

# PART TWO: EXPLANATORY SECTION

## PART TWO CONTENTS

<b>01</b>	<b>SITE AND CONTEXT ANALYSIS</b>	<b>75</b>
1.1	GOVERNANCE CONTEXT	76
1.2	COMMUNITY CONTEXT	84
1.3	ECONOMIC CONTEXT	91
1.4	PHYSICAL CONTEXT	98
1.5	RESPONSE TO CONTEXT	122
<b>02</b>	<b>STAKEHOLDER AND COMMUNITY PARTICIPATION</b>	<b>129</b>
2.1	ENGAGEMENT SUMMARY	130
<b>03</b>	<b>VISION</b>	<b>133</b>
3.1	VISION	134
<b>04</b>	<b>DESIGN ELEMENTS</b>	<b>137</b>
4.1	URBAN ECOLOGY	139
4.2	URBAN STRUCTURE	149
4.3	PUBLIC REALM	155
4.4	MOVEMENT	177
4.5	LAND USE	193
4.6	BUILT FORM	211
4.7	TECHNICAL APPENDICES	240

## LIST OF TABLES

P2 - TABLE 1: STATE PLANNING FRAMEWORK SUMMARY	76
P2 - TABLE 2: LOCAL PLANNING FRAMEWORK SUMMARY	81
P2 - TABLE 3: ROCKINGHAM (SUBURB) RESIDENTIAL PROPERTY DATA - SALES	89
P2 - TABLE 4: ROCKINGHAM (SUBURB) RESIDENTIAL PROPERTY DATA - SALES	89
P2 - TABLE 5: EMPLOYMENT GAP WITHOUT FUTURE EMPLOYMENT LAND	95
P2 - TABLE 6: ECONOMIC SWOT ANALYSIS	97
P2 - TABLE 7: POS HIERARCHY	113
P2 - TABLE 8: PSP - KEY DESIGN CONSIDERATIONS	122
P2 - TABLE 9: ENVIRONMENTAL MITIGATION STRATEGIES	140
P2 - TABLE 10: INTENDED SUB-PRECINCT CHARACTER	151
P2 - TABLE 11: POS TYPES AND FUNCTION	157
P2 - TABLE 12: PROPOSED POS DESIGN GUIDANCE	160
P2 - TABLE 13: PROPOSED INTERSECTION UPGRADES	182
P2 - TABLE 14: ECONOMIC RESILIENCE ASSESSMENT FINDINGS	195
P2 - TABLE 15: RSC POPULATION AND EMPLOYMENT SCENARIOS	196
P2 - TABLE 16: RPSP LAND USE MIX	197
P2 - TABLE 17: STRATEGIC EMPLOYMENT TARGET	200
P2 - TABLE 18: NON-RETAIL FLOORSPACE GAPS	202
P2 - TABLE 19: ULTIMATE RSC FLOORSPACE PROJECTIONS (2041)	202
P2 - TABLE 20: WALKABLE CATCHMENT	203
P2 - TABLE 21: RPSP DENSITY TARGETS	205
P2 - TABLE 22: POTENTIAL INTERIM USES	207
P2 - TABLE 23: FRONTAGE TYPES	224

## LIST OF FIGURES

P2 - FIGURE 1: DEMOGRAPHIC CATCHMENT MAP	84
P2 - FIGURE 2: CITY OF ROCKINGHAM POPULATION FORECASTS	85
P2 - FIGURE 3: ROCKINGHAM HOUSEHOLD INCOME QUANTILES	90
P2 - FIGURE 4: CITY OF ROCKINGHAM GRP MEASURE	92
P2 - FIGURE 5: REGISTERED BUSINESSES BY INDUSTRY IN ROCKINGHAM 2020	93
P2 - FIGURE 7: TOP 10 OUTPERFORMED HIGH AND LOW GROWTH INDUSTRIES	94
P2 - FIGURE 8: TOP 10 UNDERPERFORMED HIGH AND LOW GROWTH INDUSTRIES	94
P2 - FIGURE 6: CITY OF ROCKINGHAM EMPLOYMENT SELF SUFFICIENCY	96
P2 - FIGURE 9: BROADER AREA CONTEXT	99
P2 - FIGURE 10: DEVELOPMENT PATTERNS	102
P2 - FIGURE 11: DEVELOPMENT CHARACTERISTICS	103
P2 - FIGURE 12: DEVELOPMENT POTENTIAL	104
P2 - FIGURE 13: LAND USE	106
P2 - FIGURE 14: PUBLIC SPACES AND HERITAGE	114
P2 - FIGURE 15: NATURAL ENVIRONMENT	116
P2 - FIGURE 16: PUBLIC TRANSPORT	118
P2 - FIGURE 17: PRIVATE VEHICLE MOVEMENT	120
P2 - FIGURE 18: PSP - RESPONSE TO CONTEXT	126
P2 - FIGURE 19: URBAN ECOLOGY PLAN	142
P2 - FIGURE 20: URBAN STRUCTURE PLAN	152
P2 - FIGURE 21: PUBLIC REALM PLAN	158
P2 - FIGURE 22: PROPOSED JECKS STREET TREATMENT	162
P2 - FIGURE 23: GODDARD STREET GREEN LINK CROSSING	163
P2 - FIGURE 24: PATTERSON ROAD GREEN LINK CROSSING	163
P2 - FIGURE 25: PUBLIC REALM INVESTMENT PRIORITY	166
P2 - FIGURE 26: PROPOSED READ STREET TREATMENT	181
P2 - FIGURE 27: MOVEMENT PLAN	184
P2 - FIGURE 28: MOVEMENT AND PLACE VALUES	189
P2 - FIGURE 29: MOVEMENT AND PLACE ASSESSMENT	190
P2 - FIGURE 30: LAND USE AND DENSITY PLAN	198
P2 - FIGURE 31: DESIRED INFILL DESIGN OUTCOMES	221
P2 - FIGURE 32: MOVEMENT AND PLACE FRONTAGE TYPES	223
P2 - FIGURE 33: CITY CENTRE AXONOMETRIC DIAGRAM	231
P2 - FIGURE 34: WATERFRONT VILLAGE AXONOMETRIC DIAGRAM	233
P2 - FIGURE 35: COASTAL LOTS AXONOMETRIC DIAGRAM	234
P2 - FIGURE 36: TOD VILLAGE AXONOMETRIC DIAGRAM	235
P2 - FIGURE 37: CITY PARK AXONOMETRIC DIAGRAM	236



# 01

---

## SITE AND CONTEXT ANALYSIS



# 1.1 GOVERNANCE CONTEXT

## 1.1.1 STATE PLANNING FRAMEWORK

Planning in the RSC is guided by a range of documents including a range of strategies, State Planning Policies (SPP), and other key documents. Those relevant to the RPSP are summarised in **P2 - Table 1**.

**P2 - Table 1: State Planning Framework Summary**

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
Metropolitan Region Scheme	The Metropolitan Region Scheme (MRS) outlines objectives for regional development and provides a statutory mechanism to assist strategic planning, by setting out broad land-use zones, setting aside areas for regional open space, protection of environmental values and other regional infrastructure purposes, and assisting in coordinating the provision of major infrastructure. Local government planning (including local planning schemes) is required to be consistent with the broad land uses under the MRS.	The RSC is largely zoned as Central City Area under the MRS, but also contains areas of land currently zoned Industrial, and a small area reserved for Public Purpose on Contest Parade. It is generally surrounded by land zoned Urban, Industrial and Parks and Recreation Reserve. To the east it is bound by the Primary Regional Road Reserve of Ennis Avenue, and the Other Regional Road Reserve of Rae Road and Read Street. Additionally, it is bisected in the north by the Other Regional Road Reserve of Patterson Road.
Perth and Peel @3.5 Million Southern Metropolitan Peel Sub-Regional Framework	Perth and Peel@3.5million is a suite of strategic land use planning documents which provide a framework for future growth to 2050. The strategy recognises the benefits of a consolidated and connected city utilising the region's previous historic patterns of urban growth. It is divided into four sub-regional frameworks, which provide more detailed guidance on future land use and development for a city of 3.5 million people.  The RSC is situated within the South Metropolitan Peel Sub-regional Planning Framework area. The framework suggests infill development should be focussed in activity centres, station precincts and along urban corridors in line with the 10 principles for urban consolidation.	The framework acknowledges that Rockingham is the principal centre of the southwestern sector. Its large and increasingly urban catchment will support population-driven growth in retail activity and the activity centre is planned to be a focus of office and commercial development for much of the area. The ability to attract development and investment has been constrained by the need for better connectivity between the heavy rail system and city centre. Transit corridors connecting the city centre with the surrounding urban catchment are proposed.  A key objective of the Sub-Regional Framework is to promote employment opportunities and increase the number of people who live and work within the sub-region, with a focus on attracting strategic economic and employment land uses within the strategic metropolitan centres such as RSMC. Employment self-sufficiency levels in the South Metropolitan Peel sub-region are projected to increase from 65% to 83 % in the southwestern sector with a target of 12,290 jobs in the City by 2050.  Regarding housing, the City have a target of 14,680 infill dwellings by 2050 (93,590 dwellings total). Given the high-level of amenity in the RSC, it is expected to fulfil a significant role in meeting the City's infill housing targets.
SPP 2.0 – Environment and Natural Resources Policy	SPP 2.0 is a broad sector policy and guides the protection, management, conservation and enhancement of the natural environment. The policy promotes responsible planning by integrating environment and natural resource management with broader land use planning and decision-making.	The RSC is a highly urbanised area, therefore as shown on <b>P2 - Figure 15</b> only a few natural areas remain. Integration of these areas into the PSP design where possible should be a key focus, as large parts of the RSC are located within an environmentally sensitive area (ESA).

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
	SPP 2.0 outlines general measures for matters such as water, air quality, soil and land quality, biodiversity, agricultural land and rangelands, basic raw materials, marine resources, landscapes and energy efficiency. These general measures should be considered in conjunction with environmentally-based, issue-specific state planning policies which supplement SPP 2.0.	
SPP 2.6 – State Coastal Planning	SPP 2.6 provides for the long-term sustainability of Western Australia's coast and is relevant to those local governments that contain coastal areas. The purpose of the policy is to guide decision-making within the coastal zone including managing the development and land use change, the establishment of foreshore reserves and protecting, conserving and enhancing coastal values.  SPP 2.6 outlines criteria for the consideration of development and settlement arrangements, including building height limits within local planning frameworks and management of water resources. It further acknowledges the importance of coastal planning strategies, coastal hazard risk management approaches, coastal foreshore reserves and community participation in coastal planning.  SPP 2.6 is supplemented by the State Coastal Planning Policy Guidelines and Coastal Hazard Risk Management and Adaptation Planning (CHRMAP) Guidelines	The northern part of the RSC abuts the ocean, as such considerations must be had for coastal hazards such as erosion and inundation. In 2019, the City prepared the City of Rockingham CHRMAP in accordance with the requirements of SPP 2.6, of which two sectors (Sector 1 and Sector 2A are within the RSC). Outcomes of the study are summarised in Section 1.4 (Part 2).
Draft SPP 2.9 – Planning for Water	SPP 2.9 and the associated SPP 2.9 Planning for Water Guidelines outline how water resource management should be integrated into planning processes, such as the preparation of structure plans.  It recognises that planning should contribute to the protection and management of water resources through the implementation of policy measures that identify significant water resources, prevent the degradation of water quality and wetland vegetation, promote restoration and environmental repair and avoid incompatible land uses.  It also provides guidance on how future development can be better suited to addressing climate change, and protect public health by ensuring appropriate delivery of wastewater infrastructure. As such, when finalised, the policy will replace existing guidelines such as the Government Sewerage Policy, and Better Urban Water Management.	There are a small number of conservation status geomorphic wetlands within the RSC. These are generally located on Lot 201 adjacent to the north east of the Rockingham Courthouse, and 61 Council Ave, Rockingham (Lot 103) adjacent to the north west of the Rockingham Aquatic Centre. Analysis of historical aerial imagery demonstrates that these wetlands have been predominantly cleared and built over (in some areas). Further investigations may be required to confirm their status as a conservation wetlands.  With regard to wastewater, there are parts of the precinct where reticulated sewerage is not currently provided. Future subdivision and development will need to have consideration for provision of this infrastructure.

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
SPP 3.7 – Planning in Bushfire Prone Areas	<p>SPP 3.7 provides a framework in which to implement effective, risk-based land use planning and development outcomes to preserve life and reduce the impact of bushfire on property and infrastructure. The policy emphasises the need to identify and consider bushfire risks in decision-making at all stages of the planning and development process whilst achieving an appropriate balance between bushfire risk management measures, biodiversity conservation and environmental protection.</p> <p>The policy applies to all land that has been designated as bushfire prone by the Fire and Emergency Services Commissioner as well as areas that may have not yet been designated as bushfire prone but is proposed to be developed in a way that introduces a bushfire hazard.</p> <p>SPP 3.7 should be read in conjunction with the deemed provisions, Guidelines for Planning in Bushfire in Prone Areas and Australian Standard 3959: Construction of buildings in Bushfire Prone Areas.</p>	<p>There are a number of identified bushfire prone areas located within the RSC, such areas are identified on <b>P2 - Figure 15</b> which is based on data received from the Department of Fire and Emergency Services (DFES). Designation of an area as being bushfire prone reflects the potential of bushfire to affect that site.</p> <p>It acts as a mechanism for initiating further assessment in the planning and building processes.</p> <p>SPP 3.7 and the associated Guidelines for Planning in Bushfire in Prone Areas provide clear guidance for the role of structure plans. For the RSC, this means that adequate provisions will be required in Part One to ensure that the risks associated with planning and development in bushfire prone areas is appropriately managed and mitigated.</p>
Draft SPP 4.1 – Industrial Interface	<p>Draft SPP 4.1 guides planning decisions to protect the long-term future operation of industry and infrastructure facilities, by avoiding encroachment from sensitive land uses and potential land use conflicts. The policy encourages the use of statutory buffers; facilitating industrial land uses with off-site impacts within specific zones and a compatible interface between strategic/general industry zones and sensitive zones.</p> <p>Draft SPP 4.1 supports land use conflict being addressed as early as possible in the planning process. It is also expected that land use conflict will be subsequently considered at each stage of the planning framework, increasing in detail at each level.</p> <p>The policy recognises the overlap of various environmental, health and safety regulations and guidelines and outlines considerations for decision-makers in this regard.</p>	<p>The RSC is located south of the Kwinana Strategic Industrial Area, which is one of Western Australia's most important strategic industrial areas and is part of the State's premier heavy industrial zone, the Western Trade Coast. The operation of heavy industry in this area saw the establishment of the Kwinana Air Quality buffer. Under SPP 4.1, the role of a structure plan is primarily to manage land use conflict by ensuring that compatible land uses are provided in buffer areas and at their interface. Minimising sensitive land uses such as residential, are to be avoided where possible.</p>
Draft SPP 4.2 – Activity Centres for Perth and Peel	<p>Draft SPP 4.2 and its Guidelines apply to the preparation and assessment of the relevant components of planning instruments that relate to activity centres within the Metropolitan (Perth), Peel and Greater Bunbury Region Scheme areas. Draft SPP 4.2 seeks to provide a consistent approach for the planning and development of a hierarchy and network of activity centres that meets community needs, and provides economic and environmental benefits, enables the distribution of a broad range of goods and services, and facilitates retail, commercial and mixed used developments.</p>	<p>Under Draft SPP 4.2 the RPSP is identified as a Strategic Centre with its main role and typical attributes as follows: "Strategic centres are the main regional activity centres. They are multi-purpose centres that provide a diversity of uses. These centres provide the full range of economic and community services necessary for the communities in their catchments. These centres are expected to service substantial populations, providing health, community and social services, be integrated with public transport and provide opportunities for business agglomeration. Access is a priority for these centres."</p>

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
	<p>Draft SPP 4.2 encourages the preparation of precinct structure plans for strategic, secondary, district and specialised activity centres. Neighbourhood and local activity centres may require either a precinct structure plan or local development plan, at the discretion of the decision-maker.</p>	
SPP 5.4 – Road and Rail Noise	<p>SPP 5.4 guides the performance-based approach for managing and mitigating transport noise associated with road and rail operations.</p> <p>This policy applies where noise sensitive land uses are located within a specified distance of a transport corridor, new or major road or rail upgrades are proposed or where works propose an increase in rail capacity resulting in increased noise. The policy also sets out specific exemptions for where the policy requirements do not apply.</p> <p>SPP 5.4 supports noise impacts being addressed as early as possible in the planning process for the purpose of avoiding land use conflict and achieving better land use planning outcomes. Considerations for decision-makers include ensuring that the community is protected from unreasonable levels of transport noise, whilst also ensuring the future operations of transport corridors.</p> <p>SPP 5.4 is supplemented by the Road and Rail Noise Guidelines.</p>	<p>In regards to structure plans, activity centre plans, and precinct plans; SPP 5.2 states that noise will be addressed through:</p> <ul style="list-style-type: none"> <li>+ Identification of appropriate compatible land-use zoning that is commensurate with the function of the transport corridor;</li> <li>+ Design solutions that utilise street and lot configuration to screen and/or buffer noise;</li> <li>+ Consideration of density and built form outcomes that will help alleviate and/or manage noise;</li> <li>+ Outlining the need for additional noise mitigation measures through quiet house requirements and or noise barriers in accordance with the guidelines; and</li> <li>+ Consideration to appropriate future planning provisions to ensure more detailed planning is undertaken at the subdivision and development stage.</li> </ul> <p>This Policy applies to land within:</p> <ul style="list-style-type: none"> <li>+ 300m of Ennis Avenue</li> <li>+ 200m of parts of Patterson Road and Read Street</li> </ul>
SPP 7.0 – Design of the Built Environment	<p>SPP 7.0 is a broad sector policy relevant to all local governments. The policy sets out the objectives, measures, principles and processes which apply to the design and assessment of built environment proposals through the planning system. It is intended to apply to activity precinct plans, structure plans, local development plans, subdivision, development and public works.</p> <p>The policy contains ten design principles which set out specific considerations for decision-makers when considering the above proposals. These include, context and character, landscape quality, built form and scale, functionality and build quality, sustainability, amenity, legibility, safety, community and aesthetics. The policy also encourages early and on-going discussion of design quality matters and the use of design review.</p> <p>These principles should be considered in conjunction with the range of supporting State Planning Policies that provide design quality guidance for specific types of planning and development proposals.</p>	

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
SPP 7.2 – Precinct Design	<p>SPP 7.2 provides guidance for precinct planning with the intent of achieving good planning and design outcomes for precincts within Western Australia. The policy recognises that there is a need to plan for a broader range of precinct-based contexts and conditions to achieve a balance between greenfield and infill development. Objectives of the policy include ensuring that precinct planning and design processes deliver good-quality built environment outcomes that provide social, economic and environmental benefit to those who use them.</p> <p>Precinct types include activity centres, station precincts, urban corridors, residential infill and heritage precincts. These areas are recognised as requiring a high-level of planning and design focus in accordance with a series of precinct outcome considerations as outlined in the policy. The policy also encourages the use of design review.</p>	<p>Under SPP 7.2, activity centres such as the RSMC are identified as a type of precinct. Activity Centre Plans (as they exist today) will be replaced by Precinct Structure Plans as these must be prepared for SMCs. Just like Activity Centre Plans, a Precinct Structure Plan will outline land use, density and built form outcomes, movement and access arrangements, infrastructure, environmental assets and community facilities to facilitate future subdivision and development.</p> <p>This guidance will come primarily from the design elements identified in the SPP 7.2 Precinct Design Guidelines, which will replace the Model Centre Framework (currently provided in Appendix 2 of SPP 4.2).</p>
SPP 7.3 – Residential Design Codes Volumes 1 and 2	<p>SPP 7.3 – Residential Design Codes Volume 1 and 2 provides the basis for the control of residential development throughout Western Australia for single houses, grouped dwellings and multiple dwellings. The purpose of the policy is to address emerging design trends, promote sustainability, improve clarity and highlight assessment pathways to facilitate better outcomes for residents. They are also used for the assessment of residential subdivision proposals.</p> <p>The policy outlines various objectives for residential development, planning governance and development process and sets out information and consultation requirements for development proposals. The policy also makes provision for aspects of specified design elements to be varied through the local planning framework.</p> <p>SPP 7.3 - Residential Design Codes Volume 1 and 2 should be read in conjunction with the supporting Guidelines.</p>	<p>The RPSP should use SPP 7.3 as a reference document when creating built form controls. Using similar terminology will ensure consistency and certainty to development in the Precinct.</p> <p>SPP 7.3 outlines which elements can be varied by a local government endorsement and which require WAPC approval.</p>

## 1.1.2 LOCAL PLANNING FRAMEWORK

The City's local planning framework and its relationship to the RPSP is summarised in **P2 - Table 2**.

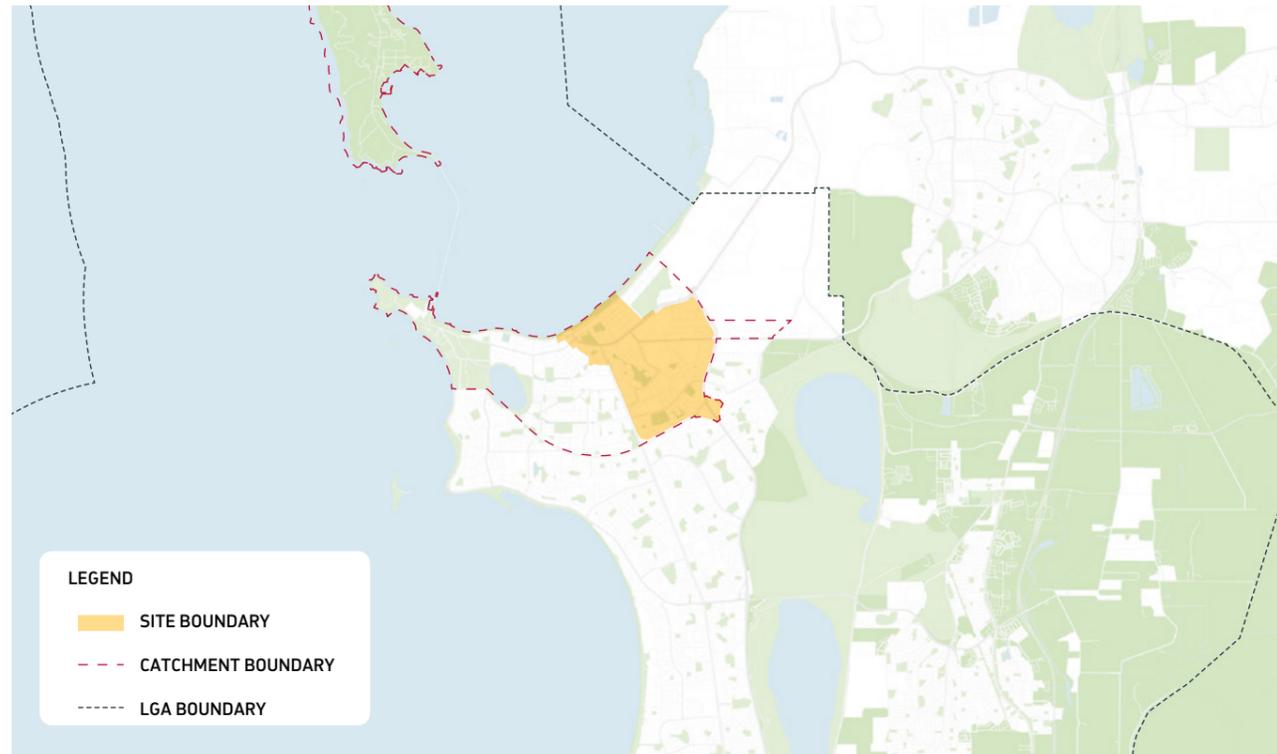
**P2 - Table 2: Local Planning Framework Summary**

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
City of Rockingham Local Planning Strategy	The City are in the process of preparing a Local Planning Strategy. When complete it will become the City's primary strategic planning document, setting out localised strategies for employment, housing, transport and environment.	To support the Local Planning Strategy, the City have already commenced preparation of numerous studies, which all reflect the primacy of the RSC as the City's largest activity centre and employment hub.
Public Open Space Community Plan Strategy	The City's Public Open Space Strategy was prepared to guide the planning, development and management of Public Open Space (POS) within the City, to ensure it best meets the needs of the community and balances competing demands for space.	The POS Strategy sets out a range of objectives which guide the planning, development, and management of POS. As the RSC is an area expected to experience major changes in development and density, it is important that this is delivered with consideration for the POS needs of a predominantly urban centre.
Tourist Destination Strategy	<p>The purpose of the Rockingham Tourist Destination Strategy (RTDS) is to establish the City's strategic direction and priority actions that would inform the Rockingham region's future direction with tourism and marketing. The State Government's renewed focus on tourism and the focus on emerging markets presents a great opportunity for Rockingham to undertake increased activities in tourist destination marketing.</p> <p>The key strategic objective of the Tourist Destination Strategy is to effectively and measurably promote Rockingham as Western Australia's premium coastal destination - as a place to visit, live and invest in.</p>	<p>One of the primary strategic objectives of the RTDS is to "Facilitate and promote the development of a more vibrant foreshore and coastal strip, including the consideration of infrastructure, pedestrian traffic, and parking".</p> <p>The RSC has a critical role in assisting with this by ensuring that built form and public realm outcomes at the waterfront assist with its continued transformation into a preeminent coastal destination.</p>
City of Rockingham Town Planning Scheme No.2 (TPS2)	<p>TPS2 sets out the way land is to be used and developed within the Scheme area (including the RSC) and classifies areas for land use and include provisions to coordinate infrastructure and development. TPS2 was gazetted on 19 November 2004. Six zones have been introduced into TPS2 over various amendments to enable implementation of the Centre Plan. The Primary Centre comprises the:</p> <ul style="list-style-type: none"> <li>+ Primary Centre City Zone</li> <li>+ Primary Centre Waterfront Village Zone</li> <li>+ Primary Centre Urban Village Zone</li> <li>+ Primary Centre City Living Zone</li> <li>+ Primary Centre Campus Zone</li> <li>+ Primary Centre Urban Living Zone</li> </ul>	As evidence by the Centre Plan, TPS2 and the RPSP are interlinked. Through various amendments, TPS2 was the primary statutory implementation tool used to give weight to the existing Centre Plan. It is expected that a similar approach will be taken, whereby an amendment to TPS2 will enable implementation of the RPSP.
Rockingham Strategic Regional Centre - Centre Plan	<p>Adopted in 2009, the Rockingham Strategic Regional Centre - Centre Plan (the Centre Plan) was prepared as part of a major two-stage review and expansion of the City's previous 1995 Development Policy Plan. The Centre Plan covers close to 600 hectares.</p> <p>The Centre Plan endeavours to accommodate a sophisticated coastal Activity Centre servicing an ultimate population of approximately 275,000 people in the Rockingham/Kwinana area.</p>	It is intended that the RPSP will supersede the Centre Plan, bringing the planning framework for the RSC into conformity with Western Australia's contemporary state planning policy framework.

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
	<p>The Centre Plan contains 'Sector Guidelines' which assist in the preparation of Development Policy Plans (DPPs) for the 11 Sectors which are adopted as Local Planning Policies under TPS2. This suite of Development Policy Plans (DPP) were prepared to help guide development within the RSC.</p> <p>With respect to the implementation of the approved Centre Plan, the City has implemented the following statutory development planning plans (DPPs):</p> <ul style="list-style-type: none"> <li>+ DPP 3.2.1 - City Centre Sector - Sector 1 (2010)</li> <li>+ DPP 3.2.2 - Waterfront Village - Sector 2 (2012)</li> <li>+ DPP 3.2.5 - Smart Village South - Sector 3 (2012)</li> <li>+ DPP 3.2.6 - Northern Waterfront - Sector 9 (2013)</li> <li>+ DPP 3.2.8 - Campus - Sector 6 (2014)</li> <li>+ DPP 3.2.9 - Eastern - Sector 7 (2015)</li> <li>+ DPP 3.2.12 - Southern Gateway and Rockingham Station - Sectors 10 and 11 (2016)</li> </ul> <p>DPP's with draft Planning Policies and supporting Amendments to TPS 2 which have yet to be gazetted are:</p> <ul style="list-style-type: none"> <li>+ DPP 3.2.7 - Northern Smart Village (Sector 4)</li> <li>+ DPP 3.2.10 - Leeuwin (Sector 8)</li> </ul>	
LPP No. 3.1.2 - Local Commercial Strategy	<p>Prepared in 2004, the City's Local Commercial Strategy (LCS) establishes the objectives, principles and key strategies for retailing and commercial development in the City. Its primary function is to define a hierarchy of centres and to provide guidance on the role, function and floorspace requirements for key centres to provide sound guidance for strategic planning.</p>	<p>The RSC is clearly defined in the LCS as the 'Strategic Regional Centre' performing an essential role as the City's primary retail and employment hub. The LCS is underpinned by a needs assessment which was prepared by Pracsys in 2021. It is currently under review, outcomes of this review have informed the RCSPSP in the following ways:</p> <ul style="list-style-type: none"> <li>+ Objectives and intent for centres of this hierarchy level as they relate to the SPP 4.2 guidance</li> <li>+ Population forecasts for the RSC and the associated floorspace by type that this indicates.</li> <li>+ Employment targets to achieve the Self Sufficiency rate set within the Sub-Regional Framework.</li> </ul>
LPP 3.3.21 - Heritage Conservation and Development	<p>This Policy applies to all places entered in the Local Heritage Survey pursuant to TPS2. Aboriginal heritage is protected by the Aboriginal Heritage Act 1972. This Policy does not apply to the conservation of aboriginal heritage, except in cases where aboriginal heritage places are entered into the Heritage List or a designated Heritage Area.</p>	<p>39 places included on the Local Heritage Survey are located in the suburb of Rockingham, in which the RSC precinct is found. As per the Heritage Act 2018 these are categorised into five management categories, depending on their level of significance (or if it is an historic site in regard to Category E).</p> <p>Consideration should be given to each of these local heritage survey places and their level of protection when preparing the RPSP.</p>

DOCUMENT	OVERVIEW	RELEVANCE TO RSC
LPP 3.3.25 - Percentage for Public Art	<p>The policy aims to facilitate the City's public realm improvement by providing a funding mechanism for the provision of public art in publicly visible locations as part of private sector development. It specifies land uses and other development parameters that trigger the artwork provision requirement.</p>	<p>Whilst the policy applies to the majority of the RSC area it will play an important role in facilitating positive public realm outcomes in key activity areas within the Centre. The area exempt from this policy include sites zoned 'Service Commercial' and 'Public Purpose' (P2 - Figure 30)</p>
LPP 3.4.3 - Urban water management	<p>The purpose of this policy is to:</p> <ul style="list-style-type: none"> <li>+ Ensure the application of Better Urban Water Management (WAPC, 2008), and any future versions of UWM, as part of the planning approvals process;</li> <li>+ Provide guidance on the City's urban water management requirements to ensure that planning and development proposals are dealt with in a consistent manner;</li> <li>+ Ensure that appropriate measures are taken to manage catchments in order to maintain or improve surface and groundwater resources;</li> <li>+ Promote alternative water conservation and sustainability practices that reduce reliance on traditional supplies.</li> </ul>	<p>A Local Water Management Strategy (LWMS) is to be prepared to inform and guide the RPSP from a water management perspective. The LWMS must demonstrate how the proposed change in land use / future intensification will address water use, the protection of water dependent environments and management, and identify existing and required water management infrastructure, including detailed land requirements.</p>
LPP 7.2 - Local Bushland Strategy	<p>This Policy deals with bushland of local significance rather than regionally significant bushland. The ultimate purpose of this policy is to provide Council with guidance in the assessment of proposals to rezone, subdivide and develop land within the City where remnant bushland of local significance is present.</p> <p>This is achieved by establishing:</p> <ul style="list-style-type: none"> <li>+ Assessment Criteria against which the values of the bushland can be established;</li> <li>+ A Local Bushland Data Collection Form to be used to collect information on the attributes of a piece of bushland;</li> <li>+ An Assessment of Significance Form which uses the data collected in the questionnaire and the Assessment Criteria to arrive at a measure of the value of the bushland at the local level; and</li> <li>+ Guidelines in using the results of the assessment process in dealing with proposals to rezone, subdivide and develop land.</li> </ul>	<p>The RSC has some minor areas of local bushland contained within this precinct. The most significant area of local bushland is located between Dixon Road and Patterson Road (<b>P2 - Figure 15</b>). Any proposal to develop this area should be accompanied by an Environmental Assessment Report prepared by a suitably qualified consultant in accordance with the City's information sheet - Preparation of Environmental Assessment Reports to Inform Structure Plan Applications.</p>
LPP 7.4 - Design Review Panel	<p>Design Review Panel Policy enables the provision of independent expert advice to the Council, City's Administration and proponents on the planning and design matters to ensure positive urban design, public realm and built form outcomes.</p> <p>The Policy outlines the development categories that would require review, which generally involve proposals that depart from the primary controls, fall within \$2-10 million construction cost category or will likely have a significant impact on the City.</p>	<p>Any proposed development within the RSC that falls within the development categories outlined in the Design Review Panel Policy will be referred to the DRP for comment. The considerations provided by the Panel should be addressed to ensure high quality development outcomes in the RSC.</p>

# 1.2 COMMUNITY CONTEXT



P2 - Figure 1: Demographic Catchment Map

The RSC precinct lies within the Rockingham-Peron-Garden Island statistical area, as defined in profile. id (refer to **P2 - Figure 1**). This statistical areas has been identified as best representing the demographic profile of the RSC. The characteristics of this demographic area are detailed in the analysis below, providing an understanding of the current community context for the RSC.

The City of Rockingham Local Government Area and Greater Perth statistical areas have been used as benchmarks.

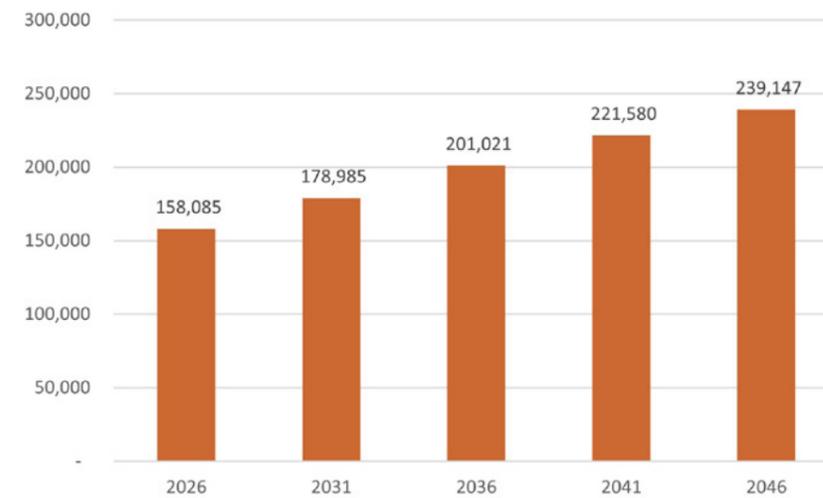
The purpose of the socio-economic and housing affordability overview of the precinct is to highlight some of the anticipated needs of the resident population that the RPSP can potentially address.

## 1.2.1 PEOPLE

### POPULATION

The City of Rockingham has and continues to experience substantial population growth. Its population grew by 8% between 2016 and 2021, which is significantly higher than the WA average. This represents an annual average growth rate of approximately 4,250 persons per year. The population growth of Rockingham in 2031 (39%) is estimated to be much higher than the growth rate of WA (27%).

These figures demonstrate that the RSC services a large and growing population, it will require the RPSP to carefully consider and plan for the future land use needs of this expanding catchment.



P2 - Figure 2: City of Rockingham Population Forecasts

Source: Population and household forecasts, 2016 to 2046, prepared by .id (informed decisions), June 2020. FAR Lane, 2021.

### AGE AND LIFE STAGE

The RSC population has a median age of 45 years, contrasting with 34 years in the City of Rockingham and 36 years across Greater Perth.



This is driven by an above average percentage of over 60 year olds with 30% of the catchment in this Retirees/Seniors/Elderly age group, compare to just 17% in the City of Rockingham and 19% in Greater Perth.

Conversely, the proportion of babies/toddlers and school aged children in the catchment (16%) are well below City of Rockingham's 26%. Equally, young adults and the parents of these children are not prominent age groups in the RSC.

### HOUSEHOLD TYPES

Reflective of the age and life stage profile, 33% of people in the RSC live alone, which is much higher than the broader City of Rockingham (19%). Couples without children in the home represent 27% of households, well above the 22% in this group across Greater Perth.

Given the age structure outlined above, couple families with children represent less than one fifth of households, compared to 35% of City of Rockingham households.



### CULTURAL DIVERSITY

The proportion of Aboriginal and Torres Strait Islanders in the RSC is 1.7% which is on par with Greater Perth and slightly below the City of Rockingham (2%).

Whilst 35% of the RSC was born overseas, which is similar to Greater Perth, however, language diversity is not as common. Just 10% speak a language other than English at home versus 20% in Greater Perth. The underlying reason for this is the top two countries of origin in the RSC are the United Kingdom (18%) and New Zealand (5%), both above Greater Perth (10% and 3% respectively).

### EDUCATION & QUALIFICATIONS

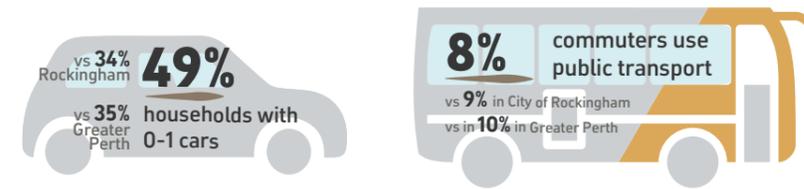
Due to the low proportion of children and teens in the RSC, just 11% of the population attend primary or secondary school, well below the City of Rockingham at 18%. In people aged over 15 years, only 9% attend university and 1.7% TAFE, which is a large contrast to 23% of Greater Perth adults attending University.

Of those in the RSC that hold a qualification, one quarter have a trade (certificate) above the 19% in Greater Perth. Far fewer people are university qualified with just 9% in this group, whereas 23% of Greater Perth adults hold tertiary qualifications.



### CAR OWNERSHIP & METHOD OF TRAVEL TO WORK

Smaller households, older residents that are often not working and the accessible and highly amenable environment in the precinct are likely factors contributing to the lower-than-average car ownership in the RSC. Almost half have no or one car in the household, which is well above 35% across Greater Perth demonstrating low car ownership. Conversely, just 13% of households have more than three cars, compared to one fifth of City of Rockingham and Greater Perth households.



In 2016, 69% of Rockingham's labour force drove to work in 2016. This was even higher in the RSC with 76% of employed persons driving to work. As a result, there was a lower proportion of people using public transport when compared to Greater Perth.

### INCOMES

Median weekly household incomes in the RSC are at \$1,012, which is below City of Rockingham (\$1,550) and Greater Perth median incomes (\$1,636). This relates to the older, smaller households, prevalence of lone person households, low labourforce participation rate and lower proportions of people employed in higher earning occupations.

There is more representation of RSC households in the lower income bands with two fifths earning under \$999 pw, whereas 28% of City of Rockingham households are in this group.

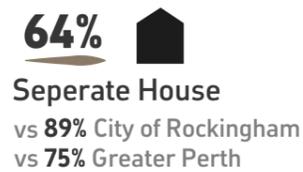
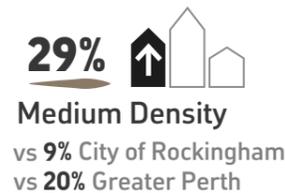


## 1.2.2 HOUSING

### DWELLING MIX

Nearly 30% of dwellings in the RSC are medium density, which is higher than both the City of Rockingham (10%) and Greater Perth (20%). High density at 5% in the catchment is on par with Greater Perth. The current aged persons/seniors living villages that exist in the catchment area are one contributor to the high proportion of medium density housing stock.

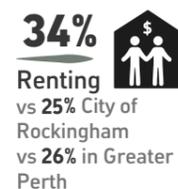
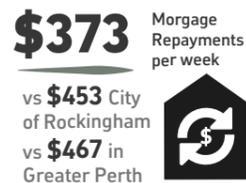
Consequently, the percentage of separate houses (65%) is well below the City of Rockingham (89%) and outer metropolitan area levels generally, highlighting that the RSC is performing ‘-acceptably’ from a housing diversity perspective. Households are generally smaller than the benchmark areas, related to the ageing population and prevalence of lone person households / smaller housing types.



### TENURE

Renting is the dominant tenure type in the RSC (34%), which is much higher when compared to the City of Rockingham (25%). However, there is also a greater proportion of people who own their home without a mortgage (31%) when compared to the City of Rockingham (22%), likely due to the prevalence of older couples (comprised of both retirees and empty nesters).

Similarly, without a strong family-based demographic in the catchment, there is less tendency to be purchasing a home with a mortgage (traditionally linked with this life stage and household structure), with only 25% of households in this tenure, versus nearly half (45%) in the City of Rockingham.



### HOUSING COMMITMENTS

Median weekly rents at \$303 per week in the RSC are below the City and Greater Perth. So too are median weekly mortgage repayments, at \$373 per week whereas Greater Perth households pay a median of \$467 per week.

These lower housing commitments are linked with the greater percentage of medium density and therefore generally smaller dwellings in the catchment relative to separate houses on larger lots (often costing more) in the City of Rockingham.

### RESIDENTIAL PROPERTY DATA

Through an understanding of the current availability and cost of purchasing or renting dwellings of various types within the precinct together with the household characteristics examined above we are able to gain insight into likely future housing product opportunities.

**P2 - Table 3** and **P2 - Table 4** below provide median house, unit and land prices as well as growth rates over time for both Rockingham and the Greater Perth area for comparison. Over the long term Rockingham has fared better.

**P2 - Table 3: Rockingham (suburb) Residential Property Data - Sales**

	2021 MEDIAN SALE PRICE		GROWTH RATE					
	ROCK.	GREATER PERTH	> 1 YEAR		5 YEARS		10 YEARS	
	ROCK.	GREATER PERTH	ROCK.	GREATER PERTH	ROCK.	GREATER PERTH	ROCK.	GREATER PERTH
<b>HOUSES</b>	\$405,000	\$515,000	12.1%	5.1%	-1.5%	-0.9%	0.0%	0.4%
<b>UNITS</b>	\$266,000	\$390,000	14.2%	2.6%	-1.8%	-2.3%	-0.2%	-0.7%
<b>LAND</b>	\$295,000	\$242,000	-6.0%	-1.6%	-10.5%	-2.2%	2.5%	-0.2%

Source: REIWA, based on settled sales as at 31 May 2021

**P2 - Table 3** demonstrates that median house and unit prices in Rockingham are well below Greater Perth. However, residential land is selling for a median of \$295,000, well above the metropolitan price-point of \$242,000.

Over the longer term 10 year timeframe, land in Rockingham has experienced 2.5% price growth. Additionally in recent times, houses and to a greater degree units in Rockingham have surged (12.1% and 14.2% growth respectively) with prices growing much faster than Greater Perth as a whole. These recent growth rates are particularly strong given Perth’s annual house price growth rate has been 5.9% over the past 15 years.

With Rockingham offering waterfront, shopping and services, good transport accessibility as well as the remaining residential land development opportunities focused in the city centre or nearby, there are several factors likely influencing demand and hence land prices.

**P2 - Table 4: Rockingham (suburb) Residential Property Data - Sales**

DWELLING TYPE	NO. BEDROOMS	NO. PROPERTIES RENTED	MEDIAN RENT/WEEK	
			ROCKINGHAM	PERTH METRO REGION
<b>HOUSE</b>	1-2	17	\$250	\$345
	3	29	\$350	\$400
	4	14	\$400	\$490
	5+	5	\$495	\$625
	<b>ALL</b>	<b>65</b>	<b>\$355</b>	<b>\$435</b>
<b>MULTI RESIDENTIAL</b>	1	6	\$350	\$340
	2	31	\$278	\$390
	3	15	\$370	\$435
	<b>ALL</b>	<b>52</b>	<b>\$330</b>	<b>\$390</b>

Source: REIWA, January - March 2021

**P2 - Table 4** highlights house rents in Rockingham are below Greater Perth medians across all dwelling sizes (numbers of bedrooms).

It reveals that smaller 1 bedroom multi-residential product is more comparable to the Perth median whereas larger (2-3 bedroom apartments) generally rent for rates below Greater Perth.

### AFFORDABILITY

The Australian Institute of Health & Welfare outlines that affordability *can be expressed as the ratio of housing costs to gross household income* (ABS 2017). Noting that these costs include: *rent payments, rate payments (water and general), and housing-related mortgage payments* (ABS 2019).

Source: <https://www.aihw.gov.au/reports/australias-welfare/housing-affordability>

In the case of the RSC, it is reasonable to evaluate the affordability of housing through the relationship between household incomes and the percentage of income that is spent on housing (either through renting or mortgage costs).

Importantly, within the discussion on affordability is the concept of “housing stress” or the point where housing becomes unaffordable. It means to measure the impact of this cost of living on the lowest income earners in a catchment. This group are evaluated, to ensure that they are not expending in excess of 30% of their gross income on housing costs.

Therefore, where a low income household is needing to spend greater than a third of their income on housing, they are assessed as experiencing “housing stress” or affordability issues.

**P2 - Figure 3** highlights the catchment household income quartiles relative to the median mortgage repayment quartiles per week. Broadly it is apparent that more than two thirds of households earned less than \$1,582 per week, whilst nearly 80% of households paid a weekly mortgage repayment of \$1,315 per week and above. This highlights that RSC households in the lower two income earning quartiles would be experiencing some housing stress.



**P2 - Figure 3:** Rockingham household income quartiles relative to mortgage repayment quartiles

Renters are also part of housing affordability considerations. As outlined in **P2 - Table 4** the current median rent of a 3 bedroom house in Rockingham is \$350 per week or a 2 bedroom townhouse \$280 per week. Although household incomes have changed since the 2016 Census, it is considered likely that income earners in the lowest quartile (notionally under \$790 per week) would find these rents difficult to manage and proportionally they would represent more than 30% of the gross household income.

## 1.3 ECONOMIC CONTEXT

To develop an understanding of site characteristics, and the overall local, sub-regional and regional economic context of the Rockingham Strategic Metropolitan Centre (SMC).

The Strategic Metropolitan Centre is guided by the City Centre Developing Plan (DPP). It reflects the principles of a “main strip/street” town Centre with mixed use, street front development framing an activated public demand. With continuing growth of the Region and the construction of the City Centre Transit System, a broader and more comprehensive domain was required to provide a long-term vision.

The Rockingham Economic Development Strategy reflects ongoing commitment to addressing the needs of local businesses and attracting new/diverse investment that delivers increased economic and social benefits to the community. The Economic Development Strategy aims to grow a diverse, vibrant, resilient and balanced economy that provides growth and drives sustainable economic success. Economic development aspirations include:

- + Investment attraction;
- + Establishing a Strategic Metropolitan Centre;
- + Local business development; and
- + Advocacy and Lobbying.

### OCCUPATIONS

The older age profile of the catchment influences the labourforce participation rate with 51% aged 15+ not engaged in the workforce, compared to 63% across the City of Rockingham and Greater Perth.

Closely related to these education trends, the occupations of RSC workers are heavily dominated by trades/labourer/machinery operator/driver jobs. With 42% working in these “blue collar” roles whereas less than a third of Greater Perth workers do.

Conversely, only one fifth of Rockingham PSP catchment work in managerial or professional roles versus one third of Greater Perth workers in this group.

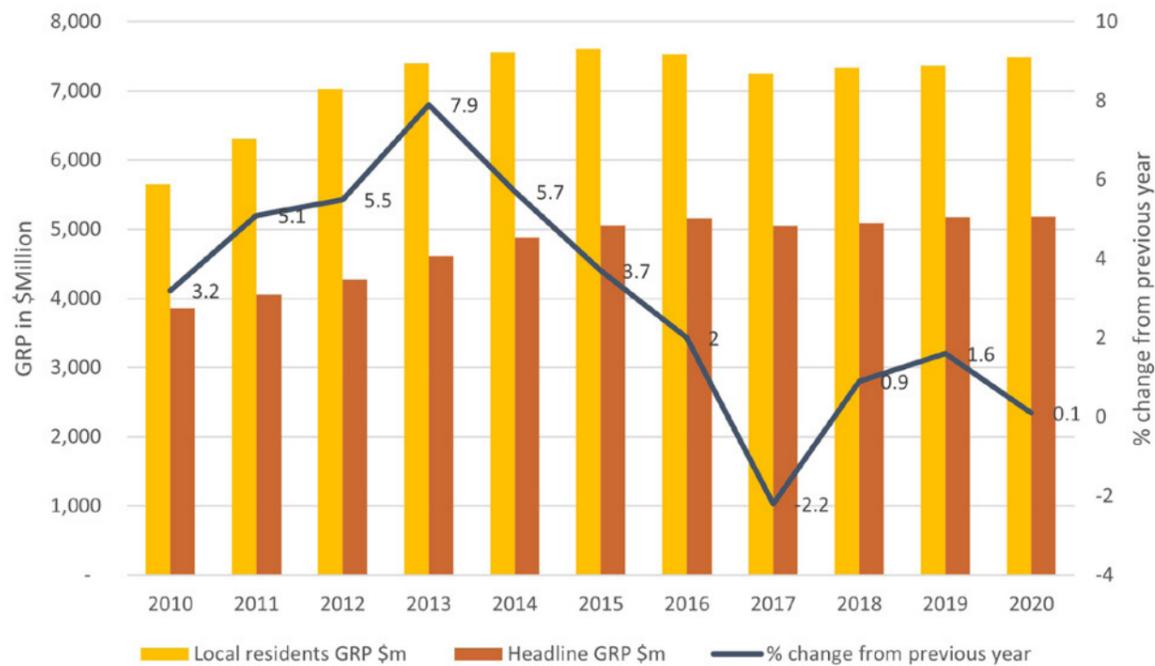
### 1.3.1 ROCKINGHAM ECONOMIC PERFORMANCE

#### GROSS REGIONAL PRODUCT (GRP)

Headline GRP is a measure of net wealth generated by the local economy. Changes in this figure over time can represent changes in employment productivity or types of industries within the area.

Local resident GRP refers to the economic output of the residents of the area. Resident GRP in Rockingham is relatively high to the headline GRP, indicating that residents are contributing their economic productivity to other areas.

The impact of Covid-19 appears to be more substantial for Rockingham than Perth, where the growth of GRP has reduced significantly from 1.62% in 2019 to 0.09% in 2020. This can be largely attributed to high unemployment rates within industries that were largely affected by Covid-19. These industries include: retail, food and accommodation – all of which dominate employment areas within Rockingham.



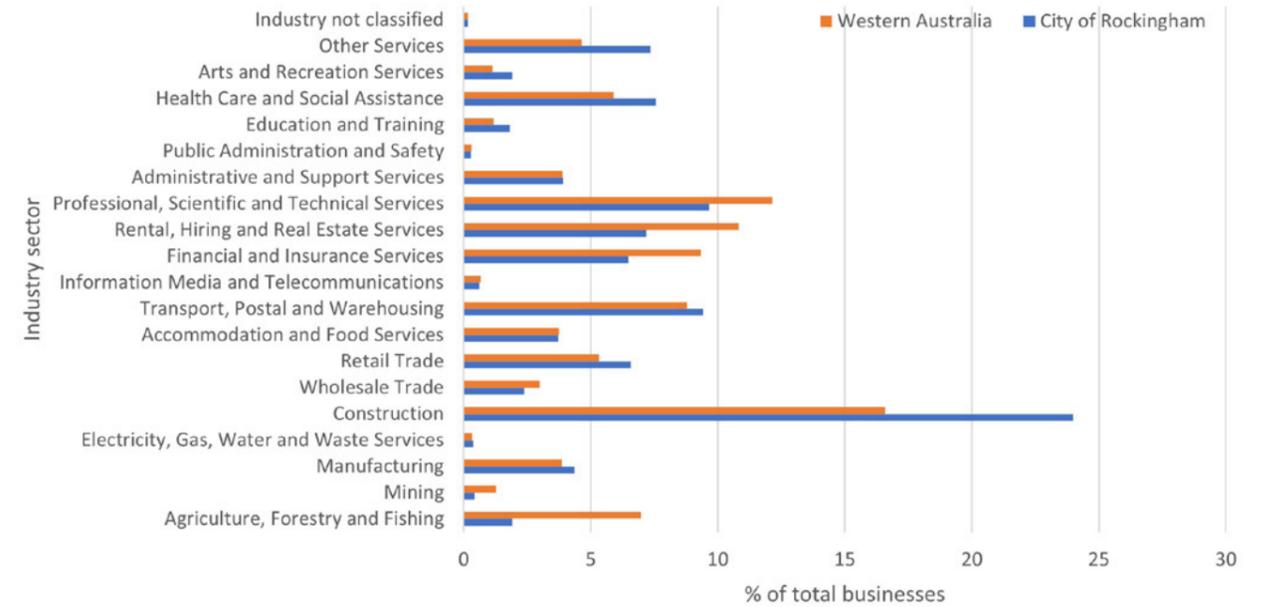
P2 - Figure 4: City of Rockingham GRP Measure  
Source: National Institute of Economic and Industry Research (NIEIR), 2021. FAR Lane, 2021.

#### BUSINESS GROWTH

FAR Lane have undertaken a review of the 2020 Australian Business Register, which has found that the number of businesses in Rockingham has increased from 5,435 (June 2018) to 5,937 (December 2020). There has also been an increase in GST registered businesses between 2015-2020. The increase of businesses is a result from a decreased number of cancelled businesses and a stagnant number of new GST registrations each year. If this trend continues, there is a chance for additional economic output and employment opportunities within the area.

With regards to businesses by industry type, P2 - Figure 5 indicates that construction is the biggest industry sector in Rockingham. This is followed by professional, scientific and technical services, and transport, postal and warehousing.

Registered businesses in construction have decreased by 120% since 2019. The construction decrease is linked with the slowing of the state population growth and new house production over the same time period.



P2 - Figure 5: Registered Businesses by Industry in Rockingham 2020  
Source: ABS, Counts of Australian Businesses, including Entries and Exits, 2016 to 2020. FAR Lane, 2021.

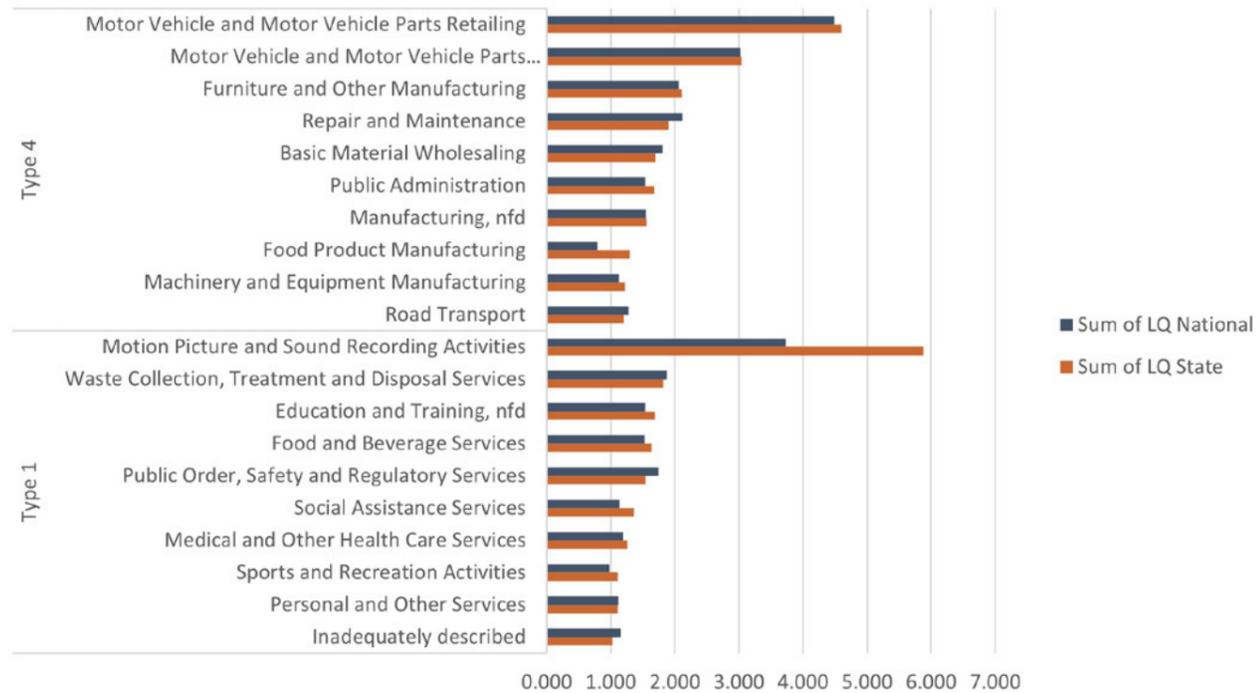
#### SHIFT SHARE ANALYSIS

A shift share analysis helps identify industries where a regional economy has a competitive advantage over the larger economy. There are four types presented below:

- + Type 1 - Local Firms outperforming in a high growth Industry
- + Type 2 - Local Firm underperforming in a high growth industry
- + Type 3 - Local Firm underperforming in a low growth industry
- + Type 4 - Local Firms outperforming in a low growth Industry

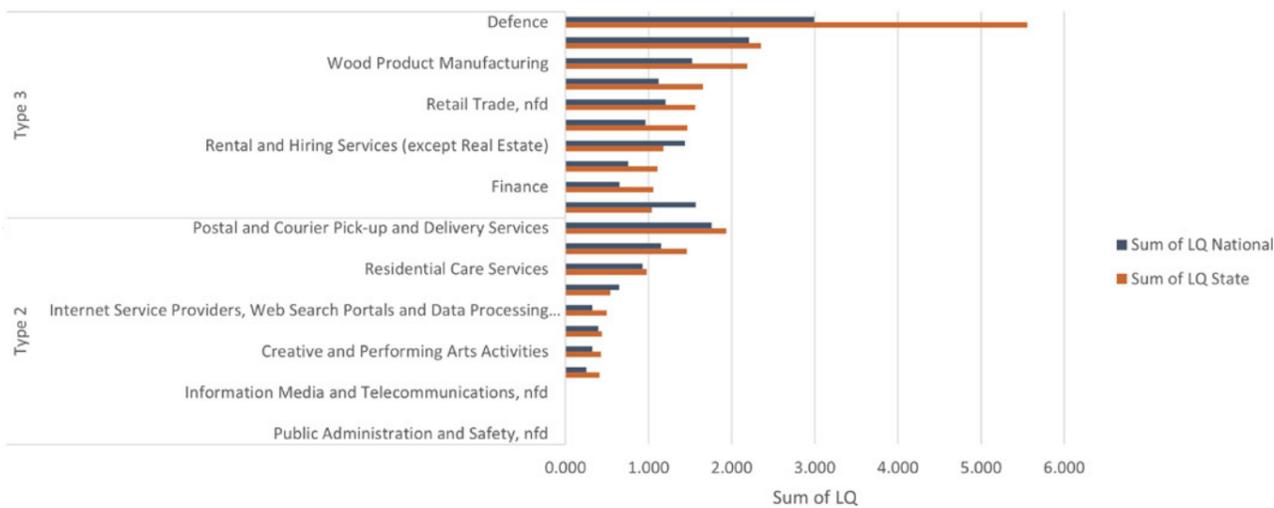
FAR Lane’s assessment determined that there were a number of low-growth and high-growth industries which were outperforming the regional economy (P2 - Figure 7). This included some of the City’s more popular industries of employment such as Health Care and Social Assistance.

With regards to underforming industries (P2 - Figure 8), retail sector was highlighted as one which raises concerns as it is the biggest employer in the City of Rockingham. This emphasises the importance of diversifying the industries of employment in RSC.



P2 - Figure 7: Top 10 industries which have Outperformed High and Low Growth Industries

Source: ABS Census, 2011 and 2016, FAR Lane, 2021.



P2 - Figure 8: Top 10 Industries that have Underperformed High and Low Growth Industries

Source: ABS Census, 2011 and 2016, FAR Lane, 2021.

### 1.3.2 EMPLOYMENT STATISTICS

#### EMPLOYMENT STATUS & INDUSTRY OF EMPLOYMENT

According to the 2016 Census, 90% of the City's labour force is employed and 10% is unemployed, in contrast to 92% and 8% respectively in Greater Perth. In 2016, there was a lower proportion in employment, and a higher proportion unemployed compared to Greater Perth. Within the RSC, there are 2,246 employed residents. With the biggest industries of residential employment being those that do not necessarily require any formal tertiary education – with big proportions in Construction, Health Care and Social Assistance, Public Administration and Safety as well as Retail Trade.

These figures align closely with the broader City of Rockingham, with Retail Trade, Health Care, Social Assistance and Public Administration and Safety among the biggest industries. Together they make up 45.5% of local employment.

#### EMPLOYMENT SELF SUFFICIENCY

The South Metropolitan Peel Sub-Regional Planning Framework provides Employment Self-Sufficiency (ESS) targets for the region. ESS represents the jobs available in a sub-region compared to the labour force of the sub-region. An ESS of 100% means that a sub-region has an equal number of jobs and labour force. The assessment has estimated the employment supportable at the City's Activity Centres based on population growth. The 2020 Rockingham Employment Study considered the potential employment requirements of the City with projections based on population growth and other development opportunities.

Employment estimates from the Rockingham Employment Study for non-activity centre employment have been combined with activity centre estimates to approximate the additional employment required to achieve an ESS target of 74%. The additional employment will need to be strategic in nature and suitable to the RSC and other employment lands such as industrial areas. The estimated gap in employment without considering future employment land (not activity centre based) and catalyst projects in the RSC amounts to between 31,000 and 40,000 (P2 - Table 5).

P2 - Table 5: Employment Gap Without Future Employment Land

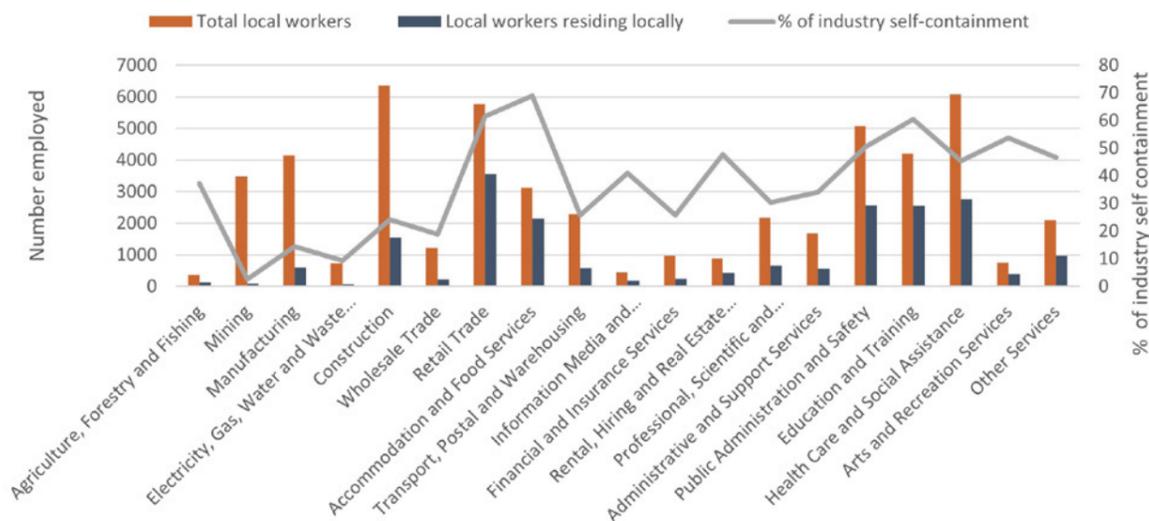
EMPLOYMENT CATEGORY	WAT EMPLOYMENT	COR EMPLOYMENT
Employment Target 2041 (74% ESS)	70,833	88,292
Needs Assessment 2041 - RSC	10,697	14,252
Needs Assessment 2041 - Other Centres	13,139	15,442
Jobs Rest of City	15,572	18,984
Gap to Target ESS	31,425	39,614

Source: Syme Marmion & Co 2020, Pracsys 2021

Existing ESS in Rockingham was 39.6% in 2016, which is a relatively low number. However, this is higher than other outer metropolitan LGAs (in 2016) such as City of Swan (32.6%) and Joondalup (30%). A number of factors can contribute to low ESS, the most common being quantum of jobs available, diversity of jobs on offer, and location of the industry (e.g. jobs in mining and construction typically located outside of the City).

**P2 - Figure 6** indicates that the ESS differs across industry groups:

- + High ESS in popular local industries such as Retail Trade (61.5%), Education and Training (60.6%) and Accommodation and Food Services (68.9%).
- + Low ESS in knowledge and office-based employment industries such as Professional, Scientific and Technical Services (30.4%), Financial and Insurance Services (25.7%) and Administrative and Support Services (34.1%). This is likely impacted by limited concentration of local employers and businesses.
- + Low ESS in labour intensive industries such as Construction (24.2%), Manufacturing (14.4%), and Mining (2.6%). This is likely impacted by proximity to major industrial hubs such as Kwinana and Henderson which attract a lot of local workers, and high proportion of fly-in-fly-out workers in mining.



**P2 - Figure 6: City of Rockingham Employment Self Sufficiency**

Source: ABS, Census of Population and Housing 2016, FAR Lane, 2021.

In addition to low ESS, the City of Rockingham also has a relatively high level of unemployment compared to the Greater Perth region and has a particular issue with youth unemployment. Should current trends continue, the issue is likely to be exacerbated as employment opportunities in the City could grow slower than the population.

### 1.3.3 SWOT ANALYSIS

**P2 - Table 6** provides a summary of the strengths, weaknesses, opportunities and threats of the RSC economy.

**P2 - Table 6: Economic SWOT Analysis**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>+ Location – Coastal City with good proximity to road, and rail infrastructure and an internationally competitive heavy industry zone at the Rockingham / Kwinana Industrial complex.</li> <li>+ Availability of land and commercial space to support future economic growth.</li> <li>+ Proximity to major defence establishment at Garden Island.</li> <li>+ Proximity to an internationally competitive naval and maritime industries construction, maintenance and services complex at Henderson in the Western Trade Coast; and</li> <li>+ A City Centre designated as the primary activity centre for a very large region, connected to regional transport systems and with an attractive ocean-front location for part of it.</li> </ul>	<ul style="list-style-type: none"> <li>+ Unemployment rates.</li> <li>+ Local workforce is not highly specialised.</li> <li>+ Heavy reliance on local retail sector and other population-based employment industries.</li> <li>+ Workforce is significantly larger than local jobs (major contributor to low ESS).</li> <li>+ Employment opportunities in the City of Rockingham are specialised in construction and defence, reflective of the expansion in residential dwellings currently happening and due to Garden Island. So additional strategic employment opportunities need to be generated over time to increase the current level of ESS in the City of Rockingham.</li> <li>+ Current employment-generating land is under threat from competing non-industrial uses</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>+ Stronger public transport infrastructure.</li> <li>+ Diversification of jobs and employment industries.</li> <li>+ Better use of floorspace / increased floorspace to provide jobs that match local skills.</li> </ul>	<ul style="list-style-type: none"> <li>+ Limited or slower than anticipated population growth.</li> <li>+ Low participation rates in education and employment.</li> </ul>

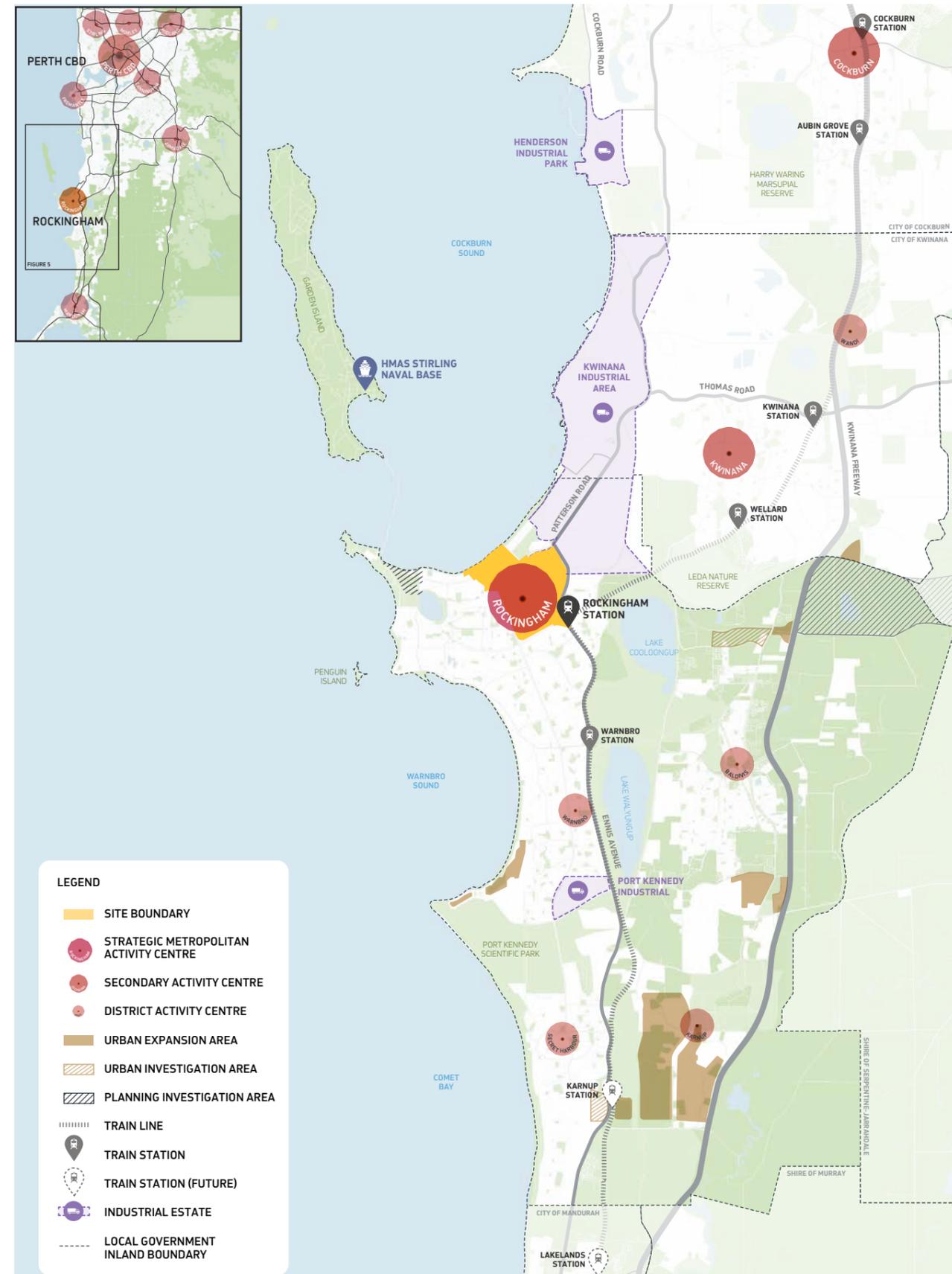
# 1.4 PHYSICAL CONTEXT

## 1.4.1 BROADER CONTEXT

The Rockingham is identified as one of ten designated Strategic Centres in WA's activity centre hierarchy. The RSC is located approximately 40km south of Perth and as shown on **P2 - Figure 9**, it is the primary activity centre between Fremantle and Mandurah servicing a broad urban catchment that captures people from the Cities of Rockingham, Kwinana, Mandurah and parts of the Shire of Serpentine Jarrahdale.

Within the City, the RSC is located in the north, with good proximity to State-significant employment generators such as Kwinana Industrial Estate and Garden Island. The RSC itself is also an economic hub in the area, and primary location for a range of major services. It is supported by the Kwinana Secondary Centre, and Baldivis and Warnbro District Centres (and a number of neighbourhood centres) which provide for more localised retail needs.

Historically, the bulk of the urban population in the City has been located between the Perth-Mandurah rail line and the ocean. However, in the early 2000s development expanded eastward with the Baldivis areas becoming one of the fastest growing suburbs in the State. This growth is set to continue further south, with Karnup identified for urban expansion, demonstrating that the RSC catchment is growing and will continue to grow for some time.



P2 - Figure 9: Broader Area Context

## 1.4.2 PRECINCT HISTORY

The City has a proud history. The Traditional Owners of the area now known as Rockingham are the Nyoongar people. The City sits on the boundary of the Whadjuk and Binjareb Nyoongar peoples territories<sup>1</sup>.

The City was first settled by Europeans when Sulphur Town was established on Garden Island in 1829. Port Rockingham was once the busiest port in the State by tonnage of goods shipped through the jetties at the end of Railway Terrace. However, when the viability of loading timber declined the associated beachfront and townsite was subsequently transformed into one the States favourite family holiday and day trip destinations. As such, initial development occurred along the waterfront capitalising on the coastal amenity.

Rockingham began to grow steadily in the 1950s following the development of nearby Kwinana as a major industrial area. The 1970s - 1980s saw the establishment of the urban structure we know today, including major local roads such as Ennis Avenue, Read Street, and Patterson, Rae and Dixon Roads.

It also saw the TAFE facility, Mike Barnett Sports Complex, light industrial development and a shopping centre established, with two primary residential areas:

- + One in the north, which is adjacent to the waterfront and an extension of original urban footprint; and
- + An area in the south, west of Ennis Avenue.



RSC 1975



RSC 1985

<sup>1</sup> <https://rockingham.wa.gov.au/events-culture-and-tourism/heritage>

In the 1990s - 2000s, Rockingham began to mature. The waterfront area experienced some transition to a more dense urban form along the foreshore, and the city centre began to form around the shopping centre and City of Rockingham Administration building. A new residential estate was also established over the former golf course.

Passenger rail was introduced in 2007 as part of the Perth-Mandurah railway line. The original intent was for the station to be in the city centre, however, changes in design thinking saw it constructed at the corner of Ennis Avenue and Rae Road. Despite being disconnected from the city centre, the rail extension did improve the RSC's connectivity with the broader metropolitan region via high frequency public transport.

From 2007 onwards, there have not been any major changes experienced in the RSC.

Over a 50-60 year journey, the RSC has undergone many transitions. From small holiday destination to satellite city and major centre in the South Metropolitan Region. The purpose of the RPSP will be to guide the centre's next transition over the decades ahead.



RSC 2005



RSC 2015

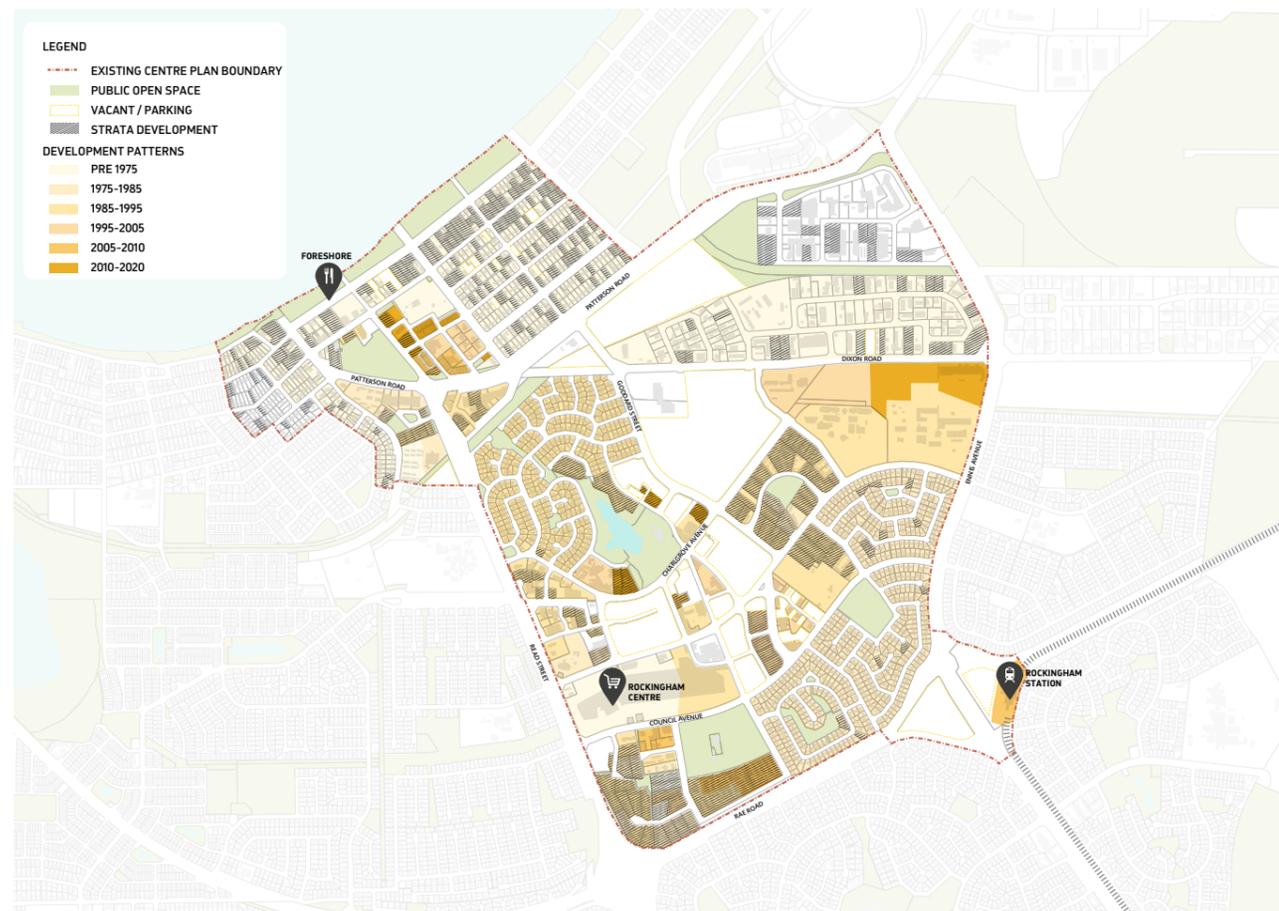
### 1.4.3 DEVELOPMENT POTENTIAL

#### CENTRE PLAN DEVELOPMENT VISION

The development vision for the RSC was based around the establishment of the RCCTS, which connects the rail station with the City Centre, education campuses and the renowned beachfront. This TOD based approach was centred on the route of the proposed street-based transit system.

The route of the RCCTS was developed initially as a busway with the understanding that it will be upgraded to a more fixed system (e.g. trackless tram or light rail) once a more supportive level of development has been achieved along the route. The City is committed to achieving the vision of a fixed route, streetcar transit system as the focus of a corridor of high intensity, mixed use development between the rail station and the beachfront. Though it is acknowledged that the ultimate alignment is subject to review in the RPSP.

The approach proposed in the Centre Plan would allow for establishment of approximately 16,793 dwellings (30,227 people @ 1.8 persons per dwelling). There is an expectation that the RPSP use this figure as a benchmark, to ensure similar levels of residential density can be achieved.



P2 - Figure 10: Development Patterns

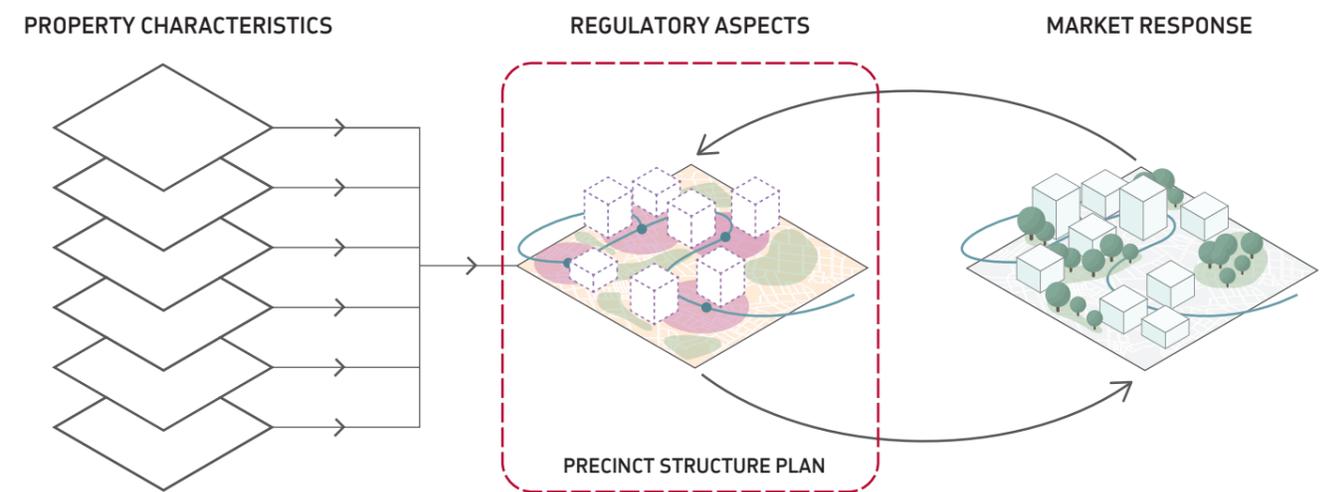
#### DEVELOPMENT SINCE THE CENTRE PLAN

An analysis of historical aerial imagery assisted with mapping development patterns throughout the RSC over time. This has been translated on P2 - Figure 10. One of the primary observations is that limited development has occurred since 2010, which is around the time the previous Centre Plan was endorsed. This is reflected by the fact that in 2016, there were an estimated 4,352 residents living in the RSC (well below the density target), suggesting that significant development potential still exists.

When assessing factors that impact development, the following themes are considered as the primary factors:

4. **Property** – attributes and characteristics that influence the physical possibility of a property to be developed for residential or retail use, including access and infrastructure services;
5. **Regulatory** – governance, legal and planning provisions that influence the built form, density and land use types that can be provided within the precinct; and
6. **Market** – characteristics influencing the supply, demand, price and feasibility of developing for a particular use or development outcome. The market can ultimately be influenced by a range of factors which could impact the rate at which development occurs. This could include government interventions such as public transport investment, or transformative projects such as the proposed Rockingham Marina.

When considering future development in the RSC, it is important to consider how the above characteristics relate to each other. This relationship is illustrated on P2 - Figure 11, it demonstrates that the RPSP will influence the regulatory aspects. However, it is though, still important to consider how local market characteristics may respond. In the long-term, this market response would likely guide future reviews of the RPSP.



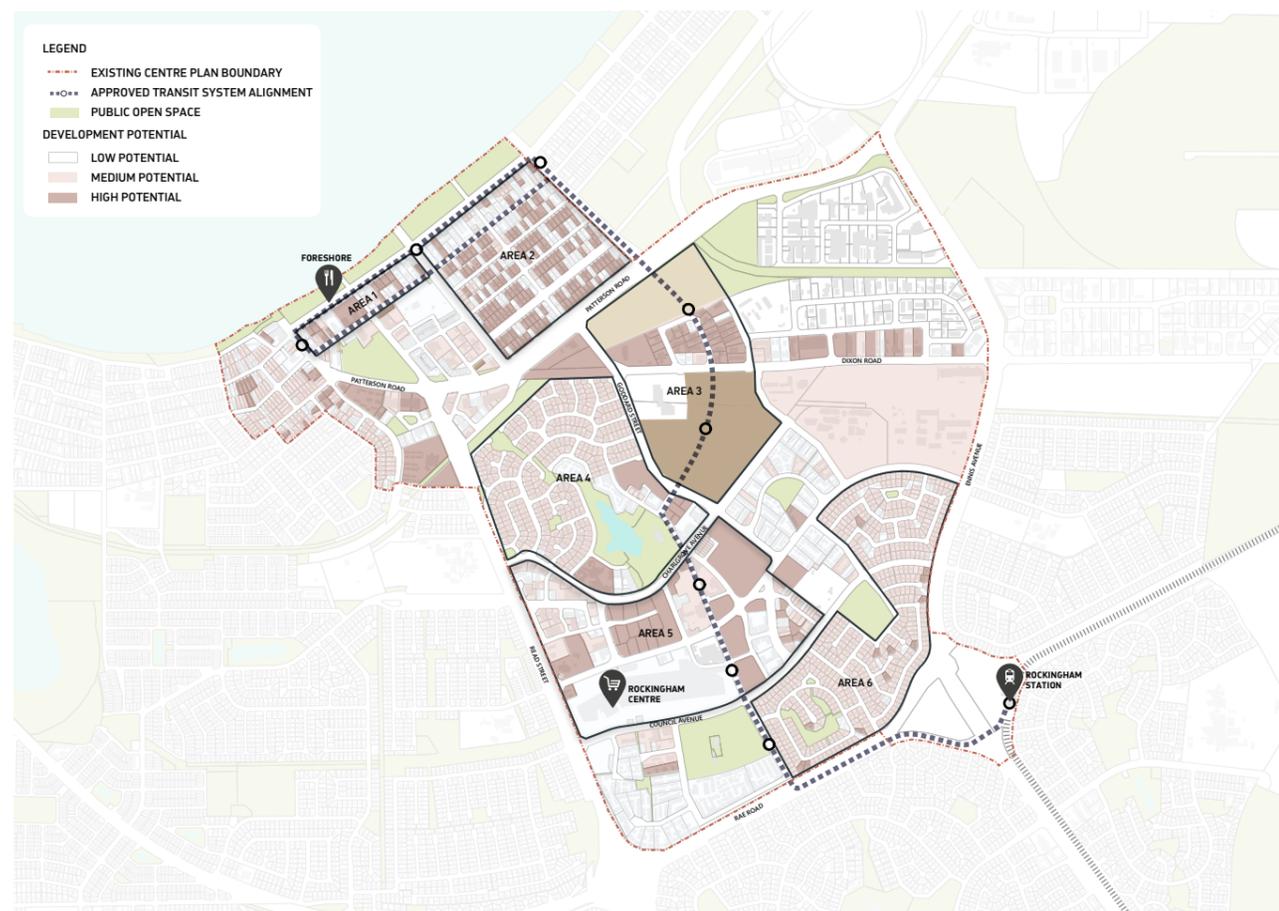
P2 - Figure 11: Development Characteristics

## FUTURE DEVELOPMENT POTENTIAL

A key principle of transit oriented development is to facilitate an increase in both residential (housing diversity and density) and non-residential (employment generating land) development. This ensures that the urban environment supports affordable opportunities to live and work in the area. The RSC is currently characterised as a low-medium density, retail-centric precinct with limited high-density residential and diversity of employment on offer when compared to the development vision.

From a residential stand point, this stems from the fact that new dwelling supply in the broader region has largely emerged from greenfield estates, where the buyer profile is dominated by first home buyers seeking entry level product. These buyers are very much driven by affordability with lot size and space a key consideration. Therefore, the challenge in developing within the RSC is the ability for developers to achieve sufficient built form price points in order for projects to be financially viable.

To provide an evidence base to support the RPSP design, a preliminary development potential assessment was undertaken to understand (spatially) where future development should be focussed.



P2 - Figure 12: Development Potential

## ASSESSMENT METHODOLOGY

The development potential assessment included a combination of quantitative and qualitative analysis. From a spatial perspective, the quantitative analysis considered a number of critical influencing factors:

- + Tenure - which assessed lots based on their land ownership and tenure.
- + Lot Size - which assessed lots based on their size.
- + Existing Use - which assessed whether a lot is vacant or developed.
- + Age / Condition - which assessed the age and condition of existing development (if present).

The above indicators were supported by weighted criteria which allowed each development parcel in the RSC to be assigned a 'development potential rating'. These ratings were assessed further, having consideration for a range of qualitative factors (e.g. proximity to open space, transport, or land use amenity), and feedback received during the stakeholder engagement process.

The development potential ratings are illustrated on P2 - Figure 12, they include:

- + Low potential - being land that is highly unlikely to be developed in the next 10-20 years. This typically includes new development, or properties with complex strata ownership structures.
- + Medium potential - being land that is likely to be developed in the next 10-20 years. This typically includes single residential lots that have ageing stock and have capacity to support infill development.
- + High potential - being land that is highly likely to be developed in the next 10 years. This typically includes large, vacant lots which are in sole ownership. Or large single residential lots that have ageing stock ready for redevelopment.

The analysis determined that the following areas have the highest development potential:

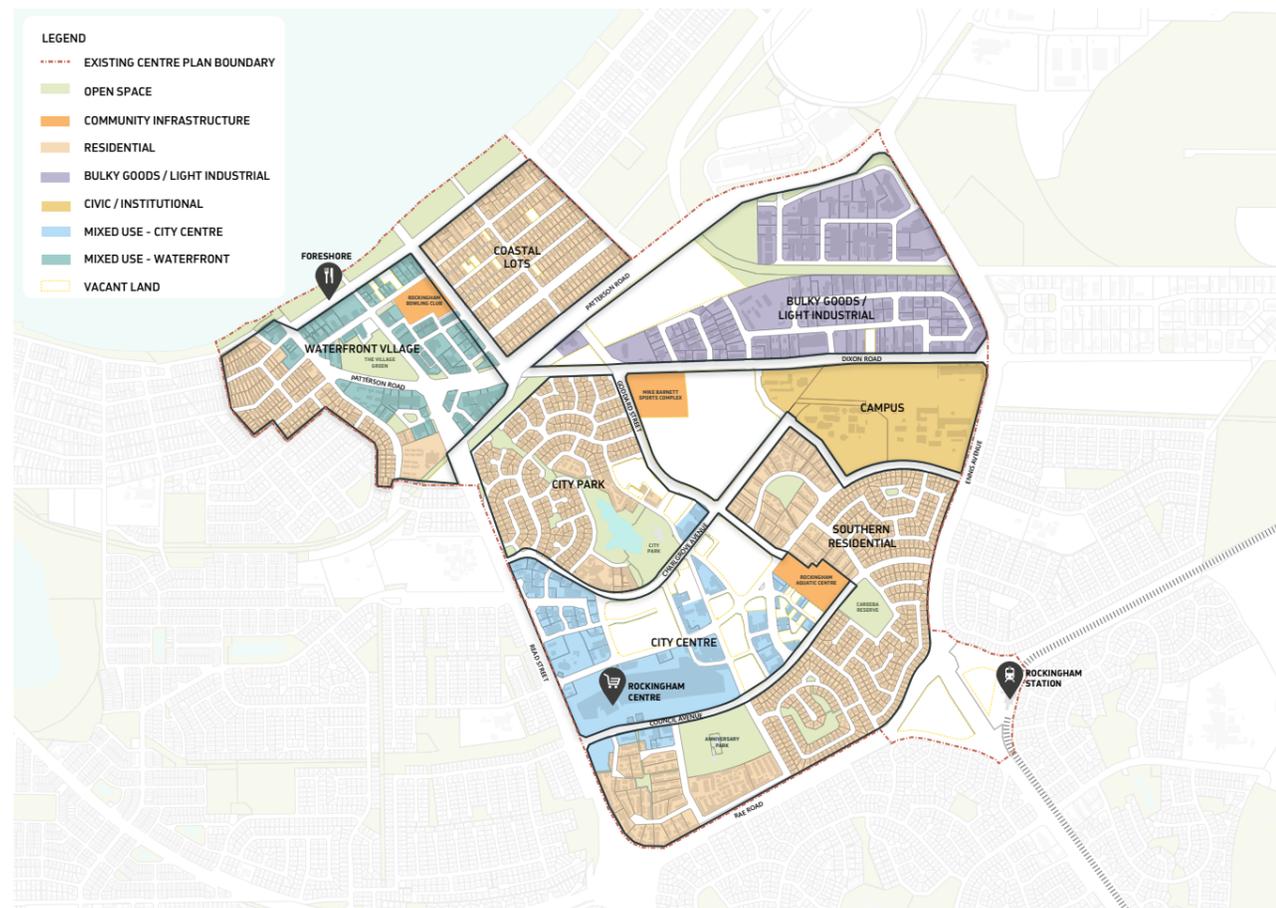
- + **Area 1** - is the waterfront area along Rockingham Beach Road it offers substantial natural and entertainment amenity, it also includes a number of large development parcels which have good flexibility in the existing framework.
- + **Area 2** - includes the large 'coastal lots' located generally between Rockingham Beach Road and Wanliss / Regan and Victoria Streets. The large lots, grid pattern and coastal proximity in this area offer good potential, however, land fragmentation is a challenge particularly when seeking to implement medium density development.
- + **Area 3** - these proposed villages were based on the RCCTS alignment, and presented opportunities to generate employment opportunities and increased residential density. Development potential here, and in the surrounding campuses will ultimately be guided by the final transit alignment.
- + **Area 4** - include the City Park residential areas, this area shares many similar characteristics with Area 3. However, the lots are slightly smaller.
- + **Area 5** - is the City Centre, it also offers good amenity and transport infrastructure. There are a number of substantial vacant development parcels with consolidated ownership.
- + **Area 6** - include the 'southern residential' lots, this area shares many similar characteristics with Area 3. However, the lots are slightly smaller and access to amenity varies throughout.

## 1.4.4 LAND USE AND URBAN STRUCTURE

With an extent of over 600ha, the RSC has and is proposed to include a diverse land use mix. **P2 - Figure 13** illustrates that there is a variety of residential and non-residential uses are distributed throughout the Centre as described below:

- + There are two primary mixed-use nodes being the City Centre and Waterfront. These areas provide a variety of retail, food and beverage, commercial and residential uses. They are also the primary attractors for medium-high density residential;
- + South Metropolitan TAFE, Murdoch University and Kolbe Catholic College form an education / campus precinct in the northeast;
- + A Service Commercial / Light Industrial area exists between Dixon and Patterson Roads;
- + There are a three (broad) existing residential areas, being the northern waterfront, central and southern residential. All areas comprise low-scale housing stock, however, the lots sizes and character varies throughout; and
- + Two TOD Villages are proposed in the existing Centre Plan, the intent for these areas was to provide a mix of uses.

Site visits and analysis of these land uses determined that there were a number of distinct character qualities that applied to these areas, based on their existing built and landscape qualities.



P2 - Figure 13: Land Use

## CITY CENTRE

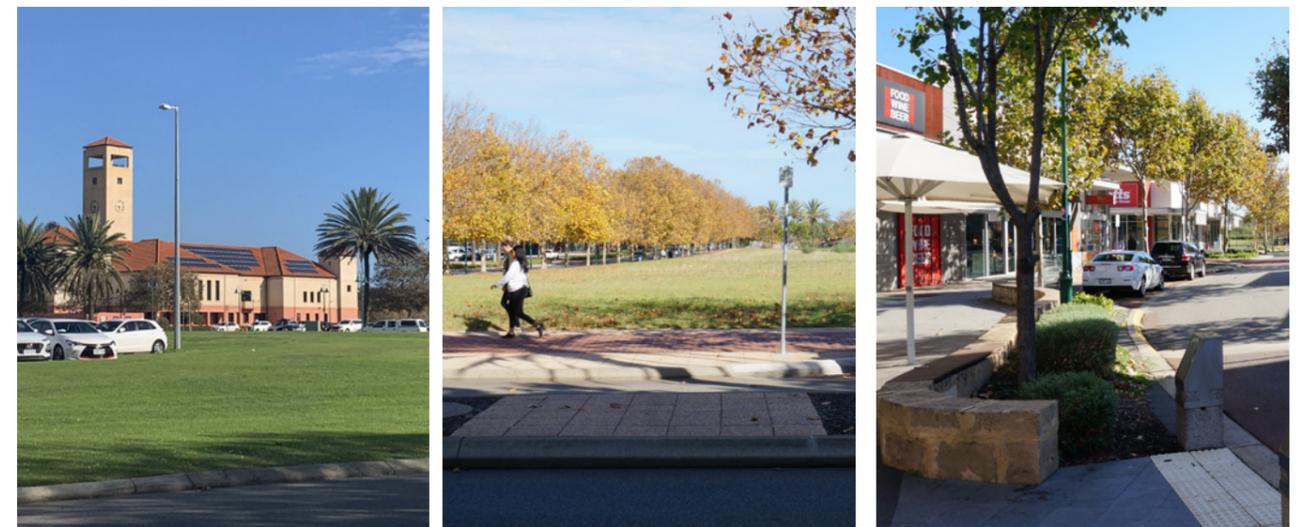
The City Centre consists of large urban blocks, with grand winding streets and boulevards providing connectivity between the arterial roads that frame the RSC boundary. The shopping centre lot acts as an impervious barrier, due to its sheer size activation becomes difficult. Lots to the north and east of here come in many shapes and sizes, with the road network forming an incongruous street pattern that limits wayfinding and sense of arrival.

Key aspects of City Centre:

- + **Civic** - Grand, formal, and organised. The City's administration building acts as a prominent feature and wayfinding tool. An avenue of trees on Civic Boulevard adds to the formality, providing greenery, shade and an important link between City Park and Syren Street.
- + **Rockingham Central** - From the air, it appears as a place dominated by parking and concrete. At ground level, it is a tale of two very different street experiences. The majority of the building's interface is typified by blank walls and loading docks. Though Syren Street is the oasis, with greenery, alfresco dining and a diversity of shop fronts creating a positive street interface and environment where the pedestrian reigns supreme.
- + **Urban Commercial** - Nil setbacks and glazing are prominent in the area between Ameer and MacKinnon Streets. However, tenancies trade to car parks at the rear, leading to streets without true activation or addresses. Streets are formal and organised with good landscaping, though vacant lots make the area feel underutilised.
- + **Read Street / Council Avenue** - Wide road reserves, large building setbacks and car parking dominate these thoroughfares. Presenting as a somewhat harsh environment for pedestrians, these areas are difficult to activate and more suited for vehicles than pedestrians or cyclists.

### Character Statement - 'Varied character and undefined heart'

Developed over many years, the City Centre represents a tapestry of architectural and landscape styles. Its varied character and lack of coordination have led to a centre without a defined heart or cohesive theme. Though it emblemises potential, large vacant lots provide the opportunity to stitch it together.



## WATERFRONT VILLAGE

As Rockingham's pre-eminent destination, the foreshore area is unique in Perth with a predominantly north facing, foreshore reserve that is one of the best shaded and tree lined foreshores in Perth. Patterson Road and Read Street are the major arteries that connect to the foreshore area to the remainder of Rockingham. Due to the amenity on offer, it is an attractive place to live translating into a noticeably higher scale of development in this area.

Key aspects of Foreshore:

- + **Rockingham Beach Road / Foreshore** - Active street frontages interact with foreshore, where a constant hive of activity can be experienced during the day. Taller buildings are common, but trees mask their height from the foreshore / beach front.
- + **Kent Street** - One street back from the foreshore, Kent Street has the potential to become a defined place for local art and culture. It is already the location of the Arts Centre, Visitors Centre, and Rockingham Museum. Safer, better defined mid-block connections to the foreshore could unlock its potential.
- + **Village Green / Flinders Lane** - The area east of Flinders Lane offers a good example of local housing density and diversity with apartments and terraces. Whilst beautiful, the Village Green is often ignored with wide east-west oriented buildings prominent, as everyone is 'chasing the view'.
- + **South of Patterson** - The width and primary of Patterson Road and Read Street results in these areas being disconnected. They do not feel 'part of the area', reinforced by the style and types of buildings found here.

### *Character Statement - 'The beating heart where everyone wants to be'*

Rockingham's foreshore is part of its identity, buildings, businesses and people want to be here. Scale and height veiled by rows of prominent coastal trees stand aside to give generous room for a vibrant place along the coast for everyone to enjoy.



## COASTAL LOTS

The urban structure of the coastal lots area includes a typical grid with quarter acre blocks, this type of development was common at the time of its establishment. Lot sizes and dwelling types are relatively consistent, though intermittent redevelopment has introduced new typologies over time.

Key aspects of Coastal Lots:

- + **Large Lots** - The area is typified by large lots with a diversity of low-scale housing types. Whilst there has been some redevelopment, existing planning controls require amalgamation of at least two lots to support development as such the original character has mostly been retained.
- + **Modest Gardens and Houses** - Small houses on large lots are the most common typology in the area. Modest homes and gardens create a relaxed holiday feel. Interestingly, the tree canopy increases away from the coast where views of the ocean are no longer possible due to the flat topography.
- + **Spacious** - Large front setbacks and wide roads create a sense of openness. If preserved, these qualities could support sensitive infill and redevelopment that does not diminish character.

### *Character Statement - 'Large lots and modest houses'*

Traditional in nature, the existing development pattern reflect a previous era where large suburban lots reigned supreme. Introduction of new typologies has been intermittent, though a relaxed coastal feel has largely been preserved.



## SOUTHERN RESIDENTIAL / CITY PARK

Established throughout the 1970s-1990s, these low density residential areas are typical of suburban development throughout these periods. A curvilinear street pattern with wide winding streets and prevalence of cul-de-sacs creates a car centric environment where permeability for pedestrians is limited. There are two dominant development types, referred to as 'relaxed suburbia' and 'compact suburbia'.

Key aspects of Southern Residential:

- + **Relaxed Suburbia** - Typically larger traditional suburban blocks with low scale detached housing and large front setbacks. Winding streets create a relaxed feel, with trees are found mainly within the private lot. A consistent approach in materials and building style reflect the period of establishment and a defined character.
- + **Radburn Pockets** - There are two notable examples of a Radburn Design influence with linear parks such as Hazelmere Reserve (Southern Residential) and Warramunga / Kybra Mews Reserves (City Park) interspersed between pockets of housing.
- + **Compact Suburbia** - Typically neat, compact homes that are part of grouped housing sites. Trees and greenery are replaced by roofs and driveways making for a substantially different type of character. Strata titling prominence makes redevelopment difficult, however, prominence of seniors / retirement living perform important social role.

### *Character Statement - 'Contrasting styles'*

The contrasting styles of development are ever present: large lots versus compact lots; greenery versus hardscape. A blend of their positive qualities that could support quality infill.



## CAMPUS

The area is formed through a combination of sporting fields and three education institutions. Established at various points, there is little integration between these areas with each operating independently. There is a significant amount of vacant space which is difficult to activate. Outside of operating hours, it feels empty and desolate.

Key aspects of the Campus area:

- + **Existing Campuses** - Buildings are typically set within the landscape in a traditional campus style. Spaces between buildings create public places and provide opportunities for greenery and trees. Substantial space exists to support future growth and development
- + **Southern Smart Village** - The proposed 'smart village' is currently occupied by the Dixon Road playing fields. The sporting complex will remain, however, there is an opportunity to consider how future development can help grow local knowledge industries, stimulate investment in the university, and support residential density.

### *Character Statement - 'Pockets of development, but largely empty'*

Existing development includes low scale buildings set within the landscape with space between buildings and prominent greenery. Outside of these pockets, large, vacant underutilised spaces create a desolate and empty feel.

## DIXON ROAD

The light industrial / service commercial area bounded by Dixon Road, Patterson Road and Ennis Avenue performs an important role in providing local employment. It was developed in two periods, the initial development occurred on Dixon Road in the 1970s and 1980s. Original sheds and workshops were eventually replaced by larger, bulkier buildings and an increased dominance of car parking. The area north of Tesla Road was established much later in the early-mid 2000s.

A substantial amount of local bushland exists south of Patterson Road.

Key aspects of the Light Industrial / Service Commercial area:

- + No defined character or quality to signify entry into RSC.
- + Environmental qualities of bushland south of Patterson Road to be determined.

### *Character Statement - 'Harsh and hard'*

Minimal landscaping and a dominance of car parking and hardstand make for a harsh urban environment, with contrasting edge treatments either side of Dixon Road.

## 1.4.5 PUBLIC OPEN SPACE AND COMMUNITY INFRASTRUCTURE

### LANDSCAPE CONTEXT AND CHARACTER

The Rockingham promontory did not exist 8,000 years ago. It developed as the offshore chains of islands eroded and deposited sand to form much of the coastline that exists today.

Pre-development the site was typical of coastal dunes of the Swan Coastal Plain, with the calcareous deep and yellow sands. Due to its coastal location the soil was never suitable for agricultural purposes rather it was primarily developed for residential with some industrial (which has since evolved further).

Over time, a series of different landscape nodes and types have emerged. These include natural areas, formal landscape (both parks and civic squares), playing fields, and of course the streets themselves. Analysis of the precinct has determined the following key public realm nodes:

- + **Rockingham Beach Road** - The foreshore / Rockingham Beach Road is one of the most unique foreshores in Perth. It is predominantly north facing and one of the best shaded and tree lined foreshores in the Perth Metropolitan area. It is a hive of activity, ground floor uses spill out onto the street and the precinct is well used and loved by the community and visitors alike.
- + **Rockingham Beach Plaza** - As part of the Rockingham Foreshore upgrades, the plaza was established in 2019. Unlocking new viewing and alfresco opportunities for neighbouring ground floor uses, it has become a popular destination amongst the local youth due to its openness and generous room to play.
- + **Railway Terrace** - Creates a pedestrian-orientated link between the other waterfront nodes by providing uniquely broad, shaded, and buffered pathways with frequent inclusions of seating, landscaping, and colourful shade structures.
- + **Kent Street** - A collection of attractions and uses including the Arts Centre, Visitors Centre, Rockingham Museum, Creative Arts shop and the Village Green offer potential to become a culture and arts precinct.
- + **Civic Plaza** - Nestled behind the City's administration building, the civic plaza is characterised by a grove of trees and seating nodes. It is formal in nature, but provides opportunities for respite for local workers.
- + **Syren Street** - Rockingham's local 'eat street' is the most recent expansion of Rockingham Central. Numerous eateries, and entertainment venues (including a cinema) assist with activation throughout the day and night. A series of landscape and traffic calming initiatives make for an attractive and pedestrian-focussed environment.

The site topography prior to development notes longer linear dunes that lay perpendicular to the prevailing south west winds. Whilst much of these formations have been levelled and built upon, evidence of these dunes are still seen in some places and are a key part of the character of Rockingham. Whilst there are some smaller localised higher points, the current topography for the area is reasonably flat with levels generally 6m AHD in the south falling toward the coast which is generally 4m AHD.

### PUBLIC OPEN SPACE

Given the value of POS within the community, the City has a responsibility to ensure there is appropriate provision for multi-purpose public open spaces which offer a range of functions and are accessible to the local community. The City's POS hierarchy includes four categories, the typical size, catchment and function is provided in **P2 - Table 11**, with a quantification of the spaces currently provided in the RSC:

P2 - Table 7: POS Hierarchy

TYPE	SIZE	FUNCTION	EXISTING RSC POS
<b>POCKET</b> 200m / 3min walk	<0.4Ha	Passive Recreation	Hazelmere Circus (0.06) Sepia Court Reserve (0.48 ha) Derwent Park (0.26 ha) Leghorn Street Park (0.20 ha) Sycamore Park (0.13 ha) <b>Pocket Park Total = 1.13</b>
<b>LOCAL</b> 400m/5min walk	0.4Ha - 1Ha	Passive Recreation Active Sport Nature	Benjiman Reserve (0.57 ha) Emerald Park (0.57 ha exc. foreshore reserve) Phoebe Hymus Park (0.75 ha exc. foreshore reserve) Warramunga Reserve (0.81 ha) <b>Local Park Total = 2.70 ha</b>
<b>NEIGHBOURHOOD</b> 800m/10min walk	1Ha - 5Ha	Passive Recreation Active Sport Nature	Kybra Mews Reserve (1.20 ha) Ashford Avenue Reserve (1.30 ha) Churchill Park (1.35 ha) Bell Park Reserve (1.65 ha) Hazelmere Reserve (1.89 ha) Careeba Reserve (3.20 ha) ANZAC Park (3.40 ha) <b>Neighbourhood Park Total = 13.99 ha</b>
<b>DISTRICT</b> 2km from home	5Ha - 15Ha	Passive Recreation Active Sport Nature	Anniversary Park (6.68 ha exc. buildings and car park) City Park (9.38 ha) <b>District Park Total = 15.98 ha</b>
<b>TOTAL USEABLE POS</b>			<b>33.74 ha</b>

This demonstrates that there is currently an approximate 33.74 ha of useable POS, as the above excludes the foreshore reserve and vegetated areas. The estimated 33.74 ha also does not include the following areas, demonstrating that there are opportunities to increase the amount of useable open space should the need arise:

- + Dixon Road Playing Fields = 11.45ha (only includes historical playing fields not vegetated area on Goddard Street);
- + Murdoch University / TAFE = 6.23 ha (vacant, not used for public open space); and
- + Kolbe College = 3.4 ha (privately owned, access could be restricted).

In comparison to other Strategic Centres, the RSC has substantially more useable open space. Joondalup, the most comparable in size and scale only has 11.58 ha (2.4%). Morley (6.76 ha or 3%) and Armadale (5.95 ha or 7.5%) provide more (than Joondalup), whilst Canning was one of the better performing centres (19.41 ha or 9.9%), however, a substantial amount of this is associated with the Canning River Foreshore. What the high-level comparative analysis demonstrates, is that highly urbanised centres typically have limited access to quality public open space. Despite this, the RSC is well positioned as it is currently better serviced by a diversity of open space types when compared to other centres of its type (**P2 - Figure 14**).



P2 - Figure 14: Public Spaces and Heritage

## COMMUNITY INFRASTRUCTURE

With regards to community infrastructure, the RSC is currently serviced by a variety of community infrastructure facilities such as:

- + The Autumn Centre Community Centre;
- + Rockingham Bowls Club;
- + Rockingham Aquatic Centre;
- + Anniversary Park Hall / Rockingham Men's Shed;
- + Rockingham Library; and
- + Mike Barnett Sporting Complex.

Regarding Mike Barnett Sports Complex, it is currently the City's only dedicated indoor recreation centre. An additional facility is being built in Baldvis, however, this is to service the growing Baldvis / Karnup corridor. Further detailed analysis of the current form and function of Mike Barnett Sports Complex and any necessary facility upgrades are included in the City's Community Infrastructure Plan, with a master plan to guide the ultimate footprint of the facility.

Regarding education, the RSC currently includes the following collocated facilities:

- + Kolbe Catholic College;
- + South Metropolitan TAFE; and
- + Murdoch University.

Rockingham Senior High School is also on the border, located on Read Street. Regarding future provision, the RPSP will need to have consideration for potential growth impacts and what that may mean for future education facilities. The Department of Education and the main non-government education providers typically require one primary school site per 1,500 and 1,800 housing units for government schools.

## 1.4.6 HERITAGE

The term "Cultural heritage significance" means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. (ICOMOS Burra Charter, 2013). When using the word heritage, the City considers: Natural Heritage; Aboriginal Heritage; Historic Heritage; and Tangible and Intangible Heritage. In 2020 the City prepared a Heritage Strategy, which sets the future direction for heritage management.

### ABORIGINAL HERITAGE

The Aboriginal peoples of the south-west of Western Australia are collectively known as the Nyoongar (also spelt Noongar, Njonga, Nyungar, Nyunga, Yunga, Nyungah) peoples. The histories of Aboriginal peoples in connection to what is now known as the City of Rockingham today relates to mainly the social organisation, land relationships, events and experiences in the area, as the current boundaries of the City do not reflect the Aboriginal cultural groupings prior to the contact and settlement period.

A search of the Department of Planning, Lands and Heritage (DPLH) controlled Aboriginal Heritage Inquiry System (AHIS) was conducted on 22 July 2021 (by Cardno). This database incorporates both the Heritage Site Register and the Heritage Survey Database. The Heritage Site Register is held pursuant to Section 38 of the State's *Aboriginal Heritage Act 1972* and contains information on over 22,000 Aboriginal sites throughout Western Australia.

The search of the AHIS Site Register database did not identify any registered sites within the RSC. Though it is acknowledged that RSC is on land within the Gnaala Karla Booja Indigenous Land Use Agreement.

There are major opportunities for the RPSP to explore how planning for the RSC can improve and enhance the sense of place and belonging for Aboriginal people.

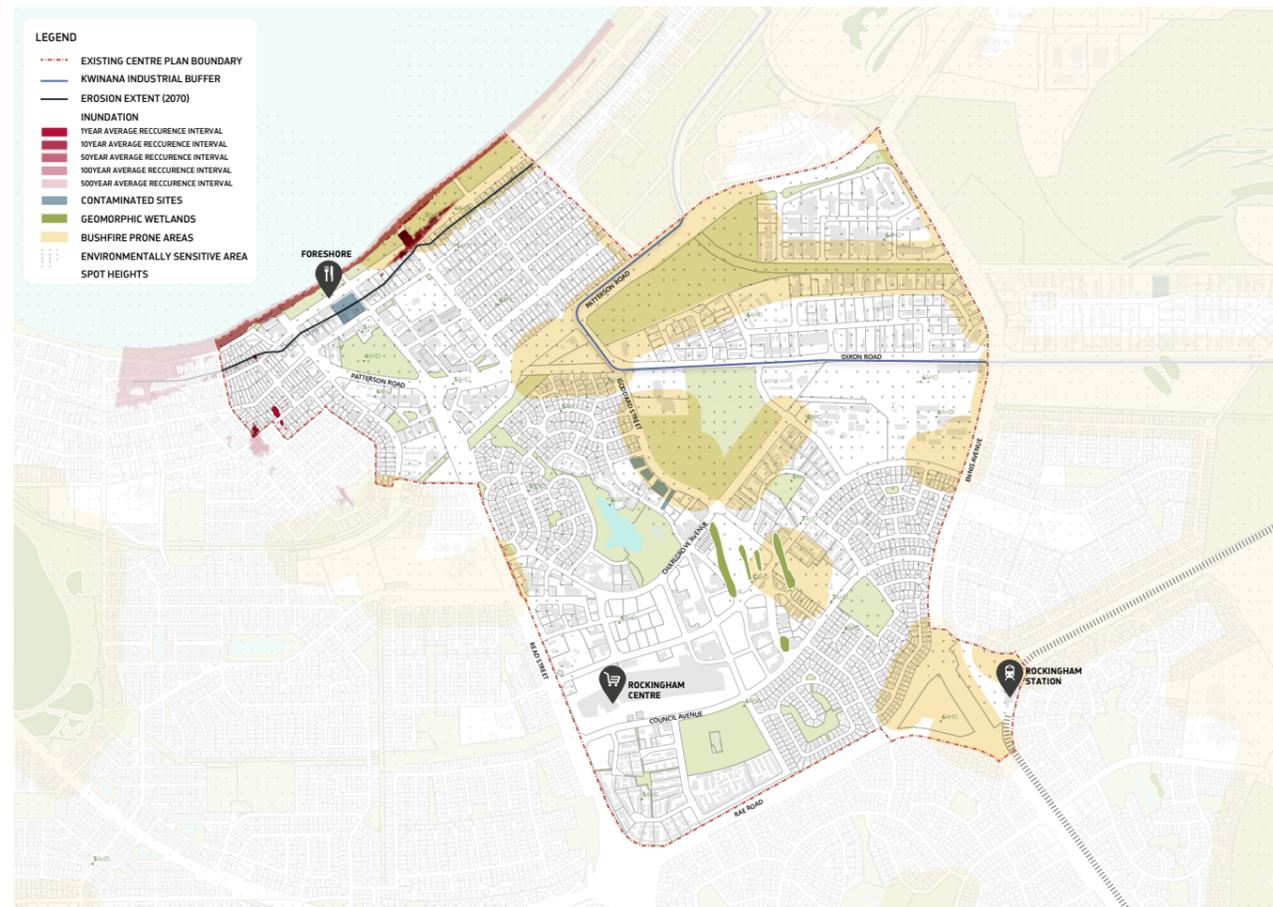
### HISTORIC HERITAGE

The presence of historical or current European Heritage sites was investigated using the Commonwealth Department of Agriculture Water and Environment (DAWE), Australian Heritage database and the State Heritage Council database. The Heritage Council WA database contains information regarding natural and historic places throughout Western Australia.

Several heritage sites listed on the Municipal Heritage Inventory are located within the RSC. As shown on **P2 - Figure 14**, these are typically concentrated around the foreshore and on Kent Street reinforcing its potential as a place to celebrate local culture and the arts. No State Heritage sites are identified.

## 1.4.7 ENVIRONMENT

Cardno, UDLA and Hames Sharley undertook a high-level assessment of the existing environmental conditions in the RSC. The objective of the assessment was to gather relevant environmental data associated with the RSC to support the context analysis. Background information and data was sourced from government agency database searches, requests and other publicly available information.



P2 - Figure 15: Natural Environment

### VEGETATION

There is evidence (observed by historical aerial photography) that the remnant vegetation within the study area has been a fairly recent addition through revegetation efforts and self seeding of these plants. The taller vegetation is the *Eucalyptus gomphocephala* 'Tuart' which is the dominant tall tree of the Swan Coastal Plain. Much of the remnant vegetation is typical of the lower growing *Acacia* sp. and coastal heathland species. The foredune area appears to be only recently revegetated during the 90s - 2000s.

The remaining dune vegetation and heathland provides important broader ecological and biodiversity corridors from the 'Bush Forever' sites located to the east of Ennis Avenue and beyond. Whilst this vegetation would not be characterised as the original pre-colonial vegetation it does add to the landscape character, particularly its location adjacent a key road (Patterson Road) into Rockingham and importantly adjacent the beach and Foreshore area.

These remnant vegetation areas are important today as they are into the future so the people that inherit these landscapes will have them in the areas they will want them the most; near the coast and urban areas.

### WETLANDS AND SURFACE WATER BODIES

Conservation category wetlands were identified within the RSC (see P2 - Figure 15), which have the highest priority for conservation. However, the site was previously earmarked for development. Analysis of historical aerial photography suggests that this designation could be a legacy as the site is predominantly cleared. The Department of Biodiversity, Conservation and Attractions (DBCA) is the current custodian of the wetland mapping dataset for the Swan Coastal Plain. Justification (i.e. through a wetland identification and/or delineation investigation) must be provided to the DBCA for an existing mapped wetland area to be modified to the status of 'No longer a wetland'.

### COASTAL HAZARDS

In 2019, the City prepared the City of Rockingham CHRMAP. In the context of the RSC, this includes Sector 1 (municipal boundary to Wanliss Street) and Sector 2A (Wanliss Street to Garden Island Causeway). P2 - Figure 15 illustrates the potential erosion and inundation risks, as defined in the CHRMAP. Findings include:

- + The risk of erosion in both sectors increases substantially by 2070, with the majority of the foreshore at risk. By 2110, the risk extends beyond Rockingham Beach Road impacting adjacent properties.
- + The risk of inundation in both sectors is quite limited (within the RSC). Localised flooding can be expected for 1:50, 1:100 and 1:500 ARI storm events in parts of Rockingham Beach Road (near Wanliss Street).

The CHRAMP identifies that both short and long-term measures will be required to protect these areas from coastal erosion. The role of the PSP, will be to ensure that these risks are understood and factored in to future planning decisions.

### OTHER ENVIRONMENTAL CONSIDERATIONS

A summary of additional environmental findings is presented below.

- + Surface geology comprises Calcareous Sand of the Safety Bay Sand.
- + No area of the site is mapped as having a known risk of acid sulfate soil (ASS) occurring within 3m of ground surface.
- + Priority and Threatened species are likely to occur within the planning envelope.
- + Most of the planning envelope is within an ESA due to the presence of TECs and a conservation significant wetland across the area. Any clearance permit application will require a flora and fauna survey to be conducted.
- + No Bush Forever site is located on the planning envelope. Though a Bush Forever site is located directly to the east of the RSC.
- + A number of areas within the RSC are identified as being bushfire prone.
- + The Kwinana Industrial Area air quality buffer limits development of 'sensitive' land uses within this area.
- + Five land parcels within a 1 km radius of the RSC have been assigned a contaminated sites classification by the DWER.

In summary, there are a number of environmental considerations in the RSC, however, no major constraints on future development are identified. Appendix 2 provides further information.

## 1.4.8 PUBLIC TRANSPORT

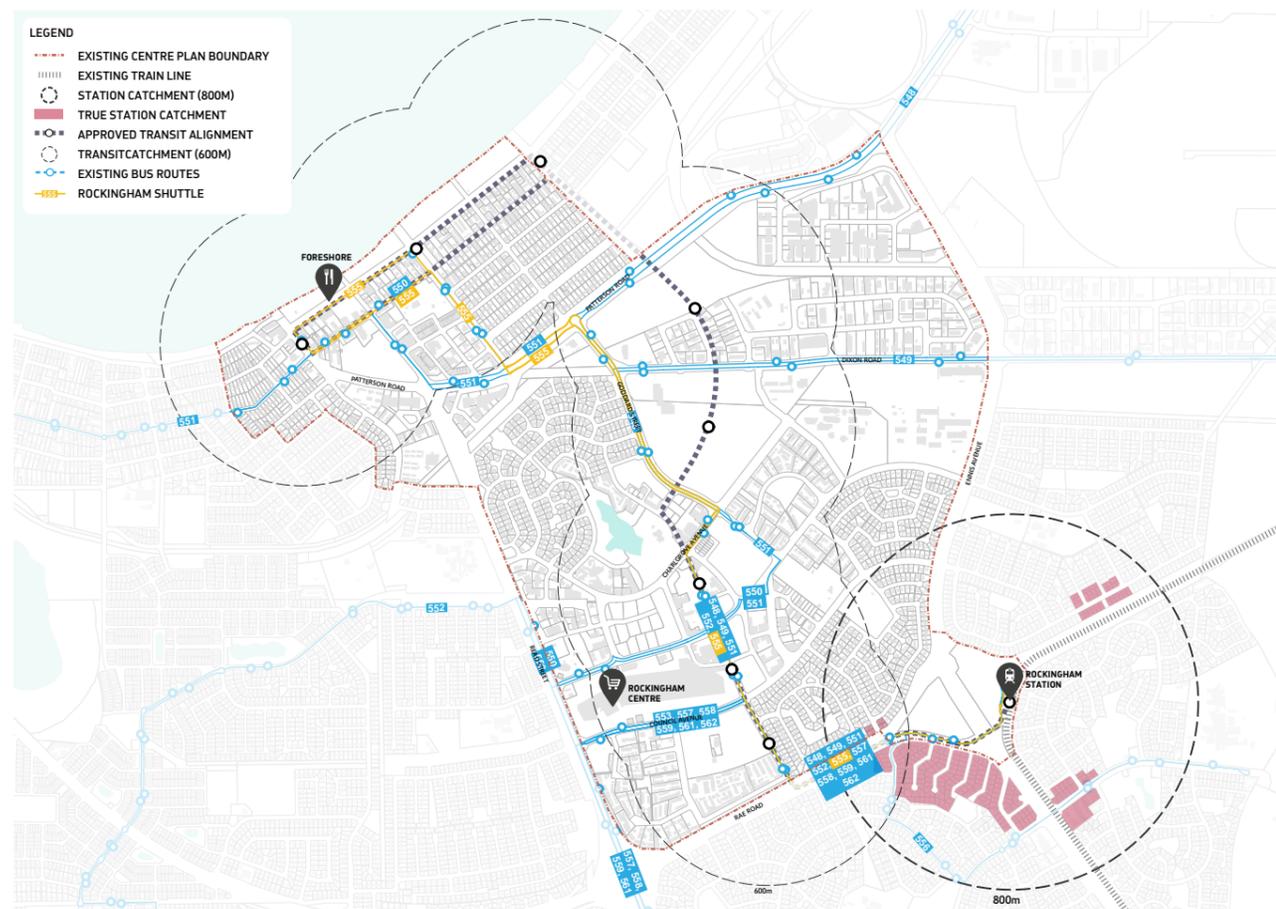
### PASSENGER RAIL

The RSC is currently serviced by rail, with high frequency services connecting passengers to the Perth CBD in 40 minutes. Unfortunately, one of the primary limitations of passenger rail in the RSC is the location of Rockingham Station itself. The majority of patrons access the station via park and ride, and bus. Major physical barriers such as Ennis Avenue, Rae Road and PTA parking areas limit cycling and walking access. Pedestrian access is noticeably poor, with only a small proportion of households in the walkable catchment truly able to access the station in an 800m (see **P2 - Figure 16**) walk. As such, interventions which consider how to improve station access to properties within the RSC need to be explored.

### BUSES

The RSC is serviced by a number of buses, most of which connect surrounding residential areas with Rockingham Central and Rockingham Train Station. Of these routes, Bus 555 (the Rockingham Shuttle) is the best performing Rockingham area bus route. It connects key RSC nodes such as the Rockingham Station, Rockingham Central and the Rockingham Foreshore. Buses typically run every 10 minutes in off-peak, to run in parallel with the frequency of trains.

Advice from the PTA is that the shuttle bus' high frequency and long span of hours is critical to its success. However, as the route is completely funded by the State it is not currently a priority for upgrades (unless costs can be offset by additional funding partners).



P2 - Figure 16: Public Transport

### FUTURE PUBLIC TRANSPORT

As explained in the 'development potential' section to cater for future population growth and support the City's TOD strategy, the City has supported establishment of the RCCTS, a fixed route transit streetcar system that is designed to link major activity nodes starting at the Rockingham Train Station and traversing through the Rockingham City Centre, Smart Village Sector and the Rockingham Foreshore.

The implementation of the RCCTS is expected to result in the following:

- + Increase connectivity between major activity nodes;
- + Support growth of existing and new business opportunities;
- + Increase public transport access from the Rockingham Train Station; and
- + Unlock potential to incentivise development, through TOD opportunities around transit stops.

Bus priority measures between Rockingham Station and Charlgrove Avenue perform an important role in future proofing the proposed route. Similar measures could be implemented in other parts of the RSC.

To ensure the RCCTS route is safe and functions to meet the City's vision, potential risks with the proposed expanded RCCTS route have been identified. Locations have been identified where the proposed RCCTS route poses a potential risk to the existing road and public transport network. Traffic controls at the four-way intersections in the form of signals or roundabouts at the following locations are likely to alleviate potential risks at: Patterson Road; Dixon Road; and Goddard Street.

The ultimate preferred alignment of the RCCTS, will explored in **Section 4.4.1** to support the vision and deliverability of the PSP.

## 1.4.9 ACTIVE TRANSPORT

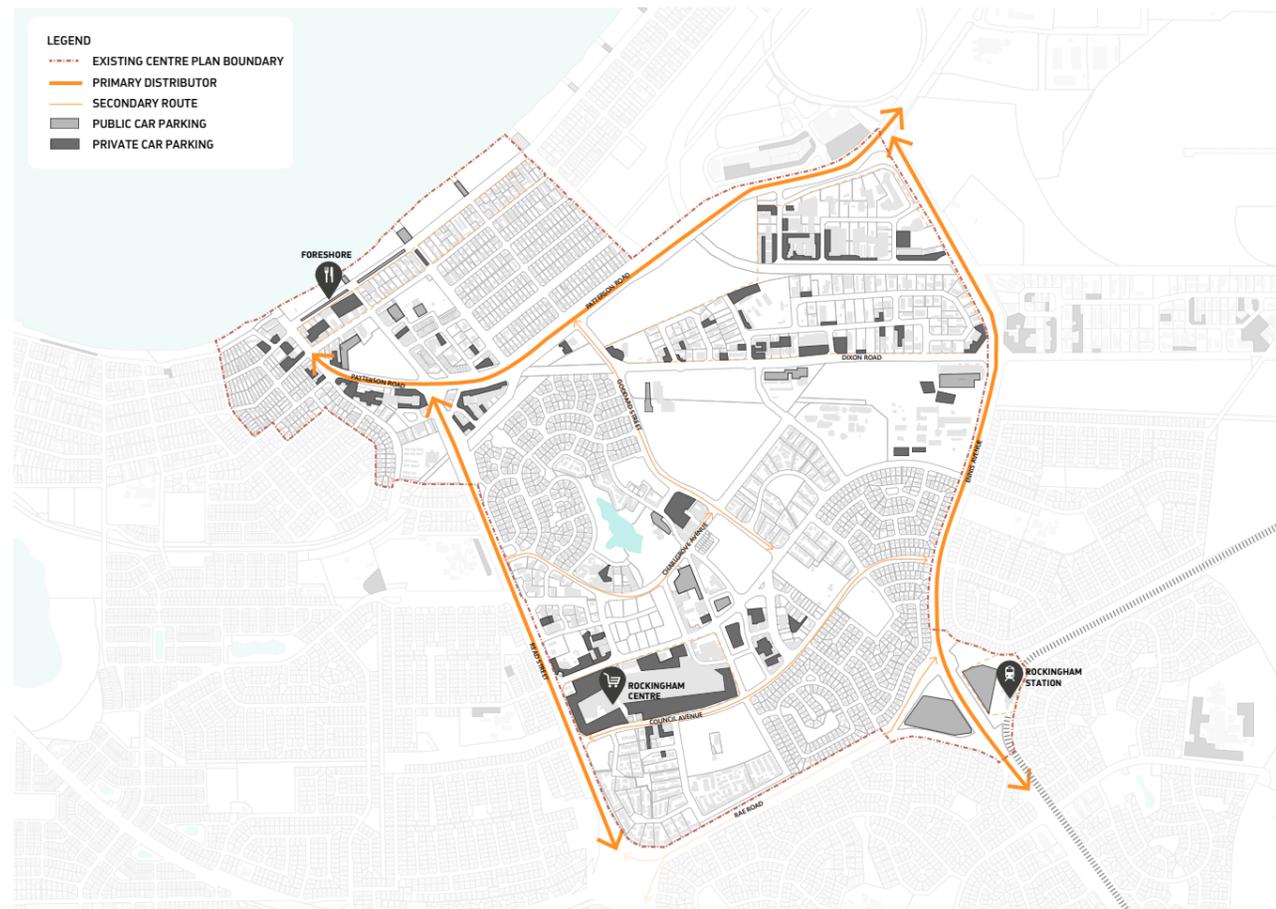
### CYCLING

The existing pedestrian and cyclist network in the RSC is generally in good condition providing direct, continuous links to key destinations. Extensive shared path and good road riding infrastructure have been identified in strategic mapping. However, there are some routes that have been incorrectly identified and require amendment. Additionally, there is an opportunity to recognise and strategically represent existing good quality walking and cycling environments that are currently not identified. Extending existing shared path infrastructure will improve connectivity and continuity throughout the City, especially to direct people from the Rockingham Train Station and City Centre to the Rockingham Foreshore.

### PEDESTRIAN

Given the size and scale of the RSC, pedestrian movement is focussed more on localised trips within key areas such as the City Centre and Foreshore. Broader pedestrian movement is somewhat limited, with a number of factors such as physical distance, lack of amenity (e.g. shading and weather protection), and safety (due to prioritisation of cars in most areas). Some areas observed as providing a high quality pedestrian environment include Syren Street and the Rockingham Beach Foreshore. Traffic calming and reduced road speeds have been implemented in these areas to promote safety as they are highly pedestrianised areas.

## 1.4.10 VEHICLE MOVEMENT



P2 - Figure 17: Private Vehicle Movement

### ROADS

As a mature centre, the RSC road network is well established providing important connections to local neighbourhoods, surrounding activity centres, and strategic employment areas such as the Kwinana Industrial Area. The precinct's boundary is effectively framed by major roads such as Ennis Avenue, Patterson Road, Read Street and Rae Road.

The arrival experience into the City Centre is one area where potential improvements could be made. The existing urban structure has resulted in a somewhat convoluted road network that impacts on legibility. Whilst major upgrades to local roads are not expected, some potential changes in the City Centre could be of value. Some new connections are also to be expected in areas where future development is proposed.

An assessment of the Main Roads Western Australia (MRWA) functional road hierarchy has determined that the following classifications are present in the RSC:

- + **Primary Distributors:** These provide for major regional and inter-regional traffic movement and carry large volumes of generally fast-moving traffic. Some are strategic freight routes and all are National or State roads. They are managed by MRWA and include Ennis Avenue.
- + **District Distributor A:** These carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited

access to adjoining property. They are managed by the City, and include key local routes such as Patterson Road, Dixon Road, Read Street and Council Avenue.

- + **Local Distributors:** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the local distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks.
- + **Access Roads:** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by the City.

The Traffic Impact Assessment provided in **Appendix 3** has undertaken an assessment of ROM data, and a high-level road network safety review. A number of potential intersection upgrades are identified, which is summarised in **Section 4.4.1**.

### PARKING

As a predominantly car dominant centre, the RSC is serviced by a range of public and private car parks - the largest of which is provided at Rockingham Central.

With regard to delivery of public parking, this is guided by the City's 'Rockingham Strategic Metropolitan Centre Public Parking Strategy'. Using Licence Plate Recognition cameras in three timeslots between 9:30 am and 5:30 pm, 1,130 on-street and off-street bays were surveyed in the Waterfront Village and 816 bays in the City Centre, plus approximately 500 of the 3,229 bays in the Rockingham (Shopping) Centre, this determined that:

- + In the City Centre, the average occupancy for all on-street parking was generally below 75% across the entire day. Several streets reached a peak occupancy of over 80%.
- + The average occupancy for the off-street public car parks within the City Centre was above 60% for almost all car parks, with the peak occupancy being above 80%.
- + In the Waterfront Village, the average occupancy for all on-street parking was less than 70%, with the busiest areas located on Rockingham Beach Road, Railway Terrace and Val Street.
- + The average occupancy for the off-street public car parks was quite high for the parking areas adjacent to Rockingham Beach Road, which included the car parks at the end of Railway Terrace and Flinders Lane. These car parks had an average occupancy of 92% and 68% respectively.

Based on this assessment, it can be determined that due to the number of vacant bays observed during both surveys that the two precincts are likely experiencing more of a parking management problem, rather than a parking supply problem as all of the available parking is not being used effectively.

## 1.5 RESPONSE TO CONTEXT

Sections 1.1-1.4 provide a thorough analysis of the RSC, the outcomes of which will directly inform the design process. **P2 - Table 8** and **P2 - Figure 18** provide a detailed summary and visual illustration of the key design considerations, including recommendations / actions for elements which require further interrogation and testing. The responses have been framed using the six key design elements from SPP 7.2. It is acknowledged that some of the design considerations / actions are closely linked across multiple design elements, these instances are reference in **P2 - Table 8**.

As part of this process, the existing Centre Plan boundary has also been reviewed, the proposed boundary is illustrated on **P2 - Figure 18**. The primary change is that parts of the light industrial area north of Dixon Road have been removed due to their separation from the broader RSC.

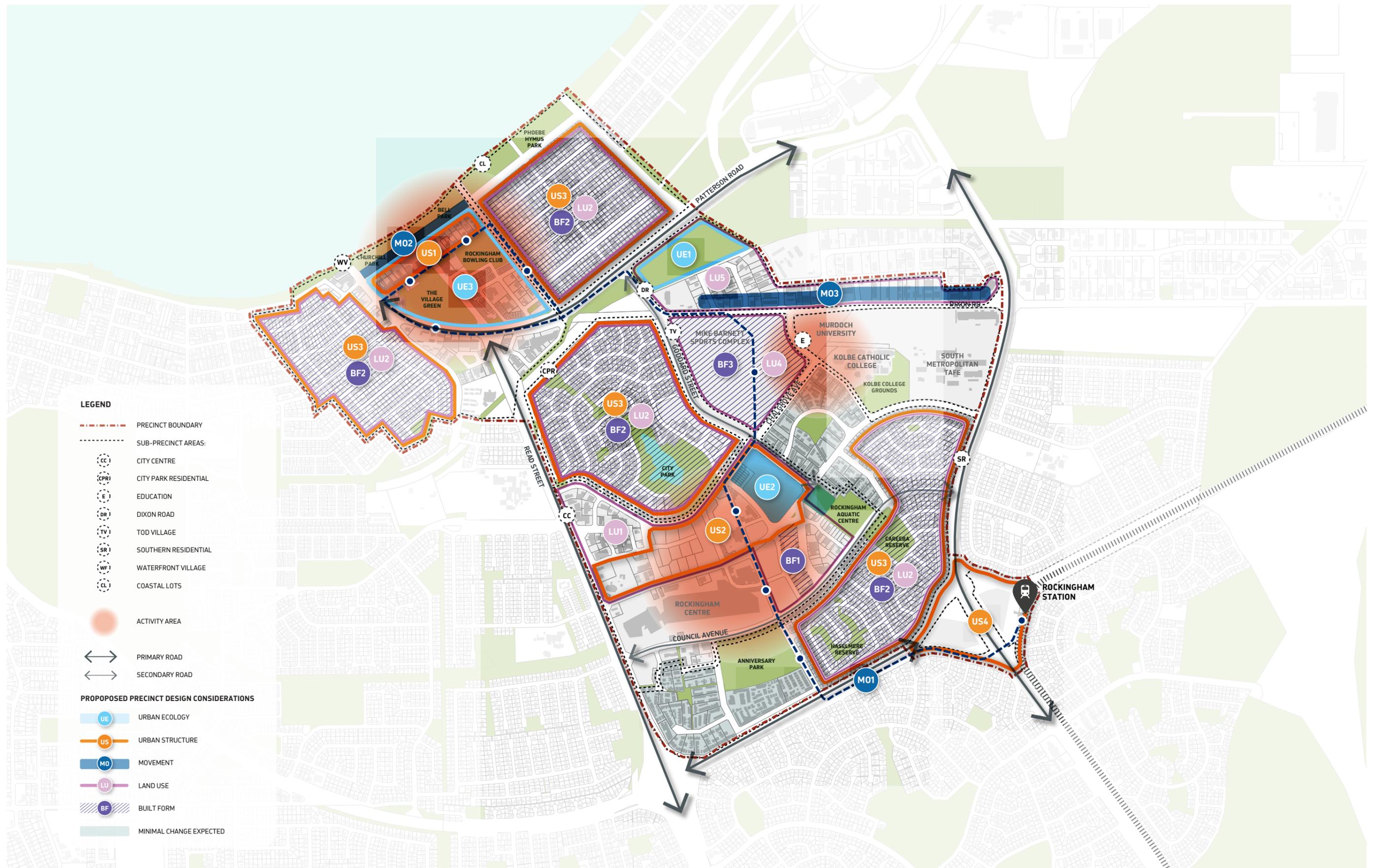
**P2 - Table 8: PSP - Key Design Considerations**

REF.	ISSUE / OPPORTUNITY	DESIGN CONSIDERATIONS / ACTIONS
UE-1	The existing remnant vegetation on Lot 501 Patterson Road and Lots 502 and 503 Dixon Road is located within a defined ESA. The current RCCTS alignment runs through part of this area, however, it needs to be considered that any clearing would require a flora and fauna study to be undertaken by the proponents prior to development and/or subdivision unless otherwise exempt.	Due to the identified environmental considerations and limited tree canopy in the light industrial area, it is recommended that the PSP design considers retention of some vegetation / green space in this area. However, this would need to be balanced against employment objectives and the RCCTS operational requirements.  Consideration could also be given to an alternate realignment for the RCCTS, if required.
UE-2	Lot 201 (Charlgrave Avenue) and Lot 103 (61 Council Avenue) contain conservation category wetlands. These areas require the highest level of protection, however, analysis of aerial imagery suggests that ongoing development and historic clearing have diminished their roles and function as wetlands.	Liaison with DBCA should be prioritised to ensure that development is possible, particularly on Lot 201. Analysis of aerial photography suggests that vegetation on Lot 103 looks to be in much better condition, further environmental investigations to determine quality are required.
UE-3	There is a concentration of properties listed on the municipal heritage inventory in the waterfront area on Kent Street and Rockingham Beach Road. These properties combined with various cultural and tourism facilities such as the Rockingham Arts Centre, Visitors Centre, Rockingham Museum and The Village Green.	Explore opportunity to build on this concentration of uses, possibly through the establishment of a cultural / arts precinct in the Kent Street area to celebrate Rockingham's heritage.
US-1	Kent Street is identified as having the potential to become a secondary main street, supporting the retail and entertainment functions in the foreshore area. However, there are currently limited defined and safe mid-block connections between Rockingham Beach Road and Kent Street. This is acknowledged in the existing Centre Plan, with potential connections and design provisions identified.	PSP design to map key desire lines and consider where appropriate mid-block connections could be provided. This should have consideration for the existing Centre Plan provisions (which will be reviewed), as well as land ownership and future desired land use / built form outcomes.
US-2	The urban structure of the City Centre will be essential in delivering the RSC's vision. A number of large, vacant lots and a convoluted road network both impact the existing urban morphology. Interventions in these areas are likely to be delivered over many years and development may be subject to future subdivision. Therefore, to ensure that the City Centre supports a highly permeable and flexible urban structure, consideration should be given to a revised road network with appropriate lot sizes that can accommodate different types of development in the short or medium term, while reducing the impact of achieving a long term vision.	PSP design to carefully consider design and provisions for large vacant lots to ensure they can cater for a diversity of short, medium and long term uses and are future proofed to adapt to long-term change if/when the City Centre's needs change.  <i>Linked to LU-1</i>

REF.	ISSUE / OPPORTUNITY	DESIGN CONSIDERATIONS / ACTIONS
US-3	Larger single residential lots offer opportunities to support medium density infill development. High fragmentation of ownership in these areas resulted in the existing Centre Plan including minimum lot provisions that require amalgamation. Stakeholders have raised some concerns with these requirements, highlighting that a review is required.	Design testing (supported by economic testing) should be undertaken to determine if the existing requirements are appropriate. It is imperative that any provisions ensure that quality infill can occur, guidance should be sought from the draft Medium Density Policy (SPP 7.3 - Volume 1).  <i>Linked to LU-2</i> <i>Linked to BF-2</i>
US-4	Existing physical barriers significantly limit the efficiency and effectiveness of the Rockingham Station walkable catchment. Interventions that improve station access (for pedestrians and cyclists) should be considered.	PSP to explore opportunities for new connections / infrastructure investment that could improve walkability in the Rockingham Station catchment.
PR-1	The RSC is a highly urbanised environment. Large road carriageways, at-grade parking and denser housing forms are all contributing to a limited tree canopy and present challenges for water sensitive urban design (WSUD). With major density increases proposed, it is imperative that these design elements are considered and prioritised.	PSP to explore opportunities to retain and increase the urban tree canopy and provide guidance on measures which can be implemented to support WSUD. Where possible, planting of natives should be considered as recommended by community.
PR-2	As described in LU-1 development and activation of the City Centre has been challenging due to a number of contributing factors. It has been observed that the City Centre lacks a defined heart. Key nodes such as Syren Street and the civic square have good qualities, but are not clearly linked. Due to wide roads and vacant lots, the human scale is sometimes lost. There is an opportunity for the public realm to play a leading role in activating underutilised parts of the City Centre.	PSP design to carefully consider opportunities for public realm interventions in the City Centre to assist with activation. Special attention should be paid towards Syren Street / Civic Boulevard, as these roads and frontages are proposed as being high activity areas.
PR-3	Developed over many years, the built and landscape character of the RSC varies. Each period of development brings unique qualities, though this has resulted in stark contrasts which make branding, wayfinding and 'place awareness' difficult.	PSP design to explore opportunities for a more consistent approach to delivery of public realm infrastructure (e.g. signage, furniture, paving). It is important though that localised sub-precinct character is still celebrated.  An example could include the RCCTS and supporting infrastructure (e.g. stops, shelters, paving and signage) being uses to create a suite of unifying landscape elements that define the RSC. This could allow the broader public realm design in each sub-precinct to reflect the unique character qualities.
MO-1	Establishment of the RCCTS will allow public transport to be strengthened throughout the RSC. Exploration of modes such as light rail or trackless tram will allow a defined Tier 2 transport system to be established, providing enhanced connectivity between the Rockingham Station, City Centre, Education Precinct and Rockingham Foreshore.  It also offers the added benefit of supporting increased densities, reducing pollution, easing traffic congestion, and incentivising development in the area, supporting precinct-wide sustainability.	PSP to ensure that RCCTS remains a central focus of design, with a focus on residential density and activation, as appropriate. Exploration of a refined alignment could be considered in light of new technology and other factors (such as feedback from PTA on current operations considerations, improved connections to TAFE).  As delivery is likely to occur over many years, opportunities to future proof the alignment through short-medium term interventions (such as bus priority and enhanced bus stop amenity) should also be considered.

REF.	ISSUE / OPPORTUNITY	DESIGN CONSIDERATIONS / ACTIONS
MO-2	Due to its popularity, the Rockingham Foreshore area and surrounds is a hive of activity, particularly at peak visitor times (e.g. on weekends). This has resulted in traffic increases and major demand for parking along Rockingham Beach Road. Parking demand management is recommended throughout the RSC, though addressing it here should be a matter of priority.	PSP to explore opportunities for a revised approach to traffic movement and parking management in high-activity areas such as the Foreshore and City Centre.  Review of RSMC Parking Strategy should be undertaken to inform analysis.
MO-3	Businesses within the light industrial area north of Dixon Road suffer from poor connectivity between each other. There are issues with easements which leads to traffic movements in and out of access driveways that increase congestion and crash risk.	PSP to explore opportunities to establish a more coordinated approach to access and parking in the light industrial area (along Dixon Road).
MO-4	Key activity areas such as the City Centre, Foreshore and Education Precinct are likely to support the greatest concentration of pedestrian and cyclist journeys. The current design of the movement network in the RSC still prioritises vehicle movement, with pedestrian movement only prioritised in some targeted areas (e.g. Syren Street and Rockingham Beach Road). Improving safety and quality of active transport journeys will be essential in supporting greater precinct activation.	PSP to define key pedestrian / cyclist routes and desire lines to ensure that built form, public realm and intersection design responses support safe and high-amenity connections. This will also include careful consideration of stops along the RCCTS alignment.
LU-1	Due to challenging market conditions and land ownership patterns, development in the City Centre has stagnated over the last decade. Many large lots have remained vacant, due to a conflict between long term vision and short term development feasibility. To stimulate activity and attract investment, consideration for more flexibility or interim development opportunities has been identified as a potential way forward by stakeholders.	PSP to interrogate and review existing planning provisions to identify where opportunities for flexibility could be considered. It is likely that this be focussed primarily in the City Centre, where development activity / interest is less pronounced.  <i>Linked to US-2</i>
LU-2	The existing large residential lots in the Coastal Lots and Southern Residential focus areas (refer US-3) are currently permitted residential densities between R60-R100, and heights ranging from 3-8 storeys. There are some concerns among the community for what this density looks like, and how it is delivered with such highly fragmented ownership.	Design / economic testing proposed in US-3 to also consider different approaches to residential density in light of draft Medium Density Policy (SPP 7.3 - Volume 1).  <i>Linked to US-3</i> <i>Linked to BF-2</i>
	In addition, consideration for SPP 7.2 feasibility requirements and draft principles and provisions set out in the draft Medium Density Policy (SPP 7.3 - Volume 1) will also be required with new approaches to deep soil, site cover potentially impacting existing Centre Plan controls.	
LU-3	The existing Centre Plan proposed concepts over the Dixon Road playing fields, in what is referred to as the 'Smart Village'. It is expected that the design would need to be revisited due to the following reasons: <ul style="list-style-type: none"> <li>+ The potential realignment of the RCCTS;</li> <li>+ Confirmed retention of the Mike Barnett Sporting Complex;</li> <li>+ Strong community desire to retain some open space;</li> <li>+ Consideration for retention of bushland and trees; and</li> <li>+ Community identified some concerns with the proposed built form controls in the existing Centre Plan.</li> </ul>	PSP to review and explore alternative design options for the Smart Village, having consideration for the existing context and any potential changes to the RCCTS. Any new development will be required to provide public/urban spaces, and should focus on residential density and white collar employment opportunities. Relevant urban structure and built form considerations will also need to be factored into the review.  <i>Linked to BF-3</i>

REF.	ISSUE / OPPORTUNITY	DESIGN CONSIDERATIONS / ACTIONS
LU-4	Key stakeholders such as Kwinana Industries Council and Development WA signalled a clear intent that encroachment of sensitive land uses (e.g. residential) into the Kwinana Industrial Area buffer need to be avoided at all costs.	PSP to provide clear guidance on land use permissibility within the Kwinana Industrial Area buffer to ensure continuity and integrity of employment lands adjacent to the RSC.
LU-5	Rockingham's employment profile has the opportunity to create additional jobs which support greater diversity of employment within the RSC, and improve employment self-containment. Planning of future floorspace in the precinct needs to consider how employment generating land can be clustered, to establish defined commercial hearts.	PSP to carefully consider how employment floorspace is distributed throughout the RSC's commercial areas. An approach which ensures consolidation in key areas should be prioritised.
BF-1	The existing Centre Plan promotes development types that embody 'main street' principles and high street activation. Whilst sound in theory, the current models that have been delivered in the City Centre are not operating effectively. Many businesses use blinds and other measures to block out glazed areas, with access to businesses promoted from the rear car parks not the street meaning true activation is not being achieved.  New research into how buildings interface with the street should be considered to get the balance right. A blurring of the private / public sphere through landscaping and other measures can promote greater opportunities for people to interact in the street, be it a commercial or residential use.	PSP design should consider design testing that explores different approaches to street activation to deal with active street edges. It is acknowledged that different building types and sub-precincts in the RSC will require unique approaches.
BF-2	See LU-2.	Review of planning provisions proposed in LU-2 to also consider built form envelopes, focussing specifically on elements such as building heights, setbacks, street activation.  <i>Linked to US-3</i> <i>Linked to LU-2</i>
BF-3	See LU-3	Design testing proposed in LU-3 to also consider built form envelopes, focussing specifically on elements such as site cover, building heights, setbacks, deep soil and open space. Privacy and open space will also need to be considered.  <i>Linked to LU-3</i>



P2 - Figure 18: PSP - Response to Context



# 02



---

## STAKEHOLDER AND COMMUNITY PARTICIPATION

## 2.1 ENGAGEMENT SUMMARY

In preparing the RPSP, preliminary stakeholder and community engagement was undertaken between June - August 2021. In order to seek feedback, the following engagement activities were undertaken for the project:

- + Community and business workshops
- + Individual stakeholder meetings
- + Online interactive mapping tool
- + Online survey

A summary of the feedback received and the outcomes that have informed the RPSP are provided below. A copy of the full engagement report is provided in **Appendix 7**.

### 2.5.1 SUMMARY & OUTCOMES

The community and businesses who engaged with this first phase of the planning framework review, were extremely passionate about the area. The project team received a broad range of feedback. The key themes identified throughout the engagement period are outlined and categorised based on the design principles of SPP 7.2 - Precinct Design. A high-level summary is provided below.

#### **URBAN ECOLOGY**

- + Strong support for use of natives.
- + Support for more greenery, landscaping, wildlife corridors etc.

#### **URBAN STRUCTURE**

- + Suggestion for improved permeation for pedestrian movement.
- + Suggestions around traffic movement along Rockingham Beach Road.

#### **PUBLIC REALM**

- + Support for improved pedestrian environment - paths, lighting, crossings etc.
- + Support for play spaces and recreation facilities.
- + Support for more greenery.
- + Support for activating the foreshore.
- + Support for beautification of area e.g. through artwork, colour, greenery etc.

#### **MOVEMENT**

- + Support for improved cycling networks/ facilities.
- + Support for good pedestrian network (paths, crossings).

- + Suggestion to reduce traffic speeds and volumes along Rockingham Beach Road.
- + Support for more parking.
- + Suggestion for a free CAT service/ shuttle through the precinct.

#### **LAND USE**

- + Support for more entertainment and active uses.
- + Support for community, arts and culture facilities.
- + Support for sport and recreation facilities.
- + Support for proposed marina.

There was divergent perspectives on dwelling types and land uses dependent on the area within the RSC.

#### **BUILT FORM**

- + Support to update and modernise old buildings
- + Suggest for design that reduces concrete on buildings.

There were divergent views on building types, densities and building heights dependent on the area within the RSC.

### VISION AND PRINCIPLES

During the engagement there were no direct comments from the community regarding the validity of the existing Centre Plan vision. Notwithstanding this, some clear themes and elements (highlighted in **Appendix 7**) were valued by the community, but not adequately captured in the existing vision.

In reviewing the existing vision there was an opportunity to include greater reference to some of these themes. Interweaving commonly reported elements such as 'greenery', 'pedestrian focused' and 'unique coastal atmosphere' will allow for a tangible response to the pre-engagement outcomes, and a more distinguished precinct vision.

These common themes were carried through and referenced in the RPSP Vision and Principles (provided in **Section 03**).

### PLANNING SYSTEM AND FRAMEWORK

A key theme raised by the businesses community was the need to ensure greater flexibility in the planning framework to respond to market needs. However, this needs to be balanced with enough robustness to provide certainty.

Having a robust, flexible planning framework will provide land owners and developers greater scope to develop and activate their property whilst also ensuring the long term vision of the RSC can be achieved.

### RAISING PUBLIC AWARENESS

During the engagement process it became evident that there was a lack of awareness of the existing Centre Plan. This represents an opportunity for this process to enable a greater level of awareness of the RPSP, providing a clear framework for all.

### 2.5.2 KEY ENGAGEMENT STATISTICS

- + 10,000 people aware (impressions on social media, website visits, document downloads etc)
- + 2,076 total visits to Social Pinpoint with 532 unique users.
- + 119 contributors on Social Pinpoint
- + 408 people directly engaged (127 surveys, 62 comments, 173 Facebook comments, 46 people (workshops).
- + Approximately 15 meetings were also held with key stakeholders (e.g. government departments, major landowners etc.).



# 03



---

## VISION

# 3.1 VISION

The vision for the RPSP is:

Rockingham leverages off its *unique coastal atmosphere* to establish a *green and walkable* centre that offers a *diversity of uses and building types*, *celebrates local culture*, and promotes a relaxed lifestyle. It is a *regional employment destination* that connects its *distinct activity hubs* via a *high-frequency public transport*.

## CELEBRATE



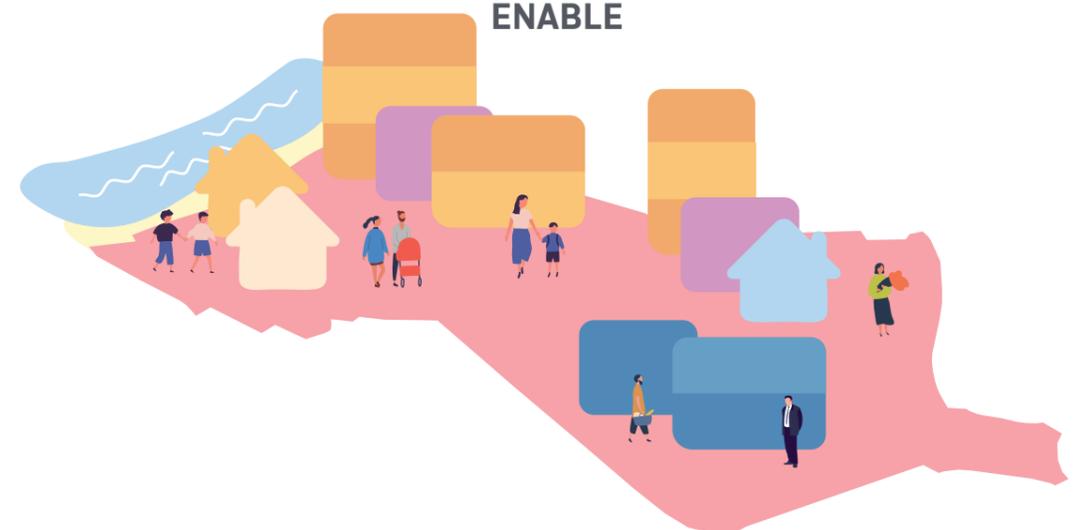
- + Embrace the relaxed, welcoming ambiance of a coastal lifestyle in streets and public spaces.
- + Value the rich tapestry of cultural and social experiences are found throughout Rockingham's diverse neighbourhoods.
- + Promote the Rockingham foreshore as a unique natural place that builds on a proud legacy.

## CONNECT



- + Enhance a city-wide green network that links people, businesses and neighbourhoods through natural landscapes.
- + Promote a transit alignment that brings Rockingham's station, city centre and foreshore together in a sustainable, accessible and reliable way.
- + Design streets beyond car movement, with important place values promoted through urban development and street upgrades.

## ENABLE



- + Unlock opportunities for diverse housing options to attract residents from though different life stages.
- + Realise land and development potential that activates vibrant urban centres along Rockingham's transit route.
- + Encourage business opportunities and local employment to support sustainable growth of the City.



# 04



---

## DESIGN ELEMENTS

OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>O 1.1</b> To protect, enhance and respond to the ecological systems of the precinct.	<b>C1.1.1</b> Identify and respond to the topography and landscape of the precinct and its surrounding area.	
	<b>C1.1.2</b> Identify opportunities to develop and/or enhance the extent, connectivity and quality of the green network.	
	<b>C1.1.3</b> Consider the total water cycle and how any proposed management responds to the hydrological system, the site and its development context.	
	<b>C1.1.4</b> Identify opportunities to support habitat protection and enhancement in the precinct.	
<b>O1.2</b> To enhance sense of place by recognising and responding to Aboriginal, cultural and built heritage	<b>C1.2.1</b> Acknowledge and incorporate local Aboriginal knowledge, concepts and stories of place.	
	<b>C1.2.2</b> Consider and integrate cultural heritage of the area into the precinct design.	
	<b>C1.2.3</b> Identify and incorporate unique built features, including built heritage, into precinct design.	
<b>O1.3</b> To reduce the environmental and climate change impacts of the precinct development	<b>C1.3.1</b> Identify opportunities to retain existing trees and enhance the tree canopy through new planting.	
	<b>C1.3.2</b> Consider the influence of the precinct design on energy demand and review the potential for precinct scale energy generation, distribution and storage.	
	<b>C1.3.3</b> Prioritise consideration of waste management at the relevant scale in line with low-waste, circular economy objectives.	
	<b>C1.3.4</b> Promote water conservation including water reuse and recycling.	
	<b>C1.3.5</b> Evaluate the performance of precinct development proposals against leading Australian sustainability performance standards.	

## 4.1 URBAN ECOLOGY

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 1: Urban Ecology can be summarised as follows:

- + The RSC is 'urban' in nature, the natural environment has gradually been replaced by buildings. Tree canopy is quite limited throughout the majority of the precinct, as such tree retention and tree planting are a high priority.
- + A range of environmental factors such as ESAs, conservation category wetlands, bushfire prone land are all important considerations from a development perspective.
- + The concentration of heritage listed properties and various cultural and tourism facilities in the Kent Street area represent a good opportunity to promote establishment of a heritage and cultural precinct.

### DESIRED OUTCOMES

A site responsive and holistic design approach that carefully considers the interrelationship of the built, cultural and natural characteristics that make Rockingham special.

- + Development in Rockingham considers the natural environment, enhancing existing ecological systems through public realm design.
- + Local culture and heritage is referenced in landscape and building design to establish a sense of place that is uniquely Rockingham.
- + Enhance the tree canopy within the urban environment to promote climate resilience, improve shade and shelter, enhance sense of place, and improve biodiversity outcomes.
- + Promote environmentally sustainable practices, including resource efficiency (energy, water, waste, air quality, material selection, urban green infrastructure) at all stages of development.

### 4.1.1 NATURAL ENVIRONMENT

As a predominantly flat, built up urban environment the general approach taken for the RSC has been to celebrate, enhance and better connect existing natural areas and parklands. This is demonstrated on **P2 - Figure 20** (Urban Structure Plan) and **P2 - Figure 21** (Public Realm Plan), where enhanced green spaces are interlinked to form more defined ecological corridors. The area of most environmental significance to the RSC is that contained within the foreshore reserve, the RPSP design ensures protection and celebration of this area. With regard to the potential environmental impacts of the proposed RPSP design, an assessment was undertaken by Cardno which found the following:

**Environmental Sensitive Areas** (refer to **Appendix 2** for further details)

- + A conservation category wetland is mapped within an area proposed for clearing as part of the implementation of the RPSP.
- + Priority and threatened species are known to occur in the area and might be disturbed as part of the RPSP proposals.

**Contaminated Sites** (refer to **Appendix 2** for further details)

- + The land parcel at 25 Rockingham Beach Road is classified 'Contaminated – remediation required' by the DWER. This site is proposed for a major development site, it is anticipated that some level of environmental investigation/potential remediation will be required to ascertain the site is suitable for the proposed land use.
- + The land parcels at 7 McNicholl Street have been classified 'remediated for restricted use' by the DWER. It is noted that the RPSP plans for a residential use (Major Development Site) at this site. The development is likely to involve earthworks and the disturbance of the Asbestos in soil contained beneath the capping layer in place.

Mitigation strategies associated with the above environmental impacts are summarised in **P2 - Table 9**, with relevant information included within the Part One Subdivision and Development Requirements to ensure all appropriate measures are taken to mitigate the environmental impact.

**P2 - Table 9: Environmental Mitigation Strategies**

ITEM	POTENTIAL IMPACT	MITIGATION
ESA	Clearing of a conservation category wetland	Conduct a wetland identification and/or delineation investigation on Lot 201 Chalgrove Avenue and Lot 103 Council Avenue to reassess the wetland's status in consultation with the DBCA for the existing mapped wetland area to be modified wholly, or in part to the status of 'No longer a wetland'.  Proponents to prepare Development of an environmental management plan and obtain any necessary clearing permits at development and/or subdivision stage.
	Disturbance of endangered/critically endangered TEC	Conduct appropriate Flora and Fauna Studies and impact assessments on Lot 501 Patterson Road, Lots 502 and 503 Dixon Road, and Lot 1511 Dowling Street (Mike Barnett Sports Complex) and obtain any necessary clearing permits prior to any clearing of existing vegetation and/or bushland. Proponents to prepare an environmental management plan at development and/or subdivision stage.
Contaminated Sites	Disturbance of Asbestos/contaminated soil	Develop and implement an asbestos management plan and construction environmental management plan (AMP/CEMP) as required.  Development of an environmental management plan at development stage.
	Suitability of site for proposed land use	Conduct further environmental assessment prior to ground disturbance to determine remediation requirements and land use suitability.  Development of an environmental management plan at development stage.

### 4.1.2 ABORIGINAL, CULTURAL AND BUILT HERITAGE

**Section 1.4.6** provides a high-level overview of the existing heritage qualities and sites located within the RSC. This section sets out the ways in which the RPSP can help meet the City's vision for heritage:

*To improve awareness and foster a greater appreciation of the City's rich and diverse heritage; and to collaborate with our community and key stakeholders to protect, preserve, enhance and celebrate our heritage for the benefit of the current and future generations.*

*City of Rockingham Heritage Strategy 2020*

Heritage in the RPSP is addressed with consideration for the tangible and intangible aspects of Natural Heritage, Aboriginal Heritage, and Historic Heritage (as defined in the Heritage Strategy).

#### NATURAL HERITAGE

Due to ongoing urban development, the tangible natural heritage of the RSC is primarily emblemised by the Rockingham Beach Foreshore and the coastline itself. Foreshore conservation, combined with the heritage listed Churchill and Bell Parks ensures an attractive urban park which features over 100 trees planted in wide avenues. These spaces have historic value for their association with the beautification of the Rockingham Beach foreshore which begun in the 1920s and has since been enjoyed for many decades.

The RPSP seeks to preserve and celebrate the foreshore through continued implementation of the Rockingham Beach Foreshore Master Plan.

#### ABORIGINAL HERITAGE

Celebrating local Aboriginal cultural heritage, including intangible elements such as language, traditional skills, stories, songs, oral history and knowledge is identified as an area of improvement. Developing a shared understanding of the significance of the Rockingham landscape to Aboriginal people can help improve sense of belonging and create more inclusive places. The Rockingham Beach Foreshore Master Plan, through engagement with the City's Aboriginal Advisory Group begun to identify opportunities where recognition or interpretation of local Nyungar stories could be delivered in the public realm.

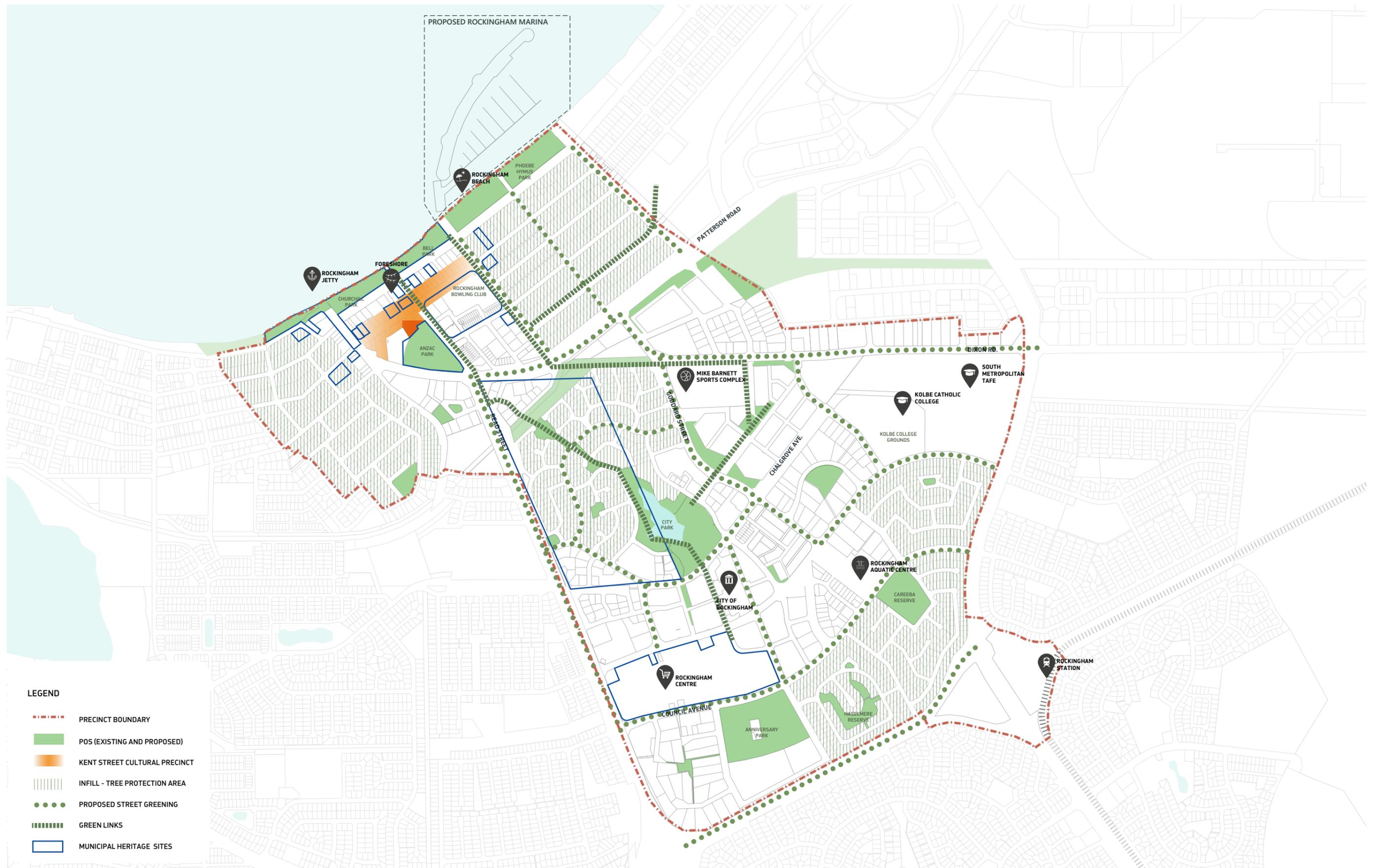
Beyond the foreshore, the City are in the process of conducting a broader study which looks at how the representation of Aboriginal people can be enhanced through built and landscape design. The RPSP supports and acknowledges the need to implement the outcomes of this study when complete.

The link between Aboriginal Heritage and how this could be translated into improved sense of place and belonging through public realm design is provided in **Section 4.3.3**.

#### HISTORIC HERITAGE

As described in Section 1.4.2 Precinct History development in Rockingham was first established in areas surrounding the waterfront. The patterns of use throughout the RSC's history has seen the majority of local heritage sites located in this area as shown on **P2 - Figure 19**.

In more recent times, establishment of cultural uses such as the Rockingham Visitor Centre, Rockingham Museum, and Rockingham Arts Centre have helped form an important hub. Recognition of this unique blend of historic, cultural, and social significance is celebrated through the Kent Street Cultural Precinct. Which is envisioned as a place that embellishes local history and stories, helping to shape the distinct identity and sense of place in the Rockingham Foreshore area.



- LEGEND**
- PRECINCT BOUNDARY
  - POS (EXISTING AND PROPOSED)
  - KENT STREET CULTURAL PRECINCT
  - INFILL - TREE PROTECTION AREA
  - PROPOSED STREET GREENING
  - GREEN LINKS
  - MUNICIPAL HERITAGE SITES

P2 - Figure 19: Urban Ecology Plan

### 4.1.3 TREE CANOPY

The City of Rockingham Greening Plan advocates that the retention, protection and enhancement of green space has a multitude of environmental, social and economic benefits for the City.

Trees provide shade to buildings, outdoor recreational spaces, pavements and parking areas, lowering ambient temperatures and assisting in reducing adverse Urban Heat Island (UHI) effects and electricity use. This issue is increasingly important due to current patterns of tree canopy loss and forecast temperature increases due to climate change. Improving tree canopy also supports habitat protection, provides cleaner air, stormwater infiltration, and reduces energy use for cooling.

In the suburb of Rockingham, it was determined that 83% of canopy cover was located within private land<sup>1</sup>. This highlights that whilst street tree planting will be essential, putting measures in place to promote tree retention within existing private lots will also be required.

The RPSP proposes the following measures to improve tree canopy:

- + Street tree planting of key streets and public spaces to promote active transport through creation of quality, attractive links (refer to Public Realm Plan on **P2 - Figure 21** for further details); and
- + Development controls which promote tree retention where infill development is proposed (refer to lot testing provided in **Section 4.6.2**).

#### STRATEGIES TO INCREASE URBAN TREE CANOPY DIVERSITY

Current best practice suggests that a diverse range of tree species and types is vital to a healthy urban forest.

The existing convention of planting avenues of consistent tree species, can limit species diversity. Whilst it is noted that avenue plantings are important to local character in many streets within the City, in order to balance these two differing planting strategies, the following strategies can be used:

- + Establish existing streets most important to maintain with continuous avenues and limit use elsewhere;
- + Where logical 'breaks' occur in existing avenues, such as intersections, trees species should reflect similar size, form and character;
- + Where existing trees within avenues need replacing, trees species should reflect similar size, form and character;
- + Use asymmetrical planting within some streets where one side of the street may retain avenue planting, with the other side a mixed range of species;
- + Use informal mixes of species, including deciduous and evergreens with a preference for deciduous trees adjacent to heritage buildings; and
- + Use existing parks and open spaces to plant a diverse range of species to augment existing residential areas.

<sup>1</sup> City of Rockingham Greening Plan 2017.

### TREE PLANTING PRINCIPLES

In meeting the RPSP's vision for creating a more green Rockingham, the following tree planting principles are proposed to guide future greening initiatives.



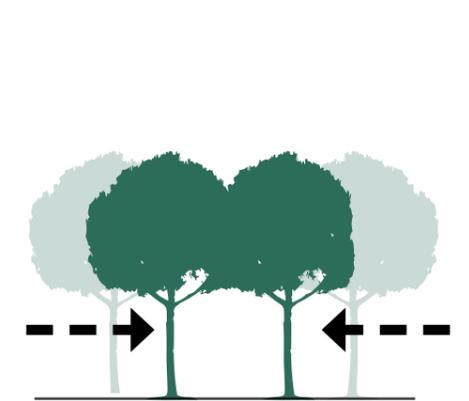
#### 1. DIVERSITY OF SPECIES

Plant a diversity of tree species to provide a resilient urban forest, and a range of different trees for different conditions.



#### 2. HABITAT & BIODIVERSITY

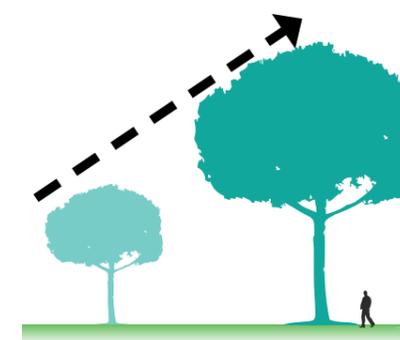
Promote the use of appropriate endemic and native tree species that offer biodiversity and habitat benefits, and utilise species that are a food source for Carnaby's Cockatoo's.



#### 3. CLOSE SPACING

Planting trees with a close spacing to provide a quick increase in canopy cover and a continuous and connected canopy cover.

Trees planted closely will develop more upright forms, and be less susceptible to wind damage.



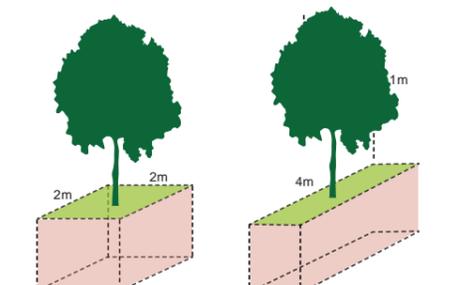
#### 4. PREFERENCE LARGE

Large, broad canopied trees to provide significantly greater benefits when compared to smaller trees. These include greater shade and cooling, reduction in stormwater flows and reducing air pollution.



#### 5. WATER SENSITIVE URBAN DESIGN

Utilising best practice WSUD to reduce and treat storm water flows, and promote sustainable water management.



#### 6. MAXIMISE SOIL WIDTH & VOLUME

To enable proposed trees to thrive into the future, a minimum surface area of 4m<sup>2</sup>, with deep soil is to be provided. In areas where multiple trees are planted in groups this can be reduced to 3m<sup>2</sup>.

The 4m<sup>2</sup> can be modified to account for varying urban conditions.

#### 4.1.4 WATER MANAGEMENT

To support the RPSP, Cardno prepared a Water Management Strategy (WMS) which considers best practice water management principles, that can be embedded into the precinct planning. The WMS outlines stormwater infrastructure and water management approaches required to accommodate land use changes resulting from the proposed development. Implementation of the WMS will maximise opportunities for sustainable long-term use of the precinct, balanced against the growth, climate and environmental challenges for the site.

The WMS is provided in **Appendix 1**, it has been developed to achieve the following objectives:

- + Present Water Sensitive Urban Design (WSUD) options that could be applied to the precinct;
- + Determine the proposed drainage parameters and existing flood capacity of the development site;
- + Consider stormwater management options which could be utilised, including reuse opportunities;
- + Consider precinct level, total water cycle management options and provide a multi-criteria analysis for consideration including economic, environmental and other constraints; and
- + Consider alternative water sources to be used within the development (potable and non-potable).

In achieving the above objectives, the WMS has reviewed and provided an assessment of the following aspects:

- + **Water Balance** - to understand the change in regime between aspects of the total water cycle;
- + **Water Supply and Wastewater** - to understand how future development can adequately be serviced by long-term water and wastewater planning;
- + **Water Efficiency Measures** - which explore how the City can achieve its water efficiency targets in accordance with its accreditation as a Gold Waterwise Council;
- + **Stormwater Management** - which considers the impacts of future density increases on major and minor drainage infrastructure;
- + **Stormwater Detention Measures** - which explores how future development will impact the ability of urban areas to appropriately detain water;
- + **Water Quality Management** - which ensure that appropriate non-structural and structural controls and be put in place to manage water quality; and
- + **Groundwater Management** - which seeks to manage and protect groundwater resources.

Based on the review of the proposed RPSP land use approach the following options have been deemed the most relevant to the study area and were reviewed within the Multi Criteria Analysis:

1. Soakage well systems on lot level;
2. Regional bioretention/ detention basins;
3. Bio-swales along road frontage;
  1. Rainwater tanks;
  2. Treated stormwater & wastewater for irrigation; and
  3. Aquifer re-injection.

#### 4.1.5 ENERGY AND CLIMATE CHANGE

In a rapidly urbanising environment, it is fundamental to the prosperity, identity and lifestyle of RSC residents that the City commits to the protection and enhancement of the environment, to ensure it is sustainably managed for future generations to enjoy.

The City have prepared a Sustainability Strategy (2020) which sets out a series of priorities and actions across Energy and Emissions, Water, Waste and Resources, and Health and Nature. These actions relate to a number of key issues.

How the RPSP can assist in supporting implementation of the City's Sustainability Strategy is summarised below:

***Key Issue 3 - The City is not currently working towards carbon neutral or carbon negative status, in line with best practice climate change adaptation.***

The subdivision and development requirements included within Part One of the RPSP strongly advocate for the use and implementation of renewable energy measures to assist the City in reducing its energy use. This is especially important, as the RSC is proposed to increase its urban footprint substantially over the next few decades.

***Key Issue 9 - To date, there has been no overarching strategic framework for the analysis, prioritisation and provision of sustainable transport infrastructure.***

**Section 4.4 Movement** provides details on the measures and opportunities which the RPSP has put in place to assist with a reduction in localised vehicular traffic. More specifically, it focusses on initiatives which could see an increase in more sustainable transport modes such as public transport and active transport.

***Key Issue 10 - Environmentally sustainable design principles and green infrastructure initiatives are encouraged through the existing planning framework in broad terms, however, the need for a local policy position to address gaps and promote sustainable development outcomes requires further investigation.***

The RPSP acknowledges that new development needs to be better at considering its impact on the built and natural environment. A well-considered design testing exercise has explored how new development can contribute to an improvement in the overall landscape of the RSC through a greater focus on landscaping and greenery, to help combat climate change and the impacts of UHI. This also includes measures associated with planting of waterwise plant species.

OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>02.1</b> To ensure the pattern of blocks, streets, buildings and open space responds and contributes to a distinct, legible precinct character	<b>C2.1.1</b> Design the urban structure in response to the existing or intended future precinct character.	
	<b>C2.1.2</b> Create blocks and lots of the appropriate size, proportion and orientation to support the intended character and functions of the precinct.	
	<b>C2.1.3</b> Identify existing key landmarks to create view corridors and highlight destinations and focal points within the urban structure.	
<b>02.2</b> To promote an urban structure that supports accessibility and connectivity within and outside the precinct	<b>C2.2.1</b> Design a legible, interconnected and functional urban structure that supports ease of movement to and through the precinct.	
	<b>C2.2.2</b> Develop an urban structure that gives priority to safe walking and cycling, with a focus on achieving 400m and 800m walkable catchments around nodes of activity and public transport hubs.	
	<b>C2.2.3</b> Identify opportunities to create new or enhance existing connections to and through the precinct.	
<b>02.3</b> To ensure the urban structure supports the built form, public realm and activity intended for the precinct.	<b>C2.3.1</b> Provide block configurations that support the function and amenity of the precinct.	
	<b>C2.3.2</b> Design lots (size and configuration) that can support intended retail, commercial and mixed use development.	
	<b>C2.3.3</b> Design lot layouts to respond to local climate, topography and existing natural features, while supporting intended built form.	
	<b>C2.3.4</b> Design an urban structure that can accommodate lots for large format uses outside the precinct core where desired.	
	<b>C2.3.5</b> Create an urban structure that contributes to the development of accessible, safe and well located public spaces.	
<b>02.4</b> To ensure an adaptable urban structure that can respond to and facilitate change within a precinct.	<b>C2.4.1</b> Develop a street block pattern that can accommodate change over time.	
	<b>C2.4.2</b> Identify long-term strategic opportunity/catalyst sites and detail how they are to be protected from under-development.	
	<b>C2.4.3</b> Illustrate the relationship between the proposed urban structure and precinct staging.	

## 4.2 URBAN STRUCTURE

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 2: Urban Structure can be summarised as follows:

- + The RSC's two primary mixed use nodes (City Centre and Waterfront Village) include large urban blocks, which in some cases lack clear, defined and safe connections. There is a need to 'break down' these blocks to create more permeable and walkable urban environments.
- + There is a prevalence of larger single residential lots throughout the RSC, these areas offer opportunities to support medium density infill development. However, high fragmentation of ownership presents land assembly challenges, which require further exploration to ensure quality outcomes can be achieved.
- + Access to Rockingham Train Station is notably poor, the true walkable catchment is severely limited by the existing urban structure with major roads and a lack of pedestrian / cyclist connections. Interventions which explore enhanced connectivity are desired.

### DESIRED OUTCOMES

Rockingham's urban structure is flexible and adaptable. Lot and street block sizes respond to context, support active transport, and can accommodate a variety of land uses and building types.

- + Street and block configurations in the City Centre and Foreshore are "fine grained", supporting a highly-permeable urban scaled townscape that promotes pedestrian movement.
- + Connectivity for pedestrians and cyclists throughout the RSC is improved through creation of interconnected 'Green Links' which bridge the gap between green nodes and urban areas.
- + Development in existing low density residential areas provides an urban framework that supports delivery of high-quality infill outcomes.
- + New development to consider flexibility and adaptability to accommodate future change.
- + The orientation and configuration of new lots / street blocks carefully considers local climate, optimising solar access and natural ventilation.
- + Interventions into the existing urban environment ensure improved access to Rockingham Station within its walkable catchment.

## 4.2.1 URBAN STRUCTURE APPROACH

The urban structure of the RSC has been considered at two scales: precinct and sub-precinct. At the precinct scale, there are a number of influencing factors driven primarily by existing land use, movement, and public open space patterns. Having been developed over more than 50 years the context analysis (undertaken in **Section 1.4.4**) determined that there were a number of defined sub-precincts in the RSC.

The sub-precincts are illustrated on **P2 - Figure 20**. These sub-precincts are used in the RPSP as a way of developing localised design responses and development controls where required.

### LAND USE / PRECINCTS

The identified sub-precincts typically include clear land use agglomerations and unique character qualities. This is influenced by historical development patterns and land use types guided by the previous Centre Plan.

To enable place responsive urban structure outcomes in each of the sub-precincts, their desired future character is summarised in **P2 - Table 10**. Resultant land use and built form responses at the sub-precinct scale are provided in **Section 4.5** and **Section 4.6**.

### WALKBLE CATCHMENT AND KEY CONNECTIONS

One of the primary challenges in the RSC is that the various sub-precincts are somewhat isolated and independent of each other. Large internal roads such as Dixon Road, Patterson Road, Goddard Street and Council Avenue perform important functions as key connectors, however, in some cases their scale contributes to a severance of neighbourhoods which limits pedestrian and cyclist connectivity between sub-precincts.

A primary focus of the proposed RSC urban structure is to blur the lines between sub-precincts, contributing to a more integrated and interconnected centre that is less car oriented. Specific initiatives include:

- + Realignment of the RCCTS to provide defined public transport links between sub-precincts. This link provides the impetus to concentrate development activity within an 800m walkable catchment of key stops and nodes along the link (refer to **Section 4.4.1**).
- + A landscaped network of pearls is also proposed, with the intent being to use greenery and the public realm to connect key nodes and sub-precincts together through 'Green Links'. For example this includes a continuation of the existing City-Waterfront link which currently terminates at the northern extent of the City Park Precinct (refer **Section 4.3.2**).

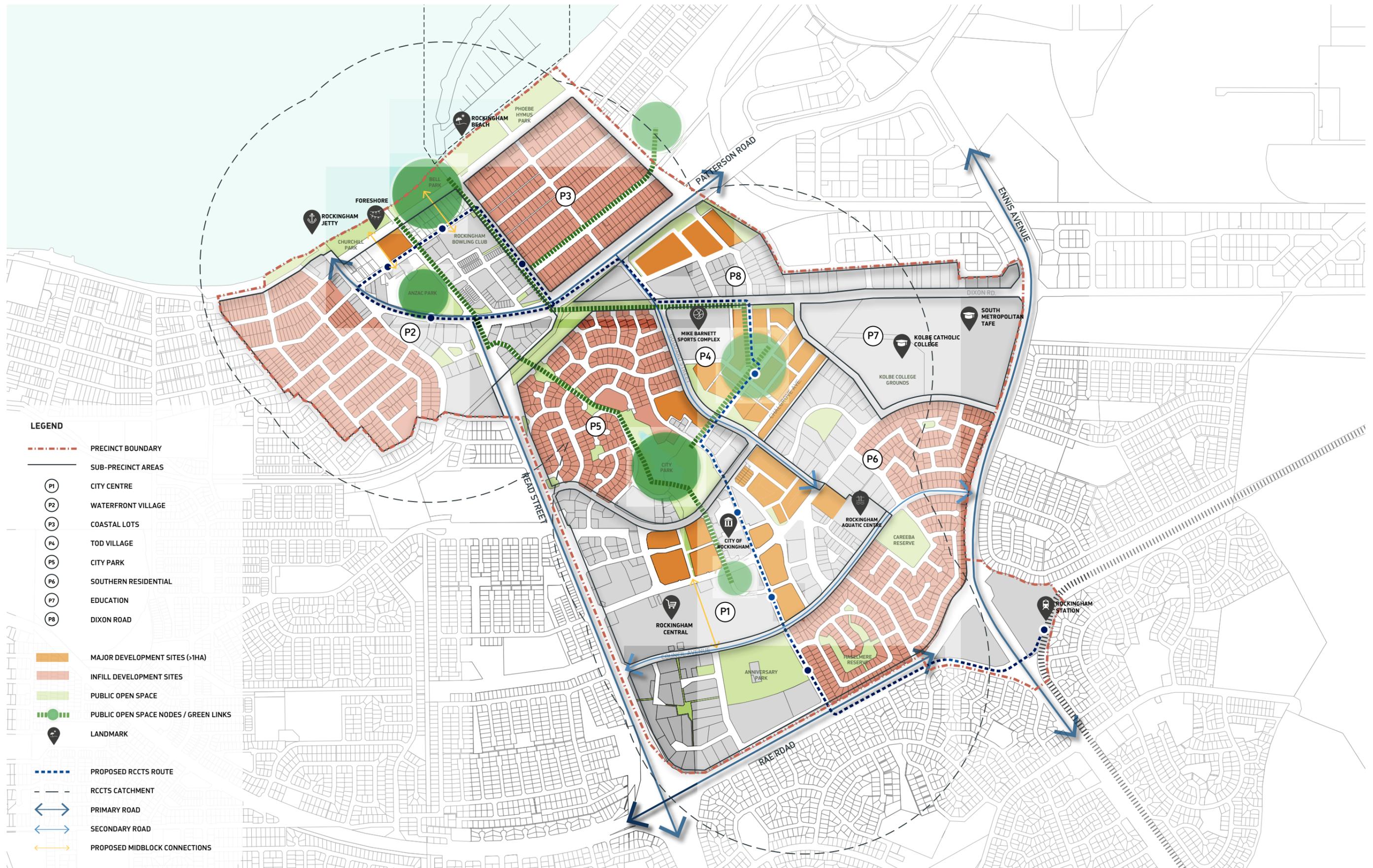
### VACANT AND UNDERUTILISED LAND

The City Centre, Waterfront Village, and City Village Precincts include a number of large underutilised and/or vacant land parcels. These catalyst sites are identified on **P2 - Figure 20**, proposed lot configurations demonstrate an approach that focusses on flexibility and adaptability. Street block widths promote greater opportunities for walkability, and lot depths ensure that a range of residential and non-residential uses could be accommodated.

Protecting these sites from 'under development' is essential in delivering on the PSP vision. As such, specific land use and built form outcomes are provided in **Section 4.6**.

**P2 - Table 10: Intended Sub-precinct Character**

PRECINCT	KEY FEATURES	DESIRED PRECINCT CHARACTER
<b>Precinct 1 - City Centre</b>	<ul style="list-style-type: none"> <li>+ Rockingham Central</li> <li>+ Civic and administrative functions</li> <li>+ Syren Street food and beverage precinct</li> <li>+ Large vacant super lots</li> <li>+ Aquatic Centre</li> </ul>	Anchored by the shopping centre and civic precinct, the City Centre will provide the primary economic and employment focus of the RSC. Higher density housing and new commercial development creates a critical mass of people who enjoy a highly permeable and walkable urban structure, that connects major public spaces with public transport on Contest Parade. New development provides a positive and well-defined street interface, where pedestrians and cyclists enjoy priority over vehicles.
<b>Precinct 2 - Waterfront Village</b>	<ul style="list-style-type: none"> <li>+ North facing foreshore reserve and beachfront</li> <li>+ The Village Green</li> <li>+ Concentration of art, cultural and other community functions.</li> </ul>	The Waterfront Village will continue its transformation into a regionally significant beachfront hub with further redevelopment of under-utilised public and private properties. An attractive mix of medium to high density residential and short-stay accommodation, hospitality-focussed retail, offices and recreation uses will combine to make this a priority destination on the Rockingham coastline for locals and tourists alike.
<b>Precinct 3 - Coastal Lots</b>	<ul style="list-style-type: none"> <li>+ Large quarter acre lots are prominent</li> <li>+ Surrounded by recreation nodes to north, east and west</li> </ul>	High-quality medium density development supports quality urban infill outcomes along the RCCTS. A combination of grouped and multiple dwelling typologies enable an increased density, balanced with generous street setbacks and open space to ensure improved tree canopy.
<b>Precinct 4 - TOD Village</b>	<ul style="list-style-type: none"> <li>+ Mike Barnett Sporting Complex</li> <li>+ Existing mature trees</li> <li>+ Largely vacant</li> </ul>	Extension of the RCCTS represents a strategic TOD opportunity that provides for contemporary higher density development opportunities, which integrate with the existing landscape and retained Mike Barnett Sporting Complex. The transit stop includes a well landscaped central park and local centre that creates a destination and amenity to support growth in the precinct.
<b>Precinct 5 - City Park</b>	<ul style="list-style-type: none"> <li>+ City Park</li> <li>+ Autumn Centre (community centre)</li> <li>+ Existing low density residential</li> </ul>	The Autumn Centre is expanded and existing single detached dwellings are largely retained, with the framework supporting future long-term growth and development through infill. New development is focussed primarily on Goddard and McNicholl Streets providing density along the RCCTS.
<b>Precinct 6 - Southern Residential</b>	<ul style="list-style-type: none"> <li>+ Rockingham Station / Par and Ride</li> <li>+ Well serviced by local parks (Anniversary Park, Haselmere Reserve, Careeba Reserve)</li> <li>+ High concentration of strata properties</li> <li>+ Curvilinear street pattern</li> </ul>	<p>High-quality medium density development support sensitive and quality urban infill outcomes, primarily in the form of grouped dwellings and small scale apartment typologies. Heights are generally between two-three storeys, and generous street setbacks align with the existing character of the area.</p> <p>Existing areas with high concentrations of strata properties are highly unlikely to change in the near term.</p> <p>The rail station is serviced by park and ride car parks located on either side of Ennis Avenue, with long-term redevelopment aspirations on the western-most car park presenting possible opportunities to increase density in close proximity to the station.</p>
<b>Precinct 7 - Education</b>	<ul style="list-style-type: none"> <li>+ South Metropolitan TAFE</li> <li>+ Kolbe Catholic College</li> <li>+ Rockingham Library</li> <li>+ Murdoch University</li> </ul>	Existing campuses are linked by an internal link road which enhances connectivity between the Education and City Village precincts. Sufficient capacity for new development ensures large spaces are provided between buildings supporting the establishment of greenery and tree planting, which creates an attractive place to work and recreate.
<b>Precinct 8 - Dixon Road</b>	<ul style="list-style-type: none"> <li>+ Primarily light industrial and bulky goods commercial</li> <li>+ Some vacant bushland</li> </ul>	A gateway statement at the corner of Dixon Road and Ennis Avenue frames the entry into the RSC. Enhancement of the streetscape supports a green buffer which screens the light industrial and commercial development to the north. The bushland south of Patterson Road is developed in the long-term, with a flexible urban structure supporting a range of commercial and employment generating land uses.



- LEGEND**
- PRECINCT BOUNDARY
  - SUB-PRECINCT AREAS
  - P1 CITY CENTRE
  - P2 WATERFRONT VILLAGE
  - P3 COASTAL LOTS
  - P4 TOD VILLAGE
  - P5 CITY PARK
  - P6 SOUTHERN RESIDENTIAL
  - P7 EDUCATION
  - P8 DIXON ROAD
  - MAJOR DEVELOPMENT SITES (>1HA)
  - INFILL DEVELOPMENT SITES
  - PUBLIC OPEN SPACE
  - PUBLIC OPEN SPACE NODES / GREEN LINKS
  - LANDMARK
  - PROPOSED RCCTS ROUTE
  - RCCTS CATCHMENT
  - PRIMARY ROAD
  - SECONDARY ROAD
  - PROPOSED MIDBLOCK CONNECTIONS

P2 - Figure 20: Urban Structure Plan

OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>03.1</b> To ensure the public realm is designed to promote community health and wellbeing.	<b>C3.1.1</b> Provide a range of public spaces that support and contribute to the community's health and wellbeing, in response to identified community need.	
	<b>C3.1.2</b> Design public spaces for multiple uses, to efficiently accommodate a range of functions and activities.	
	<b>C3.1.3</b> Consider year-round user comfort in the design of the public realm.	
<b>03.2</b> To enable local character and identity to be expressed in public realm design to enhance sense of place.	<b>C3.2.1</b> Public realm design should incorporate local natural topography, habitats and vegetation to enhance sense of place.	
	<b>C3.2.2</b> Demonstrate appropriate interpretation of Aboriginal knowledge, history and heritage within public realm design.	
	<b>C3.2.3</b> Design the public realm to reflect the heritage significance of the precinct and support the precinct's intended character and identity.	
<b>03.3</b> To ensure that key environmental attributes are protected and enhanced within the public realm.	<b>C3.3.1</b> Integrate environmental features of the precinct within the public realm.	
	<b>C3.3.2</b> Ensure the public realm contributes to creating and/or improving the urban tree canopy within the precinct and its surrounds.	
	<b>C3.3.3</b> Incorporate waterwise species into the green network and public realm where appropriate.	
	<b>C3.3.4</b> Incorporate water sensitive urban design into the public realm.	
	<b>C3.3.5</b> Provide opportunities for urban greening, such as community gardens and rooftop gardens.	
<b>03.4</b> To ensure the public realm is designed to be inclusive, safe and accessible for different users and people of all ages and abilities.	<b>C3.4.1</b> Develop legible routes and intersections, connected by identifiable landmarks to aid navigation through the public realm."	
	<b>C3.4.2</b> Accommodate and promote inclusion and accessibility for people of all ages and abilities in the public realm.	
	<b>C3.4.3</b> Design the public realm according to the principles of Crime Prevention through Environmental Design (CPTED).	
<b>03.5</b> To ensure public realm design is integrated with the built form, movement network and landscape of the precinct.	<b>C3.5.1</b> Design well-proportioned and appropriately scaled public spaces and streets.	
	<b>C3.5.2</b> Consider and enhance relationships between the public realm and surrounding land uses and activities to create mutual benefit.	
	<b>C3.5.3</b> Design the public realm as a series of wellconnected, legible spaces.	
	<b>C3.5.4</b> Integrate services and utilities to minimise impact on function and amenity of public spaces, streets and surrounding built form.	

## 4.3 PUBLIC REALM

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 3: Public Realm can be summarised as follows:

- + Exploration for opportunities to improve tree canopy, this has been addressed in **Section 4.1.1** and **Section 4.6**.
- + Design to consider new public open space design interventions in the City Centre to assist with activation of the precinct.
- + RPSP to explore opportunities for how best to enhance place branding across the RSC, given its size, scale and therefore the physical separation of certain areas.

### DESIRED OUTCOMES

Rockingham's public realm celebrates its unique coastal atmosphere, providing active and attractive streets and public places.

- + The quality, identity, comfort, accessibility and useability of streets, parks and civic spaces is enhanced.
- + Urban tree canopy is increased through improved tree retention and integration of established vegetation into new development proposals.
- + A coordinated approach to tree planting which promotes use of suitable trees to improve shade and shelter, enhance sense of place, and improve biodiversity outcomes.
- + New development contributes to the quality of the public domain through well considered interfaces at the street level and considerations for creating inviting streetscapes (noting overshadowing and wind tunnels etc).
- + Design of the RCCTS and supporting infrastructure (e.g. stops, shelters, paving and signage) creates a suite of unifying landscape elements that define the RSC. This allows the broader public realm design in each sub-precinct to reflect the unique character qualities.
- + Design public spaces to facilitate flexible use, safe environments for users and create a sense of public ownership.
- + Defined entry statements / gateways at key junctures announce arrival into the RSC to assist in defining an identity for the precinct.

### 4.3.1 POS NETWORK

As the RSC evolves to a more urban form, high quality public spaces will perform an important role in contributing to the vitality of the centre as a lively place, both during the day and night. This includes attracting local residents and visitors as active participants in urban life, which will:

- + Enhance liveability, diversity and inclusion through access to a range of activities for all residents and visitors;
- + Enhance the cultural tourism potential of the RSC;
- + Provide safer POS environments through enhanced built form integration and passive surveillance.

#### EXISTING POS

As demonstrated on **P2 - Figure 21**, the RPSP's Public Realm Plan is comprised primarily of existing spaces. The hierarchy aligns with the City's POS Community Plan Strategy.

A review of the existing POS hierarchy reveals that passive activity and sporting are the two primary functions of the existing POS, and as demonstrated on **P2 - Figure 14** RSC residents are very well serviced by existing public open space from a spatial perspective. However, some of these spaces offer limited diversity of activity and function. As the RSC evolves, demand for a broader range of activities and functions may be required, resulting in upgrades to some of the existing POS areas.

Improving existing POS will also require considerations for how to better incorporate CPTED design principles, particularly where houses back onto parkland (e.g. Sepia Park, Hazelmere Reserve). In these instances, the built form approach (set out in **Section 4.6.2**) demonstrates how infill development can improve the interface between POS and private residences through enhanced passive surveillance.

#### ORGANISED SPORT

As the RSC and its population grows, it is acknowledged that there may be a desire / requirement to provide additional land for organised sport. The development of the playing fields in P4 - TOD Village will see loss of existing playing fields, however, given the strategic importance of this precinct to provide housing and jobs (along the RCCTS) in the short-medium term it was determined that playing fields are not considered to be the highest and best use of this land when ultimate demand is not known. Alternatively, the Public Realm Plan (**P2 - Figure 21**) identifies two investigation areas for consideration:

- + **INV 1** - Exploration for establishment of playing fields on Dixon Road. This utilises existing (and vacant) government land in a highly accessible location. It would allow for future education uses / functions to be developed around a central green which becomes the focal point of the precinct.
- + **INV 3** - A potential temporary (or long-term solution) which explores a shared use agreement with Kolbe Catholic College for use of their grounds as is common in other parts of the City.

#### PUBLIC REALM PLAN POS

The different spaces which make up the RSC Public Realm Plan include both green and urban nodes:

- + **Public Domain Nodes** - include public plazas, squares and main streets where high concentrations of people gather to socialise, engage, and dwell in the urban environment.
- + **Green Nodes** - include a diverse mix of natural, formal, and active reserve spaces. Some spaces such as Rockingham Foreshore are major destinations which perform a regional function, whilst other nodes provide a more localised function for adjacent residents. Each is important in its own right, as they service the diverse needs of the RSC Community.

**P2 - Figure 21** illustrates the location of proposed new POS areas, with **P2 - Table 11** illustrating their size and place in the hierarchy. In summary new POS incorporates x1 neighbourhood space, x2 local spaces, and x4 pocket parks. All of which are proposed within identified 'major development sites'. As such, their design and implementation will be delivered by individual landowners / proponents. In lieu of concept designs, guidance on their design is provided in **P2 - Table 12**.

As demonstrated in **P2 - Table 11**, the RPSP provides **XX ha** of public open space which equates to **XX%** of the PSP area.

**P2 - Table 11: POS Types and Function**

TYPE	SIZE	FUNCTION	EXISTING POS	PROPOSED POS
<b>POCKET</b> 200m / 3min walk	<0.4Ha	Passive Recreation	Hazelmere Circus (0.06 ha)	POS6 (0.06 ha)
			Sepia Court Reserve (0.48 ha)	POS5 (0.20 ha)
			Derwent Park (0.26 ha)	POS7 (0.20 ha)
			Leghorn Street Park (0.20 ha)	POS3 (0.27 ha)
			Sycamore Park (0.13 ha)	
<b>Pocket Park Total = 1.86</b>				
<b>LOCAL</b> 400m/5min walk	0.4Ha - 1Ha	Passive Recreation Active Sport Nature	Benjiman Reserve (0.57 ha)	POS4 (0.46 ha)
			Emerald Park (0.61 ha)	POS2 (0.56 ha)
			Phoebe Hymus Park (0.90 ha)	
			Houston Reserve (0.90 ha)	
			Warramunga Reserve (0.81 ha)	
<b>Local Park Total = 4.62 ha</b>				
<b>NEIGHBOURHOOD</b> 800m/10min walk	1Ha - 5Ha	Passive Recreation Active Sport Nature	Kybra Mews Reserve (1.20 ha)	POS1 (1.23 ha)
			Ashford Avenue Reserve (1.30 ha)	
			Churchill Park (1.35 ha)	
			Bell Park Reserve (1.65 ha)	
			Hazelmere Reserve (1.89 ha)	
			Careeba Reserve (3.20 ha)	
			ANZAC Park (3.40 ha)	
<b>Neighbourhood Park Total = 15.22 ha</b>				
<b>DISTRICT</b> 2km from home* <small>*Catchment shown on Figure 25 uses an 800m walkable catchment)</small>	5Ha - 15Ha	Passive Recreation Active Sport Nature	Anniversary Park (6.68 ha exc. buildings and car park)	
			City Park (9.38 ha)	
			<b>District Park Total = 15.98 ha</b>	
<b>TOTAL USEABLE POS</b>			<b>37.68 ha</b>	
<b>RESERVES AND OTHER</b> Typically includes foreshore reserve and landscaping adjacent major roads.			<b>Reserves Total = 12.32 ha</b>	
<b>TOTAL POS</b>			<b>50 ha</b>	



- LEGEND**
- - - - - PRECINCT BOUNDARY
  - DISTRICT OPEN SPACE (800M)
  - NEIGHBOURHOOD OPEN SPACE (800M)
  - LOCAL OPEN SPACE (400M)
  - POCKET PARK (200M)
  - PUBLIC DOMAIN NODES
  - PROPOSED POS**
  - POS CATCHMENT
  - GREEN LINKS
  - NATURE / OTHER RESERVE
  - POS 1 PROPOSED POS
  - INV 1 POS INVESTIGATION

P2 - Figure 21: Public Realm Plan

P2 - Table 12: Proposed POS Design Guidance

POS AREA	DESIGN INTENT	PRECEDENT
<p><b>POS1</b> 1.23 ha 'Neighbourhood'</p>	<p><b>Purpose:</b> Provide 'Neighbourhood POS' for passive and informal active recreation and social activities.</p> <p><b>Design Guidance:</b> Design to integrate with high-density residential providing amenity for residents, workers, and visitors alike.  To be multipurpose in nature with a variety of features and facilities. Ensures preservation of existing mature trees on Goddard Street, serving important function in the area's broader ecological system.</p> <p><b>POS Programming:</b> Passive lawn spaces (kick-a-bout), broad canopied shade trees, play areas, pathways, seating, and toilets.</p>	<p><b>Totterdell Park, West Perth (7,500m<sup>2</sup>)</b></p> 
<p><b>POS2 / POS4</b> 0.56 / 0.46 ha 'Local'</p>	<p><b>Purpose:</b> Provide 'Local POS' for day to day recreation opportunities for the immediate residential population.</p> <p><b>Design Guidance:</b> Design to integrate with high-density residential providing amenity for residents, workers, and visitors alike.  Ensures preservation of existing mature trees on Goddard Street, serving important function in the area's broader ecological system.</p> <p><b>POS Programming:</b> Passive lawn spaces, broad canopied shade trees, play areas, pathways and seating.</p>	<p><b>Socrates Park, North Coogee (3,800m<sup>2</sup>)</b></p> 

POS AREA	DESIGN INTENT	PRECEDENT
<p><b>POS3</b> 0.27 ha 'Local'</p>	<p><b>Purpose:</b> Provide 'Local' urban node adjacent to the proposed RCCTS stop within P4.</p> <p><b>Design Guidance:</b> Design to integrate with adjacent mixed-use development. Design includes a combination of hard and soft elements. To be multipurpose in nature with a variety of features and facilities that enable small-scale community events to be held.</p> <p><b>POS Programming:</b> Open areas for events, high-quality lighting, shade trees, custom furniture.</p>	<p><b>Northbridge Piazza, Northbridge (1,800m<sup>2</sup>)</b></p> 
<p><b>POS5 / POS6</b> 0.20 / 0.06 ha 'Pocket'</p>	<p><b>Purpose:</b> Designed to function as a small linear green pocket park that allows for green relief and provides outlook for adjacent development.</p> <p><b>Design Guidance:</b> Design to integrate with high-density residential providing amenity for residents.  Primary function to provide shade, comfort and respite along green link to City Park.</p> <p><b>POS Programming:</b> Passive lawn spaces, broad canopied shade trees, pathways and seating.</p>	<p><b>Subiaco Common Green Link, Subiaco (1,800m<sup>2</sup>)</b></p> 
<p><b>POS7</b> 0.20 ha 'Pocket'</p>	<p><b>Purpose:</b> Provide 'Pocket POS' for passive recreation.</p> <p><b>Design Guidance:</b> Design to integrate with high-density residential providing amenity for residents and visual outlook. Primary function to provide green node at end of east-west green link.</p> <p><b>POS Programming:</b> Passive lawn spaces, broad canopied shade trees, seating.</p>	<p><b>Thelma Street Park, West Perth (2,000m<sup>2</sup>)</b></p> 

### 4.3.2 GREEN LINKS

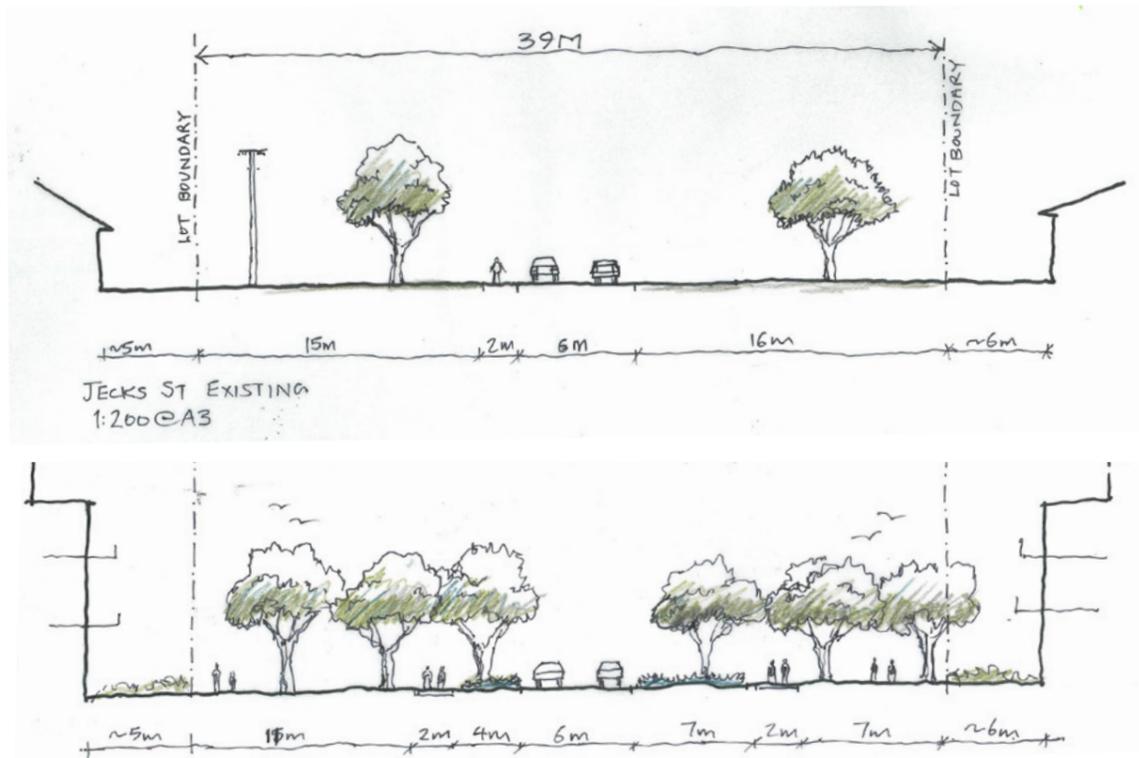
As described in **Section 4.3.1** the majority of POS nodes in the RSC are existing. It is recognised though, that the current urban form is characterised by large roads and setbacks which is a barrier to access and connectivity across the City. Improvements to the access, function and quality of the existing POS has been identified as a key opportunity in the RPSP. This includes the enhancement of the existing urban form as a means to provide improved access and connectivity to POS through a cohesive and integrated network of green nodes. The opportunity to build on the City's Greening Plan by significantly increasing tree planting across the City will assist in providing shaded and comfortable journeys, and enhance the sense of place (see Urban Ecology Plan).

To facilitate the above, the RPSP identifies a network of 'green links' (as illustrated on **P2 - Figure 21**). These links include:

- + Primary north-south links which seek to enhance connectivity to the Waterfront Village to build on the recent foreshore redevelopment, and further establish this as one of the premier coastal locations in Perth. Providing dedicated pedestrian and bicycle/e-bike pathways will improve access and liveability for residents and reduce the reliance on vehicles for shorter, local trips.
- + Secondary east-west links, which better connect Sub-Precincts together.

The proposed approach seeks to build on and enhance the existing urban form to connect existing isolated POS into a broader network of spaces. This includes utilising the existing urban structure which includes generous road reserves and verges which support opportunities for streetscape upgrades that allow safe, shaded, and comfortable journeys for pedestrians and low speed cyclists.

**P2 - Figure 22** provides an example showing how Jecks Street could be reimagined into a green link, with dedicated pathways and tree planting to boost canopy coverage.



P2 - Figure 22: Proposed Jecks Street Treatment

Upgrading key connections on these links across major roads is also important.

The current streetscapes are visually open which may encourage higher speeds for motorists and a reduction in safety for pedestrians. The proposed approach includes lining the streets with trees and planting to visually enclose the street as tree-lined roads are generally perceived to be safer in both urban and suburban conditions with individual driving speeds generally significantly reduced. Line marking and/or a material change designates a clear crossing point for pedestrians is also proposed.

Examples of potential treatments at Goddard Street and Patterson Road are illustrated on **P2 - Figure 23** and **P2 - Figure 24** respectively.



P2 - Figure 23: Goddard Street Green Link Crossing



P2 - Figure 24: Patterson Road Green Link Crossing

### 4.3.3 IMPROVED QUALITY, FUNCTION, ACCESS AND DIVERSITY

As the population grows within Rockingham, and with limited opportunities for new POS areas, consideration should be given to increasing the quality, function, access and diversity of POS to support the community.

High quality, diverse and accessible POS should support a range of activities for the community. Ensuring POS is simple and flexible to accommodate the future needs of the community over time should be considered (refer to **Section 4.3.1**).

Sense of place and belonging for a range of cultural backgrounds should also be considered. In particular, the recognition and inclusion of Aboriginal people through a broad range of interpretations and programs. The use of cultural knowledge in design must be undertaken respectfully and with correct protocol. This includes

- + Utilising the City of Rockingham's **Aboriginal Advisory Group** to identify Traditional Owners and Elders who can speak for the area.
- + Acknowledgement that ownership of cultural knowledge remains with Traditional Owners and as such they must be continually involved in the planning, design, implementation, and management process to ensure memories and stories shared are being utilised correctly. This should be undertaken through the development of an **Aboriginal Engagement Framework** for the project/s.
- + **Payment for consultation** services are allowed for to ensure this ongoing engagement.
- + Approaches support the Cities **Reconciliation Action Plan** (RAP).
- + **Cultural Context documents** and key themes for the area to capture appropriate stories and memories relevant to the site. Ensure engagement with Traditional Owners every time the document is utilised.
- + Interpretation of Aboriginal Cultural Heritage is integrated into public realm design and delivery through materials, art, wayfinding, sound and light installations and events.
- + Acknowledge that the translation of Aboriginal Cultural Heritage into public realm is a minimum approach to acknowledging Traditional Owners. Inclusivity at all levels of a project is important and roles should be considered on design teams for Aboriginal Project management, capacity building roles created where appropriate, procurement approaches considered to ensure **employment of Aboriginal workers** and that design approaches ensure the finalised public spaces are welcoming and safe spaces for Aboriginal and Torres Strait Islander people. This should all be directed via engagement of local Aboriginal community.

### 4.3.4 PUBLIC REALM STYLE GUIDE

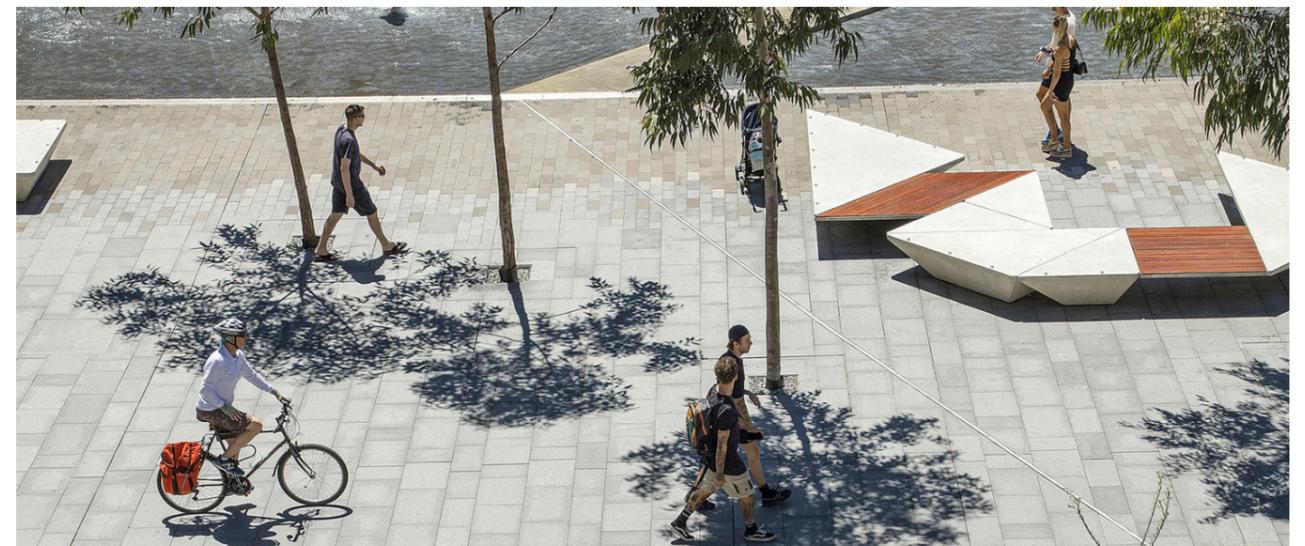
#### INTRODUCTION & PURPOSE

This high level style guide outlines elements of the public domain including materiality, surface finishes, furniture, wayfinding and planting.

The style guide focuses primarily on three key precincts - P1 - City Centre, P2 - Waterfront Village and P4 - TOD Village. Further detail and investigation is recommended including creating a detailed Public Realm Style Guide considers existing furniture, fixtures and finishes and future upgrades.

The style guide will use the following principles:

- + Appropriate to the existing character and context.
- + Proposed selections are of a 'timeless' appearance and complementary with existing selections.
- + Robust 20+ year lifespan.
- + Multiple configurations within the same supplier and family of product type e.g. seats that are backless, back rest, arm rest, wheel chair accessible etc.
- + Replaceable elements, e.g. battened seating surface interchangeable between hardwood timber and powder coated aluminium.
- + Surface mounted and sub-surface fixture options.
- + Ease of maintenance and cost effectiveness over entire lifecycle.

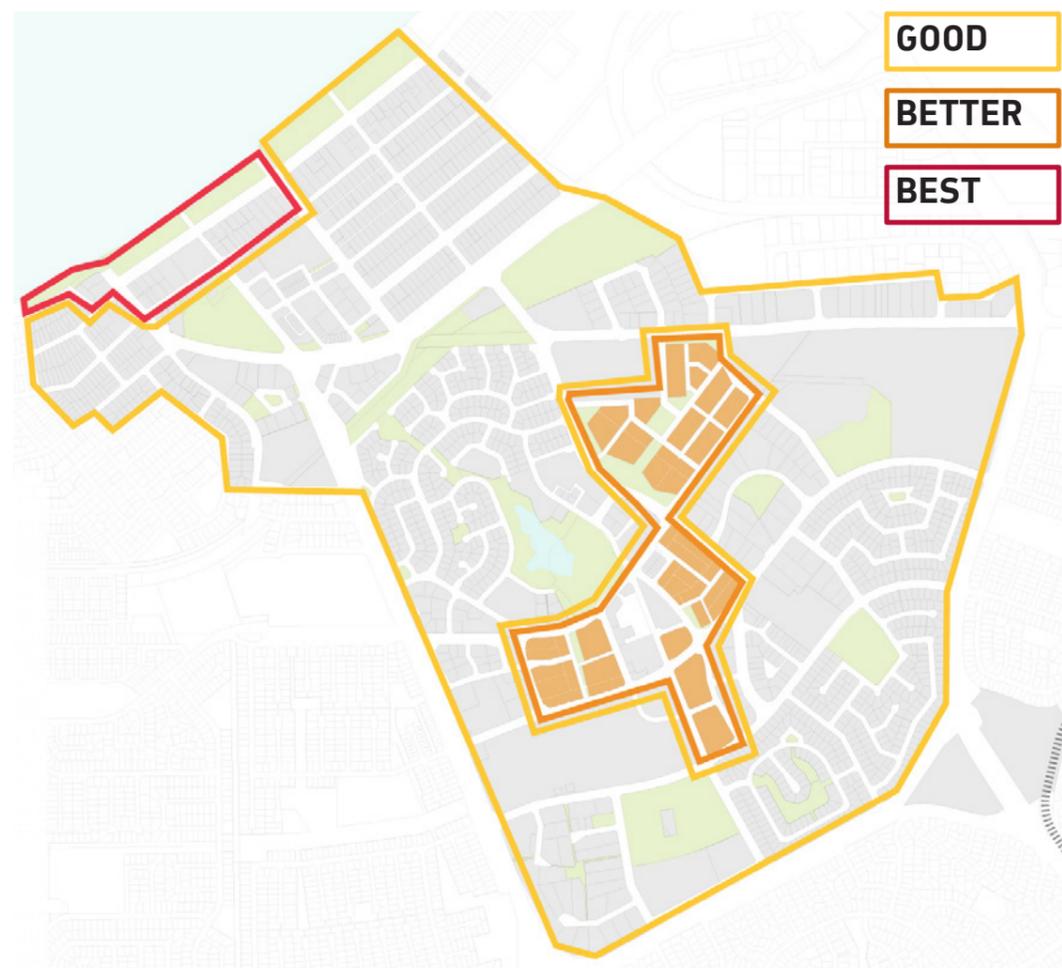


## INVESTMENT PRIORITY

**P2 - Figure 25** identifies the investment priority for key locations in the RPSP, with the material quality summarised as follows:

- + **'Good'** - Simple, robust, cost effective materials and finishes suitable for the existing suburban and adjacent environments.
- + **'Better'** - Good quality, contemporary materials and finishes suitable for existing and proposed urban environments.
- + **'Best'** - Custom and high quality materials and finishes the build on and enhance the recent foreshore development.

Whilst the proposed quality levels are a general guideline the City may at its discretion modify these based upon the nature of the proposed works.



P2 - Figure 25: Public Realm Investment Priority

## MATERIALITY

Surface treatments across the City will be varied due to the different uses and functions, and the hierarchy as proposed in this style guide. Material finishes selected will need to be robust, durable, and suitable for local climatic conditions in Rockingham.

The following considerations should be applied:

- + **Functionality:** Appropriate to the functional requirements (e.g. universal access, vehicle traffic-ability, foot traffic, services, existing trees, maintenance, wayfinding etc.).
- + **Accessibility:** Consideration of all user abilities prior to material selections, ensuring universal access. Provide a consistent style and design palette for future works to the public realm and streetscape to build on and enhance the existing public realm.

Enhance and celebrate the unique character of the City and recognise and respond to identified areas or precincts of a similar nature.

- + Create comfortable and safe places for people to use and encourage walking, cycling and use of public transport.
- + Provide clear guidance to those involved in planning, designing and constructing public realm spaces on the quality of design expected.
- + Consolidation: Materials are coherent across precinct(s) and do not clash with one another.

Placement and selection is critical to the success of surface treatments within the public realm. Whilst these Guidelines provide general advice it is recommended that for any major redevelopment, detailed surface treatment design be undertaken.

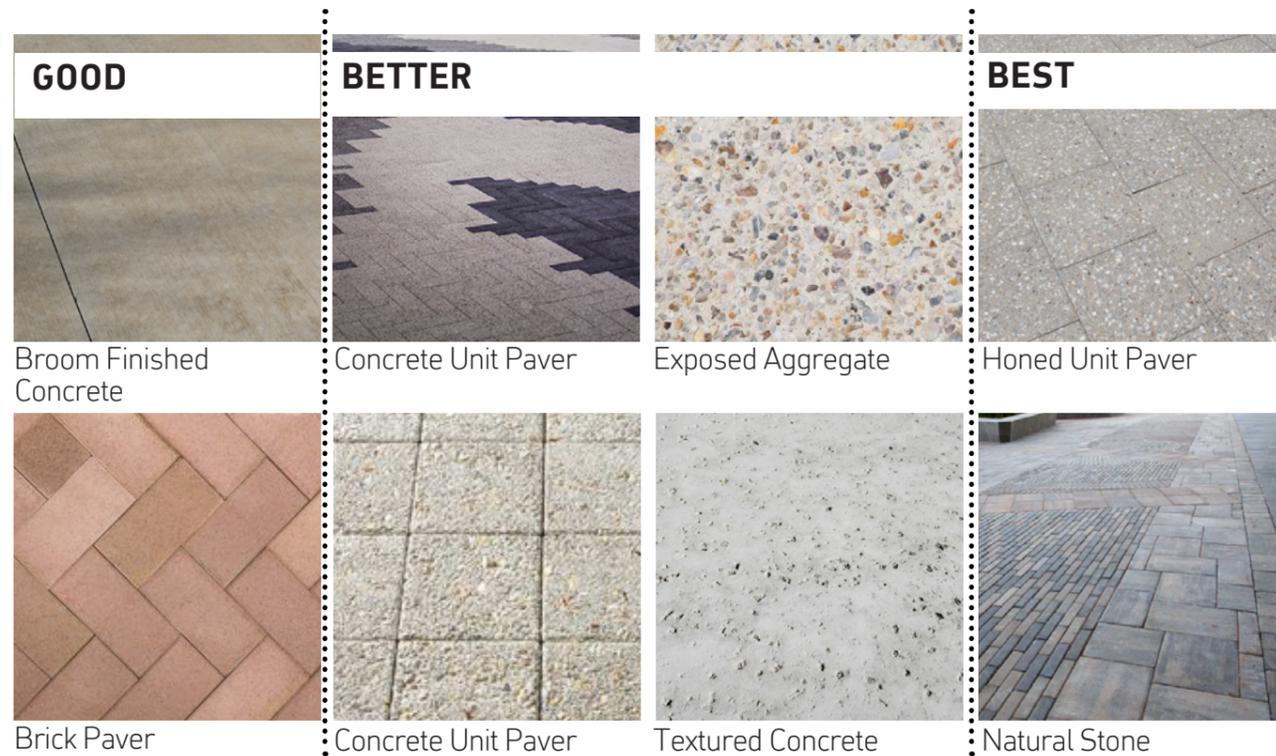


**SURFACE TREATMENTS**

Surface treatments across the City will vary due to the different uses and functions, and the precincts proposed by the Style Guide.

This section provides a general guide to the proposed quality of surface treatments for each precinct. Selections should ensure the following:

- + Selections align with intended functional requirements of the proposed area;
- + Selections consider the existing adjacent treatments to ensure a coherent and consolidated approach;
- + Detailed paving design is undertaken prior to selections.



**FURNITURE**

The City's coastal location dictate that selections are required to be robust and durable.

Placement is critical to the success and usability of furniture as it must respond to its intended function and user.

The following considerations should be applied:

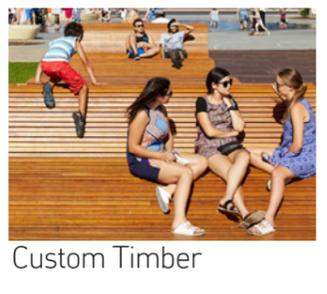
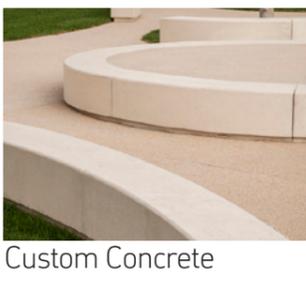
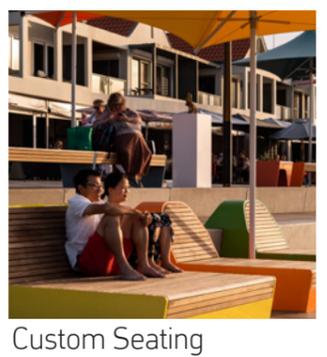
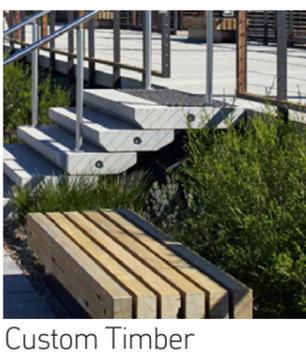
- + Ease of maintenance and cost effectiveness over entire lifecycle.
- + Where practicable, offer DDA compliant options.
- + Co-locating furniture and elements within parks and POS e.g. BBQ's with shelters and seating.
- + Seats generally aligned with path whilst still allowing a clear path of travel and oriented towards a view.
- + Consider shade from trees and allow for clear sight-lines;
- + Groupings of seats should be arranged to promote social interactions between people
- + Where close to a street, shared path or car park, locate elements a minimum of 600mm back from the edge to avoid collisions by vehicles.
- + Space seats a minimum of 1200mm apart to allow for easy access.
- + Not within large areas of open space which prevents use of the area for organised/formal activities.



**SEATING**

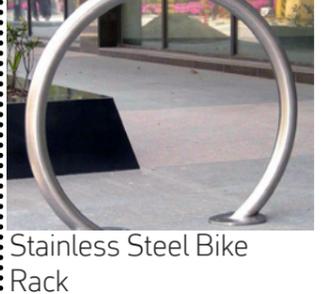
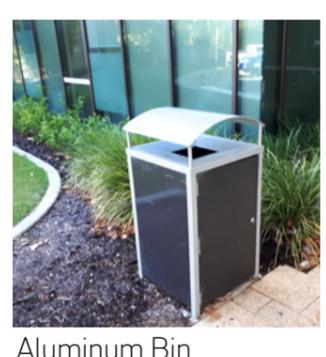
As set out by the Style Guide, the Foreshore Precinct will generally consist of medium to high quality custom products, in line with the precincts recent development.

Whilst these Guidelines provide general advice it is recommended that for any major redevelopment, detailed furniture design and or selection is undertaken.

GOOD	BETTER	BEST	
 <p>Aluminum Bench</p>	 <p>Seat - Arm/Backrest</p>	 <p>Custom Timber</p>	 <p>Custom Concrete</p>
 <p>Aluminum Bench</p>	 <p>Bench - No Arm/Back</p>	 <p>Custom Seating</p>	 <p>Custom Timber</p>

**FIXTURES**

Placement and selection is critical to the success of fixtures within the public realm. The use of stainless steel within the Foreshore Precinct is used due to the coastal conditions.

GOOD	BETTER	BEST	
 <p>Galvinised Bubbler</p>	 <p>Powder Coated Bubbler</p>	 <p>Stainless Steel Bike Rack</p>	 <p>Stainless Steel Bubbler</p>
 <p>Aluminum Bin</p>	 <p>Stainless Steel Bin</p>	 <p>Stainless Steel Bin</p>	 <p>Custom tree grates</p>
 <p>Galvinised Steel Bike Rack</p>	 <p>Stainless steel BBQ</p>	 <p>Stainless Steel Bollard</p>	 <p>Stainless Steel BBQ</p>

## PUBLIC ART

Public art is an important component of place-making and the creation of both artistic and family-friendly spaces. Public art can create a strong community identity, community pride and sense of place across a variety of cultural settings. Public art in the RSC has the opportunity to provide an artistic voice that helps communicate Rockingham's history, community and future directions. A strong sense of place, guided by iconic public art, plays an important part in our cultural development, contributes to urban renewal and design, and helps our tourism industry.

In delivering public art in the RPSP area, the following considerations should be applied:

- + Collaboration and liaison with the City's Aboriginal Advisory Group to explore opportunities to reflect, recognise and celebrate Aboriginal history and culture through public art where appropriate;
- + Enhance a sense of place by encouraging public art forms which provide an interpretation and expression of the natural physical characteristics and social values of the local area;
- + Improve interpretation of cultural, environmental and built heritage; and
- + Improve way finding and legibility of streets, open spaces and buildings.

Public Art in the RPSP should be coordinated through delivery of a Public Art Strategy to provide a clear direction for the delivery of public art in the precinct.



## WAYFINDING & DIRECTIONAL SIGNAGE

Wayfinding is the process of how people navigate and orientate themselves in an environment. Good wayfinding design – which involves graphic design, sensory design, architectural design and landscape design – can minimise the need for excessive freestanding directional signage. When a public space is well-considered and well-signed, it can help the users of the space feel safe and confident, as well as help to ensure the recognisability and memorability of a place.

When developing wayfinding & directional signage strategies the following should be considered:

- + Consideration should be given to develop and manage clear navigation routes throughout the public realm.
- + An integrated and cohesive approach to architectural and landscape architectural cues, graphic communication, audible communication and tactile communication.
- + Consideration should be given to coherence and consistency, both locally and more broadly. From a local point of view, consider how the wayfinding and directional signage relates to other precincts throughout the City of Rockingham. Consider the design of a signage suite; an expandable and hierarchical family of signs that can be implemented across multiple sites. More broadly, incorporate universally recognised symbols and colours where appropriate.
- + Scale and placement should be carefully considered to ensure effectiveness and accessibility. When determining sign placement and design, consider access, sight lines, paths of movement and speed of movement. For example, large nodal signage should be placed at intersections and edges to facilitate navigation and play a role in welcoming visitors to the site.
- + When designing directional signage, keep it simple, clear and to-purpose. Consider the scale of the content (words, symbols and images) in relation to the purpose of the sign. Where possible, use universal symbols to promote inclusiveness while also catering for non-English speaking people.
- + Colour is an important variable in delineating signage. Keep colour-coding consistent and in line with recommended visual accessibility contrast ratios.
- + Consider the connections and distances between the wayfinding and signage elements – the physical and visual connections between signs play an important role in helping to guide people to follow particular paths through an environment.

## INTERPRETIVE SIGNAGE

Interpretive signage communicates additional information about a site, including its history, its stories and its context. Interpretive signage can contribute to the wayfinding system of a site, but its primary role is to enhance the visitor experience to encourage people to consider, linger and explore.

- + When developing a wayfinding strategy, include interpretive signage as a complementary component of the overall signage system.
- + Consider integrating and embedding interpretive information into site features and materials.



## PLANTING

### TREE SELECTION PRINCIPLES

As described in the Urban Ecology section, improving and enhancing tree canopy is a primary focus of the RPSP. The style guide presents the following principles for street tree selection and placement.



#### 1. CLEAR SIGHTLINES

Prioritise clear trunked tree species to offer clear sightlines. Ensure trees are located at a suitable distance from crossovers and street intersections.

#### 2. DIVERSITY

Planting a diversity of tree families, genus, and species will provide visual and seasonal interest, and resilience from pest and disease.

#### 3. VERGE WIDTH TO TREE RATIO

Select tree species to ensure selections are in scale and harmony with the existing streetscape and its functions.



#### 4. LARGE CANOPIED TREES

Prioritising taller, broad canopied tree species to maximise shade and cooling benefits.

#### 5. CLOSE SPACING

Planting trees with a close spacing to provide a quick increase in canopy cover and a continuous and connected canopy cover.

Trees planted closely will develop more upright forms, and be less susceptible to wind damage.

### PLANTING SELECTION PRINCIPLES

The City's 2017 Greening Plan shall be referenced in the first instance with the selection and location of tree and plant species.

The pattern of existing plants of the site is determined primarily by the landforms, soil types and fertility, and location to the coast.

Whilst there is less variation and numbers of species within the Quindalup dune complex than other areas of the Swan Coastal Plain, it nonetheless contains a large number of endemic plants.

Planting should be selected with a focus on endemic planting to provide habitat and biodiversity benefits, and to provide a sense of place in keeping with the sites coastal context.

Planting selection criteria shall ensure the right plant for the right location is used and include:

- + Maintain sightlines (<600mm), within urban environment
- + Site specific analysis (soils, pH, verge width);
- + Plants suitable for projected future climate conditions (reduced rainfall and increased temperatures);
- + Desired ecosystem services; i.e. urban shade/cooling, storm water mitigation, biodiversity, feature planting etc.
- + Functions and uses of the space;
- + Ongoing maintenance, watering and other inputs.
- + Suitability for irrigated or non-irrigated garden beds.



OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>04.1</b> To ensure the movement network supports the function and ongoing development of the precinct.	<b>C4.1.1</b> Address the current and future access needs of the precinct through an integrated transport planning and land use assessment process.	
	<b>C4.1.2</b> Design the movement network in balance with place considerations, local access and neighbourhood/ district/regional access requirements for travel to, through and around the precinct.	
	<b>C4.1.3</b> Develop a movement network that enables convenient and comfortable travel and access for users of all ages and abilities.	
	<b>C4.1.4</b> Design transport infrastructure that provides a safe network for all users.	
<b>04.2</b> To ensure a resilient movement network that prioritises affordable, efficient, sustainable and healthy modes of transport.	<b>C4.2.1</b> Prioritise walking, cycling, public transport and shared mobility, to minimise car dependency.	
	<b>C4.2.2</b> Establish mode share targets for the precinct.	
<b>04.3</b> To enable a range of transport choices that meet the needs of residents, workers and visitors.	<b>C4.3.1</b> Prioritise provision of direct and legible pedestrian routes within the precinct and to adjacent areas.	
	<b>C4.3.2</b> Provide a bicycle network within the precinct that integrates with the broader cycle network and connects safely and conveniently to key destinations.	
	<b>C4.3.3</b> Identify public transport services and infrastructure to be upgraded or established to improve coverage, frequency, connection and user choice.	
	<b>C4.3.4</b> Design public transport infrastructure to integrate with and be appropriate for the intended mode share, patronage and place character of the precinct.	
	<b>C4.3.5</b> Consider access requirements for service vehicles and logistical freight movements within the precinct.	
	<b>C4.3.6</b> Design the movement network to allow for private vehicle access and movement that is appropriate to the precinct function.	
<b>04.4</b> To ensure the quantity, location, management and design of parking supports the vision of the precinct.	<b>C4.4.1</b> Provide the minimum amount of car parking appropriate for the precinct.	
	<b>C4.4.2</b> Manage and locate car parking to prioritise access according to the needs of different user groups.	
	<b>C4.4.3</b> Design parking to be integrated with the urban form.	
	<b>C4.4.4</b> Design parking for adaptability over time to accommodate potential future change of use.	
	<b>C4.4.5</b> Consider parking requirements and end of trip facilities for other transport modes.	

## 4.4 MOVEMENT

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 4: Movement can be summarised as follows:

- + The RCCTS will continue to act as the focal point of the public transport network in the RSC, ensuring essential links and connections are provided between key precincts such as the City Centre, TOD Village, and Waterfront Village.
- + Broad improvements to active transport are desired, particularly for local trips. This will contribute to ensuring that mode share targets can be reduced, resulting in a host of environmental and social benefits to the community.
- + Design of the movement network will need to ensure that it is delivered with careful consideration for the needs of all users (not just private cars). Promoting pedestrian priority, safe cyclist movements and universal access are all critical considerations.

### DESIRED OUTCOMES

Rockingham's integrated movement network is safe and efficient, promoting sustainable transport options that reduce the need for private vehicle trips.

- + Walking is prioritised as the most important mode of transport. Streets, public places and buildings are all designed to provide a safe, shaded, secure, stimulating and pleasant walking environment for people of all ages and abilities.
- + The RCCTS provides a dedicated tier two public transport link that connects Rockingham Station with the City Centre, Education Precinct, and Foreshore.
- + Key cycle routes are defined, and infrastructure provided to promote cycling as a safe and viable mode of transport.
- + An integrated urban design and traffic management approach is adopted within the City Centre and Foreshore to deliver low speed traffic environments that promote and prioritise pedestrian safety in high activity areas.
- + Intersection treatments throughout the RSC prioritise pedestrian safety and consider the safe and efficient movement of all transport modes.
- + Parking demand management promotes short-term car parking in high activity areas. Mid-long term parking is consolidated on the periphery of the City Centre and Foreshore to reduce the parking footprint in these areas.

#### 4.4.1 PROPOSED MOVEMENT NETWORK

A preferred movement network has been adopted by the City, taking into account the vision and principles of the RPSP which seek to substantially improve connectivity (for non car based trips) within the RSC.

The adopted movement network for the RPSP is illustrated on **P2 - Figure 27**. It includes a wide range of street types which consider a range of existing and emerging transport modes that can support a range of functions. The key elements of the movement network are summarised below.

##### PUBLIC TRANSPORT NETWORK

The existing Centre Plan was developed around a proposed street based public transport system, referred to as the RCCTS. The primary function of this proposed route is to enhance connectivity between key nodes in the RSC, and to catalyse development along the route. This dedicated route provides a link between Rockingham Station, City Centre, TOD Village, and the Waterfront Village.

Through the RPSP design process, an alternate route has been considered and adopted for the RCCTS. This new route will first be based on bus movements, with a transition to trackless trams or an alternate mode considered in the future. The proposed route includes three key segments:

- + Segment 1: The southern segment runs from Rockingham Station to Charlgrove Avenue (via Contest Parade). It traverses through the City Centre with large sections of bus priority. No changes to the route are proposed in this segment.
- + Segment 2: The central segment travels from Charlgrove Avenue through the TOD Village to Dixon Road. It crosses Goddard Street (from Market Street) in a dedicated green crossing (active and public transport only). At Dixon Road, the route travels westward to Patterson Road (via Goddard Street). This represents a change from the existing alignment, however, the design ensures that future extension into the commercial area north of Dixon Road is possible in the future if desired.
- + Segment 3: The northern segment runs along Patterson Road into the Waterfront Village. The route traverses the precinct in a clockwise route, via Kent Street and Wanliss Street (before reaching Patterson Road and heading back to Rockingham Station). A terminus on Wanliss Street is possible.

From an operational and development perspective, the following benefits are identified with this new alignment:

- + The proposed RCCTS route aims to reduce the number of transits stops along the route, especially along major distributor routes to potentially reduce the journey time while maintaining the accessibility within the RPSP.
- + The proposed RCCTS route is relocated away from the foreshore (Rockingham Beach Road) to minimise the conflict with pedestrian traffic. New stops on Kent Street provide the impetus to encourage development on Kent Street, and provide new midblock connections (to Rockingham Beach Road).
- + The extended coverage along Patterson Road expands the walkable catchment westward, now capturing high amenity residential. It also assists in activating commercial developments between the Waterfront Village and City Centre.
- + Flexibility to revert back to extend the route in accordance with the initial alignment (if required).

In addition to the RCCTS, the RSC will continue to be served by Rockingham Station and the various bus services which currently exist.

##### TRANSITION TO TRACKLESS TRAM

The transition to trackless tram along the RCCTS route is expected to be largely driven by the overall route patronage. When the popularity of the route dictates a higher frequency or larger capacity buses to accommodate the passenger demand, trackless tram should be considered financially viable. Additionally, the residential density of the catchment surrounding the RCCTS route would need to increase noticeably over the current level of development to justify the implementation of future trackless tram infrastructure.

It is noted that the running of trackless trams would require wider turning paths at intersections than that of a typical bus, which makes roundabouts less desirable for intersection treatments. As such, consideration of intersection treatments on the future trackless tram route should also be noted.

##### ACTIVE TRANSPORT

The RPSP focuses heavily on the integration of key activity nodes. Whilst the RCCTS is one primary measure in which this can be achieved, there is also a desire to explore opportunities to enhance active transport allowing more local trips to be generated by these modes.

Within the RSC, it is identified that pedestrian and cyclist infrastructure is good in isolated pockets. However, precinct-wide connectivity is lacking. There is also a notable lack of quality and defined north-south links which presents challenges for encouraging active transport between key destinations such as the City Centre and Waterfront Village.

##### CYCLIST INFRASTRUCTURE

To support the RPSP Vision, the following upgrades are proposed (refer **P2 - Figure 27**):

- + **Read Street Upgrades** - Read Street is identified as the most direct cycle link between the City Centre and Waterfront Village Precincts. There is currently a shared path on the western side of the road reserve, however, there are opportunities to significantly enhance this link turning it into the primary cycle route within the RSC. The width of the road reserve means that there are opportunities to explore creation of two new dedicated pathways on the eastern side, which would include a dedicated and separated cycle / PMD link, and a new pedestrian path which will be adequately shaded to improve the link's amenity.

**P2 - Figure 26** provides an illustration of what the future street upgrades could look like.

- + **New Shared Path Flinders Lane** - Flinders Lane from Patterson Road to Kent Street has been recognised as containing a shared path on the western side of the road. This route has a wide, comfortable path that many pedestrians and cyclists may opt to use to access the Foreshore from Patterson Road. However, the path beyond Kent Street to the foreshore also contains a shared path, albeit of different form, that should be recognised.
- + **New Shared Path ANZAC Park** - Patterson Road is recognised as having a shared path up until Flinders Lane which ends before the ANZAC Park. However, it has been identified that this path continues through ANZAC Park to Kent Street. This route is shaded by extensive tree coverage that makes for a pleasant, scenic cycle or walk. Plans should be amended to reflect this high-quality route.
- + **New Shared Path Victoria Street** - Victoria Street is currently not recognised as being a significant route of any kind, however, possesses many qualities of a high-quality shared path. Victoria Street could be recognised for its existing shared path. There is also an opportunity to promote cycling along this path with the addition of an on-road bicycle lane or creation of a bicycle boulevard, which Victoria Street can comfortably accommodate.

- + **Shared Path Upgrade Wanliss Street** – Wanliss Street is recognised as containing a shared path. The existing path infrastructure is not in the greatest condition and requires an upgrade in path quality and width, especially as it is a significant route that provides access to the Foreshore. Wanliss Street has a large road reserve which provides ample opportunity to create a high-quality shared path infrastructure, in concert with the proposed RCCTS Route.
- + **Goddard / Louise Street Cycle Path Extension** – The most significant high-quality north-south route currently exists on Goddard Street between Patterson Road and Chalgrove Avenue. There is an opportunity to extend this shared path south to Council Avenue. The benefits of developing a shared path along this route could help reduce through traffic demand from the current Goddard Street / Simpson Avenue / Whitfield Street area and create potential for a more pedestrian activated commercial precinct.
- + **City Centre Good Road Riding Environment** – The area in the City Centre that includes Contest Parade / Central Promenade / Whitfield Street (from Council Avenue to Chalgrove Avenue) has potential to be recognised as a good road riding environment. From Council Avenue, cyclists can ride north along Contest Parade then on to Central Promenade followed by Whitfield Street to Chalgrove Avenue. Ensuring future road treatments promote cyclists in these areas is a priority.
- + **Jecks Street Path Upgrade** – Jecks Street is identified as being part of the RSC’s future green link network. The wide road reserve is conducive to path improvements and tree planting on both sides – which would support the density increases proposed here. This will provide an important link between the Victoria Street POS and the RCCTS on Wanliss Street.

P2 - Figure 22 provides an illustration of what the future street upgrades could look like.

**PEDESTRIAN MOVEMENT**

With regards to pedestrian movement, the upgrades proposed above will all have a bearing and positive influence on enhancing the quality of key links for pedestrians.

Whilst the hard infrastructure plays an essential role in the quality, safety, and amenity of pedestrian journeys. The Urban Structure and Built Form Sections provide commentary on how the RSC’s proposed urban design will enhance walkability in key precincts. This includes careful consideration for the size and width of urban blocks. It also considers what is happening on these journeys, where possible green nodes are created, these micro-destinations add visual interest and help to ‘break up the journey’. With regards to the proposed built form approach, the focus on street interface and frontage types ensures that future development has special consideration for how people and buildings will interact with each other. For example in denser, main street areas awnings, alfresco dining, and other measures add to the pedestrian experience.

**PROPOSED READ STREET UPGRADE**

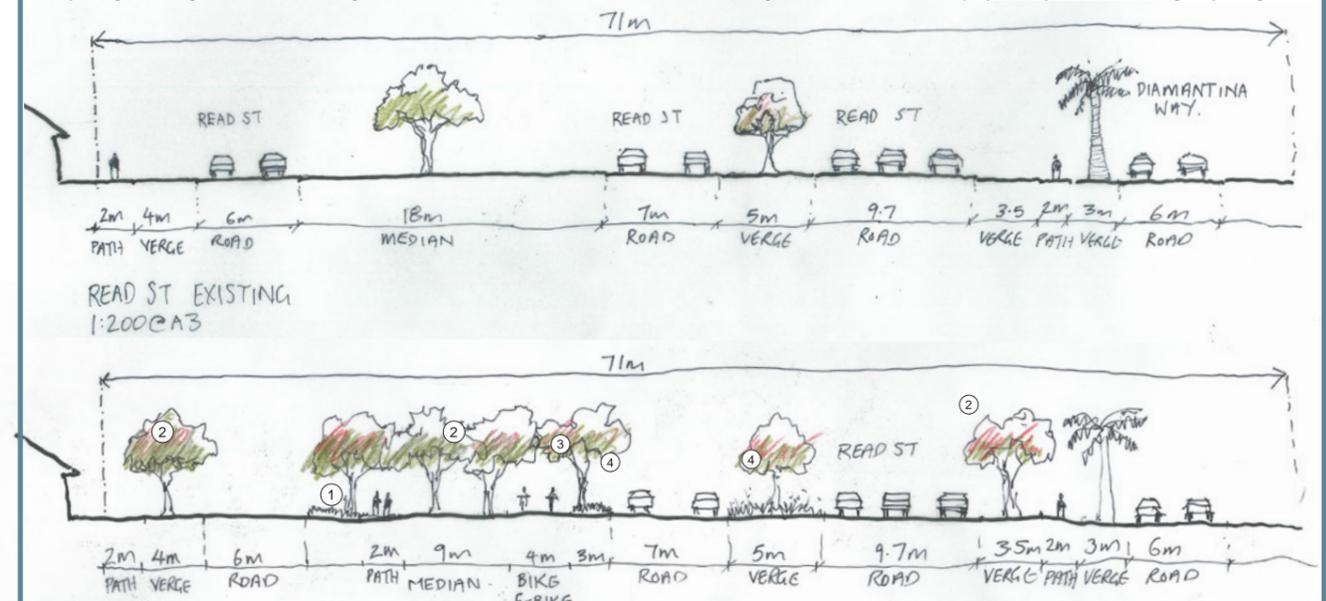
A key design principle of the RPSP is to improve links between key nodes, with a focus on modes other than the private car. Providing safe, and pedestrian separated bicycle / Personal Mobility Devices (PMD) path ways has been identified as an opportunity which could help reduce the ‘tyranny of distance’ across the RSC and offer alternative modes of transport for the community.

The current urban form of many places in the RSC is not conducive for the community to adopt alternative (non-vehicular) means of transport. Use of PMD such as e-scooters, e-bikes, and e-skateboards is growing rapidly in Perth, these devices have the potential to change the way we travel with more shorter journeys and commuting being undertaken.

Current barriers to the community using PMD’s and bicycles include poor urban design and lack of dedicated bicycle infrastructure<sup>1</sup> are identified as major influencing factors. To overcome this, an enhanced Read Street is proposed to better connect the City Centre and Waterfront Village, allowing it to act as a key gateway and wayfinding element in Rockingham (see **Section 4.4.1** for further details). Enhancements will require major interventions within the road reserve, which could include:

- + Construction of new (and separated) pedestrian and dedicated cycle / PMD pathways; and
- + Major planting and other upgrades to provide lighting, shade, and comfort to make it safe and attractive.

<sup>1</sup>Cycling Getting Australia Moving - Barriers, facilitators and interventions to get more Australians physically active through cycling.



P2 - Figure 26: Proposed Read Street Treatment



1 Separated pedestrian paths with native planting to provide safe, shaded pedestrian paths.



2 Additional tree planting to medians to shade users, provide traffic calming, and increase urban canopy.



3 Separated bike, e-scooter/e-bike paths to provide direct connections to the beach from the Civic centre



4 Rich, diverse native flower planting to provide a ‘botanic gateway’ to the Foreshore

## VEHICLE TRANSPORT

The maturity of the RSC means that provision of new roads is limited primarily to identified PLDP areas such as the TOD Village and within the City Centre. In these cases, roads will serve a localised movement function, connecting local traffic to higher order roads.

The future mode share (as defined in **Section 4.4.3**) emphasises a strong desire to reduce the amount of localised trips made by car. Despite this, it is acknowledged that due to its location the RSC will always rely on vehicles for a high number of trips, particularly those made by non-local workers and visitors. To ensure that the proposed movement network moves cars in a safe and efficient manner, Cardno have undertaken a review of road safety data, and ROM 24 Link Volume Plots for 2021 and 2041 (which were provided by MRWA). This review determined that a number of intersections would require upgrades to enhance performance. These are illustrated on **P2 - Figure 27** and summarised in **P2 - Table 13**.

**P2 - Table 13: Proposed Intersection Upgrades**

PRECINCT	INTERSECTION	KEY ISSUES
City Centre	1. Central Promenade / Syren Street	Safety issues – driven by crash data. On street parking restricting available sightlines – contributing to crashes.
	2. Central Promenade / Charlgrove Avenue	High level of sight line available can contribute to drivers turning through intersection at speed without proper assessment of pedestrian movements across carriageways. Some confusion as to right of way also observed.
	3. Central Promenade / Whitfield Street / Goodard Street	Legibility of movement network into City Centre. Some confusion as to right of way also observed.
TOD Village	4. Goddard Street / RCCTS	New intersection required to facilitate implementation of RCCTS.
	5. Goddard Street / New Road	New road connection to Goddard Street required to assist with local connectivity for new development.
City Park	6. Leeuwin Parade	Connection of existing cul-de-sacs to improve local movement network permeability.
Dixon Road	7. Patterson Road	Potential new road connection to Patterson Road to assist with local connectivity for new development.
Waterfront Village	8. Patterson Road / Thorpe Street	Improve safety issues (driven by crash data).
	9. Flinders Lane / Kent Street	Improve safety issues (driven by crash data).
	10. Flinders Lane / Rockingham Beach Road	Improve safety issues (driven by crash data), and observed vehicle speeds late evening and early morning (while pedestrian activity is still significant).
	11. Rockingham Beach Road / Wanliss Street	Improve safety issues (driven by crash data). Also provide entry treatment to reinforce low speed environment within precinct.
	12. Wanliss / Kent Street	Providing a priority route along Wanliss Street for cyclists travelling to / from beach front and help reduce speeds of traffic along Kent Street as they transition from the residential to Beach front village.

Potential intersection treatment options and their justification are provided in the Traffic Impact Assessment (**Appendix 3**).

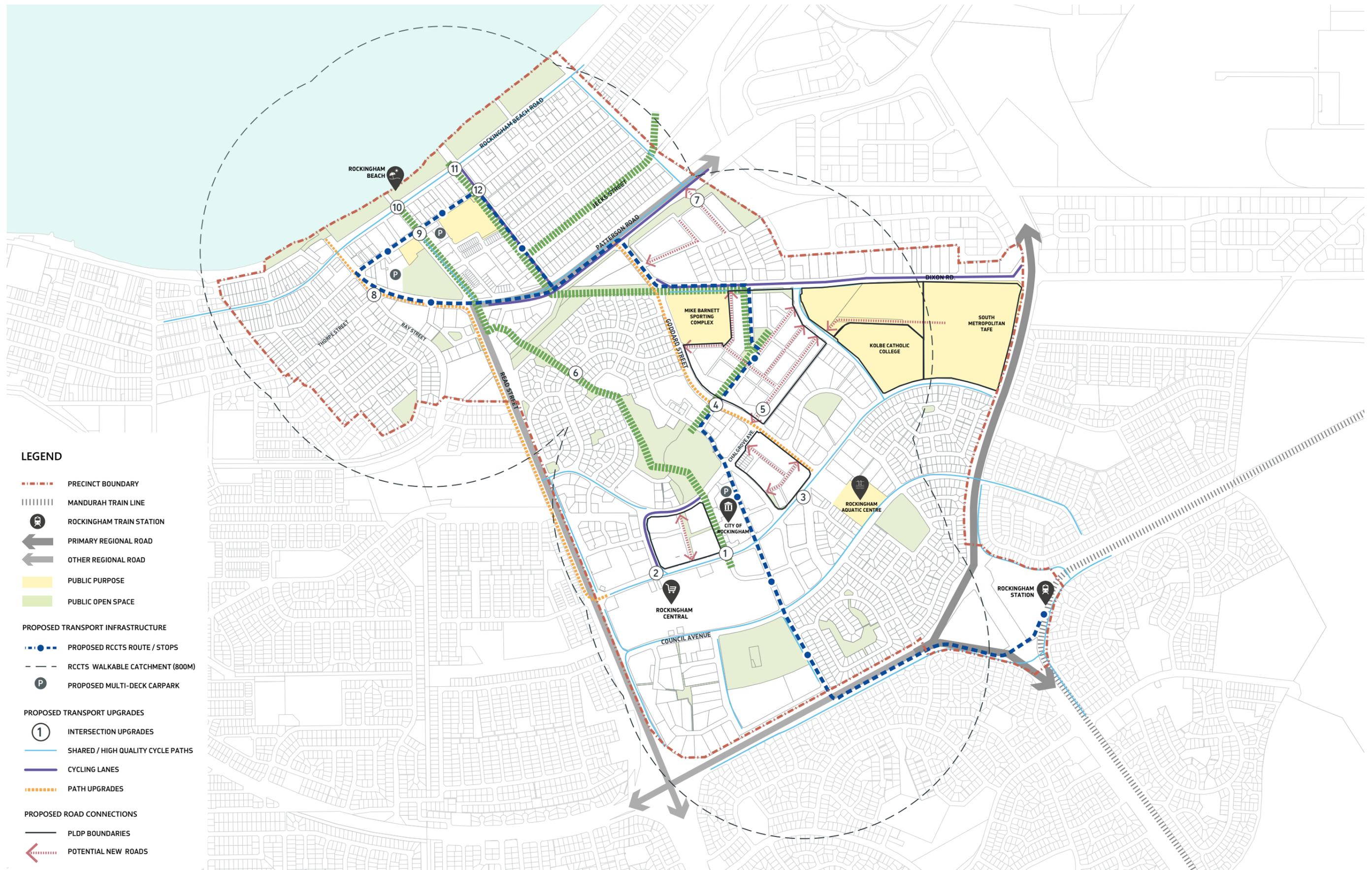
The intersection upgrade options considered generally include:

- + Standard Roundabout;
- + Mini roundabout;
- + Signalised intersection;
- + 4-way raised intersection treatment; and
- + Minor upgrades such as intersection layout improvements and local area traffic management.

It is noted that the data currently available is insufficient to fully inform the required treatment footprint and future timing of upgrades.

In delivering future intersection / road upgrades the RPSP advocates for strong consideration for the following principles, which are derived from the objectives and considerations set out in SPP 7.2 – Precinct Design Guidelines:

- + **Response to Place Requirements** – proposals should consider how well the option responds to the street classifications and frontage types associated with the proposed Movement and Place Plan (**P2 - Figure 29**) proposed in the RPSP.
- + **Accessible Streets** – consider how well the solution caters for universal design, promoting access for members of all ages and abilities in accordance with the City's Disability Access and Inclusion Plan.
- + **Pedestrian and Cyclist Priority** – consider how the solution can assist with prioritising walking, cycling, public transport and shared mobility, to minimise car dependency.
- + **Safe Pedestrian Connections** – consider how the solution performs in providing safe pedestrian connections through the intersection.
- + **Safe Cyclist Connections** – consider how the solution performs in providing safe cyclist connections through the intersection.
- + **Public Transport Integration** – consider how well the solution integrates with existing and proposed public transport infrastructure.
- + **Safe Vehicle Movements** – consider how well the solution responds to the desired function and movement priority of the precinct.
- + **Safe On-street Parking** – consider how well the solution supports provision of safe and integrated on-street parking commensurate to the desired urban form.



LEGEND

- · - · - PRECINCT BOUNDARY
- MANDURAH TRAIN LINE
- ROCKINGHAM TRAIN STATION
- PRIMARY REGIONAL ROAD
- OTHER REGIONAL ROAD
- PUBLIC PURPOSE
- PUBLIC OPEN SPACE
- PROPOSED TRANSPORT INFRASTRUCTURE
- · - · - PROPOSED RCCTS ROUTE / STOPS
- RCCTS WALKABLE CATCHMENT (800M)
- P PROPOSED MULTI-DECK CARPARK
- PROPOSED TRANSPORT UPGRADES
- 1 INTERSECTION UPGRADES
- SHARED / HIGH QUALITY CYCLE PATHS
- CYCLING LANES
- · - · - PATH UPGRADES
- PROPOSED ROAD CONNECTIONS
- PLDP BOUNDARIES
- · - · - POTENTIAL NEW ROADS

P2 - Figure 27: Movement Plan

#### 4.4.2 PARKING AND PARKING MANAGEMENT

Within the RSC, it is important that a balance is achieved between meeting the access and parking needs for vehicles and the movement needs of pedestrians and cyclists. As set out in the City's Public Parking Strategy (for the RSC) it was determined that quantum of parking is not currently an issue, rather revised approaches to parking management are desired.

The distribution of car parking in the RSC focusses primarily on the City Centre, Waterfront Village and TOD Village Precincts, areas where there is a greater focus on employment and residential density and therefore parking. Better management of parking in these areas will help to increase accessibility and encourage use of alternative transport modes such as public transport, cycling and walking. Over the long-term, as patronage increases on alternative transport modes, reductions in the need for parking could then be expected.

The key focus areas of the RPSP as it relates to the Parking Strategy are as follows:

- + Demand for parking across the City is reduced through increased use of alternative transport modes.
- + Carpark designs reduce the amount of ground-level space required and the impact upon the urban form.
- + Reciprocal parking opportunities are maximised.
- + Pedestrian links within parking areas are provided and are safe, legible and connect with surrounding activity uses.
- + Formalised on-street parking is encouraged in appropriate locations as a traffic calming tool.
- + Timed and paid parking is used strategically to manage parking demand and occupancy, and revenue is utilised to support sustainable travel modes.
- + Demand generators are responsible for managing and reducing the parking demand they create and the promotion and support of alternative transport modes.
- + Centralised and controlled parking.:

#### PROPOSED PARKING IMPROVEMENTS

The following parking improvements are proposed to assist with implementation of the RPSP:

- + **City Centre Decked Car Park** – The City have identified a decked car park location within the City Centre which could accommodate the future parking demand increase. The multi-decked station located adjacent to the bus transit lane is expected to provide a significant public parking resource for the City Centre with the proposed 500 bay public parking station.
- + **Waterfront Village Parking** – The proposed strategy is to promote longer-term parking in the off-street locations predominantly south of Kent Street. The existing 'Village Green Carpark' and 'Museum Carpark' have been designed to accommodate parking decks to increase supply.
- + **Foreshore Reserve Parking** – The Rockingham Beach Foreshore Master Plan intend to provide public parking within the foreshore reserve and street parking within Railway Terrace and Rockingham Beach Road. The parking rationalisation was associated with a desire to create more pedestrian orientated public spaces and remove public parking from areas of high social value.
- + **Overflow Parking** – The Public Parking Strategy advocates that the City should develop guidelines that facilitate the use of suitable City controlled land to be made available for overflow parking for major events and in peak summer periods.

- + **Reciprocal Parking Easement Dixon Road** – An accessibility issue that has been identified in the Dixon Road Precinct is that there is poor connectivity between businesses of similar function along Dixon Road. There are partial easements across some of these, however, some sites can only be accessed via Dixon Road, leading to traffic movements in and out of access driveways, increasing congestion and crash risk. In the future it is likely that many of these buildings may be redeveloped and there will be an opportunity to create a parking / access easement along the Dixon Road frontage, which will improve access and connectivity between businesses and improve overall safety.

#### CASH-IN-LIEU PARKING REQUIREMENTS

To help fund the parking upgrades in the Waterfront Village, the existing Centre Plan included a mechanism where developers can provide cash-in-lieu of parking to the City for a set minimum percentage of parking bays, with the option to increase the cash-in-lieu allowance by agreement. The details of this mechanism are included in the parking provisions of Town Planning Scheme No.2.

Stakeholder feedback suggested that these requirements were providing an impediment to development. There are also additional challenges associated with the fact that it may be many years / decades before sufficient funds are raised to be able to construct the decked car parks, and significant parking shortfalls in the mean time may result.

An alternate contribution mechanism could see construction of the parking up front, with costs recovered through developer contributions. The other option that has been explored in the RPSP is whether bonus density or height could be provided where a new development provides community benefit in the form of free, publicly accessible parking within the site – at no cost to the City.

#### 4.4.3 MODE SHARE

Existing mode share targets within the RSC are heavily weighted toward private vehicle trips, this is both for local resident trips, and employee trips (which include a greater proportion of people travelling from outside the RSC). This is not uncommon in outer metropolitan centres such as Rockingham, that being said there is a desire to shift the existing mode share particularly for local trips.

In improving mode share, the RPSP proposes the following strategies:

**Public Transport Improvements** – Improvement to public transport links and frequency within the centre is likely to result in a step change of public transport usage. In dense urban locations supported by high-frequency public transport service, a reduced driving mode share for employees and residents is reasonable. The RCCTS allow the RSC to be well connected by public transport via the Perth-Mandurah train line. Future incentives such as reduced public transport fares could see an increased usage of public transport and encourage mode shift from private vehicles to public transport.

**Bike shares** – Emerging technology also provides the opportunity for bike and scooter sharing platform to thrive. These platforms allow for one-way travel, and particularly when e-bikes are provided, can support much lower 'car as-driver' mode shares for short distance travel. It is acknowledged that a number of bike-share start-ups have been trialled in Perth, with inconsistent results. However, the success of bike share schemes internationally suggests that the benefits of such as system can be extensive with pilot opportunities along the proposed Read Street link possible.

**Car Sharing and Autonomous Vehicles** – The rise of autonomous vehicles is occurring in tandem with a shift away from traditional ownership models, towards sharing and on-demand services. Before autonomous vehicles are fully integrated across the transportation system at all levels, car-sharing supports behaviour change in car-as-driver mode.

### 4.4.4 MOVEMENT AND PLACE APPROACH

Buildings, public spaces and streets all work together to create the urban places that locals use throughout the RSC. There are a range of different experiences walking, cycling or driving through the structure plan area on the street network, often in competing roles. All streets are different with different movement and place requirements.

- + **Movement** is the transport of people and goods, the movement role is to provide a seamless connection from the beginning to the end of the journey.
- + **Place** is the qualities of the streets and roads, the place role recognises that these are places and destinations in their own right understanding the activities that are occurring.

The SPP 7.2 Precinct Design Guidelines introduce the notion of 'movement and place', and the Department of Transport (in collaboration with the DPLH) are developing a 'Movement and Place' framework that can assist in the precinct planning process. While this framework is in draft it is a useful tool to apply. It will help to guide:

- + The way buildings address streets, and the land uses that can be contemplated within
- + Public works and landscape design and investment
- + Priorities for 'movement' and 'place' outcomes, which may compete in strategic locations of the structure plan area

#### HOW IT WORKS

An assessment was undertaken which assigned 'very low, low, mid, high or very high' values to each road (or portion of road), which was undertaken on a sub-precinct basis. These values have been developed in collaboration with the project team and the City of Rockingham. The general considerations for movement value included the street's length, daily volume of traffic (for all modes), the road's classification according to MRWA hierarchy and its connections to other higher order roads, regional and local destinations. The considerations for place included residential density and the number and variety of activities occurring on, or adjacent to, the street.

Movement and place values are interrogated for each street to suggest building frontages that may be suitable for that place. These frontages are expressed with sections and photo examples.

A priority rating is applied to some streets to highlight the benefit of streetscape upgrades to assist with urban redevelopment. This can be used by the City, and adjacent landowners to coordinate public works and landscaping projects in the structure plan area.

#### DEFINING THE VALUES

**P2 - Figure 28** provides a graphic representation of these values. When combined, the movement and place values form distinct groups which become a way of organising and distilling the desired outcomes. These are explained further below.

**Movement Corridors** (high movement / low place) - are routes that facilitate broader connections to, through and within the precinct. Their design prioritises efficient movement of people and freight, and is characterised by broader carriageways, minimised traffic disruptions and higher speed limits. Key examples of this street environment are Read Street, Ennis Avenue and Patterson Road.

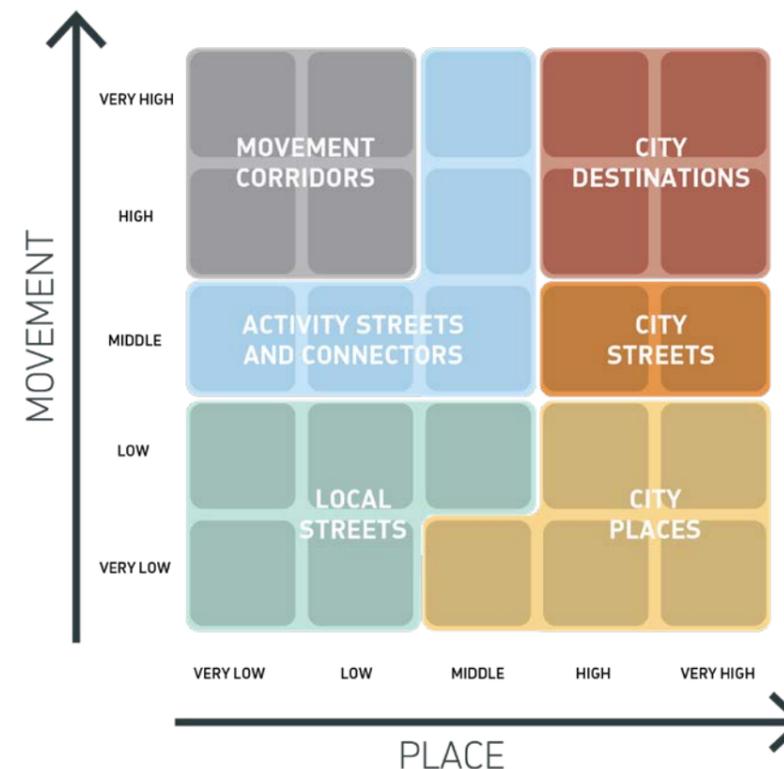
**Activity Streets and Connectors** (mid movement and place) - form the precinct's secondary internal movement network and facilitate connections to schools, smaller-scale retail, commercial and industrial centres within the precinct. These streets prioritise vehicle access, whilst providing convenient pedestrian connections to the premises. Livingston Road, Leach Crescent and Morgan Street are examples illustrating this street type.

**City Destinations** (high movement and place) - are focal precinct locations characterised by both high 'place' and 'movement' values. These streets are shaped by a variety of uses and activities, often have a prominent built environment, including heritage and civic places, and attract high volumes of movement. They are often pedestrian priority, shared spaces. The examples include Railway Terrace, Civic Boulevard and Syren Street.

**City Streets** (mid movement / high place) - value environments that have lower movement activity. These streets are characterised by high residential density and accommodate walkable connections to open space and public transport. This street typology forms the core network for the TOD Village precinct.

**City Places** (low movement / high place) - are links to local destinations that have a higher 'place' value but are characterised by 'low' or 'very low' movement. They facilitate local connections to parks, small-scale retail, commercial and community uses. Moresby Grove is an example of this street type.

**Local Streets** (low movement and place) - form the majority of streets in Rockingham. Albeit lower in activity, they can have significant meaning to the residents, offering places to play, socialise and exercise.



*Note: A high place value does not mean that a street should be active with retail development at nil setbacks. There are different frontage types and activities that can occur on streets with higher place values. Examples include: Green living edges with residential courtyards and balconies; active retail and frontage; landscaped edges with commercial development set back behind.*

*How these classifications relate to different street frontage types is explained in Section 4.6.3.*

P2 - Figure 28: Movement and Place Values



P2 - Figure 29: Movement and Place Assessment

OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>05.1</b> To ensure current and planned land uses respond to the needs and expectations of the community.	<b>C5.1.1</b> Review existing zonings and land uses within and adjacent to the precinct to identify gaps and determine the appropriate zones and land use mix.	
	<b>C5.1.2</b> Consider the current and future need for services, utilities and social infrastructure, including community, civic and cultural facilities.	
	<b>C5.1.3</b> Identify locations for staged land use transition to meet changing community needs.	
<b>05.2</b> To ensure the planned land use types contribute positively to the precinct character and amenity.	<b>C5.2.1</b> Co-locate land uses that have a mutual, positive benefit.	
	<b>C5.2.2</b> Locate and distribute land uses to manage amenity impacts such as noise, visual and air pollution.	
	<b>C5.2.3</b> Distribute land uses across the precinct to support and benefit from the movement network.	
<b>05.3</b> To achieve a mix of land uses and activity that supports the precinct vision.	<b>C5.3.1</b> Determine the appropriate land use mix for the precinct.	
	<b>C5.3.2</b> Determine the appropriate distribution of residential density to support the intended character and function of the precinct.	
	<b>C5.3.3</b> Provide for land uses that appropriately activate and promote safety in the public realm.	
	<b>C5.3.4</b> Identify a land use mix that supports local employment and the local economy.	
	<b>C4.3.5</b> Consider access requirements for service vehicles and logistical freight movements within the precinct.	
	<b>C4.3.6</b> Design the movement network to allow for private vehicle access and movement that is appropriate to the precinct function.	

## 4.5 LAND USE

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 5: Land Use can be summarised as follows:

- + Opportunities to consider more flexible approaches to development, that have consideration for staging and interim development to promote development activity.
- + Consideration for how density is distributed across the RSC, and how infill development can be addressed.
- + A land use approach for the TOD Village Precinct that responds to the new proposed urban structure.
- + Consideration for how employment generating land is distributed throughout the RSC.
- + Residential land uses to be excluded from areas impacted by the Kwinana Industrial Area air quality buffer.

### DESIRED OUTCOMES

Rockingham fulfils its role as a strategic centre by providing a mix of uses that improve housing density and diversity, promote employment / education growth, and provide entertainment for a broad population catchment.

- + Provide a range of housing choices (densities, ownership patterns, price and building types) to ensure a diverse population can be housed.
- + Provide sufficient land for employment opportunities to support economic growth aspirations.
- + Promote development along the RCCTS to support implementation of a TOD model.
- + Encourage land uses and developments that attract high numbers of people, and have the potential to activate the RSC throughout the day and night. Such uses should include medium to high density residential, retail, civic and community facilities, educational and cultural facilities, cafes, restaurants, hotels, offices and other intensive employment uses.
- + Reinforce the 'main street' model (in key areas of the RSC) by giving priority to pedestrians and active street-oriented land uses.
- + Appropriate forms of interim development are provided to support short-medium term activation in key precincts.
- + Ensure timely and efficient provision of community and social infrastructure to meet the future service needs of the population. .

### 4.5.1 ECONOMIC RESILIENCE ASSESSMENT

As one of ten designated Strategic Centres in the Perth and Peel Region, and the primary centre between Fremantle and Mandurah the RSC is envisioned to fulfil an important function as a multi-purpose centre that provides a mix of retail, office, community, entertainment, residential and employment activities. Its role is not only to provide services and amenities to its diverse population, but also to provide a full range of economic and community services to support the surrounding region.

The RSC is a major hub of economic activity and employment within the surrounding region, it currently provides approximately 9,000 jobs accounting for 25% of the City's total offer. It provides an array of local employment opportunities for residents across various industries, with Retail (19%), Public Administration and Safety (12%) and, Health Care and Social Assistance (10%) the most prominent. It is home to a range of institutions across the retail, public administration, and education fields as well as a thriving business sector with 600 local businesses (11% of City's total).

The RSC has been at the centre of the rapidly expanding southwest corridor, with an additional 93,000 people expected to all the City home by 2041. The RSC is therefore well-positioned and expected to continue its evolution into a major urban centre. Guiding this evolution is the identification of a set of land use projections which have informed the structure plan design and process. This has enabled the identification of aspirational but achievable targets for growth in economic output and employment.

To inform the RPSP design, FAR Lane have undertaken an Economic Resilience Assessment (Appendix 4) of the RSC. The assessment focuses particularly on the elements of uniqueness, connectivity, and fit-for-purpose to ensure competitiveness and resilience, creating the basis to realise economic prosperity:

**+ Competitiveness** - The ability of the regional economy to compete in state, national and international markets.

*Competitiveness is the foundation for attracting and retaining investment, as well as creating wealth in an economy (Snowdon & Stonehouse, 2006). Economies evolve from being product-driven, to investment-driven, and eventually become innovation-driven (Porter, 2005). This is a process that local economies need to plan for, as it is the key challenge to achieving competitiveness.*

**+ Resilience** - The ability of the economy to respond effectively to change and shocks.

*Resilience is increasingly being recognised as a critical component of economic development. Systems and economies need to be resilient to disruptions and shock to ensure adverse impacts are minimised and can be managed effectively by promoting and sustaining diversity, innovation, competition, and entrepreneurship.*

Competitiveness and resilience need to be considered equally in attracting and retaining investment to create jobs, boost public amenity, and create economic prosperity. In undertaking the Economic Resilience Assessment, FAR Lane considers the following to be the key economic issues for the RPSP to address:

- + Meeting the needs of a growing population.
- + Lack of density.
- + Increasing employment needs.
- + Underdeveloped tourism visitation.

For these key issues, the Economic Resilience Assessment determines key success factors, potential Precinct Plan Responses, and impacts as shown in **P2 - Table 14**.

P2 - Table 14: Economic Resilience Assessment Findings

	ISSUE	SUCCESS FACTORS	PSP RESPONSE	IMPACT
Growing Population	<ul style="list-style-type: none"> <li>+ Insufficient capacity to service an extra 93,000 residents by 2041. Including:</li> <li>+ Demand for secondary schooling and aged care.</li> <li>+ Service and retail needs for young families.</li> <li>+ A retail floor space gap between 17,140 m<sup>2</sup> (WA Tomorrow) and 78,300 m<sup>2</sup> (City forecast).</li> </ul>	<ul style="list-style-type: none"> <li>+ Being able to meet the demand for a growing population by providing a diversified set of offerings and services for the local community.</li> <li>+ Ensuring that there will be sufficient floor space to cater for the needs of an increased population.</li> <li>+ Developing universally accessible infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>+ Provide diversified floorspace with emphasis on fit-for-purpose, accessible and unique offers.</li> <li>+ Planning for required amenities including schools and medical facilities.</li> <li>+ Plan for a population with a lower proportion of high-income earners compared to Greater Perth.</li> <li>+ Provide a range of housing options, including high and medium density.</li> <li>+ Planning that requires universal accessibility.</li> </ul>	<ul style="list-style-type: none"> <li>+ A precinct that meets the residential, retail, and employment requirements for its increasing number of residents.</li> <li>+ Increased economic activity through new retail opportunities, and tapping aged care and other emerging markets.</li> </ul>
Lack of Density	<ul style="list-style-type: none"> <li>+ Currently, the RSC is underutilising space, which discourages vibrancy.</li> <li>+ Rockingham's beachfront infrastructure is not well connected to other Rockingham hubs, particularly the City Centre and Rockingham Station.</li> </ul>	<ul style="list-style-type: none"> <li>+ Using available land for high-density purposes, including consideration for interim uses on key developments sites to stimulate activity.</li> <li>+ Supporting public transport and active transport infrastructure both to and within the RSC and beyond.</li> <li>+ Diversity of offerings for residents, workers and visitors.</li> </ul>	<ul style="list-style-type: none"> <li>+ Supporting high-density development.</li> <li>+ Provide enhanced pedestrian, bike and public transport infrastructure providing better connectivity between key precincts throughout the RSC.</li> <li>+ Better utilisation of unused land by introducing interim uses for long-term development sites.</li> </ul>	<ul style="list-style-type: none"> <li>+ Improved housing density and diversity, leading to a greater range of amenities, activities, and increased vibrancy.</li> <li>+ Improved employment opportunities.</li> <li>+ Increased tourism visitation and spend.</li> </ul>
Increasing Employment Needs	<ul style="list-style-type: none"> <li>+ A gap in office floor space gap between 30,500m<sup>2</sup> (WA Tomorrow) and 52,700 m<sup>2</sup> (City forecast).</li> <li>+ Current lack of office space and start-up infrastructure.</li> <li>+ Employment opportunities are concentrated among a few industries making the RSC vulnerable to external shocks.</li> </ul>	<ul style="list-style-type: none"> <li>+ Supporting business environment, including for startups.</li> <li>+ Creating sufficient additional floor space (in employment precincts) to realise a diverse and unique set of offerings for a wide range of users, including boutique micro-retail offerings.</li> <li>+ Office and event space with good linkages to other business precincts as well as to transport linkages.</li> <li>+ Space where local businesses can network and meet.</li> </ul>	<ul style="list-style-type: none"> <li>+ Plan for office precincts and environments which promote creativity, startups, and innovation.</li> <li>+ Providing land opportunities for businesses to create jobs by leveraging the local defence industry; and Kwinana and Henderson supply chains.</li> </ul>	<ul style="list-style-type: none"> <li>+ More businesses want to operate in the RSC due to the favourable business environment which exists there.</li> <li>+ A variety of new businesses and startups emerge.</li> <li>+ The City becomes an important hub for the defence industry that brings professionals and skills from across the world.</li> <li>+ New businesses have been established due to supply chain opportunities from Kwinana and Henderson.</li> <li>+ New infrastructure that maximises and supports events creates new jobs.</li> </ul>
Tourism Visitation	<ul style="list-style-type: none"> <li>+ Insufficient supply of short-stay accommodation in the RSC.</li> <li>+ Non-unique tourism attractions.</li> <li>+ Lack of infrastructure for major conferences.</li> </ul>	<ul style="list-style-type: none"> <li>+ Short and long-term accommodation options.</li> <li>+ Unique tourism attractions and event conference facilities, underpinned by the City's coastal location, and are not found in other Perth beachfront locations.</li> </ul>	<ul style="list-style-type: none"> <li>+ Plan for increased short stay accommodation.</li> <li>+ Diversity in floorspace with emphasis on uses, including boutique micro-retail offerings.</li> <li>+ Promoting the development of major conference facilities.</li> </ul>	<ul style="list-style-type: none"> <li>+ Increased tourism, including overnight stays.</li> <li>+ Major conferences are held in the RSC.</li> </ul>

## 4.5.2 FUTURE POPULATION

As demonstrated in **Section 1.3** the City's population growth is expected to increase substantially with an extra 93,000 people expected by 2041. As the largest centre in the City and surrounding region, the RSC is expected to perform a significant role.

The Needs Assessment prepared for the City's Local Planning Strategy (by Pracsys) has tested two distinct growth scenarios for the RSC based on State Government projections (WA Tomorrow) and research undertaken by the City (forecast id). The scenarios are described below:

- + **Scenario 1 WA Tomorrow** – Referred to as the 'low population growth scenario' the City's Needs Assessment defines that under this scenario a population of approximately 200,000 people could be achieved in the City by 2041.
- + **Scenario 2 City of Rockingham Forecasts** – Referred to as the 'medium population growth scenario' the City's Needs Assessment defines that under this scenario a population of approximately 250,000 people could be achieved in the City by 2041.

The key population and jobs targets for each scenario have been summarised in **P2 - Table 15**.

**P2 - Table 15: RSC Population and Employment Scenarios**

SCENARIO	POPULATION				JOBS			
	2026	2031	2036	2041	2026	2031	2036	2041
Scenario 1 WA Tomorrow	6,212	6,462	6,722	6,992	8,851	9,365	9,974	10,697
Scenario 2 COR	13,903	18,370	24,272	32,070	9,199	10,367	11,917	14,252

Source: City of Rockingham 2021, Pracsys 2021

**In the RSC, a target of approximately 30,000 residents and 14,000 jobs are desired by 2041.**

The Economic Resilience Assessment outcomes set out in **P2 - Table 14** identified specific areas where the RPSP could help improve economic performance. The general land use approach can be summarised as follows:

- + Supporting increased housing density and diversity;
- + Providing floorspace to meet retail need;
- + Providing floorspace to support greater employment diversification; and
- + Support increased tourist visitation.

## 4.5.3 LAND USE MIX

**P2 - Table 10** identified the desired precinct character, **P2 - Figure 30** provides the broad land use response<sup>1</sup> for these precincts which can be summarised as follows:

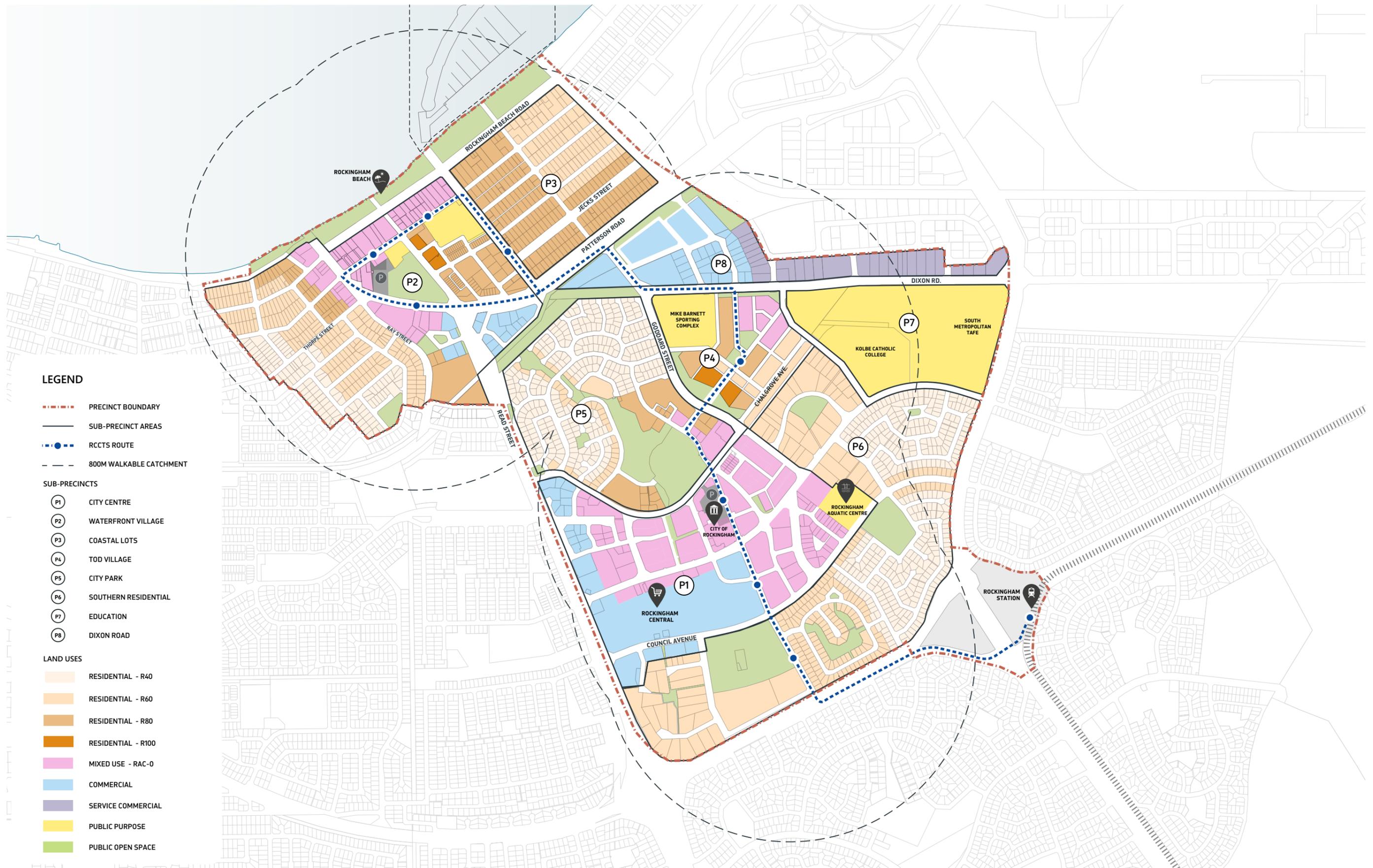
- + **Mixed Use** - Two primary mixed used nodes are proposed in Precinct 1 - City Centre and Precinct 2 - Waterfront Village. The intent is that these two precincts remain the primary focus for retail, entertainment, commercial and high-density development with both horizontal and vertical distribution of uses considered. A range of employment opportunities are enabled with access to transport and other public amenity acting as drivers for growth. A third, smaller node is also proposed in Precinct 4 - TOD Village to provide retail and employment opportunities.
- + **Retail / Commercial** - Areas designated as retail / commercial are located in more car dominated environments. Uses such as shopping centres (Rockingham Central), bulky goods retail, and showrooms rely on strong vehicle access. As such, these uses are proposed on key vehicle thoroughfares such as Council Avenue, Read Street and Patterson Road where the place value is not as high.
- + **Service Commercial** - These uses are concentrated in the area north of Dixon Road. The land is used exclusively for businesses, with a focus on employment generating uses. Bulkier business types more akin to the prevailing light industrial use will remain the focus, with opportunities to leverage off the Kwinana / Henderson industrial areas. Residential uses are not permitted due to the Kwinana Industrial Area Air Quality Buffer.
- + **Residential** - In addition to the mixed use areas, residential is the most predominant use. Densities range between R40 and R100, with higher densities proposed in areas with good access to public open space and transport amenity. Precinct 4 - TOD Village is proposed as a new high-density village, the balance of residential growth is expected to be in an infill setting in Precinct 2 - Waterfront Village, Precinct 3 - Coastal Lots, Precinct 5 - City Park and Precinct 6 - Southern Residential.
- + **Public Purpose** - These areas include major community infrastructure nodes such as Mike Barnett Sporting Complex, Rockingham Aquatic Centre and Rockingham Bowls Club. It also includes the education institutions (both public and private) located in Precinct 7 - Education.
- + **Public Open Space** - Form and functionality of public open space areas as described in **Section 4.3**.

The breakdown of uses proposed in the RPSP is summarised in **P2 - Table 16**. The approach taken ensures that the character, diversity and intended activity of the precinct is realised, achieved through a mix of uses various housing types, community facilities, business uses, as well as public spaces.

**P2 - Table 16: RPSP Land Use Mix**

LAND USE TYPE	AREA (HA)
Mixed Use	46
Retail / Commercial	40
Service Commercial	11
Residential R100	2
Residential R80	43
Residential R60	79
Residential R40	55
Public Open Space	50
Public Purpose	46

<sup>1</sup> Detailed land use permissibility and zones are defined in Part 1.



P2 - Figure 30: Land Use and Density Plan

## 4.5.4 EMPLOYMENT AND NON-RESIDENTIAL FLOORSPACE

### EMPLOYMENT GAP

It is estimated that the employment gap to reach a target ESS of 74% (for the City) would require an additional 2,100 to 5,100 jobs in the RSC. These results reflect the importance of the RSC in providing employment opportunities to meet sub-regional employment targets. The Southern Metropolitan Peel Framework currently provides a target of only 12,290 jobs in the RSC. Under the COR scenario (**P2 - Table 15**) the RSC will need at least 14,252 jobs to meet the goods and services needs of the surrounding population to contribute to an ESS of 74%. The findings of the Rockingham Employment Study and our analysis indicate that regional ESS targets would not be achievable unless a greater concentration of employment is planned for in the RSC. This additional employment would be in line with its role as a Strategic Centre.

Activity Centre Employment is population driven and found in businesses and uses within the hierarchy of centres. Whereas Strategic Employment is that which comes from industries which are mostly separate to the drivers that activity centre employment is as it mainly relies on the comparative advantages of an area (i.e. resources, location) and individual decisions of businesses. Growth in Strategic Employment can be achieved through promoting the unique advantages of the area to businesses, encouraging business collaboration and other business-friendly policies. The primary locations that can accommodate strategic employment with the City are the RSC and Rockingham Industrial Area.

The Employment Study defines a number of employment activities in line with the Strategic Centre role of the RSC that could be targeted to achieve greater strategic employment levels. These include:

- + Primary regional institutions including a full-service university, major health campus with teaching capabilities, State government administration, and high-level arts and entertainment
- + Business services for nearby industrial areas, the naval base and Westport
- + Tourist activities including business travel and visitation for the surrounding area
- + Defence, heavy industry and port related uses

Strategic employment targets in the RSC as set out in the Needs Assessment are provided in **P2 - Table 17**.

**P2 - Table 17: Strategic Employment Target**

SCENARIO	STRATEGIC EMPLOYMENT JOBS			
	2026	2031	2036	2041
Scenario 1 WA Tomorrow	1,738	1,839	1,959	2,101
Scenario 2 COR	3,263	3,677	4,227	5,055

Source: Pracsys 2021

### EMPLOYMENT GENERATING LAND

As the primary centre in the surrounding region, the RSC is expected to fulfil its role as a strategic employment hub that provides a diverse range of jobs commensurate to the needs of its community. The economic analysis (**Section 1.3**) determined that currently, the jobs on offer in the City do not match the needs of its community with the majority of residents seeking employment outside of the City. This can impact quality of life, with potentially long commute times and other factors impacting overall liveability in the City and RSC.

The issue is exacerbated further due to the fact that the City's population growth is not matched by commensurate employment growth. The amenity and economic advantages that can be available with a successful city centre is a therefore a key focus for future employment in the City. This requires an expanded role for the RSC with a focus on increasing employment (as evidenced by the Economic Resilience Assessment) opportunities.

The key focus of the RPSP is to ensure that there is enough employment generating land to enable the jobs targets to be met. As described in **Section 4.5.3** and illustrated on **P2 - Figure 30**, the RPSP proposes this to occur in three primary employment areas, being the City Centre, Waterfront Village, TOD Village, and Dixon Road Precincts. These precincts are expected to accommodate between 11,000 - 14,000 jobs based on the low and medium growth scenarios.

The proposed employment targets are higher than that included within the Perth and Peel @ 3.5 Million framework, however, the additional employment within the RSC is expected to come from catalytic projects that support strategic employment opportunities. The Employment Study defines employment activities in line with the role of the RSC that could be targeted to achieve greater employment levels.

The significant population relying on the RSC as their primary centre would benefit from having access to higher-order services such as a university, reducing their need to travel significant distances to access the services elsewhere in the Metropolitan area. It would also facilitate access to residents of surrounding areas that have lower socio-economic status and may be limited in their ability to access services elsewhere.

The announcement of Westport at the Western Trade Coast (WTC) is a significant opportunity for development at the RSC, which is the closest higher order centre. The Employment Study identified a significant proportion of office floorspace currently at the WTC. Strategic port-related uses will create significant demand for land as Westport develops and will likely lead to a transition of uses in the WTC. The uses that are most likely to transfer are those that are population-related and/or do not need to be located on strategic industrial land.

The RSC is ideally located near the WTC to attract office related uses, which could be accommodated in the Dixon Road and City Centre Precincts.

### FLOORSPACE GAP ANALYSIS

In order to meet the 15,000 job target, major floorspace increases are proposed across all major sectors. Floorspace modelling undertaken for the RSC as part of the City's Needs Assessment is summarised below. The provision of floorspace across the RSC was compared to the identified benchmarks to determine and quantify current gaps by Planning Land Use Categories (PLUC) floorspace use.

### SHOP / RETAIL AND OTHER RETAIL

The gap in Shop/Retail and Other Retail floorspace was assessed by estimating expenditure at each activity centre through gravity modelling. This expenditure was then divided by the required floorspace to productivity ratio for activity centres to ensure adequate retention of tenants. For the RSC this ranged between \$6,422 - \$6,997 per m<sup>2</sup>.

Based on this, the level of supportable floorspace that the RSC should provide was calculated. This was compared to the current provision of floorspace which determined that there is a gap of 15,500m<sup>2</sup> of Shop/Retail and Other Retail floorspace.

### NON-RETAIL

Non-Retail Floorspace gaps were calculated by identifying a suitable floorspace per person ratio by PLUC code based on a number of benchmarked areas. The areas used as benchmarks were 25km catchments from the Mandurah, Armadale and Joondalup Strategic Centres. Based on these benchmarks, provision ratios were identified for Entertainment (ENT), Health/Welfare/Community (HEL), Manufacturing (MAN), Office (OFF), Service (SER) and Storage (STO).

The identified Floorspace Provision Gap was then multiplied by the population in the City at each time interval assessed to determine the current gap in Non-Retail Floorspace. The floorspace gap by PLUC Code is shown in **P2 - Table 18**:

**P2 - Table 18: Non-Retail Floorspace Gaps**

SCENARIO	ENT	HEL	MAN	OFF	SER	STO	TOTAL
Precinct 1*	7,070	46,084	6,175	16,415	8,141	4,090	<b>87,976</b>

Source: DPLH 2017, Pracsys 2021

\*Note Precinct 1 in the Needs Assessment also includes a range of other smaller local and neighbourhood centres which will also contribute to addressing this gap.

## FLOORSPACE PROJECTIONS

**P2 - Table 19: Ultimate RSC Floorspace Projections (2041)**

SCENARIO		ENT	HEL	MAN	OFF	SER	STO	TOTAL
Scenario 1 WA Tomorrow	2021 (existing)	29,500	54,559	1,135	48,662	4,533	1,890	140,279
	2041 (ultimate)	16,088	94,511	7,595	29,538	9,948	4,760	162,441
	<b>Total</b>	<b>45,588</b>	<b>149,070</b>	<b>8,730</b>	<b>78,200</b>	<b>14,481</b>	<b>6,650</b>	<b>302,720</b>
Scenario 2 COR	2021 (existing)	29,500	54,559	1,135	48,662	4,533	1,890	140,279
	2041 (ultimate)	29,393	112,765	11,047	51,513	16,238	9,438	230,395
	<b>Total</b>	<b>58,893</b>	<b>167,324</b>	<b>12,182</b>	<b>100,175</b>	<b>20,771</b>	<b>11,328</b>	<b>370,674</b>

Source: City of Rockingham Needs Assessment, 2021, Pracsys

## 4.5.5 RESIDENTIAL DENSITY

### DWELLING TARGETS & WALKABLE CATCHMENT

**Section 4.5.2** identifies that the RSC has a population target of 30,000 people. In meeting this aspirational target, it is important to consider how residential density is approached, and more importantly staged. The SPP 4.2 Implementation Guidelines identify that an interim target should be established (to be achieved within 10 years of approval) and an ultimate target. These targets are described in the residential yield section below.

As a Strategic Centre, SPP 4.2 defines a residential density target of 50 dwellings per gross urban zone hectare within the walkable catchment. Given the physical separation and limited access to Rockingham Station, the walkable catchment for the RSC encompasses the land within 800m of a high-frequency stop on the proposed RCCTS. The route allows for proposed density increases along the 10.5km route.

**P2 - Table 20** demonstrates that the 800m walkable catchment (measure from stops on the RCCTS) for all urban zoned land (excluding roads, public open space, public purpose) would total 245 hectares. If the Dixon Road Precinct is removed (as residential is not permitted), the total of available residential zoned land totals 198 hectares or 206 hectares for the entire RSC.

As such, for the purposes of defining a density target for the RPSP the 206 hectares of gross residential land has been used - equating to a dwelling target of 10,300.

**P2 - Table 20: Walkable Catchment**

PSP AREA	AREA (HA)	WALKABLE CATCHMENT	AREA (HA)
Urban Zoned Land (PSP)	257	Urban Zoned Land (Walkable Catchment)	245
Residential Zoned Land (PSP)	206	Residential Zoned Land (Walkable Catchment)	198
<b>Total PSP Area 551 HA</b>			

At an average of 2.07 persons per household, 10,300 dwellings would see the RSC fall short of the 30,000 population target. The following sections demonstrate how the target is proposed to be achieved.

### DENSITY DISTRIBUTION

In terms of density distribution, **P2 - Figure 30** demonstrates the following:

- + As demonstrated in the development potential analysis and Urban Structure Plan (**P2 - Figure 20**) the City Centre, TOD Village, Waterfront Village, and (part of the) Coastal Lots Precincts have the highest potential for redevelopment and density increases. Therefore dependent on location, densities in these areas include R60, R80, R100 and RAC0 signalling a clear focus for change in these areas.
- + In areas where medium density infill development of a lower scale is expected to be more prominent (i.e. Southern Residential, City Park, and part of Waterfront Village) an R40-R60 density is considered most appropriate. Design testing provided in **Section 4.6.2** demonstrates how this can be delivered in a sensitive manner which preserves existing character qualities.
- + No residential development is proposed in the Education and Dixon Road Precincts.

The above approach is consistent with the guidance provided in SPP 4.2 and SPP 7.2.

## RESIDENTIAL YIELD

To ensure that the proposed density and population targets can be met, estimates of residential yield are provided to ensure that the land use response adequately meets the needs of the centre. The RPSP envisions a diversity of residential typologies including single houses, terraces, mid-rise apartments, and high-rise apartments (the latter two could be either standalone or mixed-use).

The proposed residential yields have been informed by the land use and density plan (P2 - Figure 30) which is underpinned by the redevelopment analysis (P2 - Figure 10). The redevelopment analysis graded development potential based on the likelihood of each individual lot being redeveloped, the purpose of which is to ensure that the densities proposed are realistic.

From a spatial perspective, factors such as lot characteristics (tenure and size), land use (whether it is vacant or has an existing use), building characteristics (quality and age of existing development); and amenity on offer (public transport access, natural amenity, public amenity):

- + **Development Ready Land** – The availability of vacant, undeveloped land situated in proximity to amenity is a key indicator of development potential. Importantly, the zoning of this land should be flexible enough to encourage development to occur.
- + **Lot Size and Land Ownership** – Larger lots in sole ownership (both government and private) can be catalysts for redevelopment as there are fewer complexities involved. Areas comprised of such lots are typically viewed more favourably than those which have a high number of smaller lots in private ownership. Multiple land owners, sometimes with conflicting interests, can make redevelopment difficult, and usually results in redevelopment occurring over a much longer timeframe.

When combined, the above factors provide an accurate picture of the true development potential that exists in the RSC. This assists with staging and prioritisation of land for development.

The residential yield analysis has also had consideration for the staging guidance provided in the SPP 4.2 Implementation Guidelines. It therefore considers the following:

- + An 'interim' density target which is to be achieved within 10 years of the approval of the RPSP; and
- + An 'ultimate' density target, which is to be achieved through future reviews of the RPSP following 10 years of its implementation.

A breakdown of these targets by sub-precinct is provided in P2 - Table 21, which demonstrates that the land use and density approach for the RPSP provides capacity for the RSC to exceed the dwelling target.

P2 - Table 21: RPSP Density Targets

PRECINCT	EXISTING DWELLINGS	INTERIM TARGET	ULTIMATE TARGET
P1 - City Centre	432	3,005	4,248
P2 - Waterfront Village	1,097	2,522	3,634
P3 - Coastal Lots	536	1,379	1,762
P4 - TOD Village	0	805	1,205
P5 - City Park	347	347	1,326
P6 - Southern Residential	1,555	1,855	2,917
P7 - Education	0	0	0
P8 - Dixon Road	0	0	0
<b>TOTAL</b>	<b>3,967</b>	<b>9,914</b>	<b>15,093</b>

Notes and high-level assumptions:

- + Interim Density Target - Assumes 80% of high potential land, and 20% of medium potential land is developed / redeveloped.
- + Ultimate Density Target - Assumes 100% of high potential land, and 80% of medium potential land, and 20% low potential land is developed / redeveloped.

The RPSP acknowledges that the majority of the RSC's density will be in the form of medium - high density development. As such, meeting the interim target proposed above will be dependent on the overall uptake of high density dwellings. Dwelling targets needs to consider the challenge in delivering apartment/high density development in precincts such as the RSC as in current market conditions it is difficult for developers to achieve sufficient built form price points (for larger developments) that enable projects to be financially viable. This is especially true in instances where basement parking is needed.

Appendix 5 includes a high-level feasibility analysis which explores the commercial viability of apartment developments throughout various precincts in the RSC.

## 4.5.6 STAGING AND DEVELOPMENT PRIORITY

### UNLOCKING VACANT DEVELOPMENT SITES

The SPP 7.2 Precinct Design Guidelines outline the importance of “balance between the long-term vision of the precinct plan and the economic reality of the desired outcomes”. This is pertinent for the RSC, where its strategic importance requires high quality development that meets the ultimate vision for the place, though there are large vacant landholdings that have not yet developed.

Stakeholder engagement has highlighted the need for some flexibility and nuance in the planning framework, to encourage further development of larger vacant landholdings in the City Centre Precinct. There are two approaches to meet this objective, outlined below.

#### PRIORITISING DEVELOPMENT ON AREAS OF SITES THROUGH A TIERED APPROACH

The physical dimensions of most vacant sites in the RSC are such that they can deliver a range of lots to accommodate larger building types (such as multi-level apartments, commercial, retail, and mixed-use developments) on multiple edges. That is advantageous for development staging, as it allows for new streets, paths and lots to set up a structure for each site and deliver development over multiple stages. With the objective of balancing long-term development and economic realities of the place, development could feasibly be encouraged earlier on some parts of these sites where edges are deemed to be ‘less critical’ where facing a street that has a lower ‘place value’.

The planning provisions in Part One shows the areas of sites where development responses are deemed to be ‘less critical’ based on a lower ‘place value’ for that portion of street. In these areas there may be an opportunity to relax land use, development standards and car parking requirements to encourage economic activity and employment.

#### ENCOURAGING SHORT TERM DEVELOPMENT AND LAND USES

While some areas of sites may be deemed ‘less critical’ to achieving the long-term vision for the RSC, there are areas facing onto important streets that are highly critical in delivering the long-term vision for the RSC.

There is an opportunity for the PSP to encourage short term activity on lots that does not result in long term development. These uses need to balance community benefit with economic reality, the focus should be on uses which will generate activity and help stimulate development.

Short term land uses and development that are proposed in the City Centre have been suggested in **P2 - Table 22** based on their ability to generate economic activity, and offer a ‘short term return on investment’ to the proponent. This is likely to result in a life span that is shorter than a typical building, therefore can be timed for land redevelopment to ‘highest and best use’ when economic conditions allow.

Clause 72 of the Local Planning Scheme Regulations 2015 offer the opportunity for time limited approvals, which may assist with this approach

#### *Temporary development approval*

*The local government may impose conditions limiting the period of time for which development approval is granted. Note: A temporary development approval is where the local government grants approval for a limited period. It does not have any effect on the period within which the development must commence.*

**P2 - Table 22: Potential Interim Uses**

Land use	Definition (Local Planning Scheme Regulations 2015)	Considerations for a time limited approval in the PSP area	TPS2 Permissibility
Amusement parlour	means premises — (a) that are open to the public; and b) that are used predominantly for amusement by means of amusement machines including computers; and (c) where there are 2 or more amusement machines	+ Outdoor, low investment pursuits only + Temporary amusement installations	D
Cinema/theatre	means premises where the public may view a motion picture or theatrical production;	+ Outdoor, low investment pursuits only + Examples such as drive-in movies	D
Community purpose	means premises designed or adapted primarily for the provision of educational, social or recreational facilities or services by organisations involved in activities for community benefit	+ Outdoor, low investment pursuits only	D
Exhibition Centre	exhibition centre means premises used for the display, or display and sale, of materials of an artistic, cultural or historical nature including a museum.	+ Outdoor, low investment pursuits only	D
Holiday Accommodation	holiday accommodation means 2 or more dwellings on one lot used to provide short term accommodation for persons other than the owner of the lot.	+ Modular construction, low investment pursuits only + Example: Hougoumont Hotel Fremantle	D
Market	means premises used for the display and sale of goods from stalls by independent vendors	+ Outdoor, low investment pursuits only	D
Restaurant / Cafe	means premises primarily used for the preparation, sale and serving of food and drinks for consumption on the premises by customers for whom seating is provided, including premises that are licenced under the <i>Liquor Control Act 1988</i>	+ Outdoor, low investment pursuits only	D
Serviced Apartment	serviced apartment means a group of units or apartments providing — (a) self-contained short stay accommodation for guests; and (b) any associated reception or recreational facilities	+ Modular construction, low investment pursuits only + Example: Hougoumont Hotel Fremantle	D

## UTILITIES AND SERVICES

The RSC is planned to undergo significant change, it is therefore important to understand existing and planned infrastructure such as energy supply, sewerage, water and waste systems.

Cardno have undertaken a review of existing utility infrastructure within the RSC, which has identified the potential infrastructure upgrades which would be required to meet the density targets proposed in the existing RPSP.

This assessment will help inform the City on decisions around the long-term provision of electrical energy, potable water and sewage disposal, natural gas, along with high-speed data/telecommunications and stormwater drainage for the RSC precinct.

The findings and advice presented in this report is based on Cardno's observations, experience from similar projects and responses from various service providers and stakeholders. Detailed analysis and mapping of existing infrastructure is provided in **Appendix 6**.

The methodology followed for this study included:

- + Engaging with key stakeholders;
- + Reviewing available data and identifying proposed works;
- + Investigating existing infrastructure capacity; and
- + Investigating and assessing future servicing requirements as per the existing Centre Plan.

### POTENTIAL INFRASTRUCTURE UPGRADES SUMMARY

A key focus of this preliminary study was to understand how well existing infrastructure capacity could meet needs of future development. The proposed yields in the Existing Centre Plan were used as a baseline for the assessment. The key findings and recommendations of the study were:

- + **Precinct 1 – City Centre** - Significant Gas, Power, Communications, Water, Wastewater and Stormwater Infrastructure required within the 'major development sites' identified within the City Centre. These parcels of land are currently underutilised and vacant areas which as part of the RPSP.
- + **Precinct 2 – Waterfront Village** - An increase of gas, power, communications, water and sewer main line capacity will be required to accommodate future medium and high-density areas, contemporary residential apartments and transit terminal. There is also staged development of Challenger lodge sites to the south of the precinct which will require future utility infrastructure. The extent of future infrastructure will need to be confirmed with relevant authorities prior to development.
- + **Precinct 3 – Coastal Lots** - The current mains infrastructure is consistent with that proposed in the existing development policy plan and hence no major utility service upgrades are required within this precinct. There is potential for medium and high-density residential apartments, major streetscape enhancement and marina development which will require future investigation of servicing requirements.
- + **Precinct 4 – TOD Village** - Precinct 4 will require the most significant utility infrastructure upgrades within the RPSP. Currently, this parcel of land is predominately vacant with the indicative development proposing new roads, high-density mixed-use areas, terrace style medium density areas, carparks and the RCCTS route. New infrastructure will be required for all utilities with the extent and demand to be confirmed with relevant authorities.

- + **Precinct 5 – City Park** - The current mains infrastructure is consistent with that proposed and hence no major utility service upgrades are required within this sector. Opportunity to progressively upgrade residential capacity and introduce an urban built form will require further investigation of servicing requirements.
- + **Precinct 6 – Southern Residential** - The current mains infrastructure is consistent with that proposed and hence no major utility service upgrades are required within this sector. Opportunity to progressively upgrade residential capacity and introduce an urban built form will require further investigation of servicing requirements.
- + **Precinct 7 – Educaion** - The current infrastructure is mostly consistent with that proposed in the existing development policy plan with predominantly refurbishment occurring to existing structures. There is an education/training campus and campus square proposed which will require minor utility upgrades but no changes to the existing main lines. A proposed low speed access road running north-south through the precinct will also require stormwater infrastructure.
- + **Precinct 8 – Dixon Road** - Precinct 8 will require utility infrastructure upgrades, primarily in the currently undeveloped development parcel between Patterson and Dixon Roads. New infrastructure will be required for all utilities with the extent and demand to be confirmed with relevant authorities. For existing development sites, there is also an opportunity to progressively upgrade capacity if required, subject to further investigation of servicing requirements.

The above high-level advice on engineering servicing for the proposed future development of the RSC has identified areas where future utility infrastructure will be required to support future development. The report (**Appendix 6**) demonstrates that with appropriate upgrades, future development can be supported. These findings will also be used to inform the PSP through recommendations on staging and subdivision and development requirements for key areas / major development parcels.

OBJECTIVE	CONSIDERATIONS	REFERENCE
<b>06.1</b> To ensure that the built form is responsive to the purpose, context and intended character of the precinct.	<b>C6.1.1</b> Address how the precinct built form will respond to the physical and cultural characteristics of the precinct.	
	<b>C6.1.2</b> Manage the built form transitions between and within the precinct.	
	<b>C6.1.3</b> Promote a diversity of built form types appropriate to the precinct.	
	<b>C6.1.4</b> Identify buildings with potential for retention and adaptive reuse (including temporary use) with a priority on heritage buildings and buildings that contribute to place character.	
<b>06.2</b> To ensure building placement, scale and massing is appropriate for the intended precinct and streetscape character.	<b>C6.2.1</b> Set height controls to ensure buildings within a precinct have a positive impact on the surrounding streetscape and public spaces.	
	<b>C6.2.2</b> Develop setback controls in consideration of the intended relationship between buildings, and between buildings and the street.	
	<b>C6.2.3</b> Apply built form envelopes to define the streetscape and reinforce the precinct character.	
	<b>C6.2.4</b> Determine plot ratio controls appropriate for the existing or intended future character of the precinct, where relevant.	
<b>06.3</b> To ensure that built form design reduces energy demand across the precinct by facilitating climate-responsive design.	<b>C6.3.1</b> Locate and arrange buildings to optimise solar access to buildings and the public realm.	
	<b>C6.3.2</b> Consider the placement and layout of buildings to optimise natural ventilation and minimise wind impact at street level and on adjoining properties and public spaces and streets.	
<b>06.4</b> To ensure that built form design is responsive to the streetscape and contributes to a safe and comfortable public realm.	<b>C6.4.1</b> Design and setback buildings to enable passive surveillance and outlook to the street.	
	<b>C6.4.2</b> Design for weather protection for pedestrian priority streets and public spaces, where appropriate.	

## 4.6 BUILT FORM

### RESPONSE TO CONTEXT

As described in **Section 1.5** key design considerations for Design Element 6: Built Form can be summarised as follows:

- + The RPSP is to consider new approaches to street activation, having consideration for how the building interface can relate to the 'movement' and 'place' value of a street.
- + Planning provisions and building envelopes to be reviewed in the City Centre, Waterfront Village, and TOD Village precincts to ensure that the proposed approach is market responsive.
- + Design testing in areas where infill development is likely to ensure appropriate density allocations and design responses that are site responsive and cognisant of existing neighbourhood character.

### DESIRED OUTCOMES

Buildings in Rockingham promote an urban scale and character that is reflective of a contemporary, coastal centre.

- + Massing and scale of development supports targeted density and intensity, with a human scale retained at street-level.
- + Locate and configure buildings to positively interact with the street, using diverse frontage types to create interesting streetscapes.
- + Buildings contribute to a comfortable pedestrian environment, providing opportunities for weather protection, including shelter from local sun and wind conditions.
- + New development ensures that access ways and parking facilities do not visually dominate the public realm or create obstructions to the pedestrian environment and minimising potential conflicts.
- + Prominent corners and sites
- + Built form controls provide flexibility, allowing proponents to adapt and change in line with market trends.

### 4.6.1 BUILT FORM APPROACH

At 551 hectares, the RSC is the largest activity centre in WA. Having evolved over a long period of time, its built character reflects many periods of development, emphasised by the unique qualities observed in each of the RPSP's eight precincts. In future, the quality of the experience in the RSC will largely be defined by the quality of its buildings, and their interplay with streets, and public spaces. The proposed built form approach supports a highly urbanised environment, one that is reflective of its primacy in the region.

All urban places are varied and diverse in their built form character and public realm experience, the RSC is no exception providing a wide range of functions for its diverse user group. Therefore the standard and quality of design implemented through the RPSP will be essential in ensuring that the Rockingham experience is a positive one. Particularly as it embarks on its next urban transition. Future investment in the RSC can then be assured that certain qualities will be carried through the various stages of the centre's development.

The other primary considerations that have influenced the built form approach is the need to be site responsive. Driven both by a physical response to the context, and local market conditions, the built form needs to be fit for purpose. A delicate balance between long-term vision and market realism is sought, emphasised through the approach taken to density and height (as explored in **Section 4.5.6**), which addresses a desire to promote activity and stimulate investment.

Due to the size, complexity, and unique character of the RSC the built form approach is organised through its sub-precincts. Design Element 2 (Urban Structure) and Design Element 5 (Land Use) consider the RSC as a holistic urban system, this provides the broad spatial framework that sets the scene for the built form approach. An approach that emphasises the need for localised responses.

When considering the built form approaches explored within this section, three primary approaches are considered (relative to the needs of each sub-precinct):

- + All Development Sites - As described in **Section 4.4.4**, our approach considers that movement and place are inextricably linked. Therefore the qualities and potential planning controls for all frontage / building types have been considered.
- + Major Development Sites - The Urban Structure Plan identifies (**P2 - Figure 20**) a number of major development sites. These areas are deemed as critical to the success of the RPSP given that their likelihood of development is high, and contribution to housing and employment targets substantial. In these instances, more detailed planning is likely, which is to be guided primarily by PLDPs.
- + Infill Development Sites - Infill development is likely to be the most prevalent type of development in the RSC due to the quantum of land, size of blocks, and age of stock. In an ever evolving medium density market, design testing has been undertaken to ensure a site responsive approach in key infill precincts.

The research and analysis undertaken in Design Elements 1-5 has directly informed the built form approach. The approach taken ensures that the Development Standards in Part One are tested and functionally sound, ensuring an appropriate response to character, intensity, bulk and scale.

### 4.6.2 BUILT FORM TESTING

#### INFILL DEVELOPMENT

Urban structure and development analysis undertaken for the RSC determined that there is substantial opportunities to deliver infill development in the Waterfront Village, Coastal Lots, City Park, and Southern Residential Precincts. This approach supports the RPSP's residential density targets, which seek to promote infill in areas with good access to amenity and future public transport linkages. Further to this, community feedback suggested that there was a desire to explore a review of the amalgamation provisions included within the existing Centre Plan, highlighting that they were to onerous. These provisions included a minimum development site between 1,200 - 1,500m<sup>2</sup> dependent on location.

#### DESIGN TESTING SCOPE

To ensure that the RPSP is providing an appropriate response to infill, a high-level design testing exercise was undertaken on typical sites across the precinct. Given that infill development can take decades to occur due to complex land assembly, the primary intent was to ensure that infill could be delivered in a way that is responsive to both existing neighbourhood character, and local market conditions. The schematic tests are cognisant of the latest design requirements in the SPP 7.3 Residential Design Codes (including draft Medium Density Code provisions). It has therefore included consideration of: building siting, vehicle access and parking, building entrances and vehicle access locations, landscaping/tree provisions, and dwelling mix (for apartments).

In the Coastal Lots Precinct, the exercise tested the following scenarios:

- + Front loaded single lot development for grouped and multiple dwellings.
- + Front loaded amalgamated lot for multiple dwellings.
- + Rear loaded (laneway access) single lot development for grouped and multiple dwellings.
- + Rear loaded (laneway access) amalgamated lot development for grouped and multiple dwellings).

In the Waterfront Village, City Park and Southern Residential Precincts (referred to as 'other infill areas below), the exercise tested the following scenarios:

- + Front loaded single lot development for grouped dwellings.
- + Front loaded amalgamated lot for grouped dwellings.
- + Front loaded single lot development for multiple dwellings.

The primary difference between the two areas were lot size, and access. The Coastal Lots Precinct includes lots that are typically >1,000m<sup>2</sup> some which have access to a rear laneway. The other three precincts have lots that typically range from 680m<sup>2</sup> - 900m<sup>2</sup>. One consistent feature is that the majority of lots have a frontage that is 20m or greater.

The overall purpose of this exercise was to assist with informing preparation of the built form controls in Part One.

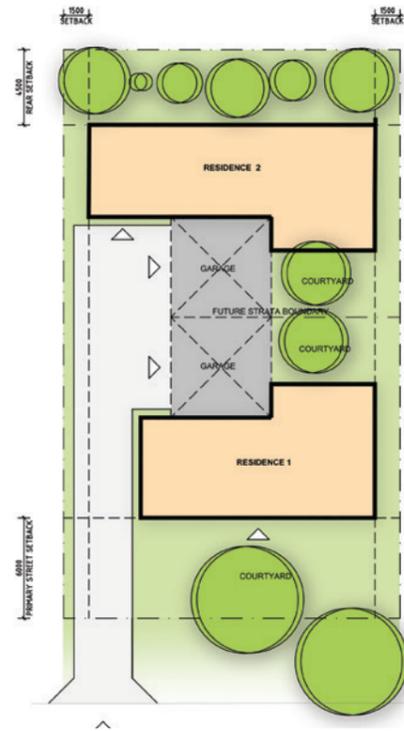
### OTHER INFILL AREAS - GROUPED DWELLINGS

The site tested represents a typical residential lot found throughout the RSC, located primarily within suburban streets. The tests explore how a single, front loaded lot could be redeveloped. They have had consideration for the following:

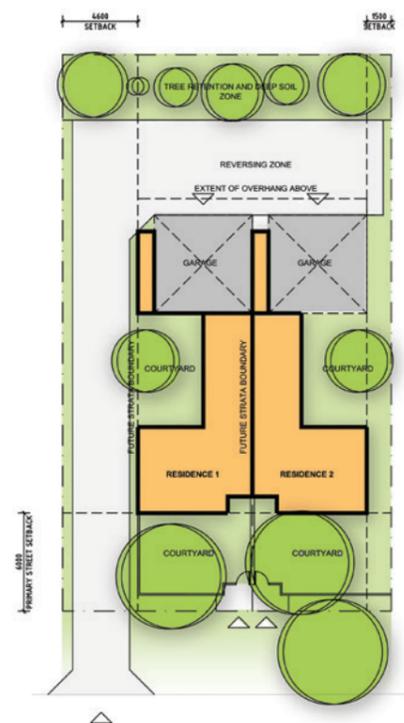
- + Two development scenarios, one being retention of the existing house at the front with a new dwelling at the rear. The other being demolition and redevelopment of two new homes in a side by side arrangement. Two storeys is assumed for new dwellings.
- + A generous landscaped setback is promoted to improve resident outlook to the street in keeping with the existing neighbourhood character.
- + Access to the site is limited to one crossover, while still allowing for generous landscaped spaces on both sides to minimise impacts.
- + Car parking and garages are located towards the rear of the lot and are screened from view. This allows living spaces to open out onto the street, ensuring a high-quality interface.
- + Rear setbacks provide adequate provision for deep soil and allow for retention of existing mature trees which are prevalent across many lots.
- + Assumes visitor parking can be accommodated on or close to the street.

In both instances, to achieve desired open space and street interface outcomes a maximum of two dwellings per lot is likely. This type of development is okay in some areas, however, in parts of the RSC where greater density is desired the outcome has some limitations and is not preferred where a more urban outcome is desired.

SINGLE LOT - GROUPED (FRONT LOADED)



SINGLE LOT - GROUPED (FRONT LOADED)

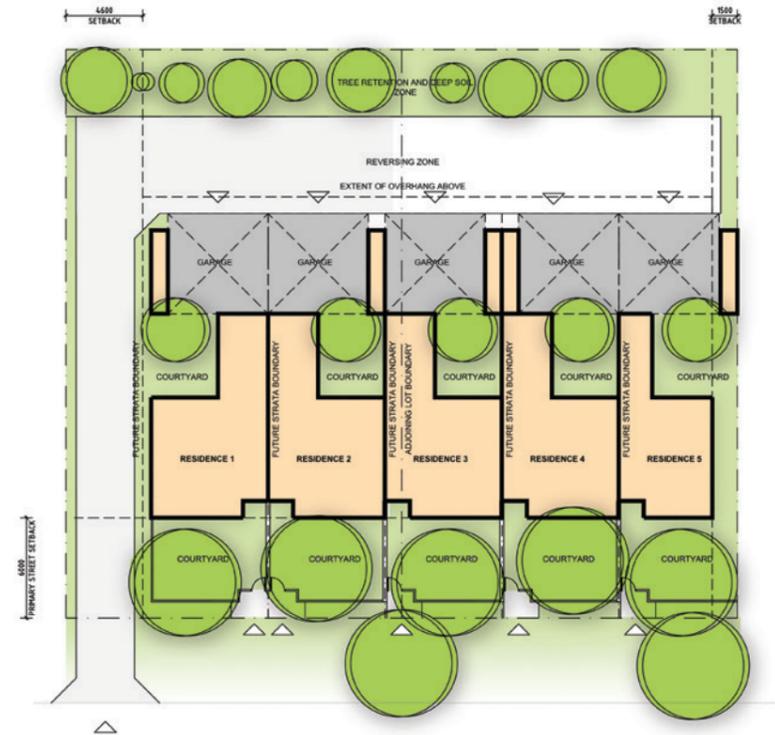


This test explores what happens when two lots are amalgamated. The design follows the same principles, ensuring that:

- + Deep soil can be achieved at the rear of the lot (to retain trees) and in both front / central courtyards;
- + One crossover is provided, with garages provided at the rear; and
- + Houses open out onto the street, ensuring a quality interface.

In this instance, five grouped dwellings (at an R60 density) can be achieved demonstrating that amalgamation can offer a net increase to grouped dwelling yield.

AMALGAMATED LOT - GROUPED (FRONT LOADED)



### OTHER INFILL AREAS - MULTIPLE DWELLINGS

This test explores the possibility of delivering multiple dwellings on a single front loaded lot. Six (apartments) are possible, serviced by a single crossover with undercroft parking at the rear. Visitor parking is provided on-site and deep soil at the rear allows for retention of trees.

However, whilst this option does allow a greater yield to be delivered it does rely on a minimised front setback which can detract from existing character. It could also result in visual privacy issues to the rear.

This outcome is only recommended where a lot backs on to public open space, as rear apartments could provide passive surveillance.

SINGLE LOT - MULTIPLE DWELLING (FRONT LOADED)

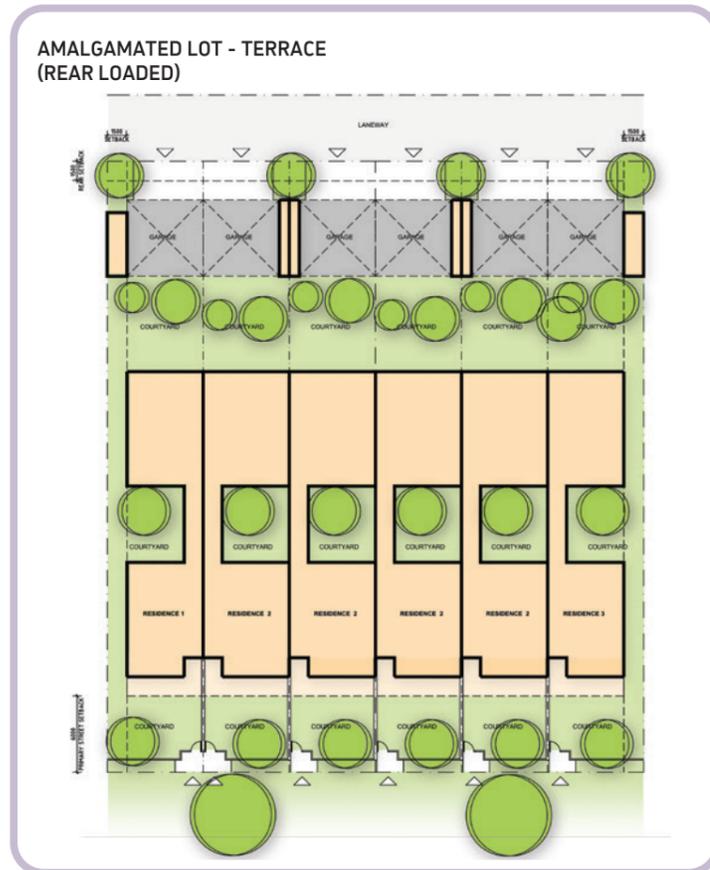


### COASTAL LOTS PRECINCT - GROUPED DWELLINGS

The site tested represents a typical residential lot found throughout the Coastal Lots Precinct. They have had consideration for the following:

- + A combination of development scenarios, which explore front vs rear loaded lots, and single vs amalgamated lots.
- + A generous landscaped setback is enabled in all scenarios to improve resident outlook to the street in keeping with the existing neighbourhood character.
- + Access to the site for front loaded product is limited to one crossover, while rear loaded sites are able to leverage off the laneway allowing courtyards / front gardens to occupy the street frontage.
- + Car parking and garages are located towards the rear of the lot and are screened from view. This allows living spaces to open out onto the street, ensuring a high-quality interface.
- + Rear loaded product is able to provide a generous sized garden area, front loaded product is more limited but can still allow for tree retention at the back of the lot.
- + Assumes visitor parking can be accommodated on or close to the street.

In all scenarios, to achieve desired open space and street interface outcomes two storey dwellings are most likely. Whether they are amalgamated or not, rear loaded lots allow for a more generous open space / deep soil approach. Comparatively, front loaded product loses more space to vehicle parking and access. Regarding amalgamation, the testing demonstrates that similar density outcomes can be achieved, however, amalgamation can lead to a more consolidated street interface outcome.



### COASTAL LOTS PRECINCT - MULTIPLE DWELLINGS (SINGLE LOT)

The site tested represents a typical residential lot found throughout the Coastal Lots Precinct. The below tests have had consideration for the following:

- + A single lot multiple dwelling development that explores the comparison between a front and rear loaded lot.
- + Both scenarios allow the potential to deliver a small-scale apartment development which could range from 2-3 storeys dependent on the approach taken. A generous landscaped setback is enabled in all scenarios to improve resident outlook to the street in keeping with the existing neighbourhood character.
- + Both scenarios enable a positive street interface, with a landscaped frontage and dwellings opening out onto the street at ground level.
- + Parking is located at the rear in both scenarios, with development over the top forming an undercroft. The rear loaded option provides the added benefit of not requiring a crossover in the street frontage enabling a higher quality street edge and more room for landscaping.
- + Visual privacy of adjacent lots is managed through an appropriately scaled rear setback, with lots either overlooking the deep soil area (front loaded) or laneway (rear loaded).
- + Assumes visitor parking can be accommodated on the lot.

The test has determined that ultimately, the yield is driven by how much parking can be provided on the site. It also demonstrates that a positive development outcome could be achieved for both a front and rear loaded apartment typology in this precinct.



### COASTAL LOTS PRECINCT - MULTIPLE DWELLINGS (AMALGAMATED LOT)

The site tested represents a typical residential lot found throughout the Coastal Lots Precinct that has been amalgamated with its neighbour. The below tests have had consideration for the following:

- + An amalgamated lot multiple dwelling development that explores the comparison between a front and rear loaded configuration.
- + Both scenarios allow the potential to deliver a small-scale apartment development which could range from 3-4 storeys dependent on the approach taken. Where 3-4 storeys is desired, greater setbacks side and rear setbacks may need to be considered. There would also be a desire to curate views towards the street to mitigate potential privacy impacts.
- + A generous landscaped setback is enabled in all scenarios to improve resident outlook to the street in keeping with the existing neighbourhood character. This enables a positive street interface, with a landscaped frontage and dwellings opening out onto the street at ground level.
- + Parking is located at the rear in both scenarios, with development over the top forming an undercroft. The rear loaded option provides the added benefit of not requiring a crossover in the street frontage enabling a higher quality street edge and more room for landscaping.
- + Assumes visitor parking can be accommodated on the lot.

In comparison to the single lot tests, these scenarios enable the yield to be doubled (though still driven by the amount of cars which can be accommodated). The primary benefit of the amalgamated lot scenario is that you can provide a more consolidated street interface, particularly for front loaded products where the crossovers can be coordinated and reduce to one per development.



## DESIGN TESTING OUTCOMES

The outcomes of the design testing will directly inform the planning provisions developed in Part One: Implementation. Key considerations can be summarised as follows:

**Preserving and enhancing space for deep soil, trees and landscaping** - The design testing has focussed on ways to deliver density while still offering suitable opportunities for redevelopment on lots. To achieve this project principle, space for backyards, front yards and courtyards of varying size and function are proposed. This is particularly relevant where there is suitable space for deep soil and retention of existing mature trees.

**Built form design which enhances streetscape character** - The testing has sought to ensure that the built form responds to and enhances street character. Spaces created from setbacks can be well calibrated and designed so that they become an extension of living spaces. To achieve this project principle, space for front yards and courtyards of varying size and function should be maintained.

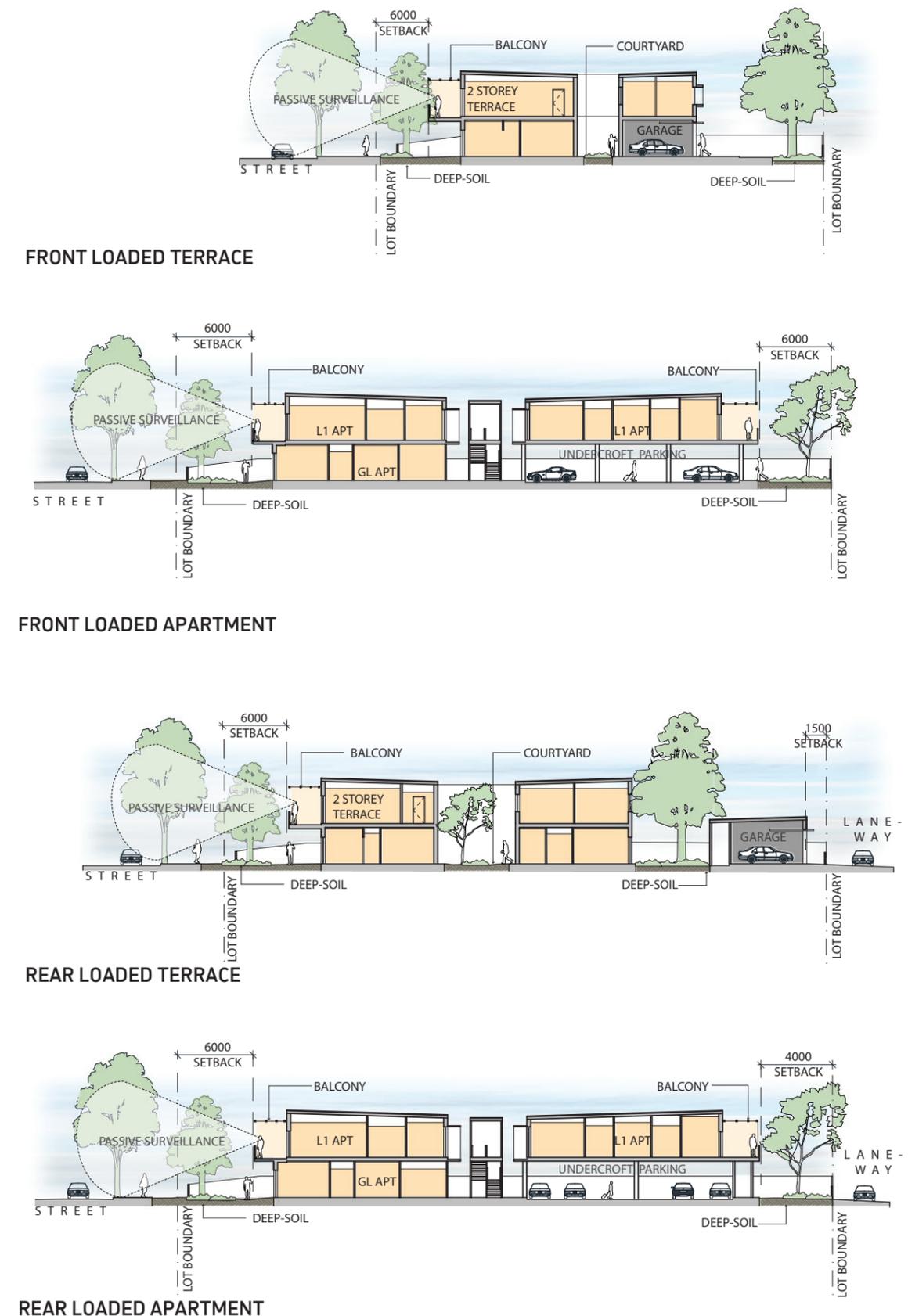
**Promote active living spaces that address the street** - Redevelopment of detached dwellings can impact the relationship between buildings and the street edge. The tests have therefore focussed on practical ways to locate garages away from the street edge (giving more opportunities for living spaces to be orientated towards the street), encouraging new dwellings to promote passive surveillance.

**Consolidated access** - Where lot amalgamation occurs, the design testing seeks to ensure that consolidated access via one-crossover per development site is provided. This approach assists in delivering on the outcomes referenced above by minimising the amount of space taken up by parking and driveways, particularly as the economic testing has demonstrated that basement parking solutions are highly unlikely.

**P2 - Figure 31** illustrates these desired outcomes, demonstrating the standard expected for infill development in the RPSP.

In addition to the above design outcomes, the testing has also influenced approaches taken to residential density, height, and lot amalgamation as summarised below:

- + **Density and Height** - Infill development is likely to occur at three scales, influenced by location, lot configuration, and development likelihood. This will include new residential development at R40 (2 storey maximum), R60 (3 storey maximum), and R80 (4 storey maximum).
- + **Lot Amalgamation** - In the Coastal Lots Precinct, it has been determined that due to the urban structure and lot configuration, amalgamation may not be likely as desired built form outcomes can be achieved. In the Waterfront Village (western residential area), City Park, and Southern Residential Precincts it is envisioned that amalgamation provisions will remain as the smaller lot sizes do have an impact on the outcomes that can be achieved.



P2 - Figure 31: Desired Infill Design Outcomes

### 4.6.3 STREET INTERFACE

The interface of a building with the street can create a strong and lasting impression of the quality of both the public space and the buildings that define it. The street interface determines the way in which people relate to a building, enter it, and use it. The street interface also determines how a building's occupants relate to the public outside. In essence, the quality of the street interface is central to the way in which it allows people to use the urban environment, and therefore, the success of the city as a centre for human interaction is dependent on the success of the street interface.

#### MOVEMENT, PLACE, AND STREET FRONTAGES

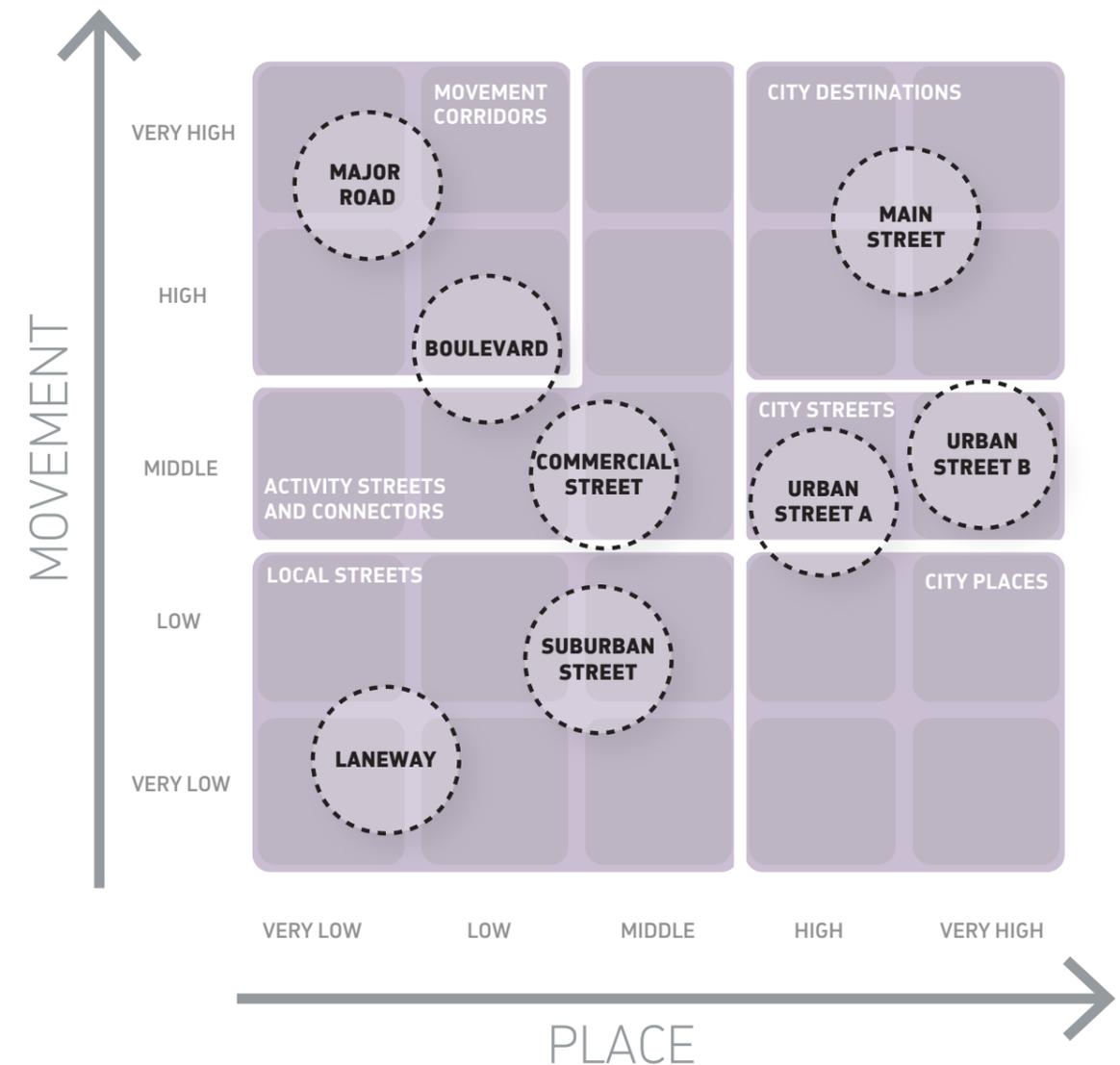
The RPSP has been formulated in accordance with a 'movement and place' philosophy (Section 4.4.4), an approach which considers that each street in the RSC has different qualities. For example the City Centre promotes active 'main street' buildings with generous spaces for community, retail and food and beverage activities to spill out onto. Places where people recreate in an urban setting, day and night. Conversely, in the Southern Residential Precinct, street become places for local residents. Generous front setbacks and landscaping see a more subtle built form response.

In that regard, the RPSP considers that the movement and place qualities of a street shape the built form setting and should encourage specific design elements. The right combination of design elements helps to shape the building's frontage, which defines its interface with the street.

Different streets would require different frontage design that balances the movement and place qualities. As such, the RPSP has explored how this framework can be used to drive built form outcomes. This is displayed visually on **P2 - Figure 32**, which defines eight unique frontage types for the RPSP, these include:

- + Laneway,
- + Suburban Street,
- + Urban Street A (residential);
- + Urban Street B (mixed use);
- + Main Street;
- + Commercial;
- + Boulevard; and
- + Major Road.

The typical qualities of these frontage types are expressed in **P2 - Table 23**, highlighting the relationship between building and streets, specifically setback dimensions, vertical separation between the street, promotion of landscape, and other elements. These qualities are not a 'catch-all', as each frontage type may have different requirements dependent on its location within the RSC. As such, planning controls ensure that localised responses can be provided in accordance with the proposed built form approach outlined in **Section 4.6.1**.



P2 - Figure 32: Movement and Place Frontage Types

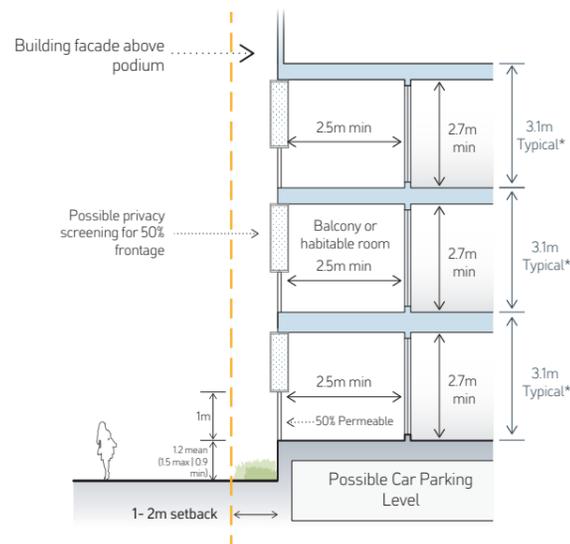
P2 - Table 23: Frontage Types

FEATURES	LANEWAY	SUBURBAN STREET	URBAN STREET A RESIDENTIAL	URBAN STREET B MIXED USE
<b>Movement value association</b>	Mid, Low	Mid, High	Low, Mid	Mid
<b>Place value association</b>	Mid, Low	Mid, High	Mid, High	High
<b>Typical land uses</b>	Residential	Residential houses, terraces, apartments	Terraces, apartments	Mixed use
<b>Typical building setbacks</b>	1-2	2-6	1-3	1-3
<b>Direct development access</b>	Yes	Yes	Yes	Yes
<b>Awnings</b>	No	No	Place specific	Place specific
<b>Vertical separation consideration</b>	Place specific	Place specific	Yes	Place specific
<b>Footpaths</b>	No	Yes	Yes	Yes
<b>Street furniture</b>	No	No	No	Place specific
<b>Street dining</b>	No	No	No	No, Yes
<b>Landscaped Median</b>	No	No, Yes	No, Yes	No, Yes
<b>Landscaped Edges (on public land)</b>	No	Yes, Street trees	Yes, Street trees	Yes, Street trees
<b>Landscape in Setback (on private land)</b>	Yes	Yes	Yes	Yes
<b>Landscape Quality</b>	Typical	Typical	Typical	Typical
<b>Jurisdiction</b>	Local	Local	Local	Local

Note: The above qualities represent the 'typical' approach and considerations for each frontage type. In most cases, a place specific response is required to determine the most appropriate built form response. Specific planning controls / provisions for frontage types are provided in Part One: Implementation, this is provided on a sub-precinct basis.

FEATURES	MAIN STREET	COMMERCIAL	BOULEVARD	MAJOR ROAD (PRR)
<b>Movement value association</b>	Mid, High	Mid	High	High, Very High
<b>Place value association</b>	High, Very High	Mid	Low, Mid	Low
<b>Typical land uses</b>	Mixed Use, Retail	Retail	Retail, Landscape	N/A
<b>Typical building setbacks</b>	0	3+	3+	3+
<b>Direct development access</b>	Place specific	Yes	Place specific	No
<b>Awnings</b>	Yes	Place specific	No	No
<b>Vertical separation consideration</b>	No	Place specific	No	No
<b>Footpaths</b>	Yes	Yes	Yes	Place specific
<b>Street furniture</b>	Yes	Place specific	Place specific	No
<b>Street dining</b>	Yes	No	No	No
<b>Landscaped Median</b>	No, Yes	No	Yes	No, Yes
<b>Landscaped Edges (on public land)</b>	Yes, Street trees	Yes	Yes	No, Yes
<b>Landscape in Setback (on private land)</b>	Yes	Yes	Yes	No, Yes
<b>Landscape Quality</b>	Above Typical	Typical	Typical, Above Typical	Typical
<b>Jurisdiction</b>	Local	Local	Local, State	State

LANEWAY

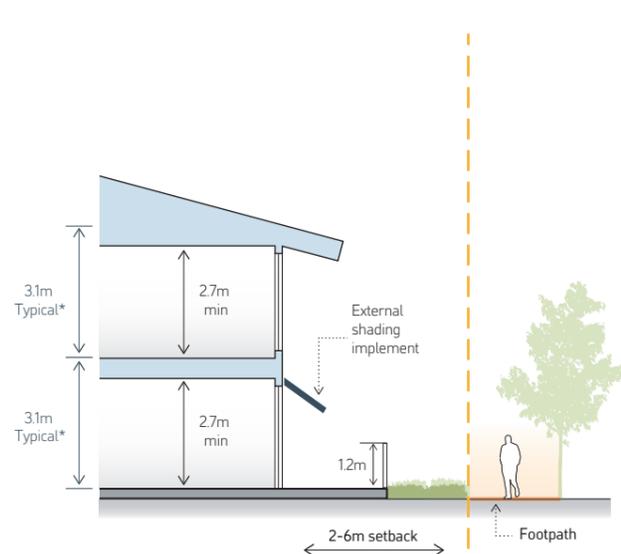


Dependent on location, buildings interfacing with laneways should prioritise activation at ground level, with safety (commercial / public areas), and privacy (residential areas) key considerations. Typical qualities include:

- + A 1-2 metre setback which allows for separation between buildings and the laneway with space for landscaping and services/ utilities.
- + It is likely that many laneways will host service functions at ground floor, like car parking. Screening, lighting and permeable space is important in these environments.
- + If residential dwellings are provided in a laneway setting, they need to be separated vertically from the laneway for privacy.

Typically found in higher density precincts where development is more urban in nature.

SUBURBAN STREET

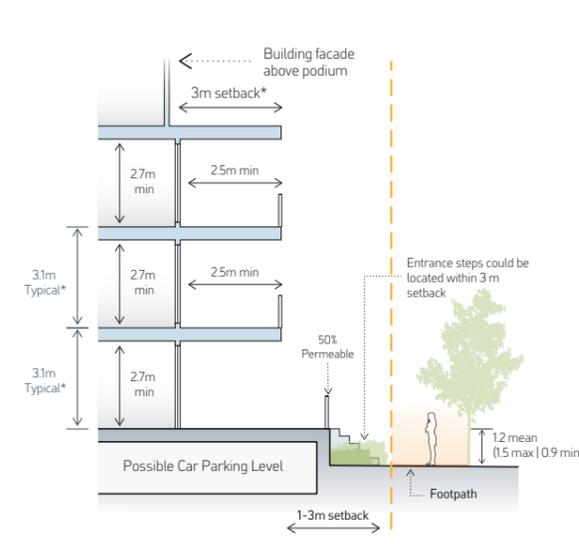


Suburban streets are residential in nature, with single houses, terraces, low-scale apartments interfacing with the street environment. They have a moderate relationship with the public realm, while creating amenity and maintaining a visual connection to streets:

- + Buildings are set back from the boundary to allow for landscaping, increased privacy and amenity for residents. The front setback is prominent, in response to the prevailing neighbourhood character.
- + A second layer of courtyards, gates and low permeable fences will encourage living on the street, particularly when infill development (i.e. terraces and apartments) make their way into suburban streets.

Typically found in low density residential precincts and where low-scale infill is proposed.

URBAN STREET A (RESIDENTIAL)

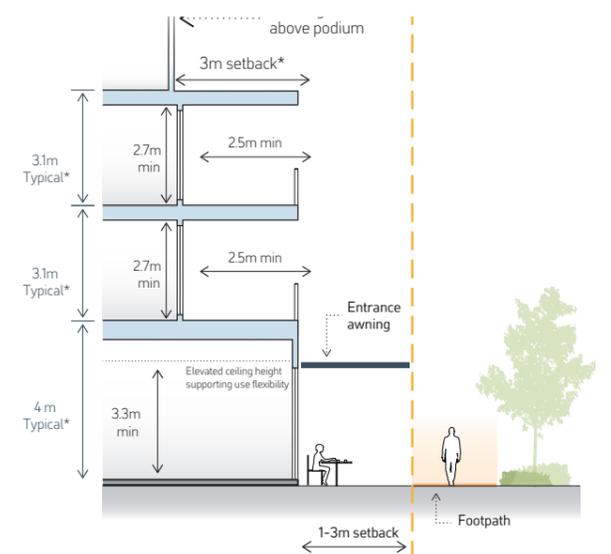


Urban residential streets are similar to suburban streets in that their sole function is for residential uses. The primary difference is the scale of development, with terraces and mid-rise apartments more prominent.

- + Front setbacks are more modest, it still allows for landscaping, however, the building becomes a more prominent feature on the street with balconies / courtyards ensuring good passive surveillance of streets.
- + Design approach will encourage living on the street, with appropriate vertical separation ensuring a clear delineation of the private / public domain.

Typically found in residential precincts and where new development or a more dense scale infill is proposed.

URBAN STREET B (MIXED USE)

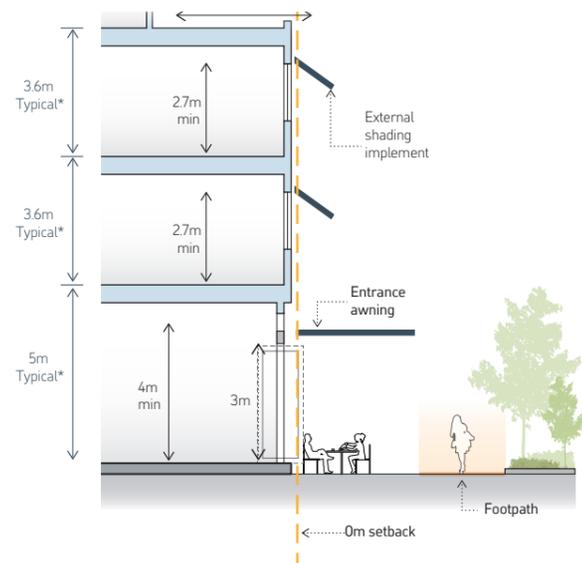


Mixed use urban streets provide a combination of commercial and residential buildings interfacing with the urban street environment. They typically have an active ground floor use with a strong relationship to the public realm, prioritising permeability and a visual connection to the street:

- + A 1-3 metre setback allows for street awnings above entrances to shelter the footpath in front of buildings. Allowing opportunities for uses to spill out onto the street.
- + There is a more generous scale (through greater floor to ceiling heights and canopies) to create greater flexibility of internal spaces on the ground floor.

Typically found in urban environments such as City Centre and Waterfront Village.

**MAIN STREET**

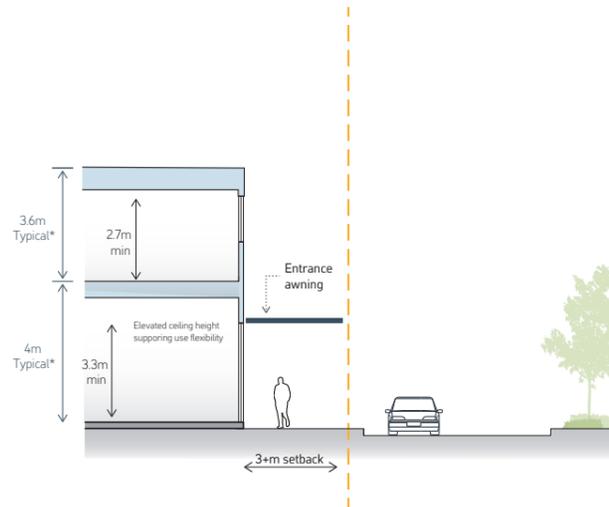


Commercial and residential buildings interfacing with the main street environment have a strong relationship to the public realm:

- + Building edges meet the lot boundary with a nil setback at ground floor.
- + There is a more generous scale (through greater floor to ceiling heights and canopies) that meets the higher order of the main street environment as the centre of the city.
- + Where there is space at ground level, development should explore opportunities for further activation of streets through initiatives such as alfresco dining.

Typically found in urban environments such as City Centre and Waterfront Village.

**COMMERCIAL**

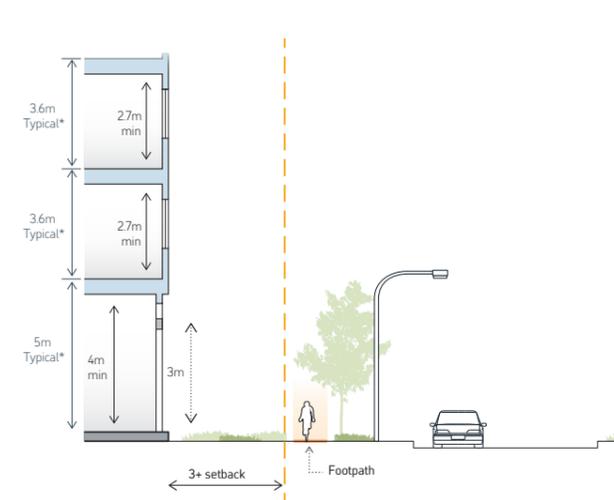


The low-scale commercial edge is located in areas where vehicle access is promoted over pedestrian access. These edges typically include 1-2 storey development which can either be built to the boundary with parking at the rear, or more commonly parking will be provided at the front to optimise customer experience.

Whilst this edge type is not aspirational, it is highly functional and representative of the diverse uses and activities that are provided in the RSC.

This edge applies to a number of building types found in the RSC, it can also include large format retail, education, and light industrial uses.

**BOULEVARD**

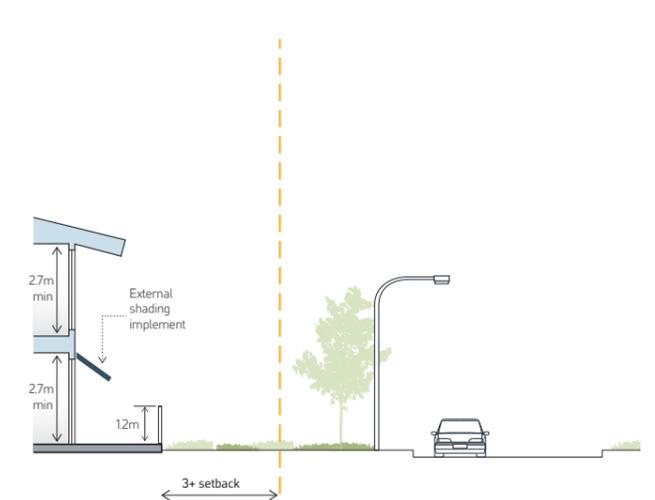


Boulevards represent streets that have a high movement function and low place role. Road reserves are typically large, as a result the relationship between the buildings and the street is limited.

- + Buildings have a range of setback approaches, but generally orientate towards the street.
- + Vehicle movement priority is high, as such in some cases landscaping or parking is provided between the road carriageway and building setback line.

Typically found on the periphery or urban precincts, a primary example in the City Centre is the western portion of Council Avenue.

**MAJOR ROAD**



Major roads represent streets that have a high movement function and no place role. In most cases they are the peripheral roads of the RSC such as Read Street, Rae Road, Ennis Avenue and Patterson Road. There is almost no relationship between the built form and the street.

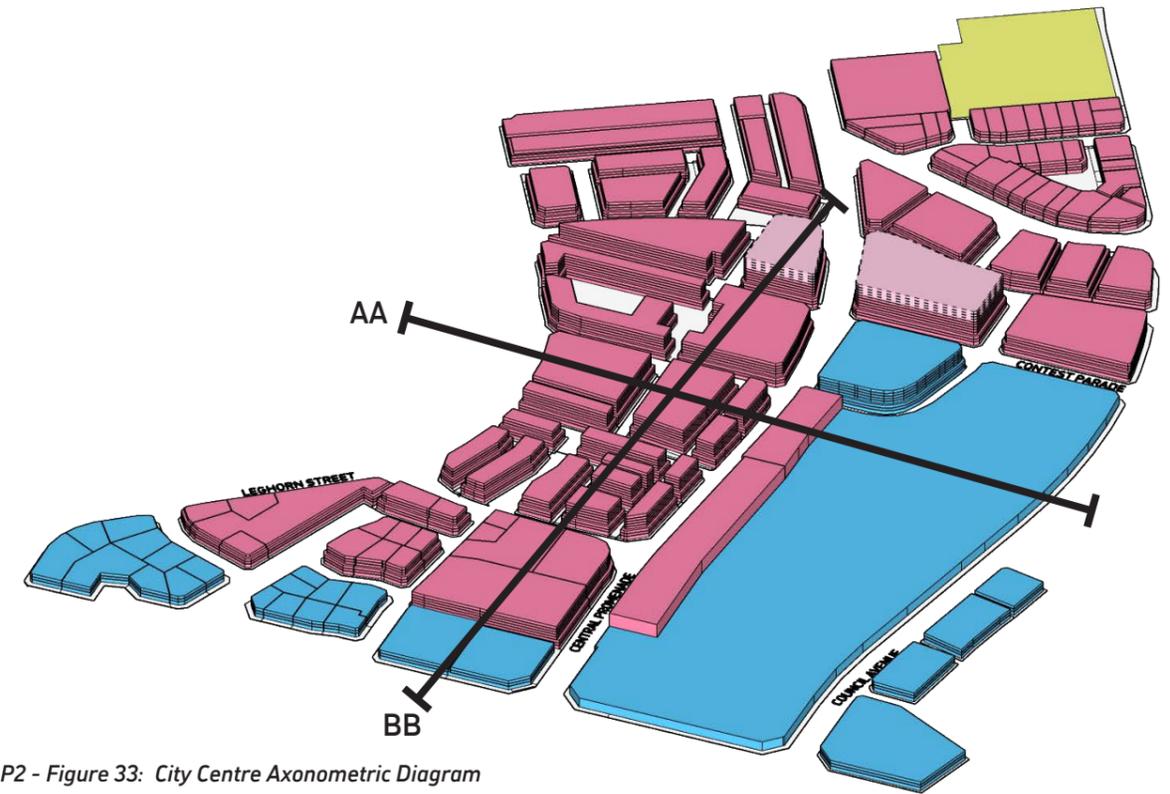
### 4.6.4 PRECINCT 1 - CITY CENTRE

#### DESIRED FUTURE CHARACTER

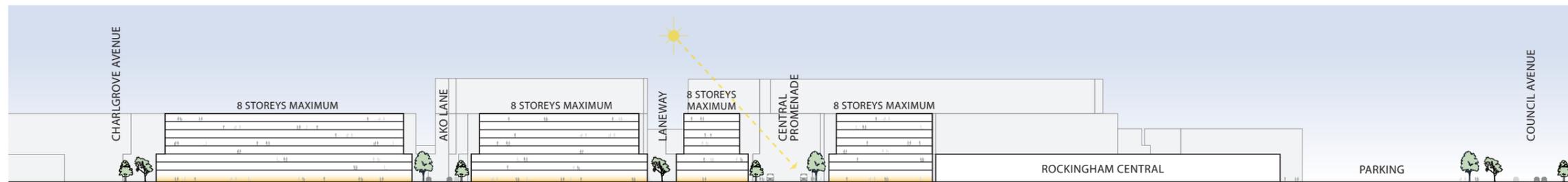
Anchored by the shopping centre and civic precinct, the City Centre will provide the primary economic and employment focus of the RSC. Higher density housing and new commercial development creates a critical mass of people who enjoy highly permeable and walkable urban streets, that connect major public spaces with public transport on Contest Parade. New development provides a positive and well-defined street interface, where pedestrians and cyclists enjoy priority over vehicles.

#### PRECINCT OBJECTIVES

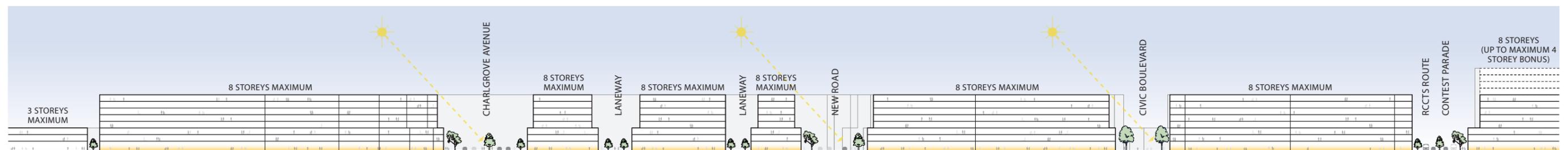
- + Provide for an attractive and compact City Centre, supported by green and walkable streets.
- + Concentrate a mix of uses in the central core including high density residential and employment intensive land uses.
- + Establish the land interfacing with the Syren Street / Civic Boulevard / Central Promenade intersection (and surrounds) as the primary retail heart of the City Centre.
- + Unlock vacant development sites through flexible urban structure and planning controls that allow short term development that does not impact on the long term vision for the City Centre.
- + Achieve a gradation of height to visually define the activity core of the City Centre and on Contest Parade along the RCCTS route.
- + Realign the Whitfield / Goddard / Simpson Avenue intersection to allow an eastern extension of Central Promenade to enhance sub-precinct legibility.
- + Sleeving of Rockingham Central Shopping Centre to activate Central Promenade and Civic Boulevard.



P2 - Figure 33: City Centre Axonometric Diagram  
Not to Scale



SECTION AA - CITY CENTRE



SECTION BB - CITY CENTRE



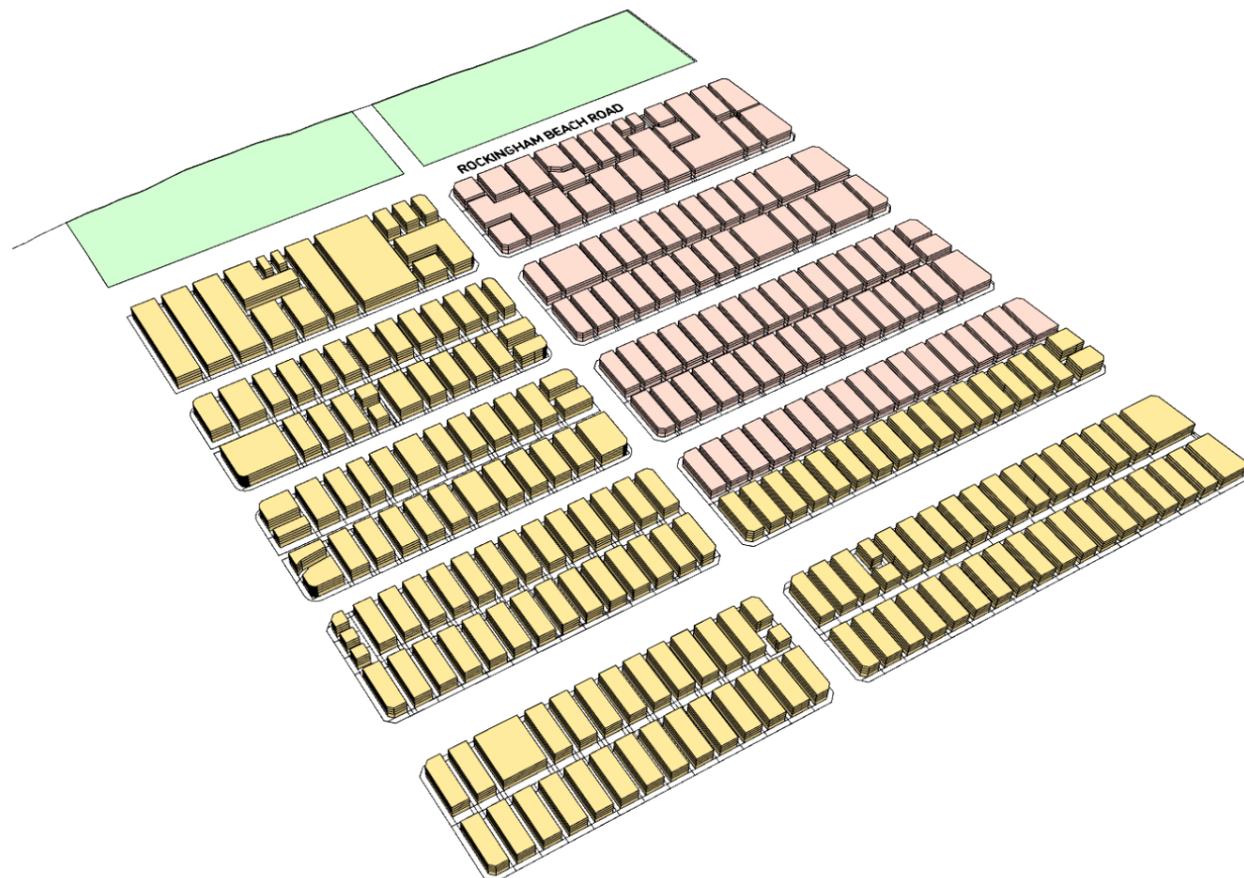
## 4.6.6 PRECINCT 3 - COASTAL LOTS

### DESIRED FUTURE CHARACTER

High-quality medium density development supports quality urban infill outcomes within the catchment of the RCCTS. A combination of grouped and multiple dwelling typologies enable an increased density, balanced with generous street setbacks and open space to encourage improved tree canopy as the neighbourhood evolves.

### PRECINCT OBJECTIVES

- + Guide the progressive urban consolidation and transformation of this area into a high-quality residential infill setting.
- + Jacks Street reinforced as green link to enhance connections between parkland and Wanliss Street transit stop.
- + Design approaches to building envelopes, vehicle access, and landscape ensure existing neighbourhood character can be preserved.
- + Battle-axe subdivision is not permitted to ensure desired streetscape and density outcomes can be achieved.
- + Support retention of existing mature trees and urban water management through well-considered approaches to on-site landscape design.
- + Land ceded from properties adjacent to existing laneways helps to formalise two-way vehicle movement unlocking new development opportunities.



P2 - Figure 35: Coastal Lots Axonometric Diagram

Not to Scale

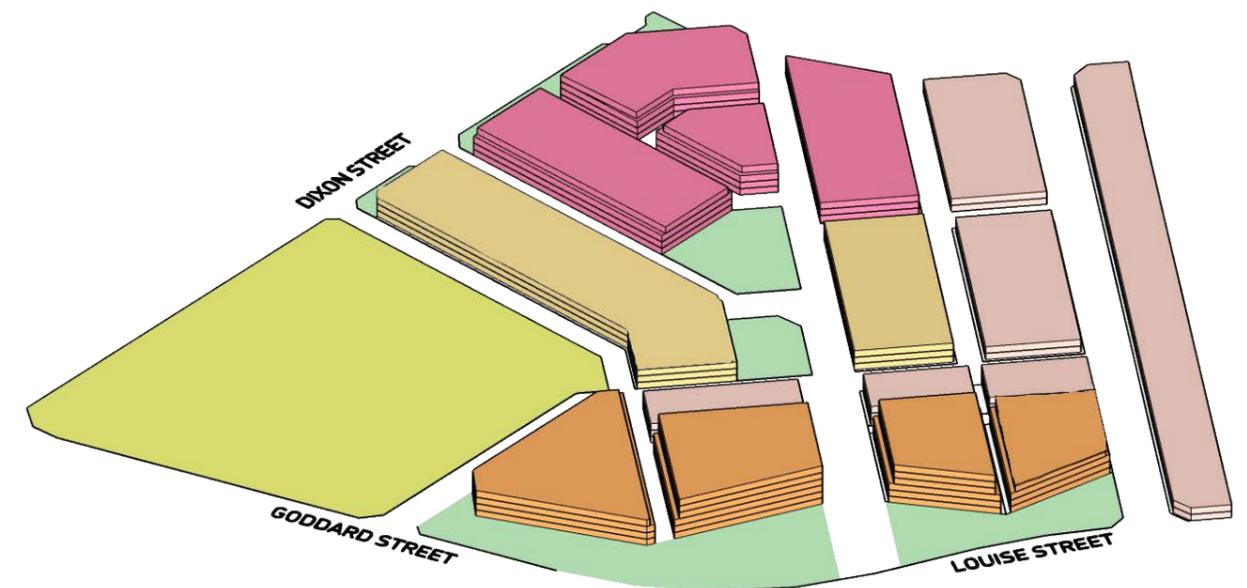
## 4.6.7 PRECINCT 4 - TOD VILLAGE

### DESIRED FUTURE CHARACTER

Extension of the RCCTS represents a strategic TOD to provide contemporary higher density development and employment opportunities. The transit stop includes a quality landscaped central park and local centre that creates a focus for community life – a destination with local amenity to support growth in the precinct.

### PRECINCT OBJECTIVES

- + Promote a highly flexible urban structure that enables block and lot configurations that can accommodate a range of building typologies that can adapt with Rockingham's needs at the time of development.
- + Promote a range of building heights and densities to support housing diversity and approximately 1,000 new dwellings.
- + Buildings are integrated with the centrally located transit to visually define the route.
- + Leverage off proximity to the Education Precinct and promote new employment opportunities.
- + Create high-quality and attractive public amenity to support increased density, making the TOD Village a place that encourages people to live, work, and recreate in the area.
- + New development integrates with the existing landscape and a retained Mike Barnett Sporting Complex. Both become a part of the TOD Village, with strong connections that 'draw into' the development.
- + Facilitate the priority construction of a direct access and movement corridor between Dixon Road and the City Centre.
- + Provide a legible and well-connected arrangement of streets, laneways and public spaces.



P2 - Figure 36: TOD Village Axonometric Diagram

Not to Scale

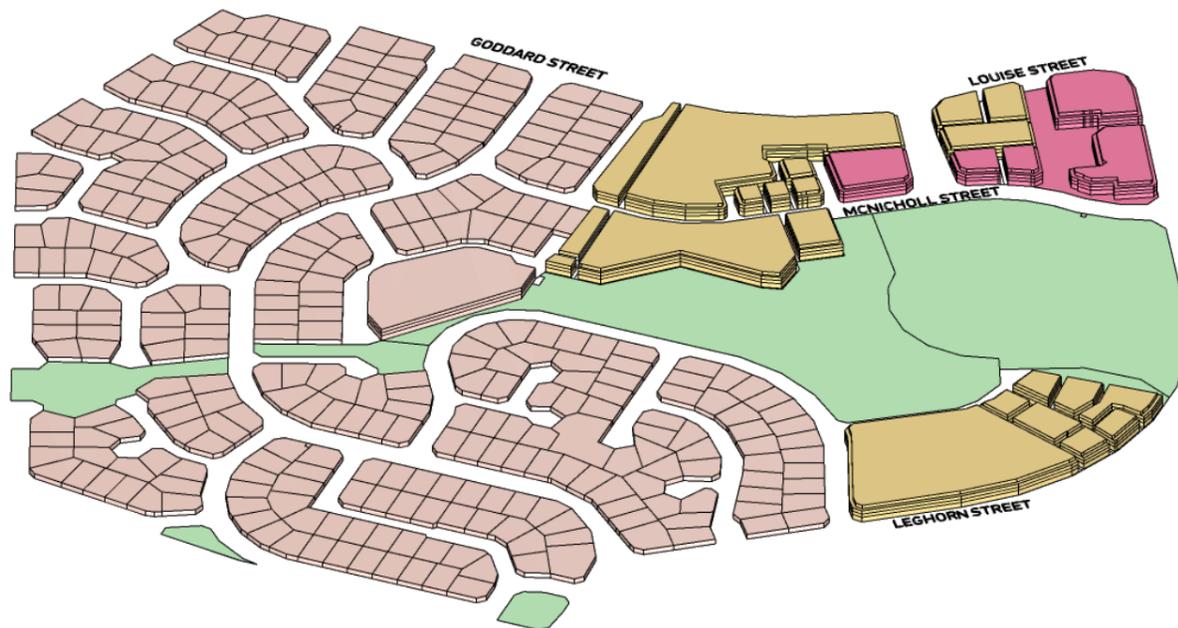
## 4.6.8 PRECINCT 5 - CITY PARK

### DESIRED FUTURE CHARACTER

High-quality medium density development support sensitive and quality urban infill outcomes, primarily in the form of grouped dwellings and small scale apartment typologies. Heights are generally between two-four storeys, and generous street setbacks align with the existing suburban character of the area.

### PRECINCT OBJECTIVES

- + Guide the progressive development of this area consistent with best practice infill residential development principles.
- + Ensure future development responds to existing suburban neighbourhood character.
- + Promote increased density in areas with access to high quality amenities such as the City Park and connected linear parklands, and along the RCCTS route.
- + Encourage amalgamation of lots adjacent to the green link to support new development which provides passive surveillance of the adjacent park land.
- + Battle-axe subdivision is not permitted to ensure desired streetscape and density outcomes can be achieved.
- + Support retention of existing mature trees and urban water management through well-considered approach to landscape and deep soil.



P2 - Figure 37: City Park Axonometric Diagram

Not to Scale

## 4.6.9 PRECINCT 6 - SOUTHERN RESIDENTIAL

### DESIRED FUTURE CHARACTER

High-quality medium density development support sensitive and quality urban residential infill outcomes, responding to existing open spaces in the area. Heights are generally between two-three storeys, and generous street setbacks align with the existing suburban character of the area.

### PRECINCT OBJECTIVES

- + Guide the progressive development of this area consistent with best practice infill residential development principles.
- + Ensure future development responds to existing suburban neighbourhood character.
- + Promote increased density in areas with access to high quality amenities such as parkland and along the RCCTS route.
- + Battle-axe subdivision is not permitted to ensure desired streetscape and density outcomes can be achieved.
- + Support retention of existing mature trees and urban water management through well-considered approach to landscape and deep soil.

## 4.6.10 PRECINCT 7 - EDUCATION

### DESIRED FUTURE CHARACTER

The Education Sub-Precinct is a place of learning and discovery, linking local residents to trade, research and recreation opportunities. Campus buildings are arranged around an internal loop which enhances connectivity between institutions and the neighbouring TOD Village. Sufficient capacity for new development ensures spaces between buildings supporting establishment of playing fields to provide for organised sport.

### PRECINCT OBJECTIVES

- + Maintain and enhance high-quality refurbishment and redevelopment for each individual campus, coordinated through the preparation of PLDPs.
- + Ensure that campuses are developed in a complementary way, to share resources where feasible and to present an integrated urban character.
- + Urban design of campuses to ensure a high-quality and attractive environment, with buildings presented in a landscape setting, including orientation around centralised public open space.
- + The Dixon Road and Simpson Avenue entry points use planting, lighting and signage to convey a clear sense of arrival into the Rockingham Strategic Centre.

## 4.6.11 PRECINCT 8 - DIXON ROAD

### DESIRED FUTURE CHARACTER

Dixon Road fulfils a dual role as service and employment hub. A gateway statement at the corner of Dixon Road and Ennis Avenue frames the entry into the RSC, with an enhanced streetscape supported by a green buffer which screens the light industrial and commercial development to the north. The area south of Patterson Road is developed with a flexible urban structure to create a new business park with an employment focus.

### PRECINCT OBJECTIVES

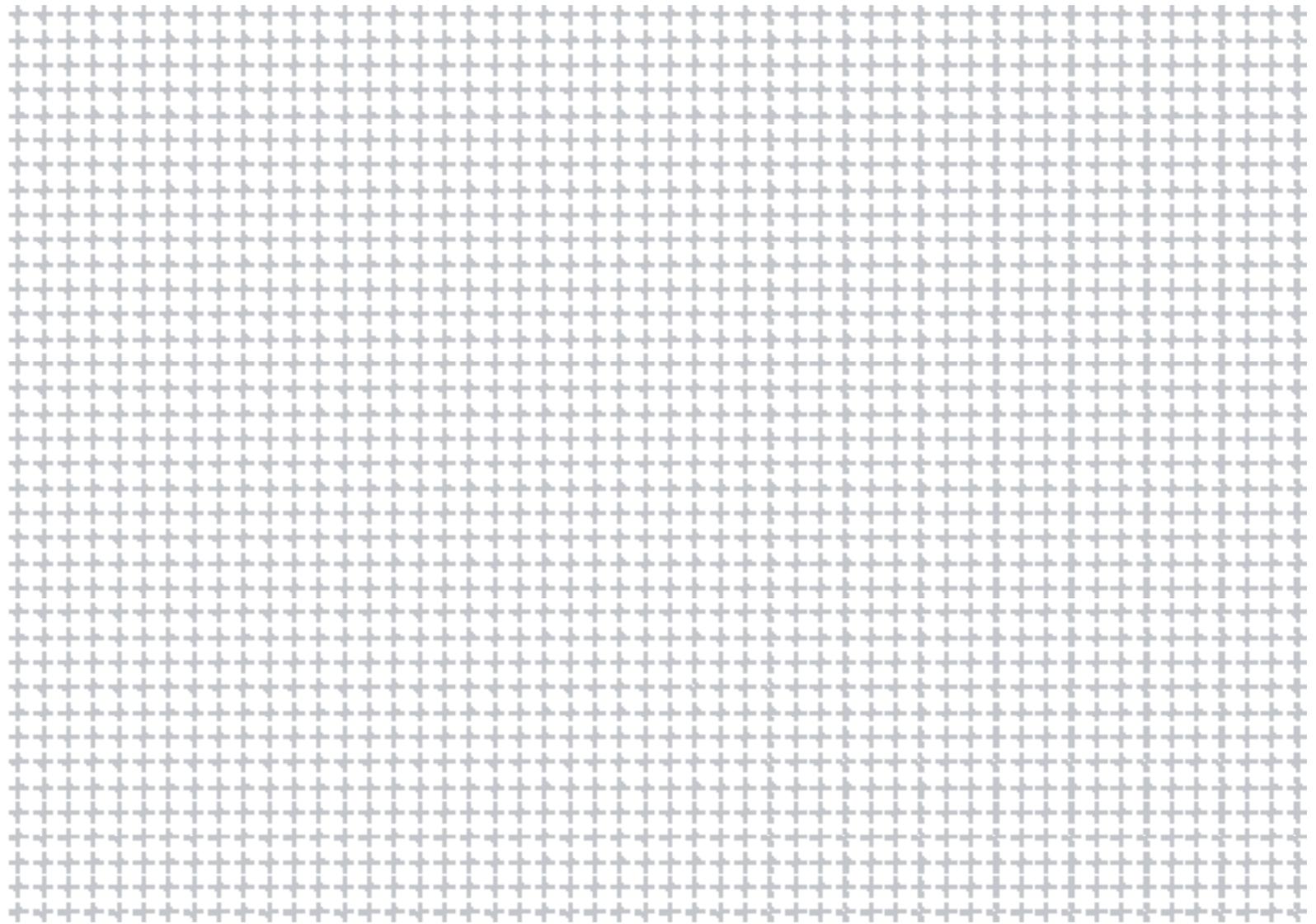
- + Maintain and enhance the sector as an important service commercial area at the north eastern gateway to the RSC.
- + Give particular attention to the landscape treatment of Ennis Avenue.
- + Patterson Road and Dixon Road where planting, lighting and signage should convey a clear sense of arrival at the gateway to a major urban centre.
- + Upgrade the streetscapes of the long established light industrial area consistent with the changing function of the Sub-Precinct.

## 4.7 TECHNICAL APPENDICES

- + Appendix 1 - Water Management Strategy
- + Appendix 2 - Environmental Report
- + Appendix 3 - Transport Report
- + Appendix 4 - Economic Resilience Assessment
- + Appendix 5 - Site Feasibility Assessment
- + Appendix 6 - Infrastructure Servicing Strategy
- + Appendix 7 - Stakeholder Engagement Summary Report

### ABBREVIATIONS

<b>ABS</b>	Australian Bureau of Statistics
<b>CHRMAP</b>	Coastal Hazard Risk Management and Adaptation Plan
<b>EPA</b>	Environmental Protection Authority
<b>ESA</b>	Environmentally Sensitive Area
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions
<b>DOT</b>	Department of Transport
<b>DPLH</b>	Department of Planning Lands and Heritage
<b>DPP</b>	Development Policy Plans
<b>DWER</b>	Department of Water and Environmental Regulation
<b>LPP</b>	Local Planning Policy
<b>LCS</b>	Local Commercial Strategy
<b>LPS</b>	Local Planning Strategy
<b>PAW</b>	Public Access Way
<b>PLUC</b>	Planning Land Use Category
<b>PMD</b>	Personal Mobility Device
<b>POS</b>	Public Open Space
<b>PTA</b>	Public Transport Authority
<b>REIWA</b>	Real Estate Institute of Western Australia
<b>RCCTS</b>	Rockingham City Centre Transit System
<b>RSC</b>	Rockingham Strategic Centre
<b>RPSP</b>	Rockingham Strategic Centre Precinct Structure Plan
<b>SCP</b>	Strategic Community Plan
<b>SEIFA</b>	Socio-Economic Indexes for Areas
<b>SPP</b>	State Planning Policy
<b>TOD</b>	Transit Oriented Development
<b>TPS2</b>	City of Rockingham Town Planning Scheme No.2
<b>UHI</b>	Urban Heat Island
<b>WAPC</b>	Western Australian Planning Commission
<b>WMS</b>	Water Management Strategy
<b>WSUD</b>	Water Sensitive Urban Design
<b>WTC</b>	Western Trade Coast



**Hames  
SHARLEY**

 ARCHITECTURE  
INTERIORS  
URBAN DESIGN  
PLANNING  
LANDSCAPE

[www.hamessharley.com.au](http://www.hamessharley.com.au)

