Alkimos Central

Precinct Plan

March 2022

Innovation Through Demonstration

Shaping our State's future

DevelopmentWA

The authors and contributors to this document would like to acknowledge the Traditional Owners of the land, the Whadjuk people of the Noongar nation and pay respect to Elders past, present and emerging. We recognise the unique and incomparable contribution the Whadjuk people have made and continue to make to our culture and in our community. We also acknowledge the wider Noongar and Aboriginal people and their respective communities who have directly worked on the project and recognise the significant role they played, and continue to make, in the planning and delivery of the Precinct in the future. The land on which we live, meet and thrive as a community always was and always will be Noongar land.

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Community Development	Element

Description	Version	Date	Distribution
Draft	1	20/11/2021	DevelopmentWA
For Submission	2	2/12/2021	City of Wanneroo
Final for Submission	3	10/3/2022	City of Wanneroo

This structure plan is prepared under the provisions of the City of Wanneroo District Planning Scheme No. 2.

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

Signed for and on behalf of the Western Australian Planning Commission

_____

an officer of the Commission duly authorised by the Commission pursuant to Section 16 of the *Planning and Development Act 2005* for that purpose, in the presence of:

_____

Witness

_____

Date

_____

Date of Expiry

Table of Amendments:

Amendment No.	Summary of Amendment	Amendment Type	Date Approved by WAPC
1	Amendment to Alkimos City Centre Activity Centre Plan primarily relate to: • Inclusion of built form controls for the city centre core including the station precinct. • The realignment of Romeo Road in order to retain and protect the Pinnacles Aboriginal area (Place ID 37478) as a culturally significant site. • Modifications to the precinct layout and associated land uses as a result of the Romeo Road realignment. • Updated design interface between the Precinct and Alkimos Station since the Yanchep Rail Extension became a committed delivery project in November 2019. • The review and updating of economic forecasts, project outcomes and timelines in response to the COVID 19 Global Pandemic. • Realignment of the document towards State Planning Policy 7.2, Precinct Design Guidelines, released in December 2020. • The review and updating of key supporting Technical studies to take account of the above changes.		

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Executive Summary

This Alkimos Central Precinct Plan – ("precinct plan") provides the planning framework for Lots 1, 2 and portion of Lot 2000 Marmion Avenue, Alkimos and will facilitate the development of a secondary centre for the growing residential community in Alkimos and surrounding suburbs. The precinct is commonly referred to as "Alkimos Central".

This document replaces the existing Alkimos City Centre Activity Centre Plan No. 89 approved August 2019 (**ACP89**). This amendment provides a planning framework for the proposed precinct plan in line with Part 4 of the Planning and Development (Local Planning Scheme) Regulations 2015 (**P&D Regulations**) and State Planning Policy 7.0 - Design of the Built Environment (Design WA suite).

Alkimos Central is located to the north of the existing suburb of Alkimos approximately 15km north-west of the Joondalup city centre. The activity centre is considered and provided for in a range of higher-level planning documents including State Planning Policy 7.2 - Precinct Design (**SPP7.2**), State Planning Policy 4.2 – Activity Centres for Perth and Peel (**SPP 4.2**), Alkimos - Eglington District Structure Plan (**DSP**) and the City of Wanneroo District Planning Scheme No. 2 (**DPS2**). The site is also recognised as Planning Control Area No. 132 – Yanchep Line Extension – Alkimos, which is established to facilitate the development of the land for railway and related public purposes.

The precinct plan provides for:

- A consolidated city centre core focused around the Alkimos Station and the junction of two key main streets as the focus of retail and community activity with a high standard of built form and landscape treatment.
- Provision of a range of employment generating activities including business, service industry, office, recreation, health and retail to support Alkimos Central as a secondary centre.
- A mix of uses in the city centre core comprising of pedestrian scaled retail, commercial, entertainment, food and beverage, recreational and civic and cultural land uses to ensure a vibrant and lively central core.
- A residential community that supports low to medium density housing around the city centre core and serves a supporting role in activating the centre.
- A clear street network providing major roads with a 'boulevard' treatment enabling high levels of accessibility, while the city centre core's accessibility with the surrounding residential precincts will have alternative routes with an emphasis on shared urban street environments safe for pedestrian and cycle movements.

- Retention of the regionally significant parabolic dune system that will form a major public space network through the precinct enabling physical and visual connection to the coast.
- Protection of 'the Pinnacles' as a symbol of the cultural heritage significance of the location to the Aboriginal community which will be celebrated as a key element of the open space network.
- Provision for a primary school site located within the residential area to maximise connection with the Alkimos community.
- High quality built form that responds to the unique context, climate and conditions of this place with a design philosophy that includes the use of alternative materials that will offer environmental benefits.

This precinct plan includes:

- **Part One – Implementation** – providing the subdivision and development controls for the activity centre.
- **Part Two – Explanatory Section and Technical Appendices** – providing planning background and explanatory information to support the precinct plan including updated technical investigations where required.

This precinct plan, as required by the relevant clauses of the Deemed Provisions of the P&D Regulations, provides the primary land use, built form and strategic planning controls for the precinct area, and is to be given due regard in the consideration of development and subdivision applications by the relevant determining authority.

This precinct plan will facilitate the provision of a secondary centre to service the future of Alkimos Central in a manner and form consistent with the State planning framework.

An overview of the key characteristics of the precinct plan is provided in **Table 1**.

Table 1 – Precinct Plan Overview

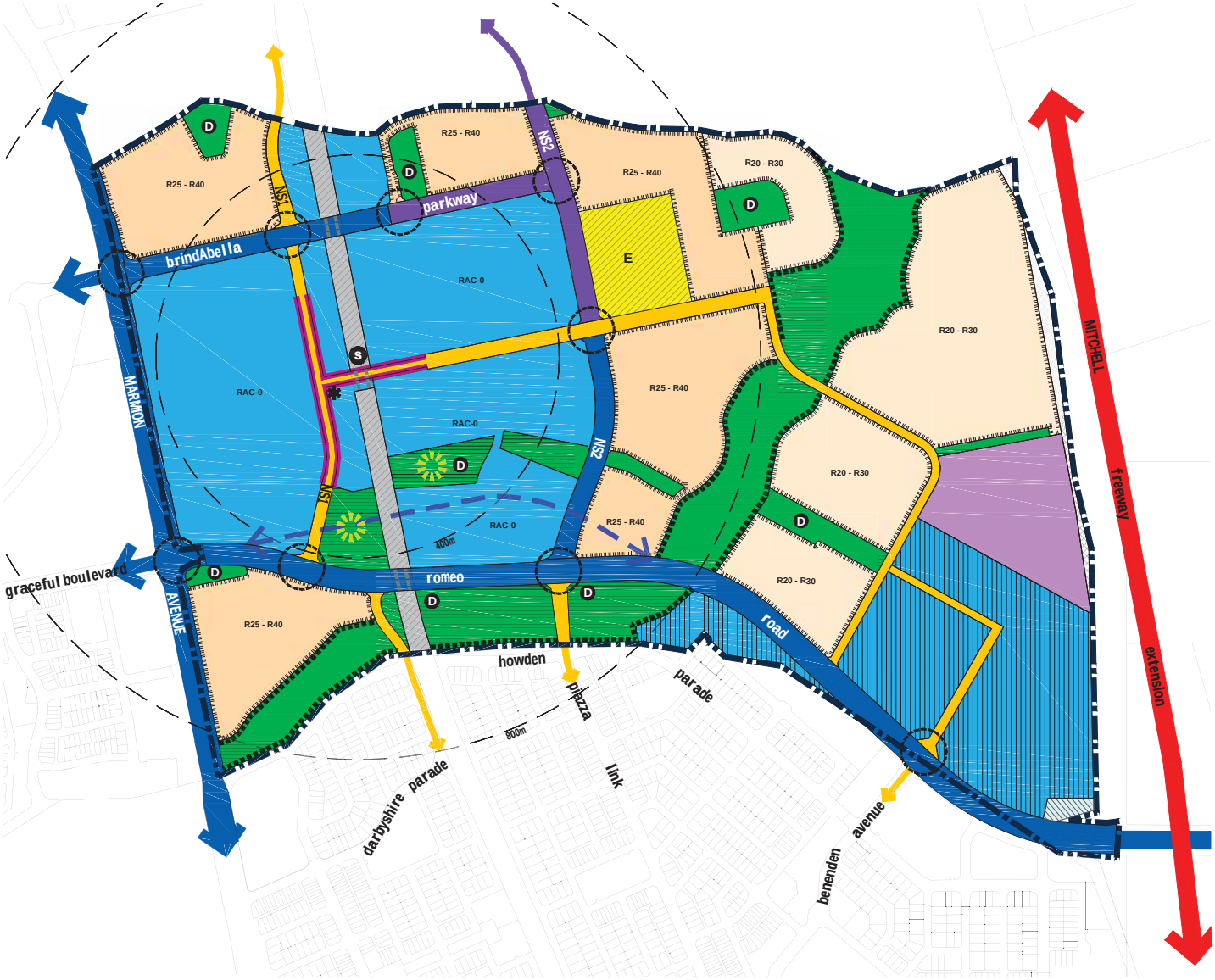
Item	Data	Precinct Plan Ref.
Total area covered by the Precinct Plan	203.1 hectares	Part 1 Section 1.1 Part 2 Section 5.1.1
Area of each land use proposed	• Residential – 43.6679ha • Commercial – 35.4257ha – Retail – 7.3159ha – Mixed Use – 14.0792ha – Residential – 10.4286ha – Civic Purpose – 3.6020ha • Service Commercial / Business – 25.7ha • Education – 4.0289ha • Railway – 3.73 ha (Excludes: PTA carparks, Train and bus station area outside of railway reserve, and bridge areas)	Part 2 Section 7.2 and 7.3
Total estimated lot yield	2,020 lots (comprising 1,957 residential lots and 63 non-residential lots)	Part 2 Section 7.3.1
Estimated number of dwellings	2,457 dwellings (to 2051) 2,957 to 3,157 dwellings (to 2071)	Part 2 Section 7.2.5 and 7.26
Estimated residential site density	49 Dwellings per gross hectare based on a gross area of 54.0965 hectares (excluding Precincts 5, 6 and 7)	Part 2 Section 7.2.5
Estimated population	6,263 people (2051)	Part 2, Section 7.2.5
Number of high schools	0	n/a
Number of primary schools	1	Part 2 Section 7.3.2
Estimated commercial floor space	72,000sqm NLA retail floor space at 2041, 45,000sqm of Bulky Goods floor space at 2041	Part 2 Section 7.3.3
Estimated area and percentage of public open space	28.87 ha (21.56%)	Part 2 Section 7.6.2

Draft Render subject to final details and update

Part One - Implementation

Draft Render subject to final details and update

Plan 1: Alkimos Central Precinct Plan



LEGEND

PRECINCT PLAN AREA

ZONES

RESIDENTIAL
- R20 - R30
- R25 - R40

COMMERCIAL

BUSINESS

SERVICE INDUSTRIAL

RESERVES

E — EDUCATION

PUBLIC OPEN SPACE

DRAINAGE

PRIMARY DISTRIBUTOR ROAD

INTEGRATOR A

FUTURE INTEGRATOR A

INTEGRATOR B

NEIGHBOURHOOD CONNECTOR ROAD

RAILWAYS

OTHER

D — DRAINAGE

S — RAILWAY STATION

RAILWAY ALIGNMENT

400m — WALKABLE CATCHMENT

TOWN SQUARE

MAIN STREET

ENVIRONMENTAL / HERITAGE VALUE

INDICATIVE FUTURE WESTERN POWER CORRIDOR

CONTROLLED INTERSECTION

EXISTING ROMEO ROAD MRS RESERVATION

POS / DUNE INTERFACE SUBJECT TO DETAIL DESIGN

NOTES

1) Ultimate Road Hierarchy at 2051
2) Traffic Signals subject to Main Roads WA approval
3) Extent of POS subject to detailed design in accordance with provisions of Part 1 of the Precinct Plan
4) Future Western Power Corridor is subject to further investigation through more detail planning including the review ot Western Power network requirements

1. Implementation

1.1 Precinct Plan Area

The Alkimos Central Precinct Plan ("precinct plan") shall apply to the land identified within the boundary of the "precinct plan area" as denoted on **Plan 1: Alkimos Central Precinct Plan.**

The precinct plan boundary has been slightly modified from approved ACP89 based on the current cadastre information which removed a portion of land for the future Mitchell Freeway extension on the eastern boundary.

1.2 Operation

This precinct plan comes into effect on the day the enabling amendment is approved by the Western Australian Planning Commission (**WAPC**), the date of which is outlined on the endorsement page. As per the Deemed Provisions of the P&D Regulations, from the date of endorsement this precinct plan is to have effect for a period of 10 years, unless otherwise determined by the WAPC.

Unless otherwise specified, the words and expressions used in this precinct plan shall have the respective meanings given to them in the City of Wanneroo DPS2.

Nothing in this precinct plan is to be interpreted as limiting clause 4.2 of DPS2 which allows for variations to the site and development standards and requirements. Nothing in this precinct plan is to be interpreted as limiting clause 43 of the deemed provisions that outlines that a decision-maker for an application for development approval or subdivision approval in an area that is covered by precinct plan is to have due regard to, but is not bound by, the precinct plan when deciding the application.

This precinct plan is to be read in conjunction with any approved Precinct/Local Development Plan(s) (**PLDP/LDP(s)**) as adopted by the City of Wanneroo and the WAPC (if required).

1.3 Vision Statement

The precinct plan is based on the following vision statement:

Alkimos Central is a dynamic and adaptive place to live, learn, work and retreat. Anchored by its town centre and new take on an integrated transit hub, it will blend seamlessly within its coastal context, integrate cultural heritage, connect communities across generations and foster economic and social vitality.

1.4 Objectives

Subdivision and development in the precinct plan area shall align with the following objectives:

Objective	Statement
Create a City Centre for the District	Alkimos Central will be the main city centre for the surrounding Alkimos-Eglinton District offering a high-quality environment and a diverse range of uses and amenities to residents and visitors including public transport, public open space, retail, commercial, food and beverage, health and medical, entertainment, civic, recreation and service industrial/commercial.
Create an Active, Transit-focussed City Core	The city centre core will be focussed around Alkimos Station and the junction of two key main streets. These streets will be the focus of retail and community activity within the city centre core and will be designed with high-quality built form and landscaping treatments.
Design to Celebrate the Coastal Location	Retention of the regionally significant parabolic dune is a key structural element and will form a major public space network around and through the project, enabling physical and visual connection to the coast. The design detail of public realm areas and open spaces will bring the environmental qualities of the dunes and coastal landscape into urban spaces to reflect, complement and enhance natural amenity and provide for interconnection.
Acknowledge the site's Cultural Heritage	A site of cultural heritage significance to the Aboriginal community known as 'the Pinnacles' has been retained following extensive consultation and will be incorporated as a key element of the project's public space network.
Enable a diversity of employment and living options	The project's designation as a secondary centre, provides a basis for the centre to be a key economic centre for the district and provide a range of employment opportunities from professional and medical services to retail, hospitality, service and industrial activities. Further, a range of residential housing options will be provided including, single, grouped, and multiple dwelling options and aged living opportunities. Higher employment and residential densities are to be concentrated within the city centre core.

Objective	Statement
Provide a legible movement network catering for all modes	All parts of the precinct plan will be connected by a clear street network that is emphasised through built form elements, landscape elements and key view corridors. Major roads with a boulevard treatment provide higher volume accessibility, while the city core and residential precincts place an emphasis on a shared urban street environment emphasising safe pedestrian and cycle movement. Key elements within this street network include a central east-west civic spine that enhances walkability to the city centre and Alkimos Station from the surrounding residential areas.
Ensure Quality Built Form Design	The design of buildings within the precinct plan will need to create comfortable and protected public places for people, and a high-quality built form that responds to the unique setting and the importance of Alkimos as a secondary centre.
Be an Exemplar of Sustainable Development	All parts of the precinct plan will aspire to achieve high standards of sustainable design with a focus on inbuilt resilience and adaptability to ensure the prosperity of the city centre into the future.
Create a cool, shaded urban retreat	Public spaces and new developments will collectively target the planting of 20,000 trees across the precinct plan to create a protected retreat from the coastal elements.

1.5 Zones, Reserves And Precincts

Plan 1 divides the activity centre into various zones and local reserves in accordance with the DPS2 as follows:

- **Commercial Zone** – comprising the land identified within the Commercial Zone. The Commercial Zone provides primarily for the city centre core of Alkimos.
- **Residential Zone** – comprising all land identified within the Residential Zone. The Residential Zone provides for a diversity of low to medium density housing, including aged persons housing.
- **Service Industrial Zone** – comprising all land identified within the Service Industrial Zone. The Service Industrial Zone provides a key employment area and provides for a variety of service industry developments.
- **Business Zone** – comprising all land identified within the Business Zone. The Business Zone provide for retail and commercial businesses which require large areas such as bulky goods / large format retail and category/theme based retail outlets as well as complementary business services.
- **Public Open Space Reserve** – comprising all land identified within a Public Open Space reserve.
- **Drainage Reserve** – comprising the land identified within a Drainage Reserve.
- **Education Reserve** – comprising land specifically to provide for a primary school.

The precinct plan is zoned City Centre under the Metropolitan Region Scheme (MRS) and covered by Planning Control Area No. 132. It is also partially designated with a Primary Regional Roads (part of the Mitchell Freeway extension) and Other Regional Roads (Romeo Road) reservation.

The precinct plan area has been divided into seven (7) precincts to outline the specific vision statement and objectives for subdivision and development. These precincts are shown on **Figure 1 – Precincts and Frontages Plan** and are detailed in **Table 2**.

Table 2 – Precincts

Zone	Precinct
Commercial Zone	City Central (P1), City West (P2), City East (P3)
Residential Zone	Dune Residential (P4)
Business Zone	Business (P5)
Service Industrial Zone	Service Industrial (P6)
Commercial Zone	Transition (P7)

1.6 Staging

Development in the precinct plan area will be implemented in a variety of stages over a period of time, and similarly built form may be delivered over multiple stages. The first civils stage will be progressed in the near term to provide for the delivery of the new Alkimos Station, key vehicle access to/from the station, provision of essential services and the initial stages of Alkimos Central.

- The configuration of the above roads are to be generally in accordance with the major roads shown on **Plan 1**.
- Arrangements are to be made to the satisfaction of the WAPC for the construction of road referred to as North-South 1 (NS1) as part of the subdivision of land once the following has been achieved:
  - Alkimos Station is operational; and
  - 15,000sqm of shop-retail floor space has been constructed and in operation within the City Central Precinct (P1) as identified on **Figure 1 – Precincts and Frontages Plan.**
- Arrangements are to be made to the satisfaction of the WAPC for the construction of the road referred to as North-South 2 (NS2) as part of the subdivision of land once the following has been achieved:
  - Scotthorn Drive is constructed from Alkimos Drive (from Alkimos Vista Local Structure Pan No.95) to the northern boundary of the Parks and Recreation reserve to the north of the precinct plan boundary; and
  - Brindabella Parkway is constructed to its intersection with NS2.

The staging of development within the balance of the precinct plan can then be progressed as key roads and services are in place and as market demand for residential, retail and commercial development permits. Further details on staging is outlined in **Part 2 – Explanatory Section**.

Where development is proposed to be delivered over stages, satisfactory arrangements and/or treatments for the residual vacant land, facades and upper levels that are to be the subject of future stages of development need to be demonstrated as part of development applications to the satisfaction of the determining authority. This can be in the form of temporary activation, landscaping, temporary facades, artwork / murals or temporary uses such as enabling residual space to be utilised for community group purposes
(eg. a community garden or markets).

2. General - Subdivision And Development Requirements

The following provisions apply to all subdivision and development in the precinct plan area.

This precinct plan and any approved PLDP/LDP(s) is to be read in conjunction with State of Planning Policy 7.0 - Design of the Built Environment (Design WA suite) and the City of Wanneroo DPS2 and any relevant Local Planning Policy. Where there is a conflict, the requirements of this precinct plan and the associated PLDP/LDP(s) prevails.

The requirements of this precinct plan are able to be varied subject to any proposed subdivision and development being in accordance with the vision and objectives in **Part 1** of this precinct plan, inclusive of the respective precincts, any applicable PLDP/LDP(s) and the intent and objectives of SPP7.3 Residential Design Codes (Volume 1 and 2).

2.1 Subdivision Layout

a) Development and subdivision is to be of a layout generally in accordance with that illustrated in **Figure 16 - Indicative Land Use and Residential Density Plan** contained in **Part 2 - Explanatory Section**.

b) Subdivision that would prejudice the precinct plan objectives, individual precinct objectives and Zone objectives by way of fragmentation or irregular lot shapes will not be supported.

c) Variations to the subdivision layout may be contemplated having regard to any applicable PLDP/LDP(s) to align with subdivision patterns and road alignments to benefit the overall functionality, design and success of the precinct plan.

2.2 Land Use Permissibility

Land use permissibility shall be in accordance with the zoning within DPS2 and the corresponding zone designated on **Plan 1** and outlined in **Table 3**.

Table 3 – Zoning

Precinct Plan Land Use Category	Equivalent Zone/Reserve in accordance with DPS2
Commercial	Commercial Zone
Residential	Residential Zone
Service Industrial	Service Industrial Zone
Business	Business Zone
Public Open Space	Parks and Recreation Reserve
Drainage	Waterways

When considering discretionary land uses (D or A) under **Table 1** - Zoning Table of DPS2, the determining authority is to have regard to the zone and precinct objectives as they relate to the land use intent identified for each zone and precinct contained in Part 1 and 2 of this precinct plan.

2.3 Public Open Space

a) Public open space (POS) is to be provided generally in accordance with the POS reserves shown on **Plan 1** noting that this is in the order of 21.56% which is in excess of the minimum requirement of 10% under Development Control Policy 2.3 Public Open Space in Residential Areas and Liveable Neighbourhoods.

b) The 'POS / Dune Interface' noted on **Plan 1** is subject to detailed design to ensure the retention of good quality vegetation is considered and retained, whilst providing flexibility in the location and treatment of the POS / Dune Interface.

c) The extent of the 'POS / Dune Interface' (as noted in (b) above) identified on **Plan 1** may be reduced by up to 10% in total area on any plan of subdivision.

d) Suitable justification being provided by the proponent for the variation based on the design principles of Liveable Neighbourhoods and to the satisfaction of the City of Wanneroo/DPLH.

2.4 Prominent Locations

a) Prominent Locations are identified on **Figure 1 - Precincts and Frontages Plan** and reflect key entryways into the city centre and important streets. A PLDP/LDP(s) can identify other Prominent Locations in addition to those described on **Figure 1 - Precincts and Frontages Plan** in response to site specific design outcomes.

b) Additional site-specific requirements may be provided for these locations which will be contemplated via any applicable PLDP/LDP(s).

c) These Prominent Locations can be in the form of landmarks, sites that interface the public realm and critical pedestrian connections and linkages.

d) Built form should generally incorporate the following (at a minimum) to emphasise the role of these locations, noting that where there is a conflict, the requirements of the relevant PLDP/LDP(s) prevails:

   i. Achieve an exemplary standard of architectural design, as determined by the City of Wanneroo Design Review Panel and/or State Design Review Panel.

   ii. Shall be expressed as strong visual elements using techniques such as facade articulation, increased height, distinctive roof forms, materials and colour, establishing a focal point and architectural feature.

   iii. On corner sites, respond architecturally to the corner condition in a way that emphasises the corner.

   iv. On sites that terminate vistas, place important architectural elements at the centre of the view line.

2.5 Landscaping

a) In order to meet the objective of achieving 20,000 trees within the precinct plan area, in addition to new landscaping/tree planting, reasonable efforts are to be made at appropriate stages to preserve trees of significant value in lots, road reserves, POS and recreation reserves. Evidence of proposed tree retention is to be provided at each relevant subdivision stage.

b) Landscaping design and species should be provided in accordance with the Landscape Masterplan.

c) Landscaping shall be carried out and maintained on all those areas of a development site which are not approved for buildings, accessways, storage purposes or car parking.

Unless otherwise varied by an applicable PLDP/LDP(s), the following landscape requirements apply:

Residential and Mixed-Use Development:

a) For residential or mixed-use development, in addition to 2.5 (a-d) the provisions of SPP7.3 (Volume 1 or 2 as applicable) apply.

Non-Residential Development:

a) For non-residential development, the following provisions apply:

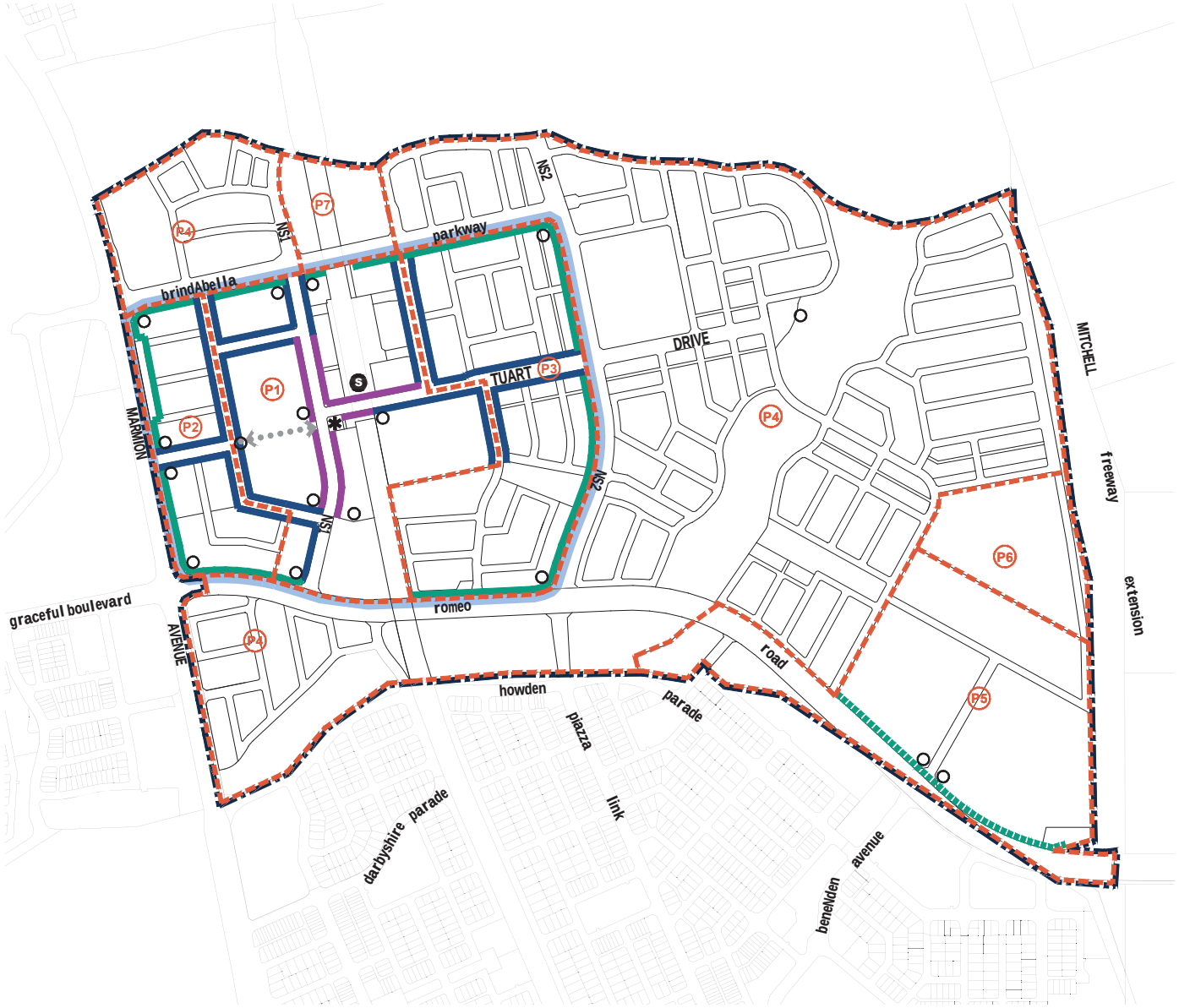
   i. A minimum of 10% of the area of a development site shall be set aside, developed and maintained as deep soil to a standard satisfactory to the local government. In addition, the road verge adjacent to the lot shall be landscaped and maintained to the satisfaction of the local government.

   ii. Noting 2.7 (d), when a proposed development includes portions of a car parking area abutting a street, an area no less than 3m wide within the lot along all street alignments shall be set aside, developed and maintained as landscaping.

   iii. Tree provision at a minimum rate of 1 tree per 200sqm of application area.

   iv. Shade trees shall be planted, spaced and maintained in car parking areas, and designed within 1.2m x 1.2m tree wells at a rate of 1 tree for every 4 car parking bays.

Figure 1 Precincts and Frontages Plan



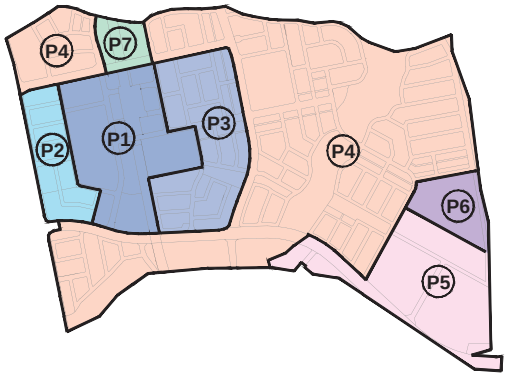
LEGEND

- PRECINCT PLAN AREA
- CITY CENTRE CORE
- PRECINCTS
  - P1 CITY CENTRAL
  - P2 CITY WEST
  - P3 CITY EAST
  - P4 DUNE RESIDENTIAL
  - P5 BUSINESS
  - P6 SERVICE
  - P7 TRANSITION
- MAIN STREET
- CITY STREET
- BOULEVARD
- HIGHWAY SERVICE FRONTAGE
- TOWN SQUARE
- PROMINENT LOCATION
- ACTIVATED PEDESTRIAN LINK
- INDICATIVE ROAD LAYOUT
- ALKIMOS TRAIN STATION

NOTE

Built form controls in the City Centre Core shall be in accordance with the provisions of Part 1 and any applicable PDLP(s).

precincts



2.6 Streetscape Design

a) Streetscapes are to be designed in accordance with the sections included at **Attachment A** - (from page 37) and any applicable PLDP/LDP(s).

2.7 Vehicle Access and Parking

a) Access should be provided generally in accordance with major roads shown on **Figure 2 - Movement Network Plan**.

b) Vehicle entries should be identifiable from the street, while being integrated with the overall façade design.

c) Vehicle entries are designed to have adequate separation from street intersections to the satisfaction of the determining authority.

d) Off-street car parking shall be located either to the rear or side of buildings, and not within the street setback area so as not to visually dominate or disrupt the continuity of building frontages.

e) For the city centre core (City Central (P1), City West (P2), City East (P3)), parking provision is to be in accordance with an approved Parking Management Strategy, incorporating maximisation of on-street parking, integrated public parking facilities and promotion of reciprocal use, and provision for bicycle parking and end of trip facilities.

f) In the absence of an approved Parking Management Strategy, all lots located within an 800m radius of Alkimos Station shall comply with the following car parking provisions:

   i. Car parking for all non-residential land uses shall be provided at a maximum rate of 4.5 car spaces per 100sq.m of NLA, with the exception of office and showroom which shall be provided at a maximum rate of 2 car spaces per 100sq.m of NLA.

   ii. Car parking for all residential uses is to be provided as per SPP7.3 (Volume 1 or 2).

g) All land outside of the 800m radius from Alkimos Station shall provide car parking in accordance with DPS2 and/or SPP7.3 (Volume 1 or 2) as applicable.

h) Small car bays (to the specifications of AS2890.1) are permitted off-street to a maximum of 25% of the non-residential off-street car parking provided.

2.8 Bicycle Access and End of Trip

a) Cycling routes via the identified 'Shared Pedestrian and Cycle Path' are to be provided generally in accordance with the **Figure 2 - Movement Network Plan**. Noting "Principal Shared Path" and "Indicative Principal Shared Path" in **Figure 2 - Movement Network Plan** are to be provided by Others.

b) For residential development, provision for bicycle parking and end of trip facilities should be made in accordance with SPP7.3 (Volume 1 or 2).

c) For non-residential development, the provision of bicycle parking and end of trip facilities such as showers, change rooms and lockers are to be delivered in accordance with Austroads' Guide to Engineering Practice Part 14: Bicycles.

2.9 Signage

a) Signage is to be designed in accordance with the City of Wanneroo Signs Local Planning Policy 4.6. Unless otherwise guided by an applicable PLDP/LDP(s), a Signage Strategy will be required at the development applications stage and should:

   i. Improve the overall appearance and legibility of the public realm.

   ii. Integrate into the building design and relate to the architectural composition of the building it serves without obscuring any of the building's functions or architectural features.

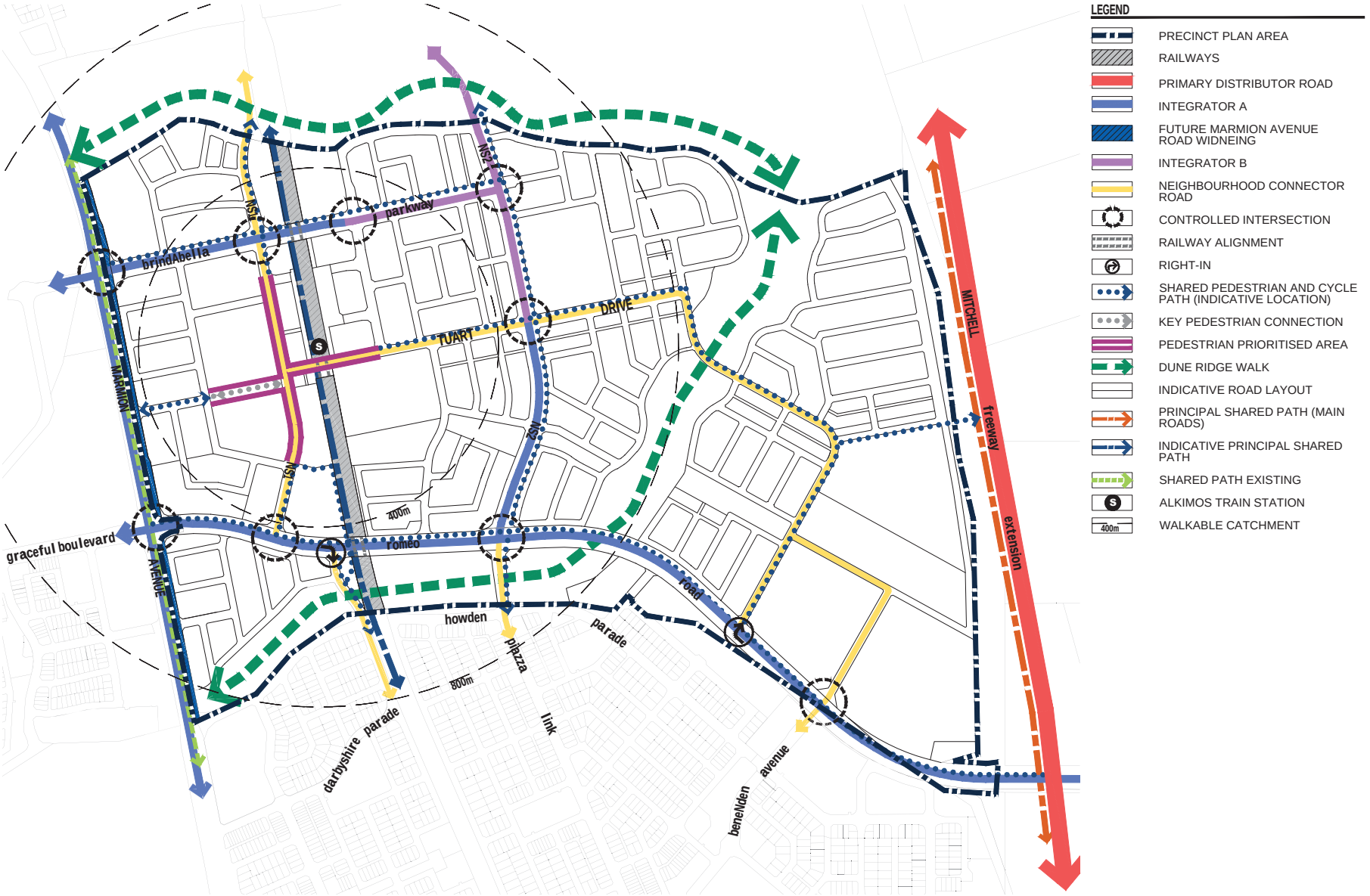
2.10 Safety and Amenity

a) Loading docks and service areas within development sites shall be screened visually and acoustically from sensitive uses and key pedestrian areas (i.e. residential areas, child care centres, public and private realms such as alfresco areas of restaurants/ cafes and entries and displays of retailers).

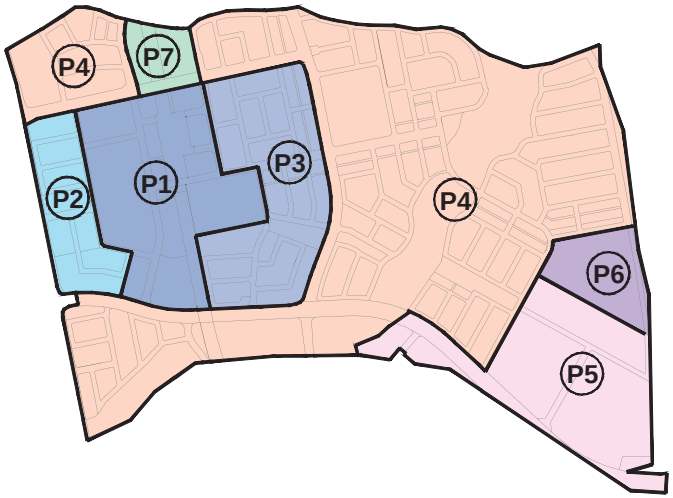
b) Bin storage areas shall be screened from the street and be mindful of sensitive uses and key pedestrian areas and provide a clear method for refuse disposal.

c) Developments are to incorporate design principles of Crime Prevention Through Environmental Design (CPTED).

Figure 2 Movement Network Plan



3. Precincts – Subdivision and Development Requirements



Section 3.0 provides subdivision and development requirements for each of the seven (7) precincts –

Section 3.1 - City Central (P1), City West (P2), City East (P3)

Section 3.2 - Dune Residential (P4)

Section 3.3 - Business (P5) and Service Industrial (P6)

Section 3.4 - Transition (P7)

3.1 Commercial Zone - City Centre Core Precincts (P1, P2 & P3)

3.1.1 City Central Precinct (P1) Vision and Objectives

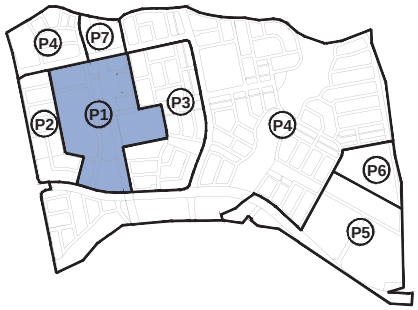


Image 1 City Central Precinct (P1)

Vision

> *As the gateway to and heart of Alkimos; the City Central Precinct will create an activated and alive hub around Alkimos Station including the Town Square and the two key main streets. The precinct will accommodate a mix of retail, commercial, entertainment, food and beverage, recreational, civic, cultural and some residential land uses.*
>
> *Precinct 1 will focus on the pedestrian experience via leading public realm design that celebrates the coastal location and delivers a network of quality and integrated development outcomes, particularly in identified Prominent Locations.*

Objectives

- Create an attractive, active, accessible, and economically diverse city centre environment.
- Provide two traditional and recognisable main streets converging at a central Town Square and that are integrated with Alkimos Station.
- Provide for a mix of uses, including retail, commercial, entertainment, food and beverage, recreational, civic and cultural, and residential land uses.
- Create an east-west 'activated pedestrian link' to provide a clear connection from Marmion Avenue, through the primary retail and entertainment area, to the Town Square and Alkimos Station and further east to the remainder of the precinct east of the rail.
- Promote an 'Integrated Urban Village' with a comfortable, safe and attractive civic, shopping, living and recreation environment through high-quality design, materials and landscaping.
- Provide a 'shared street' environment throughout the Precinct that promotes safe pedestrian and cyclist movement and provides accessible, shady and active street spaces.
- Connect, protect and promote the 'environmental and cultural heritage values' of the city centre core to integrate with the wider cultural heritage values of Alkimos.
- Deliver sustainable, experiential and distinctive design outcomes.
- Deliver Prominent Locations that promote high quality design outcomes acting as interfaces, landmarks and gateways to the precinct.
- Promote access for private and service vehicles to be integrated into the building's design and at-grade car parking to be predominantly sleeved behind buildings or when above-grade or sub-basement to be screened in a manner and form consistent with the building.

3.1.2 City West Precinct (P2) Vision and Objectives

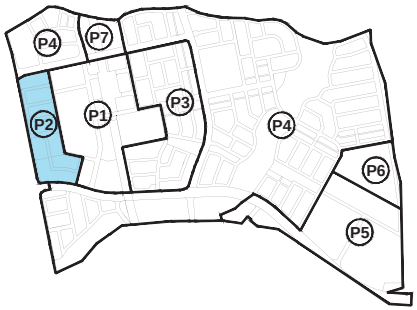


Image 2 City West Precinct (P2)

Vision

> *The City West Precinct forms the important western edge of the city centre core on Marmion Avenue and is defined by its mix of office, commercial, and residential uses, green streets and large flexible blocks. A series of laneways will appropriately service the activity within the City Central Precinct (P1) enabling high amenity and pedestrian oriented streetscapes and facades. Development on the periphery will act as a key urban frontage to Marmion Avenue and provide a gateway entrance statement which points into the city centre core. Internally, the City West Precinct will interface with and support the activities within the City Central Precinct (P1) promoting a mix of residential and non-residential uses.*

Objectives

- Provide for a mix of office and commercial uses that are compatible to residential development with the opportunity for small convenience retail.
- Provide for a variety of complementary housing forms including apartments, small lot, grouped housing and terrace formats through varying forms of tenure.
- Provide for engaging and where possible active uses at ground level fronting Marmion Avenue, Brindabella Parkway and Romeo Road.
- Deliver Prominent Locations that promote high quality design outcomes acting as interfaces, landmarks and gateways to the Precinct.
- Provide a comfortable, safe and attractive office/commercial and residential environment through high-quality design, materials and landscaping.
- Provide for a variety of complementary housing forms including apartments, small lot, grouped housing or terrace formats through varying forms of tenure.
- Promote access to be serviced by a series of laneways to support access to car parking and / or service entries and minimise impact on the streetscape and amenity.

3.1.3 City East Precinct (P3) Vision and Objectives

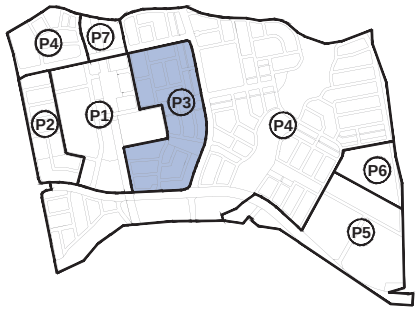


Image 3 City East Precinct (P3)

Vision

> *Acting as a connection from the predominant residential areas east of this precinct and the unique dune backdrop, the City East Precinct blends City Central Precinct (P1) activities with elements of transition to the suburban qualities further afield. The precinct is focussed around the eastern extension of Tuart Drive main street forming an 'eastern gateway into the city centre core. The southern portion of the precinct will complement the proposed recreational facility and includes a prominent open space with protected vegetation as a precinct focus. The northern portion of the precinct provides a flexible urban structure with excellent access to the station to accommodate future growth opportunities as the city centre matures.*

Objectives

- Provide for a transition in intensity of development eastward within the precinct particularly at the interface with the Residential Precinct (P4) including the proposed education site.
- Provide for a mix of office and commercial uses that are compatible to residential development and deliver a variety of medium to high density residential dwelling options.
- Provide for engaging and where possible active uses at ground level fronting Tuart Drive, Brindabella Parkway, NS2 and Romeo Road.
- Deliver Prominent Locations that promote high quality design outcomes acting as interfaces, landmarks and gateways to the Precinct.
- Provide a comfortable, safe and attractive office/commercial, living and recreational environment through high-quality design, materials and landscaping.
- Provide for a variety of complementary housing forms including apartments, small lot, grouped housing or terrace formats through varying forms of tenure.
- Promote access to be serviced by a series of laneways to support access to car parking and / or service entries and minimise impact on the streetscape and amenity.

3.1.4 City Centre Core Subdivision & Development Requirements (P1, P2 & P3)

These requirements apply to the land identified within the Commercial Zone (RAC-0) on **Plan 1** and the "city centre core" comprising land defined as Precincts 1, 2 and 3 on **Figure 1 - Precincts and Frontages Plan**.

In addition to these requirements, a Precinct Local Development Plan(s) (PLDP) will apply to the city centre core to guide built form development. The provisions of this precinct plan are to be read in conjunction with any approved PLDP/LDP(s).

3.1.4.1 Precincts and Land Use Intent

For each precinct in the city centre core the land use intent is outlined in **Table 4**. The land uses identified in Column 3 are the primary land uses that will be supported in the city centre core. All relevant development requirements will still apply regardless of land use.

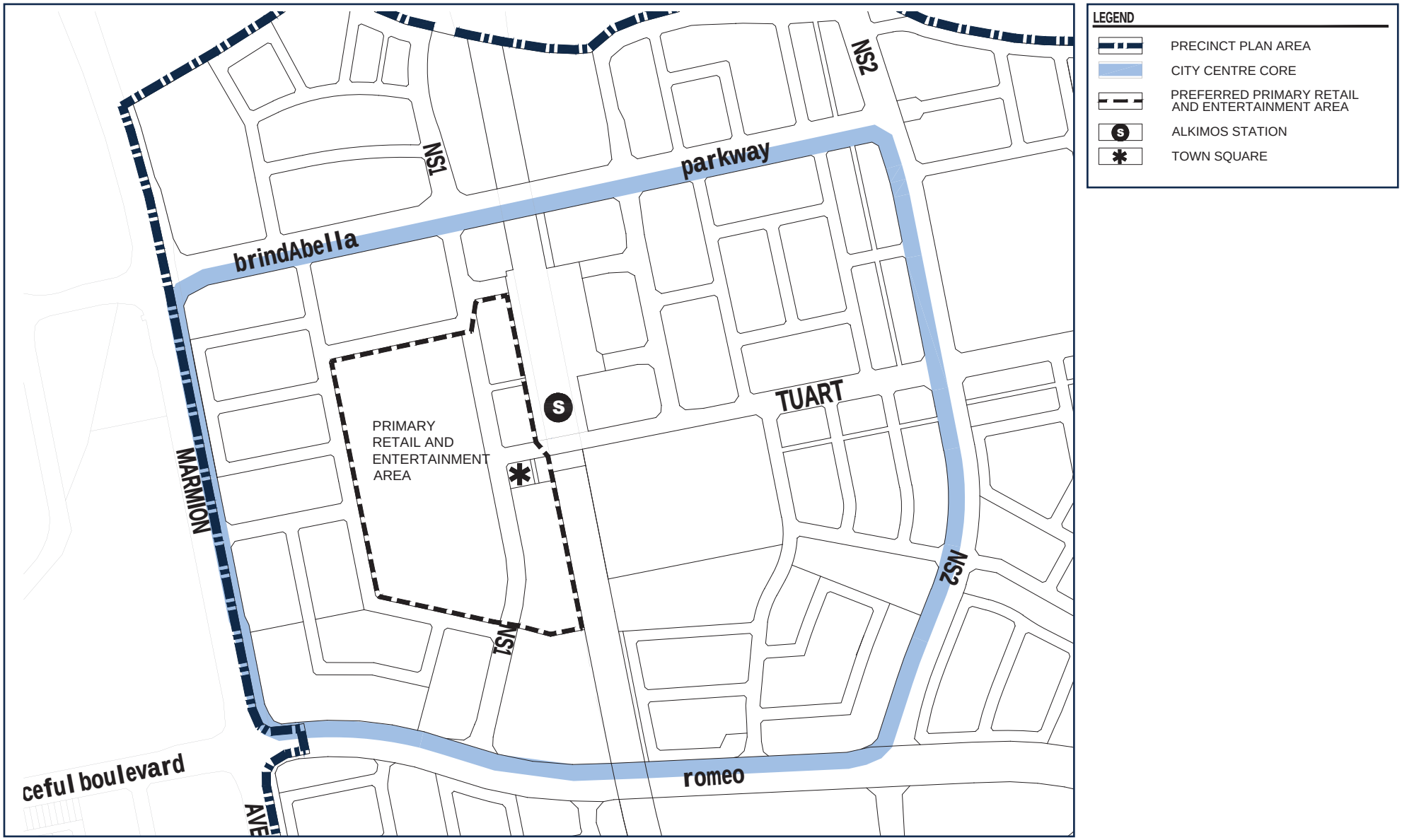
3.1.4.2 Built Form

- For the most critical street edges within the precinct plan area a series of more detailed development standards based on 'frontage types' are imposed to ensure an appropriate interface with the adjacent public realm that is consistent with the intended urban design outcome. These frontage types are referred to as 'Main Street', 'City Street' and 'Boulevard' and are included at **Figure 1 - Precincts and Frontages Plan** and the **Built Form Controls Table** at **Table 5** and described in **Section 7.6.3 - Frontage Types** of **Part 2**.
- Where no frontage type is designated, development shall comply with the 'City Street' frontage requirements unless site specific requirements are contained in any applicable PLDP(s).
- The location of frontage types is based on the indicative subdivision layout generally in accordance with the **Figure 16 - Indicative Land Use and Residential Densities Plan** contained in **Part 2 – Explanatory Section**.

Table 4 – Land Use Intent for City Centre Core

Precinct	Land Use intent	Land Use Category
City Central (P1)	Provide for a mix of land uses, including major retail (supermarket, shopping centre), commercial, entertainment, food and beverage, recreational, civic and cultural facilities. **Figure 3** identifies the preferred location for the primary retail and entertainment area for the city centre core.	Shop Supermarket Department Store Cinema Office Recreation Centre Liquor Store (small) Child Care Centre Civic Building Restaurant / Cafe Small Bar / Tavern Multiple Dwellings
City West (P2)	Provide for a mix of office and commercial uses that are compatible with residential development with the opportunity for small convenience retail. Residential can be in the form of apartments, terrace housing and grouped dwellings.	Office Shop / Convenience Store Grouped Dwellings Multiple Dwellings Single Dwelling (R40+) Aged Care
City East (P3)	Provide for a mix of office and commercial uses that are compatible with residential development and deliver a variety of medium to high residential dwelling options. This precinct will support health and aged care uses.	Office Shop / Convenience Store Medical Grouped Dwellings Multiple Dwellings Single Dwelling (R40+) Aged Care

Figure 3 Primary Retail and Entertainment Area Location Plan



3.1.4.3 Residential Development

- Unless otherwise specified in this precinct plan or PDLP/LDP(s), residential development is to be in accordance with the intent, objectives, acceptable outcomes of SPP7.3 Residential Design Codes (Volume 1 or 2) as applicable.
- Residential development is encouraged above commercial development throughout the city centre core to achieve transit orientated development principles, and via other dwelling typologies as specified in this precinct plan and any associated PDLP/LDP(s).
- Residential development is not permitted at ground level on the main street as identified on **Plan 1**.

3.1.4.4 Town Square

- In addition to any site-specific requirements contained in an applicable PLDP/LDP(s), for development fronting or abutting the Town Square (as identified on **Plan 1**), the following provisions shall apply:
  - An active edge / interface shall be provided along the southern and eastern perimeter of the square to provide for activation and surveillance of the space.
  - Development abutting the Town Square will have an interface that prioritises the interaction of the tenancy and its patrons with the square through, for example, alfresco dining or from the site, creating opportunities to 'people watch'/ overlook the space or retail into the square.

3.1.4.5 Environmental / Heritage Value

The 'Environment / Heritage Value' sites identified on **Plan 1** relate to important environmental and Aboriginal heritage sites within the precinct plan area. These include:

- The 'Environment / Heritage Value' site to the east of the railway line which contains a Threatened Ecological Community (TEC) set within an open space buffer.
- The 'Environment / Heritage Value' site to the west of the railway line which contains a TEC and an Aboriginal area (Place ID 37478) considered to be culturally significant. This is referred to across this document as 'the Pinnacles'.

In addition to any site-specific requirements contained in an applicable PLDP/LDP(s), subdivision and development will need to have regard to interface considerations including any Aboriginal heritage site protection, environmental buffers, built form interface, fencing and pedestrian access.

3.1.4.6 Vehicle Access and On-Site Parking

- To be read in conjunction with section 2.7.
- Car parking for the city centre core is to be supplied in the form of off-street reciprocal and shared parking facilities and on-street or other public parking wherever possible.
- Access and location of on-site parking shall be in accordance with the provisions prescribed in the city centre core **Built Form Controls Table** at **Table 5** and any additional site-specific requirements outlined in an applicable PLDP/LDP(s).

3.1.4.7 Pedestrian and Cycling Access

- To be read in conjunction with section 2.8.
- An 'activated pedestrian link' is identified on **Figure 1 – Precincts and Frontage Plan**. Subdivision and development in this location is required to deliver an east-west pedestrian connection through the retail/entertainment precinct to the main street connecting directly to the Town Square and onwards to Alkimos Station. The connection must be provided by way of a public access easement on title to the benefit of the public at large. The design response for the connection shall provide:
  i. Safe, direct, attractive, well-lit access and provide a line of sight from one end to the other that is publicly accessible at all times;
  ii. At least 10 metres wide;
  iii. Open to the sky or glazed in such a way that the view to the sky is maximised;
  iv. Lined by active frontages;
  v. Avoid entrapment spaces; and
  vi. Consider open air accessibility as well as weather protection across its length.

Table 5 – City Centre Core Built Form Controls

Element	Provision	Frontage		
		Main Street	City Street	Boulevard
Density	**Site R-Coding**	R-AC0	R-AC0	R-AC0
	Plot Ratio	N/A	N/A	N/A
Building Height	**Minimum Height**	7.5m	7.5m	Discretionary
	Maximum Height	No height limit	No height limit	No height limit
	Minimum Boundary Wall Height	7.5m	7.5m	Discretionary
Podium Height	**Podium Height Range**	3 Storeys (11-15m)	3 Storeys (11-15m)	3 Storeys (11-15m)
Front Setback	**Minimum Setback**	0m	0m	3m
	Maximum Setback	0m	3m*	3m preferred 9m discretionary**
	Upper Level Setback From Podium	3m Except prominent sites – Nil setback	3m Except prominent sites – Nil setback	3m Except prominent sites – Nil setback
Side / Rear Setback	**Minimum Setback**	Residential: Refer to applicable PLDP/ LDP Non-Residential: Nil	Residential: Refer to applicable PLDP/ LDP Non-Residential: Nil	Residential: Refer to applicable PLDP/ LDP Non-Residential: Nil
Residential: Ground Floor	**Minimum Finished Ground Level to First Floor Height**	N/A (Refer Section 3.1.4.3)	Refer R-Codes (Volume 1 or 2 Part 4.3)	Refer R-Codes (Volume 1 or 2 Part 4.3)
	Minimum Upper Floor to Ceiling Height	Refer R-Codes (Volume 1 or 2 Part 4.3)	Refer R-Codes (Volume 1 or 2 Part 4.3)	Refer R-Codes (Volume 1 or 2 Part 4.3)

Element	Provision	Frontage		
		Main Street	City Street	Boulevard
Non-residential: Ground Floor	**Floor Level**	Footpath Level (+/- 0.6m)	Footpath Level (+/- 0.6m)	Discretionary
	Minimum Finished Ground Level to First Floor Height	4.5m	4.5m	4.5m
	Minimum Upper Floor to Ceiling Height	2.7m	2.7m	Discretionary
	Minimum % of Building Frontage with Clear Glazing	80%	70%	50%
	Minimum Frontage Build Out (excluding crossovers and access points)	100%	100%	70%
Awnings	**Minimum % of Building Frontage**	100%	80%	Discretionary
	Minimum Height	3m	3m	3m
Onsite Parking	**Between Street + Building**	Not permitted	Discretionary	Discretionary
Vehicle Access		No access permitted	• Car park entry and access from secondary streets; and • Limiting the number of vehicle access ways to a minimum; and • Vehicle access points – max 2 lane dual access.	• Consolidated / shared access points desired utilising secondary street or laneway where possible.
Prominent Location		For sites identified as a Prominent Location, these controls may be varied subject to requirements of an applicable PLDP/LDP(s).		
***City Street Maximum Setback**		Zero setback is preferred for all City Streets unless an approved PLDP/LDP(s) permits an increased setback to a maximum of 3m.		
****Boulevard Maximum Setback**		3m setback is preferred for all Boulevard Streets unless an approved PLDP/LDP(s) permits an increased setback to a maximum of 9m.		

Note: Discretionary means that the built form requirement will be guided by the Precinct Plan Vision and Objectives (Section 1.3 and 1.4) and the Precinct specific Vision and Objectives (Section 3.1) and any applicable PLDP/LDP(s).

3.2 Residential Zone – Dune Residential Precinct (P4)

These requirements apply to the land identified within the Residential Zone (P4) on **Plan 1**.

3.2.1 Vision and Objectives

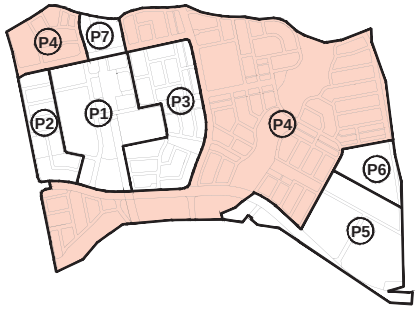


Image 4 Dune Residential Precinct (P4)

Vision

> *The Dune Residential Precinct (P4) is strongly influenced by the parabolic dune that sweeps through this precinct enabling neighbourhoods to have good access and vistas to the dune. As the precinct will primarily accommodate a variety of low to medium density housing including aged persons housing, the streetscapes lend themselves to be green and attractive and in particular the edges with the dune will have particular requirements to enhance this relationship.*

Objectives

- Development is to respond to the undulating nature of the precinct and other public open spaces including the dunes.
- Provide for a variety of residential homes of varying forms and architectural design.
- Provide for a school to service the local community in close proximity to the residential area.
- Provide a legible street network with an integrated use of public and private space and green streetscapes.
- Provide for strong pedestrian and cyclist connections to the city centre core and Alkimos Station.
- Maximise Home Based Business opportunities.

3.2.2 Residential Development and Density

a) Unless otherwise specified, SPP7.3 Residential Design Codes (Volume 1 and 2) will apply.

b) Residential density to be in accordance with the applicable density code identified on **Plan 1** ranging from R20-R40.

c) Densities of R25 to R40 and above are encouraged for residential lots fronting key roads including Tuart Drive, NS2, Brindabella Parkway and Romeo Road, in accordance with the **Figure 16 - Indicative Land Use and Residential Densities Plan** contained in **Part 2 - Explanatory Section**.

3.2.3 Prominent Location(s)

a) Prominent Location(s) are identified on **Figure 1 - Precincts and Frontages Plan**. A 'Prominent Location' is identified centrally within Precinct 4 within the POS.

b) This 'Prominent Location' is envisaged to function as a potential civic space/ café/ tearoom or similar within or above the natural dunal amphitheatre located at the termination of Tuart Drive, where the street meets the dune.

c) It will be a key area which will provide residents and visitors with clear access to the dune POS and include desired views to the ocean and city centre core.

d) Subdivision and development within Precinct 4 is to maintain views and create clear linkages to this prominent site.

3.2.4 Vehicle Access and Parking

a) Crossovers into residential development should comprise of one entry/exit only.

3.3 Business (P5) and Service Industrial (P6) Zone

These requirements apply to the land identified within the Service Industrial Zone and Business Zone on Plan 1 and Precincts P5 and P6 on **Figure 1 - Precincts and Frontages Plan**. In addition to these requirements, a PLDP or LDP may apply to Precincts 5 and 6 to provide a more detailed set of development requirements that respond to site specific considerations.

3.3.1 Business Precinct (P5) Vision and Objectives

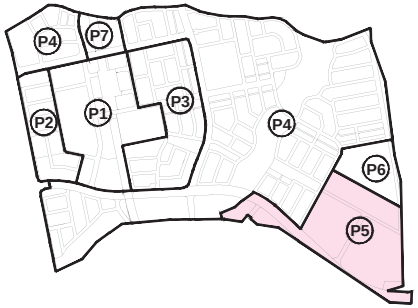


Image 5 Business Precinct (P5)

Vision

> *The Business Precinct is intended to accommodate warehouses, showrooms, trade and professional services and small scale complementary and incidental retailing uses. This precinct is also intended to provide bulky goods retail outlets that provide for the needs of the community but which due to their nature are generally not appropriate to the city centre core.*

Objectives

- To accommodate commercial and business activities which, because of their nature of the business, require good vehicular access and/or large sites.
- To accommodate a range of light industries, showrooms, warehouses and complementary business services that are not appropriate in the city centre core or Service Industrial Zone.
- To ensure that building setbacks, car parking, landscaping and access provide for a high standard of built form and landscaping.
- To ensure that where any development is adjacent to residential properties, the development is suitably setback, screened or otherwise treated so as not to detract from the residential amenity.

3.3.2 Service Industrial (P6) Precinct Vision and Objectives

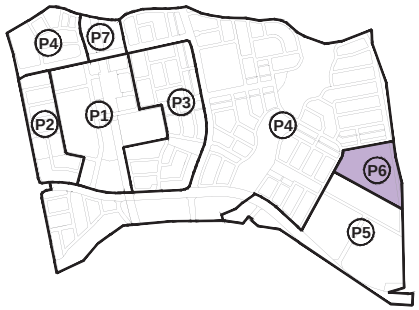


Image 6 Service Industrial (P6)

Vision

> *The Service Industrial Precinct is a primary employment area with service and light industrial uses and showrooms away from the city centre core. This area will have an appropriate and well considered interface to the residential area to the west and north.*

Objectives

- To provide a range of service industries generally compatible with urban areas that cannot be accommodated in the Business Zone.
- To ensure that where any development is adjacent to residential properties, the development is suitably setback, screened or otherwise treated so as not to detract from the residential amenity.
- To ensure that building setbacks, car parking, landscaping and access provide for a high standard of built form and landscaping.

3.3.3 Land Use Intent

a) Whilst residential development can be contemplated in the Business Zone under DPS2, it is not supported in the Business Precinct (P5) and should be located in the Residential or Commercial Zone.

3.3.4 Prominent Location(s)

a) Prominent Location(s) are identified on **Figure 1 - Precincts and Frontages Plan**. A 'Prominent Location' is identified as a gateway building element at the corner of Romeo Road and Benenden Avenue to reflect the role of the intersection as the entry to the precinct.

3.3.5 Highway Service Frontage

a) Within Precinct Business Precinct (P5), the 'Highway Service Frontage' fronting Romeo Road identified on **Figure 1 - Precincts and Frontages Plan** is subject to the following additional development requirements:

   i. Building façades, including entries, glazing and signage, to incorporate building articulation and be oriented toward and clearly visible from the street where practicable to create interest and surveillance and avoid blank walls and inactivity to the public realm.

   ii. Placement of trees should be used to assist in moderating bulk and scale of large blank walls.

   iii. Landscaping and tree planting between the building edges and the street should promote the concept of 'buildings in a landscape setting' and should contribute to communal open spaces for users.

3.3.6 Façade Design

a) Entry points are to be legible and clear to the primary street and promote simple wayfinding, such as through the use of awnings, architectural features, signage and landscaping.

b) The street fronting façades of all development shall be of a high standard of architectural design and constructed in high quality materials.

c) The facade or facades of all development shall have incorporated in their design, integrated panels for the purpose of signage placement.

3.3.7 Awnings

a) Awnings to be provided over all footpaths that abut a building, and above all entrances and exits of a building.

b) Awnings shall have a minimum clearance height of 3m measured from the pavement level at the building line.

3.3.8 Vehicle Access, Car Parking and Service Areas

a) Access should be provided generally in accordance with major roads shown on **Figure 2 - Movement Network Plan**.

b) The layout of a site shall create a well-connected internal street system for vehicle and pedestrian wayfinding and safety. Site layouts need to prioritise circulation and ease of comfort for pedestrian movement and building entries should be connected via a legible footpath to the internal streets and dedicated roads.

c) Vehicular traffic, access/egress into lots should be limited by:

   - Making vehicle access points no greater than 2 lane dual access where possible;
   - Limiting the number of vehicle access ways to a minimum; and
   - Locating car park entry and access from secondary streets and lanes.

d) Upper floors and rooftops may be used for parking where this can be done without undermining streetscape amenity and architectural quality.

3.3.9 Pedestrian and Cyclist Access

a) Pedestrian and bicycle routes are to be provided generally in accordance with the **Figure 2 - Movement Network Plan**.

b) Pedestrian and cycling access should be provided to the front entry of all developments and connect to external footpaths.

c) Shared pedestrian paths with shade provision through landscaping and awnings should be provided.

3.4 Commercial Zone – (P7) Transition Precinct

These requirements apply to the land identified within the Commercial Zone (P7).

3.4.1 Vision and Objectives

Image 7 Transition Precinct (P7)

Vision

> *The Transition Precinct (P7) functions as an interim park and ride facility for Alkimos Station. The long-term the vision is for these sites to be redeveloped for urban uses to serve as future growth areas for the city centre core.*

Objectives

- To provide a safe and convenient park and ride facility for Alkimos Station as an interim land use outcome.
- At an appropriate time, transition the park and ride facilities to alternative urban land uses such as commercial, residential or civic uses to support the growth of the city centre core.

3.4.2 Subdivision and Development Requirements

a) Future subdivision requires the preparation of a PLDP provide to development.

b) Development approval for park and ride facilities should be limited to a period of 10 years to allow review of other development opportunities for the park and ride site.

3.5 Other Requirements

3.5.1 Indicative Future Western Power Corridor

An 'indicative future Wester Power corridor' (132kV overhead line) is proposed by Western Power along the eastern boundary of the precinct plan area abutting the Mitchell Freeway reserve to provide supply to the new Eglinton Zone Substation.

Investigations into the viability of an alternative alignment of the transmission line outside of the precinct plan area should be undertaken to remove it from residential land use areas. Alternative alignments of the transmission line could include utilising the Mitchell Freeway corridor, or placing the line east of the Freeway, including utilising the existing Wanneroo Road reserve, which is the current alignment of the existing feeder south of Romeo Road (east).

3.5.2 Development Contributions

Development contributions are to be made in accordance with DPS2, including Schedule 15 of DPS2, or as otherwise agreed with the City of Wanneroo.

3.5.3 Environment Protection and Biodiversity Conservation Act Approval

Subdivision and development is to be undertaken in accordance with the project's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval and associated conditions (EPBC 2015/7561), as outlined in **Table 12** within **Section 5.3.8.**

3.5.4 Alkimos-Eglinton District Structure Plan

The Alkimos-Eglinton District Structure Plan (DSP) is subject to monitoring and review by the City and/or the WAPC commencing in 2017. Any amendments to the DSP may result in consequential amendments to the precinct plan, which must be consistent with the DSP.

3.5.5 Employment Monitoring and Reporting

A report monitoring progress against employment targets and strategies is to be prepared annually with a comprehensive review every 5 years (within 12 months of release of census data), unless otherwise agreed by the City. If necessary, this may include recommendations in relation to the implementation and/or modification of the employment strategy and/or the provisions contained within this precinct plan.

3.6 Alkimos Central – Local Development Plan(s)

Local Development Plans (**LDPs**) may be required as a condition of subdivision for land in the Service Industrial Zone, Business Zone, Residential Zone and Commercial Zone. A Local Development Plan shall be prepared and approved in accordance with the Part 6 of the Deemed Provisions of the P&D Regulations.

In the context of SPP7.2, a Precinct LDP (PLDP) will be required for the city centre core (P1, P2 and P3) and the Transition Precinct (P7).

As further stages of development progress, PLDPs and/or LDPs may be prepared for other Precincts to guide development and public realm outcomes as further detail become known including market drivers, availability of infrastructure and progression of detailed planning.

3.7 Additional Information

Table 6 outlines additional information required at certain approval stages.

Table 6 – Additional Information Requirements

Additional Information	Approval Stage	Consultation Required
Vegetation and Fauna Management Plan A vegetation and fauna management plan may be required to be prepared to address impacts to flora, vegetation and fauna during construction and development.	Subdivision (possible via condition)	Western Australian Planning Commission City of Wanneroo Department of Biodiversity Conservation and Attractions
Aboriginal Cultural Heritage Management Plan An Aboriginal Cultural Heritage Management Plan or similar should be developed, before ground disturbance occurs, to allow for culturally appropriate management of any discoveries of suspected or actual heritage material.	Subdivision or Development Application (where applicable)	Department of Planning, Lands and Heritage
Bushfire Attack Level (BAL) and Bushfire Management Plan A BAL Contour Map and Bushfire Management Plan is required to determine indicative acceptable BAL ratings across the precinct plan at each subdivision stage. This should be accompanied by identification of any bushfire hazard issues and an assessment against the bushfire protection criteria requirements demonstrating compliance within the boundary of the affected area.	Subdivision or Development Application (where applicable)	Western Australian Planning Commission City of Wanneroo Department of Fire and Emergency Services
Urban Water Management Plan Detailing the specific drainage requirements for future development.	Subdivision or Development Application (where applicable)	City of Wanneroo Department of Water and Environmental Regulation
Geotechnical Investigation and Management Plan A site-specific assessment of possible karst features is to be undertaken as a requirement of subdivision in accordance with the City's Draft Local Planning Policy 4.13 – Caves and Karstic Features.	Subdivision	City of Wanneroo
Density Plan A Density Plan is to be provided at the first residential subdivision stage, and updated as required at each additional stages, identifying the final maximum R-codes applicable in accordance with the R-code ranges specified on **Plan 1**.	Subdivision	Western Australian Planning Commission City of Wanneroo
Dwelling Yield Plan A Dwelling Yield Plan is to be provided for residential subdivision and/or development within the precinct plan area to demonstrate that a diversity of housing product types are provided to reflect the role and function of the centre as a secondary centre, the zone objectives and the precinct objectives.	Subdivision	Western Australian Planning Commission City of Wanneroo

Additional Information	Approval Stage	Consultation Required
POS Schedule A schedule of allocated and to-be-allocated POS is to be provided at each subdivision stage involving POS, to ensure that the overall subdivision of the precinct plan will meet a minimum of 10% being provided.	Subdivision	Western Australian Planning Commission City of Wanneroo
Parking Management Strategy A Parking Management Strategy for the city centre core is to be provided which considers the requirements of SPP 4.2 and Liveable Neighbourhoods to address matters including: use allocation, design, the provision of short stay and/or paid parking, upper parking limits, the provision of adaptable parking structures, consideration of street management and parking policies, and the provision of dedicated taxi and rideshare pick up and set down areas.	Subdivision or Development Application (where applicable)	Western Australian Planning Commission City of Wanneroo
Traffic Impact Statement or Assessment Where subdivisions and individual developments have moderate impact (10 – 100 vehicle trips in the peak hour) a TIS is to be provided. Where subdivisions and individual developments have high impact (>100 vehicle trips in the peak hour) a TIA is to be provided. The TIS or TIA is to demonstrate the proposal is consistent with the precinct plan and provide a greater level of details of any transport planning issues specific to the subdivision or development. Refer to WAPC Transport Impact Assessment Guidelines (August 2016) for more details on TIS and TIA requirements.	Subdivision Development Application	City of Wanneroo Main Roads Western Australia Department of Planning, Lands and Heritage Public Transport Authority
Transport Noise Assessment Lots adjacent to the extended Yanchep railway and major roads including Marmion Avenue, Romeo Road and the extended freeway may be affected by noise and vibrations. Further assessment of the traffic noise impacts from the railway and such major roads is to be undertaken at each impacted stage of subdivision in accordance with State Planning Policy 5.4 – Road and Rail Noise.	Subdivision	Western Australian Planning Commission City of Wanneroo
Environmental Noise Assessment Non-residential development within the Commercial, Business and Service Industrial Precincts is to demonstrate the ability to comply with noise regulations, including taking into account further residential development in the city centre core.	At relevant development application stages	City of Wanneroo
Signage Strategy A signage strategy is to be prepared at relevant development application stages to outline the location and nature of signage.	At relevant development application stages	City of Wanneroo

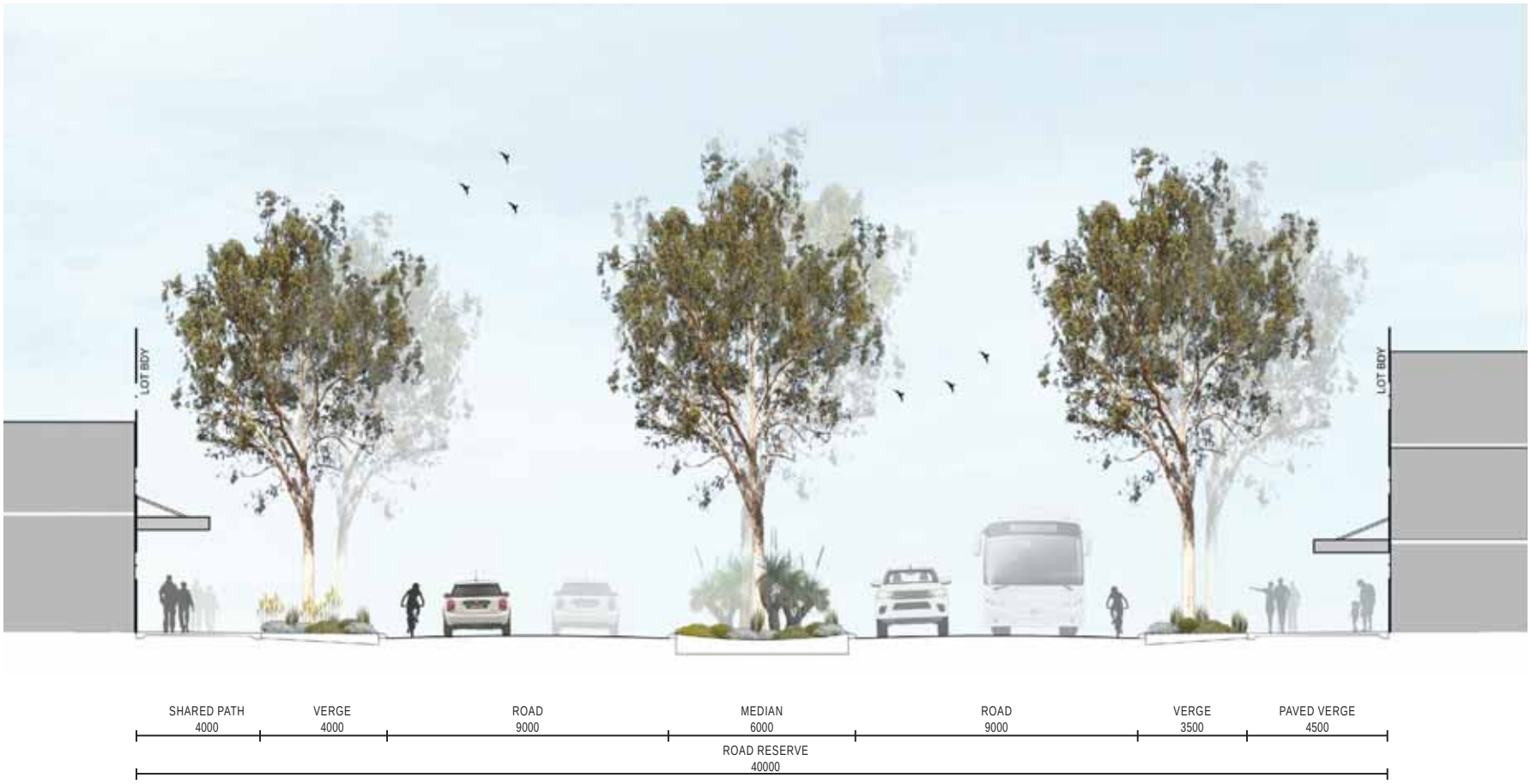
3.7.1 Exemptions to Additional Information Requirements

The above additional requirements may not be required through an application for subdivision if the City of Wanneroo or WAPC considers that the subdivision is for one or more of the following:

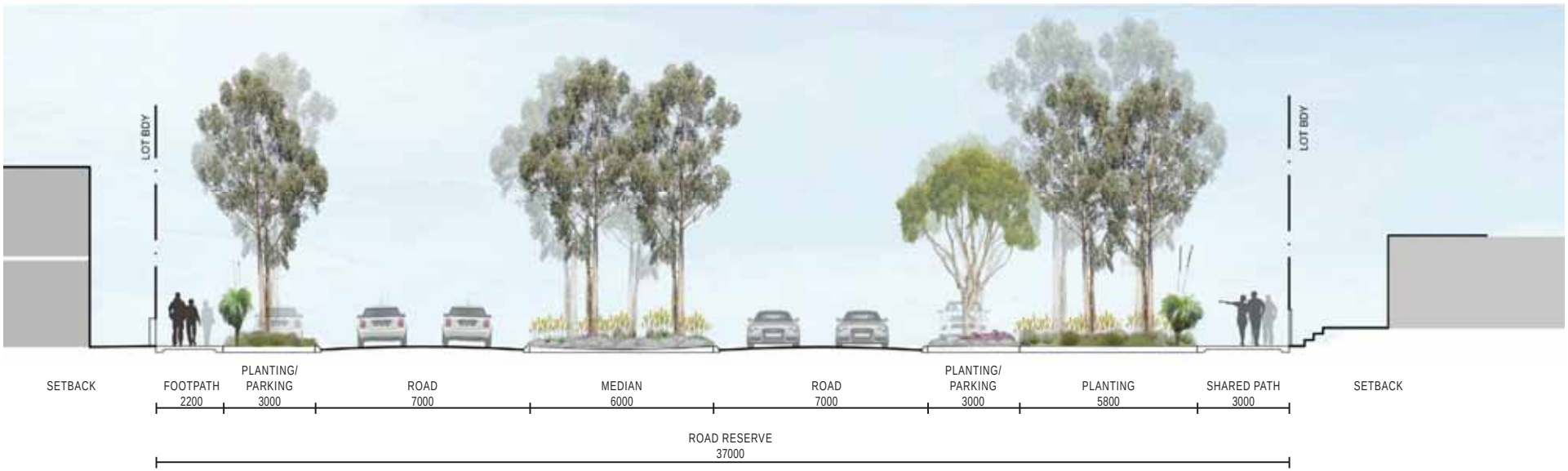
- Amalgamation of lots.
- Consolidation of land for "superlot" purposes to facilitate land assembly for future developments and undertake forward site works.
- The purposes of facilitating the provisions of access, services or infrastructure for infrastructure and servicing agencies.
- Land which by virtue of its zoning or reservation specified on **Plan 1** cannot be developed for residential purposes.

ATTACHMENT A – STREETSCAPE SECTIONS

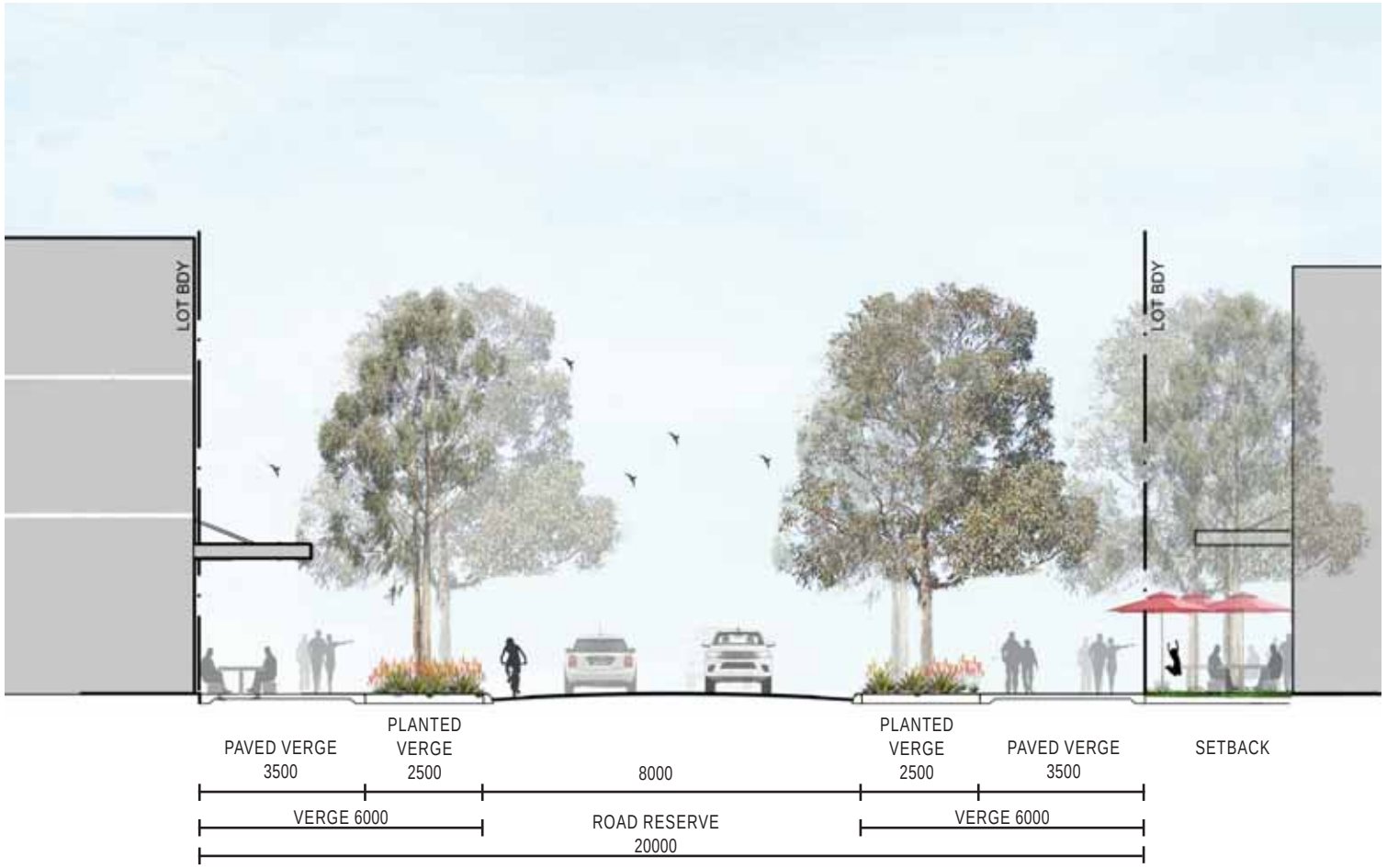
Romeo Road



Brindabella Parkway



North-South Road 2 (NS2)


LOT BDY
LOT BDY
PAVED VERGE
3500
PLANTED
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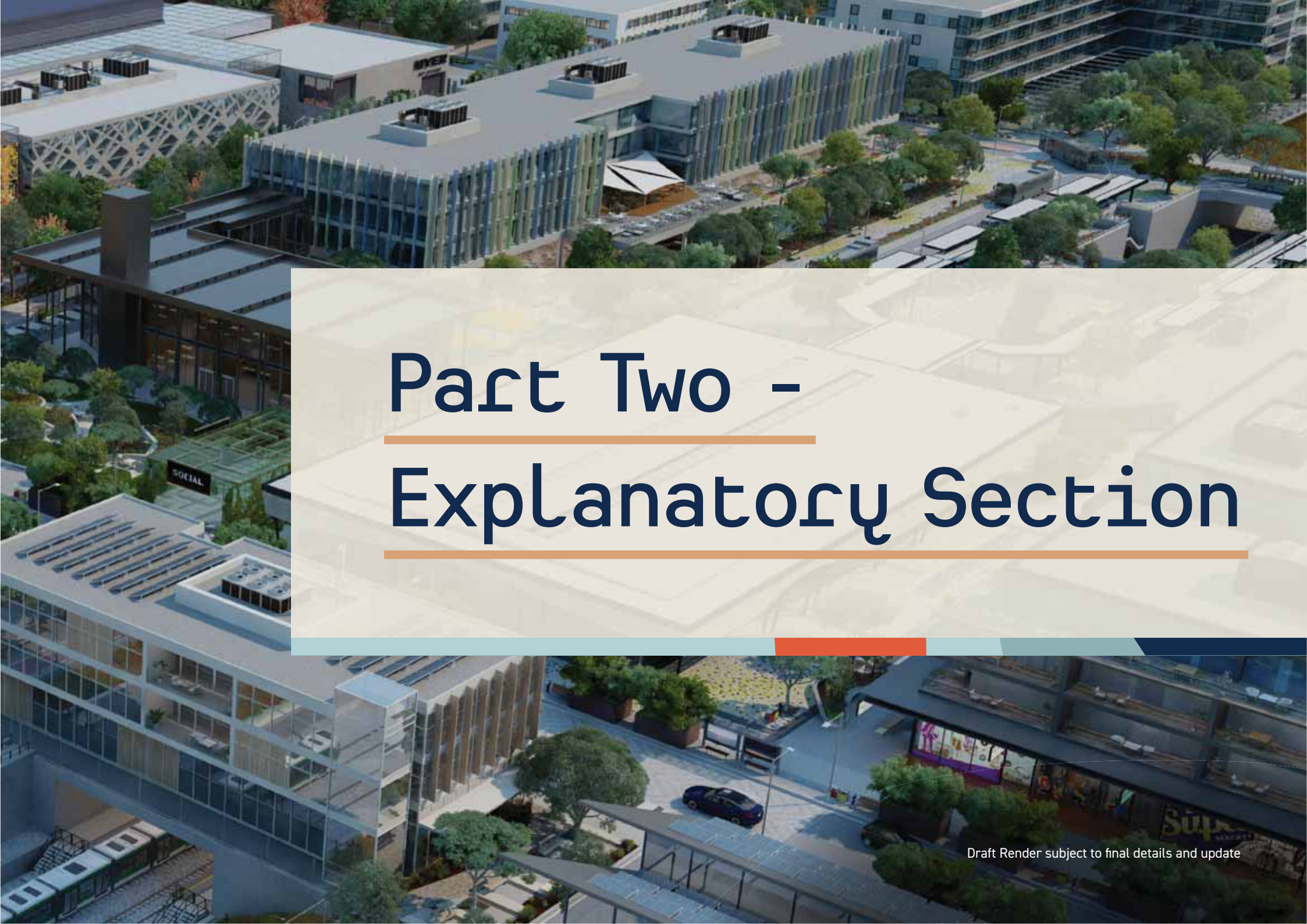
8000
PLANTED
VERGE
2500
PAVED VERGE
3500
SETBACK
VERGE 6000
ROAD RESERVE
20000
VERGE 6000

Tuart Drive

Main Street (NS1)

Draft Render subject to final details and update

Part Two - Explanatory Section



Draft Render subject to final details and update

The purpose of the precinct plan is to facilitate the development of a secondary centre in Alkimos, Western Australia, as contemplated and planned for in a variety of State and local planning frameworks.

4. Introduction and Purpose

The precinct plan has been prepared in the context of:

- **State Planning Policy 7.0 Design of the Built Environment (Design WA suite);**
- **State Planning Policy 7.2 Precinct Design (SPP7.2);**
- **State Planning Policy 4.2 Activity Centres for Perth and Peel (SPP4.2);**
- **The Alkimos-Eglinton District Structure Plan (DSP); and the**
- **City of Wanneroo's District Planning Scheme No.2 (DPS2).**

The precinct plan, otherwise known as "Alkimos Central", encompasses the City Centre zoned land under the Metropolitan Region Scheme (MRS) and covered by Planning Control Area No. 132. It is also partially designated with a Primary Regional Roads (part of the Mitchell Freeway extension) and Other Regional Roads (Romeo Road) reservation. Alkimos Central will provide for a mix of land uses, public transport services and some 2,457 new residential dwellings.

This precinct plan is in two parts:

- **Part One – Implementation** – providing the subdivision and development controls for the activity centre.
- **Part Two – Explanatory Section and Technical Appendices** – providing planning background and explanatory information to support the precinct plan including updated technical investigations where required.

The following is Part Two – Explanatory Section.

5. Site and Context Analysis

Section 5.0 provides a summary of the physical, community and governance context of the precinct plan.

5.1 Physical Context

5.1.1 Land Description

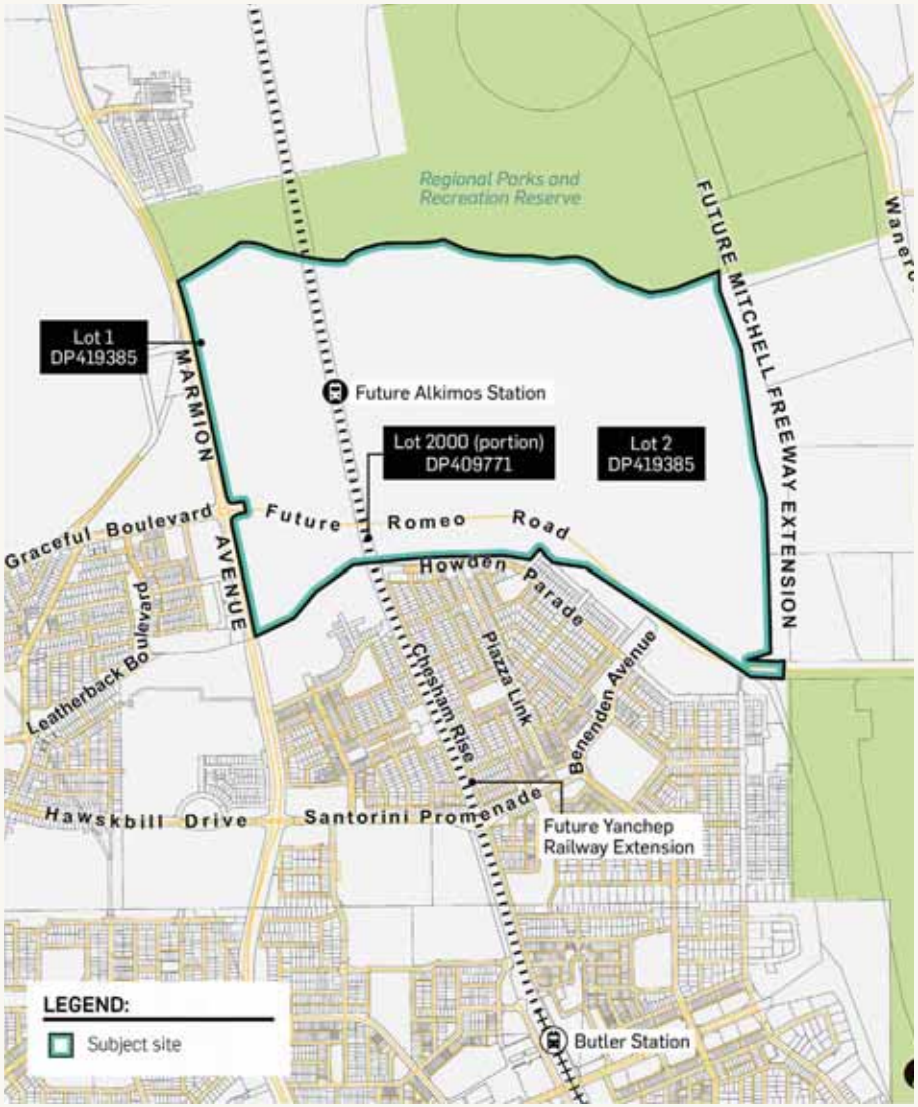
Alkimos Central is located at the junction of Marmion Avenue and Romeo Road in the expanding suburb of Alkimos, approximately 42km north-west of the Perth CBD and 15km north-west of the Joondalup city centre. The precinct is located within the City of Wanneroo local government area. Refer to **Figure 4 – Cadastre Plan** and **Figure 5 – Aerial Photograph**.

The land is bounded to the east by the Mitchell Freeway reserve for the purpose of future extensions to the Mitchell Freeway, and by Marmion Avenue to the west, which is a major arterial road providing north/south connection between Perth's north-western suburbs and the CBD. The precinct plan area is 203.1 hectares as described in **Table 7**.

Table 7 – Lot Description

Lot	Plan	Vol/Folio	Area (ha)	
1	DP419385	2985/161	1.0140	WAPC
2	DP419385	2985/161	197.9823	Western Australian Land Authority
3	DP409771	2914/420	4.1095 (portion of 8.6649)	WAPC

Figure 4 Cadastre Plan



5.1.2 Regional and Local Context

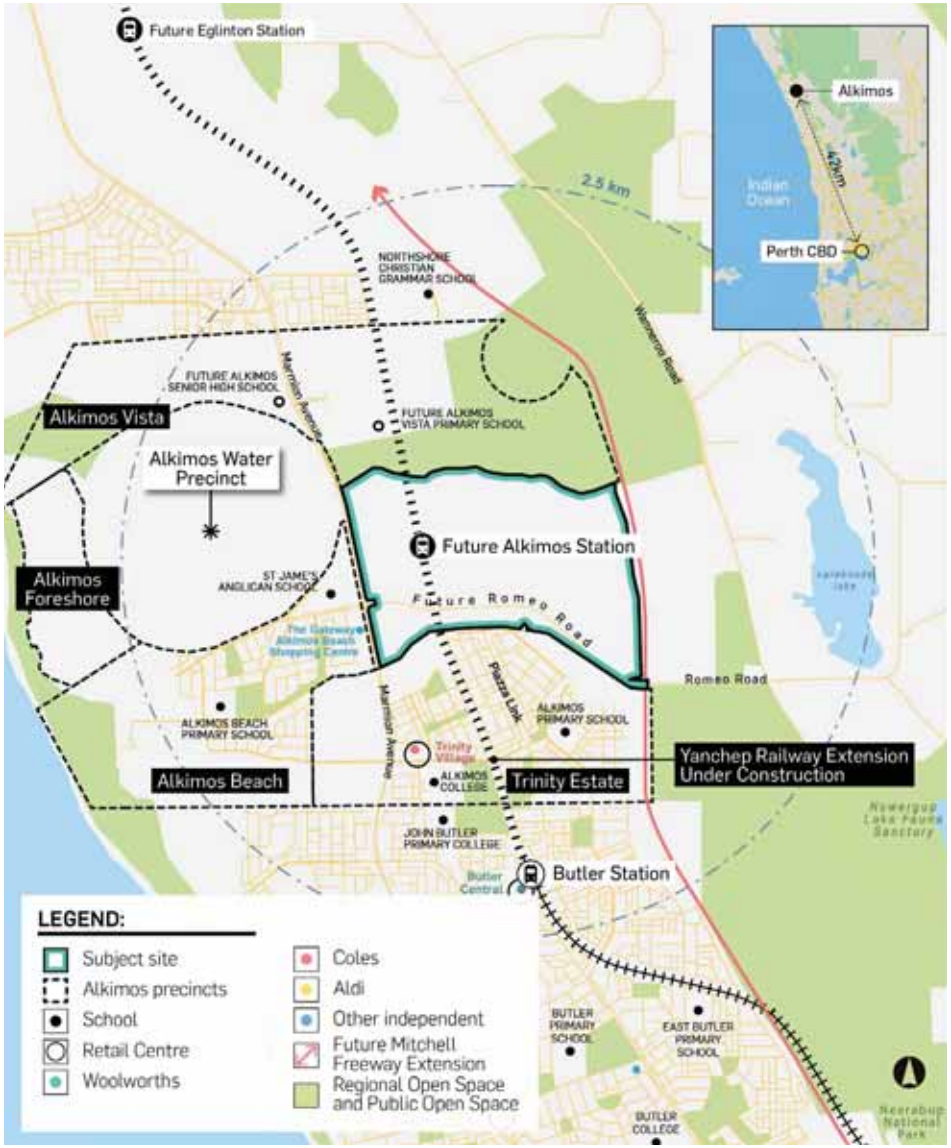
The precinct plan is situated on Whadjuk Country, centrally located within the DSP of the Alkimos-Eglinton area. As this area is still emerging and developing, the majority of the lands immediately surrounding the site remain vacant of development, with the exception of the lands to the south where initial stages of residential development within Alkimos exists.

To the north and east of the site beyond the freeway reserve, a large regional Parks and Recreation reserve exists, with some areas reserved as Bush Forever sites. Further to the north, the land has commenced development for urban purposes (Alkimos Vista), and beyond is the emerging urban area of Eglinton which will include a new district centre.

To the west of the site beyond Marmion Avenue, St James Anglican School exists which caters for Kindergarten to Year 12 classes and The Gateway, a local retail centre. Located further to the west is the Alkimos Waste Water Treatment Plant and associated buffer area. The lands outside of this associated buffer area are under development for urban purposes (Alkimos Beach). Refer to **Figure 6 – Context Plan**.

Figure 5 Aerial Photograph

Figure 6 Context Plan



5.1.3 Environment

An Environmental Assessment and Management Strategy (EAMS) has been prepared by Emerge Associates (refer to **Appendix A**). Since the approval of ACP89, Emerge Associates undertook updated Threatened Ecological Community (TEC) survey and mapping for the site in late 2019, which has been incorporated into this assessment.

The EAMS has incorporated the outcomes of these investigations and assessments to provide an overarching environmental assessment. It documents the existing environmental attributes and values and ensures that significant values can be accommodated within the precinct plan and at future stages of development.

A summary of the environmental context for the precinct plan is provided in the following section.

5.1.3.1 Climate

The climate of the site (which applies to the wider Perth metropolitan region) is described as a Mediterranean climate, with hot, dry summers and moderately wet, mild winters. Annual average temperatures in south-west WA have increased by 1.1°C between 1910 to 2013.

The majority of rainfall within the region occurs between May and October each year, and on average is between 600 to 1000 millimetres per year. Conditions between April to October have become drier across the south-west of Western Australia and in the last 50 years there has been a marked decrease in rainfall (approximately 11 per cent decrease) (BoM and CSIRO 2018).

5.1.3.2 Landforms and Soils

The site has highly undulating topography due to the parabolic dunal system on which it lies. The site ranges in height from 29 m AHD to 55 m AHD. The parabolic dune runs from the north-east through to the south-west of the site. This dune ranges in height between 30 m AHD and 55 m AHD and has steep side slopes. Refer to **Figure 7.** The site has predominantly a northwest aspect on the windward side of the parabolic dune. The leeward side of the parabolic dune varies from a south to a south-easterly aspect.

The site is located on the Swan Coastal Plain, which forms the central portion of the Perth basin. The Swan Coastal Plain is generally flat and is approximately 20 to 30 kilometres wide, consisting of a series of geomorphic entities running parallel to the coastline. The youngest and most western of these geomorphic entities is the Quindalup Dunes, followed by the Spearwood Dunes and at the most eastern extent the Bassendean Dunes.

The site is situated within the Quindalup and Spearwood Dunes geomorphological units. The dominant landform units for the site are the Quindalup Deep Sand Flat phase and the Karrakatta Sand Yellow phase. The Quindalup Second Dune phase is consistent with the parabolic dune formation through the site.

5.1.3.3 Geoheritage

The site contains a part of a broader dune system, referred to as the Alkimos dune system. This dune system is a parabolic feature approximately 2 km wide which extends inland for 4km. The Alkimos dune system was described by the Geological Society of Australia as an excellent example of a complex system of parabolic dunes of Holocene age belonging to the Quindalup system with national and international significance (EPA 2005). The system involves four Quindalup dune phases (Q1-Q4) which have been defined on the basis of profile maturity, soil development and vegetation cover. The site contains the Q2 dune phase which is the second oldest Quindalup system phase.

5.1.3.4 Geology

The geology of the site consists of limestone, sand and calcareous sand. Karst features are known to generally occur within Tamala limestone. The City of Wanneroo has produced the *Local Planning Policy 4.13 Caves and Karstic Features (CoW 2018b)*. The purpose of the policy is to outline the information requirements required for investigation and management of caves and karstic features to assist in design, assessment and determination of structure plans, subdivision applications and development applications.

The karst assessment and risk map associated with this policy identifies areas of low and medium karst risk within the site. The management requirements for these karst risk levels at the structure planning stage include a “Desktop Karst Survey” and a “Geotechnical Report”.

5.1.3.5 Desktop Geotechnical Report

A desktop geotechnical study was completed by Douglas Partners for the site in 2012. This geotechnical study reviewed the environmental geology mapping (the Yanchep 1:50,000 Environmental Geology Sheet) for the site. Douglas Partners concluded that there was a very low susceptibility for development of large karst structures within the site and that the likelihood of karst formations impacting the proposed development is low.

5.1.3.6 Acid Sulfate Soils

Acid sulfate soils (ASS) can pose issues when oxidised, producing sulphuric acid, which can present a range of risks for the surrounding environment, infrastructure and human health. The Department of Water and Environment Regulation (DWER) provides broad-scale mapping indicating areas of potential ASS risk (Landgate 2020). A review of the DWER mapping indicates that the site has been classified as having no known risk of encountering ASS within three metres of the ground surface. There is also no known risk of other soil contamination occurring within the site.

5.1.3.7 Threatened Ecological Communities

Within Western Australia, state-listed threatened flora and TECs are statutorily protected through the Biodiversity Conservation Act 2016 (BC Act), and licences (or similar) may be required where these values are proposed to be disturbed or modified.

Florisitic Community Type (FCT) 29b (Acacia shrublands on taller dunes) and FCT 24 (Northern Spearwood shrublands and woodlands) are recognised by the DPAW as 'priority ecological communities' (PEC), specifically Priority 3(i) PECs. In accordance with DPAW definition Priority 3 (i) PECs are those "that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation" (DEC 2010).

FCTs 24 and 28 (Spearwood *Banksia attenuata* or *B. attenuata* – Eucalyptus woodlands) can also form part of the Commonwealth 'banksia woodlands of the Swan Coastal Plain' TEC (herein referred to as the 'Commonwealth banksia woodland TEC'), which is listed as endangered pursuant to the EPBC Act. A detailed assessment of the banksia woodlands TEC has not been undertaken for the site, given the site has an existing approval under the EPBC Act.

In addition, recent surveys of the PTA rail corridor (GHD 2018) revealed the presence of the state listed TEC '*Melaleuca huegelii - M. systena* shrublands on limestone ridges' within the site. This TEC which is listed as 'endangered' and is synonymous with the Gibson et al. (1994) FCT 26a '*Melaleuca huegelii – M. systena* shrublands of limestone ridges'.

Emerge Associates undertook a detailed mapping exercise for the FCT 26A TEC in late 2019 to ascertain the location and extent of the TEC. Subsequently two patches of the TEC were identified totalling 0.83 ha and in 'excellent' condition. Refer to **Figure 8**.

5.1.3.8 Vegetation Condition

Vegetation condition is variable over the site and the majority of the site is "Completely Degraded" or "Degraded" with remnant patches of "Very Good" and "Good" condition vegetation in the southern portion of the site. Large areas of the site have been historically grazed and have also been extensively impacted by recreational vehicles including four-wheel drives, quad bikes and trail bikes. Rabbits and weed invasion are also affecting the vegetation condition in this area. The parabolic dune formation ranges from "Degraded" to "Very Good" across its extent within the site. Refer to **Figure 9**.

5.1.3.9 Significant Flora

A search was conducted for threatened and priority flora within a 10 km radius of the site using the Protected Matters Search Tool (DAWE 2020), NatureMap (DBCA 2020) threatened and priority flora database. In addition, previous studies to support the DSP (undertaken by ATA Environmental in 2002-2004) identified a number of locally significant flora species. Many of these species were found to occur widely over the Alkimos-Eglinton area. Based on vegetation associations, the following species may occur within the site.

- Petrophile serruriae.
- Lechenaultia linarioides (Yellow Leschenaultia).
- Crassula colorata (Dense Stonecrop).
- Conospermum triplinervium (Tree Smokebush).

A number of these species are recognised in Bush Forever (Government of WA 2000b) as significant flora of the Perth Metropolitan Region as they were either poorly reserved, significant populations or populations at the northern or southern limit of their known geographical range.

5.1.3.10 Bush Forever

There are no Bush Forever sites occurring within the site. Bush Forever Site 139 (State Forest 65 Pinjar Plantation South Bushland), is located immediately east of the future Mitchell Freeway reserve which is on the site's eastern boundary.

5.1.3.11 Biodiversity Linkages

A local biodiversity linkage has been located along the northern boundary and eastern boundaries of the site. However, the City of Wanneroo's Local Biodiversity Plan 2018/19 – 2023/24 (2018a) does not show any Local Natural Areas (LNAs) located within the site.

5.1.3.12 Environmentally Sensitive Areas

'Environmentally sensitive areas' (ESAs) are prescribed under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and have been identified to protect native vegetation values of areas surrounding significant, threatened or scheduled flora, vegetation communities or ecosystems. The majority of the site is mapped as an ESA. This ESA is large and extends to the north of the site.

However, exemptions under Schedule 6 of the Environmental Protection Act 1986 still apply, including any clearing in accordance with a subdivision approval under the Planning and Development Act 2005 and clearing that was assessed as part of a formal assessment of a scheme amendment by the EPA.

5.1.3.13 Terrestrial Fauna

Indicative habitat mapping for Carnaby's black cockatoo has been prepared by DEC (now DBCA) (DEC 2011) and updated vegetation mapping by Emerge Associates (2013a) suggests that there is potential Carnaby's black cockatoo foraging habitat within the areas of banksia woodland. The field survey undertaken by Emerge Associates (2013a) recorded evidence of foraging by Carnaby's black cockatoo over the site. Foraging was recorded within the south-eastern portion of the site and in areas on the leeward side of the parabolic dune. A number of habitat trees were also recorded at the site, particularly within the south-eastern corner.

Although several habitat trees were recorded these trees did not appear to have any hollows suitable for use by Carnaby's black cockatoo and there was no evidence of these trees being used for roosting or breeding.

The EPBC Act provides protection for listed 'threatened' species, including black cockatoos. The development of the site and adjacent areas was referred to the federal government for assessment against the EPBC Act. The proposed development has been approved (EPBC 2015/7561) under the EPBC Act with conditions.

5.1.3.14 Groundwater and Surface Water

A Local Water Management Strategy (LWMS) has been prepared by Emerge Associates (refer to **Appendix B**).

Groundwater beneath the site is a multi-layered system comprised of the following aquifers: Superficial Swan, Leederville and Yarragadee. The Perth Groundwater Map (DWER 2020b) shows that groundwater levels across the site range from between 5m AHD in the east to <1m AHD in the west, with groundwater 27.5-55m below ground level.

Groundwater monitoring has been carried out across the site with six rounds of monitoring between July 2010 and November 2011 including groundwater levels, in-situ field chemistry measurements and laboratory analysis for nutrient, metal and salt contents. Results indicate nutrient concentrations are relatively stable across the site. Further information on groundwater levels and groundwater quality can be found in the LWMS.

There are no known surface water features associated with the site. The soils have a high infiltration capacity and there would be little to no surface run off except during extreme rainfall events.

5.1.3.15 Public Drinking Water Source Area

The site is located within a Priority 3 Public Drinking Water Source Area (PDWSA) and contains Well Head Protection Zones (WHPZ) (DWER 2020b), which are subject to restricted land uses (DWER 2021).

Priority 3 classification areas are defined to 'manage the risk of pollution' to the water source from catchment activities. Protection of P3 areas is achieved through guided or regulated environmental risk management for land use activities. Land uses considered to have significant pollution potential are opposed or constrained (DWER 2021). All of the land uses proposed under the precinct plan are classified as 'Acceptable' within these areas (DWER 2021).

5.1.3.16 Wetlands

A review of the Geomorphic Wetlands on the Swan Coastal Plain dataset (DBCA 2020) indicates that there are no geomorphic wetlands on site.

5.1.4 Heritage

5.1.4.1 Indigenous Heritage

An Aboriginal Heritage Engagement Strategy was undertaken by Gundi Consulting in 2020. This strategy included consultation with traditional owners in order to incorporate findings in the public realm design for Alkimos Central. During the site visit, the Pinnacles area located within the Romeo Road alignment was assessed as having significant meaning to the local Nyoongar people.

Following the acknowledgement that there are items of cultural significance within the site, additional surveys and reporting were carried out with regard to Aboriginal heritage values on the site in January 2021. This involved an Aboriginal Heritage Survey and Cultural Survey by Moodjar Consultancy (February 2021) and an Archaeological Survey by Dortch Cuthbert (March 2021) – refer to **Appendix C**.

Archival research showed that the survey area contains no known Aboriginal sites with archaeological components, but it does include limestone outcrops known in Western Australia as "pinnacles", or limestone root-casts. The Pinnacles in the survey area are mapped as Place ID 37478 Romeo Road Pinnacles "Stored Data / Not a Site" in the Register of Places and Objects maintained by the Department of Planning, Lands, and Heritage (DPLH).

Despite this categorisation in the Register, Place ID 37478 is reported to have high cultural values and has largely been avoided by previously approved development work within the survey area. The site can be identified from the physical extent of pinnacles on the surface, which suggests Place ID 37478 is mapped incorrectly. The survey team identified numerous pinnacles outside of the mapped rectangular area currently defining Place ID 37478.

The nature of these sites and other regional archaeological evidence indicates that stone artefact scatters, limestone features, modified trees and burials may be found in or near the present survey area, including material concealed by vegetation or below ground surface. Any well-preserved archaeological sites would be of value to archaeological research in the region as well as having probable Noongar cultural or broader community significance. Portions of the survey area has not been cleared or excavated, and therefore has some potential to contain yet-unidentified archaeological material. Refer to **Figure 10**.

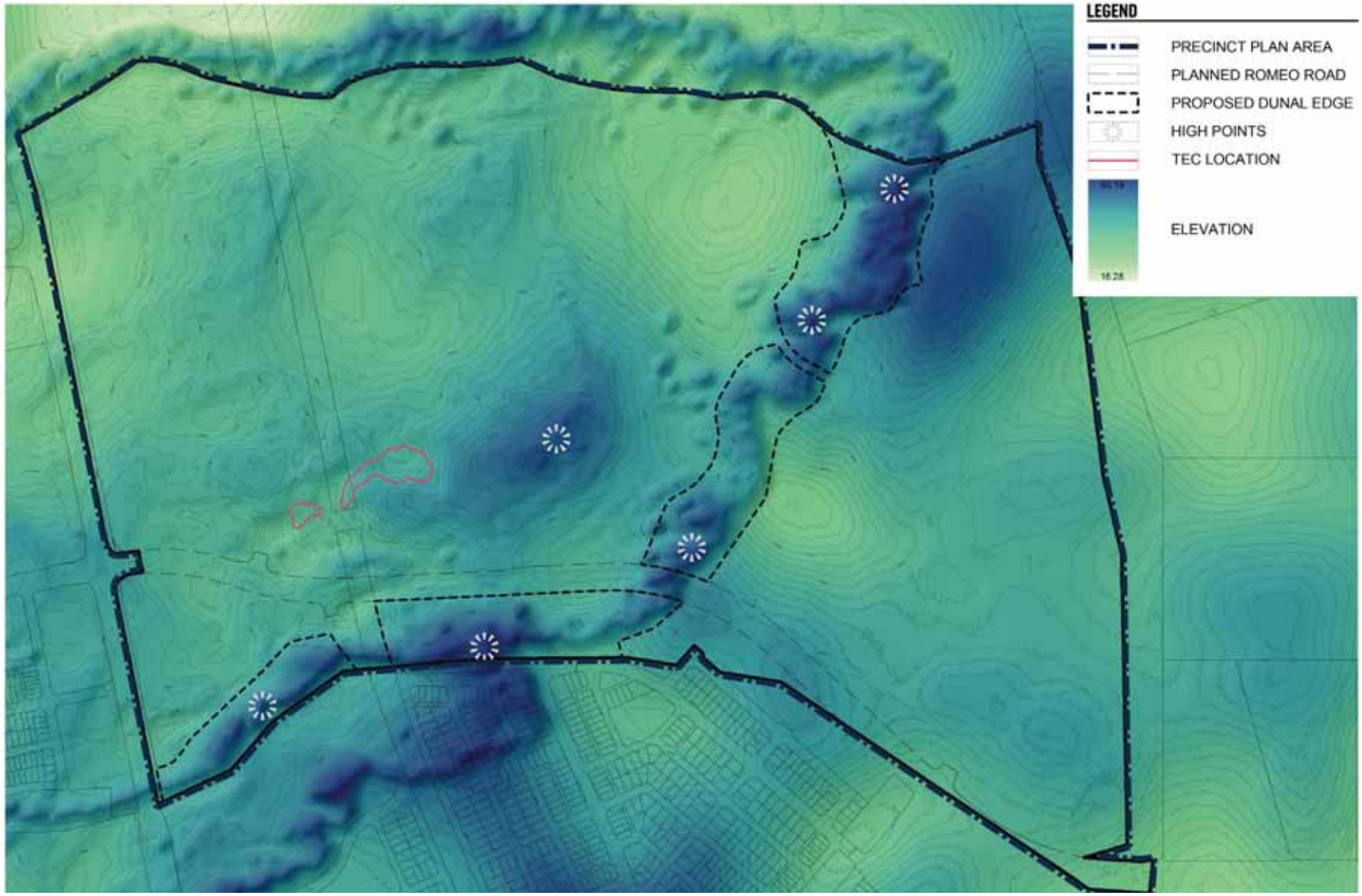
5.1.4.2 Non-Indigenous Heritage

Based on a desktop review, there are no recorded non-indigenous heritage sites found within the site.

5.1.5 Bushfire Prone Area

As the precinct plan area is identified as a 'Bushfire Prone Area' under the Department of Fire and Emergency Services Map of Bushfire Prone Areas, a Bushfire Attack Level (**BAL**) assessment and Bushfire Management Plan (**BMP**) has been prepared (refer to **Appendix D**).

Figure 7 Topographic Overlay Plan

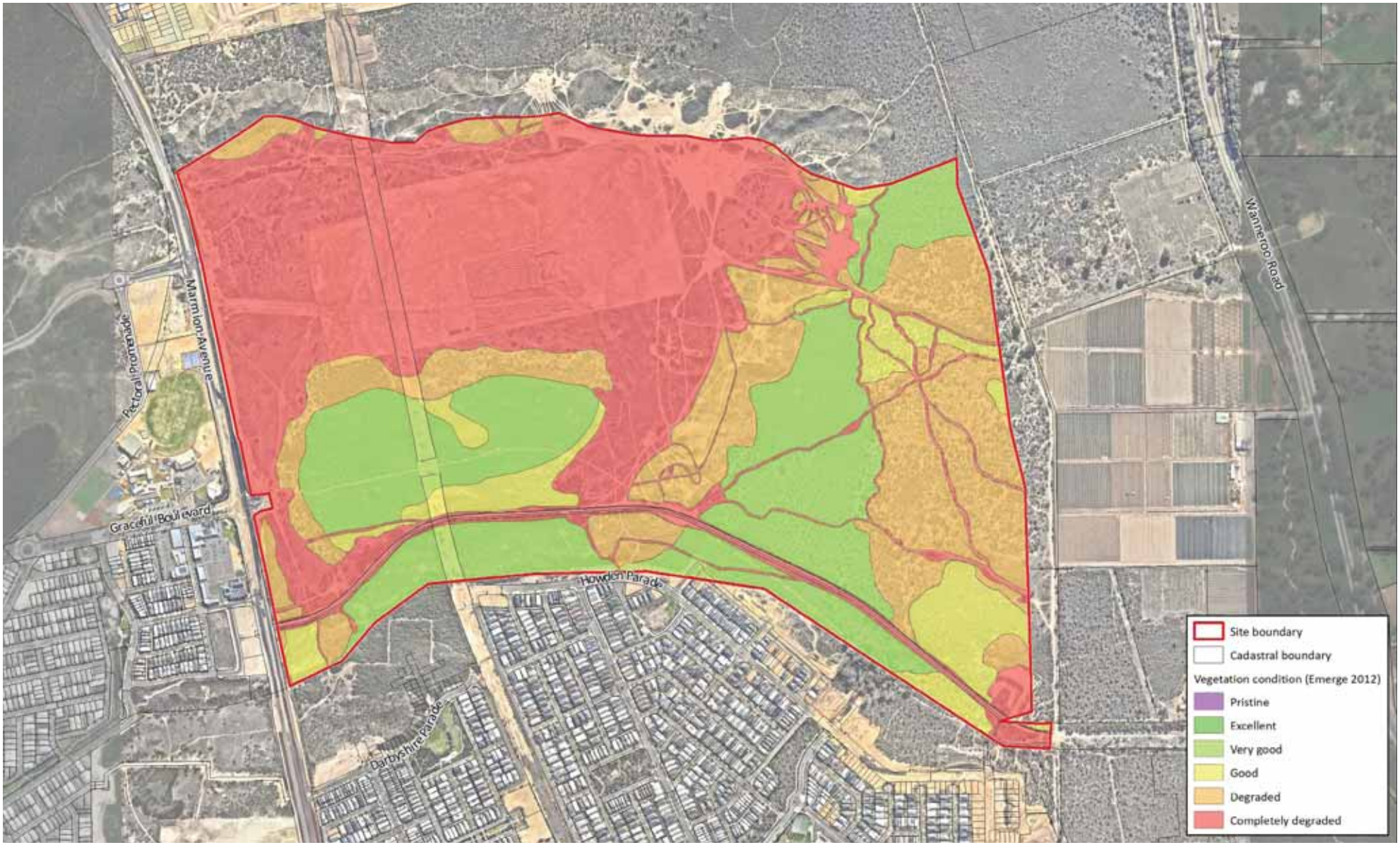


(Source: Urbis)

Figure 8 Vegetation Communities

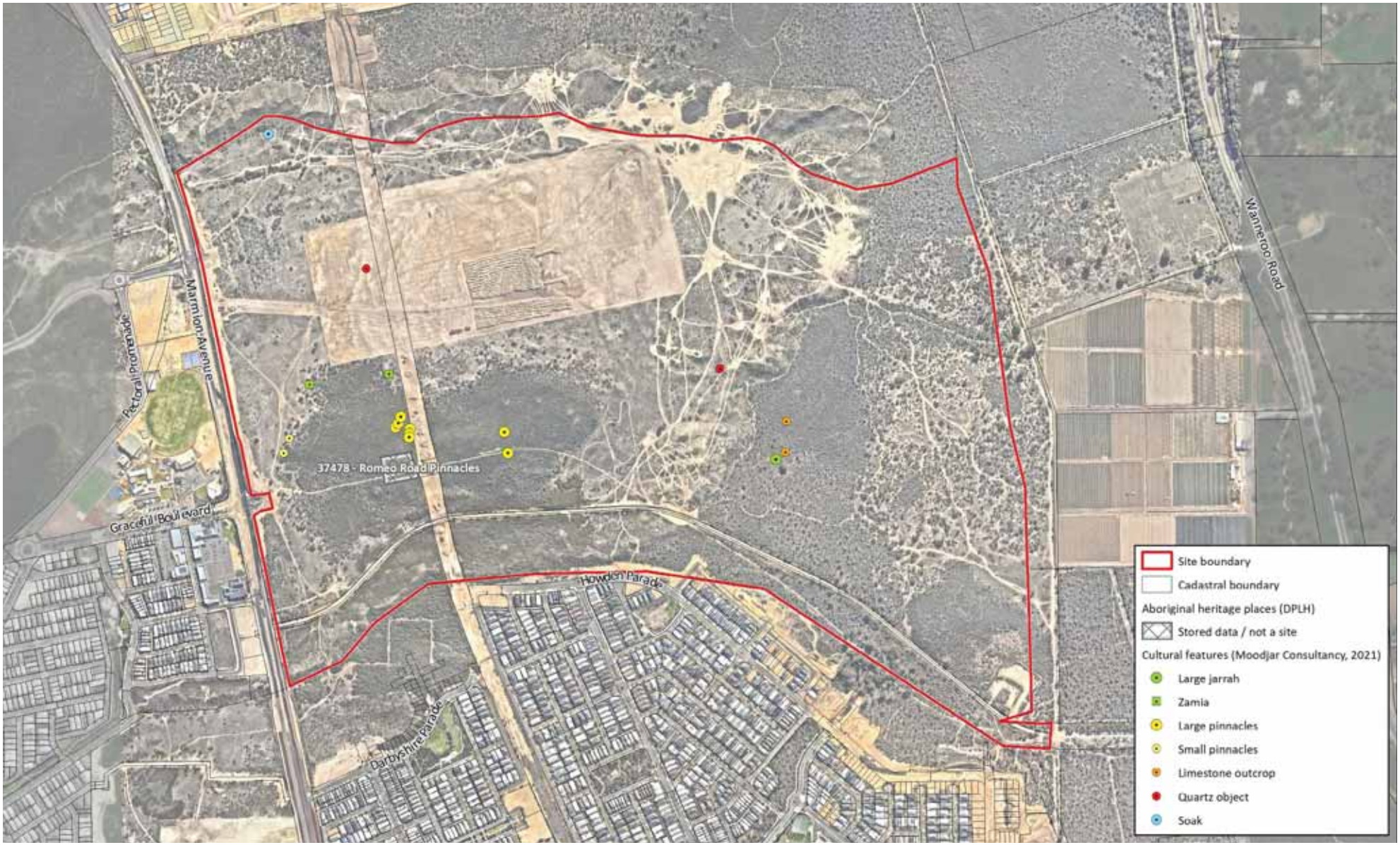
(Source: Emerge Associates)

Figure 9 Vegetation Condition



(Source: Emerge Associates)

Figure 10 Cultural Heritage



(Source: Emerge Associates)

5.2 Community Context

5.2.1 Housing Needs Assessment

A Housing Needs Assessment has been prepared by RPS to support the precinct plan (refer to **Appendix E**).

5.2.1.1 Population and Age Profile

RPS has utilised the North West Statistical Area of Perth as the basis of the analysis. This area has been selected for a number of reasons including:

- It is a large area with a critical mass of population and housing, allowing for underlying age specific housing propensities to be relied upon in Alkimos modelling.
- It includes a range of residential areas at different degrees of demographic gentrification and new population growth/migration, providing guidance on potential changes in age specific housing propensities over time.
- It includes a critical mass of non-inner city attached dwelling products, providing statistically significant data on dwelling stock mix to inform the analysis.

The population of Perth's – North West Statistical Area (composed of the Cities of Stirling, Joondalup and Wanneroo) - is increasing rapidly and is expected to reach almost 750,000 people by 2031. In contrast, the suburbs of Alkimos and Eglinton (which includes the Alkimos-Eglinton DSP area) are expected to reach a population of 68,000 by 2041.

The age profile of the North West area is expected to become increasingly older over the next decade, with the share of population aged 65+ reaching 17.5% in 2031. This is almost equivalent to the share aged 0-14. However, the population of Alkimos/Eglinton is expected to remain significantly younger with the share of population aged 0-14 reaching 27% in 2041 while the share aged 65+ will reach only 7.2%.

5.2.1.2 Housing Potential Estimates

Applying the housing need profiles (Appendix A of the RPS Report) to the population for the suburbs of Alkimos and Eglinton, RPS estimates that Alkimos-Eglinton will require over 21,100 dwellings by 2041 to accommodate the 68,000 people expected for the two suburbs. Based on the age-specific housing preference profile for the area, approximately 11% of these dwellings will need to be non-detached housing products, including over 1,920 town houses. Apartments are only expected to account for 1.7% of dwelling preferences by 2051.

Alkimos Central will be the highest concentration of services, facilities and positive accessibility attributes in the District and wider area. This is likely to support higher density dwelling demand in the area and result in Alkimos Central accounting for the lion's share of smaller product (particularly studio, 1 and 2 bedroom dwellings).

Additionally, separate housing demand in Alkimos Central is expected to focus on smaller 3 bedroom offerings, in response to reduced demand for a second car garage in areas of the city centre core with strong pedestrian accessibility to public transport. The reduced requirement for a second car allows for narrower frontages and supports smaller and more innovative dwelling formats including workers cottages and nano housing product – including 2 bedroom houses.

Overall, RPS estimates that by 2051, there will be a total potential for over 2,800 dwellings in the Alkimos precinct plan area. This will be comprised primarily of separate houses (1,867) but with more significant numbers of townhouses (636) and apartments (279).

The result of this is that by 2051, approximately two-thirds of dwelling preferences will be for standalone detached houses with the remaining third for attached products. This will include 22.7% of demand for townhouses and a further 9.9% for apartments.

5.2.2 Community Development Plan

The Alkimos Central Community Development Plan (CDP) has been prepared by Element (refer to **Appendix F**) and is a strategic document which assesses the potential future needs of the community and the infrastructure, facilities and services needed to define a framework for community development which meets the Green Star – Communities National Framework guidelines.

The overarching CDP themes are expanded into a Community Development Framework which outlines the proposed place pillars, strategies and community initiatives. This will be followed by a Community Development Implementation Plan (CDIP) to provide a framework for the delivery of initiatives. The roadmap for the first 12 months of implementation will be set out in the Town Centre Activation Plan.

The CDIP will be refined as the first residents and businesses move in and will become the active long-term document that guides the community infrastructure delivery that will be key to the success of Alkimos Central.

A key objective of the CDP is to gain 6-star Green Star – Communities accreditation from the Green Building Council of Australia, building on the sustainable vision for the Alkimos region, already realised at Alkimos Beach and the evolving Alkimos Vista.

This CDP has been informed by DevelopmentWA's development principles, GBCA's Green Star – Communities National Framework, the Project Vision developed in consultation with the local community, DevelopmentWA and City of Wanneroo, and the project's Place Pillars.

5.3 Governance Context

The following section provides an overview of the relevant planning framework as it relates to the precinct plan.

5.3.1 Zoning and Reservations

5.3.1.1 Metropolitan Region Scheme (MRS)

The site is located within the Central City Area zone under the MRS and partly within a Railways reserve, Primary Regional Roads Reserve (portion of Mitchell Freeway) and Other Regional Roads Reserve (portion of Romeo Road). Refer to **Figure 11**. The precinct plan is also within Planning Control Area No. 132 – Yanchep Line Extension (Alkimos) as part of METRONET, which is established to facilitate the development of the land for railway and related public purposes.

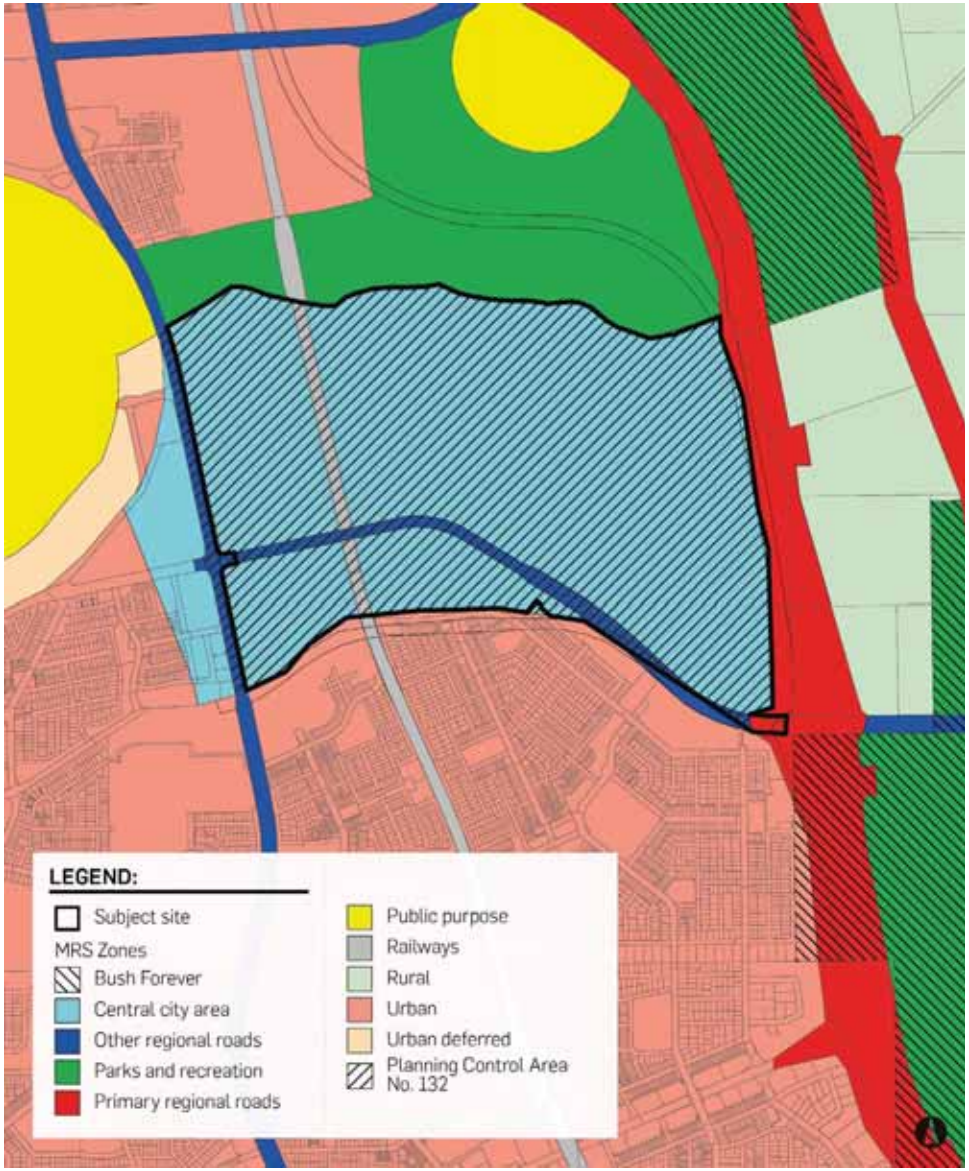
The intent for the Central City Area zone is to provide strategic regional centres for major retail, commercial and office facilities as well as employment, civic, business and residential use.

The purpose of the Railways reserve is to provide for public transit routes, freight rail lines and associated facilities.

The Mitchell Freeway extension is designated a Primary Regional Roads (PRR) reserve adjacent the eastern boundary. As such, Mitchell Freeway is under the care and control of Main Roads WA. Marmion Avenue adjacent the western boundary and Romeo Road is designated as Other Regional Roads reserve.

An amendment to the MRS is required to realign Romeo Road in accordance with this precinct plan.

Figure 11 MRS Map



(Source: DPLH / Urbis)

5.3.1.2 City of Wanneroo District Planning Scheme No.2 (DPS2)

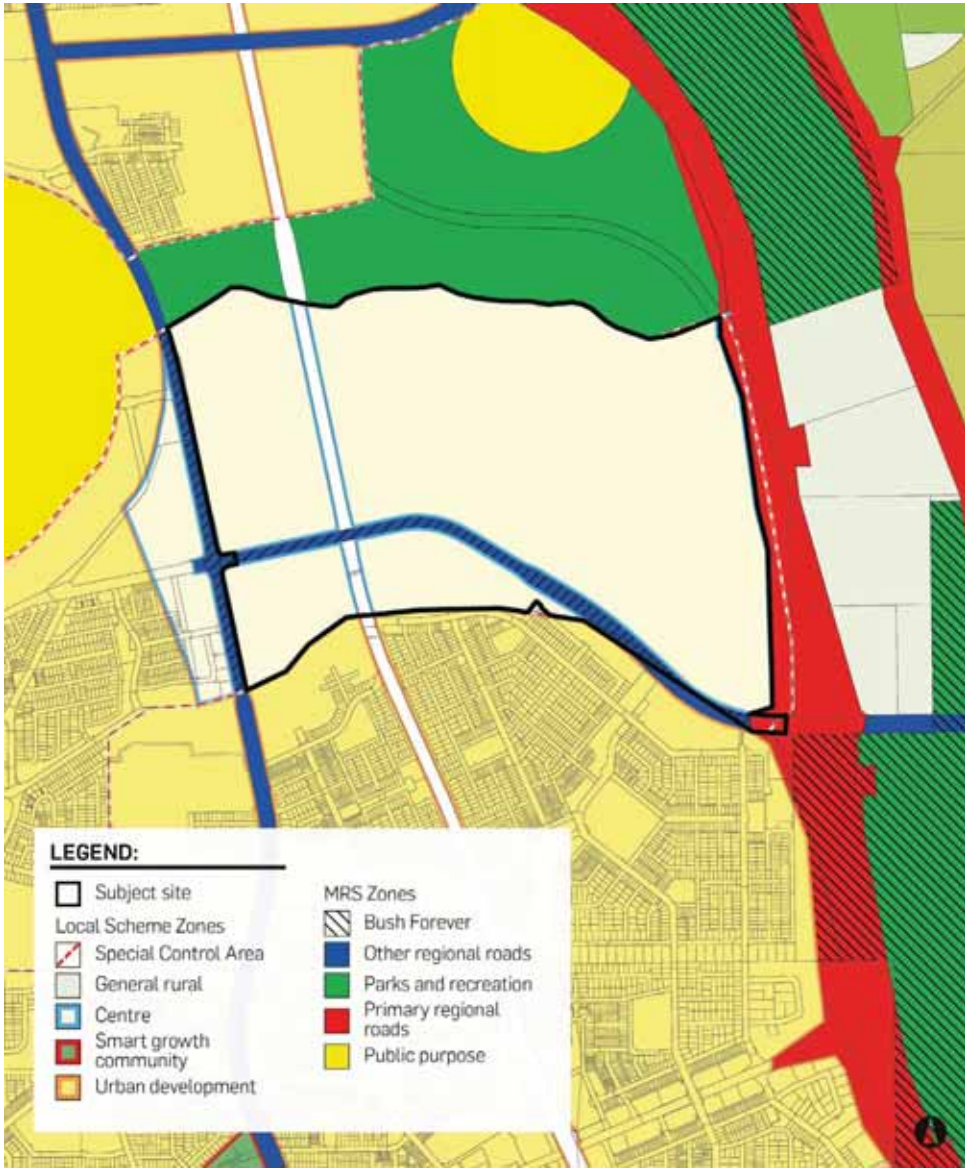
The majority of the precinct plan is identified within the Centre Zone with the remainder partly within a Railways reserve, Primary Regional Roads Reserve (portion of Mitchell Freeway) and Other Regional Roads Reserve (portion of Romeo Road) within DPS2. Refer to **Figure 12**.

The purpose of the Centre Zone is to cater to the diverse needs of the community through the provision of a hierarchy of centres from small neighbourhood centres to large regional centres.

As per Clause 3.13 of DPS2, development and subdivision should be conducted in accordance with the requirements of an activity centre plan. ACP89 has previously satisfied this requirement, with this precinct plan superseding ACP89.

The precinct plan area is located in the Alkimos/Eglinton development contribution area 1 (DCA1). Developer contribution implications resulting from the development of the activity centre will be considered through a separate process.

Figure 12 DPS2 Map



(Source: DPLH / Urbis)

5.3.2 Regional and Sub-Regional Frameworks

5.3.2.1 Perth and Peel @ 3.5 Million and North-West Sub-Regional Planning Framework (March 2018)

Perth and Peel @ 3.5 Million and the associated North-West Sub-Regional Planning Framework provides the overarching strategic planning framework guiding sustainable urban growth and efficient use of infrastructure in the sub-region. Key priorities for the north-west sub-region include:

- 'Alkimos Town Centre' is an emerging secondary centre located between Joondalup and Yanchep.
- As a secondary centre, Alkimos will support the strategic metropolitan centres with a mix of land uses, including retail, office, high density residential development, entertainment and community services.
- Alkimos will also be served by an extension of the Joondalup railway line. The centre will require detailed planning to maximise transit-oriented development and sustainable employment opportunities.
- Future public high school sites have been identified in the localities of Alkimos–Eglinton.
- Passenger rail station at Alkimos to be delivered in the short term (2015-2021).
- New 132kV transmission line along the eastern boundary aligned with the Mitchell Freeway extension (2015-2021).
- Mitchell Freeway extension to Alkimos/Eglington in the medium term (2022-2031).

This precinct plan aligns and responds to the key strategies of the Sub-Regional Framework.

5.3.2.2 Alkimos-Eglinton District Structure Plan (DSP) (18 February 2020)

The Alkimos-Eglinton DSP provides a planning framework to guide the development of over 23,000 dwellings and a population of more than 57,000 people. The DSP requires all activity centres to be subject to further structure planning to ensure there is a mix of retail, residential, community and service provision meeting main street design objectives. ACP89 has previously satisfied this requirement, with this addendum (as part of ACP 89) continuing to satisfy this requirement.

Alkimos Central is identified as a secondary centre with an area of 'Service Commercial' along the southern portion in the vicinity of Romeo Road. This Addendum is generally in accordance with the DSP in term of land use, movement network, infrastructure corridors and open space linkage. The addendum rationalises the quantum of Service Commercial land to the south-eastern corner of the precinct plan area where it will have greater exposure to the major road network. Refer to **Figure 13**.

5.3.2.3 Alkimos City Centre Activity Centre Plan No. 89 (ACP89)

ACP89 is the key document that guides subdivision and development of the precinct and was first adopted in August 2018. In response to the delivery of METRONET's Alkimos Station and bus interchange, and as part of the Green Star Communities Framework, DevelopmentWA commissioned a review of the 2018 ACP.

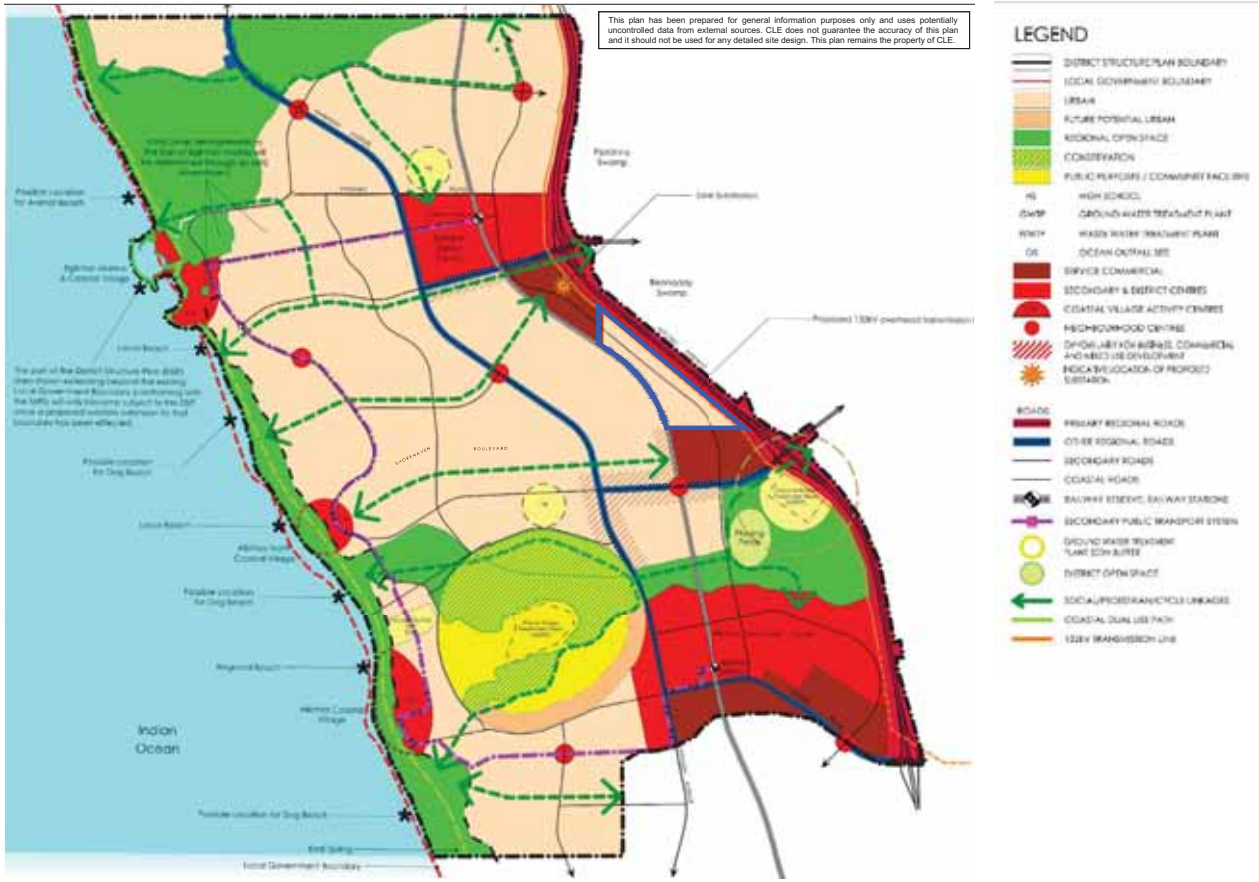
This precinct plan delivers a more considered layout for the precinct and how it connects to Alkimos Beach to the south-west, Alkimos Vista to the north and respects the Alkimos Pinnacles through the re-routing of Romeo Road. The arterial roads, railway line and parabolic dune clearly define the development zones: the city centre core nestled around the new transport hub; the public and residential areas radiating out from the centre; and the service commercial / business zone located on the peripheries, close to the freeway intersection.

Some of the changes that have occurred during this process include, but are not limited to the following:

- Retaining and protecting the Pinnacles near the proposed Romeo Road and rail reserve intersection (and surrounding area);
- The realignment of Romeo Road;
- Realignment of NS1 (main street);
- Retaining and protecting a series of mature trees and important ecological areas;
- Redesign and planning of the development structure and form;
- Relocation of the Town Square;
- Updated design interface between the Precinct and Alkimos Station since the Yanchep Rail Extension became a committed delivery project in November 2019; and
- The review and updating of economic forecasts, project outcomes and timelines in response to the COVID-19 Global Pandemic.

An extract of the existing ACP89 map is provided at **Figure 14**.

Figure 13 Alkimos-Eglinton District Structure Plan Map



The following notes relate to the Structure Plan:

a. The final locations and configurations of the government school sites depicted on this Structure Plan will occur at the local structure planning stage through landowner consultation with the Department of Education and Training, the City of Wanneroo and the Department of Planning. Locations depicted are notional and approximate to reflect catchment requirements.

b. The coastal setbacks, including any proposed reduction in coastal setback for the coastal activity nodes are to be consistent with State Planning Policy No. 2.6. State Coastal Policy.

c. Final location of railway stations and associated pedestrian and vehicular crossings will need to be determined to the satisfaction of the Public Transport Authority, in consultation with the City of Wanneroo and the WAPC.

d. The north-south road on the western side of the WWTP which transverses the 'Parks and Recreation' reserve is supported in principle and is subject to further approval from the Environmental Protection Authority.

e. Retail floorspace allocation for the proposed activity centres as outline in the Structure Plan has not been assessed in terms of its impact upon other proposed and existing centres. Accordingly, the activity centres are notional and will require compliance with any approved State Planning Policy relating to Activity Centres.

f. Areas identified as being of National Environmental Significance under the Environmental Protection and Biodiversity Conservation Act 1999 may be subject to assessment by the Federal Department of the Environment, Water, Heritage and the Arts. The outcome of any such assessment may require modification to the DSP.

g. District Open Space identified within the Structure Plan does not form part of the public open space allocation.

h. Local Open Space will be determined at the time of Local Structure Plan preparation in consultation with the City of Wanneroo and the WAPC. Detail in relation to drainage credits will be assessed at the Local Structure Planning stage, and will need to be consistent with Liveable Neighbourhoods and WAPC Policy DC 2.3 'Public Open Space in Residential Areas.

i. Activity Centres will be subject to further structure planning, to ensure there is a mix of retail, residential, community and service provision meeting main street design objectives.

j. Subdivision and/or development within the DSP is required to contribute to infrastructure items as identified in the Developer Contribution Plan to be approved by the City of Wanneroo.

k. The Structure Plan is subject to Environmental Conditions, Statement No. 722.

l. Final servicing requirements will need to be accommodated within the Structure Plan, and will be determined at the Local Structure Planning Stage.

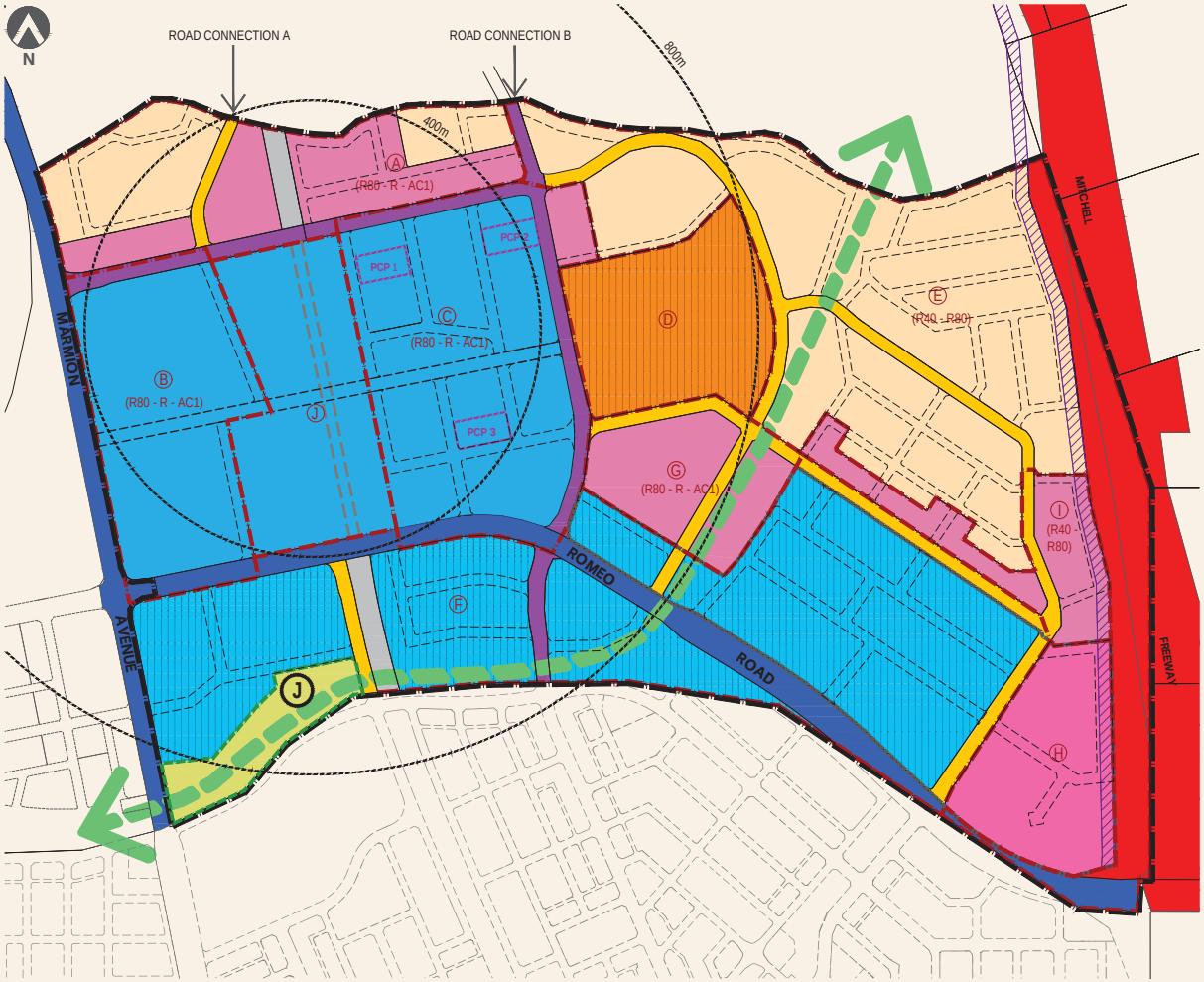
m. This DSP is subject to monitoring and review commencing in 2017.

n. An easement of up to 30m may be required for the proposed 132kv overhead transmission line. This may have implications on adjacent land uses. Final width of the easement to be determined at LSP stage.

(Source: DPLH)

Figure 14 Existing ACP89 Map - August 2018

Plan 1: Alkimos City Centre Activity Centre Plan



LEGEND

- Structure Plan Boundary
- Walkable Catchment 400m/800m
- Social/ Pedestrian/ Cycle Linkage
- Main Street
- Precincts
- Precinct Boundaries
- Nature Open Space (Refer to Table 1 of Part 1)
- Indicative 132kV Powerline Easement (24m Wide)

Zones

- Residential
- Commercial
- Mixed Use
- Business
- Civic & Cultural
- Service Industrial

Reserves

- Primary Distributor Road
- Integrator Arterial A
- Integrator Arterial B
- Neighbourhood Connector
- Railway Reserve
- Railway Alignment

INDICATIVE CAR PARK LOCATIONS		CAPACITY
PCP 1	Public Car Park 1	150 bays (at-grade) 450 bays (3 levels)
PCP 2	Public Car Park 2	150 bays (at-grade) 450 bays (3 levels)
PCP 3	Public Car Park 3	150 bays (at-grade) 450 bays (3 levels)

5.3.3 State Planning Policy 7.2 Precinct Design (SPP7.2)

SPP 7.2 Precinct Design (gazetted 19 February 2021) forms the most recent component of the Design WA Suite of Policies that applies to the preparation and assessment of planning proposals for areas that require a high level of planning and design. SPP 7.2 and its associated guidelines provide guidance on the design, assessment and implementation of precinct structure plans, local development plans, subdivision and development in areas identified as precincts.

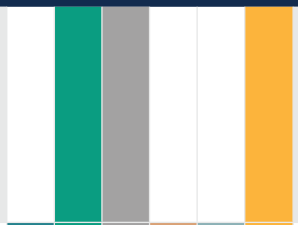
The objectives of this policy are to:

1. Ensure that precinct planning and design processes accommodate growth in a coordinated manner and deliver good quality built environment outcomes that provide social, economic and environmental benefits.
2. Ensure consistency and rigour of precinct planning across the State.
3. Enable design review to be incorporated in precinct planning processes, with due regard given to the advice received.

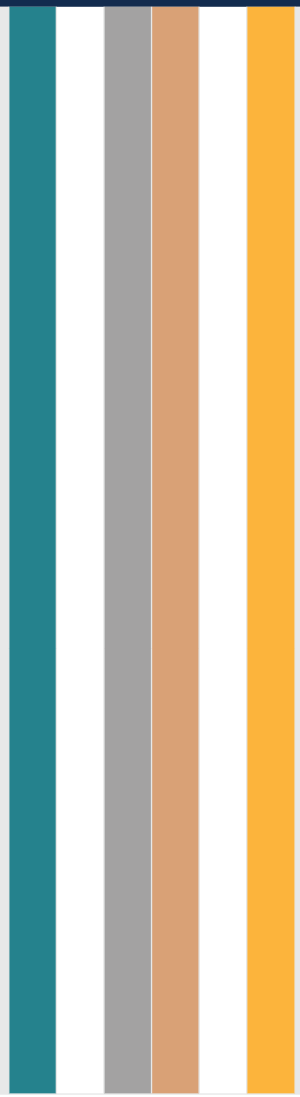
This precinct plan has been prepared generally in accordance with SPP.7.2 and the supplementary Precinct Design Guidelines. Whilst this precinct plan is considered an amendment to ACP89, the policy outcomes of SPP7.2 and the alignment with SPP7.0 Design Principles has been achieved. This is demonstrated in **Table 8** which provides a high level assessment of the precinct plan response to SPP7.0 Design Principles and SPP7.2 Policy Outcomes.

Table 8 – SPP7.2 Precinct Design Assessment (Response to SPP7.0 Design Principles and SPP7.2 Policy Outcomes)

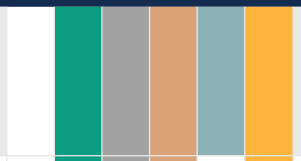
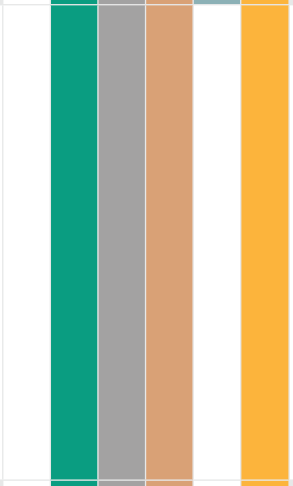
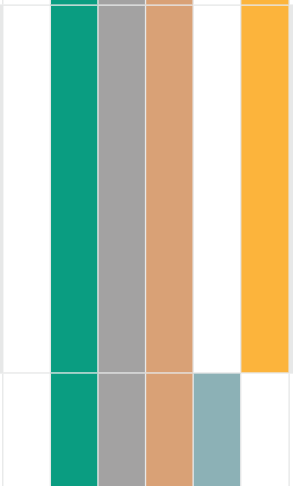
SPP 7.0 Design Principles	Design Elements						SPP 7.2 Policy Outcomes	Alkimos Central Precinct Plan Response
	1. Urban Ecology	2. Urban Structure	3. Public Realm	4. Movement	5. Land Use	6. Built Form		
Context and character							The precinct design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place. New development is integrated into its setting and is shown to respond positively to the intended future character of an area.	The form and layout of Alkimos Central responds to its environmental and cultural context and represents best practice urban design principles. A key feature of the site is the parabolic dune that frames the western portion of the site. The resulting urban structure is one that responds to its environment, embeds the cultural ties to the land and provides a clear hierarchy of movement to the town centre. Land uses respond to the overlaid grid providing the regularity and complexity required of a town centre. Further details are provided in **Section 7.4 – Urban Structure**.
Landscape Quality							Development within precincts integrates landscape design that enhances sustainability outcomes and contributes to community wellbeing. The local environment is enhanced through the: – protection of water and soil resources – retention and/or enhancement of the green network – protection and/or restoration of fauna habitat, where appropriate – consideration of microclimate and urban heat island impacts.	A Landscape Masterplan has been prepared by ULDA (refer to **Appendix J**) to articulate the approach to the public realm including the retention and protection of the Pinnacles and parabolic dune and landscaping provision to the street network, city centre core and areas of public open space. The approach to landscape achieves best-practice landscape design in accordance with the policy outcomes of SPP7.2. Further detail regarding the landscape design is provided in **Section 7.5 – Landscape and Public Realm**.

SPP 7.0 Design Principles	Design Elements	SPP 7.2 Policy Outcomes	Alkimos Central Precinct Plan Response
Built Form and Scale		Built form height and massing (bulk and scale) across the precinct is responsive to existing built form, topography, key views and landmarks, and the intended future character of the area. Buildings are suited to their purpose, contribute positively to the character of the public realm, and provide good amenity at ground level.	The built form and character of the precinct plan responds to the context, key infrastructure (road and rail), site topography and environmental features. The approach has been to create a series of 'Frontage Types' to guide the built form controls within the city centre core. This will be supported by PLDP/LDP(s) for specific precincts, as the areas of the precinct are developed. Further detail regarding the approach to built form is provided in **Section 7.6 – Built Form**.
Functionality and build quality		The precinct design facilitates development that meets the needs and expectations of the community and provides for change over time. Required services infrastructure is integrated in a manner that mitigates amenity impacts. Development considers the intended full lifecycle and is robust, resilient to wear and easy to maintain over time.	The Alkimos Central Community Development Plan (CDP) has been prepared by Element (refer to **Appendix F**) and is a strategic document which assesses the potential future needs of the community and the infrastructure, facilities and services needed to define a framework for community development which meets the Green Star – Communities National Framework guidelines. The overarching CDP themes are expanded into a Community Development Framework which outlines the proposed pillars, strategies and community initiatives. This will be followed by a Community Development Implementation Plan (CDIP) to provide a framework for the delivery of initiatives. The CDIP will be refined as the first residents and businesses move in and will become the active long-term document that guides the community infrastructure delivery that will be key to the success of Alkimos Central. This will support a precinct design that meets the needs of the community over time. Further details are provided in **Section 5.2.2 – Community Development Plan**.

Urban Ecology Urban Structure Public Realm Movement Land Use Built Form

SPP 7.0 Design Principles	Design Elements	SPP 7.2 Policy Outcomes	Alkimos Central Precinct Plan Response
Sustainability		Planning and development of precincts delivers a sustainable built environment through: • passive environmental design measures • water sensitive urban design • enhancement of the green network • harnessing opportunities for renewable energy sources and precinct-wide energy savings • adaptive reuse of existing structures where feasible • promotion of active and public transport modes.	One of the four place pillars for the Precinct Plan is "*Leading Edge & Designed to Evolve - Designed to deliver for the long term, this is a coastal city centre pushing the boundaries – sustainable, experiential and distinctive.*" This underpins the vision for Alkimos Central (refer to **Section 7.1 – Vision**) and is consistent with the Sustainability Design Principle. The following demonstrates how the SPP 7.2 policy outcomes are being met: • The primary main street (NS1) is oriented north-south, sheltering pedestrians from strong south-westerly winds, offering sun and shade in the morning and afternoon and minimising the time exposed to direct sunlight. • The precinct plan seeks to deliver best practice outcomes using a water sensitive urban design (WSUD) approach, including detailed management approaches. • The extensive green network grounded by the parabolic dune system creates a framework for the delivery of and extension to a traditional open space approach within the precinct. • Additionally, public spaces and new developments will collectively target the planting of 20,000 trees across the precinct plan to create a protected retreat from the coastal elements. • DevelopmentWA is establishing Alkimos Central under the Green Star Building Council's "Green Star – Communities v1.1" rating system and is targeting a 6 Star rating. Green Star – Communities. This rating system provides a rigorous and holistic approach to precinct planning across five impact categories of Governance, Liveability, Economic Prosperity, Environment and Innovation and will ensure opportunities for renewable energy sources and reducing energy consumption are implemented. • Accessibility for active modes of transport are prioritised with a 'boulevard' treatment enabling high volume access, while the city centre core's accessibility with the surrounding residential precincts will have alternative routes such as the east-west Civic Spine, the activated east-west pedestrian link and the dune ridge walks. With these routes having an emphasis on shared urban street environments safe for pedestrian and cycle movements.

Urban Ecology | Urban Structure | Public Realm | Movement | Land Use | Built Form

SPP 7.0 Design Principles	Design Elements	SPP 7.2 Policy Outcomes	Alkimos Central Precinct Plan Response
Amenity		The precinct design provides comfortable public spaces that encourage physical activity, enable a range of uses and are accessible to all.	A range of public spaces including the Town Square, dune ridge walk and generous streetscapes will encourage a range of physical activity and community interaction. Further detail regarding the public realm is provided in **Section 7.5 – Landscape and Public Realm**.
Legibility		The precinct design provides for places that are easy to navigate, with clear connections, good lines of sight to key locations and a logical, intuitive layout.	The precinct plan has been designed in accordance with Liveable Neighbourhoods and is cognisant of achieving walkable catchments with high cycling and pedestrian amenity. The proposed network of paths within the precinct plan area will provide an excellent level of accessibility and permeability for pedestrians and cyclists. The proposed precinct plan includes the provision of footpaths along every street. Additionally, it includes the provision of shared paths along the following roads: • NS1 • NS2 • Brindabella Parkway • Tuart Drive • Romeo Road
Safety		Planning and development optimises safety and security within precincts by: – maximising opportunities for passive surveillance – integrating safety requirements in manner that does not compromise intended uses – following Crime Prevention through Environmental Design (CPTED) design principles.	A CPTED Assessment has been undertaken for Alkimos Central, as part of the precinct plan process (refer to **Appendix G**). The assessment follows an integrated, multi-disciplinary design process that considered all aspects of safer design in the formulation of the proposed plan. A number of recommendations were considered in the preparation of this precinct plan including: • Vulnerable land uses and interface • POS interface • Underpass / overpass recommendations • Ownership of space • Built form controls
Community		The precinct design provides for development that responds to local community needs and the wider social context by delivering an appropriate mix of land uses, dwelling types and public spaces	The precinct plan delivers a range of land uses, dwelling types and public spaces as detailed in **Sections 7.2 – Zoning and Land Use, 7.5 – Landscape and Public Realm** and **7.6 – Built Form**.

Urban Ecology Urban Structure Public Realm Movement Land Use Built Form

SPP 7.0 Design Principles	Design Elements	SPP 7.2 Policy Outcomes	Alkimos Central Precinct Plan Response
Aesthetics		The precinct is attractive and inviting, with a coherent identity and cultural relevance. The scale, arrangement, articulation and material quality of buildings and spaces together create a high level of amenity.	The precinct plan sets a clear framework to establish a high standard of aesthetic throughout the public realm and built form, including a process of collaborative Design Review. This will be guided through the provisions of this precinct plan and any PLDP/LDP(s) for specific precincts. Further detail regarding the approach to built form (including built form character) is provided in **Section 7.6 – Built Form**.

Urban Ecology | Urban Structure | Public Realm | Movement | Land Use | Built Form

5.3.4 State Planning Policy Activity Centres For Perth and Peel 4.2 (SPP4.2)

Table 9 summarises how the precinct plan responds to the key provision of SPP 4.2. It is acknowledged that at the time of writing this Precinct Plan a draft SPP4.2 had been prepared and advertised. A Retail Need Assessment has been prepared by RPS to support this precinct plan (refer to **Appendix H**) in accordance with SPP4.2.

Table 9 – SPP4.2 Assessment

Provision/s	Response
SPP4.2 Activity Centres for Perth and Peel	
Activities Centres Hierarchy: Alkimos – *emerging* Secondary Centre	This precinct plan facilitates the delivery of a secondary centre in Alkimos and fulfills the requirement for a precinct plan to be prepared prior to any major development.
Typical Characteristics	**This precinct plan aims to achieve the typical characteristics of a Secondary Centre as follows:**
Main Role and Function - Secondary centres share similar characteristics with strategic metropolitan centres but serve smaller catchments and offer a more limited range of services, facilities and employment opportunities. They perform an important role in the city's economy, and provide essential services to their catchments.	The role of Alkimos Central as a secondary centre is also supported by the employment targets for the area established by the City of Wanneroo, which estimates the need for up to 20,000 jobs in the Alkimos-Eglinton District in the future. The development of Alkimos Central will aid in addressing key economic challenges in the City of Wanneroo, including the developing of and investment in commercial and retail land and infrastructure to support jobs.
Transport connectivity and Accessibility – Important focus for passenger rail and / or high frequency bus network.	The precinct plan is centred around Alkimos Station as part of the METRONET Yanchep Rail Extension (YRE) project. The delivery of Alkimos Station provides an alternative to the 1 to 1.5hr private vehicle peak hour journey to the Perth CBD, reducing the journey to approximately 41 minutes, providing direct and tangible incentives for commutes to consider public transport over private vehicle use.
Typical Retail Types: • Department store/s • Discount department store/s • Supermarkets • Speciality shops Typical Office development: • Major offices • Professional and service businesses	The precinct plan facilitates a range of retail uses within the city centre core which is designated Commercial Zone in accordance with DPS2. The Retail Needs Assessment estimates that there will be a need for over 72,000sqm NLA of Shop/Retail and 45,000sqm NLA of Bulky Goods floor space at Alkimos Central by 2041. The development of the Alkimos Central shop retail floor space to this extent is unlikely to have a significant impact on the sustainability of the retail network or on individual centres within and outside of the District and Trade Area. The precinct plan allows for office development, with the city centre core conducive to accommodating professional services.
Future Indicative Service Population (trade) area - Up to 150,000 persons	Based on the RPS Retail Need Assessment (refer to **Appendix H**) population projections indicate the Trade Area population will exceed 106,000 people in 2021 and reach over 210,000 in 2041.
Walkable Catchment for residential development – 400m (800m in the draft SPP4.2)	The precinct plan has been centred around a 400m and 800m walkable catchment as the focus of activity and density.
Residential density target per gross hectare – 25-35 dwellings per gross hectare (40+ in the draft SPP4.2)	The precinct plan delivers a residential density of 49 dwellings per gross hectare supporting its role as a secondary centre.
Diversity performance target – 40% mix of land use floor space	The Retail Needs Assessment estimates that Alkimos Central has the potential to accommodate approximately 500,000sqm of floor space between 2042-2052 including over 72,000sqm of shop retail floor space. The mix of land uses other than shop-retail accounts for 85% of the estimated non-residential floor space.

5.3.5 State Planning Polices (Other)

Table 10 summarises how the precinct plan responds to the key provision State Planning Policies that apply.

Table 10 – State Planning Policies

Policy	Relevant Provisions and Application
SPP 2.0 – Environment and Natural Resource	The purpose of this policy is to create a framework for the management and protection of biodiversity and natural resources throughout Western Australia. The Policy aims to integrate issues of environmental sustainability and conservation into broader planning decision-making whilst efficiently and sustainably managing the State's natural resources. This policy is relevant to the protection and enhancement of environmental features including the parabolic dune system and implementation of sustainability measures.
SPP 2.7 – Public Drinking Water Source	SPP 2.7 pertains to the appropriate management of Western Australian freshwater resources. The purpose of the policy is to provide a statutory framework for the protection and consideration of public drinking water sources during the planning process. The site is located within a Priority 3 Public Drinking Water Source Area (PDWSA) as part of the Perth Coastal and Gwelup Underground Water Pollution Control area. Priority 3 PDWSA's areas are defined to manage the risk of pollution to the water source from catchment activities. Under the DoW policy (DWER 2021) it is expected that protection of P3 areas is achieved through guided or regulated environmental risk management for land use activities. Land uses considered to have significant pollution potential are generally opposed or constrained. Furthermore, the precinct plan area contains proposed Wellhead Protection Zones. These carry a 300m radius protection area incurring further control on land use and development. This has been addressed in the Environmental Assessment and Management Strategy prepared by Emerge Associates at **Appendix A**.
SPP 2.9 – Water Resources	The purpose of SPP 2.9 is to guide State agencies and decision-makers regarding those aspects of state planning policy concerning the protection of water resources that should be taken into account in planning decision making. This policy and its Guidelines apply to the preparation and assessment of proposals (including precinct plans) in relation to water resource matters across WA such as public drinking water source area, river systems, water use and infrastructure. The provisions of this policy have been considered in the preparation of the LWMS at **Appendix B**. In August 2021, the WAPC has released draft State Planning Policy 2.9 Planning for Water (SPP 2.9 PW) and Guidelines which will streamline and simplify the current water-related policy framework, consistent with the State Government's current planning reform agenda. Once gazetted, SPP 2.9 PW and Guidelines will supersede a number of policy documents including SPP 2.7 and the current SPP 2.9.
SPP 3.0 – Urban Growth and Settlement	SPP 3.0 is a broad sector planning policy guiding the growth of the Perth Metropolitan Area and Western Australia's rural towns. The Policy promotes a sustainable and efficient urban form throughout Western Australia that can provide social and economic opportunities for residents. Key considerations for the precinct plan include: • Housing should have good access to employment, commercial, recreation and other facilities. • Housing options should be diverse to suit various household sizes, ages and incomes. • Higher density development should be close to commercial facilities and near transport options. • Clustering retail, employment, recreation and other activities in existing activity centres and transport nodes to create attractive, high amenity mixed use urban centres. • Urban development should foster a sense of identity and community. • Vacant and underutilised land should be utilised for urban growth. The key principles and considerations for successful urban growth have been reflected in this precinct plan.

Policy	Relevant Provisions and Application
SPP3.6 Infrastructure Contributions	SPP 3.6 applies to all development within Western Australia that results in an increase of demand for additional infrastructure, services and facilities. As the population of the North-West Corridor grows, additional infrastructure, particularly transport, is required to adequately service residents. The Policy and associated guidelines establish systems for coordinating the delivery of infrastructure and the apportioning of contributions to ensure an adequate and fair process. This includes the creation of a Development Contribution Plan to facilitate this coordination from relevant developers. A Development Contribution Plan for the Alkimos-Eglinton District was gazetted in September 2014 which provides for various items of community infrastructure across the District, and includes the specific provision of an Indoor Recreation Centre, a Library and a Community Centre as items nominated for Alkimos Central.
SPP 3.7 - Planning in Bushfire Prone Areas	SPP 3.7 directs how land use should address bushfire risk management in Western Australia. It applies to all land which has been designated as bushfire prone. SPP 3.7 seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. It applies to all higher order strategic planning documents, strategic planning proposals, subdivision and development applications located in designated bushfire prone areas (unless exemptions apply). The site and surrounding land is currently identified as a "Bushfire Prone Area" under the state-wide Map of Bush Fire Prone Areas prepared by the Office of Bushfire Risk Management (OBRM 2019). Development and subdivision will need to comply with the requirements of SPP 3.7 and the Bushfire Management Plan at **Appendix D**.
SPP 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning	SPP 5.4 applies to the preparation and assessment of planning instruments, including region and local planning schemes; planning strategies, structure plans; subdivision and development proposals, where there is proposed: • Noise-sensitive land-use within the policy's trigger distance of a transport corridor. • New or major upgrades of roads. • New railways or major upgrades of railways as specified or any other works that increase capacity for rail vehicle storage or movement and will result in an increased level of noise. This is achieved by the application of relevant 'trigger distances' around railways and significant roads. The purpose of the trigger distances is to ensure noise management and mitigation is considered as early as possible in the planning process. An Acoustic Assessment against SPP5.4 has been prepared by Herring Storer provided at **Appendix A** (sub-Appendix G of the Environmental Assessment and Management Strategy) to assess the road and rail traffic noise for Alkimos Central.
Draft DC Policy 2.4 Planning for School Sites	This policy contains the WAPC's general requirements for school sites to meet the existing and future community needs. The policy identifies when to consider the provision of sites for new schools, sets criteria for the selection of sites, includes requirements for the design and location of school sites and outlines the developer contribution methodology for government primary schools. Based on pre-lodgement discussions with the Department of Education, a primary school of 4 hectares has been provided to service the community and estimated residential population. The location of the primary school has been sited within the residential area to ensure a connection with its users and maximise access along NS2 and Tuart Drive.

5.3.7 Local Planning Polices

Table 11 summarises how the precinct plan responds to the key provision Local Planning Policies that apply.

Table 11 – Local Planning Policies

Policy	Relevant Provisions and Application
LPP 2.1 – Residential Development	This Policy applies to applications for development approval under the Design Principles of the SPP7.3 Residential Design Codes (R-Codes). LPP 2.1 gives the City the right to exercise discretion while assessing a residential development against the R-Codes. This Policy prescribes standards the City considers acceptable in addition to the deemed-to-comply provisions of the R-Codes. When applying this Policy, the City will consider these standards in conjunction with relevant standards in conjunction with relevant 'design principles' and objectives stated in the R-Codes. The precinct plan has considered the key objectives of the Policy, with future subdivision and development applications to consider these requirements in further detail.
LPP 2.4 – Site Works and Retaining for Residential Development	LPP2.4 is designed to be used in conjunction with the R-codes, specifically Volume 1. The policy applies to the site works and retaining of dwellings coded less than R40. The policy does not apply to earthworks and retaining associated with subdivision. The objectives of the policy are to provide protection of the natural environment, nearby landowners, natural topography and streetscapes from the adverse impacts of the earthworks and retaining associated with the development process. The precinct plan has considered the key objectives of the Policy, with future subdivision and development applications to consider these requirements in further detail.
LPP 3.1 – Local Housing Strategy Implementation	The purpose of LPP 3.1 is to address high level state statutory planning policy, namely, Directions 2030 and Perth and Peel @ 3.5 Million. This Policy grapples with the issues of housing affordability, urban infill and increasing housing density. It guides residential development across the City and provides a 'road map' for the City to reach its density targets and manage its population forecasts. This precinct plan supports the objectives of this Policy by increasing density within activity centres, addressing housing affordablility through a variety of residential densities and provision of infrastructure to support a future population.
LPP 3.6 – Employment Policy	This policy established a framework to encourage and retain local employment in the City and North-West corridor. As the population of the area grows, there is a need to localise a certain amount of employment opportunities to reduce the strain commuters apply to the local transport network. This policy should be used in conjuncture with State Government statutory planning framework to encourage a more efficient urban form in the North-West Corridor. In response, RPS has prepared an Economic and Employment Strategy at **Appendix I**.
LPP 3.8 – Marmion Avenue Arterial Road Access	This Policy prescribes acceptable standards for the type and location of vehicular access points, provisional standards for cycling infrastructure, and operational procedures for all new planning proposals, stressing the importance of Marmion Avenue as a North-South transport route providing cycling, walking, vehicular and public transport linkages between the Butler, Alkimos, Eglington and Yanchep Activity Centres. The Policy identifies signalised intersections along Marmion Avenue and the proposed Romeo Road within the precinct plan. It also identifies several left-in, left-out intersections in the same area. Since this Policy was prepared a number of changes have occurred to the road network planning. To support the movement network arrangements of this precinct plan a Transport Impact Assessment has been prepared by GTA at **Appendix L**.

Policy	Relevant Provisions and Application
LPP 4.3 – Public Open Space	The Policy articulates Council's position on the planning, provision, location, design, development and interim maintenance of public open space. **Section 7.5** articulates the landscape and public open space strategy for the precinct plan.
LPP 4.4 – Urban Water Management	The purpose of this Policy is to ensure planning and development within the City of Wanneroo optimises the use and management of urban water resources (including rainwater, stormwater, groundwater, drinking water and wastewater) consistent with SPP 2.9 and the Western Australian Planning Commission's (WAPC) Better Urban Water Management (BUWM). This Policy also ensures the integration of new development into existing sewerage and water servicing networks. Through the Policy Provisions, it is ensured that Water Sensitive Urban Design and the provision of sewerage and water servicing is considered early and often in the planning process. The LWMS (**Appendix B**) has had due regard to these documents and has been prepared in consultation with the City of Wanneroo officers.
LPP 4.8 – Tree Preservation	This Policy provides a mechanism by which significant trees within the City can be protected. As the development is taking place on a greenfield site, it is expected that this Policy will be relevant to areas slated for public realm (i.e. POS, commercial, road reserve) and a number of residential lots. As part of the landscape design response, key features driving the physical response to development at the site are the Pinnacles, existing parabolic dune and other key features of cultural significance (such as mature trees). The precinct will also create numerous areas of Public Open Space that will be developed in accordance with Liveable Neighbourhoods. These areas of POS will support a range of recreation opportunities as well as supporting the drainage function of the precinct. The precinct plan also sets an objective of 20,000 trees for the precinct plan area. Further details of the landscape response is provided at **Section 7.5**.
LPP 4.13 – Caves and Karstic Features	The purpose of this Policy is to preserve cave structure and karstic features as well as to minimise the risk to people and property. Much of the subject site is within a low and medium Karst Risk Level Area meaning relevant measures need to be enacted during multiple phases of the planning process including; development of Local Structure Plan, application for subdivision approval and individual development applications. This would include the preparation of Karst Surveys, Geotechnical Reports and Karstic Features Management Plan should they be required. This has been addressed in the Environmental Assessment and Management Strategy prepared by Emerge Associates at **Appendix A**.
LPP 4.18 – Earthworks and Sand Drift	The purpose of this Policy is to provide guidance for the assessment of development applications for earthworks. This Policy places the responsibility for enacting dust management measures on the developer. Applications should consider the effect dust and sand drift has on the health of nearby residents and properties. Staging of development should also consider how the earthworks of later stages effects the initial stages of the development. The earthworks strategy for the precinct plan area is outlined at **Section 7.9.1**.
LPP 4.19 – Medium Density Housing	This Policy replaces the R-Code provisions for medium density housing within development zones and applies where the approved structure plan identifies that the R- MD standards apply (ie. R25-R60). The purpose of this Policy is to provide a mechanism which allows the adopted provisions to be implemented and ensure that is applied consistently. This policy will apply to those portions of land within the Residential Zone.
LPP 4.16 - Provision of Public Art in Development Proposals (Draft)	This policy applies to all applications for development approval within the City for commercial, mixed use, multiple dwellings or non-residential developments where the cost of the development exceeds $2 million, excluding industrial development. The purpose of this policy is to facilitate the provision of public art which contributes towards a sense of place and community identity and enhances the visual amenity of the public domain. Once adopted, proponents will have to have regard to the requirements of this policy and provision of public art.

5.3.8 Other Approvals and Decisions

Table 12 summarises the other approvals and decisions that relate to the precinct plan area.

Table 12 – Other Approvals and Decisions

Proposals	Details
Environmental Protection Authority	The site (and the wider Alkimos-Eglinton area) was subject to MRS Amendment 1029/33 which was assessed by Environmental Review under Section 48A of the Environmental Protection Act 1986 by the Environmental Protection Authority (EPA). Overall, the EPA's assessment resulted in changes to areas proposed to be reserved "Parks and Recreation" within the Alkimos-Eglinton area to that which was originally proposed by the WAPC. As a result of the EPAs recommendations areas of environmental significance were reserved for "Parks and Recreation". The MRS amendment was supported by the Minister for the Environment in 2006 through Ministerial Statement 722.
EPBC Act	The site was referred pursuant to the EPBC Act in 2015 for potential impacts on matters on national environmental significance (black cockatoo species). Approval under the EPBC Act for urban land uses over the site was granted in March 2017 (EPBC 2015/7561). Approval was granted subject to a number of conditions, including: • Preparation and implementation of a Construction Environmental Management Plan • Preparation and implementation of a Park and Recreation Reserve Management Plan • Purchase of an offset property. Future development of the site will need to implement the Construction Environmental Management Plan (Strategen Environmental 2019) to ensure compliance with the EPBC Act approval.
Amendment No.2 to Alkimos-Eglinton District Structure Plan No. 18 (DSP)	The DSP was approved by the WAPC in 2009 to provide for the logical growth of the north-west corridor, addressing vital land supply demand and employment creation. Amendment No. 2 to the Alkimos-Eglinton DSP 18 which proposed the amendment of 35.6ha of Service Commercial land to Urban was advertised between 6 November and 6 December 2018 and adopted by the WAPC on 19 March 2020. The DSP provides the general basis for the preparation of local structure plans.
Subdivision Approvals	There are two current subdivision approvals for Alkimos Central – WAPC No. 160068 and WAPC No. 158189. These subdivision approvals facilitated the delivery of bulk earthworks associated with the Public Transport Authority, the delivery of Alkimos Station, forward works associated with the initial stages of the city centre development, the construction of the railway corridor, and the construction of key roads.
METRONET Station DA	In January 2021 Development Approval (DA) for Alkimos Station was issued to the NEWest Alliance, the appointed contractor to deliver the METRONET Yanchep Rail Extension on behalf of the Public Transport Authority. Subsequent design changes and scope additions has led to a 'phase 2' Development Approval being sought which was approved by the WAPC on 16 November 2021.

6. Stakeholder and Community Participation

6.1 Stakeholder Engagement

The preparation of this precinct plan has been undertaken with appropriate levels of consultation between the applicant and relevant stakeholders prior to lodgement. A range of consultation activities have taken place to inform the development of this precinct plan commencing in 2018 including:

- Various pre-lodgement discussions and meetings with the City of Wanneroo and DPLH regarding the approach to the proposed amendment, manner and form.
- Ongoing discussions with the City of Wanneroo regarding the opportunity for a recreational facility, together with a future library and community centre,within the city centre core.
- Ongoing liaison with METRONET and the Public Transport Authority in relation to the location and form of public transport infrastructure within the centre and its design integration with the centre development.
- Engagement with the Department of Education to determine the need for a school site and sought in principle support for provision of one (1) primary school and agreed locational attributes.
- Liaison with relevant Government authorities including Main Roads WA regarding traffic and access matters and relevant servicing authorities including Water Corporation and Western Power to inform technical reporting.
- State Design Review Panel (SDRP) presentations (x2) in mid-2019 to inform the approach to the precinct plans urban structure.
- Engagement with adjoining landowners including LWP (Trinity Alkimos) to the south of the precinct plan area to understand land use interface and access considerations.
- Engagement with potential future occupiers including various public sector users, and private sector built form developers for key sites (eg retail development).

6.2 Community Engagement

In October and November 2019, a program of stakeholder and community engagement was undertaken as a part of developing the Alkimos Central Community Development Plan (CDP) prepared by Element (refer to **Appendix F**). This engagement sought to find out what future users of Alkimos Central would like to see and value in the region's future city centre. Feedback was received on a range of topics, summarised into six key themes as summarised in **Table 13**.

Table 13 – Community Engagement Key Themes

Topic	Topic Feedback
Connectivity	Pedestrian and cycle friendly Good public transport connections Easy access within and to the city centre Fully accessible to all
Public Amenities	Range of community services and facilities to cater for the local population
Community	Destination for events and Community connection Sense of safety and security
Entertainment	Variety of attractions and activities for all ages
Design Quality	Considered urban design Tree-lined streets Wide footpaths All-weather use Art, nature and interesting architecture and landscape features
Employment	Options across a variety of sectors

This engagement program has provided a starting point for further conversations with the wider community and stakeholders and has informed precinct planning for Alkimos Central.

A key strategy identified in the CDP is for the project area to be 'Activated from the Outset' and includes the formation of an Alkimos Central Community Reference Group (CRG). The CRG was formed in August 2020 comprising of local community associations and groups, individual members and key stakeholders and has held three workshops to date to provide input into an early activation approach and design concepts. The CRG is likely to evolve to form the basis for further community capacity building strategies that promote community participation, build local partnerships, encourage local identity, ownership and decision making and a support network within the Alkimos Central community as it grows.

7. Precinct Plan

7.1 Vision

Alkimos Central is a dynamic and adaptive place to live, learn, work and retreat. Anchored by its town centre and new take on an integrated transit hub, it will blend seamlessly within its coastal context, integrate cultural heritage, connect communities across generations and foster economic and social vitality.

The Vision will be delivered through the four place pillars of:

- **Activated + Alive**

  Urban life supporting economic prosperity and sparking interaction and exchange.

- **Leading Edge + Designed to Evolve**

  Designed to deliver for the long term, this is a coastal city centre pushing the boundaries – sustainable, experiential and distinctive.

- **Celebrating the Coast**

  A place that celebrates a coastal lifestyle, connected to and by a tapestry of green.

- **Connected Destination**

  The coastal region's transit gateway – a primary destination for the region supporting a network of communities to live, work, learn and retreat.

The vision is underpinned by the following objectives as detailed in **Section 1.4 Objectives** of **Part 1**:

1. Create a City Centre for the Region.
2. Create an Active, Transit-focussed City Core.
3. Design to Celebrate the Coastal Location.
4. Acknowledge the site's Cultural Heritage.
5. Enable a diversity of employment and living options.
6. Provide a legible movement network catering for all modes.
7. Ensure Quality Built Form Design.
8. Be an Exemplar of Sustainable Development.
9. Create a cool, shaded urban retreat.

All subdivision and development shall demonstrate (when relevant) how each of these objectives have been met.

The vision for the precinct plan is illustrated in the Alkimos Central Masterplan at **Figure 15**.

Figure 15 Alkimos Central Masterplan

7.2 Zoning and Land Use

Plan 1 divides the precinct plan area into various zones and local reserves in accordance with the DPS2 as follows:

- Commercial Zone – comprising the land identified within the Commercial Zone. The Commercial Zone provides for the city centre core of Alkimos, retail, entertainment, food and beverage, commercial, office, health, mixed use and a diversity of medium to higher density residential land uses.
- Residential Zone – comprising all land identified within the Residential zone. The Residential Zone provides for a diversity of low to medium density housing, including aged persons housing.
- Service Industrial Zone – comprising all land identified within the Service Industrial zone. The Service Industrial zone provides for a key employment area and provides for a variety of service industry developments.
- Business Zone – comprising all land identified within the Business Zone. The Business Zone provides for retail and commercial businesses which require large areas such as bulky goods / large format retail and category / theme-based retail outlets as well as complementary business services.
- Public Open Space reserve – comprising all land identified within a Public Open Space reserve.
- Drainage reserve – comprising the land identified within a Drainage reserve.
- Education reserve – comprising land specifically for a primary school.

Additional reserves for road and railway are defined under the MRS. Land use permissibility within the precinct plan area shall be in accordance with the Zoning Table within DS2 and the corresponding zone designated on **Plan 1** and outlined in **Table 14**.

When considering discretionary land uses (D or A) under **Table 1** - Zoning Table of DPS2, the determining authority is to have regard to the Zone and sub-precinct objectives as they relate to land use and the preferred land uses identified for each Zone in **Section 3.1.4** of **Part 1** of this precinct plan.

Table 14 – Precinct Plan Zoning

Precinct Plan Land Use Category	Equivalent Zone/Reserve in accordance with DPS2
Commercial	Commercial Zone
Residential	Residential Zone
Service Industrial	Service Industrial Zone
Business	Business Zone
Public Open Space	Parks and Recreation Reserve
Drainage	Waterways
Education	Public Use – Primary School

The City of Wanneroo has initiated Amendment No. 172 which proposes to align DPS2 with the State Government's Model Provisions. At the time of writing, the amendment had not been advertised publicly. Consideration will need to be given to the implications on this Precinct Plan as the amendment progresses.

7.2.1 Alkimos Station

Alkimos Station will be delivered by the Public Transport Authority as part of the METRONET Yanchep Rail Extension currently under construction. Alkimos Station is a multi-modal station, and will comprise the following:

- Main station building, including at-grade station entrance and platform concourse below.
- Bus interchange immediately north of the station building, with a weather protection provided between the station and bus interchange.
- Short term kiss-and-ride parking area adjacent to the station.
- Long term Park and Ride facilities accommodating a maximum of 660 bays on the periphery of the city centre core.

At time of writing the Station and facilities are anticipated to be completed by end of 2023.

7.2.2 Education Facility

Based on the estimated population and discussions with the Department of Education, a primary school of 4 hectares has been provided to service the community. The location of the primary school has been sited within the residential area to ensure a connection with its users and maximise access along NS2 and Tuart Drive. The school buildings can help to anchor the corner of NS2 and Tuart Drive and provide a visual landmark for the town centre entry. The school oval offers visual and physical amenity for the surrounding residences and provides another green space within the site.

7.2.3 Recreational Facility

The City of Wanneroo commissioned a business case in late 2019 identifying three potential locations for a north coast Aquatic facility. Council identified Alkimos Central as the preferred location for an Aquatic facility.

Since this time, DevelopmentWA has had meetings with the City of Wanneroo to establish:

- The size of the land required (3.5ha, being 1.5ha for an Indoor Recreation Centre delivered with Developer Contribution Plan funds and 2.0ha for an Aquatic Facility);
- Potential locations within proximity of Alkimos Station; and
- Design elements (parking and access requirements) of the proposed facility to ensure it is complementary and appropriate in the precinct.

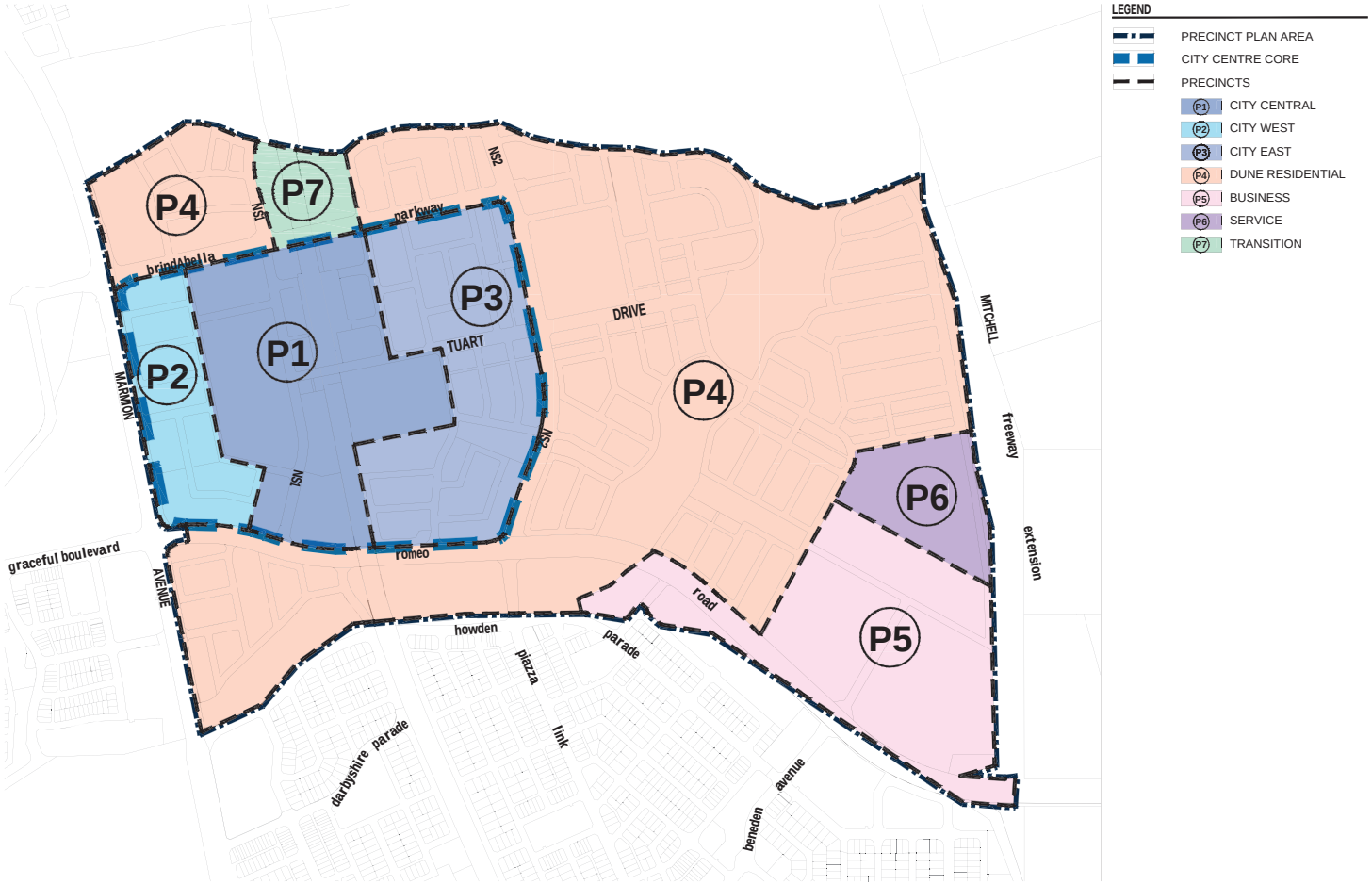
The City of Wanneroo identified its preferred site in late 2020 as reflected in this precinct plan. At time of writing, DevelopmentWA and the City of Wanneroo are negotiating the potential acquisition of a future Aquatic and Recreation facility site at Alkimos, having regard to the City of Wanneroo's DPS2, Developer Contribution Plans and identified infrastructure items.

7.2.4 Precincts and Land Use Intent

All land within the activity centre is designated within a precinct which are intended to have distinct urban forms and function and guide subdivision and development outcomes (refer to **Figure 1 – Precincts and Frontages Plan** of **Part 1**). These precincts clarify the focus of the city centre core as the heart of activity and diversity of land uses supported by a residential community and Service Industrial / Business zoned precincts.

A description of the land use intent is provided below. An **Indicative Land Use and Residential Density Plan** (refer to **Figure 16**) has been prepared to provide additional guidance as to the intended land use and subdivision layout for the precinct plan. This is described in the following sections.

Image 8 Precinct Boundaries



City Centre Core

Alkimos Central provides for a wide range of functions to cater for a diverse population of potential users. Three precincts have been defined for the city centre core, each with a unique set of characteristics, built form approaches and public realm experiences – City Central, City West and City East. The city centre core is fringed with residential precincts, all with a strong relationship to the parabolic dune that defines Alkimos Central.

The city centre core will contain a mix of uses including retail, entertainment, recreational, office, civic and residential. This range of functions is required in the ongoing liveliness and activation of any urban centre. The built format of these uses across the centre is expected to evolve over time.

Residential uses are an important part of a town centre providing a ready and accessible workforce as well as contributing to public realm activation and passive surveillance. Residences of medium to higher densities are anticipated and will be delivered in a range of formats including apartment, small or micro lots, grouped housing or terrace formats depending on the context. Providing a range of housing typologies will offer different housing opportunities and price-points into the market and attract a wider demographic mix. The proximity to Alkimos Station ensures that these uses are accessible and can reduce reliance or need for personal vehicles.

In appropriate locations, mixed use will be present in both a vertical and horizontal format. This includes housing above a shop or office or, alternately, a shop or office being located directly adjacent to a residential use.

Health and medical uses have been identified as compatible with Alkimos Central and will meet a broader strategic need for the north-west corridor. The format of these uses is suitable for the city centre core, whether as individual offices or as a larger campus style approach. Similarly, a civic recreational use is suitable within the city centre core. Health and recreation uses located in walking distance of Alkimos Station ensure ease of access to these services for locals and the wider catchment.

City Central (P1)

City Central precinct contains the primary retail and entertainment area located around the intersection of NS1 and Tuart Drive and adjacent to Alkimos Station. Retail, entertainment and civic uses will provide anchor activities fronting the two key pedestrian oriented main streets and extend via a distinct east-west 'activated pedestrian link' connection from Marmion Avenue to a central Town Square and Alkimos Station. A multi-use recreation facility is proposed in this area providing additional civic and community facilities.

This precinct anticipates a hybrid retail format with both internal circulation and externally active small scale retail and entertainment uses providing an anchor to the NS1 main street and the east west pedestrian lane. Future retail development will address NS1 as its primary frontage and will include street level access. Parking and servicing of this centre are to be located via secondary streets and laneways ensuring the main street feel on NS1 and Tuart Drive is maintained. Other uses will engage with the street and may include multiple levels to help frame NS1 and Tuart Drive. This precinct also supports the creation of landscape connections to the Pinnacles and associated public open space.

City West Precinct (P2)

City West precinct is located between the retail and entertainment core and Marmion Avenue. This location is expected to accommodate supporting land uses to the City Central (P1) Precinct defined by its mix of office, commercial, and residential uses, green streets and large flexible blocks. This location has good exposure to passing traffic on Marmion Avenue. The close proximity to Alkimos Station means that it is highly suitable for office and residential uses that can utilise height to take advantage of views to the ocean.

City East Precinct (P3)

City East precinct sits to the east of Alkimos Station and serves as the transition between the City Central (P1) Precinct and the surrounding residential context. This higher intensity inner urban area will promote office/ commercial and a diverse range residential living options in close proximity to the core of the precinct. Health and aged care uses as well as retirement living would be considered appropriate in the precinct.

This site takes advantage of the access to the school site opposite NS2 and the POS transect linking back to the dune. Residential uses can also take advantage of the adjacent recreational facility and Alkimos Station. The land uses to the north of Tuart Drive are more likely to accommodate mixed uses of residential and office. Land uses to the south of Tuart Drive are more likely to accommodate small lot, group housing and terrace based residential uses as they are further from the core.

Residential Precinct (P4)

The Residential precinct supports low to medium density housing surrounding the city centre core and serve a supporting role in activating the centre. The designated densities in the Residential Zone generally reflect the distance from the city centre core and Alkimos Station. Higher densities are located along the main transport routes and include rear access laneways to minimise crossovers onto these primary routes. Residential typologies adjacent to the dune edge tend to be larger reflecting the natural landform and offering better potential for a softer interface with the dune.

Alkimos Central's residential precinct will be high quality places to live, with strong landscape corridors and edges that follow streets, and lead to open spaces and trails through the dune environment.

Business (P5) and Service Industrial (P6) Precincts

These precincts sit at the eastern edge of the site adjacent to the Mitchell Freeway offramp easily accessible from Romeo Road. These precincts are a primary employment area with service industrial, commercial, convenience retail and large format retail that are expected to accommodate these car-based uses away from the main street and city centre core. The anticipated typology on this land use reflects large format showrooms and warehouses.

Transition Precinct (P7)

The transition precinct functions as parking for Alkimos Station containing park and ride facilities. The underlying zoning is commercial, and it is anticipated that these could serve as future growth areas for the town centre.

7.2.5 Residential Yield and Density

The precinct plan provides for a range of densities to facilitate a variety of housing types, ranging from single detached dwellings in the Residential Precinct to a mix of small lot, group housing, terrace and apartments towards the city centre core. At a precinct plan level, the proposed dwelling yields have been calculated using a staged approach, with a 2051 target and a 2071 target. This staged approach is considered to be appropriate for a centre the size of Alkimos Central as the type and density of residential development will mature as the city centre core non-residential uses (retail, office, entertainment, health, etc) are established.

The precinct plan dwelling target is 2,457 dwellings at 2051 and 3,157 dwellings at 2071. This dwelling target averages 49 dwellings per gross hectare based on a gross area of 54.0965ha (including 43.6679ha in the Residential Precinct (P4) and 10.4286ha of mixed-use land within the Commercial Zone (P1, P2 and P3)). This will support an estimated residential population of 6,263 people (2051) based on an average occupancy of 2.55 persons per dwelling.

Within the Residential Precinct (P4), a residential density code range is provided, refer to **Plan 1** of this precinct plan. The densities will be guided by the **Indicative Land Use and Residential Densities Plan** (**Figure 16**). Residential density in the city centre core will be guided by the development requirements of **Part 1** of this precinct plan and any applicable PLDP/LDP(s). The inclusion of a density range allows flexibility in the future to increase densities to meet market demands while giving security to the City of Wanneroo and DPLH that adequate densities will be achieved.

Table 15 provides a breakdown of the dwelling type, proposed residential densities, dwelling yield and mix at 2051.

Table 15 – Precinct Plan Residential Yields

Dwelling type	R-Code	Indicative Yield (at 2051)	% Mix	Comment
Single Lots	R20-R25	834	34%	Site zoned R20 -R25 in the Residential Zone
Semi Detached / Medium Density Dwellings	R30- R80 & RAC-0	1,123	46%	Site zoned R30 -R80 in the Residential Zone and Commercial Zone (RAC-0)
Sub-Total		**1,957**	**80%**	
Multiple Dwellings (Apartments)	RAC-0	500	20%	Assumes development of 500 multiple dwellings within the Commercial zone.
Total Yield at 2051		**2,457**	**100%**	

7.2.6 Residential Dwelling Mix

This precinct plan is supported by the Housing Need Assessment prepared by RPS (refer to **Appendix E**) which re-enforces the achievement of dwelling targets and mix that will be delivered by the precinct plan.

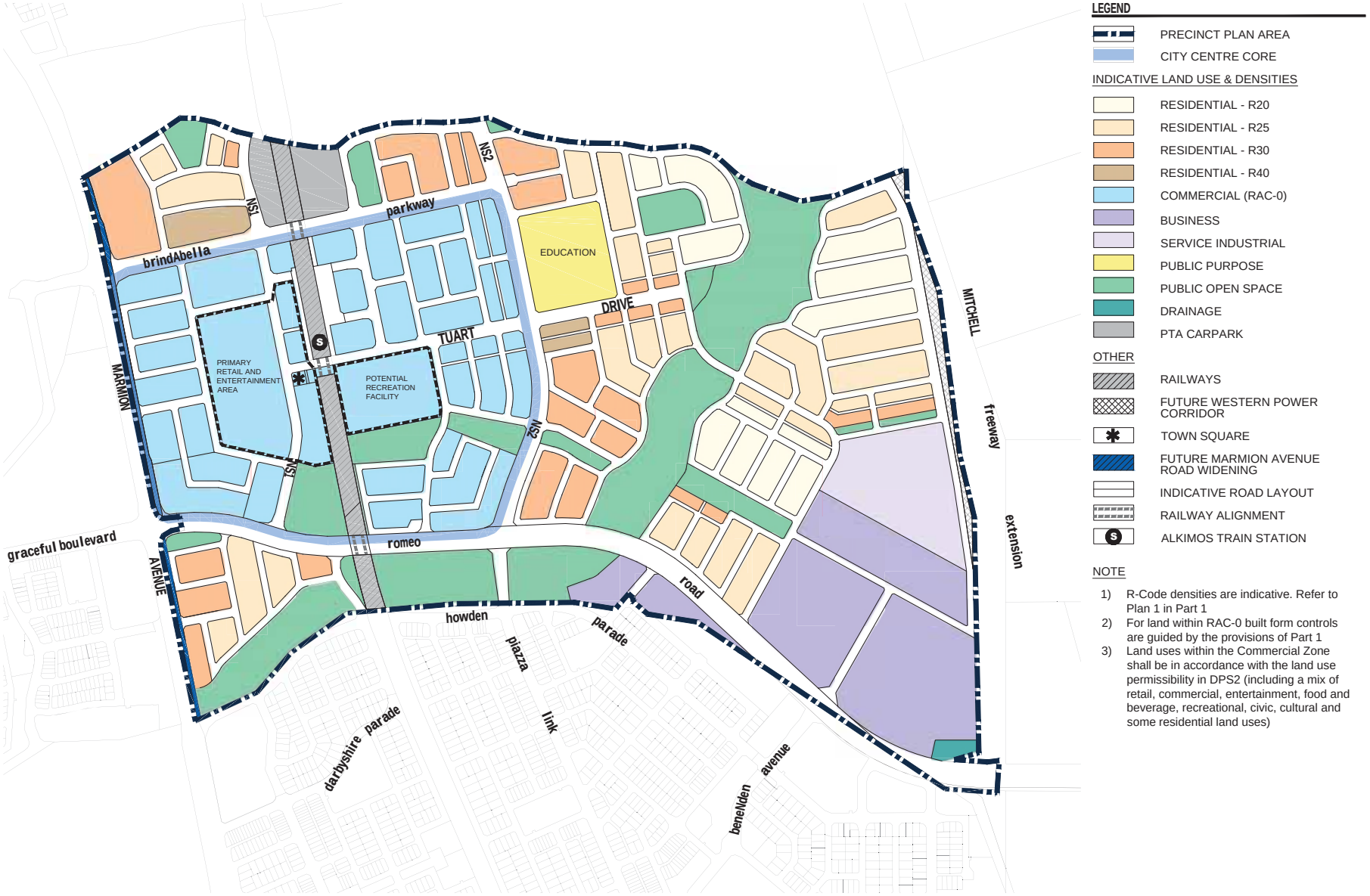
As detailed in **Section 5.2.1.2**, while the Housing Needs Assessment identifies the potential demand for over 2,800 dwellings to be developed at Alkimos Central by 2051, the precinct plan has an estimated physical capacity at this time of 2,457 dwellings – refer to **Table 15**.

The precinct plan dwelling mix proposes slightly higher shares of medium density housing and multiple dwelling targets than indicated in the Housing Need Assessment, though this is regarded as an appropriate response as part of the demographic mix of the development.

The Housing Needs Assessment suggests the Alkimos Central development will likely extend beyond current forecasts and continue to add dwellings at least until 2071. The report suggests a further 500-700 dwellings could be supported in Alkimos Central post 2051, assuming retail integration and tertiary health and/or education service provision, with a total dwelling potential of 2,957 to 3,157 dwellings by 2071.

The analysis within this report indicates that there will be sufficient demand to accommodate the proposed supply and support continued residential redevelopment and intensification over time to help Alkimos Central realise its full residential potential.

Figure 16 Indicative Land Use and Residential Densities Plan



7.3 Role in Hierarchy, Size and Use

7.3.1 Economic and Employment Strategy

This precinct plan is supported by the Economic and Employment Strategy prepared by RPS (refer to **Appendix I**) with a summary of the key elements provided. The future economic potential of Alkimos Central depends on the level of investment in key tertiary education and health facilities, the form and source of this investment and its scale and size. Three specific economic "scenarios" for the development and growth of Alkimos Central have been assessed in this Strategy:

- Scenario 1 – Full Economic Potential: includes full tertiary public and private hospital and/or TAFE/small university campus.
- Scenario 2 – Private Health and Education Only: reduced size and scale of tertiary health and education, focused on private hospital only.
- Scenario 3 – No Tertiary Health and Education: health is limited to general health service needs. Education offering in the Centre is school-based only.

These three scenarios reflect the uncertainty that exists on whether public tertiary health and education investment (either direct or indirect) can be secured for the centre, and the flow on impact these investments have on local employment and retail need and capacities in the centre in the long-term.

RPS estimates that the full economic potential of Alkimos Central – expected to be realised in 2042-2052 – will yield over 11,651 jobs. This compares with approximately 10,450 jobs under Scenario 2 and 9,250 jobs under Scenario 3.

Employment growth is expected to continue to occur post 2042-2052 as Alkimos Central continues to evolve and mature as an employment, business, and economic centre in the North West Corridor. This will likely involve a change in the mix of uses, as office/commercial and regional servicing sectors continue to grow, and local and district level population services slow as the District and wider catchment reach maturity.

This employment will help the wider Alkimos-Eglinton District and Corridor meet their employment self-sufficiency targets and help to provide significant, diverse and high value employment opportunities. However, this level of employment is contingent on the economic potential of Alkimos Central being realised, including:

- major investments by all levels of Government in the development of the Centre and in facilities and services to support the region;
- support for regionally significant retail and entertainment activity of a scale commensurate with the Secondary Centre role of Alkimos Central; and
- the attraction and growth of businesses and private investment, including a strong cluster of mixed industry and commercial office-based business in the long-term.

If realised, Alkimos Central will represent a key driver of economic health and strength in the City of Wanneroo and the wider North West Corridor, establishing a critical mass of public and private sector investment and helping to maximise the return on investment to Government, business/ industry and the community of major catalytic transport infrastructure.

7.3.1.1 Employment Self-Sufficiency

The Alkimos-Eglinton District Structure Plan established a minimum employment self-sufficiency target of 60%. This means that there is to be a minimum of six jobs for every ten workers living in the Alkimos-Eglinton District. Self-sufficiency means that these jobs are not necessarily filled by local workers (that is employment self-containment), though it is expected that the provision of a diversified range of high order local employment will be a major driver in residential settlement and therefore enhance the levels of economic-based travel containment over time.

Assuming a workforce share of total residential population of 50% (in line with corridor averages and accounting for the demographic breakdown of the population) and the 60% employment self-sufficiency rate, there will need to be approximately 19,500 jobs provided within the Alkimos-Eglinton District (and 33,000 in the broader Catchment). This is detailed in **Table 16**.

Table 16 – Alkimos-Eglinton District and Catchment Employment Requirement

Measure	AE District	Catchment
Population	55,000 to 65,000	90,000 to 110,000
Labour Force	32,500	55,000
Jobs Required (60% ESS)	19,500	33,000

(Source: RPS)

Analysis of the employment and residential development potential of Alkimos Central indicates that local Employment Self-Sufficiency is expected to range between 224.2% and 282.4% (local jobs as a ratio of local workers living in the Centre). This high Employment Self-Sufficiency reflects the employment, business, and industry focus of Alkimos Central within the wider District. By 2042-2052, Alkimos Central is expected to contribute 53.6% of the jobs required in the Alkimos-Eglinton District under Scenario 2.

7.3.2 Mix of Non-Residential Land Uses

SPP 4.2 requires that activity centre structure plans provide for a mix of land uses to generate a broader economic base and take advantage of shared facilities.

As detailed in **Section 5.3.4**, the Alkimos Secondary Centre should provide 40% non-retail land uses. The Indicative Land Use and Residential Densities Plan (**Figure 16**) has been prepared to demonstrate that the precinct plan is capable of providing sufficient employment floorspace and land use mix. Based on the proposed subdivision layout, a total of 63 non-residential lots are envisaged for the precinct plan area.

The mix of land use floorspace (excluding residential) is provided in **Table 17** based on Scenario 2.

Table 17 – Mix of Land Use Floorspace

Land use category	Estimated floorspace NLA (2041) – Scenario 2	Percentage
Non-Retail		
Health / Welfare / Community services	196,000sqm	39%
Industry and Business	59,000sqm	12%
Entertainment	16,000sqm	3%
Other	10,000sqm	2%
Commercial / Office	106,000sqm	21%
Bulky goods retail/ showroom	45,000sqm	9%
Shop-Retail	72,000sqm	14%
TOTAL	**504,000sqm**	**100%**

(Source: RPS)

7.3.3 Retail Needs Assessment

Alkimos Central has been designed to operate as a secondary centre. This is consistent with all higher level planning documentation including SPP 4.2.

A Retail Needs Assessment has been prepared by RPS to support this precinct plan (refer to **Appendix H**). The Retail Needs Assessment estimates in 2041 a total of over 72,000sqm of Shop Retail floor space and over 45,000sqm of Bulky Goods/Showroom floor space. This is regarded as appropriate and consistent with Alkimos Central's role as a centrally located Secondary Centre within the North-West Corridor.

Based on Scenario 2 (refer to **Section 7.3.2**) (reduced size and scale of tertiary heath and education), RPS estimates that Alkimos Central has the potential to accommodate approximately 500,000sqm of floor space (GFA) between 2042-2052. The estimated mix of land uses to be achieved in the precinct plan is outlined in **Table 17** based on Scenario 2.

7.3.4 Trading Impacts on Existing and Planned Centres

Maintaining the sustainability of the retail network and hierarchy within Metropolitan Perth is the principal objective of SPP4.2. This policy seeks to balance the economic benefits associated with new retail floor space in development with the need to protect consumer welfare from an oversupply and eventual degradation in the quality and accessibility of retail floor space in the area.

Overall, RPS estimates that the impact of the establishment and operation of Alkimos Central as a Secondary Activity Centre will have minor impacts on the future potential trading performance of retailers at Yanchep/Two Rocks (Strategic Metropolitan Centre) and Clarkson (Secondary) centres. For Clarkson, the development of Alkimos Central at its full capacity will still provide opportunity for Clarkson to expand in line with its local population catchment before reaching a sustainable level at or around 45,000sqm. Yanchep/Two Rocks District is likely to see just over 5% of its total expenditure pool leave the District once it has reached a population of 150,000+ (post 2060), leaving almost 100,000sqm of local demand in 2041 growing to over 200,000sqm between 2060 and 2080.

No impact is expected on District, Neighbourhood and Local Centres located within the Primary Trade Area of Alkimos Central. The distribution of retail across current and proposed centres in the Trade Area is reasonable, supports centres at their proposed size and role and meets the needs of the community.

7.4 Urban Structure

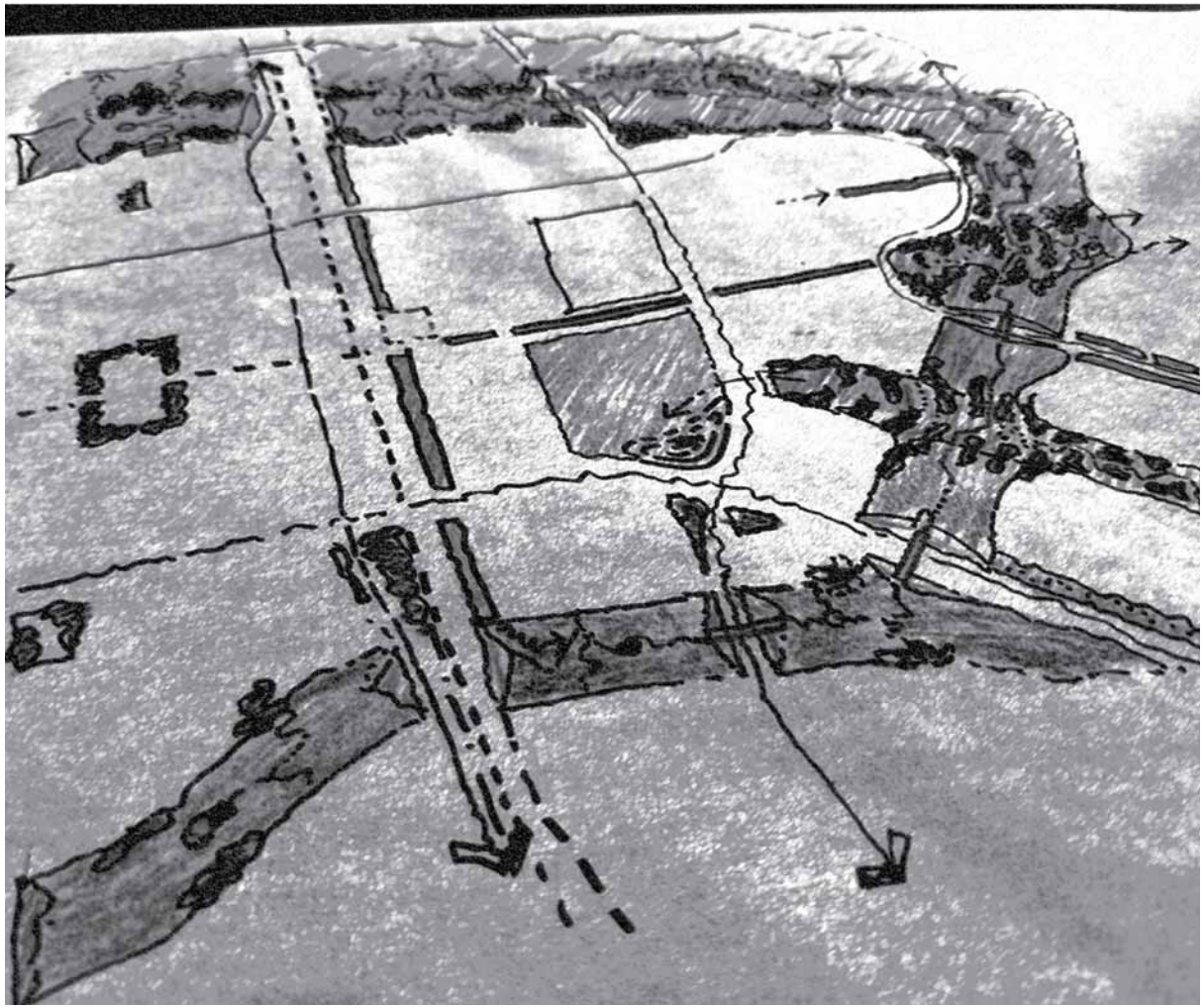
7.4.1 Lot Layout and Structure

The urban structure, form and layout of Alkimos Central responds to its environmental and cultural context and represents best practice urban design principles.

The following section outlines the design response based on:

- Environmental Features
- Movement Grid
- Urban Axis
- Connection
- Precinct Plan Form and Layout

Image 9 Parabolic Dune

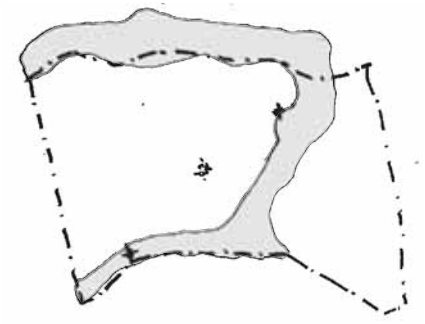


Environmental Features

Alkimos initially relies on the environmental features of the site to inform its urban structure. A key feature of the site is the parabolic dune that frames the western portion of the site. This dune separates the site into two halves but doubles as a key pedestrian movement system connecting the site to the adjacent development to the south and further west to the coast. This enveloping dune feature has been used to define and concentrate the focus of the project toward the city centre core.

The other key environmental feature includes retention and utilisation of good vegetation as natural parkland and biodiversity features. A layer of public open space has been applied to the site based on retaining the good vegetation, of which there is included two Threatened Ecological Communities (TEC), providing open spaces for each neighbourhood and for drainage. A cultural context overlay has also been applied linking the dunes, the TEC and Pinnacles site through a transect approach.

Image 10 Parabolic Dune



Site
The parabolic dune is retained and celebrated as the sites key identifying feature. It is the foundation of the future town centre.

Image 11 POS

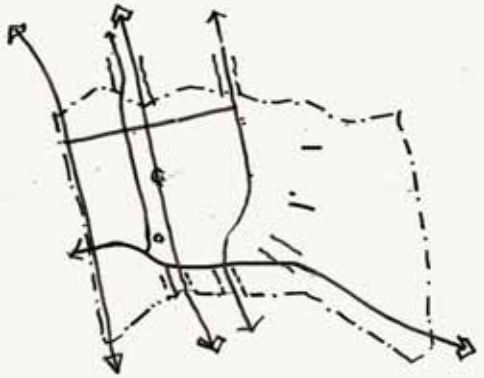
Public open space and regional open space
Connected town square via linear parks and streets to the open space at both local and regional level.

Movement Grid

Existing and planned streets inform movements across the site and the interface with the context. Marmion Avenue is an existing primary movement corridor and provides a strong edge to the west. The future Mitchell Freeway extension provides a firm barrier along the eastern edge. Romeo Road runs east-west along the southern third of the site and links into the existing Graceful Boulevard providing a connection to the coast.

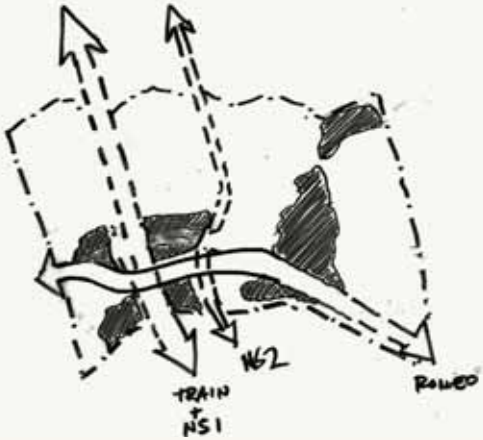
Two north-south connections dissect the site connecting to Alkimos Vista to the north and Trinity Estate to the south and ensure connectivity and integration to neighbouring estates. These fundamentally establish a movement hierarchy. A railway corridor further dissects the site running parallel to Marmion Avenue and provides a station as a central node of interest and activation. These street movements provide the urban structure of the site and identify the busier western portion of the site as suitable for a town centre. With the major roads providing the frame for the city centre core. The core area will include a high emphasis on lower volume and lower speed streets with an emphasis on pedestrian and non-vehicle movement via leading public realm design.

Image 12 Fixed Elements



Fixed element cuts
Fixed infrastructure including Romeo Road, Brindabella Parkway, Marmion Avenue and the rail corridor means that the dunes will be cut and the vegetation will be impacted.

Image 13 Good Vegetation



Good vegetation after fixed elements imposed
Vegetation becomes disconnected and the central community becomes enviable. The best opportunity is to retain the dune.

Urban Axis

The urban grid on the western edge aligns to Marmion Avenue and provides a flexible network of streets to maximise permeability appropriate for a town centre. The grid is cranked as it interfaces with the dune taking cues from this key site feature and working with topography. This cranking enables the grid edges to interface with the dune and provides vistas down streets to the parabolic dune feature. The blocks resulting from the grid adapt to the intended land uses providing opportunity for a fine urban grain as well as neighbourhood and business scale blocks.

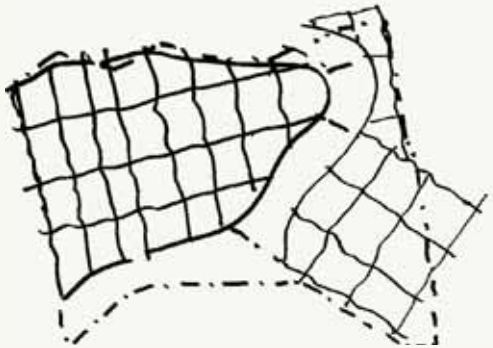
Connection

"Cuts" through the dune have been limited to those critical for movement across the site to retain the natural setting and reinforce the pedestrian movement system. The dune offers 'approach and reveal' opportunities on entry as the roads pass through or over the dune and offer views to the town centre or neighbourhoods. The resulting urban structure is one that responds to its environment, embeds the cultural ties to the land and provides a clear hierarchy of movement to the town centre. Land uses respond to the overlaid grid providing the regularity and complexity required of a town centre.

Image 14 Intersection Grids

Intersecting "cranked" grids
The development grids are projected across the site and allow views to the dunes terminating at each street. Visually connecting the dune to the town centre.

Image 15 Resulting Mesh

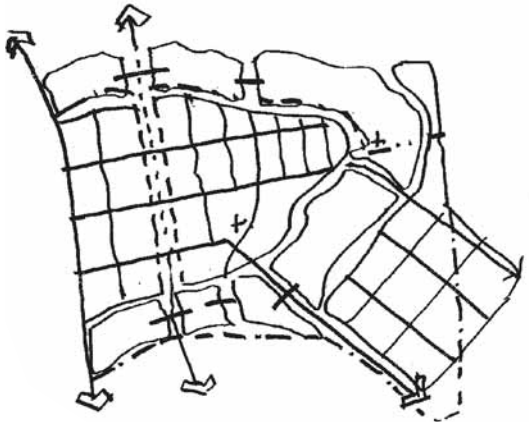


Resulting mesh
The grid and parkway combine to connect the dune physically and visually - ensuring it remains prominent and public.

Image 16 Dunes

Cuts
The cuts through the dunes need to be resolved as gateways and thresholds into the site. They become opportunities for approach and reveal.

Image 17 Urban Form Enclosures



General enclosure
The resulting urban form ensures the primacy of the dune and the establishment of a compact and efficient built environment that is easy to get around.

Precinct Plan Form and Layout

The layout of streets in Alkimos Central considers practical ways to service buildings and land uses, while creating high quality public spaces for the community. The key elements that underpin the form and layout are:

- The Joondalup train line that runs along the Mitchell Freeway breaks from the freeway in Butler and will provide Alkimos with a new train station in the city centre by late 2023. The intent of this alignment is to optimise the location of stations within the catchment and create activity centres that are well integrated with regional transport.
- A highly walkable city centre core of approximately 900m x 700m is created around the station providing a focus for employment and a mix of intensive land uses. The city centre core is framed by Marmion Avenue to the west, Brindabella Parkway to the north, Romeo Road to the south and NS2 to the east. Romeo Road provides the key east-west connection between Marmion Avenue and the Mitchell Freeway.
- The primary main street (NS1) is sited to the west of Alkimos Station and runs parallel to the train line. It is the main retail, commercial and entertainment area, a place of social and economic activity. The north-south orientation enables frontages to be designed to shelter pedestrians from strong south-westerly winds, offering sun and shade in the morning and afternoon and minimising the time exposed to direct sunlight.
- A second east-west main street (Tuart Drive) provides a key link from the Alkimos Station and the City Central Precinct (P1) toward the east and the dune ridge beyond with the street transitioning to a wider landscaped promenade as it moves east.
- The retail and entertainment core of Alkimos Central is made up of a larger scale commercial lot providing flexibility for developments of a size required to generate the critical mass necessary for a secondary centre. Notwithstanding this expectation, the ground plane response requires the sleeving of smaller retail, food and beverage and commercial tenancies on the west as well as the east-side of the main street to provide diversity and interest in activity and an overall pedestrian friendly and engaging environment.
- Beyond the main street, the City West (P2) and City East (P3) precincts of the city centre core offer a finer urban grain network that accommodates liveable streets to host residential and commercial uses within walking distance of the retail core activity.
- A clear grid network encourages pedestrian activity to and through the city centre. The main street intersects with an east-west street where Alkimos Station and the Town Square create a focal point for pedestrian activity. With the large retail site to the west designed to deliver an active publicly accessible east-west connection that is open day and night, splitting the block and facilitating connection to the west.
- The Residential Precinct (P4) wraps around the city centre core providing a diversity of dwelling options and densities together with provision of a Primary School site.
- The south-eastern reaches of the project area provide a key focus for larger format Business and Service Industrial uses (P6 & P7) with high proximity to Romeo Road and the Mitchell Freeway for broader commercial access and distribution networks.

Landform & Dune Interface

The parabolic dune is the most significant topographic feature of the site with approximately a 26m difference between the lowest and highest points. The highest points of the dune could potentially facilitate lookouts and places with desirable views and vantage points to the ocean. Further, the parabolic dune and Regional Open Space to the north are intended to create a space which can accommodate active and passive uses such as walking and cycling. Refer to cross sections at Images 19 and 20.

From an earthworks perspective, the intention is to preserve the dune as far as practically possible. This is achieved via a constant datum being referenced for which the majority of the dune interface is treated with a specific road typology referred to as the "Parkway" or public open space. The Parkway is intended to be organic and sinuous in character, that responds to the topography and is supported by "soft edges" through flush kerbs, native vegetation and vegetated verges. On some occasions, the existing topography along these sections is such that to achieve an appropriate road alignment it may be necessary to extend the earthworks batters into parts of the reserve. Orientation of the blocks adjacent to the Parkway means that the extent of this would be minimized and this is further reinforced as an objective of the road design. Beyond the Parkway, the intended intersecting roads will provide vistas down the street to the dune feature, further immersing the dune into the residential precinct.

Image 18 Dune Vistas and Access

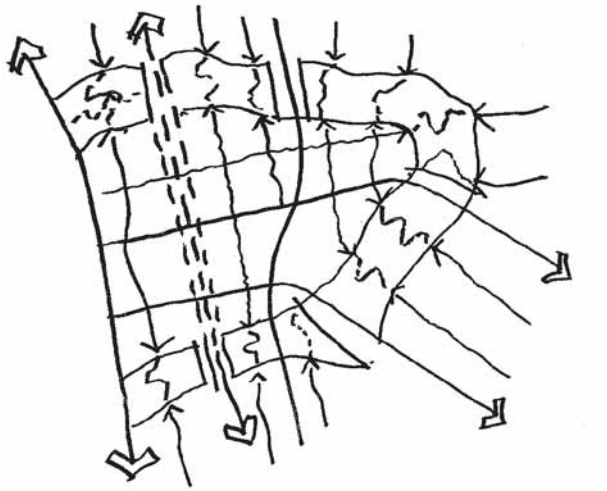
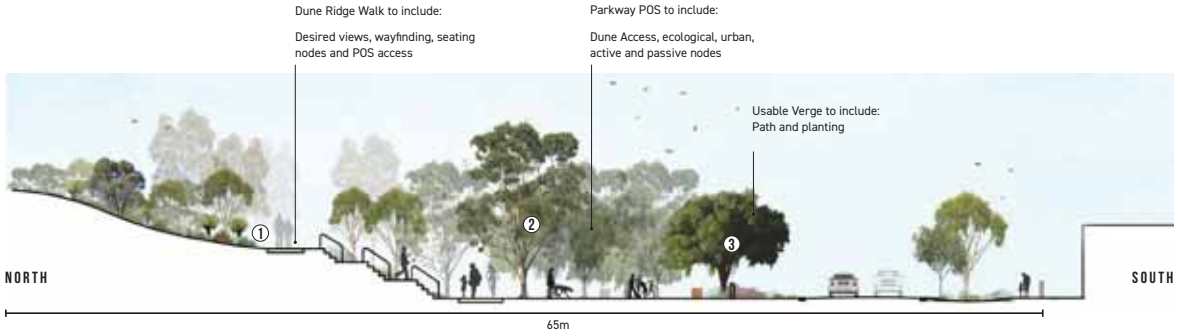


Image 19

Image 20



7.5 Landscape and Public Realm

7.5.1 Landscape Masterplan

A Landscape Masterplan has been prepared by UDLA (refer to **Appendix J**) to articulate the approach to the public realm including the retention and protection of the Pinnacles, parabolic dune, the street network, city centre core and areas of Public Open Space (POS).

The design process commenced with a review of the existing background information for Alkimos Central. Four high level Landscape Principles have been developed for the precinct.

1. Cultural Context – Protect, preserve and support the principles, protocols, physical and spiritual aspects of Noongar Country, Family and Knowledge and implement the cultural principles for the project.
2. Two loop – The creation of two loop trails for pedestrian and cyclists, the larger outer loop connecting Alkimos Central to the beach, the inner loop connecting to the city centre.
3. Unbroken Dune Ridge Walk – As part of the larger outer loop, the section traversing over the parabolic dune should be unbroken, meaning where possible bridges will be constructed over the rail lines and major road cuttings.
4. 20,000 Trees – An aspirational target of planting one tree per 100sqm or 20,000 trees for the precinct.

A summary of the landscape response 'Key Moves' is outlined below and illustrated at **Figure 17 - Alkimos Central Landscape Masterplan**.

Civic Heart and Linear Park

The "civic heart" (also referred to as the city centre core) of Alkimos Central will be a grid of tight streets with generous tree canopy and verge side planting forming the basis of a buzzing urban realm characterised by filtered light, shade, and coastal colours, materials and textures. The scale of streets and paths will make for a great pedestrian experience with the benefits of being nearby, but protected from the Alkimos coastline. At the centre of the civic heart will be Alkimos Town Square. Generally following the rail corridor will be a Linear Park/ green embellishment connecting either end of the parabolic dune to the city centre and Alkimos Station. The main street character created around the intersection of NS1 and Tuart Drive will be a slow speed environment for vehicles, and result in highly active streets for pedestrians to engage with.

Image 21 Civic Heart

(Source: UDLA, 2021)

Alkimos Central Town Square

The Alkimos Central Town Square is to be the heart of Alkimos Central and the principal urban gathering space. It will be activated at the edges with ground level retail, including cafés and restaurants, with places to sit in sun or shade, watch activity and gather. The concept for the Town Square is built on a number of key principles outlined below which will be enforced by section 3.1.4.4 of Part 1 and any site-specific requirements contained in an applicable PLDP/LDP(s).

Location & Movement

- The central location of the Town Square provides a visual and physical destination and/ or departure point to key activities within the precinct.
- The location enables the activation and framing of 'all four corners' with the Main Street and Tuart Drive able to have activated ground planes and while a square by its nature, provides a point of relief and retreat from the urban environment, the two active edges on the south and eastern edges can be activated and interplay with the variety of civic and community uses anticipated in the square.
- Being at the confluence of the two key Neighbourhood Connectors of Main Street (NS1) and Tuart Drive the connection to the Pinnacles site to the south, the east-west pedestrian link to the west (through the retail and entertainment area), the transitionary Alkimos Station to the north and to the east, the future recreation facility and the significant future residential population beyond, is logical and legible.

Image 22

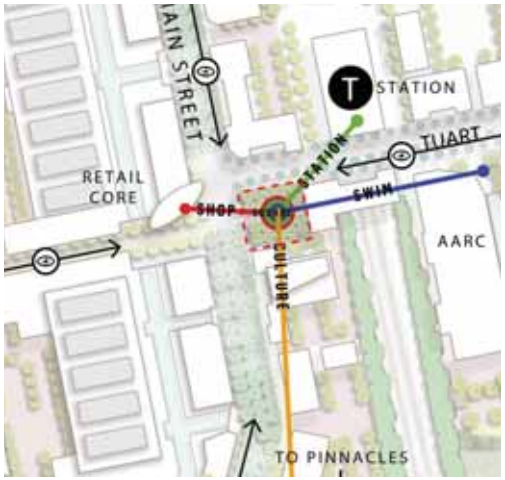


Image 23

Perth City Train Station

Image 24

The Pinnacles at Alkimos Central (Source: DevelopmentWA)

Image 25

Retail - Howey Place Melbourne

Microclimate

- A north-facing Town Square enables good solar penetration as there will be limited overshadow from buildings, though equally, this orientation provides the opportunity for buildings to protect the square from the prevailing south-westerly winds and ensure the space is responsive to the Western Australian coastal climate.
- Complemented with natural shade via the planting of trees and shelter from canopies of the flanking buildings (guided via PLDP/LDP(s)) and structures within the square, there is an ability to create a pleasant microclimate and place for people.

Image 26

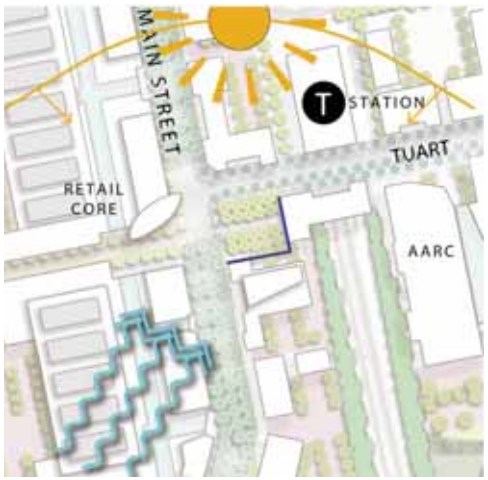


Image 27

MFO Park, by Raderschall (Source: Urban Next website)

Image 28

The Annenberg Center For Information, Science and Technology, by OJB (Source: OJB website)

Size, Scale and Function

- Based on benchmarking successful Town Squares, a space that is sufficiently sized (approximately 900sqm) and dimensioned (around 30 x 30m) it is considered the space can be utilised for regional level events (where required) though more importantly can provide a scale comfortable for “everyday use”.
- In its infancy, creating a space that enables this will be important. Initially the design objective to contain its size, frame views and establish edges will predominantly be via landscaping that is sought to prevail into longevity, however the design equally needs to provide a good fit for future façades and enable expansion as the intensity of the precinct and activity increases.
- This requires a highly functional and flexible space to be designed, given the majority of the time it will be used by individuals and smaller gatherings. Thus the objective of the space to be attractive and welcoming for more intimate, ad-hoc, spontaneous activities, eg. lunch in the “fresh air”, a meeting point, waiting for public/ ride share transport or play for children will be a key focus of the detailed design.

Image 29

Image 30

Green, shady landscape in an urban setting

Image 31

Image 32

Model Making Exercise – Community Reference Group Mtg #2 – 29 Sept 2020 (UDLA)

Activation & Useability

- Framing the Town Square with activated edges on the adjoining sites to encourage activity to spill into the public realm will be key to the success of the Square. As previously concluded, this could be in the form of alfresco dining but civic uses such as a community centre or a library could provide sufficient activity particularly if the facility seeks to incorporate the space into its functions (eg. “Rhyme Time”, “Outdoor Reading room” or community meetings).
- Furthermore programming the space with activity that encourages people to linger and interact will benefit the resilience of the region and reflects community aspirations.

Image 33

Image 34

Temporary activities linked to surrounding development sites in a constantly changing town square.

Image 35

MazelTov - 81Font, by Arkitekter (Source: Archdaily website)

Image 36

Active food and beverage on building edges to open out on to the town square.

The Dune Ridge Walk and Parkway

The parabolic dune topography links Alkimos Central to the beach by providing an unbroken connection that traces the ridge line towards the coast. The Dune Ridge Walk will provide active and passive recreation opportunities along its length. It will have multiple entry/exit opportunities to encourage use and connect back to the city centre. Prominent viewpoints and key active recreational nodes will be universally accessible, however, due to the natural elevation changes along the route it may not be feasible to maintain a fully accessible loop.

Where roads cut through the dune, alternate crossing opportunities will be investigated for feasibility, such as pedestrian bridges or signalled crossing points at road level. The 'Parkway', which refers to the road adjacent to the dune, will have active and passive POS at key locations abutting the dune. The road and path are intended as low key and meandering routes – organic and sinuous in character with soft edges, flush kerbs, native vegetation and opportunities for vegetated verges.

Image 37 Dune Ridge Walk

(Source: UDLA, 2021)

East – West Civic Spine

The East-West Civic Spine establishes a direct visual and physical connection from the eastern edge of the dune to the city centre and beyond towards Marmion Ave. The Civic Spine is achieved on the west via an active publicly accessible pedestrian lane through the retail core, and on the east can be characterised as a processional street with a large central vegetated median that provides an experiential pathway between the Town Square and the dune ridge. The POS at the eastern end of Tuart Drive, terminating the axis, uses the natural amphitheatre topography of the dune and will be established as a great public gathering space, ideal for performance, events or just relaxing with an overlook towards the city and ocean. Sitting atop this amphitheatre space will be a prominent public building that celebrates the viewpoint and can potentially become an iconic space for the Alkimos city centre.

Image 38 East West Civic Spine

(Source: UDLA, 2021)

Figure 17 Alkimos Central Landscape Masterplan

(Source: UDLA, 2021)

Cultural Interpretation Plan

The Cultural Interpretation Plan illustrates the cultural context, connections and significant features within the precinct plan area. This information is grounded in place, oral histories and traditional knowledge, and **Figure 18 - Cultural Interpretation Plan** only serves as a graphic representation of the Aboriginal (Noongar) Heritage on site.

The Pinnacles were identified during the cultural engagement process and became a key driver for the cultural design and interpretation plan. Some aspirational outcomes for the Pinnacles site are;

- Preserve and Protect the Pinnacles
- Noongar Access and Ongoing Cultural/ Maintenance Processes Encouraged
- Space for Ceremony and Cultural Business (Dance Ground and Meeting Space)
- Performance Space(s)
- Spaces for Learning and Knowledge Sharing (Outdoor Classrooms)
- Cultural/ Community Centre
- Active POS (BBQ's, Play, Exercise etc.)

Figure 18 Cultural Interpretation Plan

Extract from UDLA

7.5.2 Public Open Space (POS)

The size of POS is indicative of the uses it can offer the community. Smaller POS offer day to day passive recreational opportunities, whereas larger spaces provide organised active recreation and events. Due to these differing uses and demands, it is necessary to assess the distribution of these spaces to ensure the population have equitable access to each type of open space and the benefits that they provide.

POS can include a range of different functions depending on their size, location and design. For example, some may offer ecological functions and others may provide purely passive or recreational functions. Ensuring that a balanced mix of POS types is achieved across the site, guarantee's the community access to a variety of different outdoor spaces which can be used by diverse user groups.

In light of the above, the POS areas proposed for the site can be categorised into four (4) types:

1. Micro POS
2. Local POS
3. Neighbourhood POS
4. District POS

The site has 21.56% POS, this vastly exceeds the minimum requirement of 10%. The diverse types and sizes of POS across Alkimos Central, caters for a range of different user groups. Additionally, the map locates the Town Square and the recreational facility, whilst not technically POS under scheme calculations, these spaces offer similar uses and benefits to the public.

A POS schedule is provided at **Table 18** and POS Plan at **Figure 19**.

For the 'POS/Dune Interface' as designated on **Plan 1, Section 2.3** of **Part 1** allows for a POS reduction of up to 10% in total area on any plan of subdivision. This allows for flexibility in the location and treatment of the 'POS/Dune Interface' to respond to detailed design, and ensure the retention of good quality vegetation is considered and retained.

7.5.3 Tree Planting Target

A key objective for the precinct plan is to create a cool, shaded urban retreat from the coast. To achieve this objective, the precinct plan and Landscape Masterplan envisage an ambitious tree planting strategy that will establish a dense urban forest.

In response to the open nature of the site and to create a cool, shaded resilient urban environment, an aspiration to plant 20,000 trees will provide shade, green links, wayfinding and a sense of place. Along with the public realm via design of streets and POS, there is an expectation that the private realm will contribute to the overall tree target (refer to **Section 7.6.2**).

20,000 trees is based on one tree for every 10m or one tree every 100sqm of land area. It is intended the project be assessed against this goal on an ongoing basis as stages are implemented.

7.5.4 Trees and Plant Species

Trees for the landscaping of the public realm should be selected utilising the 'Tree Species and Planting Principles' (refer to **Appendix K**) to ensure the right tree for the right location is used. These 'Planting Principles' may apply to private realm and enforced via an applicable PLDP/ LDP(s) if required. This will ensure healthy growth and lower maintenance and replacement of trees over the long term. In this regard a tree matrix has been prepared and is included at **Appendix K** and includes a range of species which have shown to be urban tolerant and able to survive in the city centre core and broader precinct plan area. This matrix has been prepared on the basis of the following tree selection criteria:

1. Tree species and performance in an urban environment;
2. Site specific analysis (soils, pH, verge width);
3. Projected future climate conditions (reduced rainfall and increased temperatures);
4. Desired ecosystem services; i.e. urban shade/cooling, stormwater mitigation, biodiversity, feature planting etc.
5. Functions and uses of the space.

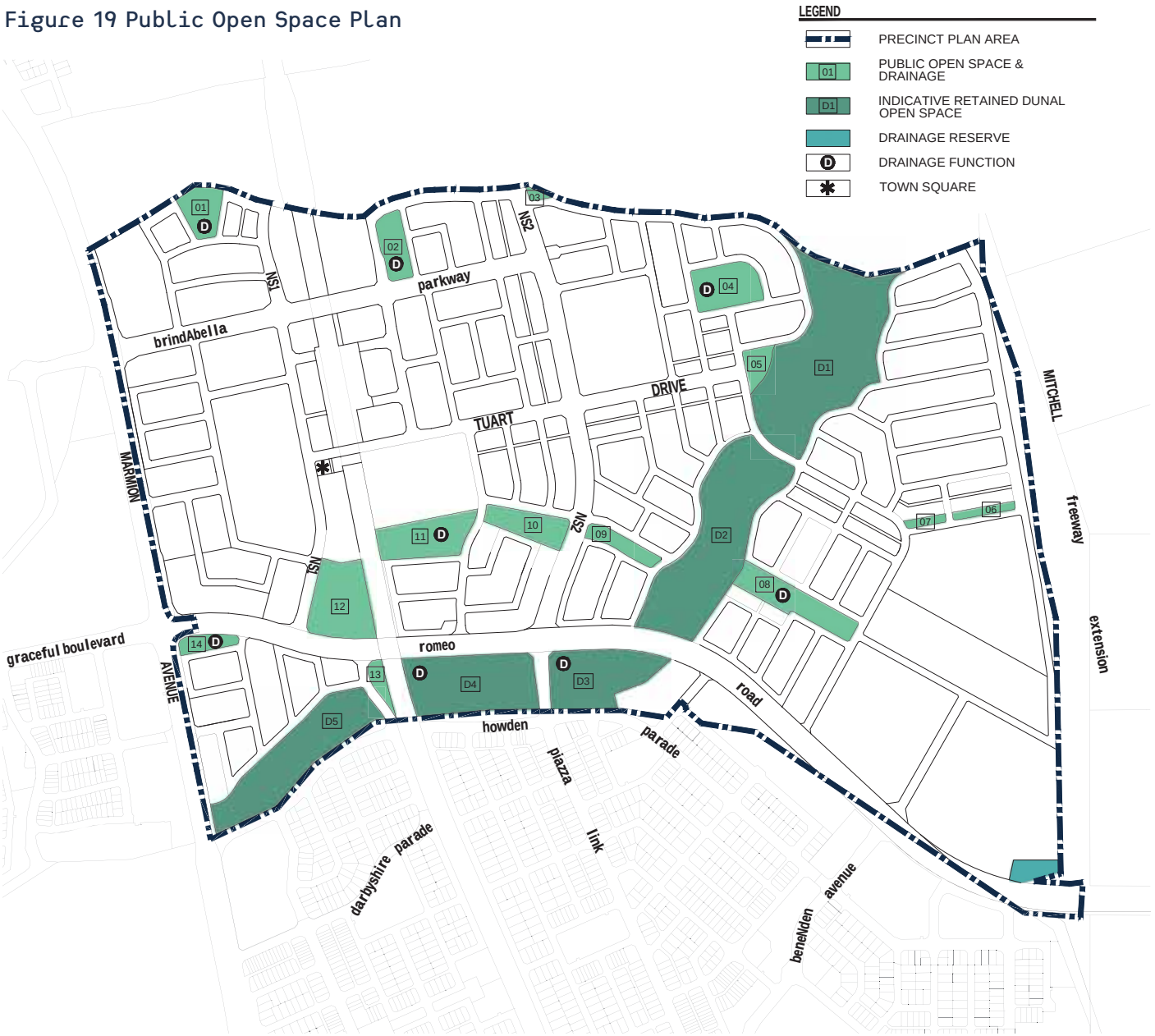
The City of Wanneroo's 'Street Tree Masterplan' should be referenced when selecting and locating tree species.

A planting species selection is also provided to guide landscaping throughout the precinct plan area. Refer to **Appendix K**.

Table 18 – POS Schedule

Site Area	Hectares (Ha)	203.11ha
Less		
TEC area	0.61	
Total	**0.61**	
Net Site Area		**202.50ha**
Deductions		
Primary School	4.02	
Commercial (includes service and business)	33.13	
Dedicated Drainage Reserves (sump)	0.36	
Dedicated Drainage Reserves (1 in 1)	0.88	
Mixed-Use	10.90	
Regional road (Romeo Rd only)	8.21	
Railway Reserve & Transport Infrastructure	7.60	
Civic (AARC)	3.51	
Total Deductions	**68.61**	
Gross Subdivisible Area		**133.89ha**
Public Open Space Contribution		
May Comprise:		
minimum 80% unrestricted POS	**10.71**	
maximum 20% restricted POS	**2.68**	**13.39ha**
Unrestricted POS sites		
Unrestricted POS Total area	**27.24ha (20.35%)**	
Restricted Use POS sites		
Restricted POS contribution	**1.63**	
Total Restricted Use POS able to contribute to POS (cannot exceed 2% of required 10%)	**2.68**	
TOTAL Contributing POS	**28.87ha (21.56%)**	
Unrestricted POS	27.24	
Restricted POS	1.63	

Figure 19 Public Open Space Plan



Unrestricted POS sites	Hectares
POS 1	0.25
POS 2	0.19
POS 3	0.07
POS 4	0.36
POS 5	0.38
POS 6	0.22
POS 7	0.14
POS 8	0.99
POS 9	0.48
POS 10	0.89
POS 11	0.65
POS 12	1.79
POS 13	0.22
POS 14	0.25
POS D1	6.44
POS D2	5.46
POS D3	2.15
POS D4	2.98
POS D5	3.33
Unrestricted POS Total area	**27.24ha (20.35%)**
Restricted Use POS sites	**Hectares**
POS 1	0.31
POS 2	0.38
POS 4	0.51
POS 8	0.18
POS 11	0.13
POS 14	0.07
POS D3	0.04
POS D4	0.01
Restricted POS contribution	**1.63ha**

7.6 Built Form

7.6.1 Key Spaces and Features

Main Street

The primary north-south main street (NS1) is comprised of a series of character areas or conditions at the ground level. These change progressively and gradually as a transition from highly intense activity and urbanity around the town square, gradually reducing in scale and intensity as it approaches the natural dune to the north and the Pinnacles landscapes to the south.

The overall built character shall appear to be a diverse assemblage of individual buildings with a variety of forms, materials, colours and expressions but with threads of consistency with regard to the expression of individual elements as part of a contextual response. The retail character of all shopfronts facing the main street shall typically be fine grain, providing a high level of pedestrian interest.

The main street is centred on the Town Square, a major public gathering place. This is the civic core of the city and should promote day and night-time activity, a sense of safety, comfort, and civic pride. The retail and entertainment sites' activity strategy for the main street must consider these objectives in order to complement and achieve these high-level design principles.

East-West Activated Pedestrian Link

Located through the main retail and entertainment site as the key link between the Town Square and the City West precinct is an important 24/7 pedestrian connection that is fringed with retail, food and entertainment uses, with the possibility for residential or commercial uses above.

This 10m wide 'laneway' is open and spacious in character, with shading from the harsh summer sun to become a cool and comfortable refuge in the summer, while protecting users from south-westerly breezes.

The east-west link is a special public gathering space that provides an important connection day and night. Its active edges encourage retailers to spill into the space with food offerings that seat diners along the edges of either side of the link creating an 'eat street' character and focus.

Pinnacles / Cultural Node

A building on the northern edge of the Pinnacles site will act as a gateway that fronts an important cultural space for Alkimos Central – the Pinnacles open space. This interface is the connection to the Pinnacles, a place of education, understanding and storytelling. A building that gives residents and visitors to Alkimos Central a richer sense of place and connects to an older history than that of the shipwreck after which Alkimos is named is highly encouraged.

While the building must address the main street, it should balance this with the Pinnacles immediately to the south and the opportunity to express arrival into the precinct from Romeo Road. There is a significant level change that occurs between the location of this building on the main street and the Pinnacles as they sit framed in the retained bushland. As the Pinnacles are difficult to access at ground level being largely concealed by thick bushland, this affords elevated views which may help in building this connection.

7.6.2 Private Realm Tree Planting

As a key objective of the precinct plan, an aspiration to plant 20,000 trees is to be achieved by way of public and private realm landscaping.

Based on the design principles of SPP7.0 Design of the Built Environment, new development should integrate into its landscape/townscape setting, reinforcing local distinctiveness and responding sympathetically to local building forms and patterns of development. Building upon this and the landscape requirements of SPP7.3 (Volume 1 and 2), in addition to soft landscaping there is a requirement to deliver trees (via Deep Soil Area) within the private realm as required by **Section 2.5** of **Part 1**. This applies to residential, mixed use and non-residential development.

Further to the requirements outlined in **Section 2.5** of **Part 1**, additional site-specific landscape requirements (including minimum tree targets) may be imposed via a PLDP/LDP(s) at particular stages of development. The intent is that a range of landscape outcomes are achieved including soft-landscape, shrubs/low planting, planting on structure, shade trees (for parking areas) and a range of small, medium and large tree canopies

7.6.3 Frontage Types

For the most critical street edges within the precinct plan area a series of more detailed development standards based on 'Frontage Types' are imposed to ensure an appropriate interface with the adjacent public realm that is consistent with the intended urban design outcome. Refer to **Figure 1 - Precincts and Frontages Plan** and the **Built Form Controls Table** at **Table 5** of **Part 1**.

Where no Frontage Type is designated, development shall comply with the 'City Street' frontage requirements unless site specific requirements are contained in any applicable PLDP(s).

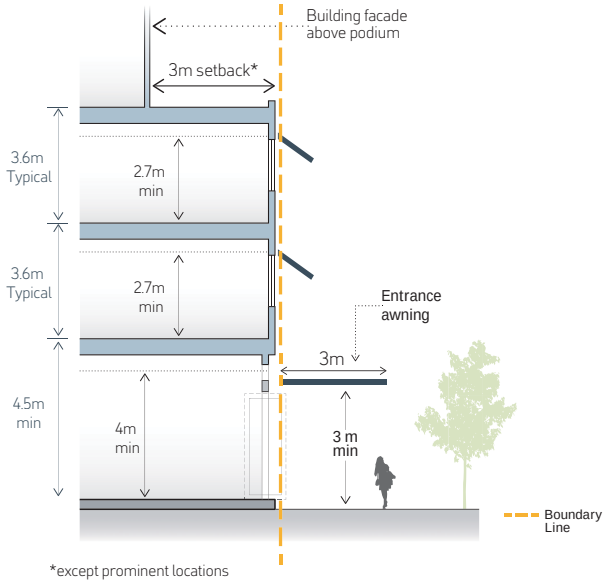
The location of Frontage Types is based on the indicative subdivision layout generally in accordance with **Figure 16 - Indicative Land Use and Residential Densities Plan**.

For each Frontage Type, the following intent and the typical cross-sections to illustrate the intent of each frontage type shall be given due regard.

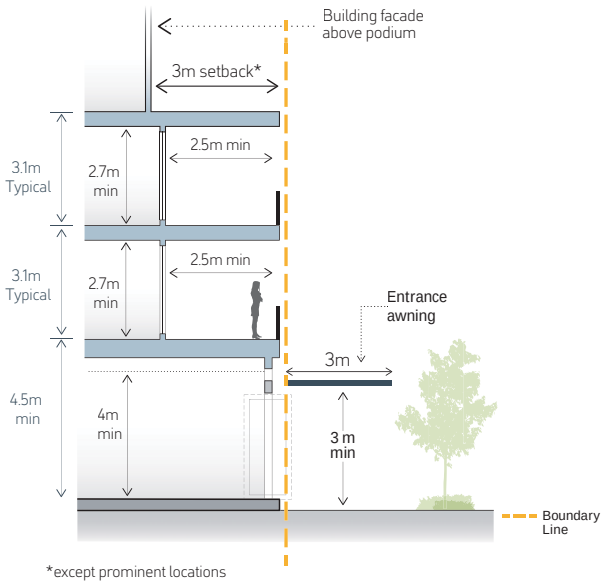
Typical cross-sections to illustrate the intent of each frontage type is provided below.

Main Street Intent

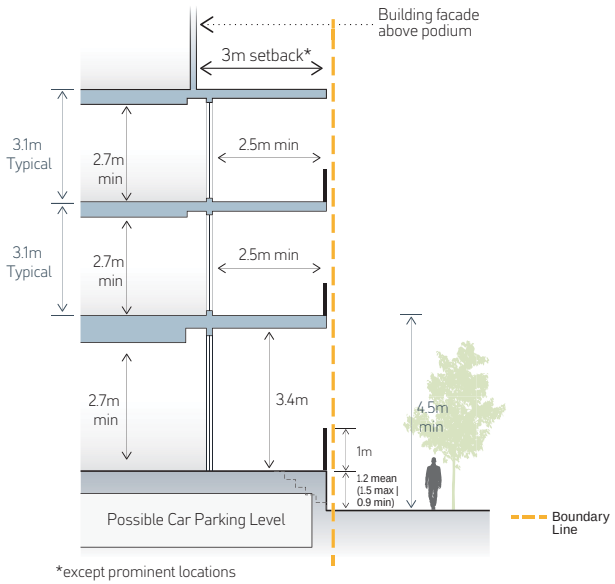
The main street is focused around the intersection of NS1 and Tuart Drive with buildings sitting on the street edge and awnings extending over the footpath to create a contained pedestrian friendly environment. Land uses on this frontage include retail, food and beverage, entertainment, civic and commercial uses and contribute to a sense of activation at the street level.



Main Street Commercial



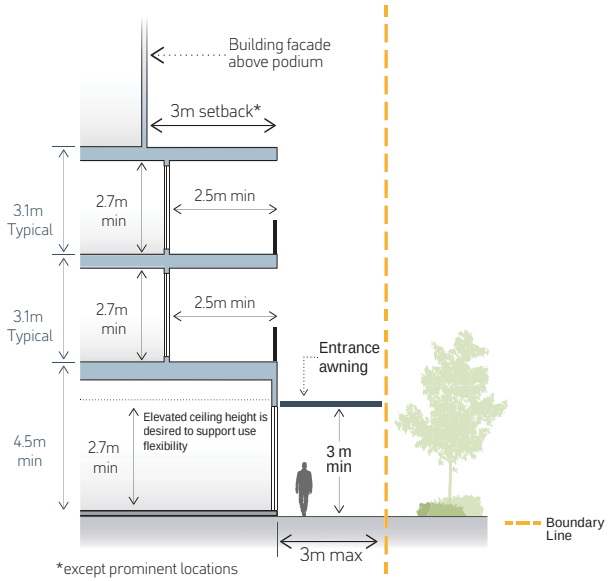
Main Street Mixed Use



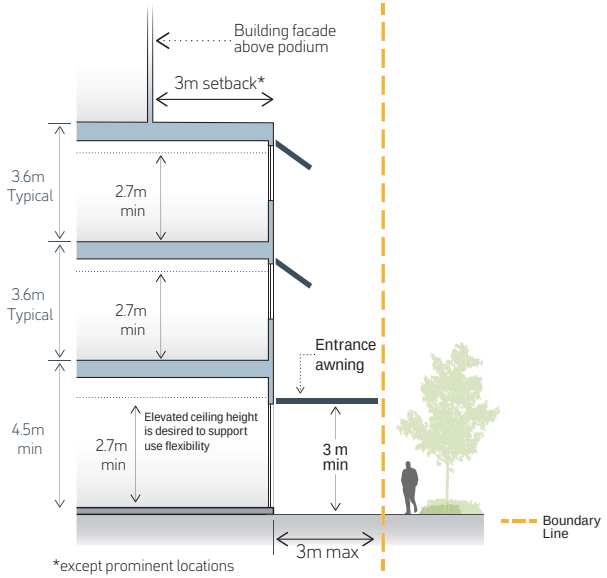
Main Street Apartments with 'step up'

City Street Intent

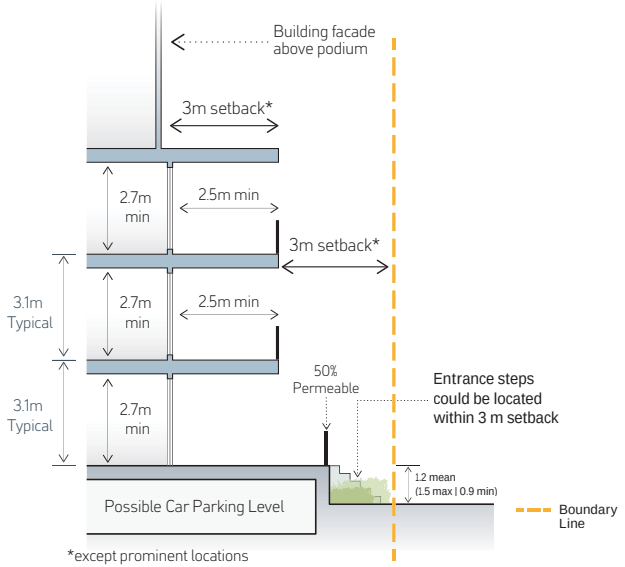
City Streets mark a transition from the periphery "Boulevard" roads of the city centre core to streets which feature buildings more actively engaging with the street edge. These edges may accommodate a mix of uses but will largely feature office, commercial and civic edges. While actively engaging with the street they may encourage a landscape setback that can offer amenity to certain commercial and residential land uses.



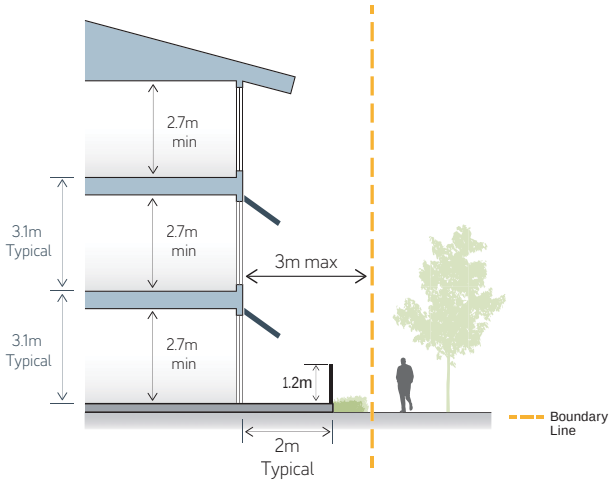
City Street Mixed Use



City Street Commercial



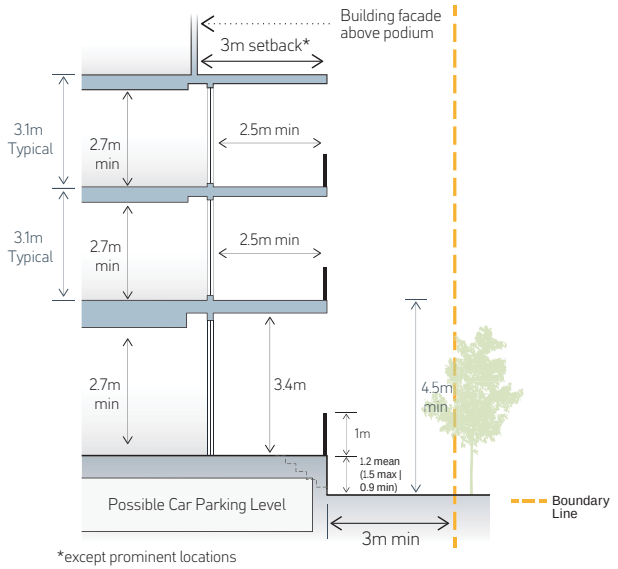
City Street Apartments with 'step up'



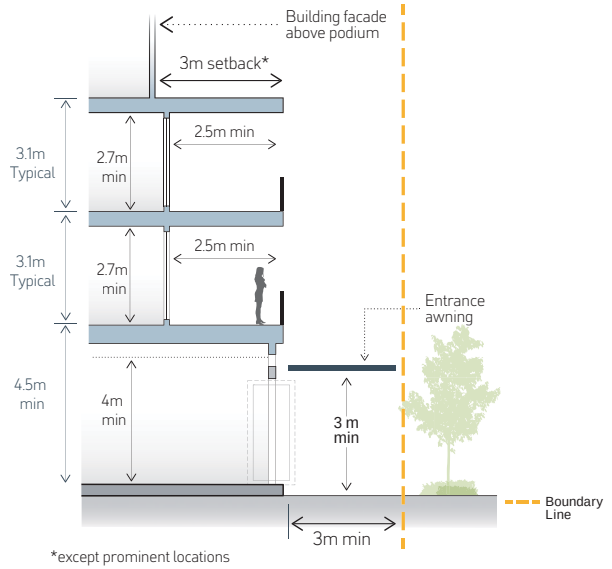
City Street Terraces

Boulevard Intent

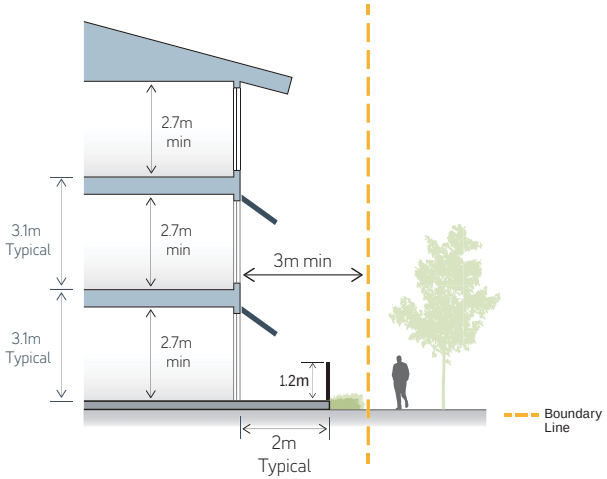
Boulevards frame the city centre core. These generously landscaped streets seek to present a uniform edge condition and provide a visual distinction between the residential context and the city centre core. This frontage can accommodate the range of uses typically found within the City Centre Core and provide a generous landscape setting for buildings.



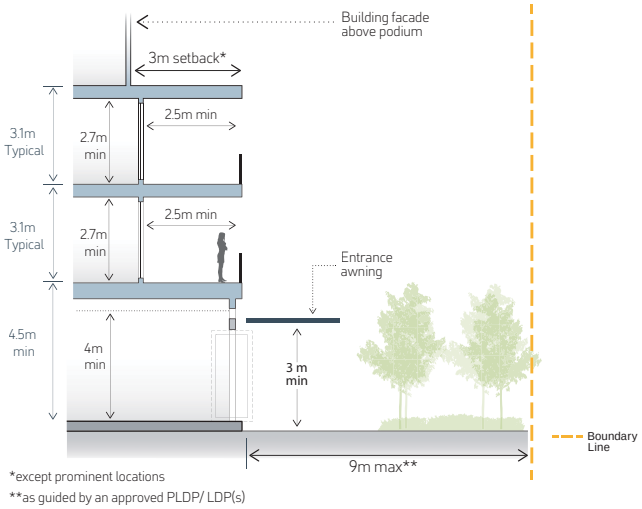
Boulevard Apartments 3 metre setback



Boulevard Mixed Use 3 metre setback



Boulevard Residential Terraces 3 metre setback



Boulevard Mixed Use 9 metre setback

7.6.3 Built Form Character

> *"Alkimos Central has a unique context, climate and conditions which the built form should reflect. For instance, the design should relate to the unique parabolic dunal landscape, the retained vegetation and cultural character through a series of contextual, environmentally responsive design approaches that promote an architecture that responds directly to place."*

To guide the built form character of the city centre core, a number of design elements shall be considered as outlined below.

'Heavy to Light' Expression

The architectural expression to the public realm at Alkimos Central should seek to convey the impression of heavy to light weight buildings, including fine edges, slender shading devices and modular cladding materials. This will encourage developments that sit gently in the landscape and respect the environmental context. Lightweight buildings are encouraged as they are often more sustainable and adaptable than masonry or concrete structures while matching the aspiration for sustainability and resilience.

Buildings should embrace a 'heavy to light' expression – a robust ground floor supporting visually lightweight upper levels. Concrete and masonry elements are preferred in areas where a high level of durability is required, such as service or delivery areas and street level façades. There is a significant focus in Alkimos on sustainability and energy efficiency. In this context, masonry elements are also desirable where they perform a useful thermal mass role within a building.

Shade and Protection

The coastal climate for Alkimos Central can be harsh with hot dry summers and strong afternoon winds that occur all year round. It is important that buildings encourage appropriate solar access, but also provide shelter from these weather conditions in both the private and public realm. Awnings and colonnades and sometimes canopies along major public access ways and recessive sheltered balconies can provide protection from these harsh weather conditions, provide a lively public realm and encourage social interactions between neighbours.

Roofs that extend and overhang provide shade to the façade below, can control the impact of sun on glazing and significantly contribute to the desired architectural character of Alkimos Central – with preferred detailing to seek shading of buildings and the expression of fine edges. These types of sheltered building interfaces promote an interesting and usable public realm for residents and visitors and become a defining part of the unique character of Alkimos Central.

Image 39

Image 40

Image 41

Prominent Locations

Image 42

Image 43

Image 44

Image 45

Shading and colonnades, light weight expression

Active and Adaptable Spaces

People using the public realm for different purposes at different times of the day will help to create a vibrant and healthy city centre. Active edges will be prioritised onto the main street and urban street types. To encourage this, adaptability of buildings is critical to allow for changes in land uses over time. Operable doors, windows and façades create flexible spaces, closing areas off when privacy is needed or 'opening up' when a connection to the outside is desired.

Natural Light and Air

Access to natural daylight and passive air movement is crucial in creating sustainable and healthy internal spaces. Lightweight structures (as an example) can reduce the need for large amounts of supporting columns or walls, 'opening up' internal spaces and providing better access to natural light. The built form character of the city centre core is to be permeable to both light and air using screening and openings. This can create naturally ventilated and well-lit internal spaces while reducing the need for air-conditioning or artificial lighting.

Image 46

Image 47

Image 48

Natural light into buildings

Image 49

Image 50

Image 51

Active and adaptable spaces

Image 52

Image 53

Lighting

Image 54

Image 55

Image 56

Varied facade types

Materials

Alkimos Central is close to the WA coastline in an exposed location. Building and public realm materials will take this into consideration regarding long term appearance and durability. Materials should weather elegantly, with natural finishes encouraged while the use of paintwork or applied coatings should be limited and focussed into key areas of need. Materials that do not meet an appropriate performance level and are likely to degrade over a short period of time for example, painted untreated mild steel, should not be considered. Face brickwork or block-work, high quality concrete finishes, selected timbers, anodised aluminium, clear glass or pre-finished composite panelling are all good examples.

Colours

Alkimos Central provides a transition between the urban density of the built-up city centre core around Alkimos Station and the surrounding suburban and coastal context. Colours should reflect elements of white or neutral coastal palettes of surrounding neighbourhoods, to read as one connected place, with overlays of greens and greys that reflect the rich, dunal landscape.

The city centre core should offset this coastal pallet with the selective use of bold accent colours to highlight feature signage and façades, and for example, to strengthen corners or to identify entry points. These bright energising colours will reflect the active uses at ground floor, adding vibrancy and excitement for residents and visitors.

Image 57

Image 58

Image 59

Image 60

Image 61

Materials palette

Image 62

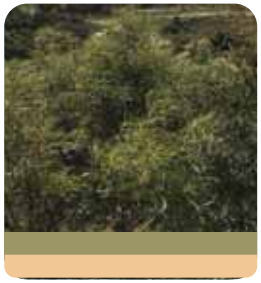


Image 63

Image 64

Image 65

Colour palette

Image 66

Image 67

Image 68

Image 69

Feature signage

7.7 Movement

A Transport Impact Assessment has been prepared by Stantec (GTA Consultants) to support this precinct plan (refer to **Appendix L**). A summary of the existing situation, proposed movement network and analysis of the transport networks is provided.

7.7.1 Existing Situation

7.7.1.1 Existing Road Network

The wider Alkimos area is currently being developed and therefore development is occurring at different stages. The higher order road network has been established in response to the urban development staging and constraints with adjoining Regional Open Space and Park and Recreation Reserves in the area. There is also a railway reserve which runs north / south through Alkimos Central. The land is currently vacant, with the only established road being Marmion Avenue.

Referring to Marmion Avenue, which runs in a north / south alignment to the west of the subject site. It is currently the key access point for the development and is identified as an Other Regional Road under the MRS. As per the Main Roads Western Australia (Main Roads WA) Functional Road Hierarchy and Road Information Mapping System, Marmion Avenue is identified as a Primary Distributor Road and currently has a posted speed limit of 80km/h.

Marmion Avenue has recently been duplicated to a four-lane dual carriageway up to Yanchep Beach Road and currently carries over 23,000 vehicles per day and is under the care and control of Main Roads WA as a state road.

7.7.1.2 Pedestrian and Cyclist Network

Existing pedestrian and cyclist access to the subject site is currently limited as the area is yet to be developed. However, there is a newly constructed Shared Path adjacent to Marmion Avenue which was provided as part of the recent duplication. A Principal Shared Path will also be constructed as part of the Mitchell Freeway Extension to the east of the subject site.

7.7.1.3 Public Transport

There are currently two bus services which operate along Marmion Avenue (Route 490 and 491). The closest bus stops are located to the north and south of Sanderling Street on Marmion Avenue.

7.7.2 Proposed Movement Network

7.7.2.1 Proposed Road Hierarchy

The transport and movement network within Alkimos Central is proposed to consist of the following streets and roads and is shown in the Movement Network Plan at **Figure 20** and summarised in **Table 20**.

Table 20 – Proposed Road Hierarchy

Road	Form and Function
Marmion Avenue	• Ultimate 6 lane divided arterial road adjacent to Alkimos Central • Other Regional Road in the MRS noting that an area of future widening is located within the precinct plan area • Primary Distributor function (80km/h posted speed limit/intended to be reduced)
Romeo Road	• Ultimate 4 lane divided arterial (44m – 49m road reserve) • Other Regional Road in the MRS • Integrator A function (70km/h posted speed limit / intended to be reduced west of rail corridor)
Brindabella Parkway	• Ultimate 4 lane divided arterial west of NS1 (40m road reserve) • Integrator A function west of NS1 (60km/hr posted speed limit) • 2 lane divided arterial east of 'North South Bus Road' (24m road reserve) • Integrator B function east of NS1 (50km/hr default speed limit)
NS1 – Main Street	• Main Street typology prioritising pedestrian movements particularly east-west across the corridor between the train station and the retail precinct • Limit 'through vehicle' movements adjacent to the station, discouraging erroneous vehicles trips with raised intersections, alternative pavement treatments and 40km/h posted speed limit
NS1 - except Main Street	• Ultimate 2 lane divided street (22m road reserve) • Neighbourhood Connector function enabling access to the city centre

Road	Form and Function
NS2	• Ultimate 4 lane divided arterial south of Tuart Drive (36m road reserve) • Integrator A function south of Tuart Drive • 2 lane divided minor arterial north of Tuart Drive (24m road reserve) • Integrator B function north of Tuart Drive (50km/hr default speed limit)
Tuart Drive	• 2 lanes minor arterial adjacent to the train station (20m road reserve) • Neighbourhood Connector function (40km/hr posted speed limit) • 2 lane divided minor arterial east of the train station (30m road reserve) • Neighbourhood Connector function (50km/hr default speed limit)

The remainder of the local road network will consist of Access Street and laneways as required with road reserves between 15 – 17m and subject to the default built up speed limit of 50km/h. The roads of Marmion Avenue and Romeo Road are intended to have reduced speed limits as the corridor matures.

7.7.2.2 Access Strategy

Direct lot access is to be provided by Neighbourhood Connector Roads or lower. Due to their proposed volumes (exceeding 500 vehicles per hour) there is no direct lot access proposed on Romeo Road, Marmion Avenue, Brindabella Parkway or NS2.

NS1 is being designed and considered as a main street, as such, there will be limited direct lot access to NS1 for those lots on the western edge of the rail reserve with no alternative access and these access points should be in the form of shared accesses where possible. Vehicle access to and from the retail core (between Marmion Avenue and NS1) will be supported by a lower order road network, leaving NS1 with a focus on pedestrian activity, safety, and amenity.

Marmion Avenue and Romeo Road are both through-traffic carrying roads and pose barriers to the Alkimos Central precinct area. As these roads are both expected to function as busy 4-lane dual carriageways even in the short to medium term (+10years) it is important for the precinct plan to consider access from and across these roads, for pedestrians, cyclists and vehicle users. Access onto and across Marmion Avenue is largely focused on two signal-controlled intersections at the northern and southern extent of the precinct intersecting with Brindabella Parkway in the north and Romeo Road in the south. These signalised intersections will provide crossing points for pedestrians and cyclists and will form the main connection for the Precinct's vehicular traffic accessing Marmion Avenue. In addition to the two signalised intersections on Marmion Avenue there is a mid-block left-in-left-out intersection on the southbound carriageway of Marmion Avenue adding additional permeability for local trips into and out of the city centre core.

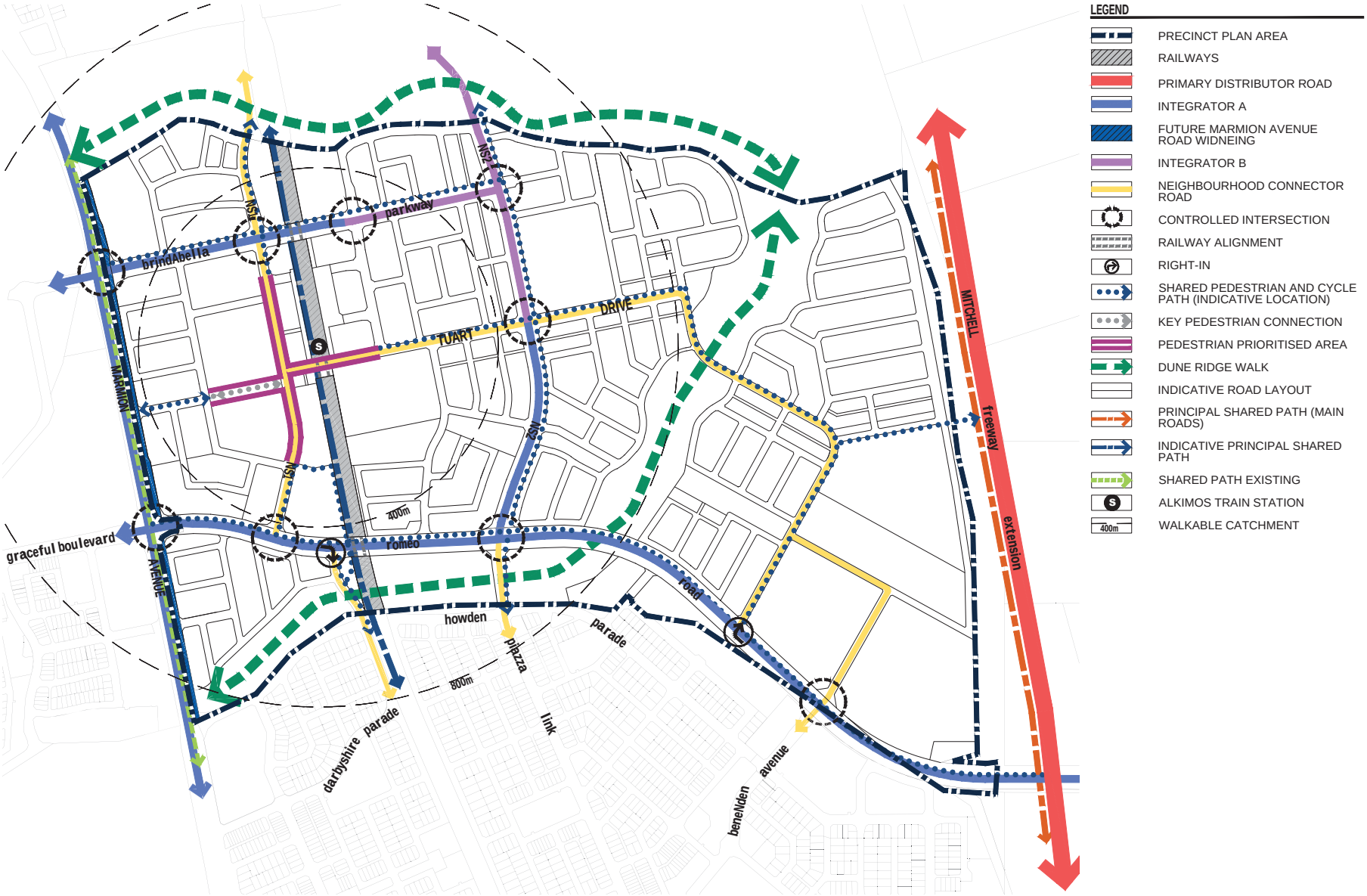
As indicated above, crossing of Romeo Road will largely be concentrated as two (proposed) signalised intersections at NS2 and Benenden Avenue. At the time of writing, the intersection of NS2 / Romeo Road and Benenden Avenue / Romeo Road have both received Gateway 1 endorsement for traffic signals from 'MRWA Network Operations Directorate', with Benenden Avenue / Romeo Road progressing through Gateway 2 and 3 approvals at present.

In addition to the two signalised intersections, there are some other key access points worth noting along Romeo Road. All minor intersections along Romeo Road are proposed to function as Left-In-Left-Out except for the following intersections:

- NS1 / Romeo Road: Right in, left-in-left-out
- Darbyshire (NS3) / Romeo Road: Right in, left-in-left-out
- Neighbourhood Connector (unnamed) west of Benenden Avenue / Romeo Road: Right in, left-in-left-out

The proposed right-in movements are subject to detailed design and are progressing at various stages. The right-in movements at NS1 and the unnamed neighbourhood connector both have conditional support from the City of Wanneroo at the time of writing this precinct plan. The proposed right-in movement onto Darbyshire Parade represents a logical movement pattern, although implementation of this right-in is largely dependent on future traffic volumes along Romeo Road and detailed design in coordination with the intersection design of NS1 / Romeo Road.

Figure 20 Movement Network Plan



7.7.2.3 Intersection Controls

Intersections which are expected to cater to higher volumes of traffic are proposed to be signalised or roundabouts. Minor intersections are proposed to be priority controlled, with further detail to be provided at individual development application stages for each subdivision.

Current MRWA endorsements for signalised intersections within the precinct plan area include:

- Marmion Avenue / Brindabella Parkway (Gateway 2 endorsement)
- Marmion Avenue / Romeo Road (Gateway 2 endorsement)
- Romeo Road / NS2 (Gateway 1 endorsement)
- Romeo Road / Benenden Avenue (Gateway 1 endorsement)

There are two other proposed signalised intersections that have not yet had an application for endorsement from MRWA, those being at the intersections of NS1 / Brindabella Parkway and Brindabella Parkway / Bus Station Access Road. The need for these intersections to be signalised is not expected to be until at least +5 after the opening and therefore outside of the endorsement lifetime (2 years) for signalised intersections. It is expected that these intersections will undergo the relevant assessment and endorsement process during subsequent stages of subdivision when the timing falls into the endorsement lifetime for the progressive land use.

7.7.2.4 Pedestrian / Cycling Network

The precinct plan has been designed in accordance with Liveable Neighbourhoods and is cognisant of achieving walkable catchments with high cycling and pedestrian amenity. The proposed networks of paths within the precinct plan area will provide an excellent level of accessibility and permeability for pedestrians and cyclists.

The proposed precinct plan includes the provision of footpaths along every street. Additionally, it includes the provision of shared paths along the following roads:

- NS1
- NS2
- Brindabella Parkway
- Tuart Drive
- Romeo Road

7.7.2.5 Station Catchment Analysis and Public Transport

Alkimos Station is located adjacent to several higher density land uses central to the city centre core of the precinct area which is zoned Commercial. This zoning allows for a range of higher density land uses such as office, retail, entertainment, mixed use, medium-high density residential and recreational facilities. Access to the station is to be supported via an extensive active transport network.

Analysis has been completed to determine the 400m and 800m walking catchment for the station. This analysis indicates that all higher density uses are contained within a 400m and 800m walking catchment.

To service the proposed development and provide connectivity to the proposed train station it is expected that several feeder bus routes will run radially to the station from surrounding suburbs. Preliminary information has been provided by the PTA for future bus services that will service Alkimos Central.

The design of the NS1 – main street prioritises pedestrian movements over vehicle movements. There are also several street alignments that intersect with NS1 that have fixed locations due to adjoining lot depths and minimum developable areas. The design of NS1 has tight turn radii and narrow traffic lanes which prioritises safer pedestrian movements and therefore does not result in a suitable environment as a bus corridor. With the close proximity of the bus station there are no additional bus stops proposed on main street (NS1).

This restriction of vehicles on NS1 is further supported by the requirement for the intersection of NS1 and Romeo Road which due to the proximity to Marmion Avenue is limited to a right-in-left-in-left-out configuration and does not allow a right-out vehicle movement.

The road network planning that has been undertaken for this precinct plan supports bus access to the station via Marmion Avenue, along Brindabella Parkway then entering the station through the proposed eastern access (the same access used by all other bus services to the eastern side of the rail) - refer to **Figure 21 - Public Transport Plan**.

Consistent with the Transport Impact Assessment undertaken for the Alkimos Station there is provision for a left-in only bus movement into the bus station from the northern portion of NS1 before the pedestrian treatments. The movement network supports the goal of achieving the 'people and place' focus that METRONET is advocating in proximity to stations.

Figure 21 Public Transport Plan

LEGEND

- PRECINCT PLAN AREA
- WALKABLE CATCHMENT
- ALKIMOS TRAIN STATION
- BUS STATION
- KISS & RIDE/DROP OFF
- PARK & RIDE AREAS
- MAIN STREET/PEDESTRIAN PRIORITISED AREA
- 480 BUS ROUTE NUMBER
- BUS ROUTES - LEFT-IN-BOUND ONLY

BUS ROUTES - STATION OPENING

- ROUTE 485
- ROUTE 486
- ROUTE 480
- ROUTE 482

BUS ROUTES - FUTURE

- ROUTE STS
- ROUTE 487
- ROUTE 483
- ROUTE 484

7.7.2.6 Car Parking

There is now significant evidence that the amount of parking provided and how it is managed changes the way people travel to, from and within developments of this type. Alkimos Central is being developed in a way that will encourage use of public transport, walking and cycling and a reduced level of car driving.

For the city centre core, a Parking Management Strategy shall be approved by the City of Wanneroo, incorporating maximisation of on-street parking, provision of park and ride facilities for the transit station, integrated public parking facilities and promotion of reciprocal use, and provision for bicycle parking and end of trip facilities. In the absence of an approved parking strategy, **Section 2.7** of **Part 1** of the precinct plan prescribes specific parking requirements for residential and non-residential development.

The intention of the Parking Management Strategy is to recommend an optimum level of parking to meet user needs and to comply with broader transport planning policy for the Alkimos city centre. Specific principles in relation to parking provision and management are:

- The parking strategy should maximize efficiency of the use of resources and reduce impacts on people travelling to, from and within the centre.
- The amount of parking to be provided should relate directly to the planned car mode share for access to the centre.
- Parking should include provision for a wide variety of vehicles including minibuses, motorcycles, scooters.
- The proportion of car parking in the centre available on demand (rather than allocated to a single user) should be maximised.
- Strategic locations for any larger public car parking on the periphery of the centre should be supported to balance the accessibility of users with the stimulation of key streets, whilst limiting impacts of car movements on pedestrians in the core of the city centre.
- A staging plan should be developed to meet users' needs through the different phases of the development of the city centre.

7.7.3 Analysis of Internal and External Transport Network

The precinct plan a long development period of 30 years. As such this Traffic Impact Assessment has assessed the following design horizons:

- 10-year design horizon - 2031
- 20-year design horizon - 2041
- Ultimate Development - 2051

Key intersections have been assessed for the 10-year design horizon (2031) to determine anticipated levels of traffic operations. The ultimate development (2051) has been assessed to determine the required road hierarchy and in turn ultimate road cross-sectional requirements as per the WAPC Guidelines for TIAs for structure planning.

The site is expected to generate 3,000 trips per hour and 4,300 trips per hour for the AM and PM peak respectively in 2042 (20-year design horizon) and 4,522 trips per hour and 6,470 trips per hour for the AM and PM peak respectively when fully developed in 2051.

The road network within the precinct plan has been determined based on daily volume thresholds and demand for on-street parking in accordance with Liveable Neighbourhoods.

The land uses are consistent with previous planning for ACP89. Traffic impacts are expected to exceed the capacity of the network in 2031 at several intersections on Marmion Avenue and Romeo Road. This is attributed to the high traffic volumes of the extraneous through traffic that is passing the site. The completion of the planned Mitchell Freeway extension north of Romeo Road will reduce the extraneous traffic on these roads and as a result these intersections are anticipated to operate more satisfactorily.

7.8 Urban Ecology

7.8.1 Environmental Assets

An Environmental Assessment and Management Strategy (EAMS) has been prepared by Emerge Associates (refer to **Appendix A**). Since the approval of ACP89, Emerge Associates undertook updated Threatened Ecological Community (TEC) mapping for the site in late 2019, which has been incorporated into this assessment.

The EAMS has incorporated the outcomes of these investigations and assessments to provide an overarching environmental assessment. It documents the existing environmental attributes and values and ensures that significant values can be accommodated within the precinct and at future stages of development. A summary of the key management strategies to be considered are summarised in **Table 21**.

The EAMS has found that the proposed urban development can be suitably managed through the standard planning process, to remove the likelihood of it giving rise to significant adverse environmental impacts.

Table 21 – Environmental Assessment and Management Strategy

Environmental Attribute / Value	Precinct Plan Consideration	Future Management Strategy
Landform and Soil	The Geotechnical Study (prepared by Douglas Partners (refer to **Appendix B** within **Appendix A** of the Environmental Assessment and Management Plan) concluded that based on the available information there is a low risk of large karstic features within the site.	The Desktop Geotechnical Study (2012) recommends that a site-specific assessment of possible karst features is undertaken as part of ongoing geotechnical investigation over the site. Furthermore, this site-specific assessment is likely to be required as a condition of subdivision in accordance with the City of Wanneroo's Draft LPP 4.13.
Flora and vegetation	The retention of natural environmental values within the site was an important design consideration, and as a result the precinct plan provides for the retention of significant environmental features. The TEC FCT 26a is to be retained within future POS areas east and west of the railway line. The intention is to conserve the community by protecting against threats to its integrity including: • Clearing • Inappropriate fire regime • Weed invasion • Trampling/track creation The Landscape Masterplan includes the retention of the TEC vegetation with a retained native vegetation buffer around the TEC. Ideally, a non-vegetated path would then surround the vegetation buffer. Fencing will be installed to limit access into the TEC. The fencing, together with the path, will limit the incursion of invasive/ non-native species and avoid animals (such as dogs, kangaroos, rabbits) and people entering the TEC. The fencing treatment should provide visual access whilst limiting physical access.	As outlined in **Part 1**, a vegetation and fauna management plan may be required to address impacts to flora and vegetation during construction and development. This is expected to be a condition of subdivision, cleared by the City of Wanneroo on advice of the Department of Biodiversity Conservation and Attraction (DBCA).
Fauna	The retention of vegetation along the parabolic dune system should ensure that vegetation within the site continues to provide an ecological linkage to large areas of vegetation to the north of the site. Vegetation in the southern portion of the dune system is in 'very good' condition and has been identified for retention within the precinct plan. This retention of vegetation allows for the retention of functional fauna habitat.	As outlined in **Part 1**, a vegetation and fauna management plan may be required to be prepared to address impacts to fauna during construction and development. This is expected to include fauna management protocols and actions prior to and during clearing activities and is expected to be a condition of subdivision, cleared by the City of Wanneroo on advice of DBCA. In addition, a construction environmental management plan was prepared by Strategen Environmental (2019) as a condition of the EPBC Act approval over the site. This management plan requires that any potential breeding trees are inspected prior to clearing, if clearing is undertaken during the breeding season for black cockatoos. If active black cockatoo nests are found within the site, the tree cannot be cleared until any fledglings have left the nest.

7.8.2 Water Management

A Local Water Management Strategy (LWMS) has been prepared by Emerge Associates provided at **Appendix B**.

This LWMS has been developed to support this precinct plan in consideration of the objectives and principles detailed in Better Urban Water Management (WAPC 2008), current Decision Process for Stormwater Management (DWER 2017), and City of Wanneroo expectations.

The overall objective for integrated water cycle management for the development is to minimise pollution and maintain an appropriate water balance. The precinct plan seeks to deliver best practice outcomes using a water sensitive urban design (WSUD) approach, including detailed management approaches for:

- Potable water consumption
- Flood mitigation
- Stormwater quality management
- Groundwater management

7.8.2.1 Water Quality Management

Recharge water quality will be controlled through the adoption of "Best Management Practices", which promote the disposal of runoff via water pollution control facilities (including vegetated swales and basins, detention storage and gross pollutant traps) and the implementation of non-structural source controls (including urban design, street sweeping, community education, low fertiliser landscaping regimes, etc.).

7.8.2.2 Stormwater Collection and Management

Stormwater recharge of the superficial aquifer should be maximised through the adoption of 'Best Management Practices', which promote the dispersion and infiltration of runoff. These include the use of porous paving for roads and car parks, the diversion of runoff into road medians and road-side swales, the disposal of road runoff into infiltration basins within areas of POS and the use of drainage soakwells to infiltrate runoff from buildings and private open space areas.

The site consists of free draining sand with substantial cover to the prevailing groundwater. Overall, therefore, the land is highly suited to the implementation of the Water Sensitive Urban Design (WSUD) management practices outlined above.

It is anticipated that runoff within future development allotments will be contained onsite. Stormwater disposal will be via soakwells or other infiltration facilities which form part of the building and private open space development. In areas of high urban density, allowance has been made in the stormwater model to manage a proportion of the runoff in the council-controlled street drainage network. This provides a more practical response for higher density sites and allows the runoff from larger storms to be managed away from buildings in areas of POS.

Drainage from public roads and lanes can be managed in a number of ways depending on the nature of the adjacent land uses, the extent of traffic and pedestrians and the objectives for drainage management.

Infiltration may be via swales within or adjacent to road reserves, gully pits with permeable bases, slotted drainage pipes, porous road pavements or under road storages subject to the City of Wanneroo approval and consideration of whole of life costs including the ongoing maintenance.

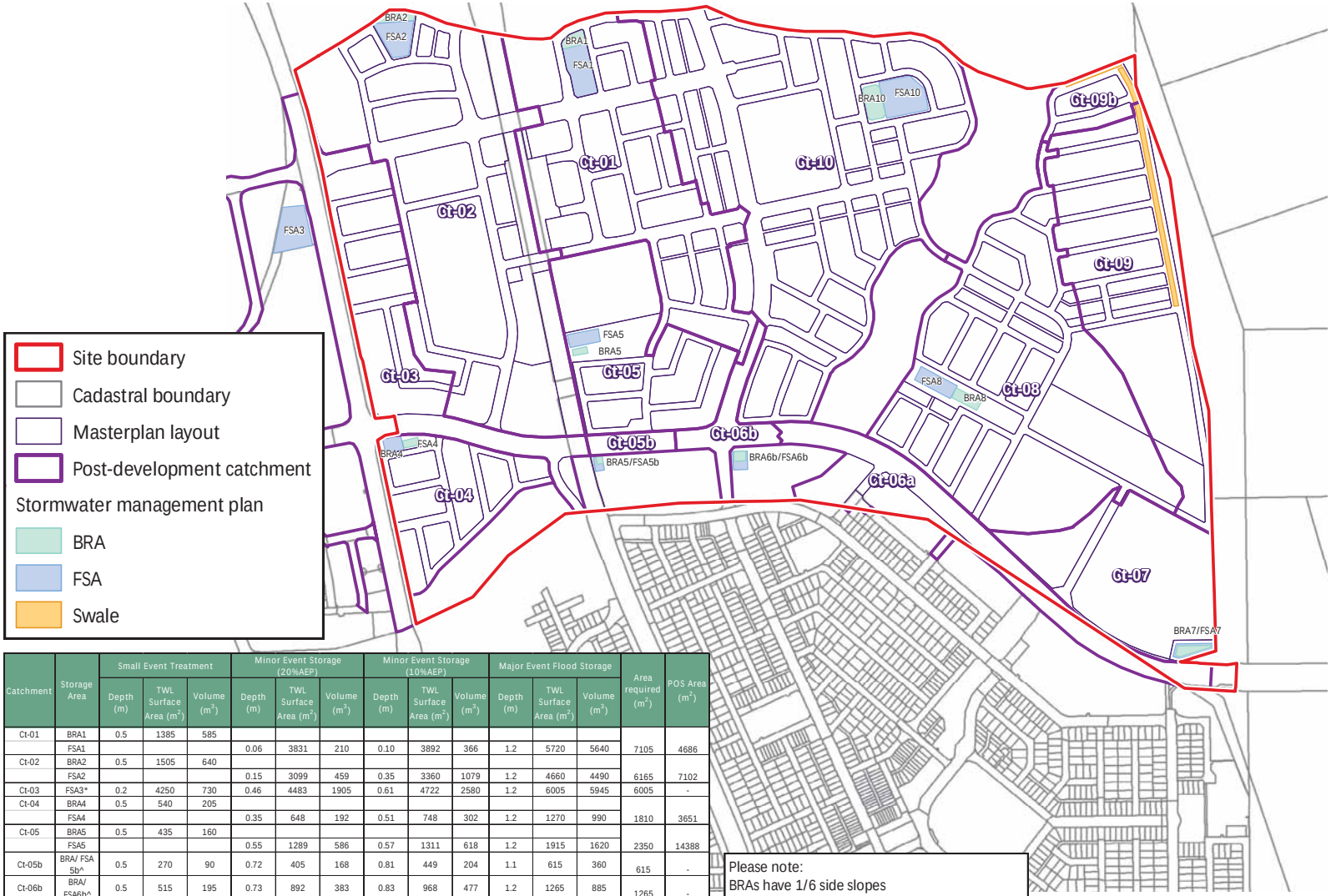
Runoff not retained on lots from storms up to the 10% Annual Exceedance Probability (AEP) for commercial areas and 20% AEP for residential areas would typically be conveyed via an underground pipe system to low point infiltration basins within POS areas or drainage reserves.

Roads and POS will be designed to cater for the surface overflow for more severe storms with finished floor levels of lots constructed at least 500 millimetres above the 1% AEP flood levels in surface storage areas.

The dispersion of stormwater disposal within the catchment will maximise recharge through the soil profile to the superficial aquifer, thereby, maximising the potential for nutrient stripping and water quality improvements.

The LWMS prepared by Emerge details the stormwater drainage strategy for the Alkimos Central Precinct Plan. The LWMS shows the approximate location of stormwater infiltration sites based on a preliminary assessment of finished development levels.
A copy of the Stormwater Management Plan is provided at **Figure 22.**

Figure 22 Stormwater Management Plan



Catchment	Storage Area	Small Event Treatment			Minor Event Storage (20%AEP)			Minor Event Storage (10%AEP)			Major Event Flood Storage			Area required (m^2)	POS Area (m^2)
		Depth (m)	TWL Surface Area (m^2)	Volume (m^3)	Depth (m)	TWL Surface Area (m^2)	Volume (m^3)	Depth (m)	TWL Surface Area (m^2)	Volume (m^3)	Depth (m)	TWL Surface Area (m^2)	Volume (m^3)		
Ct-01	BRA1	0.5	1385	585											
	FSA1				0.06	3831	210	0.10	3892	366	1.2	5720	5640	7105	4686
Ct-02	BRA2	0.5	1505	640											
	FSA2				0.15	3099	459	0.35	3360	1079	1.2	4660	4490	6165	7102
Ct-03	FSA3*	0.2	4250	730	0.46	4483	1905	0.61	4722	2580	1.2	6005	5945	6005	-
Ct-04	BRA4	0.5	540	205											
	FSA4				0.35	648	192	0.51	748	302	1.2	1270	990	1810	3651
Ct-05	BRA5	0.5	435	160											
	FSA5				0.55	1289	586	0.57	1311	618	1.2	1915	1620	2350	14388
Ct-05b	BRA/ FSA 5b^	0.5	270	90	0.72	405	168	0.81	449	204	1.1	615	360	615	-
Ct-06b	BRA/ FSA6b^	0.5	515	195	0.73	892	383	0.83	968	477	1.2	1265	885	1265	-
Ct-07	BRA/ FSA7^^	0.5	1097	534	1.5	1362	1682	1.8	1470	2211	3.3	1907	4607	1907	
Ct-08	BRA8	0.5	1425	605	0.5	1425	605	0.5	1425	605	0.5	1425	605		
	FSA8				0.34	1833	567	0.51	2013	895	1.2	2825	2555	4250	13227
Ct-09	Swale**	0.1	2595	177	0.17	3210	459	0.22	3482	602	0.5	5300	1855		-
Ct-09b	Swale***	0.1	585	53	0.17	674	94	0.24	776	149	0.5	1120	395	1120	-
Ct-10	BRA10	0.5	2765	1230											
	FSA10				0.23	5126	1119	0.37	5375	1871	1.2	6935	6965	9700	11491

Please note:
BRAs have 1/6 side slopes
FSAs have 1/6 side slopes
* Existing storage basin
**Swale with a length = 530m and width = 10m
***Swale with a length = 112m and width = 10m
^ Co-located basin
^^ Sump

7.8.3 Bushfire Management

A Bushfire Management Plan (BMP) has been prepared by Emerge at **Appendix D**. The Bushfire Attack Level (BAL) assessment has categorised the bushfire hazard pre-development across the majority of the site as Moderate-Extreme with pockets of low hazard where clearing has occurred.

The outcomes of this BMP demonstrate that as development progresses, it will be possible for an acceptable solution to be adopted for each of the applicable bushfire protection criteria outlined in the Guidelines. This includes:

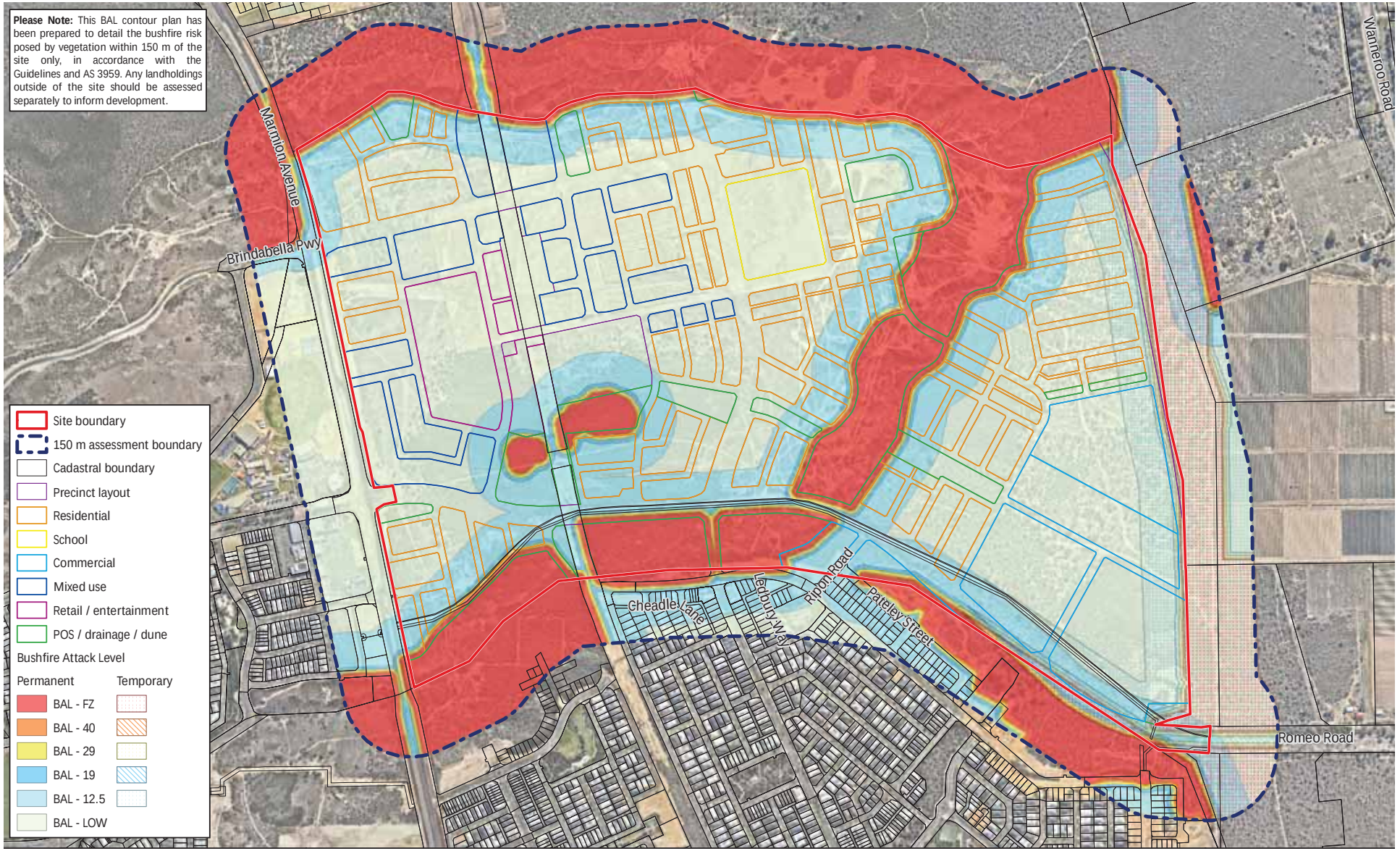
- **Location:** future development will be located in an area that will, on completion, be able to achieve separation for BAL-29 development or below.
- **Siting and Design:** all future dwellings can be sited within the proposed development so that BAL-29 or less can be achieved based on the proposed Indicative Land Use and Residential Densities Plan.
- **Vehicular Access:** safe vehicular access to the site will ultimately be provided through multiple public roads connecting to the east, south and west of the site, which then connects to the broader public road network. A fire access route maybe required along the northern boundary of the residential cell adjoining the regional open space to facilitate a perimeter road for access to the bushfire hazard to the north.
- **Water:** the development will be provided with a permanent and reticulated water supply to support onsite firefighting requirements.

The BAL contour plan (refer to **Figure 23**) indicates that future development within the site will be able to achieve a BAL rating of BAL-29 or less. Certain lots will require in-lot setbacks to achieve BAL-29 at the built form. This can be achieved based on the land use areas and demonstrated during detailed design. It is noted that there are areas of BAL-40 and BAL-FZ impacting residential land within the site. However, habitable buildings (developable land) will be able to be located outside of BAL-40 FZ areas and can achieve BAL-29 or less. In this regard, the acceptable solution can be satisfied for all proposed habitable buildings.

The post-development vegetation classification identifies permanent bushfire hazards to the north, east, south and west of the site, and within the dune POS. Separation from the permanent bushfire risks has been accommodated through the strategic placement of public roads and public open space (used for recreation purposes) that will be developed to typical urban standards and will achieve a low threat standard under AS 2959. Maintenance of these areas will be routine and ongoing, initially by the proponent and then by the City of Wanneroo.

The BAL assessment within the BMP is considered to be a conservative assessment of potential bushfire risk posed to future habitable buildings within the site based on the proposed management of vegetation. The measures to be implemented through this precinct plan and associated future subdivision process have been outlined as part of this BMP and can be used to support future planning and development approval processes. A revised BMP is likely to be required to support any future subdivision applications, particularly if the development layout detail is different to that outlined within this document and will need to respond to the subdivision design.

Figure 23 Bushfire Attack Level Contour Plan



(Source: Emerge Associates)

7.8.4 Aboriginal Heritage

As detailed in **Section 5.1.4**, an Aboriginal Heritage Engagement Strategy was undertaken by Gundi Consulting in 2020.

Additional surveys and reporting were carried out with regard to Aboriginal heritage values on the site in January 2021, following the acknowledgement that there are items of cultural significance within the site. This involved an Aboriginal Heritage Survey and Cultural Survey by Moodjar Consultancy (February 2021) and an Archaeological Survey by Dortch Cuthbert (March 2021) – refer to **Appendix C**.

While no archaeological sites are currently evident in the survey area, the survey area holds importance for Noongar custodians in the form of pinnacles and culturally significant plants. In addition, the soils of the survey area may conceal archaeological evidence of Aboriginal occupation. The following recommendations were made by the supporting archaeological and cultural survey reports:

- The area of the Pinnacles should be mapped with the additional ethnographic commentary recorded (Palmer, 2021), the additional heritage information could then be submitted to DPLH for reconsideration of the area of pinnacles as an Aboriginal heritage site.
- Prior to any ground-disturbing work, suitably experienced Noongar people should be engaged to monitor the works in case sub-surface heritage material is inadvertently unearthed. An archaeologist should also be engaged on a call-out basis should monitors require further assessment of any suspected heritage material.
- Protection of mature trees should be considered wherever possible.
- An Aboriginal Cultural Heritage Management Plan or similar should be developed, before ground disturbance occurs, to allow for culturally appropriate management of any discoveries of suspected or actual heritage material.
- The Aboriginal Cultural Heritage Management Plan should include a requirement that site inductions include the legal requirement to avoid disturbance to any Aboriginal site as defined in the Aboriginal Heritage Act 1972 (Western Australia), whether registered or otherwise, and that disturbance of a site includes ground disturbance, souveniring or defacement.

7.8.5 Acoustic

An Acoustic Assessment was conducted by Herring Storer Acoustics to determine the expected noise impacts from Marmion Avenue, Mitchell Freeway and the northern suburbs railway line (also referred to as the Yanchep Rail Extension) (refer to **Appendix G** within **Appendix A** of the Environmental Assessment and Management Plan). The updated assessment was commissioned to address the latest version of SPP 5.4 "Road and Rail Noise" and provide additional, detailed acoustic advice for the precinct plan. In undertaking the assessment Herring Storer Acoustics noted that Romeo Road is not considered under SPP 5.4 as a trigger road source for assessment and hence it is not included.

Marmion Avenue

From the modelling undertaken for the future Marmion Avenue, noise received at the development would exceed the criteria outlined in SPP5.4. As the inclusion of a noise wall for the entire length of the development is not practical due to future residential lots facing the roadway, to comply with the requirements of SPP 5.4 "Quiet House" design is required.

In terms of external noise compliance, due to the orientation of the lots, the outdoor living areas would be situated behind the houses, away from Marmion Avenue, therefore providing a barrier to noise level and hence compliance is achieved.

Mitchell Freeway

From the modelling undertaken for the future Mitchell Freeway, noise received at the development would exceed the above criteria. As the design of the freeway is unknown, it is likely a wall or barrier will be included in the road design, to comply with the requirements of SPP 5.4.

However, for this initial stage of the precinct plan, a conservative approach has been taken with no barrier included in the assessment. As such, "Quiet House" design is required for the northern lots and notification of noise on titles.

Yanchep Rail Extension

Noise modelling indicates that noise received at the closest residence to the Yanchep Rail Extension would comply with the SPP5.4 criteria. However, some lots are on the margin of 55 dB(A) and these lots would require notifications on titles relating to rail noise.

7.9 Infrastructure and Servicing

An Engineering Services Report has been prepared by Cossill & Webley at **Appendix M** with a summary provided below.

7.9.1 Earthworks

Siteworks for urban development typically comprises the identification of areas of vegetation for conservation, protecting these areas (during and after construction) and in areas identified for commercial and residential development, clearing and earthworking the existing ground to accommodate the required form of development.

In Perth it is often the case that the extent of siteworks is dictated by the density and nature of development and by the finished ground shape required for future building purposes. Increased densities and decreasing lot sizes has led to the typical practice of fully earthworking development areas to create level lots, terraced between retaining walls.

This approach has provided a number of positive outcomes in the past including:

- Reduction in the total house building cost;
- Rationalisation of retaining wall layouts and designs consistent with Local Authority specifications; and
- Enables lots to be terraced up natural slopes to maintain elevation and views while providing certainty between boundaries.
- There are a number of factors which have been considered in reviewing the anticipated finished levels of the development of the Alkimos Central Precinct. These are summarised as follows:
  - Retention of the parabolic dune, by minimising clearing and matching levels at the vegetation retention boundary as closely as possible;
  - Matching proposed development levels of the Yanchep Train Station, Bus Interchange, parking facilities and bridges;
  - Matching existing levels of the newly upgraded Marmion Avenue;
  - Matching levels of the proposed Mitchell Freeway Extension and Romeo Road;
  - Providing suitable grade across commercial, residential and mixed-use sites to support the future development requirements; and
  - Grading roads to cater for proposed gravity services and meet the standards of the required approval agencies. The precinct plan promotes the adoption of lower speeds, in accordance with Liveable Neighbourhoods objectives, through the road layout and the urban design of streetscapes. The engineering design standards which suit these lower speeds provide greater flexibility to follow the existing topography through the adoption of steeper grades and shorter sight distances.
  - In practice, the final choice of subdivision siteworks and building typologies will depend on a range of factors including affordability, product mix and economics.
  - It is considered, however, that the precinct plan as proposed will provide flexibility for a range of options to maintain the landowner's objectives for the project. A preliminary earthworks plan has been prepared to support the precinct plan.

7.9.2 Wastewater

Cossill & Webley has prepared a sewer strategy which meets the conveyance requirements of the Water Corporation. Sewerage reticulation for the development will be provided via the extension of reticulation sized gravity mains which ultimately discharge to the Alkimos Wastewater Treatment Plant. A portion of the Alkimos Central catchment cannot be connected through gravity sewers, which will require construction of a permanent wastewater pump station in accordance with the Water Corporation's wastewater scheme. The south eastern portion of the Site will discharge to the existing sewer reticulation within the Trinity Estate development south of Alkimos Central.

7.9.3 Water Supply

Cossill & Webley has prepared a water strategy which meets the conveyance requirements of the Water Corporation. Initial water supply can be provided from the existing pipe infrastructure in Marmion Avenue, with the balance of the proposed development serviced through progressive staged expansion of the trunk water main network.

The Water Corporation has planned headwork sized infrastructure within Alkimos Central as follows:

- 1500dia gravity sewer main;
- 900dia water main to be installed in Romeo Road (construction due for completion late 2022 as part of the Mitchell Freeway extension);
- 1400dia trunk water distribution main to take water from the future Alkimos Desalination Plant in the Alkimos Water Precinct (west of Alkimos Central) to the broader north-western metropolitan region; and a
- 900dia pressure main to take treated water from the future Alkimos Reclamation Plant in the Alkimos Water Precinct to Carabooda.

7.9.4 Power

Initial electrical supply can be provided from the existing high voltage HV underground infrastructure in Marmion Avenue, with the balance of the proposed development serviced through progressive staged expansion of the trunk electrical network. It is likely within approximately ten years (subject to individual dwelling loads and rate of development) the capacity of the Romeo Road (Yanchep) Zoned Substation will be exceeded and a new substation will be required to be constructed in Eglinton as planned through the Alkimos-Eglinton DSP.

Future 132kV North-South Feeder

A 132kV overhead line is proposed by Western Power along the eastern boundary of the development abutting the Mitchell Freeway reserve to provide supply to the new Eglinton Zoned Substation (referred to as 'Indicative Future Wester Power Corridor' on **Plan 1**). The anticipated width of the power line corridor is 24 metres, however this may vary if Western Power confirm the detailed design requirements prior to construction of the subdivision.

The timing and potential need for the provision of this infrastructure has varied since the Alkimos-Eglington DSP was prepared. Following the implementation of the DSP, several Local Structure Plans (LSPs) have been prepared, and development has commenced on several fronts within the DSP area.

In the past decade there has been considerable take up and implementation of a number of energy conserving measures at both residential and commercial level, including the take-up of solar power.

This has seen the load demands placed on Western Power's network vary significantly such that Western Power has no program for the installation of this line, and anticipate it could be some 15 to 20 years away at this stage, or potentially not required. Further network modelling would be required to confirm this.

Western Power has advised they would be amenable to an alternative alignment of the transmission line outside of the precinct plan area, taking it away from residential land uses. Alternative alignments of the transmission line could include utilising the Mitchell Freeway corridor, or placing the line east of the Freeway, including utilising the existing Wanneroo Road reserve, which is the current alignment of the existing feeder south of Romeo Road.

The North-West Sub-Regional Planning Framework confirms the expectation that servicing agencies will work collaboratively to maximise future shared infrastructure corridors and sites.

Utilising the existing freeway reserve for the future delivery of the 132kV feeder provides an excellent opportunity in this regard if managed appropriately, and moves the infrastructure out of the less compatible residential area.

DevelopmentWA is working with Western Power to determine if this infrastructure is still required, and if so, whether it can be more efficiently provisioned for within the Freeway reserve to de-constrain developable land and utilise infrastructure corridors more effectively. Given the potential timing, and indeed need for this infrastructure still remains uncertain, further investigation is required to finalise the 132kV reserve.

7.9.5 Telecommunications and Gas

The precinct plan is within NBN's fixed line footprint, and hence can be serviced with optic fibre under their roll-out scheme for greenfield developments.

The existing high pressure gas network has been extended from Butler to Yanchep by Atco Gas. Atco Gas has confirmed the main installed in Marmion Avenue will have capacity to service the development with no offsite headwork upgrades required. DevelopmentWA is still investigating whether gas reticulation will be extended through the precinct plan, but we note there is capacity to extend the existing network through Alkimos Central if required.

7.10 Implementation

7.10.1 Planning Implementation

Further to the 'additional information' outlined in **Section 3.7 – Additional Information** of **Part 1**, **Table 21** outlines the key planning implementation mechanisms to support he delivery of the precinct plan.

Table 22 – Planning Implementation

Document	Description	Stage	Responsibility
Metropolitan Region Scheme Amendment	Progress an amendment to realign Romeo Road Other Regional Road Reserve.	Concurrent or post-approval of the Precinct Plan	WAPC
District Planning Scheme No. 2	**Local Planning Scheme Amendment** The City of Wanneroo has initiated Amendment No. 172 which proposes to align DPS2 with the State Government's Model Provisions. At the time of writing, the amendment had not been advertised publicly. Consideration will need to be given to the implications on this Precinct Plan as the amendment progresses. In additional, any development contribution arrangements in schedule 15 of DPS2 should be reviewed and amended accordingly.	Concurrent with Precinct Plan	DevelopmentWA / City of Wanneroo
	Development Contributions Given the changes in the composition of land uses any development contribution arrangements in schedule 15 of DPS2 should be reviewed and amended accordingly.	Post-approval of the Precinct Plan	City of Wanneroo
	Local Development Plans In accordance with **Section 3.6 - Alkimos Central Local Development Plan(s)** of **Part 1**, Local Development Plan(s) (LDPs) may be required as a condition of subdivision for land in the Service Industrial Zone, Residential Zone and Commercial Zone. A Local Development Plan shall be prepared and approved in accordance with the Part 6 of the Deemed Provisions of the P&D Regulations. In the context of SPP7.2, a Precinct LDP (PLDP) applies to city centre core. As further stages of development progress, LDPs may be prepared to guide development and public realm outcomes as further detail become known including market drivers, availability of infrastructure and progression of detailed planning.	Concurrent or post-approval of the Precinct Plan	DevelopmentWA / Developer

7.10.2 Overall Staging

Acknowledging the scale and project lifespan of Alkimos Central, areas will be implemented in a variety of stages over a period time. To provide a level of guidance for subdivision and development, a high-level staging plan has been prepared in 6(+) year increments as follows (refer to **Figure 24**):

- Stage 1 – 2023 to 2028
- Stage 2 – 2029 to 2034
- Stage 3 – 2035 to 2040
- Stage 4 – 2041 to 2050

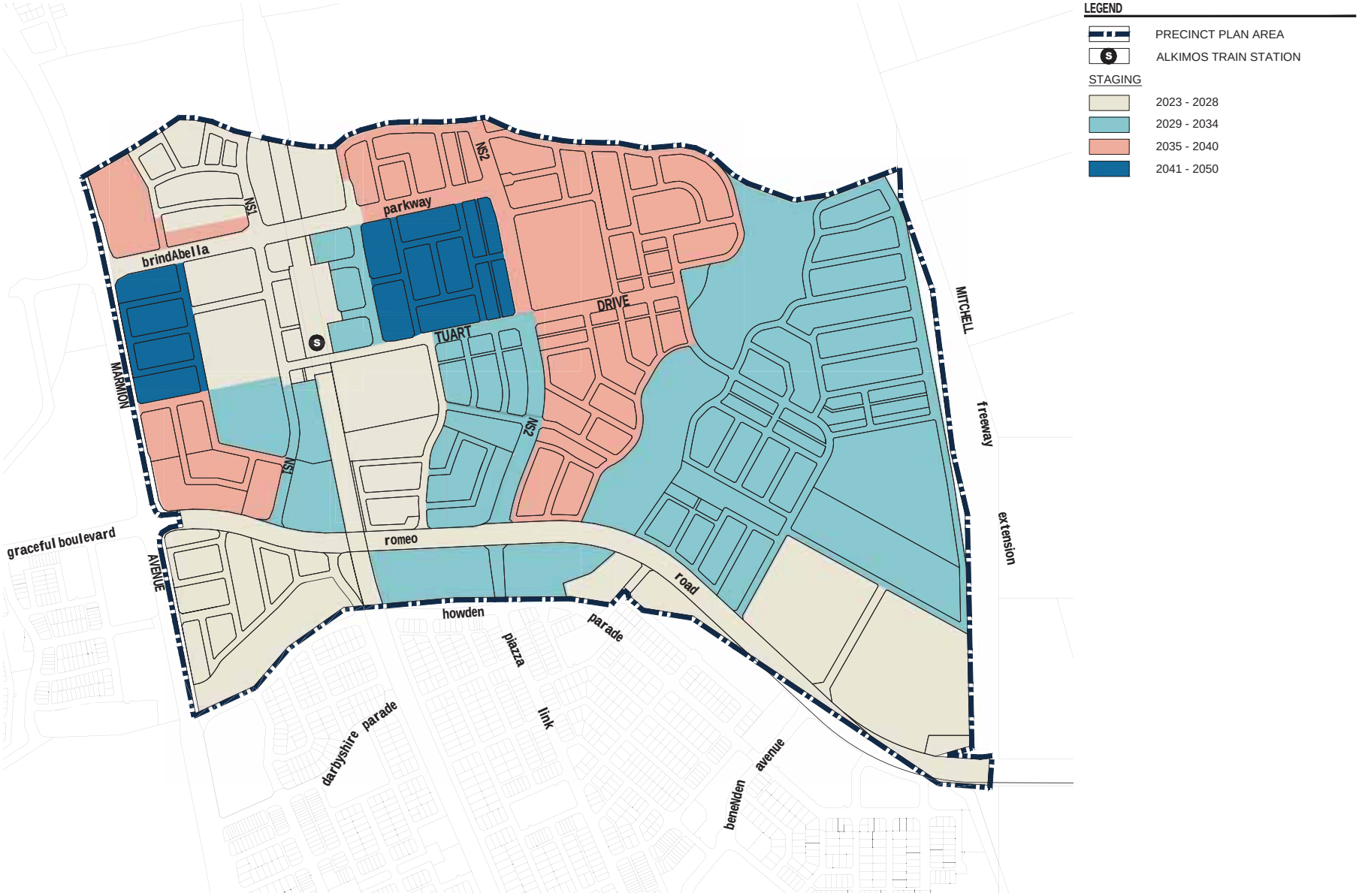
As part of the Yanchep Rail Extension, the Alkimos Central Train Station construction and the Alkimos Central Bus Interchange, DevelopmentWA has coordinated infrastructure strategies with the PTA, Main Roads WA, the Water Corporation, Western Power and the City of Wanneroo. Within the initial 5-6 years, it is anticipated the following infrastructure will have been installed:

- Yanchep Rail Extension, including the Alkimos Train Station, Alkimos Bus Interchange, Kiss and Ride facilities, and Park and Ride facilities;
- Bridges will be funded by DevelopmentWA over the Railway at Brindabella Parkway and Tuart Drive to facilitate early connections together with a Rail Capping Site opposite the Station on Tuart Drive;
- Romeo Road connecting the Mitchell Freeway Extension to Marmion Avenue. This will include the installation of traffic signals at Romeo Road/Marmion Avenue and Romeo Road/ Benenden Avenue;
- The first stage of Brindabella Parkway to the Yanchep Rail Extension, including traffic signals at Marmion Avenue/Brindabella Parkway;
- Internal road network extensions to service Day 1 Opening of the PTA facilities, and facilitate the creation of early lots such as the AARC and Retail sites;
- First stage retail within the Alkimos Central development between Romeo Road, the Yanchep Rail Extension, Marmion Avenue and Brindabella Parkway;
- A Town Square and Community Hub facility is under consideration in proximity to the Rail Station to create early amenity at the location; and
- The creation of early lots in the Precinct 5 and 6 together with initial stages of Residential development.

Following the first stage, it is anticipated that headwork infrastructure will be installed as part of the subdivisional works, with the general construction front being from west to east across the precinct plan area.

The staging of development within the balance of the precinct plan can then be progressed as key roads and services are in place and as market demand for residential, retail and commercial development permits.

Figure 24 Staging Plan



8. Technical Studies Appendices Index

Refer to **Alkimos Central Precinct Plan Technical Studies Suite**.

Appendix Ref.	Document Title	Author
A	Environmental Assessment and Management Strategy	Emerge Associates
B	Local Water Management Strategy	Emerge Associates
C	Aboriginal Heritage Survey and Cultural Survey	Moodjar Consultancy and Dortch Cuthbert
D	Bushfire Management Plan	Emerge Associates
E	Housing Needs Assessment	RPS
F	Alkimos Central Community Development Plan	Element
G	Crime Prevention Through Environmental Design Review	Urbis
H	Retail Needs Assessment	RPS
I	Economic and Employment Strategy	RPS
J	Landscape Masterplan	UDLA
K	Tree Species and Planting Principles	UDLA
L	Transport Impact Assessment	Stantec (GTA)
M	Engineering Services Report	Cossill and Webley