis Road.

The Water Corporation has also confirmed that it is highly likely that the northern section of Lot 986 (minimum 1 Stage) can be serviced from the existing DN200 water main in Furioso Green with the remainder of the Structure Plan area being reliant on possible extension of the 200P water main in Furioso Green westwards to connect to future planned infrastructure west of Baldivis Road in order to maintain pressure and flow within the network.

3.6.2.3 POWER

Western Power has confirmed that the existing infrastructure on and around the Structure Plan area is insufficient to service the entire Structure Plan area and consequently, network reinforcement works would be required. The exact extent of reinforcement works will need to be confirmed with Western Power during detailed design stage.

3.6.2.4 TELECOMMUNICATIONS

There is some spare capacity in Telstra's existing communications network and therefore it is anticipated that the Structure Plan area can readily be provided with communications/NBN Co service.

3.6.2.5 GAS

ATCO Gas has advised that the existing gas networks adjacent to the Structure Plan area have sufficient capacity to provide a satisfactory gas service. They also advise that whether any additional offsite main gas infrastructure is required to service the Structure Plan area would only be determined by ATCO Gas following their detailed gas designs.

3.6.3 Drainage and Water Management

3.6.3.1 STORMWATER

The LWMS details the following Stormwater Management:

- The stormwater drainage design demonstrates that the Structure Plan area is capable of maintaining pre-development flow rates up to the 100 year AEP (Average Exceedance Probability) event.
- Rainfall from the 1 year AEP event will be detained and treated as close to source as possible.
- The basin will have at least 0.5m clearance from the base of the bio-remediation basin and the MGL.
- A pipe and pit network will convey stormwater up to the 5 year AEP event to either the POS drainage basin or the drainage basin in the south of the Structure Plan area.
- The open drain that currently exists onsite will be converted to a 300mm closed pipe and will discharge south of the site. The existing 700 mm diameter culvert under Serpentine Road will be replaced. This drain eventually connects to the Peel Main Drain at Karnup Road, approximately 1.8km south of the site.
- Structural and non-structural controls will be used to improve stormwater quality.
- Imported fill will be required to provide sufficient clearance for installation of the gravity sewer system and to provide at least 0.5m clearance from the 100 year flood level to the minimum habitable floor level. The earthworks plan show that the finished lot levels range from 5.32m AHD to 7.48m AHD, which is well above the 100 year flood level at 3.75m AHD to 3.95m AHD across the Structure Plan area pre-development.

3.6.3.2 GROUNDWATER

- Subsoil drains will be installed in sections of the road reserve and beneath the bio-filtration areas of the drainage basins to assist in infiltration and provide a controlled groundwater level.

- The bio-filtration area in the POS will be designed to FAWB (2009) guidelines, and will include soil amendment in the base of the infiltration basin, to assist in treating stormwater prior to infiltration into the groundwater.
- The bio-retention area of the POS will be vegetated with plants species that will have a high uptake of nutrients.
- Dewatering is likely to be required for the installation of services. This will be completed under an approved ASSDMP.

3.6.4 Earthworks

Preliminary earthworks design undertaken has determined that minor cut to fill works as well as more substantial imported borrow material for use as suitable fill material will be required across the Structure Plan area to achieve the appropriate levels and grades required for the internal sewer gravity system to function and connect to existing and future networks as well as to achieve minimum separation to MGL's and the like.

3.6.5 Staging

The development of the Structure Plan area will be implemented in multiple stages. The staging plan is indicative as timing, location and composition of the future stages will be dependent on market demand. It is expected that development will start in the north, where it adjoins the existing Heritage Park Phase 1 and move south.

3.7 Developer Contribution Arrangements

The subject land forms part of Development Contribution Area (DCA) No 2 and is therefore subject to development contribution requirements as outlined within Clause 5.6, Schedule 12 of the Scheme and DCA No. 2 Map. The provisions applying to the DCA apply in addition to the provisions applying to any underlying zone or reserve and general provisions of the Scheme.

The liability for cost contributions applies in accordance with Clause 5.6.14 of the Scheme.

3.8 Other Requirements

3.8.1 RMD Codes

The relevant built form provisions of the WAPC's Planning Bulletin 112/201 *Medium-density single house development standards – Development Zones* are to be implemented within the Structure Plan area.

It is expected that the RMD provisions will ultimately be adopted under a City of Rockingham *Local Planning Policy*, thus 'Estate wide' LDPs will not be required to implement the RMD provisions.

3.8.2 Prescribed Requirements

Notwithstanding the RMD variations discussed above, there will be circumstances where LDPs will be required; this generally relates to development comprising one or more of the following attributes

- a) ***Lots within a 100 metre catchment of 'Classified Vegetation' (Bushfire Hazard Zone) thus deemed at risk from bushfire pursuant to Australian Standards;***

Note: Lots encompassed by the Bushfire Risk area are identified spatially in the accompanying Bushfire Management Plan, refer to **Appendix 3**.

Building setbacks and construction standards required to achieve Bushfire Attack Level - 29 or lower may be found in Australian Standards (AS3059): *Construction of buildings in bushfire prone areas (as amended)*.

- b) ***Lots affected by excessive noise in relation to Kwinana Freeway***

Note: Buildings requiring upgrades to facade construction (i.e. quiet house principles) shall be in accordance with SPP 5.4 – *Road and Rail Noise*

Affected lots may be identified spatially in the accompanying *Transportation Noise Assessment*, refer to **Appendix 6** of the Structure Plan; this to be updated subject to finished ground levels adjacent or type of built form design being developed.

