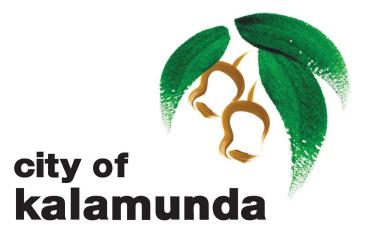


## Kalamunda Activity Centre Plan Draft for Advertising

March 2019



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#### Prepared for City of Kalamunda by:

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## **ENDORSEMENT PAGE**

This structure plan is prepared under the provisions of the City of Kalamunda Local Planning Scheme 3.

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

Date

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

## **EXECUTIVE SUMMARY**

The Kalamunda Activity Centre Plan will facilitate the ongoing development and redevelopment of the Kalamunda town centre, shaping its future positioning as a contemporary, attractive and functional centre for residents and visitors.

The town centre is at a crossroad, whereby its future and function need an effective combination of vision and practical implementation to enable its ongoing relevance and commerciality whilst retaining key elements of its character and identity.

The current town centre is diverse in nature, land use and design. Heritage, topography and an active and engaged local community provide great opportunities to leverage from. Critically, the Kalamunda town centre contains some of the trade-marks of a well-performing district centre but not all and lacks any real cohesion.

This activity centre plan will provide the greatest opportunity to date to deliver a robust planning framework that can facilitate this coordination and much needed activation to key parts of the town centre.

The planning for this activity centre has been led by the City of Kalamunda in consultation with the local community, business owners and the Department of Planning, Lands and Heritage/WA Planning Commission (DPLH/WAPC).

The activity centre is planned to provide:

- Reinforcement of Haynes Street as the traditional 'main street' with highly active edges, a mix of uses, pleasant pedestrian environment and a built form outcome that reflects the character of Kalamunda.
- Central mall becoming a food and beverage focus supported by a one-way shared vehicle/pedestrian street.
- A consolidation of retail and commercial activity within the town centre core expanding from its current approximately 20,000sq.m shop/retail and other retail floor space to an additional 2,800 3,800sq.m.
- Creation of a new 'town square' on Railway Parade at the top end of Haynes Street as a multi-use public space creating a focal point for the town centre.
- Consolidation of employment generating land uses including larger format commercial, retail and civil uses around Mead Street leveraging off Kalamunda Central shopping centre.
- Celebration of cultural features by creating synergies between Stirk Park including Stirk Cottage, Zig Zag Cultural Centre and Bibbulmun Track.
- A 'frame' to the town centre core that supports predominantly residential and mixed use development that contributes to the walkable catchment of the town centre
- Consolidated parking areas in appropriate locations.
- Highly legible, safe and well-designed pedestrian linkages to connect all parts of the activity centre as well as important community focal points beyond.

Implementation of the activity centre plan requires both private and public investment. This activity centre plan is a framework to guide future change; re-energising a traditional town centre to attract new investment and people to the area. In the absence of significant growth projections in the residential or commercial sectors, the success of the activity centre plan will rely on the co-operation and collaboration of the City of Kalamunda, State government agencies, local business owners and the community more broadly.

This activity centre plan, as required by the relevant clauses of the deemed provisions, provides the primary land use, built form and strategic planning controls for the Kalamunda activity centre, and is to be given due regard in the consideration of development and subdivision applications by the relevant determining authority.

The Kalamunda activity centre plan will facilitate the provision of a district centre to service the future of Kalamunda in a manner and form consistent higher level planning documents, and the direction of the City and the DPLH/WAPC.

### **ACTIVITY CENTRE PLAN CONTENT**

This activity centre plan is made pursuant to LPS 3, including the deemed provisions for local planning schemes of the *Planning and Development* (Local Planning Schemes) *Regulations 2015* (the deemed provisions) and State Planning Policy 4.2 Activity Centres for Perth and Peel. The Activity centre Plan comprises three parts:

**Part One: Implementation** – sets out the planning provisions to guide the assessment and approval of development and subdivision.

**Part Two: Explanatory Report** – provides a summary of the vision, objectives, context and technical analysis to support the activity centre plan.

**Technical Appendices** – containing technical studies and reports prepared by various qualified consultans to support the activity centre plan.

### **SUMMARY TABLE**

Element	Data
Total Area covered by the Activity Centre Plan	70.72ha
Area of each land use proposed:	Residential - 10.24ha Centre - 13.17ha Mixed Use - 11.17ha Public Purpose - 5.38ha
Local Open Space	Existing - 12.86ha
Estimated number of dwellings	Existing ~530 dwellings Potential ~400+ additional dwellings
Estimated population (Kalamunda-Maida Vale – Gooseberry Hill SA2)	Existing ~14,889 (at 2016) Potential ~16,590 (by 2026)
Number of high schools	Nil.
Number of primary schools	Nil.
Estimated commercial floor space	Existing: ~20,000sq.m Potential: ~ 23,800sq.m (medium-long term)



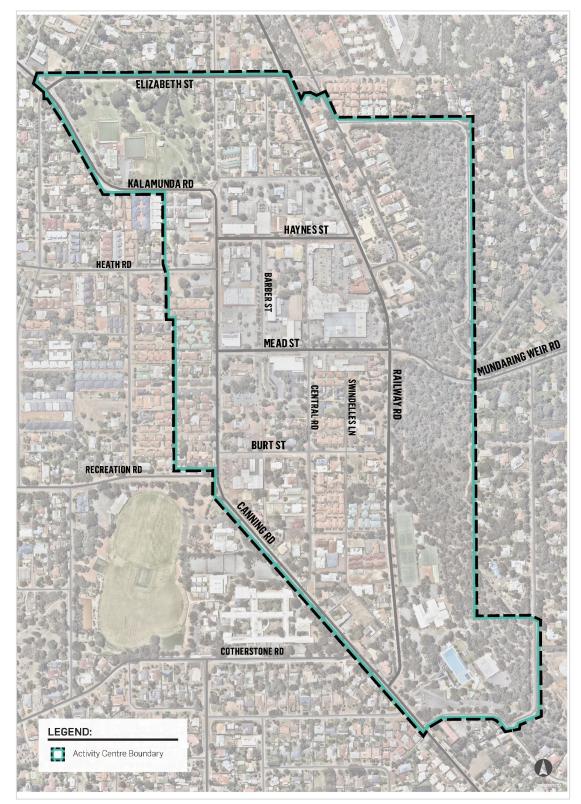
# Part 1 – Implementation

## **PART 1 - IMPLEMENTATION**

## 1.1. ACTIVITY CENTRE PLAN AREA

This activity centre plan applies to the Kalamunda activity centre as the land identified **Figure 1 – Kalalmunda Activity Centre Plan area** as defined by the black dotted boundary.

Figure 1 – Kalamunda Activity Centre Plan area



## **1.2. OPERATION**

This activity centre plan comes into effect on the day it is approved by the WA Planning Commission (WAPC), the date of which is outlined on the endorsement page. As per the deemed provisions from the date of endorsement this activity centre 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 activity centre plan shall have the respective meanings given to them in City of Kalamunda Local Planning Scheme No.3 (LPS 3).

Nothing in this activity centre plan is to be interpreted as limiting clause 5.5 of LPS 3 which allows for variations to site and development standards and requirements. Nothing in this activity centre 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 an activity centre plan is to have due regard to, but is not bound by, the activity centre plan when deciding the application.

## 1.3. STAGING

Further development in the activity centre plan area can be progressed in the near term, as services are already available, and the road network within and surrounding the activity centre are pre-existing.

The staging of future development will take place in line with market demand given the fragmented landownership within the activity centre.

Staging for public realm improvements is to be undertaken in accordance with the Kalamunda Landscape Master Plan.

## 1.4. ACTIVITY CENTRE PLAN OBJECTIVES

#### 1.4.1. Activity Centre Objectives

Development and subdivision in the activity centre plan area shall align with the objectives outlined in **Table 1** that relate to key elements around the themes of Character, Community, Live/Work/Play and Connected. These theme were formulated by the visioning process undertaken with the local community and business owners.

These objectives are to be read in conjunction with the objectives of the applicable Zones contained in LPS 3.

Theme		Objectives	
	Character – Home in the forest	• Development a new 'main street' environment along Hayne Street supported by Central Mall, Mead Street, Barber Street Canning Road and Railway Road.	
		• Encourage built form outcomes that connect the heritage character of the town centre.	
		• Promote buildings that reflects the materiality and landscape of the area through use of local material and colour palettes.	
		• Connect the cultural elements of the town centre to create a meaningful and cohesive story.	

Table 1 – Activity Centre Objectives

Theme		Objectives
, С С С — С	<b>Community</b> – A Place for everyone	<ul> <li>Create opportunities for events, festivals, markets and activities to support a vibrant and activated town centre.</li> <li>Encourage co-location of community facilities.</li> <li>Create places that cater for all members of the community from youth to the elderly.</li> </ul>
	Live/Work/Play – All your daily needs	<ul> <li>Encourage land uses that operate beyond traditional business hours.</li> <li>Enhance safety and vibrancy of the public realm by encouraging passive surveillance of it and facilitating social interaction within it.</li> <li>Enhance housing and social diversity.</li> <li>Enable a critical mass of residents, visitors and workers to support new and enhance existing retail and community offerings.</li> </ul>
0 <sup>,0</sup> ,0	Connected – Walk the centre	<ul> <li>Improve connections and better integrate major land uses and activities in the town centre.</li> <li>Promote pedestrian and cyclist priority streets that are safe and accessible for all.</li> <li>Encourage walking, cycling and public transport use.</li> <li>Ensure destinations and places are well-connected and legible.</li> </ul>

#### 1.4.2. Precinct Vision Statement

As outlined on **Figure 2** – Kalamunda Activity Centre Plan and **Figure 3** – Precinct Plan, the activity centre plan area is divided into precincts to guide land use and built form outcomes.

In addition to the Zone objectives contained in LPS 3 and the Activity Centre objectives, subdivision and development in each of the precincts should (where possible) respond to the precinct vision statement in **Table 2**.

Table 2 – Precincts

Precinct	Vision Statement
Main Street Precinct	• This precinct will encompass the primary main street anchored by Haynes Street.
	<ul> <li>The precinct should accommodate a mix of commercial, retail, mixed use and food and beverage offerings.</li> </ul>
	The main street will be safe for pedestrian and vehicles alike.
	• Built form will be sympathetic to the character of Kalamunda encouraging development that is an appropriate scale that interacts with the main street element.
Anchor Precinct	• This precinct supports larger scale uses that aren't appropriate to a main street but are critical in supporting the diversity and range of commercial offerings in the town centre.
	• This precinct is the focus of large format commercial and retail premises centred around Kalamunda Central (including supermarket/s, mini majors etc).
	<ul> <li>Small scale, active uses support the anchor tenants and generate additional employment.</li> </ul>

Precinct	Vision Statement
Tourism Precinct	• This precinct is the hub for tourism, culture and heritage for the Kalamunda town centre.
	• Centred around Railway Road and Zig Zag Culture Centre, activity in this precinct leverages off the local and regional identity, building on the heritage and character of the town centre.
	<ul> <li>Compatible land uses are consolidated where appropriate providing synergies between key cultural feature of the town centre including Stirk Park and Bibbulmun Track.</li> </ul>
Mixed Use Precinct	• This precinct supports the Kalamunda town centre core as the centre of activity and employment generation.
	• Land use is predominantly mixed use encouraging residential and small scale commercial uses in accordance with existing planning framework.
	<ul> <li>Small scale professional uses such as home office are encouraged where appropriate.</li> </ul>
Residential Precinct	• Consistent with the Residential zone, the precinct will provide primarily single and grouped dwelling development in close proximity to the town centre.
Food and Beverage Focus	• The land front Central Mall provides a focus for food and beverage outlets activating the town centre into the evening hours.
area (as identified on activity centre plan map)	<ul> <li>Central Mall will function as a shared pedestrian/vehicle zone allowing one-way traffic movement to activate the street.</li> </ul>

### 1.5. DEVELOPMENT REQUIREMENTS FOR THE ACTIVITY CENTRE

#### 1.5.1. Land Use Permissibility

The activity centre plan land uses have land use permissibility as per Table 1 Zoning Table within LPS 3 for the corresponding zone as outlined in **Table 3**.

The activity centre and precinct objectives in section 1.4.1 and 1.4.2 should inform decision-making where discretion is sought to guide the land use outcomes envisaged for the activity centre plan area.

Table 3 – Land Use

Activity Centre Plan Map Land Use category	Equivalent Zone/Reserve in accordance with LPS 3
Centre (C1)	Centre (C1) Zone
Residential	Residential Zone
Mixed Use	Mixed Use Zone
Public Purpose	Public Purpose reserve
Local Open Space	Local Open Space Reserve

#### 1.5.2. General Requirements

The following provision apply to all development in the activity centre plan area including:

These provisions are to be read in conjunction with the Built Form Design Guidelines (BFDG) which provide a set of development standards that allow for increases in density over time while maintaining the finegrained, village environment that local residents cherish (refer **Appendix A**).

The BFDG relies on the overall framework set out in the WA Planning Commission's State Planning Policy 7.3 Residential Design Codes (R-Codes) Volume 1 and 2. Where there is a conflict, the requirements of this Activity Centre Plan and the BFDGs prevail.

The below development standards in **Table 4** are applicable to all subdivision and development within the activity centre plan area to be read in conjunction with the BFDGs and the R-Codes (Volume 1 and 2).

For residential and mixed-use development, the following provisions of the R-Codes apply unless otherwise varied by LPS 3, this activity centre plan, the BFDG or any other local planning policy:

- For Single House and Grouped Dwellings R-Codes Volume 1 (previously Part 5 of the R-Codes for single and grouped dwellings)
- For Multiple Dwellings and Mixed Use development R-Codes Volume 2 (previously Part 6 of the R-Codes for apartment design and mixed use development)

In instances where a requirement refers to a provision of Volume 2 of the R-Codes, these are intended to apply to all development in the Activity Centre Plan area except for Single House and Grouped Dwellings unless otherwise specified.

Table 4 – General Requirements

Control	Requirement		
Site Planning + Ma	Site Planning + Massing		
<ol> <li>Development Requirements and Frontage Types</li> </ol>	For the most critical street edges within the activity centre 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. This includes minimum and maximum front setback requirements as well as a range of other considerations relating to the design of the front building facade.		

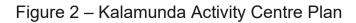
Control		equirement
	a)	Development standards as per <b>Table 5</b> - Built Form Development Requirements.
	b)	Frontage designation as per <b>Figure 4</b> - Built Form Controls.
	c)	On sloping sites, achieving at grade entrances is challenging. Floor levels may vary from 0.5m above to 0.5m below grade along footpath, but building entries must conform to BCA universal access requirements and AS1428.1.
	d)	Clear glazing requirement apply to street facing facades (measured up to 3m in height).
	e)	Frontage Build-Out requirements are intended to create a consistent built edge along a street, and relate to the identified building line across the front of the site, as set by the front setback.
	f)	Building Articulation of ground floor shopfronts is encouraged, including inset entries, creative signage, window displays, transom windows, and varying materials such as timber or brick expressed as piers, plinths, and beams to provide visual interest. Unarticulated glazed shopfronts are not encouraged.
2. Plot Ratio	a)	Maximum plot ratio allowed as per <b>Figure 2</b> - Kalamunda Activity Centre Plan and associated provisions of the R-Codes (Volume 1 or 2).
	b)	Additional plot ratio allowance may be applicable in some circumstances, see Development Incentives in Section 6.7 of the BFDG.
3. Building Height	a)	For properties with designated Frontages on <b>Figure 4</b> – Built Form Controls, heights as per <b>Table 5</b> – Built Form Development Requirements.
	b)	For properties without a designated Frontage, heights as per the designated R-Coding identified in <b>Figure 2</b> - Kalamunda Activity Centre Plan and associated provisions of the R-Codes (Volume 1 or 2).
	c)	Maximum heights are set in storeys.
	d)	Additional height allowance may be applicable in some circumstances (see Development Incentives in Section 6.7 of the BFDG).
4. Ground Floor Residential	a)	In Residential and Mixed Use areas, residential uses at ground floor may be appropriate.
	b)	Design principles and configuration for appropriate ground floor residential interfaces are outlined in sections 3.6 and 3.7 of the R-Codes, Volume 2 These provisions do no apply to sites subject to a 'Frontage Type' as per <b>Figure 4</b> – Built Form Controls.
	c)	Where no 'Frontage Type' is designated, street setback requirements are set according to the designated R-Coding as per <b>Figure 4</b> – Built Form Controls, with associated front setbacks as per the R-Codes (Volume 1 or 2).
	d)	In general, finished floor level of ground floor residential facing the street should not exceed 1m above footpath level.
	e)	Finished floor levels of ground floor residential should not be below the footpath level, unless the building is setback 10m or more from the street.

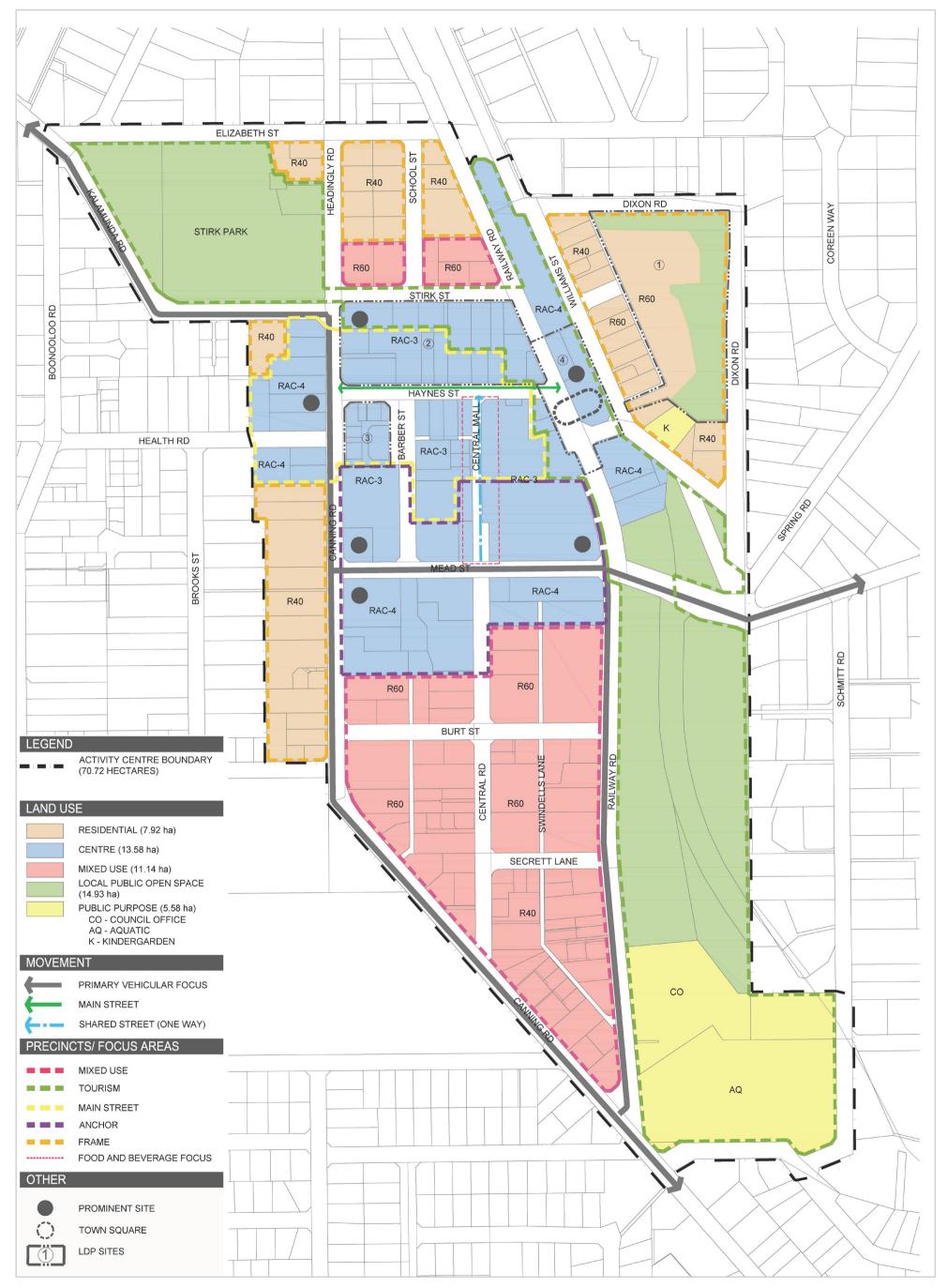
Co	ontrol	R	equirement
5.	5. Corner Buildings		Corner lots should locate a building at the corner of the site addressing both street frontages.
		b)	The corner should be emphasised and articulated in the architectural expression of the building (eg. corner entry, special awning treatment, signage, vertical element).
		c)	Minimum Frontage Build-Out requirements, if required by Frontage type, can be reduced by 20% on corner sites.
6.	Transition Provisions	a)	Applies to all properties that share a lot boundary with properties outside the activity centre plan area.
		b)	Applies to all Attached Streetscape properties (R-AC4, R-AC3) that share a lot boundary with Detached Streetscape properties (R40-R60).
		c)	Transition must be addressed using either of these approaches:
			<ul> <li>Internal boundary setback (side or rear) of applicable property to be increased by 3m (in addition to otherwise required setback).</li> </ul>
			ii. Height limit along applicable boundary reduced to 2 storeys, with upper levels set back minimum of 6m from lower building face.
7.	Response to Topography	a)	Section 3.1 of the R-Codes, Volume 2 provides guidance on undertaking a site analysis to inform new development ensuring that building site design interfaces appropriately with surrounding buildings and public realm.
		b)	Minimise the use of large retaining walls. If they are taller than 1.5m, they should be stepped and landscaped.
		c)	Incorporate retaining as part of the overall building or as part of the landscape proposal.
		d)	Design the building for 'up-slope' and 'down-slope' conditions relative to the street by:
			<ul> <li>balancing car parking access with the creation of a strong building façade along the street. Car parking access often works best at 'down-slope' side of the building.</li> </ul>
			ii. minimising the setback for up-slope conditions to achieve a close relationship between the building and street edge.
			<ul> <li>aiming for level access to the entry door wherever possible. However, where buildings are close to the street and have a residential ground floor, setting finished floor levels slightly higher can assist with privacy (max. 1m in accordance with 'Ground Floor Residential' requirements). For commercial uses, entries should be designed to achieve universal access requirements.</li> </ul>
			Balance cuts into the land with fill, instead of only using cuts or fill alone. Use parts of the slope for the open spaces associated with the development, incorporating it as terracing, and create flat outdoor spaces around the buildings.

Control Requirement							
	<ul> <li>f) Utilise the slope for undercroft (undercut) or basement car parking wherever possible.</li> </ul>						
Building Character	Building Character						
8. Place Identity	a)	New buildings within the Kalamunda Activity Centre should have an architectural character that is attractive and compatible with the surrounding buildings. This character should draw from prominent materials and colours of the area, and should express and strengthen the intended place identity of "Home in the Forrest."					
	b)	All development (inclusive of Single House and Grouped Dwellings) must comply with section 2.2 Place Identity of the BFDGs as follows:					
		<ul> <li>While replicating historical buildings is not the aim, new projects should creatively interpret these existing materials, forms, and patterns in a contemporary manner.</li> </ul>					
		<li>Buildings should pick up on the fine grained rhythm of the street using building articulation or repeating vertical elements to add texture and create pedestrian scale.</li>					
		iii. Appropriate feature materials and forms are those that link the project to the surrounding bush or the agricultural hinterlands. These include use of stained or painted timber, stone, wrought iron, heritage brick, earthy colours, and simple roof forms found in vernacular agricultural buildings.					
	c)	Due regard will be given to the indiciative colour paletted contained in the BFDGs for all development proposals.					
9. Prominant Sites	a)	Prominent Sites designation as per <b>Figure 4</b> – Built Form Controls.					
	b)	New buildings on sites designated as Prominent must:					
		<ul> <li>Achieve an exemplary standard of architectural design, as determined by the Shire of Kalamunda's Design Advisory Committee (www.kalamunda.wa.gov.au/Services/Planning/Advisory-Committee)</li> </ul>					
		ii. On corner sites, respond architecturally to the corner condition in a way that emphasises the corner. Examples of this include increased height, vertical architectural element, corner entry, bay window, blade signage, special awning treatment, distinctive cladding material, etc.					
		iii. On sites that terminate vistas, place vertical elements, bays or entries (elements that are obvious at a distance) at the centre of the view line.					
		iv. Other solutions to both corner sites and sites that terminate vistas may be appropriate and can be agreed with the Design Advisory Committee.					
10. Town Square	a)	Development within the 'Town Square' as identified on <b>Figure 2</b> - Activity Centre Plan and <b>Figure 4</b> - Built Form Controls is subject to the preparation of a Local Development Plan (refer to Section 1.6).					
Other Requirement	s						

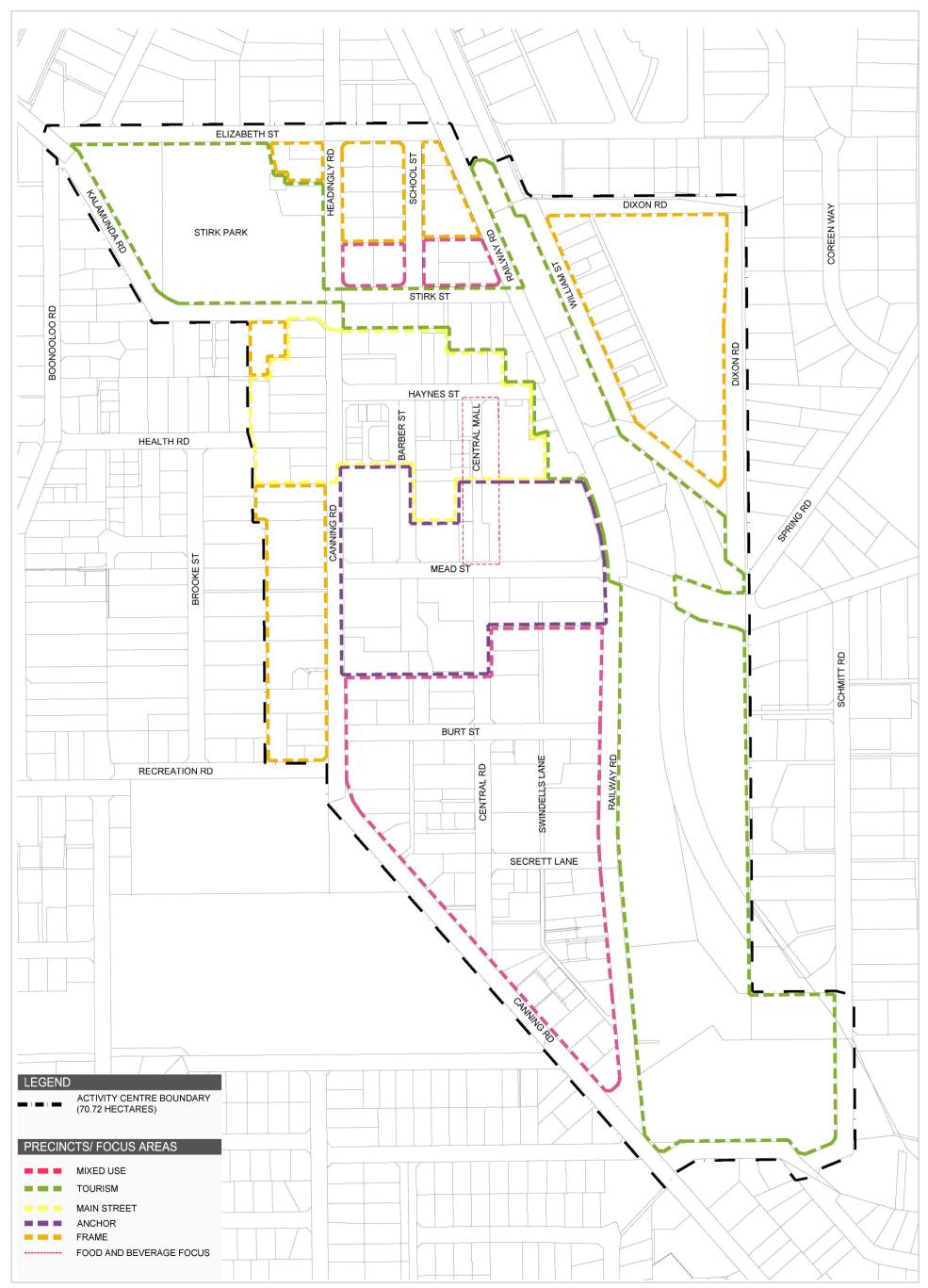
Control	Requirement
11. Car Parking Rates	<ul> <li>a) Parking rate to be supplied at a rate of:</li> <li>Shop/Retail - 4.5 car bays per 100sq.m</li> <li>Office - 2 car bays per 100sq.m</li> <li>Residential - refer to car parking requirements in accordance with the R-Codes, Volume 1 or 2.</li> <li>All other uses - refer to Local Planning Scheme No. 3.</li> </ul>
	<ul><li>b) Car parking areas are to be designed to AS2890.1 and AS2890.6.</li></ul>
	c) Non-residential car parking requirements are encouraged to be provided and/or shared across different sites within the activity centre boundary, subject to appropriate agreements being put in place.
	d) For Frontage Types 1, 2, and 3 (refer <b>Figure 4</b> ) car parking shall not sit between the building and the street.
	<ul> <li>For Frontage type 4, car parking between the building and the street is discretionary, depending on the proposed land use and building configuration.</li> <li>Where it is supported, it should be limited to an access aisle and single row of parking bays and screened at the street by a 1m landscape strip.</li> </ul>
	f) If the Minimum Frontage Build-Out requirements are met ( <b>Table 5</b> – Built Form Development Requirements), car parking may be brought close to the street for the balance of the street edge screened by a 1m landscape strip.
	g) Car parking for the activity centre is encouraged to be consolidated through reciprocal parking arrangements or through other appropriate means as agreed with the City of Kalamunda.
12. Bicycle Parking	<ul> <li>a) Bicycle parking for commercial land uses should be provided at the following rates:</li> <li> <ul> <li>1 space per 200sq.m of commercial floor space (tenancies less than 1000sq.m)</li> <li>1 space per 250sq.m of commercial floor space (tenancies over 1000sq.m)</li> </ul> </li> </ul>
13. Landscaping	a) A Landscape Plan is required for all development applications within the activity centre plan area.
	b) For Multiple Dwellings and mixed use development, design principles relating to deep root zones, tree retention and planting on built structures are outlined in Sections 3.3 and 4.12 of the R-Codes, Volume 2
	c) When proposing to remove a tree worthy of retention (according to design criteria of the R-Codes, Volume 2, Section A3.3.1), the applicant must either replace the tree with an equivalent tree in a deep soil zone onsite or take on the offset requirements listed A3.3.7 of the R-Codes, Volume 2.
	d) For Non-Residential development, shade trees are to be provided on site at a rate of 1 tree for every 6 car bays (at ground level).

Control	Requirement			
	<ul> <li>e) Landscaping is to have regard to the principles and objectives of the Kalamunda Landscape Master Plan, which has been endorsed by the City of Kalamunda (refer Appendix H).</li> </ul>			
14. Heritage	a) The City of Kalamunda has prepared a Municipal Inventory of Heritage Places, in accordance with Section 45 of the Heritage of Western Australia Act 1990.			
	b) Properties on the Heritage List may be subject to a heritage agreement with the City in order to protect and preserve the elements identified as having heritage value.			
	c) Properties on the Heritage List may be exempt from certain Scheme requirements, per Kalamunda Local Planning Scheme 3, Section 7.5(c).			
	d) Owners of properties listed on the State Register or National Heritage List should contact the City of Kalamunda and the Heritage Council (WA) to understand their responsibilities and development constraints.			

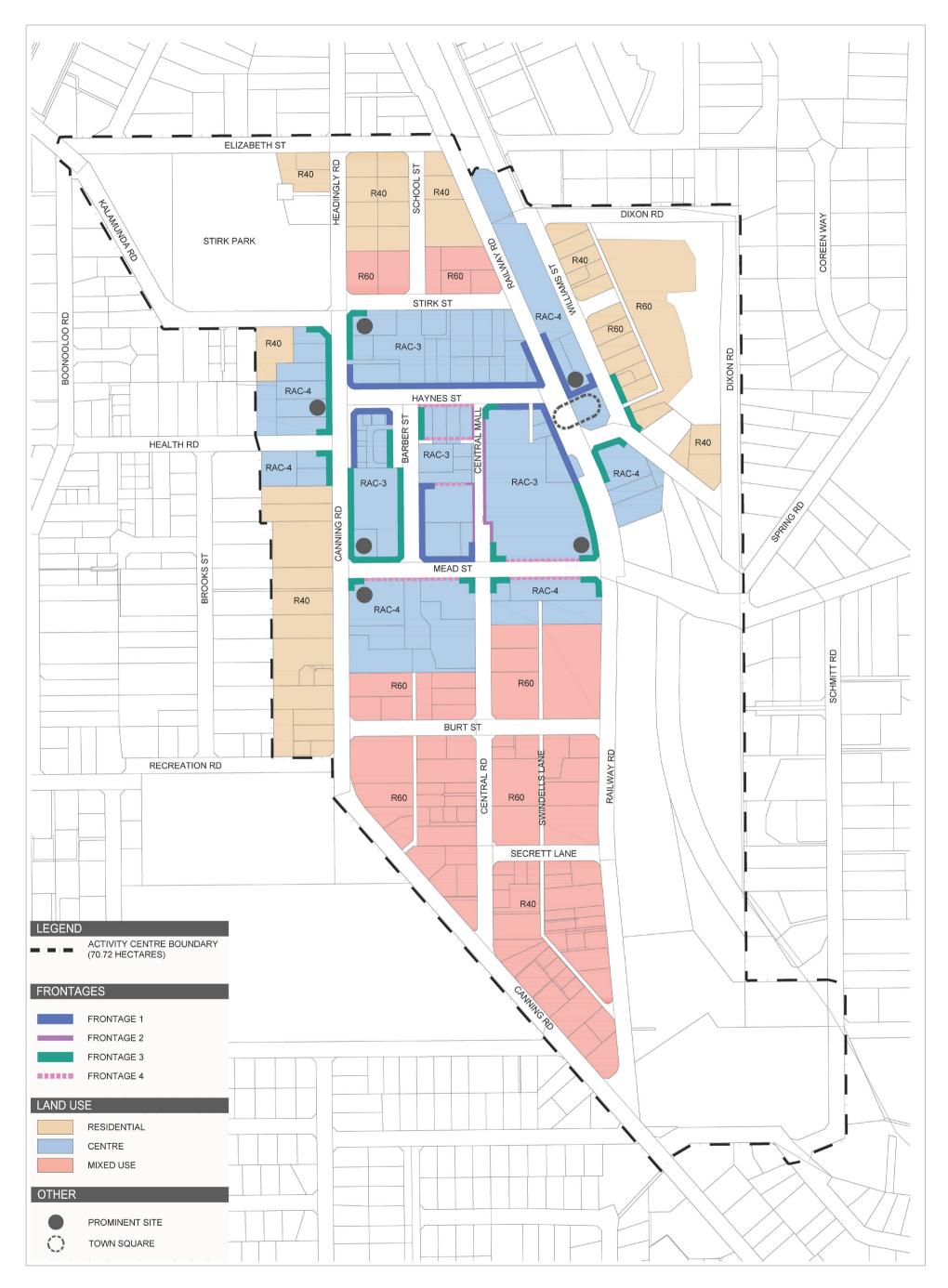




#### Figure 3 – Precinct Plan



#### Figure 4 – Built Form Controls Map



#### Table 5 – Built Form Development Requirements

ELEMENT	PROVISION	FRONTAGE 1	FRONTAGE 2	FRONTAGE 3	FRONTAGE 4	NO FRONTAGE	
Front Setback	Min. Setback	Nil	Nil	Nil	Nil	Refer R-Codes (Volume 1 or 2)*	
	Max. Setback	0.5m	0.5m	0.5m	Discretionary	None	
	Upper Level Setback	2.5m (above 3rd storey)	2.5m (above 2nd storey)	2.5m (above 3rd storey)	2.5m (above 3rd storey)	2.5m (above 3rd storey)	
Ground Floor	Floor Level	Footpath Level (+/- 0.5m)	Footpath Level (+/- 0.5m)	Footpath Level (+/- 0.5m)	Discretionary	Refer R-Codes (Volume 1 or 2)	
	Min. Floor to Floor Height	4.5m	4.5m	4.2m	4.2m	Refer R-Codes (Volume 1 or 2)	
	Min. Clear Glazing %	70%	70%	50%	50%	None	
	Min. Frontage Build-Out	80%	80%	60%	Discretionary	None	
Awnings	Min. % of Frontage	90%	90%	80%	Discretionary	None	
	Min. Depth	2.5m	2.5m	2m	Discretionary	N/A	
	Min. Height	3m	3m	3m	3m	N/A	
	Max. Height	4.5m	4.5m	4.5m	4.5m	N/A	
Onsite Parking	Between Street + Building	No	No	No	Discretionary	Discretionary	
Building Entrance	Primary Pedestrian Access	Public footpath	Public footpath	Public footpath	Refer R- Codes (Volume 1 or 2, Section 3.7)	Refer R-Codes (Volume 1 or 2)	
Building Height	Max # Storeys	Refer R-Codes (Volume 1 or 2)	3 (no height bonus)	Refer R-Codes (Volume 1 or 2)			
Boundary Wall Height	Max. # Storeys	Refer R-Codes (Volume 1 or 2)	3	Refer R-Codes (Volume 1 or 2)			
Side/Rear Setback	Min. Setback	Refer R-Codes (	Volume 1 or 2)	1			
Building Bulk	Max Plot Ratio	Refer R-Codes (	(Volume 1 or 2)				

– Minimum 2m

– Maximum 3m

#### 1.5.3. Movement

Key elements of the movement network are identified in **Figure 5** – Movement Network Plan and **Table 6** – Movement Network Development Requirements. The following provisions apply to development and/or subdivision and should be read in conjunction with Part 2.

Control		R	equirement
1.	Service Vehicle Access Points	a)	Major service vehicle access points should be in the general location and function as outlined on the Movement Network Plan.
		b)	All major site access arrangements are subject to a Transport Impact Assessment at the development or subdivision application stage.
2.	Proposed Pedstrian Linkages	a)	Pedestrian linkages through the activity centre plan area are to be provided generally where indicated on the Movement Network Plan ( <b>Figure 5</b> ).
		b)	Designated pedestrian linkages are to provide direct connections through the activity centre plan area, and should be designed generally in accordance with the following:
			i. Shall provide suitable level of shelter and/or be tree-lined.
			ii. Be of a typical minimum width of 3 metres.
			iii. Be of a grade and treatment so that it is able to be utilised by all sectors of the community.
			<ul> <li>Provide wayfinding signage at appropriate points to direct users of the activity centre.</li> </ul>
			v. Be well lit and provide seating at appropriate intervals.
		c)	Where the linkage passes through a building (for example a shopping centre), appropriate arrangements are to be put in place to allow for pedestrian passage at reasonable hours.
		d)	Where a pedestrian linkage is shown where there is existing development, the linkage is to be provided when/if that existing development is substantially redeveloped and at the discretion of the City of Kalamunda.
3.	Shared Street	a)	Central Road will be extended north to form a one-way shared street.
	(Central Mall)	b)	Development interfacing with Central Mall shall be in accordance with the applicable Frontage Type requirements as per <b>Table 5</b> – Built Form Development Requirements.

Table 6 – Movement Network Development Requirements





## 1.6. LOCAL DEVELOPMENT PLANS

A Local Development Plan(s) (LDP) is required prior to any development or subdivision for land identified as a LDP site on **Figure 6** – Local Development Plan Site Locations map. The key considerations for each LDP Site are identified in **Table 7**.

Figure 6 – Local Development Plan Site Locations

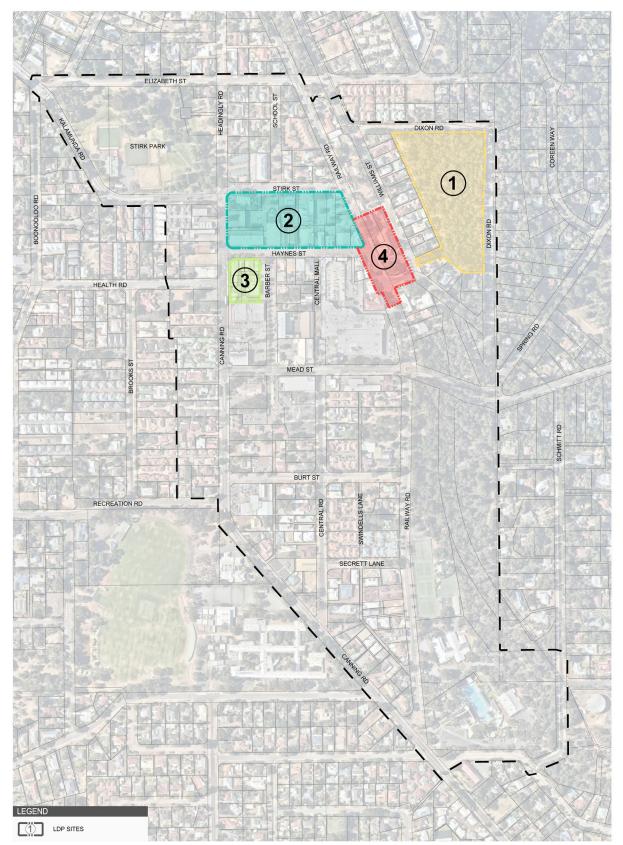


Table 7 – Local Development Plan requirements

LDP Site	General Description	Considerations
1	6 (Lot 608) Dixon	Bushfire risk within local open space.
	Road, Kalamunda	<ul> <li>Protection of remnant vegetation.</li> </ul>
		<ul> <li>Opportunity for aged care or retirement land uses.</li> </ul>
		<ul> <li>Responsive to the topography of the site.</li> </ul>
		Consolidate access points.
		<ul> <li>Aboriginal Heritage – investigate heritage place 17064 which is identified as a modified tree. Its status is an "Other Heritage Place" – Stored Data/ Not a Site. Obtain necessary approvals under the Aboriginal Heritage Act 1972 as required.</li> </ul>
2	Lots bound by Canning Road, Stirk	<ul> <li>Consolidation of land parcels where possible to achieve more developable land parcels.</li> </ul>
	Street, Railway Road and Haynes	<ul> <li>Delivery of 'proposed pedestrian linkages' in accordance with the Movement Network Plan.</li> </ul>
	Street.	<ul> <li>Restricted servicing access off Haynes Street to reduce loading and service areas dominating the streetscape.</li> </ul>
		<ul> <li>Resolution of topographical changes across the site.</li> </ul>
3	Lots bound by Canning Road, Haynes Street and Barber Street.	<ul> <li>Consolidation of land parcels where possible to achieve more developable land parcel(s).</li> </ul>
		<ul> <li>Investigate closure of internal access road to provide additional developable land.</li> </ul>
		<ul> <li>Maintain the consolidation of service access.</li> </ul>
4	Town Square	<ul> <li>Investigate the opportunity to redevelopment the existing library and co- locating this with additional community uses such as performance space, function facilities etc.</li> </ul>
		<ul> <li>Provide appropriate visual and physical connections to Zig Zag Cultural Centre, library and Bibbulmun track.</li> </ul>
		<ul> <li>Incorporate seating, playgrounds (e.g. waterplay) and opportunities for social interaction and informal gathering.</li> </ul>
		<ul> <li>Incorporation of a public art piece to terminate the view on Haynes Street will act as an attractor and aid in wayfinding.</li> </ul>
		<ul> <li>Appropriate interface with the 'Shared Zone' on Railway Parade to improve the east-west connection.</li> </ul>
		<ul> <li>A Traffic Management Plan be prepared with supporting analysis to determine impacts and mitigation strategies associated with closing the segment of Railway Road during events.</li> </ul>

The LDP(s) shall co-ordinate development in an integrated manner, taking into account built form siting and controls, vehicle access points and car parking areas, building entries and pedestrian access. Provisions of LDPs shall ensure land uses and activities that actively or passively contribute to the public realm are located at the ground level of buildings and other non-active land uses shall be located in the upper level(s) or the rear of buildings.

A Local Development Plan shall be prepared and approved in accordance with the *Planning and Development (Local Planning Scheme) Regulations 2015.* 

## 1.7. ADDITIONAL INFORMATION

Additional information required to ensure the fulfillment of the requirements of the activity centre plan is outlined in **Table 8**. The below is in addition to the lodgement requirements of LPS 3.

Table 8 – Additional Information Re	quirements
-------------------------------------	------------

Additional Information	Description	Approval Stage	Consultation Required
Heritage Impact Statement	Where development involves a place on the State Register and the Kalamunda Municipal Inventory.	Subdivision and / or Development Application	City of Kalamunda
Transport Impact Assessment	Where development proposes to vary the parking requirements of the activity centre plan.	Development Application	City of Kalamunda
Acoustic Assessment	Environmental Noise Assessment demonstrating capacity for non-residential development to comply with noise regulations, including taking into account future residential development in the activity centre area.	Development Application	City of Kalamunda
Landscape Plan	Landscape Plan to be prepared in accordance with Built Form Design Guidelines and having regard to the principles and outcomes of the activity centre plan Public Realm Master Plan.	Development Application	City of Kalamunda
Bushfire Management Plan	SPP 3.7 policy measure 6.4 requires subdivision and development applications to be accompanied by the following information in accordance with the Guidelines:	Subdivision and / or Development Application	City of Kalamunda
	<ol> <li>A BAL Contour Map or BAL assessment to determine the indicative acceptable BAL ratings across the subject site.</li> </ol>		
	2. The identification of any bushfire hazard issues arising from the BAL Contour Map.		
	3. An assessment against the bushfire protection criteria requirements demonstrating compliance within the boundary of the subdivision site.		

### **1.8. VARIATIONS**

If a development application or subdivision application does not comply with the provisions and controls of this activity centre plan, the responsible authority may vary any provision or control where it is satisfied that:

- Such a variation will not prejudice the achievement of the objectives of this activity centre plan; and
- The orderly and proper planning and amenity of the activity centre plan area will be maintained.



# Part 2 – Explanatory Report

## 2. PLANNING BACKGROUND

### 2.1. INTRODUCTION & PURPOSE

The purpose of the Kalamunda Activity Centre Plan is to facilitate the development of a district activity centre in Kalamunda, Western Australia, as contemplated and planned for in a variety of state and local planning documents.

This activity centre plan will facilitate the ongoing development of the Kalamunda town centre, shaping its future positioning as a contemporary, attractive and functional centre for residents and visitors. The town centre is at a crossroad, whereby its future and function need an effective combination of vision and practical implementation to enable its ongoing relevance and commerciality whilst retaining key of its character and identity.

The current town centre is diverse in nature, land use and design. Heritage, topography and an active and engaged local community provide great opportunities to leverage from. Critically, the Kalamunda town centre contains some of the trade-marks of a well-performing district centre but not all and lacks any real cohesion.

This activity centre plan will provide the greatest opportunity to date to deliver a robust planning framework that can facilitate this coordination and much needed activation to key parts of the town centre.

The activity centre plan is made pursuant to the requirements of LPS 3, SPP4.2, and the deemed provisions. **Figure 7** outlines the key relevant planning documents to the activity centre.

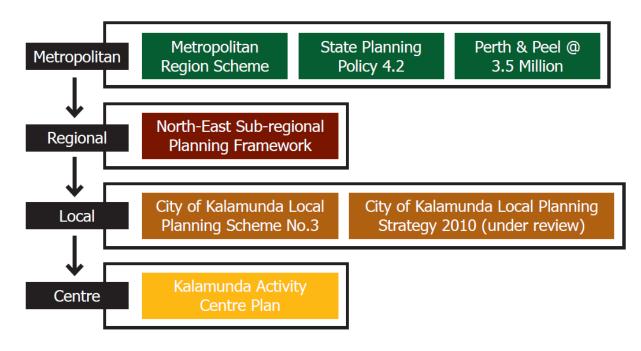


Figure 7 – Key Planning Documents

#### 2.1.1. Location

Kalamunda is located approximately 25 kilometres from Perth CBD in the growing hills area and has an estimated population of 25,190 by 2050 (refer **Figure 8**).

#### 2.1.2. Area and Land Use

Kalamunda could be said to be one of the 'first tree change' communities that has grown over time from a small village to an emerging town centre due to increased vehicular mobility, new urban settlement and the desire for a 'rural lifestyle' in close proximity to Perth CBD.

Kalamunda has a unique history evolving from the timber and orchard industries and a popular holiday destination for people from Perth and Fremantle. Kalamunda History Village and Stirk Cottage are an important element of the town's history.

Present day, wider Kalamunda has a diverse landscape of national and regional parks, State forests, wineries and local industries such as orchards, intensive horticulture and the like. It is also becoming an emerging urban area with expanding industrial and transport hubs in areas such as Forrestfield and High Wycombe, and also an attractive City for families to reside in areas such as Lesmurdie, Maida Vale and Gooseberry Hill.

Taking a closer look at the heart of Kalamunda, the town centre has a mixture of vibrant, energised spaces and streetscapes, while other areas lack a sense of identity and commercial investment resulting in a fragmented town centre. Built on a traditional grid pattern although irregular, the town centre has a mix of lot sizes, building scales and dispersed commercial and retail uses. Former development has been strongly carorientated to cater for the convenience of motorists. This has resulted in a number of developments failing to contribute to the streetscape with dominant parking areas, large setbacks and minimal street activation or presence.

#### 2.1.3. Regional & Local Context

The surrounding environment has been more generally described in **Table 9** and a location plans provided at **Figures 8-10**.

Surrounding Environment	Immediate Area	Wider Area
North	<ul> <li>Stirk Park is at the edge of the town centre in the north-west</li> <li>Areas of residential are located north of Stirk Street</li> <li>Core of the town centre from Stirk Street to the southern side of Mead Street</li> </ul>	<ul> <li>Predominantly residential area</li> <li>Kalamunda Community Garden</li> <li>Service Station</li> <li>Zig Zag Scenic Drive (Gooseberry Hill)</li> </ul>
East	<ul> <li>The Kalamunda History Village</li> <li>Zig Zag Cultural Centre</li> <li>Kalamunda Library</li> <li>Local public open space</li> <li>Tennis Courts and Kalamunda Water Park</li> <li>City of Kalamunda administration building</li> </ul>	<ul> <li>Predominantly low density residential and rural- residential area</li> <li>Department of Housing development</li> <li>Parks and Recreation Reserve / Jorgensen Park, Lalamunda National Park, Greenmount State Forest</li> <li>Mundaring Weir</li> </ul>
South	<ul> <li>Mixed use area comprising predominantly residential (R30 density) strata developments</li> <li>Scattered commercial, retail and community uses between Mead Street to the southern side of Burt Street</li> </ul>	<ul> <li>Kalamunda Performing Arts Centre</li> <li>Kalamunda Senior High School</li> <li>Kalamunda Sporting Precinct</li> <li>Predominantly residential (R10 – R20 density) single dwelling and strata developments</li> <li>Carmel and Pickering Brook Rural areas</li> <li>Kalamunda Skate Park</li> <li>Bickley Valley Wine Region</li> </ul>
West	<ul> <li>Commercial/retail uses forming part of the town centre core along Headingly Street.</li> <li>Predominantly residential (R20, R30 density) strata developments.</li> </ul>	<ul> <li>Predominantly residential (R10 – R30 density) single dwelling and strata developments.</li> <li>Escarpment and Swan Coastal Plain</li> </ul>

Table 9 – Surrounding Environment

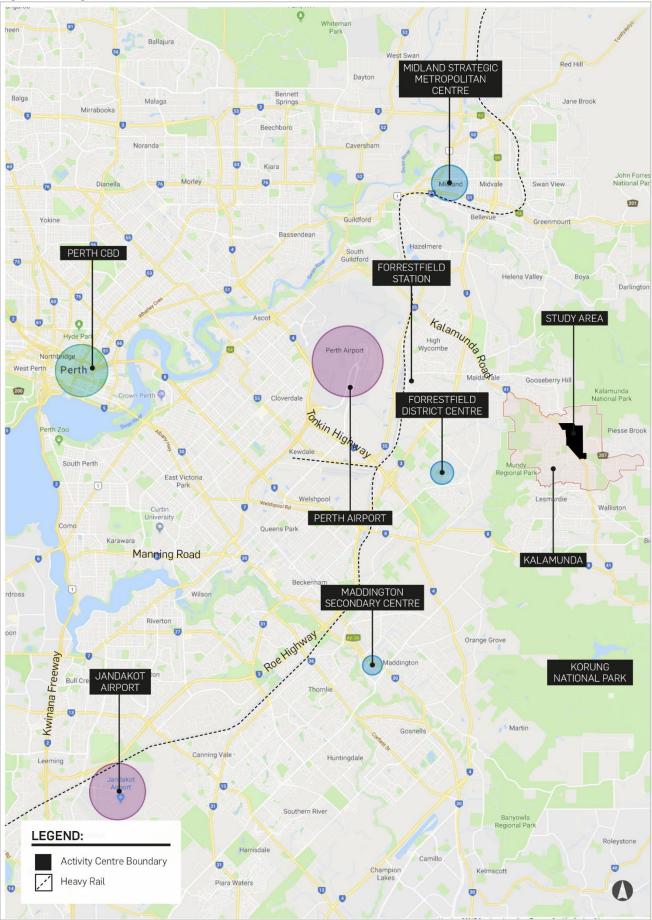


Figure 8 – Regional Context Plan

Figure 9 – Location Plan

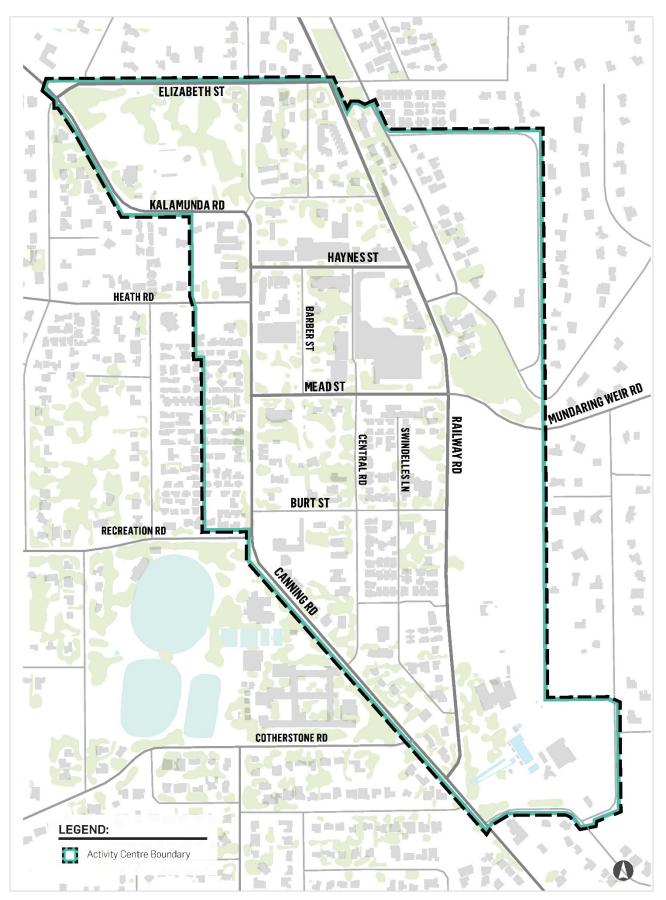
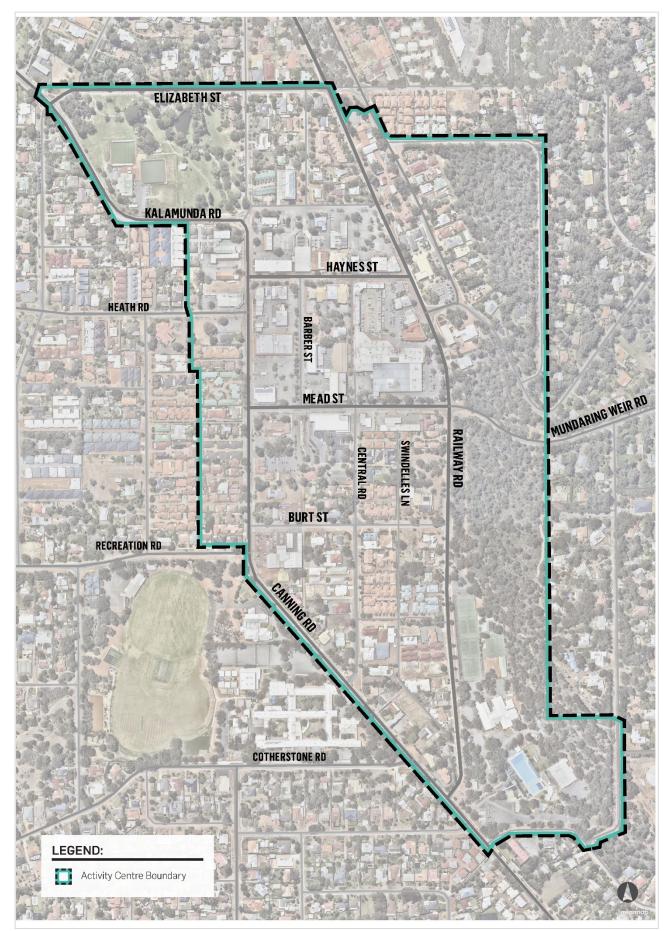


Figure 10 – Aerial Photograph



#### 2.1.4. Legal Description & Ownership

The landownership for the activity centre plan area is broadly illustrated in **Figure 11**. The core of the town centre and surrounding area is predominantly within private ownership, with the City of Kalamunda having scattered landholdings in the central and northern areas.

Along the eastern boundary is a large 'Local Open Space' reserve running north-south along the old railway alignment. There are also a number of 'Public Purpose' reserves including the railway museum, St John's ambulance, aged facilities, bus station, community purposes and churches.

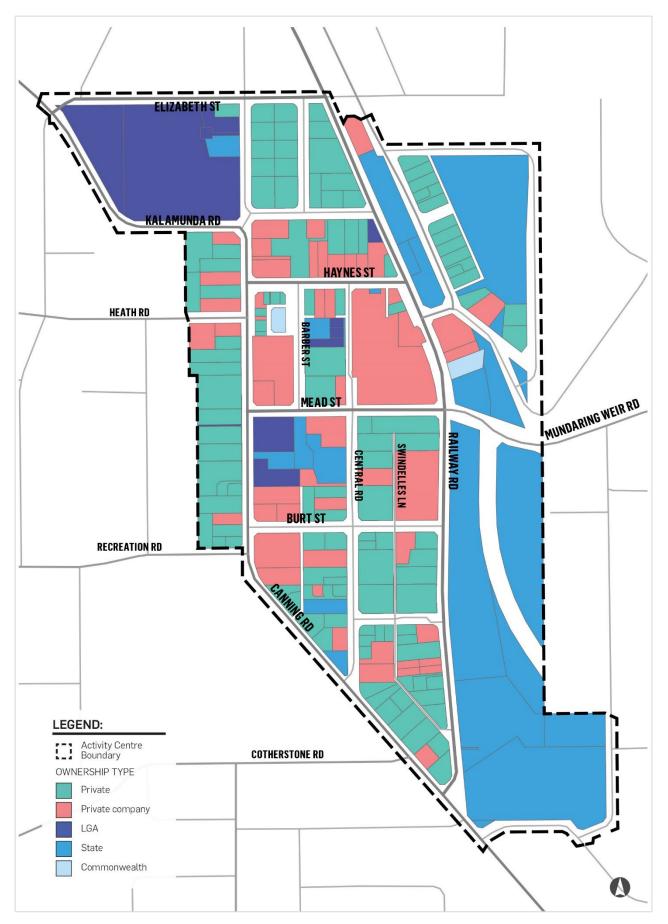
A summary of the study area landownership data is provided in **Table 10**.

Table 10 – Land Ownership

Туре	Area (sqm) <sup>1</sup>	Percent (area)	# of proprietors	# of lots	Percent of lots
Commonwealth	1,051.63	0%	1	1	1%
Company (Private)	88,499.99	29%	65	42	23%
LGA	9,081.50	3%	8	8	4%
Private	200,370.44	65%	449	130	70%
State	8,610.30	3%	4	4	2%
Grand Total	307,613.86	100%	527	185	100%

<sup>1</sup>Area relates to lot parces only and excludes areas such as roads and other reserves.





# 2.2. COMMUNITY & STAKEHOLDER ENGAGEMENT

Urbis in collaboration with the City of Kalamunda undertook the first stage of stakeholder and community consultation to seeks insights on the local perception of the town centre and how it could better meet local needs and aspirations. This included engagement with local business owners, landowners and tenants, local Chamber of Commerce, local organisations and the broader community.

A consultation program was designed to target the key stakeholders of Kalamunda's town centre area. Multiple opportunities and events were held to ensure that all relevant voices within the City were captured over February and March 2018 including:

- Business owner 'coffee chats' attended by 14 business owner(s).
- 2x "Coffee Club" sessions with local business owners (17 meetings held in total over 13 and 15 February 2018). These sessions were one on one with business owners to hear their thoughts on improvements that could be made to the Town centre to improve and attract new business.
- 2x Pop-up container workshops including Jane Jacobs Walks and Idea/Emotional Mapping (24 and 25 February 2018). Led by David Snyder from Spaced Out Place-makers, this process involved local community members leading walking tours of the town centre, sharing their experiences and providing user insights.
- Community Visioning Exercise (15 March 2018). This 3 hour workshop involved ideas and emotional mapping around the key themes of connectivity, land use, built form and public realm.
- Online Survey conducted over 6 weeks with 44 people completing the survey.

The engagement exercises mentioned above were specifically structured to ensure a range of stakeholders and user groups' inputs were received. The key themes of land use, public realm, connectivity, placemaking/business opportunities and built form have continued to be highlighted across the many engagement opportunities and guided the urban design framework.

A summary of the engagement process is provided in the Place Making and Engagement Report at **Appendix B** prepared by Spaced Out Placemakers.

# 2.2.1. Pre-lodgement Consultation

A range of consultation activities took place to inform the development of this activity centre plan as detailed in **Table 11**.

Consultation Type	Parties	Summary of Outcomes
Opportunities and Constraints Workshop – 31 January 2018	City of Kalamunda, Urbis	The City of Kalamunda and Urbis held an opportunities and constraints workshop as part of the first phase of preparing the Kalamunda Activity Centre Plan. This provided an appreciation and understanding of the existing planning framework, the local context and environment, physical site constraints and opportunities, and matters that require further investigation/analysis. A literature Review and Context Analysis Report was subsequently prepared describing the physical, social, economic and environmental context of the town centre and surrounding area. It also identifies preliminary high-level opportunities and constraints to be considered in the future planning of the site.
Business Owner meetings – 13 and 15 February 2018	Business owners, City of Kalamunda, Urbis	These sessions were one on one with business owners to hear their thoughts on improvements that could be made to the Town centre to improve and attract new business.

Table 11 – Consultation summary

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Consultation Type	Parties	Summary of Outcomes
Pop-up container Workshops – 24 and 25 February 2018	Local community, Spaced Out, City of Kalamunda, Urbis	Led by David Snyder from Spaced Out Place-makers, this process involved local community members leading walking tours of the town centre, sharing their experiences and providing user insights.
Community Visioning Exercise - 15 March 2018	Local community, Spaced Out, Edgefield Projects, City of Kalamunda, Urbis	This 3 hour workshop involved ideas and emotional mapping around the key themes of connectivity, land use, built form and public realm.
Meeting with the Department of Planning, Lands and Heritage – 25 June 2018	Department of Planning, Lands and Heritage, City of Kalamunda, Urbis	This meeting was to discuss the approach to the Kalamunda activity centre zoning and land use permissibility to inform a scheme amendment and Part 1 Implementation provisions.
Design Workshop – 2 August 2018	City of Kalamunda, Edgefield Projects, Urbis	This workshop was undertaken to test ideas and concepts to inform the preparation of the Kalamunda Activity Centre Plan and the public and private realm guidelines. The workshop covered movement, built form, public realm, economics, tourism and planning process.
Meeting with the Department of Planning, Lands and Heritage – 9 August 2018	Department of Planning, Urbis on behalf of the City of Kalamunda	This meeting was to table additional options to approaching the Kalamunda activity centre zoning and land use permissibility to inform a scheme amendment and Part 1 Implementation provisions.

As outlined above, the preparation of this activity centre plan has been undertaken with appropriate levels of consultation between the applicant and relevant stakeholders prior to lodgement.

# 2.3. PLANNING FRAMEWORK

The following section provides an overview of the relevant planning framework as it relates to the Activity Centre Plan area.

Document	Zones, Controls and Relevant Provisions		
REGIONAL FRAMEWORK			
Metropolitan Region Scheme	All of the site is zoned Urban under the MRS, with the exception of the portion of Kalamunda Road and Canning Road that is within the activity centre plan boundary. This portion of the road is reserved Other Regional Road.		
	This activity centre plan is consistent with the Urban MRS zone.		
Perth and Peel @ 3.5 million, including North-East Sub- Regional Planning Framework	Providing a spatial and policy framework for Perth reaching a population of 3.5 million, this document seeks to provide for a more compact Perth, including better planned outer area. Kalamunda is identified with an urban infill dwelling target of 11,452 dwellings		
	and an estimated population of 25,190 people.		
	The activity centre plan is consistent with the strategies contemplated by Perth and Peel @ 3.5 million in the following ways:		
	<ul> <li>The centre will encourage local employment opportunities aligning with its District Centre designation.</li> <li>Consolidation of employment generating land uses including larger format commercial, retail and civil uses.</li> <li>Increasing density in appropriate locations to support a mix of uses in the centre.</li> <li>A 'frame' to the town centre core that supports predominantly residential and mixed use development that contributes to the walkable catchment of the town centre.</li> <li>Celebration of cultural features by create synergies between Stirk Park including Stirk Cottage, Zig Zag Cultural Centre and Bibbulmun Track.</li> <li>Reinforcement of Haynes Street as the traditional 'main street' with highly active edges, a mix of uses, pleasant pedestrian environment and a built form outcome that reflects the character of Kalamunda.</li> <li>Creation of a new 'town square' on Railway Parade at the top end of Haynes Street acreating a focal point for the community.</li> <li>Consolidated parking areas in appropriate locations.</li> </ul>		
LPS 3	The City of Kalamunda LPS 3 provides the planning framework for the study area. The study area is primarily zoned 'District Centre', 'Mixed Use', 'Residential' and 'Public Purpose', allowing for a variety of land uses. Further south is the Kalamunda Senior High School and a number of recreational facilities such as the Kalamunda Sporting Precinct within the Public Purpose reserves. The residential areas are generally confined to both the north, south and west of the town centre core with densities ranging from R5 to R40 (including dual density codings).		

# 2.3.1. Key Planning Documents

Document	Zones, Controls and Relevant Provisions
	The town centre core is also identified within the 'Special Control Area (SCA) – Kalamunda Town Centre Design Control Area' (Section 6.3 of the LPS 3). The SCA imposes specific design guidelines to any development within the town centre area, and primarily seeks to ensure that any new developments. This activity centre plan proposes to amend the existing zonings and density codings for the centre, along with some minor textual updates to LPS 3. A separate scheme amendment has been prepared to accompany this activity centre plan and will be a key implementation action.
Kalamunda Town Centre Planning and Urban Design Guidelines (in effect as of 20 June 2011)	The guidelines were adopted in June 2011 and seek to specifically address urban design issues for new developments and establish a series of design principles and objectives which seek to represent the desired outcomes for developments within the current Kalamunda 'District Centre' area.
	The existing design guidelines have provided a level of guidance to date, however there is a need to comprehensively plan for the private and public realm to support the town centre based on a sound and implementable activity centre plan.
	This activity centre plan and associated Built Form Design Guidelines (BFDG) will supersede the existing Kalamunda Town Centre Planning and Urban Design Guidelines (2011).

# 2.3.2. Other Planning Documents

The following documents are also relevant to the development of the activity centre.

Table 12 – Other Planning Documents

Document	Relevant Provisions and Strategies
STATE PLANNING POLI	CIES
SPP 2.7 Public Drinking Water Source	The policy addresses land use and development in public drinking water supply areas. A portion of the town centre along the eastern edge is identified within a Priority 3 (P3) Public Drinking Water Source area.
	P3 protection areas are defined to manage the risk of pollution of the water source. P3 areas are declared over land where water supply sources need to co-exist with other land uses such as residential, commercial and light industrial developments, although there is some restriction on potentially highly polluting land uses.
	Land use compatibility in this area will be a due consideration in the preparation of the activity centre plan to ensure potential risk of on quantity and quality is minimised. No additional high risk land uses are proposed as part of the activity centre plan beyond that currently envisaged within
SPP 3 Urban Growth and Settlement	<ul> <li>Key considerations for the activity centre plan include:</li> <li>Housing should have good access to employment, commercial, recreation and other facilities.</li> </ul>

Document	Relevant Provisions and Strategies
	<ul> <li>Housing options should be diverse to suit various household sizes, ages and incomes.</li> <li>Higher density development should be close to commercial facilities and near transport options.</li> <li>Clustering retail, employment, recreation and other activities in existing activity centres and transport nodes to create attractive, high amenity mixed use urban centres.</li> <li>Urban development should foster a sense of identity and community.</li> <li>Vacant and underutilised land should be utilised for urban growth.</li> </ul> The key principles and considerations for successful urban growth have been reflected in this activity centre plan.
SPP 7.0 – Design for the Built Environment	The WAPC has released Design WA Stage 1 to the public, including State Planning Policy No. 7.3 Residential Design Codes Volume 2 - Apartments.
	As of 24 May 2019, SPP3.1 R-Codes has been renamed State Planning Policy 7.3 Residential Design Codes Volume 1, with all existing context except for Part 6 to remain.
	The new State Planning Policy 7.3 Residential Design Codes Volume 2 – Apartments will replace the content of Part 6 of the R-Codes, focusing on improved design outcomes for apartments (multiple dwellings).
	Work is also underway to include policies on Precinct Design, Neighbourhood Design and House Design. Design WA has been used as the performance based assessment tool for new development in the town centre. The BFDGs focus only on the site-specific elements and/or elements that would need to be modified in response to local considerations.
SPP 3.5 Historic Heritage Conservation	This policy sets out the principles of sound and responsible planning for the conservation and protection of Western Australia's historic heritage.
	The study area contains a number of European and Indigenous heritage sites. A Heritage Impact Assessment will be required where development involves a place on the State Register and the Kalamunda Municipal Inventory.
SPP 3.6 Development Contributions for Infrastructure	This policy sets out the principles and considerations that apply to development contributions for the provision of infrastructure in new and established urban areas, and the form, content and process to be followed. The funding mechanisms for future infrastructure requirements will be a consideration for the City of Kalamunda and landowners.
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).

Document	Relevant Provisions and Strategies		
	The entire suburb of Kalamunda is identified as bushfire prone according to the Department of Fire and Emergency Services mapping (published 31 May 2017). Development and subdivision will need to comply with the requirements of SPP 3.7 and the Bushfire Management Plan at <b>Appendix C</b> .		
DRAFT STATE PLANNIN	IG POLICIES		
Draft SPP 5.4 Road and Rail Noise (September 2017)	The purpose of the Policy is to minimise the adverse impact of road and rail noise on noise-sensitive land use and/or development within the specified trigger distance of major transport corridors.		
	The current version of SPP 5.4 does not impact on the study area. Kalamunda Road and Canning Road which run north-south in the east of the town centre are currently designated as 'Other Regional Road' (ORR) under the MRS.		
	In accordance with this Policy, a trigger distance of 200m applies along this road corridor. Future development application may require an acoustic assessment to be undertaken to mitigate potential noise impact from nearby roads.		
Local Planning documer	nts		
City of Kalamunda Local Planning Strategy 2010	City of Kalamunda Local Planning Strategy 2010 was officially endorsed by the WAPC in 2013 and incorporates the overall objectives and desirable outcomes of several key high-level documents which have been adopted by the City of Kalamunda.		
	The overall intent of the Strategy seeks to facilitate sustainable and equitable growth within and around the Kalamunda town centre and provide high levels of connectivity whilst preserving the natural environment. A review of LPS 3 is currently underway by the City of Kalamunda.		
Stirk Park Master Plan	The City of Kalamunda has prepared a Master Plan for Stirk Park which intends to guide its development into the future. In preparation of the Master Plan extensive consultation with over 650 residents was conducted to determine the communities desired outcomes for the area and a preferred master plan concept.		
	Stirk Park is located in the identified north-west corner of the identified study area bounded by Elizabeth Street to the north and Kalamunda Road to the west. Whilst on the periphery of the town centre core, Stirk Park has an important role as a place of gathering, events and community activities.		
	Stirk Park is located at a key entry point to the town centre and has a role to play in setting the character, feel and sense of place for the town centre and surrounding residential areas.		
	Whist Stirk Park is included within the activity centre plan area it does not substitute the Stirk Park Master Plan which will continue to provide an overarching framework for the development of Stirk Park.		

# 2.3.3. SPP4.2

State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP4.2) is the primary document guides the hierarchy and distribution of activity centres in the Perth and Peel regions.

Some of the key requirements and provisions of SPP4.2 are outlined and addressed in Table 13.

Table 13 – SPP4.2 Provisions and Compliance

Provision/s	Note		
The Kalamunda Town Centre is identified as a 'District Centre'.	This activity centre plan facilitates the delivery of a district centre in Kalamunda, and fulfils the requirement for an activity centre plan for district centres prior to major development.		
<ul> <li>District centres have the following typical characteristics:</li> <li>Are to have a greater focus on servicing the daily and weekly needs of residents. They are to have a greater focus local community focus, and provide services, facilities and jobs that reflect the needs of their catchment.</li> <li>Contain discount department stores, supermarkets, comparison shopping, personal services, speciality shops.</li> <li>Should be a focal point for bus network.</li> <li>Should have district level office development and local professional services.</li> <li>Should cater for 20,000-50,000 persons.</li> <li>Should accommodate a minimum 20 dwellings per gross hectare residential density within a 400m walkable catchment, and a desirable 30 dwellings per gross hectare.</li> <li>Should accommodate 30% mix of land uses where there is more than 20,000sq.m of shop retail floorspace.</li> </ul>	<ul> <li>The Kalamunda Activity Centre Plan has been prepared in accordance with the requirements of SPP 4.2 and Structure Plan Preparation Guidelines.</li> <li>The activity centre will facilitate the delivery of a district centre in line with the typical characteristics of a district centre:</li> <li>The activity centre plan will accommodate a convenience based centre with retail, community and service offerings targeted as the local community.</li> <li>The centre concentrates activities within the retail core of Haynes Street, Central Mall, Mead Street, Barber Street, Railway Road and Stirk Street.</li> <li>The Centre is connected to the bus depot providing public transport access to residents and visitors.</li> <li>The activity centre plan allows for a range of land uses from retail, commercial, residential mixed use, entertainment and the like.</li> <li>The accompanying Employment and Retail Analysis outlines that the trade area for the centre is already at approximately 18,850 persons, and is set to grow just over 1,090 persons over the life of the activity centre plan.</li> <li>The activity centre is allows for increased density in appropriate locations to support a mix of uses in the centre. This is outlined in further detail in other sections.</li> </ul>		
Retail sustainability/needs assessments are required prior to major development in activity centres.	This activity centre plan will facilitate an additiona 1,500-2,500sq.m of shop retail floorspace based on business as usual with a potential increase to		

	2,800-3,800sq.m based on an improvement share and productivity in the centre. A Retail Need and Sustainability Assessment is provided. At <b>Appendix D</b> and detailed in Section 4.9.
SPP4.2 outlines a range of matters that are to be addressed in activity centre plans, under the headings of centre context, movement, activity, urban form, resource conversation and implementation.	All of these matters are addressed throughout the activity centre plan.

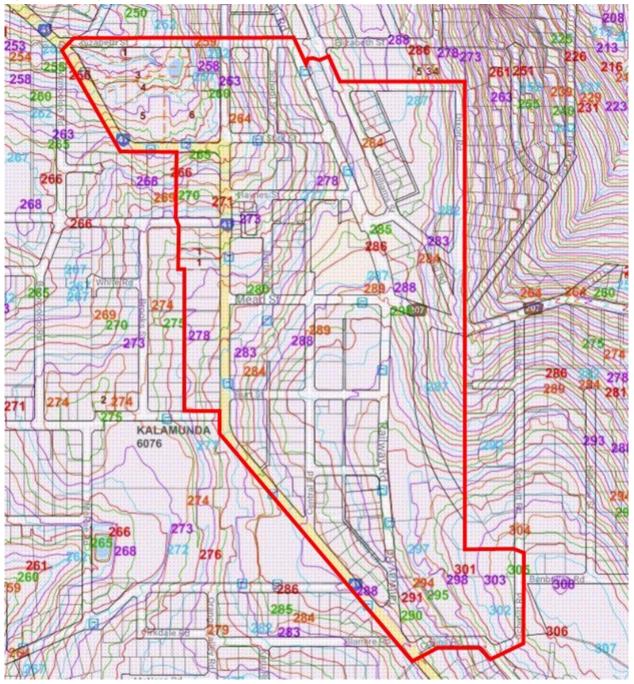
# 3. SITE CONDITIONS

# 3.1. TOPOGRAPHY

The Kalamunda activity centre has a distinct topography sloping downhill from east to west, creating opportunities for views to surrounding areas but also posing a constraint for pedestrian movement, access, streetscape and built form design.

Topographical data sourced from the Water Corporation's Electronic Submissions Interface indicates the study area comprising of undulating land with grades of up to 1 in 10 in some areas. An excerpt of the topographical data is shown in **Figure** 12 – Topographic Map.

Figure 12 – Topographic Map



(Source: Water Corporation, September 2018)

# 3.2. VEGETATION

Remnant vegetation is limited to the eastern portion of the project area, and occurs in relatively large and intact parcels, as well as fragmented plots within private landholdings. The majority of remnant vegetation within the Kalamunda activity centre is proposed to be retained as 'local open space'.

Vegetation within the project area contains habitat for Carnaby's black cockatoo (Endangered), Baudin's Black Cockatoo (Endangered) and the Forrest Red-tailed Black Cockatoo (Vulnerable) protected under the *Environment Conservation and Biodiversity Conservation Act 1999* (EPBC Act), and *Wildlife Conservation Act 1950* (WC Act)

Potential environmental impacts resulting from implementation of the proposal will be addressed in accordance with standard State and Commonwealth legislative requirements under the *Environmental Protection Act 1986* (EP Act) and EPBC Act, during future planning and development processes.

# 3.3. BUSHFIRE HAZARD

Initial investigations undertaken by Strategen Environmental (refer to Bushfire Management Plan at **Appendix C**) identifies bushfire risk to the east of the town centre associated with Jorgensen Park and Kalamunda National Park. These heavily vegetated areas have the potential to generate a catastrophic bushfire event impacting the town centre, given the continuous forest vegetation profile and the potential for strong easterly summertime winds. Management of this bushfire risk is critical for futureproofing the town centre.

Classified vegetation has been identified within the project area and surrounding local area which has the potential to have a significant bushfire impact on proposed development if unmanaged. There is a considerable bushfire hazard associated with vegetation in the eastern portion of the project area within areas proposed to be retained as 'Local Open Space', as well as private landholdings to the east of the project area. Given the vast areas of national parks and State forest east of the project area, there is also significant landscape scale bushfire risk to the project area with the potential for extended fire runs through heavily vegetated forest.

From a bushfire compliance perspective, any future development applications within a designated bushfire prone area (which encompasses the entire study area), will trigger the need for a BAL assessment for the proposed development, and if located within BAL-12.5 or greater, a Bushfire Management Plan (which will be prepared in support of the KACP) to demonstrate compliance with State Planning Policy 3.7 (SPP3.7) and the Guidelines for Planning in Bushfire Prone Areas. Part of demonstrating compliance with the Guidelines, is ensuring the siting of the development is within BAL-29 or lower, there is compliant vehicular access/egress and that the bushfire fighting water supply is sufficient.

# 3.4. HERITAGE

A Historical and Aboriginal Baseline Assessment has been prepared (refer **Appendix E**) and a summary provided below.

A total of 25 heritage listings for historic places were identified within the Study area, including one precinct comprising 11 places. Two places were identified as having a State level of heritage value – Stirk Cottage and the Kalamunda Hotel and Original Kalamunda Hotel. Remaining registered heritage places were recorded as having a local level of heritage value.

Aboriginal heritage searches identified three known sites within the Study Area, two of which are registered. The Poison Gully Creek site is located in the northern portion of the Study Area, while the Helena River site is located along the eastern boundary. Both sites are listed as mystical sites with intangible heritage values, and as such detailed information on their location and significance is unknown without further investigation or assessment.

# 3.5. OPPORTUNITIES AND CONSTRAINTS

These opportunities and constraints should be read in conjunction with the plan at Figure 13.

# 3.5.1. Opportunities

### **Existing Land Use and Development**

- Review extent and boundary of District Centre zone to create a consolidated but well-connected town centre core with a clear role.
- Reinforce Haynes Street as the 'main street' of the town centre. The focus on this main street should be strengthened through future planning and design interventions.
- Extend the town centre to include uses such as the IGA, the ALDI and Bus Depot and the zig Zag Cultural Centre.
- Reinforce gateways and entries statements to the town centre. There are relatively clear gateway points but little legibility beyond the threshold as to where the town centre is.
- Investigate potential development and redevelopment opportunity sites along Canning Road including the RSL site and Jack Healey Community Centre.
- Improve the entrance to the pedestrian mall on Central Mall. This entrance is an important (and highly visible) gateway to the pedestrian mall and weekend markets.
- Connect the town centre to its past by strengthening the physical connections to the adjacent History Village and Stirk Park.
- Investigate underdeveloped and underutilised sites in city centre for mixed used and residential redevelopment.
- Create a town square/focal point for the town centre.
- Locate additional civic and government services in the town centre to attract and retain users in the town centre.

#### **Natural Environment**

- Create clear connections (physical or otherwise) to the surrounding natural features including Jorgensen Park, Bibbulmun Track, Stirk Park, walk and bike trails and wine trails etc.
- Provide more greenery, trees and gardens including native and deciduous trees.
- Capitalise on natural view sheds from the undulating topography. Topography supports views for future tourism and food and beverage uses in northern area and lends itself to alfresco offering.
- Utilise existing vegetation as landmarks and to soften and enhance the streetscape in the town centre.
- Opportunity to introduce drainage systems such as pollution traps to reduce silt and litter adversely impacting on Poison Gully.

#### Infrastructure

- Transition the existing power network to underground power to improve amenity.
- Investigate the potential to extend sewer lines within the study area.

• Drainage system upgraded in 2017.

## Access and Movement

- Re-open Central Mall connecting Haynes Street and Mead Street. Whilst this will remain as an activated laneway for hosting festivals, food carts, and other activities during market days, by opening it up it can offer on-street parking and entice more permanent activities on non-market days, in turn supporting adjacent retailers.
- Improve pedestrian connections and wayfinding from the bus depot to the town centre.
- Improve pedestrian connection and wayfinding from the Bibbulmun Track entry to the town centre.
- Create opportunities for safe, accessible and legible pedestrian connections.
- Investigate street improvements to the pedestrian environment along Railway Road and Stirk Street that work with the Bibbulmun Track improvements and surrounding heritage context.
- Investigate the introduction of dedicated cycle routes through the town centre.
- Investigate street improvements to the pedestrian environment along Canning Road between Stirk Park and Kalamunda Senior High School to encourage walking.

## Placemaking / Social Infrastructure

- Investigate opportunities to further enhance existing event spaces such as the Town Square Gardens and establish a range of suitable events for this space.
- Create a 'brand' for Kalamunda town centre.
- Establish a hierarchy of street and spaces to improve walkability, general vibrancy (people staying longer and moving around the centre) and business trade.
- Create a night time economy.
- Reinforce the existing localised shopping experience and further enhance the existing local identity.
- Better utilise existing community assets throughout the town centre such as Kad's Theatre.
- Explore opportunities to establish a comprehensive approach to the heritage assets and celebrate and communicate the towns history.
- Potential future opportunities for interpretation of Aboriginal heritage values of the area

#### Economic

- Investigate the introduction of housing topologies and density mix in the next phase of preparing the KACP.
- Introduce a diverse dwelling mix to appeal to broader market segments
- Accommodate for the projected growth in younger age cohorts.
- Encourage weekend markets that serve as a valuable attractor for the town centre.
- Capitalise on the town's loyal customer base and leverage the limited direct competition in the wider area.

# 3.5.2. Constraints

#### Existing Land Use and Development

- Limited redevelopment opportunity on strata titled development along Canning Road, Central Road and Railway Road adjacent to the town centre.
- Fragmented ownership throughout the town centre creates challenges for land assembly and redevelopment opportunities.
- Iconic entry site at Kalamunda Road / Canning Road roundabout has a Red Rooster firmly entrenched on this site.
- Setbacks and slopes along Barber Street create difficult interfaces between buildings and footpaths.
- Aging Kalamunda Central Shopping Centre is in need of some additional investment and potential reconfiguration to better integrate with surrounds.
- Fragmented car parking in the town centre creates legibility challenges, inefficiency, and a spatially inconsistent built fabric along the streets.
- Perceived poor recent examples of density may make any further density proposals more difficult.
- Disparate and separated development across the central city centre has resulted in multiple, competing main streets and poor concentration of activity.
- Key destinational uses are located outside of the town centre (i.e. medical centre, civic and recreational uses) deprive the town centre of user groups and market segments and the ability to leverage usage patterns.

#### **Natural Environment**

- Much of the town centre land is sloping, creating challenges with footpath/ building interface, car parking layouts, and large format buildings.
- Bushfire threat is evident particularly along the eastern portion of the study area. Although there is no
  requirement to retrospectively comply with SPP 3.7, the Guidelines or AS 3959, it is recommended that
  any of the following existing buildings/land uses are reviewed to determine whether any vegetation
  modification or fuel management would improve their resilience to bushfire.
- Water quality in Poison Gully impacted by litter and silt entering drainage system.
- Detailed drainage study for the town centre has not been completed and would be beneficial to any further planning to ensure recent upgrades can service future development under the KACP.

#### Infrastructure

- Streetscape infrastructure is dated and inconsistent across the city centre.
- Poor linking between infrastructure assets such as seating and places to linger such as parklets with adequate shade.
- Currently serviced by overhead powerlines which detract from streetscape amenity.
- Limited sewer servicing impacts development potential in parts of the town centre frame

#### Access and Movement

- Poor wayfinding and lack of clear and demarcated into the town centre from entry points.
- Inconsistent and illegible pedestrian crossings throughout the town centre creating an unsafe environment for pedestrians and vehicles.
- Limited access to shops on the pedestrian mall on non-market days.

- Inconsistent shelter and shade on main streets.
- Limited opportunities to link trips specifically between education, recreation, civic and health uses.

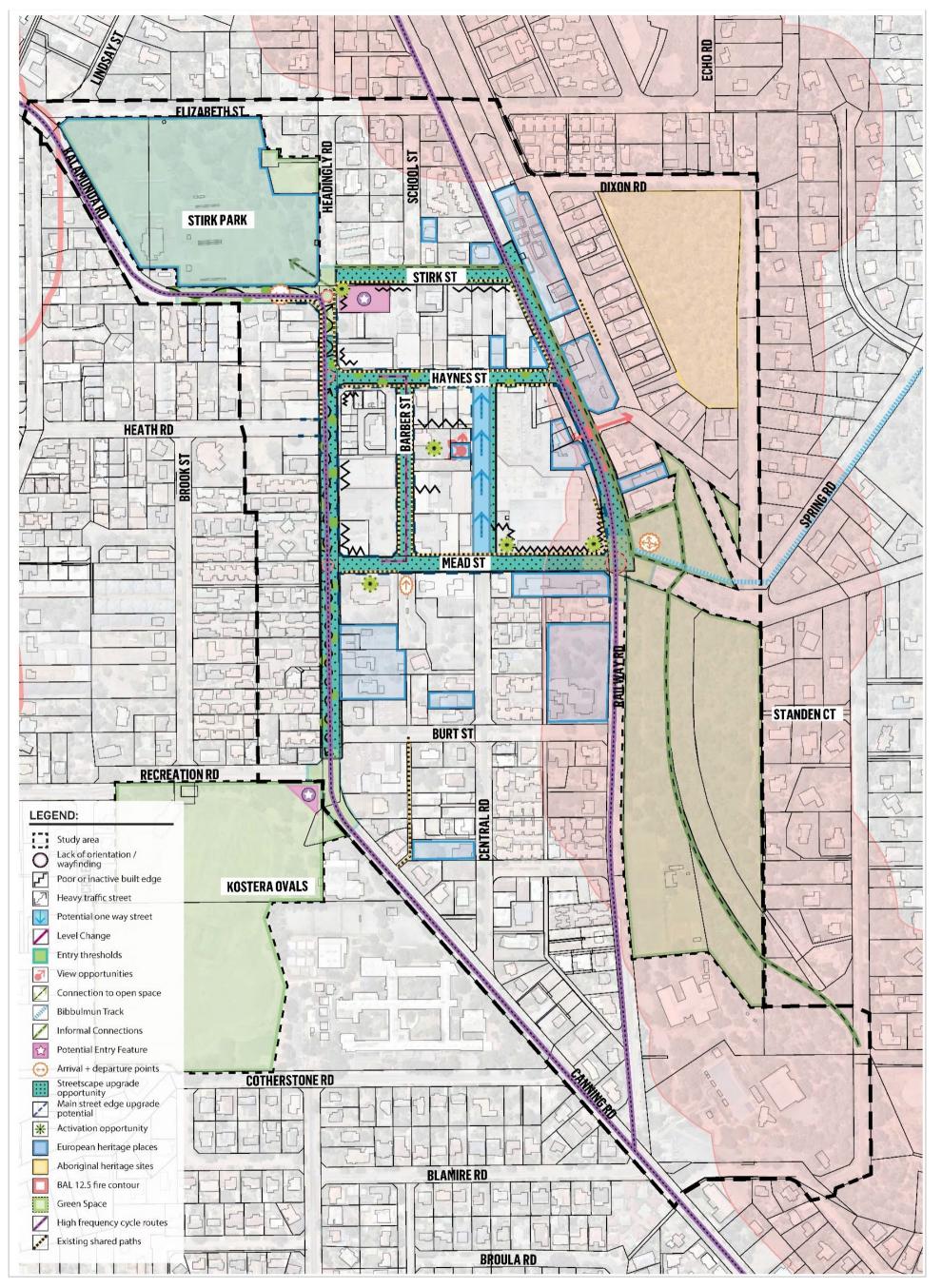
#### Placemaking / Social Infrastructure

- There is an aging population that may have specific expectations from the town both in service provision and structure.
- Poor micro-climate does not encourage walking, which adversely effects vibrancy and local business trade.
- No evidence of the overarching public art strategy being implemented.
- Re-development inertia resulting from retaining heritage buildings and maintaining a sense of heritage in the streetscape.

#### Economic

- Limited projected population growth rate.
- Dwelling mix is limited and constrains market appeal for different market segments.

Figure 13 – Opportunities and Constraints Plan



# 3.6. DEMOGRAPHIC PROFILE

# 3.6.1. Population & Demographic Attributes

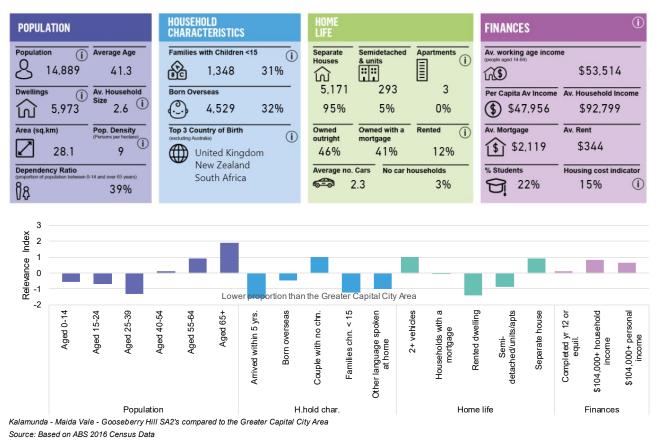
This high level demographic analysis relates the suburbs of Kalamunda, Maida Vale and Gooseberry Hill which forms the Kalamunda Statistical Area Level 2 spatial area (SA2) (2016) according to the Australian Bureau of Statistics (ABS).

Demographic analysis was undertaken at a SA2 spatial area given detailed data is not available for the population residing within the activity centre boundary. The data analysed therefore illustrates the attributes of residents that regularly frequent the activity centre, including the limited number of households within the activity centre plan area.

SA2s have a population range of 3,000 to 25,000 persons and an average population of about 10,000 persons. Population levels have been relatively stable over the past five years in the region. An ageing population, declining household sizes and increased rental vacancy levels have resulted in a moderate decline in the estimated resident population over this period.

Figure 14 provides a demographic snapshot of the Kalamunda SA2 area.

Figure 14 – Kalamunda SA2 Demographic Overview



# 3.6.2. Age Structure

**Figure 15** compares the performance of the SA2 against the Greater Perth are in a number of key demographic indicators. The region was estimated to have a relatively older age profile than the Perth average. As shown in **Figure 15**, the region had a particularly large baby boomer cohort as of 2016 and a large number of residents aged 80 and above.

The demography points to the area being a location for older more settled families, couples without children and lone person households. It is not a strong destination for younger families although presentation of the area as a viable lifestyle destination for such may improve this demographic over time.

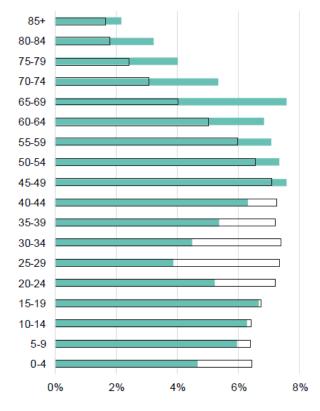


Figure 15 – Proportion of Population by Age – SA2 vs Greater Perth

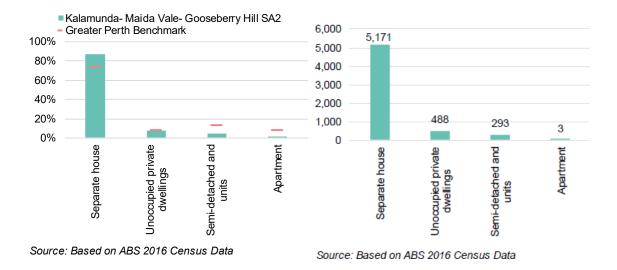
## 3.6.3. Housing Stock Attributes

The region had a larger proportion of separate houses accounting for 87% (5,171 houses) of all occupied dwellings as of 2016. This is above the Greater Perth benchmark by 14%. Moreover, nearly 55% (3,002 houses) of dwellings in the region had four or more bedrooms compared to 45% across Perth.

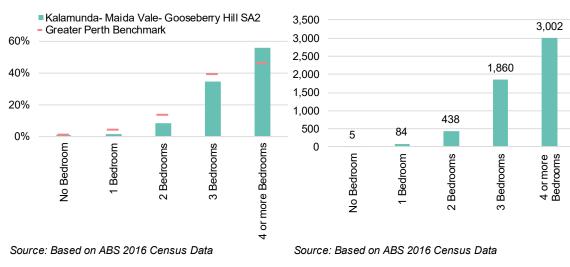
The dwelling stock implies that the area is able to accommodate families however the lack of smaller and diverse housing products may potentially limit the retention and attraction of other cohorts. Refer to **Figures 16-19** for housing stock attributes.

Figure 16 – Dwelling Structure Proportion

Figure 17 – Total Occupied Dwellings



SA2's compared to the Greater Capital City Area Source: Urbis, based on ABS 2016 Census Data



#### Figure 18 – Number of Bedrooms Proportion

Figure 19 – Dwelling Stock by Bedroom

## 3.6.4. Household Income Attributes

Residents within the region were found to, on average, live in medium to high income households. There was a particularly large number of households found to be earning more than \$156,000 per annum compared to Perth-wide averages (refer **Figure 20**).

Figure 20 – Total Household Income, 2016 (Per Annum)



Source: Based on ABS 2016 Census Data

# 4. ACTIVITY CENTRE FRAMEWORK

# 4.1. VISION & OVERVIEW

The Vision for the Kalamunda Activity Centre Plan was developed in collaboration with key stakeholders and the local community. The word cloud image below is a reflection of the most commonly heard words or themes.

OCAL MAINTAINED BUILDI PRODUCE FE WALKING RONMEN 11/1 DNSIS

These words and themes led to the following vision statement:

'Kalamunda is a place borne of community spirit with a strong connection to its heritage. The town centre serves as a gateway to the hills and as a hub connecting both locals and visitors alike. Its natural bushland setting and traditional village atmosphere are a platform to enhance Kalamunda's unique offerings, activities and events and provides spaces for community interactions and neighbourhood conversations.'

The delivery of the vision will be multifaceted and reliant upon a number of key ingredients available to the site. The enhancement and blending of these key ingredients will be required to ensure success.

The vision statement informed a suite of identified objectives for the activity centre plan that relate to key elements around the themes of Character, Community, Live/Work/Play and Connected. This informed the overall objectives for the activity centre plan outlined in Part 1 and the formulation of a design framework based around 'precincts' and 'frontages'.

# 4.2. LAND USE

# 4.2.1. Land Use Control

The activity centre plan area is primarily zoned 'District Centre', 'Mixed Use', 'Residential', 'Local Open Space' and 'Public Purpose' within LSP 3. A scheme amendment is being progressed concurrently with this activity centre plan to rezone the land to 'Centre' with a 'C1 – Kalamunda' subcategory for the core of the activity centre, with the exception of the Local Open Space reserves.

The proposed land use permissibility for 'Centre C1 – Kalamunda' in Table 1 Zoning table of LSP 3 relates to the land identified as 'C1 – Kalamunda' on LPS 3 Zoning Map and 'Centre' on the Kalamunda Activity Centre Plan Map.

All other areas outside of the C1 – Kalamunda designation shall be in accordance with the equivalent zone in LPS 3 as identified on the activity centre plan map as follows:

- Land uses in areas designated Mixed Use are to be in accordance with the Mixed Use zone listed in the Zoning Table in LPS 3.
- Land uses in areas designated Residential are to be in accordance with the Residential zone listed in the Zoning Table in LPS 3.
- Land uses in the areas designated Public Purpose and Local Open Space are to be in accordance with the provisions of Part 3 Reserves of LPS 3.

In making a determination, the responsible authority will have regard to the objectives for the Activity Centre and Precinct vision statements outlined in Part 1 of this activity centre plan.

# 4.3. URBAN FORM

The Built form of the Kalamunda activity centre will largely be guided by the Kalamunda Built Form Design Guidelines (BFDGs) (refer **Appendix A**).

The Design Guidelines create a set of development standards that will allow for increases in density over time while maintaining the fine-grained, built form and character of Kalamunda. The BFDGs provides a transparent framework for planning assessment, allowing flexibility to respond to site and market conditions but also clearly identifying the intended built form and public realm interface in each location. The requirements have been tailored to the specific conditions and opportunities within the activity centre, building on existing functioning patterns and supporting new initiatives that have emerged through the visioning and urban design process.

The BFDG sets out a series of 'frontage' requirements that clearly articulate the intended built form relationship between private lots and the public realm within the centre of Kalamunda. This structure allows for significant flexibility in designing new developments while maintaining the key interfaces to support the town centre activities.

For standards relating to development above street level and not designated with a 'Frontage' type, the BFDG relies on the overall framework set out in the State Planning Policy 7.3 Residential Design Codes, Volumes 1 and 2 (R-Codes). This is one of a suite of planning policies within Design WA, a planning reform initiative intended to improve the quality of design within Western Australia. The following development standards refer to associated sections of Volume 2 of the R-Codes. As such, please refer to both documents when designing new projects. Where there is a conflict, the BFDG prevails. Planning applications are also subject to the balance of the applicable R-Codes sections (Volumes 1 or 2) even if not specifically referenced in the BFDG.

# 4.3.1. Street Interfaces

For the most critical street edges a series of more detailed development standards (called 'frontages') have been created to ensure an appropriate interface with the adjacent public realm that is consistent with the intended urban design outcome. This includes minimum and maximum front setback requirements as well as a range of other considerations relating to the design of the front building facade. These requirements are set out in Part 1 and the BFDGs (to be read in conjunction with **Figure 21** Built Form Control Map) and described in **Table 14**.

Table	14 –	Frontage	Types
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Frontage	Location	Characteristic
Frontage 1	This is applied to building edges with the highest focus on activation at the ground level, typically in retail main street precincts.	This type is characterised by buildings edging the footpath, generous clear glazing, frequent building entries, awnings, and easy access at grade.
Frontage 2	This is applied to building edges with the highest focus on activation at the ground level and to retain a more intimate scale, typically in the shared space of Central Mall.	This type is characterised by lower building heights and buildings edging the footpath, generous clear glazing, frequent building entries, awnings, and easy access at grade.
Frontage 3	This is applied to building edges with a moderate focus on activation at the ground level, typically on the periphery of retail main street precincts.	This type is characterised by most buildings edging the footpath, modest amounts of clear glazing, frequent building entries, reasonable coverage of awnings, and easy access at grade.
Frontage 4	This is applied to building edges with a moderate focus on activation at the ground level, where flexibility is required to address site conditions or potential land uses	With appropriate justification, this flexibility can include larger setbacks, entries above footpath level, and even car parking between the building and street. Regardless of the ultimate agreed design solution, the intention is that the resulting building address the adjacent street in a way that creates an attractive, positive urban interface.
No Frontage Designation	Where not identified with a frontage type.	Properties without a nominated Frontage are subject to the design standards of LPS 3, this activity centre plan and the R-Codes (Volume 1 or 2).

# 4.3.2. Residential density

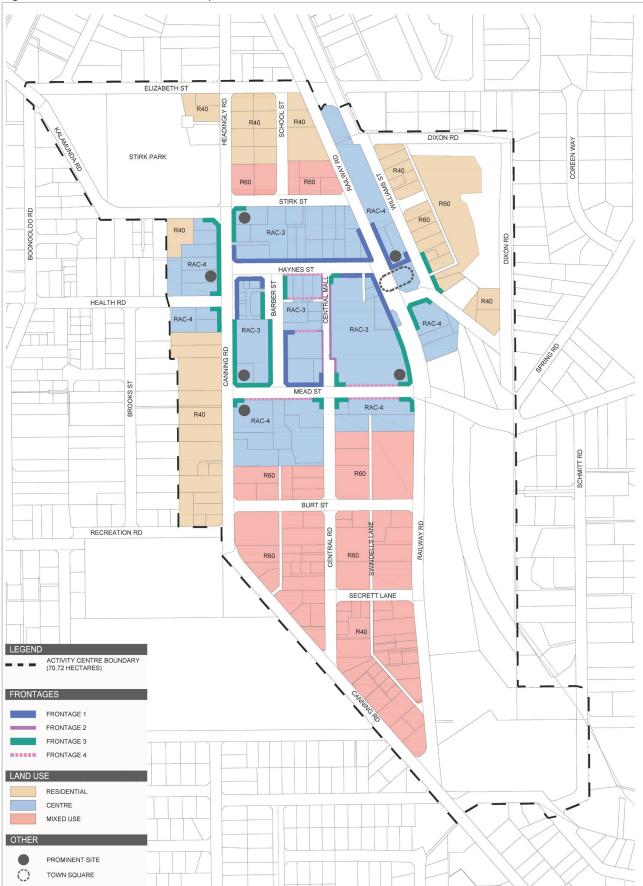
There is a level of anticipated residential growth in the activity centre that will provide additional users of the centre. The supply of additional dwelling units will not be limited by infrastructure capacity in the majority of the activity centre. Whilst residential growth would be in line with population projections for the broader area, the residential capacity of the activity centre has been augmented through a combination of encouraging residential development over shops, an upcoding of residential and mixed-use densities in the activity centre boundary and the identification of underutilised sites for redevelopment.

An expectation of an additional 400 dwelling units in the activity centre has been identified that would bring over 850 new residents to the area. The main driver for this growth will be the rezoning of the activity core to accommodate densities more in keeping with a 'town centre' however the massing and bulk of these structures will be moderated by height limits and provisions set out in the BFDGs. The introduction of these residents would be expected to occur over the lifespan of the activity centre plan as incremental growth occurs.

One identified opportunity for additional housing in the activity centre frame was through the rezoning of split zoning to a single density code. From a review of the existing LPS 3 dual density provisions, it was apparent that the higher code option was an underutilised opportunity to introduce additional density that allowed for greater flexibility. The built form outcomes and restrictions linked to the higher code are now addressed in

the BFDGs. This enabled the overall aesthetic of the frame to be improved as the new code requires similar permitted heights and massing but with a more cohesive streetscape output.

Figure 21 – Built Form Controls Map



# 4.4. PUBLIC REALM

The activity centre is in an emerging residential area, and the intensity, scale and form of the centre reflects that context. As a result, the centre will be of a low to medium intensity, in low-scale buildings that integrate with the surrounding predominantly single storey residential environment.

The current town centre is diverse in nature, land use and design. Heritage, topography and an active and engaged local community provide great opportunities to leverage from.

Through a number of visioning and community engagement exercises, the future of Kalamunda has been focused around the themes of Character, Community, Live/Work/Play and Connected. These themes have guided a desired urban form driven by a number of features based around precincts including:

- Reinforcement of Haynes Street as the traditional 'main street' with highly active edges, a mix of uses, pleasant pedestrian environment and a built form outcome that reflects the character of Kalamunda.
- Central mall becoming a food and beverage focus supported by a one-way shared vehicle/pedestrian street.
- Creation of a new 'town square' on Railway Parade at the top end of Haynes Street as a multi-use public space creating a focal point for the town centre.
- Consolidation of employment generating land uses including larger format commercial, retail and civil uses around Mead Street leveraging off Kalamunda Central shopping centre.
- Celebration of cultural features by create synergies between Stirk Park including Stirk Cottage, Zig Zag Cultural Centre and Bibbulmun Track.
- A 'frame' to the town centre core that supports predominantly residential and mixed use development that contributes to the walkable catchment of the town centre
- Consolidated parking areas in appropriate locations.
- Highly legible, safe and well-designed pedestrian linkages to connect all parts of the activity centre as well as important community focal points beyond.

## 4.4.1. Key Spaces & Features

Building on the vision, a number of key spaces and features have been identified as critical elements to the delivery of the Kalamunda Activity Centre Plan. These elements are described in the follow section and identified in **Figure 22**:

- **Town Square** A scaleable and defined town square that colocates heritage, tourism and community facilities and provides a civic focus for the town centre.
- **Main Street** A clearly identifiable Main Street enhancing an already function urban fabric and increasing pedestrian focus and connectivity.
- **Green Park and Barber St Piazza** An area of respite and social gathering, hospitality and community facilities.
- **Central Mall** Central Mall will become a one-way street acting as the heart of Kalamunda's night time economy, delivering an intimate and vibrant urban experience that supports both day and night-time activities and acts as a counterpoint to the more traditional and heritage spaces of the town centre.
- **Journeys** 'Lost and Found in Kalamunda' clearly defined pedestrian and vehicle routes offering a diversity of experience and choice in a safe and vibrant town centre environment.

The elements are supported by a number of strategies that provide more fine grain detail on the more functional aspects of the public and private realm. The BFDGs have been formulated to interface with the public realm objectives.





# LEGEND

- Town Square
- Main Street
- Barber Street Piazza
- Central Lane
- 🗕 🔶 Journeys

# KALAMUNDA TOWN SQUARE

#### Location - Railway Parade and Haynes Street

**Description** - The Town Square is the focal point of the town centre and is the gathering place for community events, creating a place where the local community is engaged in the ownership and development of culture, and a sense of place. This is key to providing a focus for the community, embedding a sense of identity as the community evolves and in providing the flexibility necessary to support community events such as markets, performances and events.

#### **Opportunities and Outcomes -**

- Redeveloping the existing library and co-locating this with additional community uses such as performance space, function spaces etc. will assist in consolidating a civic focus for the town centre
- Improve the connection (visual and physical) between the existing Zig Zag cultural centre, library and Bibbulmun track.
- Create a shared space with the ability to close this section to traffic for large events.
- Relatively level area, allowing a more scaleable event space and improved access for all.
- Numerous valued assets such as heritage, views, significant vegetation and cultural activities
- Facilities such as waterplay, seating and play will allow residents and visitors to gather informally
- Incorporation of a public art piece to terminate the view on Haynes Street will act as an attractor and aid in wayfinding.
- Connects the current cultural and civic uses to the east, with the heritage buildings with their associated retail and hospitality uses to the west.

Figure 23 - Kalamunda Town Square Element



#### 20190305 - KALAMUNDA ACTIVITY CENTRE PLAN FINAL FOR ADVERTISING

# MAIN STREET

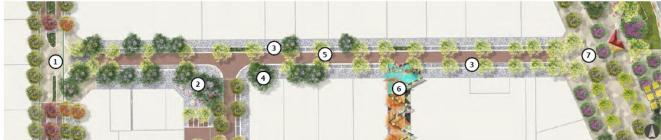
#### Location - Haynes Street

**Description** – Haynes Street is the traditional retail core of the town centre and still functions as a significant destination. There are a number of interesting and attractive retail offerings along its length that public realm improvements would support. Haynes Street also acts as a connector from Stirk Park, the proposed Barber Street Piazza and Central Mall, to the heritage and civic precinct on Railway Road.

#### **Opportunities and Outcomes -**

- Maintain a building scale consistent with the existing town centre character to encourage pedestrian activity and protect human comfort.
- Built form outcomes based on frontage types provide an opportunity to create a high focus of activation to the main street and in certain areas constrained by topography and site conditions, greater flexibility to create an attractive and positive urban interface to the street.
- Maintain and enhance the framed view along Haynes Street between Canning Road and Railway Road through avenue tree planting located between parking bays.
- Reduce the road pavement width to assist in slowing vehicle traffic and provide an enhanced pedestrian area.
- Remove kerbs to create a hybrid parking/parklet zone that allows for flexible uses dictated by the adjacent retail use.
- Consider provision of services that allow for irrigation of planting and temporary planter boxes.
- Introduce dedicated seating to provide respite along Haynes Street and encourage informal gathering.
- Resurface paths and parking/parklet zone to provide clear material hierarch.

#### Figure 24 – Main Street Element



#### LEGEND Main Street threshold treatment to Canning Rd Barber Street Piazza Parking/Parklet flexible zone Existing trees Proposed trees Central Lane Town Square theshold



# BARBER STREET PIAZZA

#### Location - Barber Street in front of the Post Office

**Description** - Diversity of places and spaces are integral to a successful town centre. The Barber Street Piazza provides an opportunity to deliver some vibrancy and a destination at the west end of Haynes Street. The proposed piazza extends the existing green park associated with the town hall, creating a link between this valued community space and the Main Street.

#### **Opportunities and Outcomes -**

- Reconfigure parking to increase pedestrian space and development the Barber/Haynes Street coner into a piazza space incorporating seating, play and light.
- Retain existing street configuration to allow for accessible / large vehicle parking such as caravans, RVs or event bus parking.
- Through a Local Development Plan, consolidate of land parcels and the redevelopment the 'Post Office' site to leverage off the adjoining public realm opportunities and access to the south.
- Closure of the internal access road behind the Post Office site to provide additional developable land.
- Consolidation of service access.

Figure 25 – Barber Street Piazza Element



# CENTRAL MALL

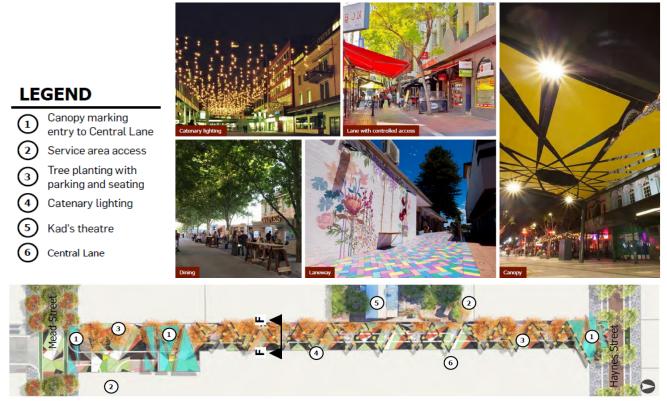
## Location - Existing Central Mall

**Description -** Central Mall is proposed to be reinvigorated into a vibrant and urban space that embraces the food and art culture of the Perth Hills. Refurbished as a flexible space that supports both day and night retail and hospitality offerings, the redeveloped 'lane' will also support markets while also allowing adjacent retailers to comfortably trade.

### **Opportunities and Outcomes -**

- Reconfigure Central Mall to allow one-way traffic through the lane in a shared street environment.
- Encourage a 'food and beverage focus' with land uses (where possible) providing opportunities for alfresco dining.
- Support opportunities for community events such as market days and fairs activating the street in the day and night.
- Provide a safe and pleasant pedestrian environment through opportunities for shade, rest stops, weather protection and footpaths.
- Install traffic management structures to allow ease of closure during events and night-time activities.
- Introduce parking opportunities into the lane to support adjacent retailers.
- Plant additional trees to extend existing planting and provide summer shade.
- Install catenary lighting assist in activation and a sense of enclosure.
- Install entry canopy and the north and south ends of the lane to create a sense of arrival and aid in wayfinding.

Figure 26 - Central Mall Element



Central Lane

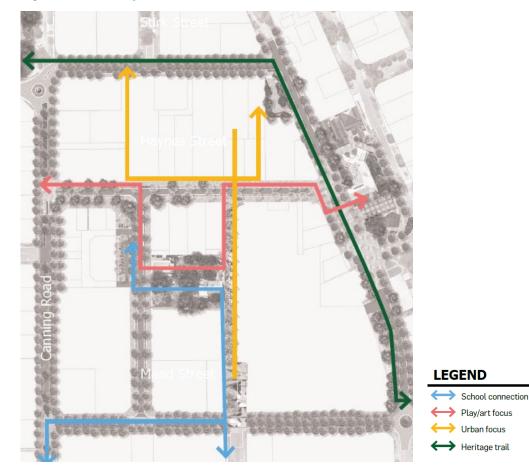
## JOURNEY

**Description -** The activity centre plan supports pedestrian and cycle access within the activity centre as well as to a number of key destinations peripheral to the core of the town such as Kalamunda Senior High School, Stirk Park and the Bibbulmun Track. Refer to Movement Network Plan at **Figure 29**.

## **Opportunities and Outcomes -**

- Create pedestrian linkages through the activity centre plan area to provide direct connections between key destinations increasing permeability, legibility and way-finding through the activity centre.
- Pededestrian linkage in locations where there is existing development, the linkage is to be provided when/if that existing development is substantially redeveloped and at the discretion of the City of Kalamunda.
- Reconfiguration of central mall to allow one-way traffic with controlled access increasing pedestrian and vehicle movement in a shared zoned.
- Rationalised road pavements to deliver improved pedestrian spaces and increased activation within road reserves.
- Dedicated on road cycleway on Mead Street and Canning Road to support commuter and recreational use.
- Prioritisation of pedestrian movement networks over vehicular within the town centre core.
- Creation of shared space in support of the town square to allow for large civic events.

Figure 27 – Journey Element



# 4.5. MOVEMENT

A Transport Assessment has been prepared by SLR Consulting and provided at **Appendix F** to support this activity centre plan.

# 4.5.1. Existing Situation

## 4.5.1.1. Road Network Infrastructure

The existing road network encapsulating the Kalamunda Activity Centre consists of a range of different road classifications, as defined by the Main Roads Western Australia (MRWA) Road Information Mapping System.

The functional hierarchy of the higher order routes including Canning Road, Mandaring Weir Road, Haynes Street and Mead Street is likely to remain consistent given their connectivity and role in the broader network. Whilst the form of the road connections may be altered as part of the activity centre plan, the hierarchical function of these connections is generally maintained, unless future road function is significantly altered.

The hierarchy of the key roads within the activity centre plan is illustrated in Figure 28.

It is anticipated that based on the form and function of the existing connections, the daily traffic demands utilising each road type can be classified as per this hierarchy. The daily traffic demands summarised in **Table 15** should be considered for each road hierarchy designation. Recent traffic demand data was sourced from the City of Kalamunda by way of consultant investigations conducted on behalf of the City. The most pertinent demand data is summarised in **Table 16**.

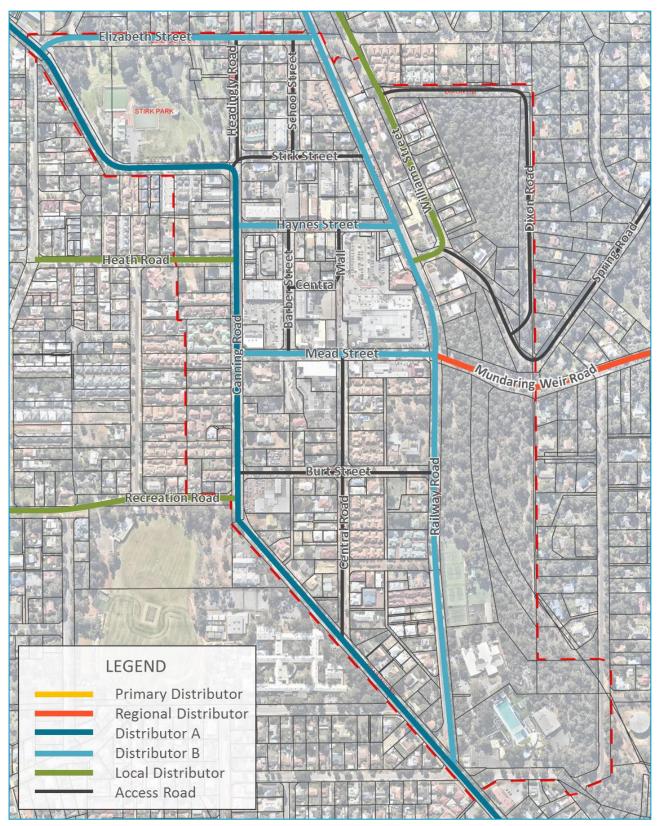
Road Classification	Number of Lanes	Typical Speed Limits	Typical Volumes (vpd)
Regional Distributor	2-4	60km/hr- 80km/hr	>15,000
Distributor A	2	60km/hr-70km/hr	10,000 – 15,000
Distributor B	2	50km/hr	5,000 - 10,000
Local Distributor	2	50km/hr	3000 - 5000
Access Road	2	40km/hr-50km/hr	<3000

Table 15 - Road Hierarchy Characteristics

Table 16 – Road Hierarchy Characteristics

Road	Count Location	Year of Data	Average Weekday Demand (vpd)	85th Percentile Speed (km/h)
Railway Road	North of Burt Street	2011	4,863	60.5
	North of Burt Street	2013	5,384	56
	South of Burt Street	2015	5,038	61
Canning Road	North of Burt Street	2012	11,255	57
	North of Burt Street	2015	7,857	57
Haynes Street	West of Barber Street	2015	3,726	30
	West of Railway Road	2015	3,081	31
Mead Street	West of Railway Road	2011	4,091	42.1
	West of Railway Road	2015	4,521	35
	West of Central Road	2015	4,543	45
Barber Street	West of Barber Street	2015	4,209	41
	South of Nestobrae Lane	2015	1,638	37
	South of Haynes Street	2015	1,789	28

#### Figure 28 – Surrounding Road Hierarchy



(Source: SLR Consulting)

## 4.5.1.2. Traffic Operation

Based on turning movement surveys and analysis undertaken by Opus in 2016, the existing road network can be assessed as operating well within typically accepted performance thresholds during the peak hour periods. **Table 17** reproduces the key performance metrics reporting by Opus for the study intersections situated within the study area.

Intersection	Critical Intersection Approach Level of Service	Intersection Degree of Saturation	95 <sup>th</sup> Percentile Vehicle Queue (veh)
Haynes St / Barber St	А	0.12	0.4
Haynes St / Canning Rd	В	0.33	1.1
Haynes St / Railway Rd	А	0.24	0.6
Canning Rd / Heath Rd	С	0.35	1.6
Mead St / Barber St	А	0.13	0.5
Canning Rd / Mead St	С	0.40	2.2
Mead St / Railway Rd	А	0.37	2.3
Canning Rd / Stirk Rd	А	0.49	3.6

Table 17 – 2015 Road Network Intersection Performance

**Table 17** results clearly indicate that recent traffic demands can be accommodated by the current road network with Degree of Saturation (DOS), Level of Service (Los) and queues all being within reasonable performance thresholds.

The 2015 Opus findings are still considered applicable to the current situation given recent traffic growth has been limited and there have been no significant local redevelopments or road network changes.

## 4.5.1.3. Safety (Crash History)

Crash data has been sourced from MRWA for the Kalamunda Activity Centre study extents for the periods between 1 January 2013 and 31 December 2017.

Based on the results, of the four crashes resulting in a fatality (and of four total crashes involving pedestrians), it is understood that two of these occurred recently in December 2017, and involved elderly members of the community, aged between 86 and 93 (both drivers and pedestrians involved). Whilst this sudden spike in fatal pedestrian crashes is a substantial outlier from the remaining data-set, it is considered that the extreme ages of the road users involved have a significant role in the crash occurrence, potentially causing slower reaction times or lack of general road awareness. Nevertheless, these crashes have been considered in the overall road enhancement strategy, particularly in areas of high pedestrian traffic.

Based on SLR's findings, there does not appear that there are any trends with regards to pedestrian or cyclist crashes that would be a result of existing design deficiencies.

## 4.5.1.4. Public Transport

The Kalamunda Bus Station is located on the southern leg of the Mead Street/Barber Street intersection. Eight bus services utilise the station with approach/departure routes travelling along Railway Parade and Canning Road. Bus routes that service the station include 279, 282, 283, 291, 295, 296, 297, and 299.

Other bus stops are also located on Canning Road (north/south bound), Mead Street (east/west bound), and Railway Road. There are no other public transport services within the study area. Service frequencies vary by time-of-day and by service but can approach <15 minutes in peak hour periods.

## 4.5.1.5. Active Travel

As reported in Section 3.3, there have been several traffic crashes that have resulted in pedestrian fatalities, two of which occurred within the most recent 9-10 months. Pedestrian path facilities located in verges are generally low quality and users are subject to numerous conflict points where vehicles must cross the verge to enter/exit development sites and intersections.

The format and design criteria of existing crossing facilities throughout the study area vary significantly and there is a lack of consistency of design philosophy or approach.

Mid-block connectivity/legibility is limited through development sites given existing buildings and significant off-street car parking facilities. The lack of midblock crossings is important as it requires pedestrians either travel significantly longer distances than desirable, or, forces users to navigate through car parking and vehicle circulation areas that at night have poor levels of passive surveillance.

On-street line-marked or dedicated off-street separated bicycle facilities are non-existent within the activity centre plan area.

## 4.5.2. Proposed Transport Proposals & Priorities

The key transport related proposals which form part of this activity centre plan are illustrated on **Figure 29** - Movement Network Plan and include:

- Improvement to urban design and built form to support:
  - Pedestrian mobility and safety
  - Cyclist mobility and safety
  - Space activation and improvement in passive surveillance and security
- Sustainable car parking provision.

## 4.5.2.1. Proposed Road Network Structure & Heirarchy

**Table 18** outlines the key priorities that were noted during stakeholder engagement. These were used in the determination of the function and intended design intent of the recommended road hierarchy and cross-section forms that would also support the activity centre plan urban design and economic revitalisation goals.

Road Classification	Prioritised User Groups	Key Function	Future Considerations & Design Intent
Canning Road	<ul><li>Private Vehicles</li><li>Buses</li><li>Cyclists</li></ul>	<ul> <li>Operates as the primary north- south route through Kalamunda</li> <li>Carries significant vehicle and cycle traffic through the town to south-</li> <li>eastern destinations from Perth</li> </ul>	<ul> <li>General function to remain consistent with existing use</li> <li>Provision of enhanced pedestrian and cycle connectivity</li> </ul>
Mead Street	<ul><li> Private Vehicles</li><li> Cyclists</li></ul>	<ul> <li>Operates as the primary east- west route through Kalamunda</li> <li>Carries significant vehicle and cycle traffic through the town to south- eastern destinations from Perth</li> </ul>	consistent with existing use
Haynes Street	<ul><li> Private Vehicles</li><li> Pedestrians</li></ul>	<ul> <li>Activated lower order road that services pedestrian and vehicle access to surrounding retail tenancies</li> </ul>	<ul> <li>Reduction in private vehicle emphasis along road connection</li> </ul>

Table 18 - Key Road Functions

Road Classification	Prioritised User Groups	Key Function	Future Considerations & Design Intent
			<ul> <li>Provision of enhanced tenancy frontages with wide verges encouraging pedestrian use</li> <li>Restrict servicing access for lots fronting Haynes Street such to minimise vehicle crossing on main pedestrian spine.<sup>1</sup></li> </ul>
Railway Road	<ul><li>Private Vehicles</li><li>Pedestrians</li><li>Cyclists</li></ul>	<ul> <li>A north-south route that operates similarly to Canning Road with a smaller traffic throughout</li> <li>Provides pedestrian access to various community facilities along the eastern activity centre boundary.</li> </ul>	<ul> <li>Enhanced road formation to encourage safe travel by pedestrians and cyclists.</li> </ul>
Barber Street	<ul><li> Private Vehicles</li><li> Pedestrians</li></ul>	<ul> <li>Activated lower order road that services pedestrian and vehicle access to surrounding retail tenancies</li> </ul>	generally be maintained.
Central Mall	• Pedestrians	<ul> <li>Provides pedestrian connectivity to a somewhat underutilised outdoor shopping mall</li> <li>Single one-way laneway for private vehicle and service vehicle access to rear of tenancies</li> </ul>	<ul> <li>Provide an enhanced share- way street to reprioritise movements by active users encouraging connectivity to shops.</li> <li>Allow infrequent access from service vehicles and high priority private vehicles (i.e. PWD and Taxis / Rideshares)</li> </ul>
Stirk Street	<ul><li> Private Vehicles</li><li> Pedestrians</li></ul>	<ul> <li>Minor east-west connection that services access to parking and servicing facilities for Haynes St tenancies</li> <li>Occasional pedestrian utilisation between Stirk Park and surrounding uses.</li> </ul>	Existing functionality to

<sup>1</sup> Servicing Strategy for individual lots to be determined during detailed application phase. Servicing access to primarily be gained via Stirk Street using access easement through various landholdings, however will be assessed on a case-by-case basis.

#### 4.5.2.2. Network Performance Capacity

Road network operational modelling of the current and anticipated land use scenarios projected to arise in the town centre have been conducted by SLR Consulting in addition to that undertaken previously by Opus and Shawmac.

Prior studies have identified that the following intersection operations are constrained, at present and under future land use scenarios that are more conservative than that now projected as part of the current Activity Centre planning:

- Canning Road / Mead Street right turn from Mead Street operating with excessive delays
- Canning Road / Heath Road right turn from Heath Road operating with excessive delays.

With respect to Canning Road / Mead Street, the City of Kalamunda has advised that capacity improvements to address current deficiencies are planned. The upgrades consists of a new lane on the Mead Street approach which will provide dedicated lanes for left and right turning traffic. **Table 19** summarises SIDRA modelling prepared by SLR Consulting with respect to the proposed Mead Street upgrade.

Assessment Scenario		Degree of Saturation	Average Delay	Critical Delay / Level of Service	95 <sup>th</sup> Percentile Vehicle Queue (veh)
	Existing (Single Lane) Approach	0.418	3.9	28.5 / D	2.1
2015	Committed Dual Lane Approach	0.414	3.7	26.1 / D	2.1
	Existing (Single Lane) Approach	0.750	6.1	53.0 / F	4.4
2031	Committed Dual Lane Approach	0.548	4.6	45.4/ E	2.3

Table 19 - Canning Road / Mead Street - Committed Upgrade to Mead Street Approach

It is clear from **Table 19** that the committed upgrading of the Mead Street approach will not provide sufficient capacity at the 2031 time horizon assuming background growth approximating 1.5% per annum from 2015 is achieved. Only the right turn from Mead Street to Canning Road operates beyond typically accepted performance thresholds; therefore, there are two possible solutions that would address this capacity issue:

- 1. Signalise the intersection
- 2. Restrict right turn movement from Mead Street.

Option 1 is recommended on the basis of this study given the banning of the right turn would only shift demand to another, possibly more critical intersection like Haynes Street which is undesirable. Signalisation of the intersection could be accommodated with no additional land resumptions given the already wide road reserve. Signalisation would have the additional benefit of also improving pedestrian safety and amenity at the intersection.

SIDRA modelling of the Canning Road / Heath Road intersection was undertaken to evaluate and confirm the prior 2016 Opus finding which indicated over capacity operations, but no upgrading proposal.

Assessment Scenario	Degree of Saturation	Average Delay	Critical Delay / Level of Service	95 <sup>th</sup> Percentile Vehicle Queue (veh)
2015	0.402	2.9	32.3 / D	1.8
2031	0.797	6.2	75.0 / F	5.1

Table 20 - Canning Road / Heath Road - Exisitng Arrangement

The **Table 20** results indicate that the existing right turn delays will increase significantly by 2031, even with relatively low 1.5% per annum background traffic growth from 2015. Similar to that identified earlier for Canning Road / Mead Street, there are two possible solutions that could be progressed to mitigate the right turn issue being signalisation or the banning/restriction of the right turn movement out of Heath Road.

In this instance, the banning or restriction of the right turn movement is preferred (Option 2) given the proximity of the intersection to Haynes Street (55m) would introduce potential up/down stream consequences along Canning Road. Additionally, movements wishing to turn right out of Heath Road have the ability to redistribute to other reasonable routes.

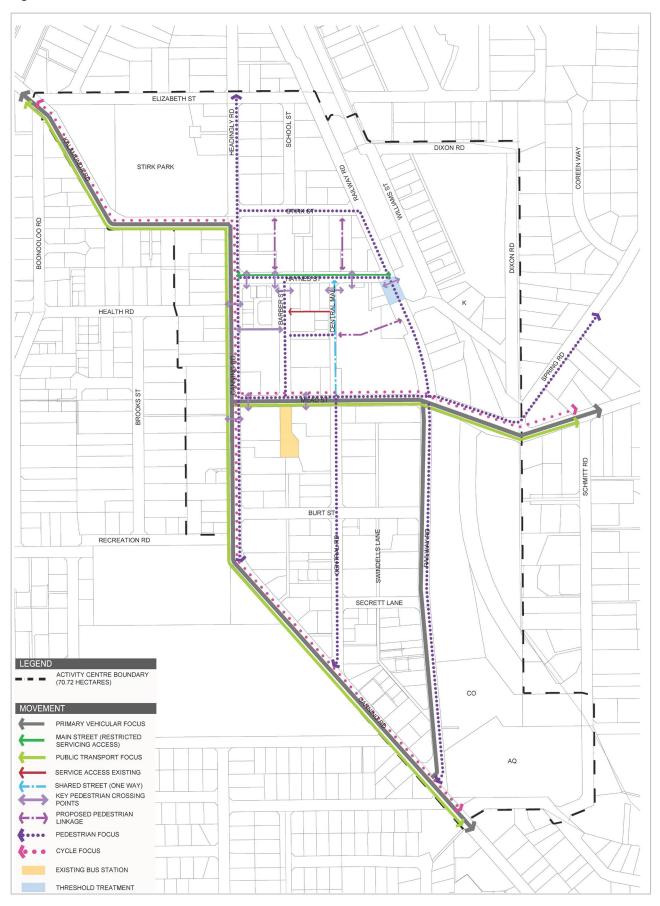
Given the significance of road functions, further traffic analysis is recommended at the following intersections to investigate potential safety or operational upgrades that would provide network benefit:

- Canning Road / Railway Road intersection
- Canning Road / Recreational Road intersection.

It is anticipated that upgrades to these two intersections would include, but not be limited to the following:

- Channelised right turn treatments (short or full-length)
- Localised parking restrictions that would improve sight lines and allow vehicle passing
- Splitter island treatments on minor road legs including pedestrian refuge.

#### Figure 29 – Movement Network Plan



#### 4.5.2.3. Road Network Connectivity

This activity centre plan proposes the following major changes to the existing road network arrangements (layout and connectivity):

- Central Mall reconfiguration to allow one-way vehicle movement
- Town Square threshold treatment.

These changes were identified in response to urban design and revitalisation priorities/goals, being:

- Improve amenity and of the activity centre area
- Improve market holding capacity.

Table 21 – Proposed Road Network Arrangements

Investigation	Recommendation
CENTRAL MALL	
The Central Mall does not currently permit vehicle traffic between the Central Road (Kalamunda Central car park north of Mead Street) and Nestobrae Lane south of Haynes Street.	Whilst Perth specific examples are limited at this time, the PPZ / Shareway approach would be consistent with that recently approved by the City of Perth for the Hay Street Pedestrian Priority Zone
The Pedestrian Priority Zone (PPZ) / Shareway arrangement would differ to the current situation in that vehicles would be legally permitted to travel through the link formed between Mead Street and Haynes Street. Both north and southbound one-way options were examined.	project. The urban design of the shared street should allow local traffic but discourage through or unnecessary trips. This can be achieved via a combination of the following:
The high-level findings of the north vs south review can be summarised as:	<ul> <li>The PPZ/Shareway should be signed as a Shared Zone and vehicles accordingly be legally subjected to a 10km/h speed limit</li> </ul>
<ul> <li>A southbound arrangement would introduce:</li> <li>Operational impacts on Haynes Street as</li> </ul>	<ul> <li>Adoption of design elements incorporating the following:</li> </ul>
vehicles entering the Shareway would queue and block Haynes Street while they are waiting for opposing pedestrians and westbound traffic	<ul> <li>Contrasting surface/pavement treatment which reinforces that it is not a typical road with threshold treatments at vehicle entries/exits</li> </ul>
<ul> <li>Operational and legibility issues at the Mead Street intersection which would be directly opposite the existing Central Road intersection, thereby creating an unsignalised four way intersection.</li> </ul>	<ul> <li>Flush levels between pedestrian spaces and shared spaces</li> <li>Bollards, paving and other streetscape furniture delineating exclusive pedestrian</li> </ul>
<ul> <li>four-way intersection</li> <li>Safety concerns as vehicles entering the Shareway from Haynes Street would turn</li> </ul>	<ul> <li>spaces</li> <li>Limited shared space width so as to reinforce</li> </ul>
across the southern pedestrian verge at higher speeds compared given the preceding road environment	<ul> <li>Constrained number of parking and loading</li> </ul>
• A northbound arrangement would provide:	opportunities -
<ul> <li>Flexibility for the intersection with Haynes Street to be reconfigured to left in/left out should this be desired to improve traffic flow and/or pedestrian safety. Sight distance would be achieved through the localised restriction of car parking in close proximity to the intersection</li> </ul>	<ul> <li>Parking only for persons with a disability or special purpose, i.e. emergency vehicles</li> <li>Loading only during pre-determined periods and taxi/rideshare at other times of day.</li> </ul>
Safer interactions between vehicles and pedestrians given vehicles would only approach the conflict area	

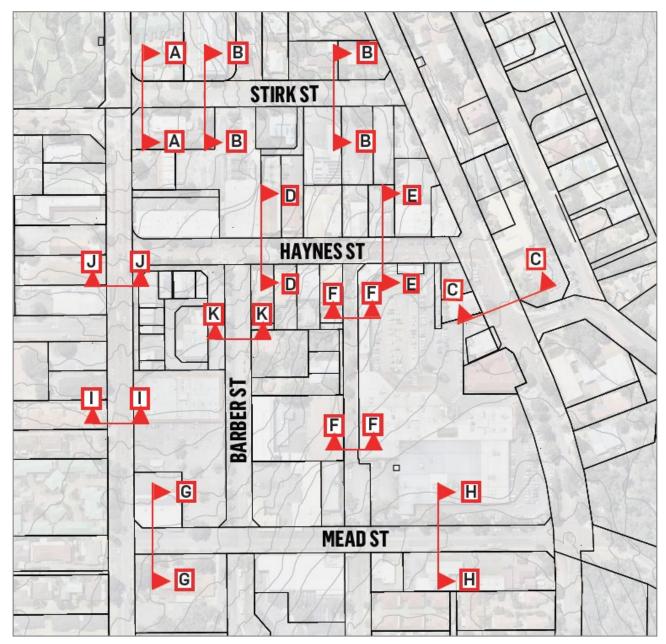
Investigation	Recommendation
from the 10km/h Shareway, perpendicular to Haynes Street with good sight lines	
<ul> <li>The north and southbound arrangements are similar with respect to:</li> </ul>	
<ul> <li>Their convenience and ability to service fronting development</li> </ul>	
<ul> <li>Their ability to connect with the Central Mall that extends to Barber Street.</li> </ul>	
Whilst the reconfiguration of the pedestrian Central Mall isn't required to address or mitigate traffic or transport issues, it is seen to improve or provide for the following:	
<ul> <li>Increased amenity for pedestrians and cyclists given the higher standard of urban design and activation</li> </ul>	
<ul> <li>Potential for more convenient loading opportunities for fronting/nearby businesses</li> </ul>	
<ul> <li>Potential for improved parking opportunities for persons with a disability</li> </ul>	
<ul> <li>Potential for pick-up/set-down facilities for taxis and ride-share.</li> </ul>	
TOWN SQUARE	
The raising of the Railway Road pavement surface between Haynes Street Williams Street has been investigated as an urban design treatment to improve pedestrian connectivity east of Haynes Street and which could be closed to vehicular traffic during events. The treatment would be approximately 40m in length. Traffic and pedestrian surveys undertaken in 2018 indicate traffic demands on Railway Road immediately south of Haynes Street exceed 400- 500vph for the majority of the day whilst pedestrian movements are generally low. When closed to traffic during events, traffic otherwise using this segment of Railway Road would be required to divert via other routes north-south routes including either/both Canning Road and Williams Street. At this time, it isn't understood how	A Traffic Management Plan should be prepared with supporting analysis to determine impacts and mitigation strategies associated with closing the segment of Railway Road during events. The existing combination of traffic and pedestrian movements is not projected to change materially on typical (non-market/non-event days). Accordingly, the facility should not be signed as a Shared Zone as it the overwhelmingly majority of use is by vehicles and is not 'shared'. Pedestrians crossing Railway Road would therefore do so as per a typical road crossing which could be accommodated within the raised segment. A lower speed limit is recommended in this zone to support amenity improvements.
frequently, how long, and on what days this section of road could be closed in support of events.	<ul> <li>Contrasting surface/pavement treatment</li> </ul>
	<ul> <li>Flush levels between pedestrian verge</li> </ul>
	<ul> <li>Bollards, paving and other streetscape furniture delineating exclusive pedestrian spaces roadway</li> </ul>
	<ul> <li>Limited road cross-section to reinforce low traffic speeds</li> </ul>

#### 4.5.2.4. Road Network Cross-Sections

The street/road cross-sections introduced here and included at **Appendix F** have been developed in response to the urban design priorities and also such that they are appropriate with regards to the anticipated function and demand of the roads/streets.

A Cross Section Reference Map is provided in Figure 30 for ease of reference.

Figure 30 – Cross Section Reference Map

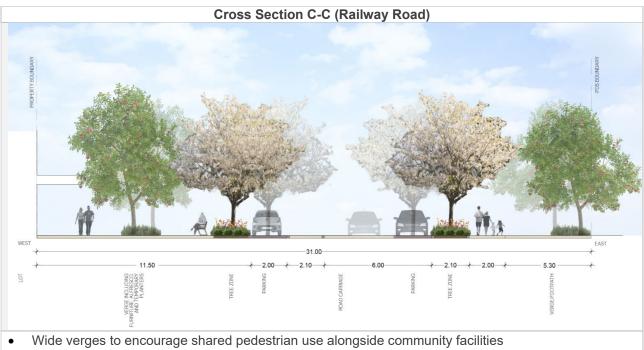




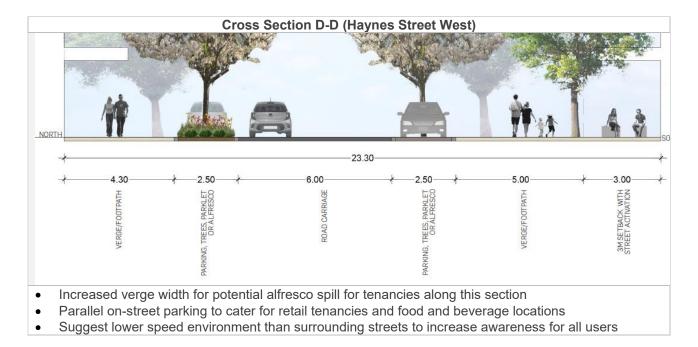
- Wide verges to encourage shared pedestrian and cyclist use
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians

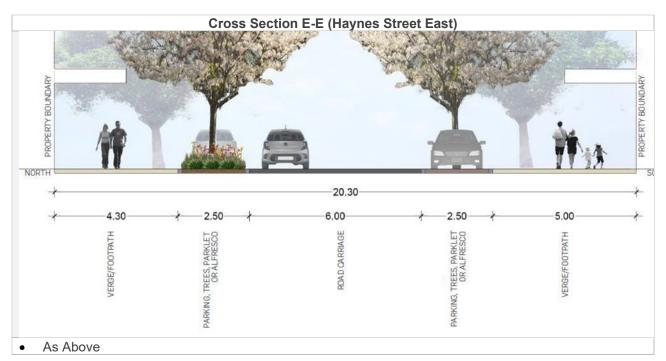


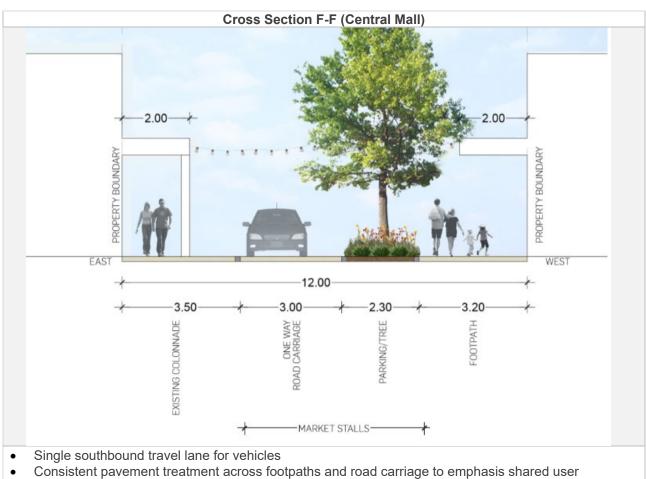
- Wide verges to encourage shared pedestrian and cyclist use
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians
- Parallel on-street parking to cater for retail tenancies to the south and residential properties to the north



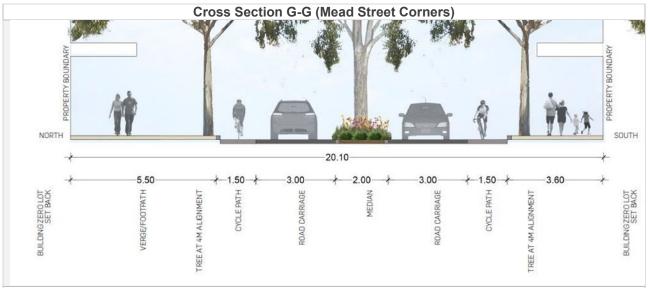
- Wider than standard verges to allow for off-street cycle travel (potential protected lane) in lieu of an on-street lane
- Parallel on-street parking to cater for retail tenancies and community facilities
- Threshold treatment and shared space to town square to allow for community events.



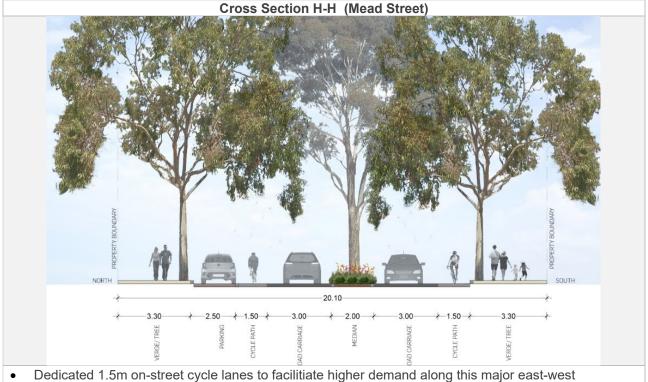




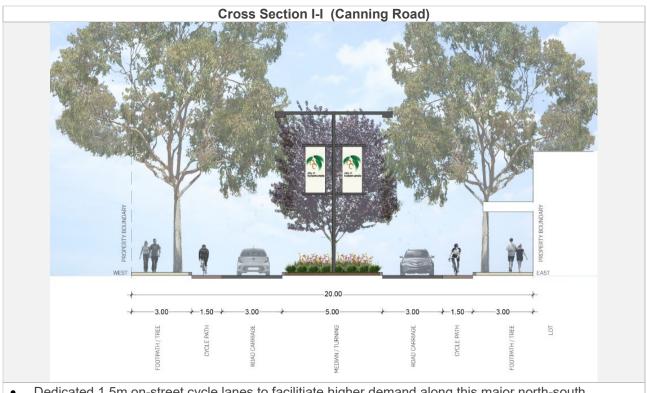
- Consistent pavement treatment across environment
- Limited parking spaces to discourage unnecessary through-traffic
- Limited shared space width so as to reinforce low traffic speeds



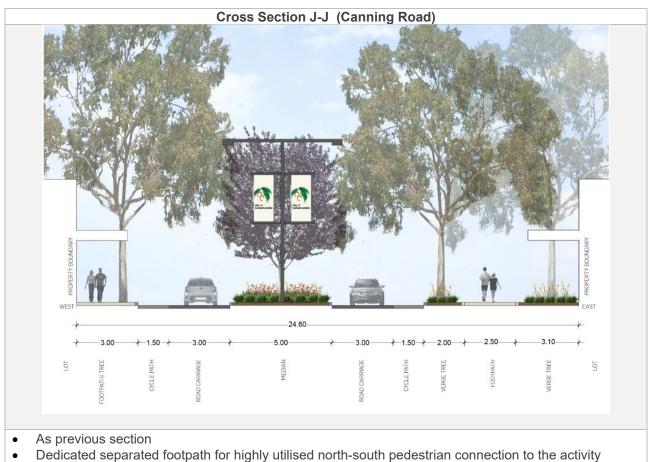
- Dedicated 1.5m on-street cycle lanes to facilitiate higher demand along this major east-west connection
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians



- Dedicated 1.5m on-street cycle lanes to facilitiate higher demand along this major east-west connection
- 2.5m parking lane allowance provides a buffer between cycle and parked vehicles that would allow a reduction to the risk of bicycle collision with car doors
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians
- Single parking lane to provide access to retail tenancies and activity centre core to the north



- Dedicated 1.5m on-street cycle lanes to facilitiate higher demand along this major north-south connection
- 5m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians.
- Median will also accommodate dedicated turning lanes where required.



centre core



- Retention of existing Australia Post parking and circulation aisle along the western section
- Wide footpaths on both sides to accommodate pedestrian movement to existing bus terminal from Haynes Street.

#### 4.5.2.5. Pedestrian Facilities

A series of pedestrian facilities improvements are warranted in response to existing deficiencies and also the increased demands likely to result from the activity centre plan improvements. There is existing demand and potential increased demand for pedestrian trips between the following key land uses/destinations:

- Zig Zag Gallery and community services
- Bibbulmun Track entrance
- Coles Kalamunda and surrounding shops
- Kalamunda Bus Station
- Stirk Park
- Kalamunda IGA

- Jack Healey Centre
- City of Kalamunda offices
- Community pool
- Kalamunda High School
- Zig Zag Heritage Trail

The desire lines generated from the connection of these major uses has been illustrated on **Figure 29**, which highlights key pedestrian crossing locations along the central road network. A summary of investigations and proposed recommendations for pedestrian facilities is provided in **Table 22**.

Table 22 – Proposed Pedestrian Facilities

Investigation	Recommendation
In 2018, GHD undertook a study assessing the suitability of several pedestrian crossings within the town centre, principally on/near Haynes Street. The GHD Pedestrian Crossing Assessment report included traffic and pedestrian surveys and evaluated the demand of the eight crossing	In addition to the rectification of the issues identified in the GHD pedestrian crossing study, SLR has identified a number of recommended upgrades to each of these key crossings based on the future demand anticipated throughout the activity centre.
locations	All crossing locations, except those located on Canning Road should comprise the following elements:
The GHD assessment concluded that none of the eight crossing locations strictly met the minimum	Install TGSIs at all crossing points
demand thresholds for combined pedestrian and vehicle iteration that would warrant a line marked zebra crossing.	<ul> <li>Raised crossing with contrasting pavement treatment</li> </ul>
Furthermore, it has been identified by site observations that pedestrian crossing facilities are	<ul> <li>Reduced crossing distance with kerb build-outs and lane narrowing</li> </ul>
inconsistent in their location, design (dimensions and line marking/signage).	<ul> <li>Parking restrictions on approach/departure to improve sight lines.</li> </ul>
It is considered critical that pedestrian crossing facilities are improved such that they are as consistent across the activity centre area so that users (motorists and pedestrians) are aware of their responsibilities and intended actions do not require site specific interpretation on a case by case basis.	It is recommended that all crossing locations on roads of similar function incorporate a consistent form so that users (motorists and pedestrians, etc.) expectations and behaviours are consistent. This will reduce confusion when comparing the current arrangements which consist of many different crossing treatments.

#### 4.5.2.6. Cyclist Facilities

Previous studies and planning documents prepared on behalf of the City have outlined recommended improvements to the bicycle network. These studies, in combination with site observations and investigations have informed the activity centre plan bicycle network. A summary of investigations and proposed recommendations for cyclist facilities is provided in Table 23.

Table 23 - Proposed Cyclist Facilities

#### Investigation

The City of Kalamunda Bicycle Plan identifies Canning Road and Railway Road as Strategic routes which "provide safe and direct connections" between Principal Routes and major trip generators such as shopping centres, industrial areas or major improved on-road facilities, including: health, education, sporting and civic facilities" (City of Kalamunda 2017). The Plan also defines Central Road and Headingly Street as a Safe Active Streets which are lower order, lower speed (<30km/h) routes where cyclists and vehicles share the street pavement.

SLR Consulting sourced bicycle demand data from Strava to supplement the demands surveys collected by Cardno in their City of Kalamunda Bicycle Plan technical reporting. The Strava heat map data has been evaluated with recognition made The designation of these dedicated on-street facilities is of the fact that cyclists who typically use and post not commuters of convenience cyclists. Accordingly, activity centre plan area. certain routes may be overrepresented in terms of recreational cyclists.

It is evident from the bicycle data that there is a significant demand for trips along Canning Road, Mead Street, and Railway Road. Other, lower order connections cater for lower levels of rider demand and can be typically described as local or parallel routes.

#### Recommendation

Whilst the Cardno technical report and City of Kalamunda Bicycle Plan do not identify specific facility upgrades within the activity centre plan area, a number of road segments have been identified that warrant

- Canning Road: dedicated on-street bicycle lanes
- Mead Street: dedicated on-street bicycle lanes

Whilst the Cardno technical reporting and City of Kalamunda Bicycle Plan do not identify upgrades on these specific segments, the installation of on-street facilities would be consistent with their designation as Strategic Routes (Canning Road) and an extension of a Training Route (Mundaring Weir Road).

supported by the existing demand data that identifies ride data to Strava are recreational or 'sport' cyclists, this route as one of the most trafficable roads within the

their relative use, i.e. mountainous ride favoured by The design treatment recommended for Canning Road is consistent with that proposed in the Bicycle Plan for another segment approximately 500m south of the activity centre plan area. The delivery of similar treatments on this route would ensure continuity for all road users, minimising the risk of unnecessary conflict.

> The road hierarchy and cross-sections respectively illustrate the extent and form of the recommended onroad cycle lanes(refer Figure 28, 29 and Appendix F).

> Dedicated, on-street facilities are not strictly warranted on other roads/streets. An approach consistent with the previously defined Safe Active Streets would be reasonable on other lower order, connecting streets where speeds and demands permit, i.e. Central Road, Burt Street, Haynes Street, Stirk Street, Headingly Street, Heath Road, and Elizabeth Street.

# 4.5.3. Car Parking

#### 4.5.3.1. Existing Utilisation

Car parking surveys completed in 2011 by Shawmac indicate that whilst some parking areas were well utilised during peak periods, i.e. (75-100% occupancy), the cumulative peak demand observed across the wider activity centre plan area was relatively low and did not exceed ~60% of the available supply. The parking demand profile surveyed by Shawmac in 2010 in addition to three discrete desktop observations made by SLR Consulting using aerial imagery concluded to the following observations:

#### Weekday Demand

- On and off-street parking demands across the activity centre area did not exceed 60%
- Despite observations being made across a period of several years and on different days, the occupancies are generally consistent
- The demand profile is reasonably flat between 10AM and 3-4PM.

#### Weekend Demand

- On and off-street parking demands across the activity centre area did not exceed 60%, even on market days
- Despite observations being made across a period of several years and on different days, the occupancies are generally consistent albeit there is greater variance when compared to the weekday sample
- The demand profile has a pronounced peak occurring at 11AM and demands taper off into the afternoon/evening. SLR desktop observations confirm that the profile is less consistent than that reported for the weekday sample.

Many of the on-street parking supplies were surveyed as having peak occupancies in the order of 40-75%. Typically, on-street parking is much more heavily used and this result indicates that there is an oversupply of street parking. Based on the quantitative 2011 car parking demand surveys and a qualitative review of the activity centre plan area, there also appears to be an oversupply of off-street car parking within the study area.

Consistent with the Shawmac findings, the expanded desktop observations made by SLR Consulting also confirm that the current/recent demand for car parking is materially lower than the available off and on-street supply. Peak weekday parking utilisation approaches 70-80% only for a few zones.

It is evident that parking demands are higher on weekends, particularly during market events. Parking occupancy approaches 90-100% in central areas on market days; however, it is still <50% in outer zones. Accordingly, it can be determined that:

- The demand for parking on weekdays and non-market weekend days is comparatively low, lower than that which can be determined in accordance with the Planning Scheme rates
- The demand for parking on market weekend days is significantly higher than other days, however, there is still underutilised parking available in the outer zones of the study area.

The 2011 Opus study identified that for core, a theoretical parking requirement of 1,987 spaces when calculated in accordance with the then current planning scheme. This equated to a requirement rate of 6.1 spaces per 100sq.m of then current floor area.

For the same core, Opus also identified an off-street parking supply of 1,575 spaces which equated to a supply rate of 4.8 spaces per 100sq.m of combined use. The SLR desktop audit relied on aerial imagery and hence may be prone to some survey error. To address this issue, the same aerial imagery review process was also undertaken for the 2011 situation so the observable difference could be quantified.

This approach identified only minor changes in the available off-street car parking supply within the core. The most significant change occurred as a result of the development of Central Heights at 10 Barber Street which redeveloped a pre-existing at-grade car park. For the purposes of this study, the supply rates are assumed to be generally the same given there has been an opposing increase in floor area.

#### 4.5.3.2. State Planning Policy 4.2 Comparison

The SPP 4.2 Activity Centres for Perth and Peel describes a sustainable car parking rate of provision:

- 2 spaces per 100sq.m for showrooms and office
- 4-5 spaces per 100sq.m for shops

Based on the car parking studies completed to date, the existing rate of requirement and supply for parking exceeds these rates within the activity centre.

#### 4.5.3.3. Local Government Car Parking Rate Comparison

A comparison of the planning scheme requirements/rates for car parking provision has been undertaken with regard to the City of Kalamunda and a selection of other Western Australian local government areas.

The reason for the review or benchmarking is due to the Shawmac and SLR parking demand assessments both confirming that the actual car parking demand is significantly less than that which would be required in accordance with the City's Planning Scheme.

The comparison found that the City of Kalamunda Local Planning Scheme rates are comparable to those required in other local government areas.

#### 4.5.3.4. Recommendation and Strategies

Generally, the City of Kalamunda Planning Scheme rates are comparable to those required in other local government areas; however, based on the level of current parking oversupply, it may be reasonable that some of the land use rates are reduced. The combined rate of existing requirement and supply are higher than that noted in SPP 4.2.

It is recommended that local planning scheme rates be reduced based on the comparative requirement stated in other planning instruments, and also the parking study results which confirm an existing oversupply of parking.

Whilst the determination of a suite of land use parking rates requires a further parking study to be undertaken, it would be reasonable to adopt an upper limit range rate of 4.5 spaces per 100sq.m for retail uses and 2 spaces per 100sq.m for office uses. These rates represent a reduction in the requirement and supply parking rate approximating 7-40% respectively.

On the basis of the above, the overall parking strategy for the activity centre is as follows:

- Provide an integrated set of land uses that will enable reciprocal parking, thereby reducing overall demand
- Transition towards more consistent seven-day trading as opposed to the current weekday and weekend disparity arising from market led trade, assisting to spread traffic and parking demands over an extended period
- Prepare, implement and commit to a parking management strategy
- Prioritise the provision (location and quantum) for older persons and those with disabilities in response to the current and projected Kalamunda demographics
- Conceal parking in basements and behind or above street level to promote an active street environment and one that reduces significant at-grade car parking supplies.

# 4.6. SERVICING

An Engineering Servicing Report has been prepared by JDSi Consulting Engineers provided at **Appendix C** and summarised below.

# 4.6.1. Sewer

#### 4.6.1.1. Existing Situation

The Water Corporation owns and maintains the sewerage reticulation system across the Perth Metropolitan area.

The activity centre plan area posseses several operational Water Corporation gravity sewer lines and two privately owned pump stations. There is the potential for existing sewer lines to be extended in order to service all lots within the activity centre plan area. Currently the sewer network in the area is collecting and flowing downstream west. An investigation would need to be undertaken to determine what amendments to the existing sewer infrastructure would be required to service additional lots and increased lot densities.

All sewer lines in the activity centre plan area are standard DN150 PVC pipe, with the exception of a single DN300 gravity line extending from the Kalamunda District Hospital (to the North East of the activity centre plan area), south along Williams Street, across Haynes Roadd and finally exiting the area to the west.

#### 4.6.1.2. Current Planning

Whilst the Water Corporation has planning in place across the Perth Metropolitan region, it requires updating as revised re-zoning and planning occurs to ensure additional loads are taken into account. The Water Corporation has carried out a review of the current planning based on the forecast dwelling numbers and developable areas for each of the precincts, and has advised of required upgrades for the ultimate development.

#### 4.6.1.3. Future Requirements

The Water Corporation's adopted, long term wastewater planning for the Kalamunda Sewer District is attached in Appendix A of the Engineering Services Report (**Appendix C**). The green linework shows the various sub-catchments and assumed SDF's based on ultimate flows arising from the full development at th zonings and density codings shown in the City's current Town Planning Scheme.

The capacity limits of the various 150mm and 225mm retic. sewers will be based on the gravity hydraulic characteristics of gravity sewers (150 sewers typically can accept up to 6 L/s SDF depending on grade; 225 sewers can accept up to 22L/s SDF depending on grade).

JDSi have overlayed the Water Corporation sub-catchments and assumed SDF flows onto the activity centre plan, and it appears the long-term flows from the full development of the proposed land uses can be accommodated in the downstream gravity sewers. However, this would need to be confirmed by Water Corporation following a review of the entire Kalamunda sewer planning at some point in the future should the zoning changes be accepted and included in a revised LPS 3.

# 4.6.2. Water Supply

#### 4.6.2.1. Existing Situation

The water supply assets with the activity centre plan area are owned by the Water Corporation. No water supply assets owned by other potable water providers were identified by Dial Before You Dig (DBYD) checks of the activity centre plan area. The activity centre plan aera is currently well serviced by a network consisting of steel, cast iron and asbestos cement pipes.

Of note, there is a DN460/535/610 steel distribution main running north to south through site towards a water storage facility in the south-east corner. Streching from Headingly Rpad, down through Barber Street, Central Road and Canning Road and acoss Collins Road.

#### 4.6.2.2. Current Planning

The Water Corporation undertook a review of its current water distribution network across the a large portion of the Perth Metropolitan Region as part of their Pressure Management Program, and are looking at implementing District Metered Areas (DMA's) to help identify where losses in their system may be occurring. A DMA is defined as a discrete part of a water distribution network, and is created by closing boundry valves or permanently disconnecting pipes to neighbouring areas. This will then allow the Water Corporation to control and meter water into a particular DMA in order to calculate the water balance for that area. This in

turn will help to identify any losses within a particular system to allow the Water Corporation to prioritise any maintenance and upgrade works required.

#### 4.6.2.3. Future Requirements

Water Corporation have advised that it is not possible to determine if any of this network will need to be upgraded to support servicing of the land use categories indicated in this activity centre plan. Depending on the hydraulic demands of individual land uses or buildings, it is possible that some short sections of reticulation main may need to be upgraded, replaced, re-laid or duplicated as necessary.

In Water Corporation's experience, most domestic water services can be adequately provided off 100 or 150mm retic mains. In some instances, particularly with mixed use class buildings under the BCA, or high rise, multi-storey buildings, the fire servicing requirements under the BCA drive the need for a large domestic fire service which can't be provided off a 100mm main. In these cases, the developer/builder/landowner will need to fund and undertake a water reticulation Main upgrades.

# 4.6.3. Power Supply

## 4.6.3.1. Existing Situation

Western Power owns and operates the electrical supply network within the activity centre plan area and therefore all electrical supply equipment and cables will need to be installed in accordance with Western Power UDS specifications. Western Power's high voltage (HV) assets located within the activity centre plan area include an existing 132kV transmission line and several high voltage distribution line assets (refer **Figure 31**).

The activity centr eplan area currently uses a combination of overhead and underground power networks. To improve the amenity of the town centre overhead lines may be moved underground. As planning progresses, discussion with Western Power and the City of Kalamunda would need to occur regarding this.

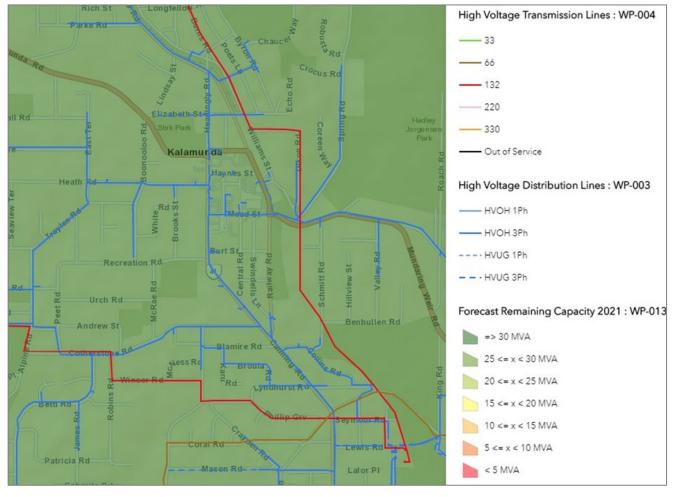


Figure 31 – Power Supply Map

(Source: Western Power Network Capacity Mapping Tool, September 2018)

#### 4.6.3.2. Current Planning

Western Power regularly monitor their current network demand, and take into account proposed local government Structure Plans to forecast potential network shortfalls across their expansive network. While they currently have planning forecasts showing remaing capacity until 2036, Western Power will not allow the reservation of power supply for any future development. It is on a "first come, first serve" basis and, therefore, Western Power cannot advise with any certainty where the power supply to support the future development of the activity centre plan will come from.

#### 4.6.3.3. Future Requirements

Based on the forecast loading, JDSi has calculated the required power demand for the ultimate development of the KACP to be in the order of 37MVA. The Western Power Network Capacity Mapping Tool indicates forecasted capacity of the activity centre plan area to be in excess of 30 MVA in 2021, and remains over 30 MVA in the 2026 and 2031 projections. This suggests that there would be sufficient capacity to service a rise in power demand following an increase in density.

Western Power has advised they are willing to set up a working group with the City of Kalamunda to work through planning of the area and review timing of developments to better inform both the City and themselves of the future upgrades required, and to help plan the upgrades through either their future network upgrading program, or working with the City and developers should upgrades be required due to specific development projects.

## 4.6.4. Telecommunications

#### 4.6.4.1. Existing Situation

The National Broadband Network (NBN) rollout map indicates that the activity centre plan area is well serviced with NBN currently. Early discussions with NBN should be undertaken to ensure adequate servicing for future planning requirements.

In addition to NBN there is an Optus fibre cabling along the entire length of Railway Road continuing along Canning Road to the south. There is also widespread Telstra assets present throughout the activity centre plan area.

#### 4.6.4.2. Future Upgrades

NBN have advised they have capacity to meet the required demands of the activity centre plan as development occurs. It will assess each application on a case by case basis to determine load demand and will work with the developer to provide the relevant infrastructure.

General communication services for development will consist of the installation of a standard pit and pipe network in accordance with NBN Co guidelines and standards. The current design practice for road reserves, pavement and verge provisions will make adequate allowance for services including broadband in accordance with the agreed Utilities Service Providers handbook. There will be some local land requirements for equipment sites, similar to current provisions which will be accommodated at detailed subdivision stage. In addition to headworks charges for development works, developers will be required to cover the costs of trenching and ducting for the infrastructure, however NBN Co will cover the other costs of installing fibre infrastructure, including backhaul. All communication assets within the development will remain in the ownership of the provider and easements will need to be granted in favour of the service provider.

## 4.6.5. Gas

#### 4.6.5.1. Existing Situation

ATCO Gas infrastructure is well reticulated through the activity centre plan area. No High-pressure mains exist, however an extensive network of medium pressure 70kPa PVC lines and lot connections are present throughout the site. ATCO gas will provide additional advice on the capacity to service the subject area once proposed changes to the current planning are finalised.

#### 4.6.5.2. Future Upgrades

ATCO Gas has advised the existing gas network has capacity to supply most of the proposed growth. Any growth above current capacity has been identified in ATCO Gas' forward planning, and reinforcement will be undertaken as part of standard network growth. This will ensure gas is available to this area as it grows.

## 4.6.6. Drainage

#### 4.6.6.1. Existing Situation

The City of Kalamunda does not have any planning / management strategies currently in place for drainage in the activity centre plan area. The City does however have plans to upgrade drainage within Barber Street, Haynes Street, Canning Road and Kalamunda Road. A portion of the proposed upgrade works have been completed to date.

#### 4.6.6.2. Future Requirements

It is recommended that a detailed drainage study of the activity centre plan area is completed to provide guidance on any further upgrades that may be required to accommodate future development. It is recommended that this is carried out prior to any further road upgrades within the activity centre plan area to avoid potential reworks being required should drainage infrastructure require upgrading.

Discussions with the City of Kalamunda has indicated a desire for lot owners to manage their drainage within their lot (up to a 1 in 100 ARI event), with the City to deal with road and POS drainage. However, this approach is relatively onerous due to the very low permeability of the ground in the area. Large onsite storage tanks would be required with low flow outlets still needing to be permitted into the City's stormwater drainage network to allow for emptying of the on-site storage. Alternatively, it is recommended a developer contribution plan (DCP) be investigated to provide a framework to seek contributions from landowners/development to facilitate the maintenance/upgrades to the drainage network as required. Key Drivers & Recommendations

There are a number of key drivers and recommendations for a project the magnitude of the activity centre upgrade.

#### 4.6.6.3. Key Drivers

The activity centre plan area is currently well serviced with power, water, wastewater, telecommunications and gas reticulation, based on the current land use status. However, the proposed increase in population, commercial and retail space, and associated increases in transport, energy and water use, as well as the incorporation of large public areas to attract more visitors to the area, are the key driver forces affecting the existing infrastructure capacities.

These drivers exert direct pressure onto these utilities and ultimately produce a number of challenges.

#### 4.6.6.4. Overhead Power

While a number of overhead power lines have been converted to underground, there are still several HV & LV overhead lines within the activity centre plan area. These will restrict road upgrade and verge treatments, as well as greatly detract from the amenity of the area. JDSi recommend the City liaise with Western Power to discuss opportunities for inclusion in their future State Underground Power Program (SUPP). This program presents an opportunity to share the cost of undergrounding power between the State Government, Western Power, local councils and property owners.

#### 4.6.6.5. Staging of Works

With over 50Ha of developable land being rezoned, and with a major portion of the area being owned by individual lot owners, staging of the works becomes a very complex situation. Should a majority of landowners wish to develop within a very short timeframe, a significant pressure would be put on a majority of services, forcing upgrades to be required earlier than would be expected through "organic growth". Western Power, ATCO Gas, and to a lesser extent the Water Corporation develop their forward works programs based on a steady rate of development. By staging the re-zoning of particular precincts, and reducing the "instant" impact on services, service reinforcements are more likely to be funded by the utilities as opposed to needing to be funded upfront by the developer.

#### 4.6.6.6. Collaborative Approach

Due to the size of the proposed activity centre plan area and the impact it will have on multiple service provider assets, JDSi recommends a working group be formed between the City of Kalamunda and the relevant Authorities. This will enable open dialogue between all parties, and help identify required upgrades, critical timing of upgrades, and any potential fatal flaws or network modifications.

# 4.7. ENVIRONMENT

# 4.7.1. Bushfire

A Bushfire Management Plan has been prepared by Strategen to support the activity centre (refer **Appendix C**).

#### 4.7.1.1. Native Vegetation – modification and clearing

The majority of the project area comprises existing development and is either non-vegetated, or managed in a low-threat state (as per Clauses 2.2.3.2 (e) and (f) of AS3959 (SA 2009)). Remnant vegetation is limited to the eastern portion of the project area, and occurs in relatively large and intact parcels, as well as fragmented plots within private landholdings.

While the northern parcel of remnant vegetation (Lot 6 (no. 606) Dixon Road) is proposed to be partially developed for residential purposes, the remaining areas of remnant vegetation within the project area are proposed to be retained as 'Local Open Space', with the exception of isolated clearing which may be required to accommodate appropriate asset protection zones (APZs) or vehicular access.

Potential environmental impacts resulting from implementation of the proposal will be addressed in accordance with standard State and Commonwealth legislative requirements under the Environmental Protection Act 1986 and Environment Protection and Biodiversity Conservation Act 1999, during future planning and development processes.

In response to identification of the above environmental values, future development within the project area should aim to (where possible) avoid clearing of native vegetation through the strategic location of lot boundaries and building envelopes, as well as construction of dwellings to BAL-29 to minimise impacts from Asset Protection Zones (APZs).

#### 4.7.1.2. Revegetation / Landscape Plans

No revegetation is proposed as part of the proposal. The Landscape Master Plan identifies future landscaping opportunities in the public realm. Any landscaping proposed in the vicinity of habitable buildings will consist of low fuel managed gardens and street scaping, consistent with Clause 2.2.3.2 (f) of AS3959. Any exceptions to this should be assessed on a case-by-case by case basis to ensure that the landscaping works do not introduce a bushfire risk to adjacent development.

#### 4.7.1.3. Bushfire hazard levels (BHL)

The eastern portion of the project area was identified to have a predominantly 'Extreme' BHL attributed to the presence of Class A forest and Class B woodland within areas proposed as 'Parks and Recreation' and 'Residential' within the ACP. Low-threat and non-vegetated areas within 100 m of Class A forest and Class B woodland vegetation are considered to have a 'Moderate' BHL as a result of their proximity to bushfire fuels.

The eastern portion of the project area is predominantly non-vegetated or in a low-threat managed state. As such these areas have a 'Low' BHL' (refer **Figure 32** Pre-development Bushfire Hazard Level).

#### 4.7.1.4. Bushfire hazard issues

Classified vegetation has been identified within the activity centre plan area and surrounding local area which has the potential to have a significant bushfire impact on proposed development if unmanaged. There is a considerable bushfire hazard associated with vegetation in the eastern portion of the project area within areas proposed to be retained as 'Local Open Space', as well as private landholdings to the east of the project area. Given the vast areas of national parks and State forest east of the project area, there is also significant landscape scale bushfire risk to the project area with the potential for extended fire runs through heavily vegetated forest.

As such, future development within 100 m of classified vegetation should incorporate suitable levels of defendable space, compliant APZs, access provisions, fire fighting water supply and increased building construction standards at the various bushland interfaces outlined above.

Following provision of these design measures, Strategen considers the bushfire risk and associated hazards are manageable through adoption of standard Guideline acceptable solutions.

#### 4.7.1.5. Bushfire management measures

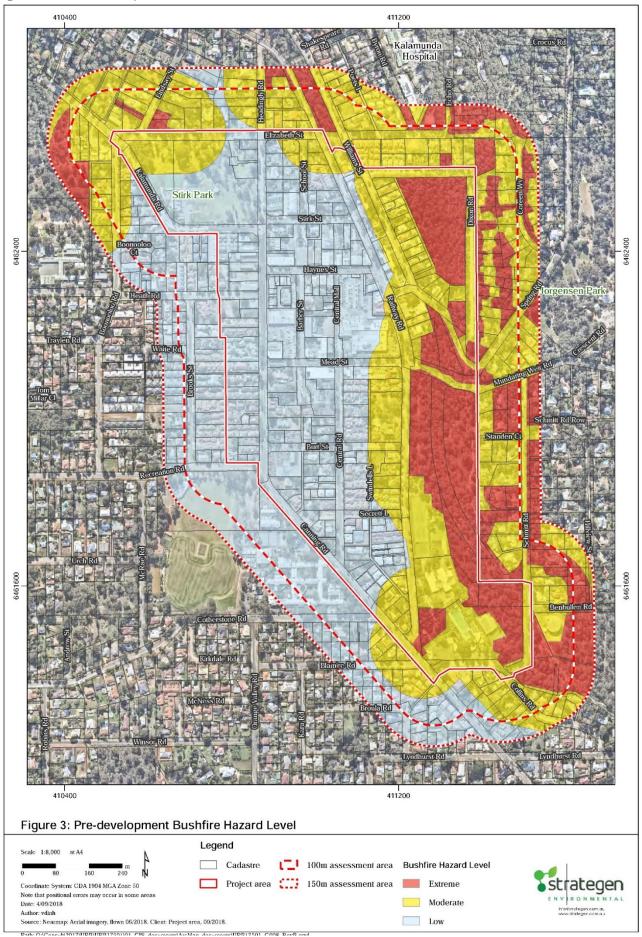
Given that the entire activity center plan area is currently identified as a bushfire prone area, any future strategic planning documents, strategic planning proposals, subdivision and development applications located within the project area will need to comply with the requirements of SPP 3.7 and the associated

Guidelines. Ensuring compliance with SPP3.7 and the Guidelines will require implementation of the following measures:

- undertaking a BAL assessment (or BAL contour assessment) to support future subdivision and development applications, or building licences (developer/ landowner).
- ensuring future lots/ habitable buildings are located in an area which is not subject to a rating higher than BAL-29 (developer/ landowner).
- ensuring future lots/ habitable buildings can accommodate appropriate APZs (developer).
- ensuring occupants of future development areas are provided with two different vehicular access routes which connect to the public road network and provide safe access/ egress to two different destinations (developer).
- ensure that proposed public and private road/ driveway infrastructure is constructed in accordance with A3.1 to A3.7 of the Guidelines (where applicable; developer).
- ensure that firebreaks are installed in accordance with the Guidelines and the City's Fire Hazard Reduction Notice (developer/ landowner).
- ensure an appropriate water supply is provided to any future lots/ habitable buildings through either reticulated water supply or water tanks, in accordance with A4.1, A4.2 or A4.3 of the Guidelines (developer).

Additional management measures are also outlined in the Bushfire Management Plan depending on the nature of future development proposals.

Figure 32 – Pre-Development Bushfire Hazard Level



# 4.7.2. Heritage

A Historical and Aboringal Heritage Baseline Assessment has been prepared to support this activity centre plan (refer **Appendix E**). The following section provides a summary of the potential historic heritage and Aboriginal heritage issues that may impact on future development in the activity centre plan area.

#### Historical Heritage

There are a number of known historic heritage places within the activity centre plan area that are included on the WA State Register, and the Kalamunda Municipal Inventory. These places are identified within the Historical and Aboriginal Heritage Baseline Assessment (refer **Appendix E**). Where future development is proposed, including new development adjacent to heritage places, internal refurbishment of heritage places, or proposed demolition of heritage places, impact assessments will be required to be prepared and approved by the relevant level of government prior to any works taking place.

The Kalamunda and District Historical Society manages a heritage trail in the town. Consideration could be given to consultation with the Society to investigate further interpretive opportunities in the future.

#### Aboriginal Heritage

The activity centre plan area is generally developed, and as such future works within these developed areas is unlikely to impact on any unknown Aboriginal sites.

However, there are undeveloped areas within the activity centre plan area where potential for Aboriginal cultural heritage significance to remain. Therefore, it is recommended that a full Due Diligence Assessment be prepared in accordance with the Due Diligence Guidelines to provide a more comprehensive understanding of the boundaries and significant aspects of the Registered sites 25023 (Poison Gully Creek) and 3758 (Helena River) and whether any future works or development of the activity centre may impact on cultural values.

A scarred tree has been identified in the undeveloped land in the north-east of the activity centre plan area. Its current condition is unknown. The eastern boundary of the activity centre plan area includes two sections of relatively undeveloped land, which is mapped as native vegetation. There is potential for previously unknown tangible Aboriginal heritage sites, such as artefact scatters, to be present in these areas.

Where future works to those undeveloped areas is proposed, an Aboriginal heritage survey should be undertaken to assess its potential for Aboriginal heritage sites. The provisions of the NSHA are understood to apply if survey is proposed. Where works are proposed in the north-eastern undeveloped land, the scarred tree should be located and recorded if impacts to it are proposed.

There are complex issues in the south west regarding native title, ILUAs and the Settlement. The application by the Whadjuk for registration of their ILUA is pending. It is recommended that consultation occur with the Land, Approvals and Native Title Unit of the Government of Western Australia, to understand and keep up to date with the progress of the ILUA, and associated future implications.

It is recommended that known heritage places, including their heritage curtilages be mapped and recorded appropriately. Consideration should also be given to consultation with the Kalamunda and District Historical Society and the Whadjuk People, to identify any sites of value within the activity centre plan area that have not been included on heritage registers and to explore any opportunities for interpretation of the heritage values of the area in the future activity centre.

# 4.7.3. Sustainability

The sustainability of the Kalamunda activity centre will be driven by its efficient urban design and complementary mixture of land uses, resulting in more effective use of land and encouraging efficient means of transportation. Innovation on an ongoing basis will provide opportunities for reducing waste and using resources more efficiently. Development incentives outlined in the BFDG considers extraordinary sustainability features as a key element to seeking development bonuses.

The sustainability and resource conversation measures in **Table 24** are encouraged for all development in the activity centre.

Means	Measure
Transport	<ul> <li>The centre will offer sustainable development through:</li> <li>The provision of an urban structure conducive to walking and cycling by concentrating core activities in a pedestrian friendly environment</li> <li>A land use mix that promotes cross visitation and reduces the need for intra-centre car trips.</li> <li>The centre being located on bus routes.</li> <li>reduction in on-site car parking standards.</li> <li>Requirements for bicycle parking and end of trip facilities.</li> </ul>
Water	The minimisation of water usage will be ecoouraged through the use of water efficient fittings and the incorporation of waterwise plants into landscape designs. Whilst not required, there may be opportunities in individual developments for the innovative use of greywater and/or stormwater.
Energy	To achieve effective passive solar outcomes and efficient solar energy collection, the massing and layout of new buildings must consider the arc of the sun as a primary design consideration. Any new proposals should carefully consider the repercussions of design decisions on solar access to communal open space, internal living spaces, as well as the overshadowing impact on adjacent properties and buildings. Design proposals should strive to protect solar access to solar panels on adjacent buildings and avoid overshadowing primary outdoor spaces and courtyards on adjacent properties.
Materials and Waste	It is important to acknowledge that all constructed elements within the private and public realm will have an embodied energy (the fuels/power, materials, human resources etc) that was used to produce and install them. Along with this, all built items will ultimately be removed or degrade naturally. Factoring this into the choices of materials and the sources of those materials, will be essential to ensure that the redevelopment is as sustainable as possible, not just in regard to the immediate environment but also globally.
	There is opportunity to implement native seed collection and propagation to provide provenance specific species suitable for landscape plantings. Other opportunities exist to capture and re-use materials from the area, such as local timber from maintenance works, rock and boulders, transplants of suitable trees and shrub and site mulch.

Table 24 – Sustainability Measure

# 4.8. LANDSCAPE MASTER PLAN

A Landscape Master Plan has been prepared to support the vision for Kalamunda activity centre by interpreting a consolidated set of townscape improvement opportunities that will underpin the successful evolution and growth of the town centre (refer **Appendix H**).

The Landscape Master Plan provides a guiding document to assist the City of Kalamunda in the prioritisation and delivery of a capital works program to the benefit of the local community, retailers and visitors. The Landscape Master Plan has been informed by community engagement, detailed site assessment, literature review and case studies.

The following list outlines projects or partial projects that could be delivered by the City without significant expenditure. This is in recognition that the time and cost that could be attributed to the entire list of elements and strategies is above the capacity of the City of Kalamunda's current funding and staffing, which will necessitate a Feasibility Framework being devised to tackle this project. The projects identified below will enable the City to demonstrate to the community and stakeholders their committment to realisation of the Master Plan prior to detailed feasibility studies.

- Trial event closure of Railway Road in conjunction with community event or markets within the town square precinct.
- Undertake tree planting within existing medians on Canning road.
- Introduce seating along Haynes street. This seating can be relocated or re-used when upgrade works commence.
- Upgrade and install pedestrian crossings in accordance with the Kalamunda Activity Centre Transport Assessment.

#### LEGEND

 Town Square
 Public art focal point
 Shared street
 Main street
 Corner park activation and way finding
 Bus bay relocation and Barber St Piazza
 Green park upgrades
 Central lane activation
 Town centre entry paving nodes
 Green' streets
 Heritage/Civic precinct
 Main street entry treatment



# 4.9. ACTIVITY

An Employment and Retail Analysis has been prepared by Urbis at **Appendix D** to support the development of the activity centre plan. The analysis is intended to provide the context and evidence base for the activity centre plan and to provide guidance on the appropriate quantum and timing of future floorspace provision within the town centre.

This analysis explores key demographic factors, household types, income distribution, dwelling distribution and population projections. The purpose of this task is to understand the current and future retail needs of local residents.

The key findings are summarised below with detail provided in the following sections.

- **Convenience Offering:** The Kalamunda activity centre currently accommodates a mixture of standalone retail stores, small multi-tenancy retail properties and the Kalamunda Central Shopping Centre. The vast majority of retail shops are considered to be convenience retail offerings which is a reflection of the relatively low level of population density within Kalamunda and surrounds and the proximity of higher order centres (e.g. Midland).
- Low Development Activity: The activity centre was estimated to have 20,700sq.m of retail floorspace as of 2017. The only notable growth in retail over the past decade is an ALDI store (equivalent to 1,600sq.m). Unlike many of Perth's other district centres, the Kalamunda activity centre is not home to a discount department store or a large number of specialty non-food retailers.
- Low Population Growth: Across the defined retail trade area which extends from Maida Vale to the west, Lesmurdie in the south, Pauls Valley in the East and Helena Valley in the north population growth has been limited. Over the 2012 to 2017 period, the trade area' population increased by only 0.1% per annum. This represents relatively low growth compared to other outer-ring areas in Perth and reflects the established nature of the area and lack of major planned development areas and infill development activity. A moderate decline in the resident population in the surrounding suburbs (defined by the suburbs of Kalamunda, Maida Vale and Gooseberry Hill) is expected to be attributable to declining household sizes as residents age and increased rental vacancy rates. generally older families, couples and singles. There is a relatively low level of young families despite the housing stock consisting predominantly of large family homes.
- **Below Average Turnover:** Based on Property Council and Urbis databases, the activity centre is considered to be trading at levels approximately 20% below benchmark district centres and large neighbourhood centres. Moreover, the activity centre has a high level of vacant floorspace (equivalent to more than 3,000 square metres) of which some of this floorspace could accommodate retail uses.
- Limited Retail Demand: The lack of population growth combined with geographical constraints that limit visitation to the centre from the wider area are considered key reasons behind low levels of retail development activity in the centre and below average turnover volumes. Additionally, the retail offering is dispersed across a large area and it is not co-located with other destinational uses (e.g. hospital, administration building, etc.) and the public realm does not adequately encourage trip linking. The lack of residential population growth will limit the extent of retail demand growth in the catchment. Any future redevelopment or expansion of retail provision in the activity centre will thus likely require increased visitor / tertiary trade and / or increased market shares. That is, the activity centre will need to draw a greater share of spending in order to support redevelopment and / or expansion of the retail offering.

## 4.9.1. Floor Space

Within the catchment as profiled there was a total of 28,200sq.m of PLUC 5 Shop-Retail floorspace (net lettable area) as of 2015. **Table 25** illustrates the level floorspace within shopping centres in the catchment based on Urbis and Property Council databases equivalent to 19,000sq.m.

The dominant shopping centre in the catchment is the Kalamunda Central Shopping Centre with an estimated 7,300 sq.m of retail floorspace. Of note however, is that the centre accounts for just 40% of the total retail floorspace in the Kalamunda activity centre.

A recent addition to the floorspace in the activity centre is a stand alone ALDI store with floorspace equivalent to approximately 1,600 sq.m. We note that while there are a number of plans and concepts to upgrade the presentation and access to centres within the catchment, including Kalamunda Central and the Sanderson IGA, it is our understanding that there are no plans to introduce new retail floorspace within the catchment.

Complex No.	Complex Name	Shop Retail and Other Retail Floorspace (Sq. m)	Key Centre	Key Centre Retail Floorspace (Sq. m)	Key Tenants
Within Catchment					
750	Kalamunda Centre	19,068	Kalamunda Central Shopping Centre	7,300	Coles,
752	Gooseberry Hill	895	Gooseberry Hill Village	895	
754	Kalamunda Glades	3,760	Kalamunda Glades	4,983	Woolworths
755	Sanderson	2,197	Sanderson IGA	2,729	IGA
757	Lesmurdie	700	Lesmurdie IGA	1,080	IGA
Not identified	Aldi Kalamunda	1,600	Aldi	1,600	Aldi
Total		28,220		18,587	
Outside Catchment (K	ey Centres Only)				
751	Forrestfield Forum	13,271	Forrestfield Forum & Market Place	11,600	Coles, Woolworths
758 & 768	High Wycombe & High Wycombe Hotel	6,944	The Village High Wycombe & High Wycombe Village	5,809	Coles, Supa IGA
Total		20,215		17,409	

Table 25 - Retail Supply - Key Centres within and Outside the Catchment

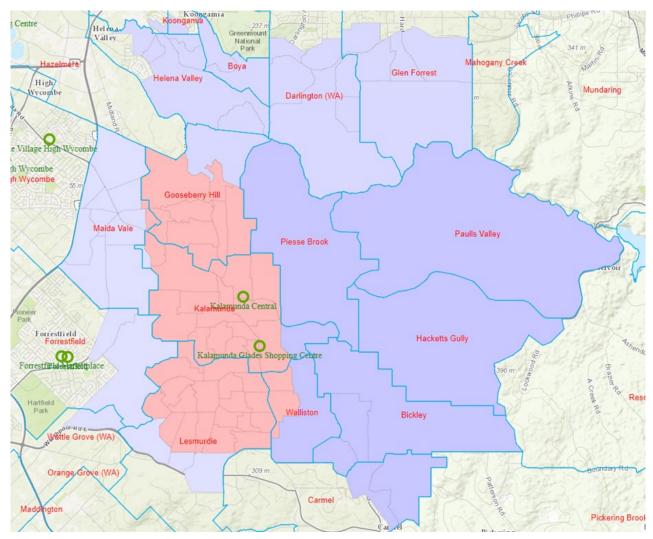
Source: Urbis

## 4.9.2. Trade Area Analysis

The definition of a trade area for a retail development is based on a range of factors including the strength, range and appeal of shops/services provided in the core area, the location, the quality and relative offer of competing centres/precincts, road and public transport accessibility, and physical and geographical barriers.

Based on an assessment of these attributes, the Kalamunda activity centre trade area has been defined as a central primary catchment and three secondary catchments (refer **Figure 33**).

#### Figure 33 – Kalamunda Town Centre Main Trade Area and Retail Supply



The primary catchment broadly corresponds to the suburbs of Kalamunda, the majority of Gooseberry Hill to the north and Lesmurdie to the south and the western portion of Walliston. Depending on the role and scale of a centre, the primary catchment typically represents approximately 50% to 70% of spending in a centre.

The extent of the secondary catchment west and secondary catchment north are limited by accessibility and the proximity of convenience-based centres in the wider area.

In addition to the catchment areas, spending from residents residing outside these areas forms a considerable level of demand. Whilst visitation estimates are not accurately known, tertiary (i.e. non-resident) trade is expected to represent approximately 10-20% of spending in the activity centre.

## 4.9.3. Population Growth

The level of population growth in the trade area has been very low over the 2012 to 2017 period. Despite Perth's population increasing considerably over this period, population levels only moderately increased and are projected to increase by approximately 1,090 persons over the coming decade.

The established nature of surrounding urban areas combined with an ageing profile implies that household sizes will decrease. Growth will therefore be driven by moderate infill development in Kalamunda and growth within the secondary north and west catchments.

The lack of residential population growth will limit the extent of retail demand growth in the catchment. Any future redevelopment or expansion of retail provision in the activity centre will likely require increased visitor / tertiary trade and / or increased market shares.

Refer to Table 26 and 27 which details the projected population and growth rates for the catchment.

#### Table 26 – Population Projections

	2012	2017	2022	2027
Total Primary	18,840	18,850	18,980	19,190
Secondary:				
West	6,310	6,270	6,450	6,810
East	2,110	2,030	2,090	2,220
North	7,780	8,000	8,090	8,020
Total Secondary	16,200	16,300	16,630	17,050
Total Trade Area	35,040	35,150	35,610	36,240

1. As at June 30.

Source: ABS; Western Australia Tomorrow 2015; SAFi; Urbis

Table 27 - Projected Population Growth Rates

	Annual Populati	Annual Population Growth (no.)			Annual Population Growth (%)		
	12-17	17-22	22-27	12-17	17-22	22-27	
Total Primary	2	26	42	0.0%	0.1%	0.2%	
Total Secondary	20	66	84	0.1%	0.4%	0.5%	
Total Trade Area	22	92	126	0.1%	0.3%	0.4%	

1. As at June 30.

Source: ABS; Western Australia Tomorrow 2015; SAFi; Urbis

## 4.9.4. Retail Need Assessment

#### 4.9.4.1. Floor Space Demand Estimates

Retail tenancies are estimated to be underperforming, on average, compared to Perth-wide benchmarks. This is evidenced by turnover input for Kalamunda Central, the high level of vacancies in the centre and advertised lease costs. Overall, the activity centre is estimated to attract approximately \$121 million of retail expenditure per annum (as of 2017), refer **Table 28** and **29**.

Current demand in the Kalamunda activity centre is expected to be driven heavily by the primary catchment. The primary catchment is estimated to support approximately 60-65% of expenditure in activity centre – equating to a market share of 25%.

Whilst population growth is expected to be larger within the secondary north and west catchments, there is a high level of competition in these suburbs that captures a large – and potentially increasing – share of additional retail expenditure. As such, the secondary catchments are expected to support approximately 20-25% of expenditure in the catchment – equating to a market share of 10%.

A review of Tourism Research Australia visitor data suggests that visitation levels are equivalent to approximately 350-400 day trips per day, on average. Additionally, input through community and business engagement suggest that visitation – especially weekend visitation – forms a critical component of patronage and revenue within the activity centre. As such, this analysis assumes that tertiary trade contributes approximately 15% of turnover within the activity centre.

Given the relative under-trading performance of the activity centre, future redevelopment and expansion of retail provision will require increased population growth, market shares and / or visitor expenditure.

#### Table 28 - Turnover Estimates, 2017

	Floorspace (sq. m.)	Turnover (p.a.)	Sales Density (\$ / sq. m.)
Shop Retail	16,600	\$106,738,000	\$6,430
Other Retail	4,100	\$14,350,000	\$3,500
Total Retail	20,700	\$121,000,000	\$5,845

Table 29 – Market Share Estimates, 2017

	Primary Catchment	Secondary Catchments	Total Trade Area	Total Centre (inc. tertiary)
Retail Expenditure	\$305,000,000	262,000,000	\$567,000,000	-
Centre Sales	\$76,250,000	\$26,200,000	\$102,450,000	\$121,000,000
Market Shares	25%	10%	18%	-

#### 4.9.4.2. Floor Space Scenarios

Urbis assessed two scenarios in order to understand the likely level of future demand for retail floorspace within the activity centre (refer **Table 30**).

Scenario one is a business as usual scenario whereby the activity centre is able to maintain its market shares over the coming decade. Under this scenario, the overall retail expenditure captured by the centre is estimated to increase by \$16.5 million to \$137.5 million. This equates to an additional 1,500 - 2,500 sq.m of retail floorspace demand.

Scenario two proposes a higher market share and visitor expenditure capture and a 103% improvement in the average turnover levels per square metre (to levels still below comparable benchmarks). Whilst this scenario is not a forecast, it provides an indication of the potential demand outcomes if the centre improves its desirability to residents and visitors as a place to visit and shop. Under this scenario, this overall retail expenditure capture increases by \$36.1 million to \$157.2 million. This scenario suggests an additional 2,800 – 3,800 sq.m of retail floorspace might be required by 2027.

Scenario	2027 Market Share Capture	Indicative Spend Capture	Implied Sq.m	Implied Net New Floorspace Demand (approx.)
Business As Usual	18%	\$137,550,000	22,500 - 23,500	1,500 - 2,500
Improved share, improved productivity	21%	\$157,200,000	24,000 - 25,000	2,800 - 3,800

Table 30 - Kalamunda Town Centre Floorspace Scenarios

Source: Urbis

#### 4.9.4.3. Retail Demand Projections

Based on the findings of the Retail Needs Assessment the retail demand projections are:

- Low Demand Growth: Based on forecast population growth levels in the trade area, per capita real expenditure growth and stable visitation levels, the need for additional retail floorspace is expected to be limited to approximately 1,500 to 2,500sq.m by 2027 on a business as usual basis. However, given below average trading levels and current high vacancy levels, this demand growth may not eventuate into development activity.
- Focus on Increased Desirability and Visitation: Given the retail modelling under a business as usual scenario suggests that retail expansion will be limited in the activity centre, the focus should be on measures that increase the desirability of the centre. Initiatives should focus on increasing population levels within the immediate area, increasing visitor expenditure and increasing trip-linking and colocation. Urbis assessed the potential demand if public realm and associated activation and policy control initiatives encourage increased expenditure in the activity centre. Under this scenario, both trading levels and market shares increase and translate into future additional demand equivalent to 2,800 to 3,800 square metres. Whilst this scenario is not a forecast, it provides an indication of the potential demand outcomes if the centre improves its desirability to residents and visitors as a place to visit and shop.

# 4.10. IMPLEMENTATION

The Kalamunda activity centre plan is a statutory document per the deemed provisions. In alignment with higher level planning documents, the activity centre plan is the key statutory tool which guides the built form, layout and land use intent for the area.

This activity centre plan, upon endorsement, will be the key document on which all development applications and subdivision proposals should be assessed. Key implementation mechanisms are outlines in **Table 31** to support the delivery of the activity centre plan.

Table 31 -	Implementation
------------	----------------

Document	Description	Stage	Responsibility
Local Planning Scheme Amendment	Amendment to LPS 3 to modify the relevant statutory provision to achieve alignment with the Activcity Centre Plan.	Concurrent with Activity Centre Plan	City of Kalamunda and WAPC
Local Development Plans	A Local Development Plan(s) (LDP) is required prior to any development or subdivision for land identified as a LDP site. The LDP(s) shall co-ordinate development in an integrated manner, taking into account built form siting and controls, vehicle access points and car parking areas, building entries and pedestrian access. A Local Development Plan shall be prepared and approved in accordance with the Planning and Development (Local Planning Scheme) Regulations 2015.	Post-Approval of the Activity Centre Plan	Landowner / developer
Parking Strategy	<ul> <li>An overall parking strategy for the activity centre that:</li> <li>1. Provides an integrated set of land uses that will enable reciprocal parking, thereby reducing overall demand</li> <li>2. Transitions towards more consistent seven-day trading as opposed to the current weekday and weekend disparity arising from market led trade, assisting to spread traffic and parking demands over an extended period</li> <li>3. Prepare, implement and commit to a parking management strategy</li> <li>4. Prioritise the provision (location and quantum) for older persons and those with disabilities in response to the current and projected Kalamunda demographics</li> <li>5. Conceal parking in basements and behind or above street level to promote an active street environment and one that</li> </ul>	Activity Centre Plan	City of Kalamunda

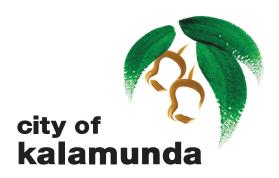
	reduces significant at-grade car parking supplies.		
Landscape Feasibility Framework and Implementation Plan	Assessment of project feasibility and the funding arrangements available and anticipated for landscape and public realm infrastructure. The Implementation Plan will be developed with due consideration of the City's ability to fund projects through the long term financial plan and annual budgets and will also identify which projects could potentially receive external funding.	Post-Approval of the Activity Centre Plan	City of Kalamunda
Traffic Management Plan	Determine impacts and mitigation strategies associated with closing segments of Railway Road during events.	Post-Approval of the Activity Centre Plan	City of Kalamunda
Aboriginal heritage survey	Assess potential for Aboriginal heritage sites. The provisions of the NSHA are understood to apply if survey is proposed. Where works are proposed in the north-eastern undeveloped land, the scarred tree should be located and recorded if impacts to it are proposed.	Post-Approval of the Activity Centre Plan and /or when development and subdivision applications are made over land identified with as an Aboriginal heritage site.	City of Kalamunda
Place Making Strategy	Refine and determine actions from the Place Making and Engagement Report for implementation. Prepare separate place making strategy linked with the activity centre plan.	Post-Approval of the Activity Centre Plan	City of Kalamunda
Detailed Drainage Study	It is recommended that a detailed drainage study of the KACP area is completed to provide guidance on any further upgrades that may be required to allow future development of the area. It is recommended that this is carried out prior to any further road upgrades within the KACP, to avoid potential reworks being required should drainage infrastructure require upgrading.	Post-Approval of the Activity Centre Plan and prior to any further road upgrades being undertaken	City of Kalamunda

# APPENDIX A BUILT FORM DESIGN GUIDELINES



# BUILT FORM DESIGN GUIDELINES

# KALAMUNDA ACTIVITY CENTRE



**MARCH 2019** 

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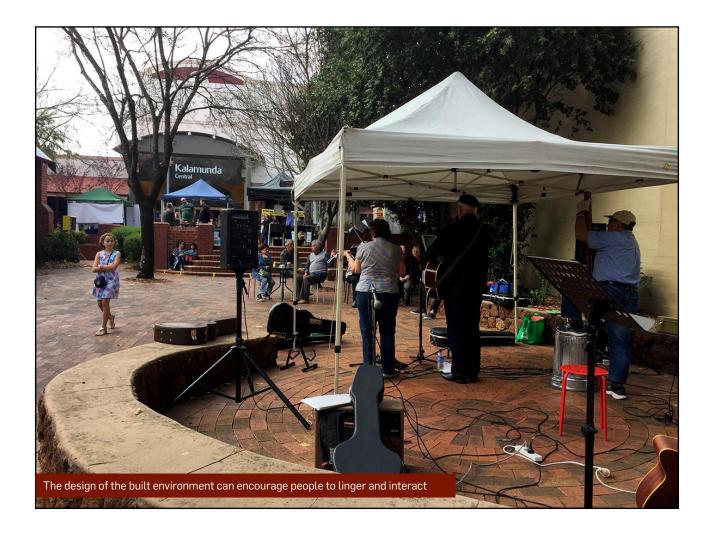
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# **1.0 INTRODUCTION**

The Built Form Design Guidelines (BFDG) for the Kalamunda Activity Centre creates a set of development standards that will allow the town to evolve and grow within a cohesive structure. This will ensure that appropriate retail and commercial uses are developed in a way that maximises the vibrancy and viability of the centre as a whole. It will also allow for increases in residential density over time, while maintaining the fine-grained, village environment that local residents cherish.

The BFDG provides a transparent framework for planning assessment and redevelopment, allowing flexibility to respond to site and market conditions but also clearly identifying the intended built form and public realm interface in each location. The requirements have been tailored to the specific conditions and opportunities within the Activity Centre, building on existing functioning patterns and supporting new initiatives that have emerged through the visioning and urban design process.

The BFDG sets out a series of 'frontage' requirements that clearly articulate the intended built form relationship between private lots and the public realm within the centre of Kalamunda. This structure allows for significant flexibility in designing new developments while maintaining the key interfaces to support the town centre activities.

For standards relating to development above street level and not designated with a '**Frontage**' type, the BFDG relies on the overall framework set out in the State Planning Policy 7.3 Residential Design Codes, Volumes 1 and 2 (R-Codes). This is one of a suite of planning policies within DesignWA, a planning reform initiative intended to improve the quality of design within Western Australia. The following development standards refer to associated sections of Volume 2 of the R-Codes. As such, please refer to both documents when designing new projects. Where there is a conflict, the BFDG prevails. Planning applications are also subject to the balance of the applicable R-Codes sections (Volumes 1 or 2) even if not specifically referenced in this document.

### **1.1 PURPOSE**

In 2018 the City of Kalamunda (the City) commenced an Activity Centre Plan (ACP) process to guide the future planning and development decisions for Kalamunda's town centre over the next ten years.

The existing planning framework is no longer performing as required and a new framework is needed that translates the vision into practical development guidelines that are in the control of local government. The ACP needs to be both implementable and enforceable.

The ACP framework incorporates and addresses issues such as regional and local context, transport and movement networks, land use and infrastructure, urban form, resource conservation as well staging and implementation.

### **1.2 OPERATION**

In conjunction with the framework established in the R-Codes (Volume 1 and 2), these design guidelines present a consolidated set of high level built form objectives and specific design guidance that will underpin the successful evolution and growth of the Kalamunda Activity Centre.

The provisions are set up using the following structure:

**Design Objectives** - the high-level objectives identify the intent and purpose of the guidance. These objectives can be achieved in a multitude of ways. Innovative solutions are encouraged.

**Design Guidance** - the design guidance provides specific outcomes that need to be met to satisfy the objective. In some cases these are clearly defined metrics, in other cases they are parameters.

These guidelines are applicable to all development within the activity centre plan area and are to be read in conjunction with the City of Kalamunda Local Planning Scheme No. 3 (LPS 3) provisions and the Kalamunda Activity Centre Plan. For residential and mixed-use development, the following provisions of the R-Codes apply unless otherwise varied by LPS 3, the KACP or any other local planning policy:

- For Single House and Grouped Dwellings R-Codes Volume 1 (previously Part 5 of the R-Codes)
- For Multiple Dwellings and Mixed Use R-Codes Volume 2 (previously Part 6 of the R-Codes)

#### APPLICABILITY BY DEVELOPMENT TYPE

	CABILITY BY DEVELOPMENT TYPE					
#	PROVISION	SINGLE	GROUPED DWELLING	DWELLING	COMMERCIAL	MIXED-USE
2.1	Frontage Standards	✓	<ul> <li>✓</li> </ul>	$\checkmark$	<ul> <li>✓</li> </ul>	$\checkmark$
2.2	Place Identity	√	✓	$\checkmark$	<ul> <li>✓</li> </ul>	$\checkmark$
2.3	Plot Ratio			$\checkmark$	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>
2.4	Building Height	✓	<ul> <li>✓</li> </ul>	$\checkmark$	✓	<ul> <li>✓</li> </ul>
2.5	Ground Floor Residential	✓	✓	$\checkmark$		<ul> <li>✓</li> </ul>
2.6	Building Depth			<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>
2.7	Corner Buildings			✓	✓	<ul> <li>✓</li> </ul>
2.8	Side + Rear Setbacks	✓	✓	<ul> <li>✓</li> </ul>	✓	<ul> <li>✓</li> </ul>
2.9	Response to Topography	✓	✓	✓	✓	✓
2.10	Transition Provisions	✓	<ul> <li>✓</li> </ul>	$\checkmark$	$\checkmark$	$\checkmark$
3.1	Façade Design	✓	$\checkmark$	$\checkmark$	✓	✓
3.2	Street Orientation	✓	✓	✓	$\checkmark$	$\checkmark$
3.3	Prominent Sites			$\checkmark$	$\checkmark$	$\checkmark$
3.4	Roof Form	$\checkmark$	✓	$\checkmark$	$\checkmark$	$\checkmark$
3.5	Entry Legibility	✓	<ul> <li>✓</li> </ul>	$\checkmark$	$\checkmark$	$\checkmark$
3.6	Balconies	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
3.7	Ceiling Height			$\checkmark$	$\checkmark$	$\checkmark$
3.8	Awnings			$\checkmark$	✓	$\checkmark$
3.9	Signage			$\checkmark$	$\checkmark$	$\checkmark$
4.1	Car Parking Location			$\checkmark$	✓	$\checkmark$
4.2	Access + Vehicle Parking	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
4.3	Waste + Services			$\checkmark$	$\checkmark$	$\checkmark$
4.4	Bicycle Parking			$\checkmark$	$\checkmark$	$\checkmark$
		·				
5.1	Tree Retention			$\checkmark$	✓	$\checkmark$
5.2	Soft Landscaping	$\checkmark$	$\checkmark$	$\checkmark$	✓	$\checkmark$
5.3	Roof Terraces			$\checkmark$	✓	$\checkmark$
5.4	Communal Open Space			$\checkmark$		$\checkmark$
5.5	Fencing	✓	$\checkmark$	$\checkmark$		
5.6	Waste + Recycling			 ✓	√	√
6.1	Solar Access	✓	✓	$\checkmark$	$\checkmark$	√
6.2	Universal Design			· ·	· · · · · · · · · · · · · · · · · · ·	· ✓
6.3	Heritage + Adaptability	√	$\checkmark$	· ·	· ✓	· · ·
6.4	Privacy Protection	· ·	· ·		· ·	·
6.5	Staged Development			· ✓	· √	·
6.6	Safety + Security	✓	$\checkmark$	✓ ✓	 ✓	✓ ✓
6.7	Development Incentives			✓ ✓	 ✓	✓ ✓
0.1	Detecopment incentives					

 Table 1
 PROVISION APPLICABILITY

In instances where these guidelines refer to a provision of Volume 2 of the R-Codes, they are intended to apply to all multiple dwelling residential and non-residential development in the Activity Centre Plan area. Some provisions also apply to the development of Single Houses and Grouped Dwellings within the ACP area (see Table 1 - Provision Applicability to left).

### **1.3 DESIGN ADVISORY COMMITTEE**

In 2018, The City of Kalamunda established its first Design Advisory Committee (DAC) to provide professional, discretionary input into the design review process. These guidelines will form the basis upon which design proposals will be evaluated.

The guidelines are built upon the 10 foundational principles of Design Excellence found in SPP 7.0 *Design of the Built Environment*, which are: context and character, landscape quality, built form and scale, functionality and build quality, sustainability, amenity, legibility, safety, community, and aesthetics.

All development proposals within the ASP area are subject to review by the City's DAC.

### **1.4 RELATIONSHIP TO OTHER DOCUMENTS**

The Kalamunda Activity Centre Built Form Design Guidelines has been developed with regards to several other key documents to assist City and community with the visioning and delivery of public realm within the Kalamunda Activity Centre core.

The masterplan has been prepared in conjunction with the following documents:

- Kalamunda Activity Centre Plan
- Kalamunda Activity Centre Landscape Master Plan

The Built Form Design Guidelines have been prepared with due regard to the following strategic and regulatory documents:

- SPP 7.3 Residential Design Codes (Volumes 1 and 2)
- SPP 7.0 Design of the Built Environment, V1, February 2019
- Metropolitan Region Scheme
- Perth and Peel @ 3.5 million, including North-East Sub-Regional Planning Framework
- Local Planning Scheme #3
- Kalamunda Town Centre Planning and Urban Design Guidelines (in effect as of 20 June 2011)
- SPP 3.5 Historic Heritage Conservation
- SPP 3.7 Planning in Bushfire Prone Areas
- Liveable Neighbourhoods (2009) and Draft Liveable Neighbourhoods (2015)
- City of Kalamunda Local Planning Strategy 2010
- Stirk Park Master Plan
- Building Code of Australia, Volumes 1 and 2 of the National Construction Code 2016
- Australia Standard 1428.1 2009, Design for access and mobility
- Liveable Housing Design Guidelines, 4th Edition (2017)



## 2.0 SITE PLANNING + MASSING

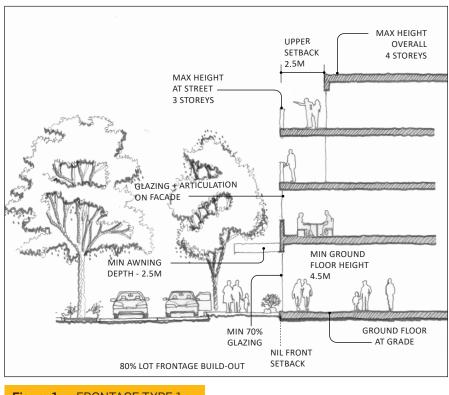
### 2.1 FRONTAGE STANDARDS

#### OBJECTIVE

For the most critical street edges within the Activity Centre, a series of detailed development standards (**Frontages**) have been created to ensure an appropriate interface with the adjacent public realm that is consistent with the intended urban design outcome. This includes minimum and maximum front setback requirements as well as a range of other considerations relating to the design of the front building facade.

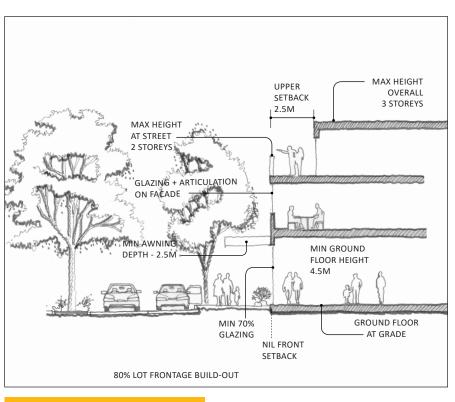
Properties without a nominated **Frontage** are subject to the design standards of their.applicable R-Coding (Volume 1 or 2) along with the provisions of these design guidelines.

- Frontage designation as per Figure 5 Built Form Controls Map.
- Where designated with a **Frontage** on Figure 5, development standards are in accordance with Table 2 Development Requirements.
- On sloping sites, achieving at-grade entrances is challenging. Floor levels may vary from between 0.5m above to 0.5m below grade along footpath, but building entries must conform to BCA universal access requirements and AS1428.1.
- · Clear glazing requirement applies to street facing facades (measured up to 3m in height)
- **Frontage Build-Out** requirements are intended to create a consistent built edge along a street, and relate to the identified building line across the front of the site, as set by the front setback.
- **Building Articulation** of ground floor shopfronts is encouraged, including inset entries, creative signage, window displays, transom windows, and varying materials such as timber or brick expressed as piers, plinths, and beams to provide visual interest. Unarticulated glazed shopfronts are not encouraged.



**Frontage 1** – This is applied to building edges with the highest focus on activation at the ground level, typically in retail main street precincts. This type is characterised by buildings edging the footpath, generous clear glazing, frequent building entries, awnings, and easy access at grade.

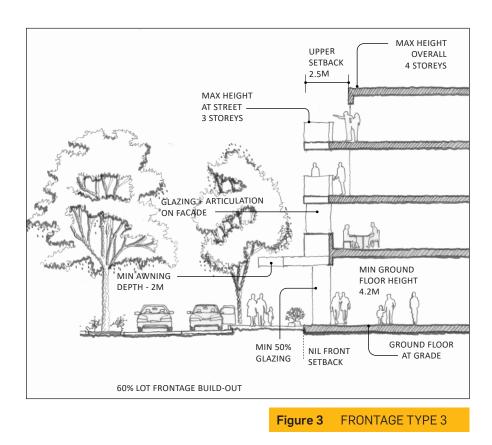
Figure 1 FRONTAGE TYPE 1



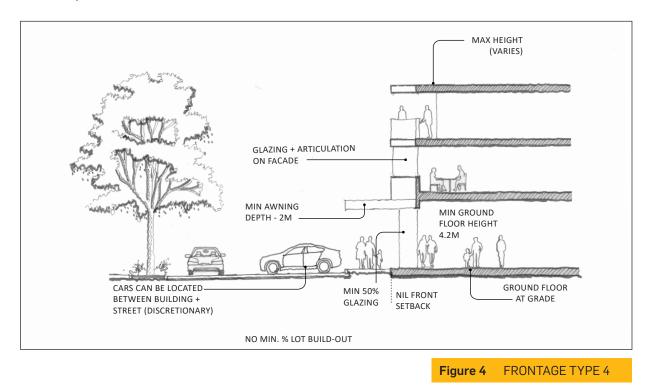
Frontage 2 – This is applied to building edges with the highest focus on activation at the ground level and to retain a more intimate scale, typically in the shared space of Central Mall. This type is characterised by lower building heights and buildings edging the footpath, generous clear glazing, frequent building entries, awnings, and easy access at grade.

Figure 2FRONTAGE TYPE 2

**Frontage 3** – This is applied to building edges with a moderate focus on activation at the ground level, typically on the periphery of retail main street precincts. This type is characterised by most buildings edging the footpath, modest amounts of clear glazing, frequent building entries, reasonable coverage of awnings, and easy access at grade.



**Frontage 4** – This is applied to building edges with a moderate focus on activation at the ground level, where flexibility is required to address site conditions or potential land uses. With appropriate justification, this flexibility can include larger setbacks, entries above footpath level, and even car parking between the building and street. Regardless of the ultimate agreed design solution, the intention is that the resulting building address the adjacent street in a way that creates an attractive, positive urban interface.



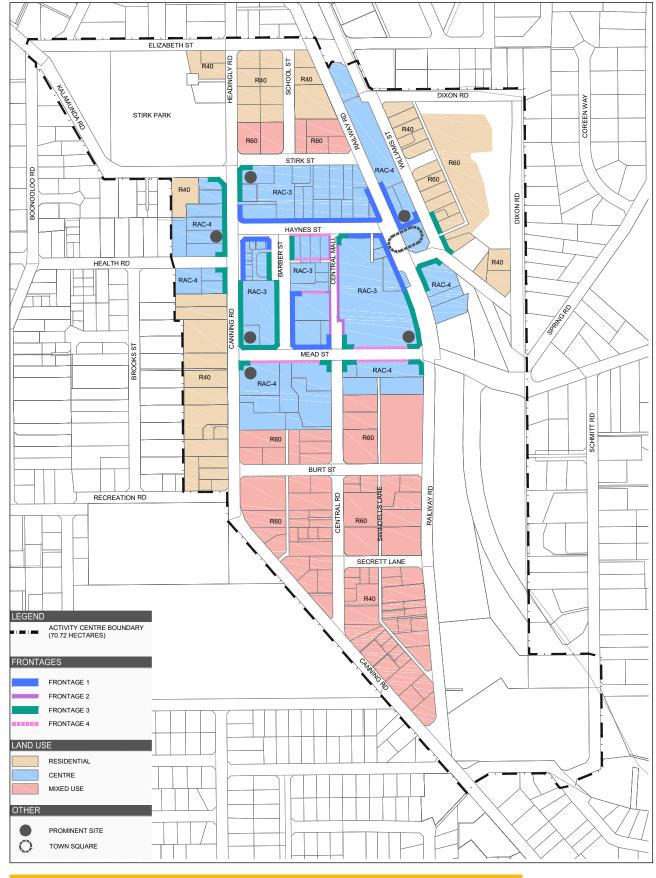
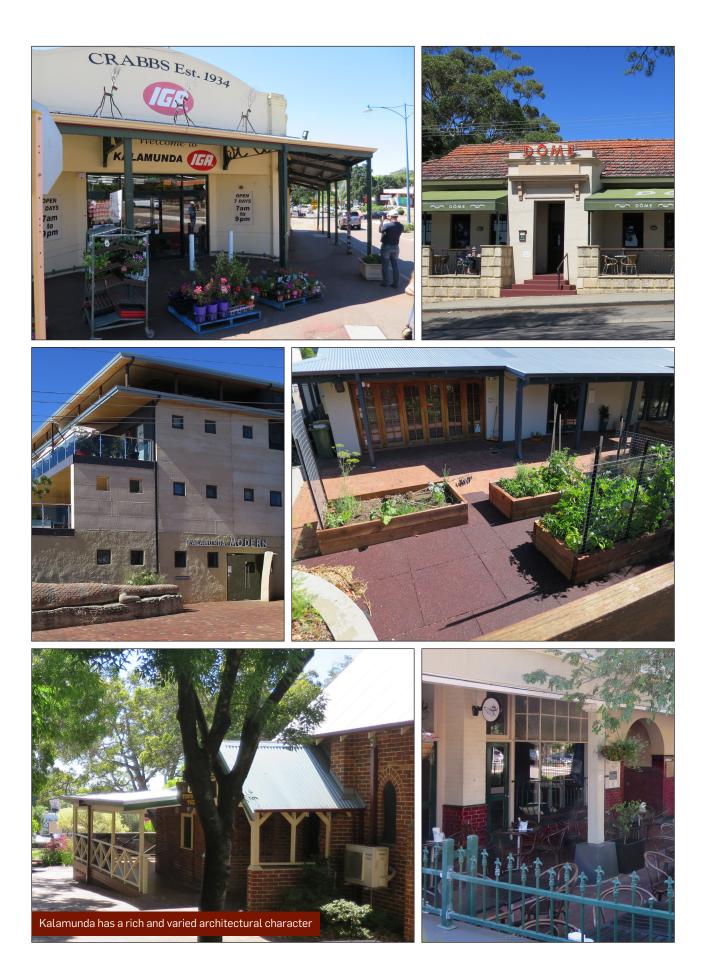


Figure 5BUILT FORM CONTROLS MAP

ELEMENT	PROVISION	FRONTAGE 1	FRONTAGE 2	FRONTAGE 3	FRONTAGE 4	NO FRONTAGE	
Primary Street	Min. Setback	Nil	Nil	Nil	Nil	Refer R-Codes (Volume 1 or 2)*	
Setback	Max. Setback	0.5m	0.5m	0.5m	Discretionary	None	
	Upper Level Setback	2.5m (above 3rd storey)	2.5m (above 2nd storey)	2.5m (above 3rd storey)	2.5m (above 3rd storey)	2.5m (above 3rd storey)	
Ground Floor	Floor Level	Footpath Level (+/- 0.5m)	Footpath Level (+/- 0.5m)	Footpath Level (+/- 0.5m)			
	Min. Floor to Floor Height	4.5m	4.5m	4.2m	4.2m	Refer R-Codes (Volume 1 or 2)	
	Min. Clear Glazing %	70%	70%	50%	50%	None	
	Min. Frontage Build-Out	80%	80%	60%	Discretionary	None	
Awnings	Min. % of Frontage	90%	90%	80%	Discretionary	None	
	Min. Depth	2.5m	2.5m	2m	Discretionary	N/A	
	Min. Height	3m	3m	3m	3m	N/A	
	Max. Height	4.5m	4.5m	4.5m	4.5m	N/A	
Onsite Parking	Between Street + Bldg	No	No	No Discretionary Discretionary			
Building Entrance	Primary Pedestrian Access	Public verge	Public verge	Public verge Refer R-Codes (Volume 2, (Volume 1 or 2) Section 3.7)		Refer R-Codes (Volume 1 or 2)	
Building Height	Max # Storeys	Refer R-Codes (Volume 1 or 2)	3 (no height bonus)	Refer R-Codes (Volume 1 or 2)			
Boundary Wall Height	Max. # Storeys	Refer R-Codes (Volume 1 or 2)	3	Refer R-Codes (Volume 1 or 2) *MAX 4 STOREYS R-AC3			
Side / Rear Setback	Min. Setback	Refer R-Codes (\	Volume 1 or 2)				
Building Bulk	Max Plot Ratio	Refer R-Codes (Volume 1 or 2)					
* Primary Street Setback for Non-Residential Uses at Ground Floor in Residential or Mixed-Use zones: Min. 2m / Max 3m							

 Table 2
 DEVELOPMENT REQUIREMENTS



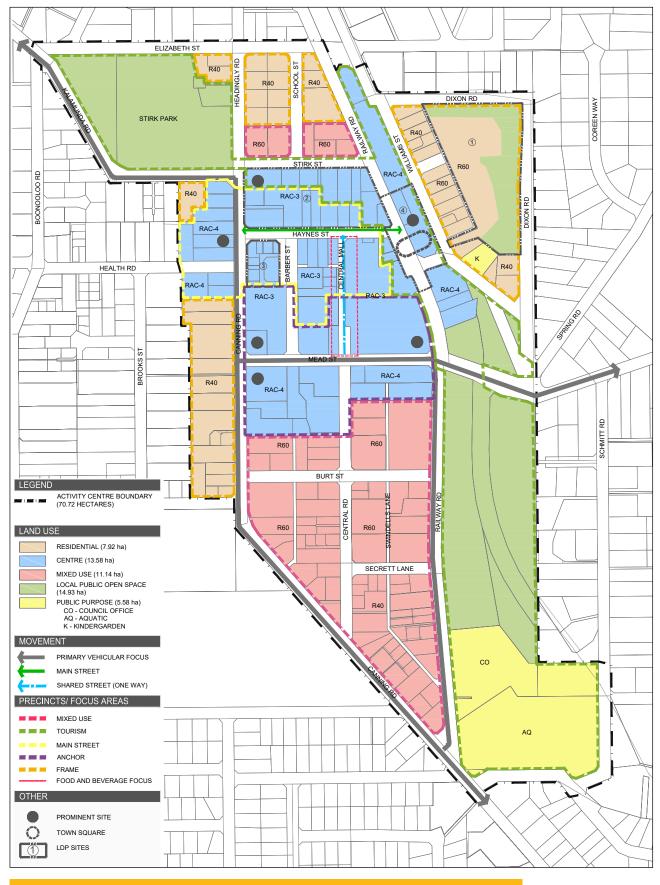
### 2.2 PLACE IDENTITY

#### **OBJECTIVE**

• New buildings within the Kalamunda Activity Centre should have an architectural character that is attractive and compatible with the surrounding buildings. This character should draw from prominent materials and colours of the area, and should express and strengthen the intended place identity of "Home in the Forrest."

- While replicating historical buildings is not the aim, new projects should creatively interpret these existing materials, forms, and patterns in a contemporary manner.
- Buildings should pick up on the fine grained rhythm of the street using building articulation or repeating vertical elements to add texture and create pedestrian scale.
- Appropriate feature materials and forms are those that link the project to the surrounding bush or the agricultural hinterlands. These include use of stained or painted timber, stone, wrought iron, heritage brick, earthy colours, and simple roof forms found in vernacular agricultural buildings.
- · Below is an indicative colour palette sourced from the existing townscape:







### 2.3 PLOT RATIO

#### OBJECTIVE

The plot ratio of new buildings within the Kalamunda Activity Centre is limited to assist in achieving the following objectives:

- · Ensure sufficient natural lighting and cross-ventilation within buildings to reduce their environmental impact
- Protect against over-development of sites that can lead to loss of landscaping opportunities and bulky buildings that are out of character with the Kalamunda Activity Centre

#### **DESIGN GUIDANCE**

- Maximum plot ratio allowed as per the R-Coding shown in Figure 6 Kalamunda Activity Centre Plan and associated provisions as per the R-Codes (Volume 1 and 2).
- · Additional plot ratio allowance may be applicable in some circumstances, see Development Incentives in Section 6.7.

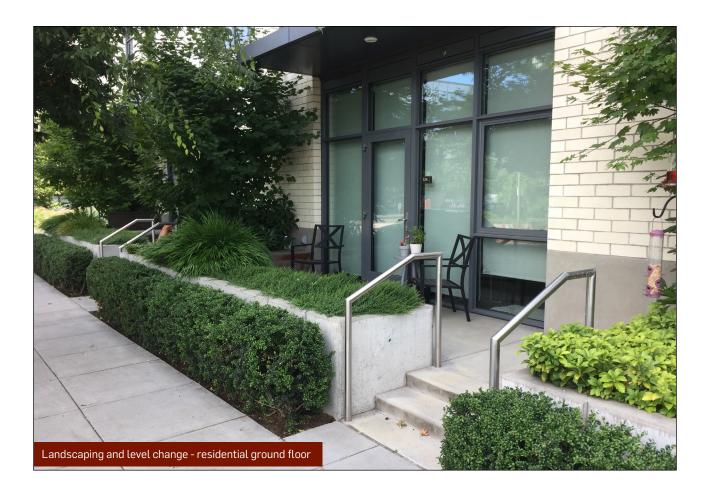
### 2.4 BUILDING HEIGHT

#### OBJECTIVE

Building heights within the Kalamunda Activity centre are controlled to assist in achieving the following objectives:

- Maintain a building scale consistent with the existing town centre character to encourage pedestrian activity and protect human comfort
- · Limit excessive overshadowing of public spaces and private gardens / buildings
- · Avoid significant differences in building height between adjacent properties to ensure a cohesive streetscape.

- · Maximum heights:
  - For properties with designated **Frontages** on Figure 5 Built Form Controls Map, heights as per Table 2 Development Requirements.
  - For properties without a designated Frontage, heights as per R-Codes (Volume 1 and 2).
- Maximum heights are set in storeys.
- · Additional height allowance may be applicable in some circumstances (see Development Incentives in Section 6.7).
- Minimum ceiling heights are as per Section 4.3 of the R-Codes Volume 2.
- Accessible roof decks or terraces are not considered a storey, but are subject to the same visual privacy provisions as Balconies per R-Codes, Volume 2, Section 4.4.
- · Roof shade structures are not considered a storey if they meet the following criteria:
  - Open on at least 3 sides
  - Maximum 150m<sup>2</sup> in area
- Roof shade structures, mechanical equipment, and vertical circulation overruns on flat roofs are subject to the following restrictions:
  - Set back from perimeter wall min. 6m facing a street, and 2.5m facing an internal lot boundary
  - Maximum height 3.5m
- · Mezzanine not counted as a storey, subject to the following limitations:
  - No larger than 1/3 of floor plate up to 200m<sup>2</sup> (BCA definition)
  - Can include enclosed rooms such as bathrooms, bedrooms or wardrobes
  - Should not be expressed externally on facade as a separate storey
- Habitable space constructed within a pitched roof space (attic) is counted as a storey
- · Habitable space constructed at least half below ground does not count as a storey
- On sloping sites, determination of building height is based on the **Apparent Height** of the building visible above natural ground level when viewed as a pedestrian from adjacent streets or public spaces.



### 2.5 GROUND FLOOR RESIDENTIAL

#### OBJECTIVE

On the periphery of the retail core (land zoned Residential or Mixed Use), residential uses at ground floor may be appropriate. However, the interface at street level must be carefully regulated to ensure appropriate levels of privacy for occupants while also creating a safe, friendly atmosphere within the public realm. This can be achieved through various configurations of setbacks, landscaping, fencing, and floor level elevation.

#### **DESIGN GUIDANCE**

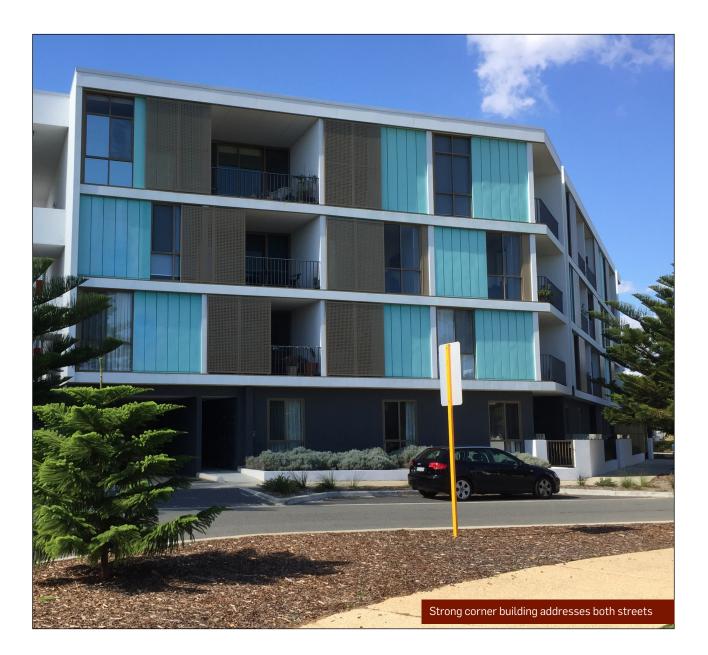
- Design principles and configurations for creating appropriate ground floor residential interfaces are outlined in the R-Codes, Volume 2, Sections 3.6 and 3.7. These provisions are not relevant to sites subject to a Frontage designation as per Figure 5 - Built Form Controls Map.
- Dimensions identified in the R-Codes, Vol. 2, Section 3.6 show configurations that achieve an appropriate balance between privacy and public realm activation; however, these are for illustration purposes only. Street setback requirements are set according to the R-Codes Volumes 1 and 2.
- In general, finished floor level of ground floor residential facing the street should not exceed 1m above footpath level.
- Finished floor levels of ground floor residential should never be below the footpath level, unless building is set back 10m or more from the street.

### 2.6 BUILDING DEPTH

#### **OBJECTIVE**

- The depth of new buildings within the Kalamunda Activity Centre is limited to assist in achieving the following objectives:
  - Promote better access to natural light and ventilation within buildings
  - Avoid wide, bulky buildings that do not have the fine-grain scale that is consistent with the existing town centre

- Measuring the maximum building depth is as per the R-Codes, Volume 2, Section 2.6.
- · Application of building depth standards:
  - Is measured above ground floor
  - Does not include balconies or open, external walkways
  - Does not apply to single houses or grouped dwellings
  - Is calculated based on the average depth in highly-articulated floor plates
  - Is measured to the exterior face of the building on both sides
- Maximum depth for:
  - Apartments (building with units facing in one direction with edge corridor) 12m
  - Apartments (building with units facing in both directions with central corridor) 22m
  - Office buildings 25m
  - Other Uses discretionary (subject to review by the Design Advisory Committee)



### 2.7 CORNER BUILDINGS

#### OBJECTIVE

Well-designed corner buildings are critical component of a cohesive, urban town centre. They define the edges of intersections, and present two facades to the public realm. They present opportunities for building expression and changes in scale. New corner buildings can have a disproportionate positive (or negative) impact on the streetscape; as such, they should be designed and reviewed carefully.

#### **DESIGN GUIDANCE**

- · Corner lots should locate a building at the corner of the site, addressing both street frontages.
- The corner should be emphasised and articulated in the architectural expression of the building (eg. corner entry, special awning treatment, signage, vertical element) to assist with wayfinding and general legibility of the streetscape
- Minimum Frontage Build-Out requirements, if required by Frontage type, can be reduced by 20% for each street edge on corner sites.

### 2.8 SIDE + REAR SETBACKS

#### OBJECTIVE

Side setbacks within the Kalamunda Activity Centre are controlled to assist in achieving the intended built form character and to provide certainty to property owners about the appropriate internal boundary interface when redeveloping a site. In the core, building on the side boundaries is allowed to maximise development opportunity and create an urban character (attached streetscape). In fringe areas, space between buildings for landscaping is desirable (detached streetscape).

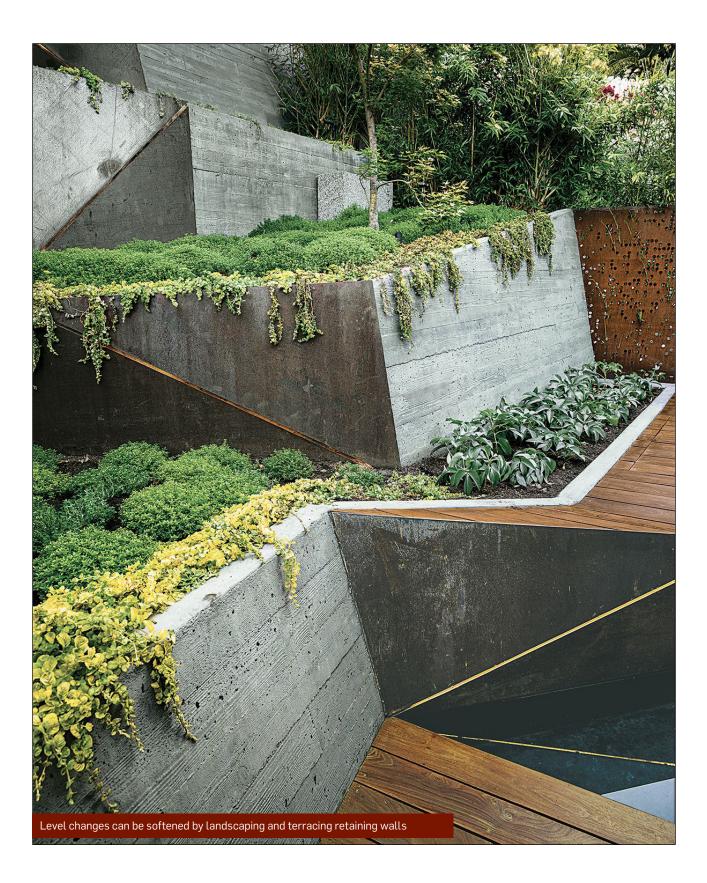
Streescape Character Types fall into two categories:

**Detached Streetscape (R40 to R160)** – streetscapes that emphasise landscape between buildings and a more informal relationship to the street alignment.

Attached Streetscape (R-AC4 to RAC1) – streetscapes that create a consistent edge of contiguous building frontages with a direct role in positively shaping urban space.

#### **DESIGN GUIDANCE**

Side setbacks are set by the applicable R Coding of the property, and are listed in the R-Codes Volume 1 and 2.



### 2.9 RESPONSE TO TOPOGRAPHY

#### OBJECTIVE

Design buildings to respond to Kalamunda's undulating terrain, working with rather than against the topography to achieve an integrated outcome. Building should strive to positively relate to the street, with ground floor levels at or slightly above footpath level.

#### **DESIGN GUIDANCE**

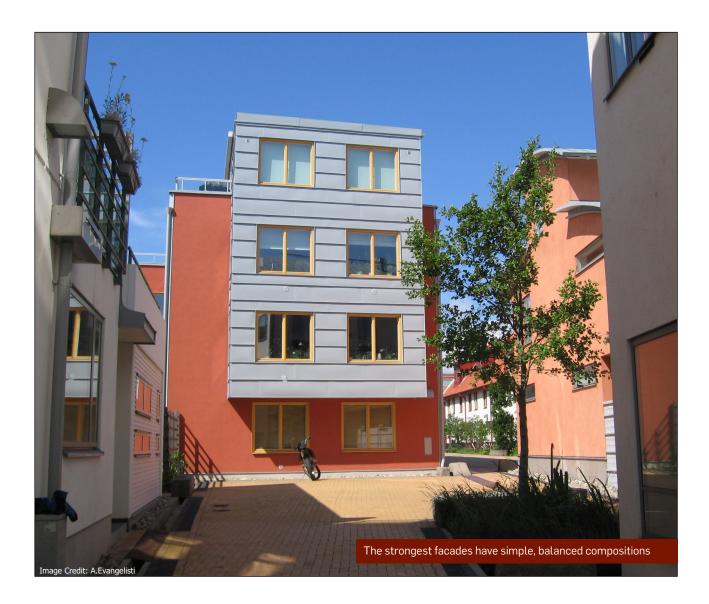
- Prior to confirming any design decisions, new developments should undertake a thorough site analysis (outlined in the R-Codes, Volume 2, Section 3.1) to ensure that the new building takes full advantage of site opportunities and interfaces appropriately with surrounding buildings and public realm.
- Minimise the use of large retaining walls. If they are taller than 1.5m, they should be stepped and landscaped.
- · Incorporate retaining as part of the overall building or as part of the landscape proposal.
- · Design the building for 'up-slope' and 'down-slope' conditions relative to the street by:
  - balancing car parking access with the creation of a strong building façade along the street. Car parking access often works best at 'down-slope' side of the building.
  - minimising the setback for up-slope conditions to achieve a close relationship between the building and street edge.
  - aiming for level access to the entry door wherever possible. However, where buildings are close to the road and have a
    residential ground floor, setting finished floor levels slightly higher can assist with privacy (max. 1m). For commercial
    uses, entries should be designed to achieve universal access requirements.
- Balance cuts into the land with fill, instead of only using cuts or fill alone. Use parts of the slope for the open spaces associated with the development, incorporating it as terracing, and create flat outdoor spaces around the buildings. Battering (creating a consistent slope) across the whole site generally creates unusable spaces.
- · Utilise the slope for undercroft (undercut) or basement car parking wherever possible.

### **2.10 TRANSITION PROVISIONS**

#### OBJECTIVE

Transition provisions ensure that the more intensive built form within the Activity Centre has an appropriate interface with adjacent lower density areas to reduce the impact of bulk, overshadowing, and overlooking.

- Applies to all properties within the Kalamunda Activity Centre that share a lot boundary with properties outside the structure plan boundary.
- Applies to all **Attached Streetscape** properties (R-AC4, R-AC3, R-AC2, R-AC1) that share a lot boundary with **Detached Streetscape** properties (R40-R60).
- Transition must be addressed using either of these approaches:
  - Internal boundary setback (side or rear) of applicable property to be increased by 3m (in addition to otherwise required setback)
  - Height limit along applicable boundary reduced to 2 storeys, with upper levels set back minimum of 6m from lower building face



# **3.0 BUILDING CHARACTER**

### 3.1 FACADE DESIGN

#### **OBJECTIVE**

New buildings within the Kalamunda Activity Centre should be carefully designed to present appropriate and attractive elevations to the public realm. Buildings should base designs on time-honoured patterns of good design, while taking inspiration from local vernacular forms and place-appropriate materials. The result should be fresh, contemporary buildings that have a strong connection to the local environment and history.

#### **DESIGN GUIDANCE**

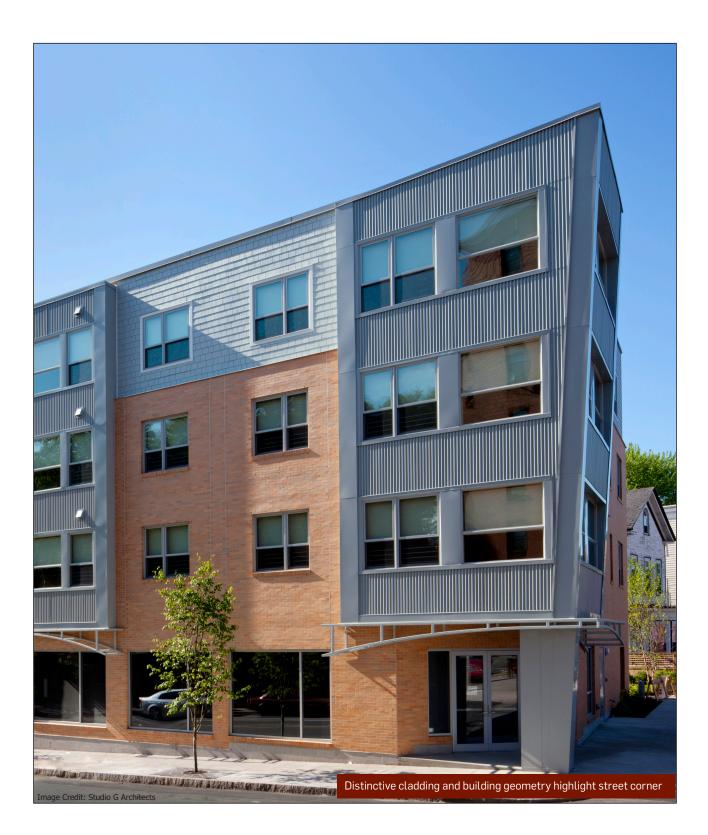
- Principles of designing successful building elevations are outlined in the R-Codes, Volume 2, Section 4.10.
- Changes in building plane (**Building Articulation**) is a key strategy used by most successful façade designs, allowing differentiation of elements, reduction in perceived scale of the building, shadow-lines and variation.
- Elements that protrude from the body of the building (eg. balconies, awnings, vertical louvers, shade structures, screens, eaves) can add depth and visual interest to facades.
- Facades should be carefully composed to achieve visual-balance.
- · Buildings to generally be designed with a clearly-identifiable base, middle and top expression.
- To avoid a 'pasted-on' look, external cladding materials should only change along a vertical line on an internal corner.
- External cladding materials in the same plane may only change along a horizontal line where there is a clear transitional element between them (eg. 'shadowline' notch or overlapping trim).
- Building elements should be visually convincing in their structural integrity. Heavier-appearing materials (eg. masonry) should generally be used below lighter-appearing materials (eg. timber or metal), and building structure should be an integral aspect of the composition.
- Building materials and forms should be chosen that augment and complement the current character of the Kalamunda Activity Centre and surrounds.

### 3.2 STREET ORIENTATION

#### OBJECTIVE

Streets form the primary movement network and public realm within the Kalamunda Activity Centre. Buildings along the street edges define three-dimensional 'outdoor rooms,' a key aspect of an urban environment. This spatial enclosure of the public realm helps to create pedestrian comfort and a sense of intimacy and place identity. To support this objective, buildings should maintain a direct and positive relationship with the street.

- · In most instances, buildings should maintain an orthogonal relationship with the street alignment.
- Where topography and/or solar orientation dictates, buildings can be stepped or segmented to maintain a relatively consistent street presentation
- Where maintaining the street edge is impossible or impractical, other elements such as landscape plantings, trees, walls, fences or artworks can be used to achieve the objective.



## **3.3 PROMINENT SITES**

#### OBJECTIVE

Certain sites play a particularly important role in setting the intended character and defining key locations / edges of the Kalamunda Activity Centre. These sites are often on visible corners or at the end of key sightlines ('terminated vistas'). The design of these prominent buildings will have a disproportionate impact on the perception of the town centre. As such they have a greater responsibility to offer something back to the community, and will be held to a higher standard of architectural design. In return, these sites will be eligible for development bonuses.

#### **DESIGN GUIDANCE**

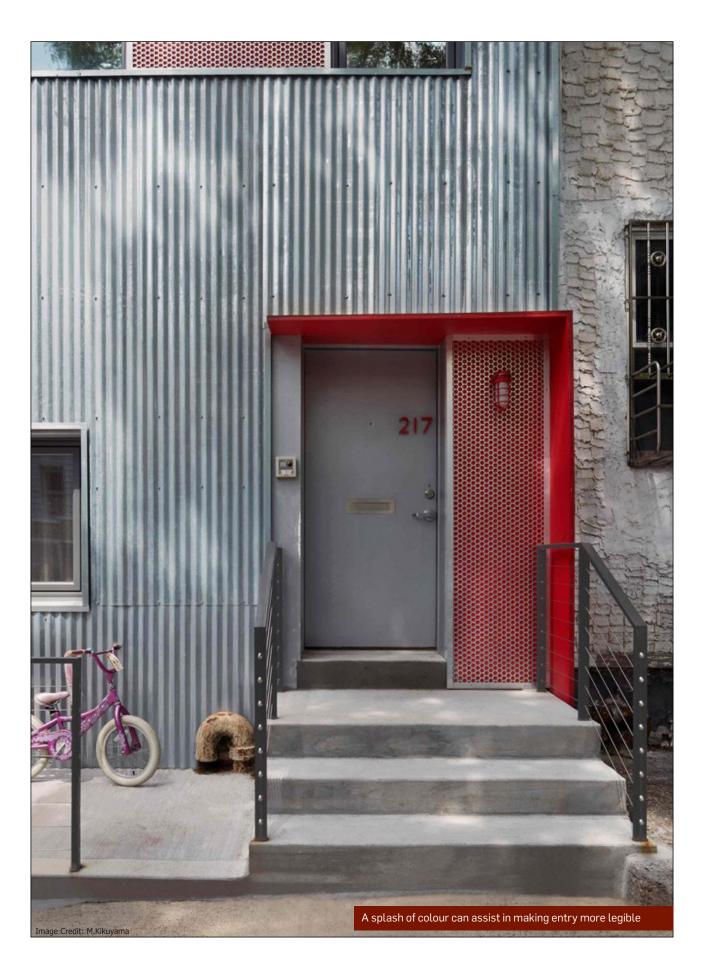
- Prominent Sites designation as per Figure 5 Built Form Controls Map
- · New buildings on sites designated as **Prominent** must:
  - Achieve an exemplary standard of architectural design, as determined by the Shire of Kalamunda's Design Advisory Committee (www.kalamunda.wa.gov.au/Services/Planning/Advisory-Committee)
  - On corner sites, respond architecturally to the corner condition in a way that emphasises the corner. Examples of this include increased height, vertical architectural element, corner entry, bay window, blade signage, special awning treatment, distinctive cladding material, etc.
  - On sites that terminate vistas, place vertical elements, bays or entries (elements that are obvious at a distance) at the centre of the view line.
- Other solutions to both corner sites and sites that terminate vistas may be appropriate and can be agreed with the Design Advisory Committee.

### 3.4 ROOF FORM

#### OBJECTIVE

New buildings within the Kalamunda Activity Centre should be carefully designed to present appropriate and attractive roof forms to the public realm.

- Principles of designing successful roof designs are outlined in the R-Codes, Volume 2, Section 4.11.
- A variety of roof forms may be appropriate for the Kalamunda Activity Centre, including flat (with parapet), hip, gable, skillion.
- · Application of roof form is generally linked to intended land use and character:
  - Flat (with parapet) commercial, retail or mixed-use (generic character)
  - Hip, Gable residential or mixed-use (traditional character)
  - Skilion any (contemporary / industrial character)
- · Roof slope is an important consideration that relates to the form chosen:
  - Flat (with parapet) min. fall for drainage + parapet high enough to screen roof equipment
  - Hip 18-25 degrees
  - Gable 25-40 degrees
  - Skilion 10-15 degrees
- Dormer windows (contemporary or traditional) are encouraged to break up the scale of large roofs and add articulation to the façade, but must meaningfully relate to interior space.
- Eaves are recommended for most roof types, providing shading to windows and adding visual interest to the elevation via shadow lines.
- North-facing roof faces are encouraged to be used for solar energy generation.



### 3.5 ENTRY LEGIBILITY

#### OBJECTIVE

Building entries should be easy to identify, and provide a direct, safe pathway for pedestrians to access the building from the street.

#### **DESIGN GUIDANCE**

- · Design principles relating to building entries and pedestrian access are outlined in the R-Codes, Volume 2, Section 3.7.
- Entries should play a formative role in the composition of the street-facing façade. They should be emphasised using colour, special awnings, changes in plane, varying material treatment, special landscape treatment, or signage.
- Entries should provide weather cover and appropriate threshold circulation space to assist users in transitioning from internal to external.

### **3.6 BALCONIES**

#### OBJECTIVE

Well-designed balconies support indoor-outdoor living in apartment buildings, providing easy access to sunlight and ventilation for residents. They also create desired articulation on building facades and support passive surveillance to keep public spaces safe.

#### **DESIGN GUIDANCE**

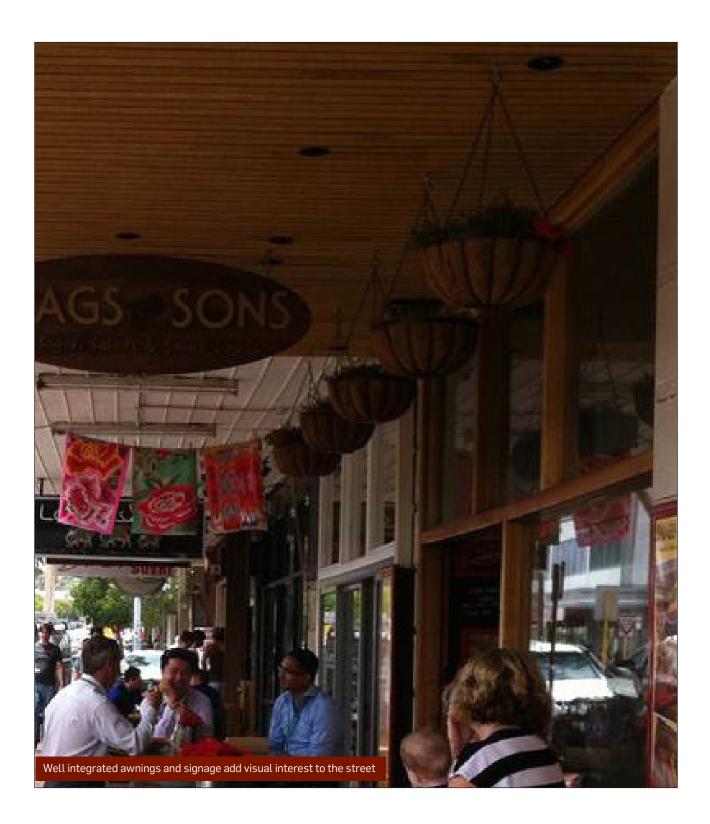
- · Principles and criteria relating to the design of balconies are outlined in R-Codes, Volume 2, Section 4.4.
- · Balconies can project up to 1m into the front setback zone (though not beyond the property boundary).
- In certain circumstances (described in R-Codes, Volume 2, Section 4.4.5), alternatives to balconies such as Juliet balconies, operable walls, bay windows or winter gardens may be acceptable.

### **3.7 CEILING HEIGHT**

#### **OBJECTIVE**

In order to create robust buildings that will be pleasant and functional over their life spans, it is important that they are designed with sufficiently high ceilings. The required ceiling height depends on the intended use, as detailed below. Taller ceilings allow more natural light into rooms, space for ceiling fans, and make small rooms feel more spacious. For commercial applications, taller ceilings allow for required mechanical services above drop-ceilings and create a more generous base to buildings at ground floor.

- Principles and criteria relating to general ceiling height parameters are outlined in the R-Codes, Volume 2, Section 4.3.
- For sites with a **Frontage** designation as per Figure 5 Built Form Controls Map, the minimum ground floor ceiling height is set according to the development standards as per Table 2 Development Requirements.
- For residential applications, ceiling height is measured to the underside of the slab or bulkhead.
- For ground floor commercial or retail applications (subject to a **Frontage** requirement), measurement is floor to floor (top of slab to top of slab above).



### 3.8 AWNINGS

### OBJECTIVE

Continuous weather protection over footpaths allows the town centre to be comfortably used in all weather, increasing its functionality and vitality by protecting pedestrians from sun and rain. Awnings can also assist in defining building entrances and encouraging pedestrian activity along street edges (eg. al fresco dining).

#### **DESIGN GUIDANCE**

- For sites with a **Frontage** designation as per Figure 5 Built Form Controls Map, the minimum awning provisions are set according to the development standards as per Table 2 Development Requirements.
- Minimum awning depth may be reduced to accommodate existing or proposed street trees at the discretion of the planning officer, but in no case shall it be less than 1.5m deep.
- Sites not subject to a **Frontage** (as per Figure 5) must provide appropriate weather-protection for users and occupants, depending on the specific building configuration, setback, entry location, and topography. This may include awnings, entry canopies, pergolas, or other similar structures.
- Awnings shall be made of materials that are water proof and provide shade (no clear glass, transparent or permeable materials).
- · Awnings to be structurally linked with the building, and be well-integrated into the design of the façade.

### 3.9 SIGNAGE

#### **OBJECTIVE**

Signage within Kalamunda Activity Centre plays an important role in the character and vitality of the town and in the success of the associated businesses. Signage should be well-designed and integrated with buildings to assist customers in locating their destination without creating excessive visual clutter.

#### **DESIGN GUIDANCE**

· Any new signage to generally be in accordance with the City of Kalamunda's policy P-DEV 42 Signage on Private Property.



## 4.0 ACCESS, PARKING + SERVICES

### 4.1 CAR PARKING LOCATION

#### **OBJECTIVE**

The intended character of the Kalamunda Activity Centre is urban and pedestrian-oriented. As such, careful placement of cars and car parking areas within this framework is critical. In general, on-street parking is encouraged as a low-impact way to incorporate convenient car parking into the streetscape without damaging the intended character. Car parking on private lots between the street and the building dilutes the street edge and reduces visual interest for pedestrians, and is generally discouraged. To reduce its impact on the streetscape, most car parking within the town centre should be hidden behind street-facing buildings.

#### **DESIGN GUIDANCE**

- For **Frontage** types 1, 2, and 3, car parking may not sit between the building and the street.
- For **Frontage** type 4, car parking between the building and the street is discretionary, depending on the proposed land use and building configuration. Where it is supported, it should be limited to a drive aisle and single row of parking bays, and screened at the street by a 1m landscape strip.
- If **Frontage Build-Out** requirements are met (Table 2 Development Requirements), car parking may be brought close to the street for balance of the street edge (screened by a 1m landscape strip).

### 4.2 ACCESS + VEHICLE PARKING

#### OBJECTIVE

The best town centres are made up of vibrant streets and public spaces lined by active uses and enclosed by a consistent building edge. Minimising the impact from vehicle access to car parking is a critical design objective.

- Design principles relating to vehicle access are outlined in R-Codes, Volume 2, Section 3.8.
- Cross-overs should be strategically placed in locations where they will have the least impact on the efficient functioning of the place.
- · Minimise cross-over widths and combine shared accessways where possible
- · Entrances to structured car parking should be recessed behind the primary building facade
- · Car parking areas or garages should be screened or tucked behind buildings, where possible.



### 4.3 WASTE + SERVICES

### OBJECTIVE

Design buildings so that they are accessible and functional with regard to service access and waste management. Encourage integrated waste collection strategies that facilitate recycling and reduce land fill. Ensure that buildings can be functionally serviced for delivery and pick-up of goods without unduly impacting on access, parking, or pedestrian amenity.

#### **DESIGN GUIDANCE**

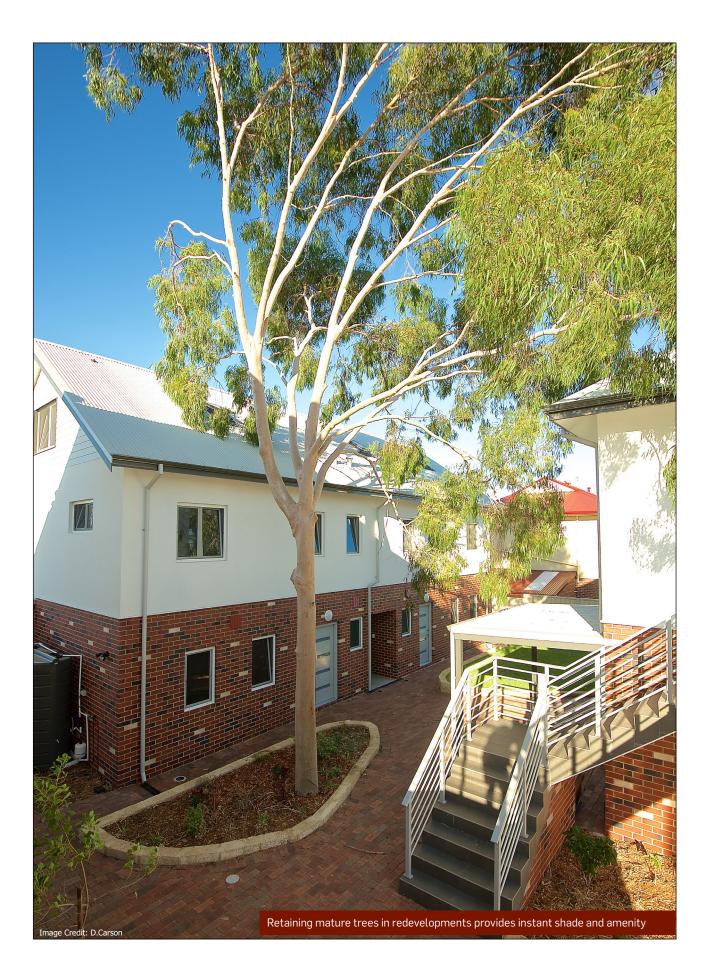
- · Design principles relating to waste management are outlined in R-Codes, Volume 2, Section 4.17.
- · Consolidate service access / loading away from areas of high pedestrian activity
- · Waste Management Plans shall be provided for all new developments.
- Design street-facing facades to minimize the impact of electrical panels, fire pump connections, telecommunications, and car parking ventilation.

### 4.4 **BICYCLE PARKING**

#### **OBJECTIVE**

Walkable town centres should encourage all non-single vehicle modes of transport by providing appropriate infrastructure and safety provisions.

- Design principles relating to bicycle parking and requirements for residential bicycle parking are outlined in the R-Codes, Volume 2, Section 3.9.
- Commercial tenancies larger than 1,000m<sup>2</sup> should offer end-of-trip facilities to encourage employees to cycle, jog or walk to work.
- · End-of-trip facilities should be located near bicycle parking facilities
- End-of-trip facilities should include, at a minimum:
  - two female and two male showers, located in separate changing rooms
  - changing rooms must be secure facilities capable of being locked
- a locker must be provided for every bicycle parking bay provided
- Bicycle parking for commercial land uses should be provided at the following rates:
- 1 space per 200m<sup>2</sup> of commercial floor space (tenancies less than 1000m<sup>2</sup>)
- 1 space per 250m<sup>2</sup> of commercial floor space (tenancies over 1000m<sup>2</sup>)



## **5.0 LANDSCAPE**

### 5.1 TREE RETENTION

#### OBJECTIVE

Kalamunda is a town set in the Perth Hills and in the bush. As such, a key part of its character is the landscaped setting of the buildings. Promoting and maintaining a generous tree canopy helps to create shade for pedestrians, preserve privacy between buildings, and soften the visual impact of buildings. As such, significant, healthy trees on private lots should be retained and designed around, where practical, and additional trees added to continue to build up this landscape pattern within the town.

#### **DESIGN GUIDANCE**

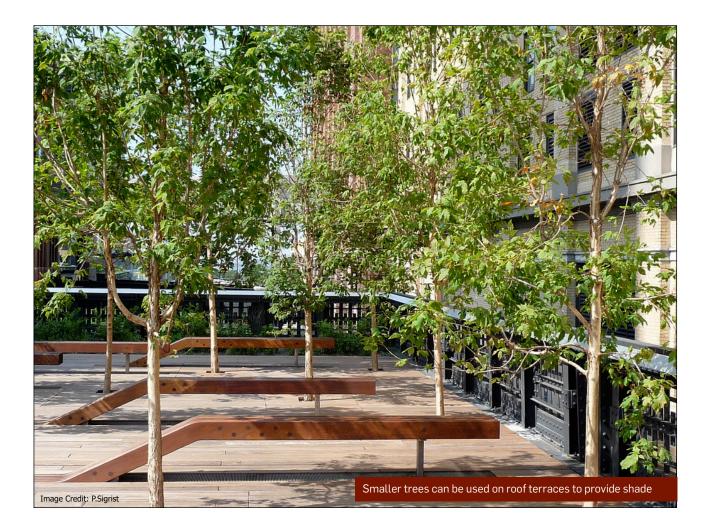
- Design principles relating to **Deep Root Zones**, tree retention and planting on built structures are outlined in the R-Codes, Volume 2, Sections 3.3 and 4.12.
- When proposing to remove a tree worthy of retention (according to design criteria in the R-Codes, Volume 2, Section A3.3.1), the applicant must either replace the tree with an equivalent tree in a **Deep Root Zone** onsite or take on the offset requirements listed in the R-Codes, Volume 2, Section A3.3.7.
- A Landscape Plan must be submitted with the planning application indicating proposed deep soil zones, plant and tree species, and calculations showing how the site meets the relevant metrics outlined in the above sections.

### 5.2 SOFT LANDSCAPING

#### OBJECTIVE

Given the bush setting of the Kalamunda Activity Centre, soft landscaping is a crucial aspect of any new development within the town centre. Plant selections and configurations should be selected that add amenity to the site and adjacent streetscape, be easy to maintain, and use water wisely.

- Design principles relating to landscape design are outlined in R-Codes, Volume 2, Section 4.12.
- Given the surrounding area's history of food production (particularly fruit), consider incorporation of productive food producing trees and plantings and vegetable beds.
- Consider appropriate mix of native plants to support local biodiversity / minimise water use, and non-native plants that can provide other benefits such as splashes of colour and summer shade / winter sun.



# 5.3 ROOF TERRACES

### OBJECTIVE

Roof terraces can provide amenity and additional open space on tight sites. They allow access to distant views, sunlight, and communal space for gatherings. Roof terraces are encouraged within the Kalamunda Activity Centre, subject to appropriate design configurations to minimise impacts on neighbours.

### **DESIGN GUIDANCE**

- Accessible roof decks or terraces are subject to the same visual privacy provisions as Balconies per the R-Codes, Volume 2, Section 4.5.
- Roof terraces are encouraged to provide a mixture of hard and soft landscaped areas, and include good solar access and areas that can be shaded in summer.
- Communal facilities such as seating, bbqs, swimming pools, saunas, ping pong tables, garden plots, etc. encourage residents to utilise the space and promote social interaction.
- Roof shade structures are not restricted in area, but will be considered a building storey unless they meet the following criteria:
  - Open on at least 3 sides
  - Maximum 150m<sup>2</sup> in area
- If roof structures are larger than 150m<sup>2</sup> in area, they can be approved but they are considered a building storey for the purposes of assessing building height.
- Roof shade structures, mechanical equipment, and vertical circulation overruns on flat roofs are subject to the following restrictions:
  - Set back from perimeter wall a minimum of 6m facing a street, and 2.5m facing an internal lot boundary (or 12m from a boundary)
  - Maximum height 3.5m

# 5.4 COMMUNAL OPEN SPACE

### **OBJECTIVE**

In more dense environments where residents have limited exterior space, the incorporation of common open space in projects can facilitate neighbour interaction and provide additional recreation space beyond courtyards and balconies.

- · Design principles relating to communal open space are outlined in the R-Codes, Volume 2, Section 3.4.
- · Communal open space not required for residential multiple dwelling projects with 10 or fewer dwellings.
- It is good practice to locate communal open in areas with adequate solar access and ideally co-located with deep soil zones and mature landscaping.
- Communal open space should be located near primary vertical circulation and property entrances to ensure that it is visible, active and well-used by residents.
- The interface between communal open space and dwelling entrances should be carefully designed to ensure appropriate transitions, thresholds and levels of privacy.



# 5.5 FENCING

### OBJECTIVE

Fencing can be a useful device to delineate private space. However, the height, colours and design of the fencing needs to be carefully chosen to blend in with the existing streetscape and complement the associated buildings. Front fencing should strike a careful balance between creating a degree of privacy and separation / maintaining a sociable interface with the public realm that promotes neighbour interaction and community safety.

### **DESIGN GUIDANCE**

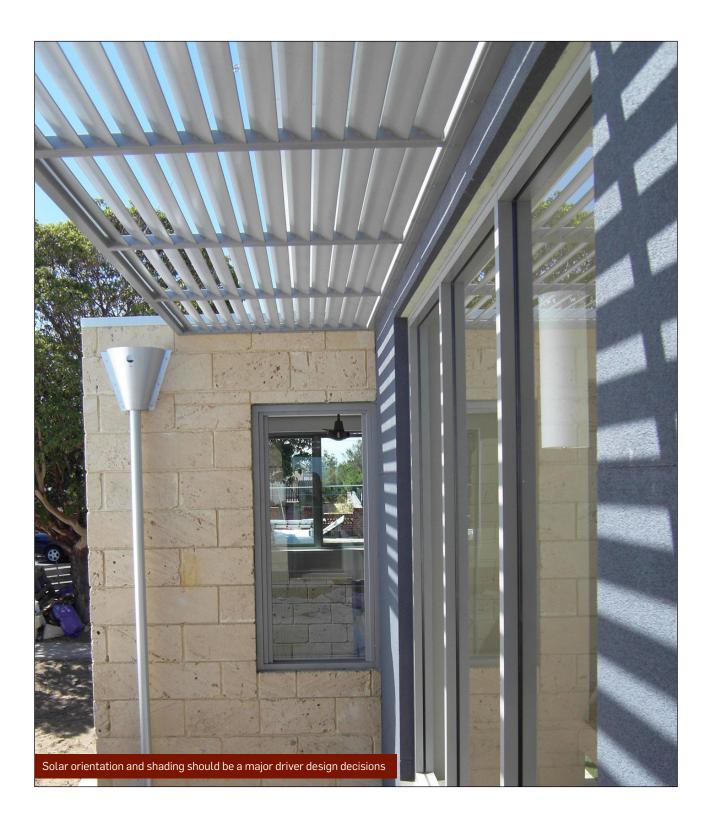
- Front fencing is not permitted between the building and the front lot boundary on any property subject to a Frontage designation (Figure 5 Built Form Controls Map).
- The erection and maintenance of dividing fences on internal property boundaries are a matter between neighbours and as such are dealt with by the Dividing Fences Act 1961 (administered by the Department of Commerce).
- A fence up to 1.2m high within the front setback of the property can be constructed without approval (on properties not subject to a **Frontage** requirement).
- Any front fence in excess of 1.2m high requires City approvals and must comply with the City of Kalamunda Fencing Local Law.
- Fencing design, colours and materials should be complementary of the proposed or existing buildings, and should enhance the streetscape.

# 5.6 WASTE + RECYCLING

### OBJECTIVE

Ensure early consideration of waste management within new projects to allow for easy sorting of waste streams. Waste facilities should be appropriately located to avoid odour impacts on residents, facilitate recycling, and ensure easy collection. At street level, waste storage should be carefully designed to minimise negative impacts on the streetscape.

- · Design principles relating to waste management are outlined in the R-Codes, Volume 2, Section 4.17.
- · Consider incorporation of dedicated vertical chutes for waste, recycling and compost items.
- If waste is stored on a level that includes residences or commercial space, ensure that there is sufficient separation to minimise odour impacts.
- Liaise with the City of Kalamunda technical staff at an early stage to work through the proposed approach to waste management and collection.
- Consider communal collection of food waste and incorporation of a composting bin associated with on-site vegetable gardens.



# **6.0 SPECIAL CONSIDERATIONS**

# 6.1 SOLAR ACCESS

### **OBJECTIVE**

To achieve effective passive solar outcomes and efficient solar energy collection, the massing and layout of new buildings must consider the arc of the sun as a primary design consideration. Any new proposals should carefully consider the repercussions of design decisions on solar access to communal open space, internal living spaces, as well as the overshadowing impact on adjacent properties and buildings.

### **DESIGN GUIDANCE**

- Design principles and criteria relating to solar access and energy efficiency are outlined in the R-Codes, Volume 2, Sections 4.1 and 4.15.
- · Design proposals should strive to:
  - protect solar access to solar panels on adjacent buildings
  - avoid overshadowing primary outdoor spaces and courtyards on adjacent properties

# 6.2 UNIVERSAL DESIGN

### **OBJECTIVE**

New developments within the Kalamunda Activity Centre should be designed to facilitate access for people of all modes and abilities.

- · Design principles and criteria relating to universal access are outlined in the R-Codes, Volume 2, Section 4.9.
- 50% of ground floor dwellings should be designed to achieve Silver status under the Liveable Housing Design Guidelines.
- Unless steep topography makes it untenable, the slope from the public footpath to the common entrance to any residential building shall be in accordance with AS1428.1 (2009).
- The slope from the public footpath to the entrance on all commercial, mixed-use, and institutional buildings shall be in accordance with AS1428.1 (2009)



# 6.3 HERITAGE + ADAPTABILITY

### OBJECTIVE

In order to preserve the rich history of the area, certain buildings and places are identified as having special heritage value. As such, owners should work with Council to preserve key historic elements of the property when redeveloping their sites. Design of new buildings should also consider the possible future uses of the spaces to allow for maximum flexibility of use to ensure a long and useful building life.

### **DESIGN GUIDANCE**

- Design principles and criteria relating to adaptive reuse of existing buildings are outlined in the R-Codes, Volume 2, Section 4.13.
- The City of Kalamunda has prepared a Municipal Inventory of Heritage Places, in accordance with Section 45 of the Heritage of Western Australia Act 1990. Based on this inventory, the City may propose to list certain properties on the Heritage List subject to advertising and communication with the owner.
- Properties on the Heritage List may be subject to a heritage agreement with the City in order to protect and preserve the elements identified as having heritage value.
- Redevelopment proposals for any property on the Heritage List are subject to satisfactory feedback from the City's Design Advisory Committee.
- Properties on the Heritage List may be exempt from certain Scheme requirements, per Kalamunda Local Planning Scheme 3, Section 7.5(c).
- Owners of properties listed on the State Register or National Heritage List should contact the Heritage Council (WA) to understand their responsibilities and development constraints.

# 6.4 PRIVACY PROTECTION

### **OBJECTIVE**

When designing new projects, it is important to consider and maintain a reasonable degree of privacy protection for sensitive areas of neighbouring properties. This relates to visual privacy and overlooking, and acoustic privacy relating to the impact of loud noise on the amenity of those living nearby.

### **DESIGN GUIDANCE**

- Design principles and criteria relating to visual and acoustic privacy are outlined in the R-Codes, Volume 2, Sections 3.5 and 4.7.
- · Visual privacy criteria apply behind the front setback area only.

# 6.5 STAGED DEVELOPMENT

### OBJECTIVE

On larger, staged developments, it is crucial that the early stages of projects retain a positive interface with the public realm and avoid negative impacts on adjacent properties.

- Buildings proposed as part of the first stage of any development shall address and present to the street in the form of entry points, openings, glazing, and any other appropriate design response.
- Any development proposed to be undertaken in stages shall provide an overall development concept for the site to demonstrate how the built form will relate to surrounding development and the public realm.
- Developers considering a staged approach to development should consider the delivery of key facilities in the earlier stages of development. Alternatively, temporary 'pop-up' elements should be considered in appropriate locations to achieve the policy objectives for certain interfaces.



# 6.6 SAFETY + SECURITY

### OBJECTIVE

Kalamunda Activity Centre is intended to be a place where residents, workers and visitors feel safe and secure at all times. This is achieved by promoting passive surveillance from buildings, good public lighting, and activity within the public realm.

### **DESIGN GUIDANCE**

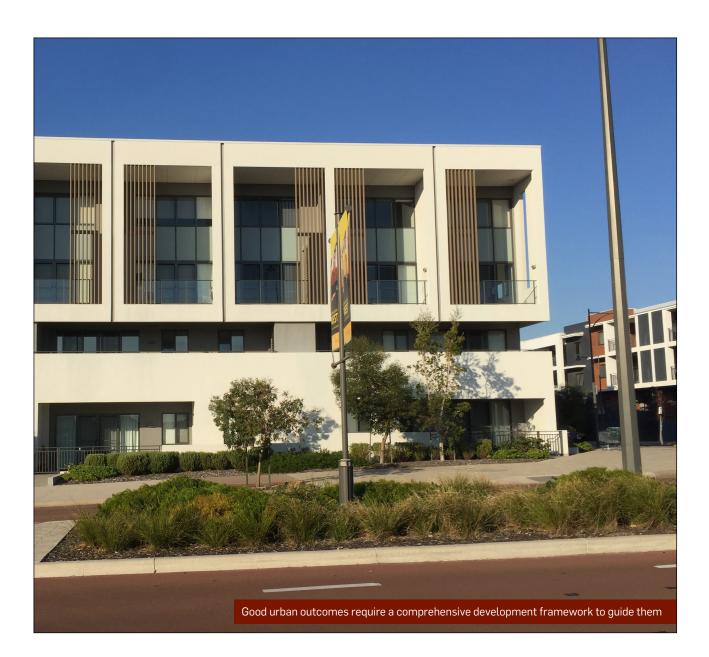
- · Design principles and criteria relating to public domain interface are outlined in R-Codes, Volume 2, Section 3.6.
- · Developments shall clearly delineate between public and private realm.
- · Building entrances shall be orientated to face open and active spaces.
- · Extensive expanses of blank walls are not permitted.
- New developments shall maximise passive surveillance by orientating habitable rooms with views over public streets and public open spaces.
- Lighting is to be provided to all public spaces including under awnings, parking areas, service areas, footpaths and entry and exit points.
- · Buildings shall be constructed from materials that are resistant to vandalism.

# 6.7 DEVELOPMENT INCENTIVES

### **OBJECTIVE**

In order to encourage exemplary design outcomes, the City of Kalamunda is offering a range of development incentives. These incentives are discretionary and subject to agreement with the City. In all cases, development bonuses or relaxation of requirements is based on achieving an outstanding contextual design outcome.

- Any proposal seeking development incentives must be presented and assessed by the City of Kalamunda's Design Advisory Committee (DAC). The DAC must be comfortable that the design proposal meets the design intentions for the site (as described in the Kalamunda Activity Centre Structure Plan and associated documents), and also that the building demonstrates excellence in architectural design.
- Sites designated as **Prominent** that are proposing a design response deemed appropriate by the Design Advisory Committee are eligible for the development bonuses listed below.
- Additional elements that can add weight to requests for development bonuses include:
  - Provision of affordable housing
  - Retention of significant landscape features
  - Provision of communal facilities open to the public
  - Extraordinary sustainability features minimising water and energy use
  - Innovative waste management solutions
- · Development bonuses that can be granted include:
  - Increase in allowable building height, per Table 2 Development Requirements or the R-Codes, Volume 1 and 2 (whichever applies).
  - Reduction in required on-site car parking by up to 30%
  - Increase in allowable plot ratio, per Table 2 Development Requirements or the R-Codes, Volume 1 and 2 (whichever applies).



# 7.0 RESOURCES

# 7.1 **DEFINITIONS**

### **APPARENT HEIGHT**

The number of storeys of a building, as visible from the adjacent public road reserve or open space.

### ATTACHED BUILDING

A building with one or more parapet walls on interior boundaries that, when paired with a similar adjacent building, would form a contiguous building mass.

### **BUILDING ARTICULATION**

Changes in the depth of the surface of a building facade to create visual interest and shadowlines, and assist in breaking-up the massing into a series of separate components.

### **CONE OF VISION**

The limits of outlook from any given viewpoint for the purposes of assessing the extent of overlooking from that point.

### **DEEP SOIL ZONE**

An area of ground unencumbered by any below-ground structures that would interfere with tree growth.

### **DETACHED BUILDING**

A building with boundary setbacks such that it is not in contact with any other buildings.

### FRONTAGE

Additional development controls relating primarily to the interface between the street-facing building facade and the street.

### FRONTAGE BUILD-OUT

The minimum percentage of the front property boundary that must be built-out with a building along the front setback line.

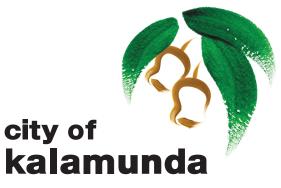
### **PROMINENT SITES**

Visually important sites within the town centre that assist with wayfinding, signfiy cultural importance, and/or help build a sense of place (often located on corners or at the end of view corridors).

# 7.2 PRIMARY CONTROLS

Current development standards table from the R-Codes, Volume 2., Table 2.1 Primary Controls, provided for convenience. Before relying on these standards, please confirm that this is the most recent version (https://www.planning.wa.gov.au/publications/DesignWA.aspx).

	Applies to R-Code areas, default settings apply unless alternative provisions defined in local planning instruments					Applicable where designated by local government in local planning scheme, activity centre plan, structure plan, local development plan, local planning policy					
Streetscape contexts and character	Low-rise residential		Medium-rise residential		High density urban residential		Neighbourhood Centre	Medium- rise urban centres		density centres	Planned areas
Site R-Coding	R40	R50	R60	R80	R100	R160	R-AC4	R-AC3	R-AC2	R-AC1	R-AC0
Building height (storeys) refer 2.2	2	3	3	4	4	5	3	4	7	9	
Boundary wall height (storeys) <sup>1,2</sup> refer 2.4	1	3	1³	2 <sup>3</sup>	2	2 3	2	3	4		
Minimum primary and secondary street setbacks refer 2.3	4m 4	2m	2	m	2	m	2m or Nil ⁵	2m or Nil⁵	2m or Nil <sup>5</sup>		Refer to local planning scheme, local dev
Minimum side setbacks <sup>6</sup> refer 2.4	2m	3m	3	m	3	m		Nil			
Minimum rear setback refer 2.4	3m		3m		6m		6m	Nil	Nil		plan and/ or precinct controls as applicable
Minimum average side/ rear setback where building length exceeds 16m. refer 2.4	2.4m	3.5m	3.5m	3.5m	3.5m	4.0m	NA	NA	NA		
<b>Plot ratio 7</b> refer 2.5	0.6	0.7	0.8	1.0	1.3	2.0	1.2	2.0	2.5	3.0	
Notes	<ul> <li>prop</li> <li>2 Whe boun</li> <li>3 Boun</li> <li>4 Minir</li> <li>5 Nil se</li> <li>6 Boun build</li> </ul>	<ul> <li><sup>1</sup> Wall may be built up to a lot boundary, where it abuts an existing or simultaneously constructed wall of equal or greater proportions</li> <li><sup>2</sup> Where the subject site and an affected adjoining site are subject to different density codes, the length and height of any boundary wall on the boundary between them is determined by reference to the lower density code</li> <li><sup>3</sup> Boundary wall only permitted on one boundary, and shall not exceed 2/3 length.</li> <li><sup>4</sup> Minimum secondary street setback 1.5m</li> <li><sup>5</sup> Nil setback applicable if commercial use at ground floor</li> <li><sup>6</sup> Boundary setbacks will also be determined by provisions for building separation and visual privacy within this SPP and building separation provisions of the NCC.</li> <li><sup>7</sup> Refer to Definitions for calculation of plot ratio</li> </ul>									



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## KALAMUNDA TOWN CENTRE PLACE MAKING & ENGAGEMENT REPORT

in conjunction with Kalamunda Activity Centre Plan by Urbis















### Contents

introduction. puplic engagement summary. activity centre plan commentary. town centre management recommendations. general place making recommendations. final thoughts: 2017 Future of Local Government Declaration

appendix: finer details of public engagement program



## introduction.

Spaced Out Placemakers was engaged in April 2018 to assist the City of Kalamunda with place making advice relating to the development of an Activity Centre Plan for the Kalamunda Town Centre. Our specific role was to:

- 1. Document the story or character of Kalamunda;
- 2. Comment on place making and the Kalamunda Town Centre; and
- 3. Provide recommendations for the City to use the Activity Centre Plan as a tool to enhance place making.

The main outcomes of the engagement and place making program included:

- Public Consultation themes considered important by the community: land use, built form, public realm and business innovation;
- Land Use: Encouraging a more invlusive town centre through incentives for a stronger choice of housing and investigating temporary community uses on vacant land;
- Built Form: Encourage more outdoor dining, active shop fronts, improved used of heritage elements, passive solar design, maintaining a strong High Street and country feel to development;
- Public Realm: Consolidating public parking, promote activation and develop curatorial themes for the development of an urban art story;
- Business Innovation & Capacity Building: Develop a Town Centre Activation and Management Plan. Employ a Town Centre Manager to better communicate with businesses and community, better organise and communicate activation and work with new development and businesses; and
- The key considerations to developing an even more lively and functioning town centre include City Beautification (land use, quality built form and public realm) and Raising Social Capital (business innovation, activation and town centre management). The Activity Centre has the ability to achieve City Beautification and development of a strong place activation and management program will drive the software or more people-focused considerations. Both need to work together to create the framework for a successful town centre.

The following place making focused engagement programme was adopted to best understand the Kalamunda Story and community sentiment:

- Tuesday, 16 January Kalamunda Town Centre site investigation
- 11-16 February 'Meet & Greet' with local traders and community members to discuss existing activation and future needs for the Kalamunda Town Centre.
- 24-25 February Community-led cultural walks and town centre public visioning exercise
- Thursday, 15 March Kalamunda visioning workshop (prepared by Urbis)



### engagement and capacity building.

The City of Kalamunda has established a strong relationship with traders and influential community members prior to the during to the Activity Centre Plan Engagement Process. This offered us the opportunity to build on the existing network, identify new leaders and test the Kalamunda Story and Place Making principles with the wider community.

Three cultural 'Jane's Walks' and two public visioning exercises were undertaken on 24 & 25 February for the purpose of articulating a stronger community understanding of placemaking and public realm improvements for the Kalamunda Town Centre. The main outcomes from the engagement programme included:

• The Kalamunda Story: Community members feel that the town centre has a lot of strengths including a strong high street, the locals meeting place, great heritage elements, excellent local art and fresh produce markets and a beautiful setting in a natural bushy surrounds. Therefore, we believe a draft proposition or story for Kalamunda may include (this should be explored further with the community);

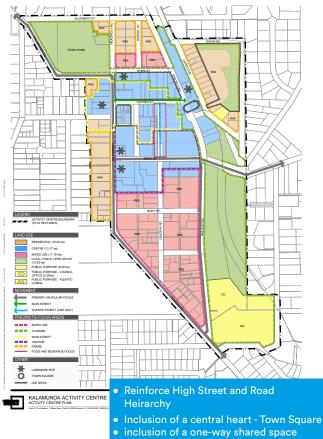
Kalamunda Town Centre is an artisan paradise with a strong natural and heritage presence. It's 'the' place for locals to meet and a hidden gem for visitors to explore. We welcome you to live, work, shop and be a part of the Kalamunda experience.

- Place Making Principles: Two over-arching themes of 'city beautification' and 'raising social capital' emerged strongly in all workshops. An additional four main meta-themes have been acknowledged (which can apply to the both themes) and explored further through the Activity Centre planning process; these include land use, built form, public realm improvements and business innovation.. There is also a need for the future development of place making to understand the 'soft' requirements of the town centre.
- Place Management: The participants identified the need for a place facilitator to manage activation, marketing, communications, maintance, development and an arts program for the Town Centre. There are many ways this position can be funded (as discussed later in the report) and partners well with a renewed strategy for the revitalisation of built form and public infrastructure through the Activity Centre Plan.
- Activation and 'Quick Win' Ideas: Many ideas have been put forward relating to improvements within the public realm. Some are community-led, community-council partnerships and/or council-led proposals. Some of the ideas relate to 'software' and the Kalamunda character, which include a curatorial theme and strategy for the development of urban art, a town centre brand and yearly calendar for celebrating existing events, making use of vacant public spaces, more outdoor dining and active business frontages, stronger communications between community members and businesses, pop up artisan spaces, etc. Many of these quick win ideas should be included in a future Town Centre Place Management and Activation Plan (discussed later within the report).
- Design and built form: Many of the public engagement comments relate to built form and pedestrian movement, which are addressed within the Activity Centre Plan. Participants requested stronger pedestrian access and connections, landscaping and public realm treatments, including an identifiable central heart or town square. A more detailed assessment of the place making recommendations carried over from the public consultation relating to built form are commented on the following page.
- Central Mall: There was some discussion regarding the pedestrianised street at Central Mall. Some enjoy the wide, calming and safe street, however others acknowledged that the pedestrian street is not working in its current form. Pedestrian Malls in Australia have had some success (Hay Street Mall, Perth, Rundle Mall, Adelaide, etc.), however these streets require a lot more people than currently visiting Kalamunda. A good alternative for non-city centred locations is the planning of a shared space. This allows the street to be free from cars on weekends when activities are occuring, such as the markets, and open for cars during the week, when events and activations are not planned.

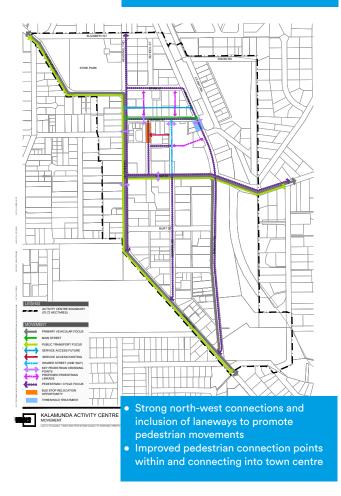
The public visioning exercise also included public engagement maps for participants to list other new ideas. Below are the raw results.

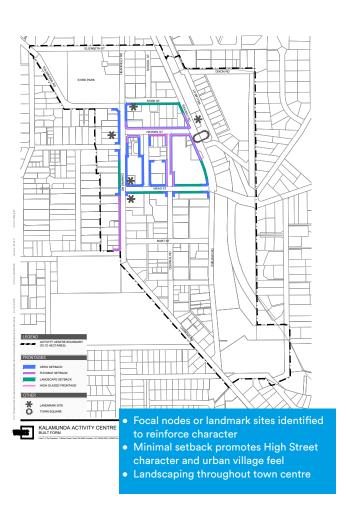
Theme	Emotions Mapping	Ideas Mapping	General Brainstorming		
Land Use		Incentives to provide more accommodation			
Built Form	Dissapointed in built form of new	Better Architecture			
	development Opportunity to plan and improve	Small Country town set around pleasant garden surrounds			
	future development	Line of trees down Hayne St			
		Development that blends with local character			
		Awnings on all buildings			
		Passive Solar Design			
		Encourage views of the City			
		Use topography to advantage			
		Consolidate parking with improved pedestrian access			
		Improved use of heritage elements			
Public Realm	Generally happy with Railway	Second school crossing	Youth Space /		
	Rd due to good pedestrian treatments and active businesses	Central Heart / Town Square	Intergenerational Space		
	People upset with lack of maintenance along Barber St	village feel needs to be more inviting - more High Street than retail centre	Dances in Historical Village Bring local musos back into		
	Unsure about pedestrian and	Outdoor furniture - art and sculptures	town		
	vehicle movements along Central	More grassed areas with picnic space	Encourage buskers on Hayne St		
	Mall	Entry improvement and pedestrians connections into and throughout Town Centre	Ping Pong tables		
		Improved footpath and awning along Haynes St			
		Enjoy open space along Railway Pde			
		Stronger connection between surrounding public uses (i.e. Stirk Park)			
		Edible gardens			
		Fenced dog park			
		More street art			
		Footpath under shade tree			
		More equipment on playground crosswalks			
		Lawn garden on corner of streets			
		Crosswalks - not vehicles first			
		Bike racks throughout street			
		Using laneways for improved connectivity			
		Colourful spaces			
Business Innovation	People generally happy with cafes	Greater variety and management of shops	Kalamunda gift hamper		
	along Haynes St	Too many cafes	Encourage businesses to be		
		Retrofit small shops - more federation style with gardens	open later		
		Creating a brand of 'home in the forest'			
		Hanging gardens			
		Working with businesses to activate shops			

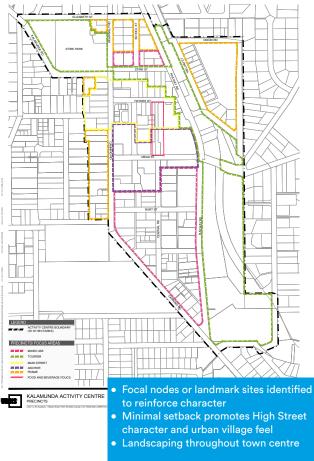




though Central Mall to increase activity











### town centre management recommendations.

Retailers and businesses in town centres are under threat. An evolving age of online shopping and the effectiveness of suburban shopping centres means that place making and town centre management is now a critical component of town centre success. Relying on natural occuring market forces and baseline development standards is not good enough for the communities of today and tomorrow.

Common Challenges facing town centres include:

- Constant change in retail environments and the inability to adapt;
- Engaging and involving local business and community participation as active members;
- Clearly identifying business and community priorities;
- Delivering and planning stakeholder priorities;
- Delivering and financing long-term financial planning and strategies;
- Increasing private investment;
- Understanding economic and retail performance; and
- Place branding and consumer confidence.

The Activity Centre Plan provides the future best practise framework to improve the built form, reinforce character, attract residents and new development into the Town Centre. What's needed next is to better understand town centre management and place making in order to drive future business, marketing, activation, increased footfall, comfort, maintenance, amenity and monitoring economic and community performance. The following management models are recommended to be explored by the City.





# different models for community empowerment and town centre management.

#### Semi-Autonomous Authorities

#### what

An extension of government or new authority with delegation to act on behalf of the City. I.e. Rundle Mall Management Authority

#### how

Formal organisation with an employed Place Manager and activation team.

#### who

Focus on an employed division or team to make decisions and act. Informed by business engagement and City priorities.

#### more information

http://rundlemall.com/about/ rundle-mall-managementauthority/

#### Business Improvement District

#### what

BIDs are established by, but often independent from, local governments. They have a formal structure and a board.

#### how

BIDs are funded through a special rating levy paid by businesses. Focus on promoting, marketing and benefits for local businesses.

#### who

Focus on businesses. Paid staff are employed and report to the Board.

#### more information

www.bizdistricts.com

#### **Totally Locally**

#### what

Totally Locally is essentially a 'Shop Local' campaign. It has resources and examples to help start a campaign.

#### how

Very informal – no formal organisation, no memberships, low budget, no formal meetings.

#### who

Focus on local businesses. Key leaders help initiate a campaign and mobilise 'people power'.

#### **More Information**

www.totallylocally.org

#### Business Association & Property Business Owner Districts

#### what

Business Associations are member-based organisations helping to promote their members. They might focus on a particular place or be more general.

#### how

Businesses Associations are independently funded.

#### who

Focus on businesses. May have paid staff.

#### more information

www.mainstreetaustralia.org.au

#### **Informal Town Team**

#### what

A town team that is not formally incorporated. It can be a good way to start a team and see how it goes.

#### how

Informal or semi-formal meetings, no formal incorporation, another organisation may 'auspice' to help with receiving funding and paying bills.

#### who

Businesses and residents.

#### more information

www.townteams.com.au

#### Committees of Council

#### what

The committee leads an advisory role for main steet management and made up of our city staff, councillors, businesses and stakeholders.

#### how

The associations are an independent committee of the Cirty

#### who

Focus is usually on businesses and councillors, run by a volunteer committee.

#### more information

Jetty Road Mainstreet Committee - https://www. holdfast.sa.gov.au/JRMC

#### **Formal Town Team**

#### what

A town team that is formally incorporated. This means you can apply for grants, have memberships, run events etc.

#### how

Semi-formal or formal meetings, events and whatever else the team would like to do.

#### who

Businesses and residents. Don't have paid staff, but could do in future.

#### more information

www.townteams.com.au

#### Place Improvement District

#### what

PIDs do not yet exist, but could be established by, but be independent from, local governments. They would have a formal structure and a board.

#### how

PIDs are funded through a special rating levy paid by all ratepayers in a specific area. They would focus on improving the place in many different ways.

#### who

Focus on businesses, residents, landowners and visitors.

#### more information

See diagram on following page



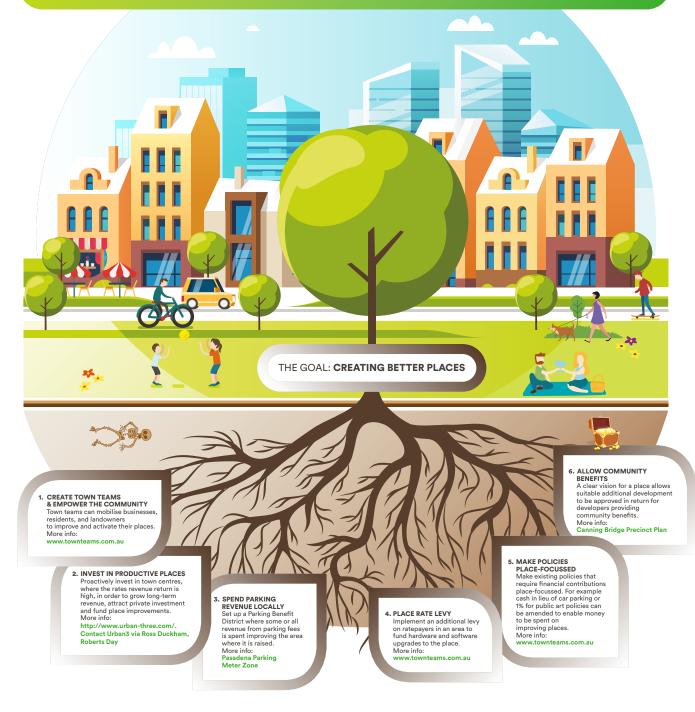
### town centre management examples.

Below are a few examples of successful town centre approaches and funding mechanisms.



### PLACE IMPROVEMENT DISTRICT BUSINESS MODEL

Implementing one or more of the following options could help to fund and deliver place improvements





More information:





# how? placemaking, place management and place activation.

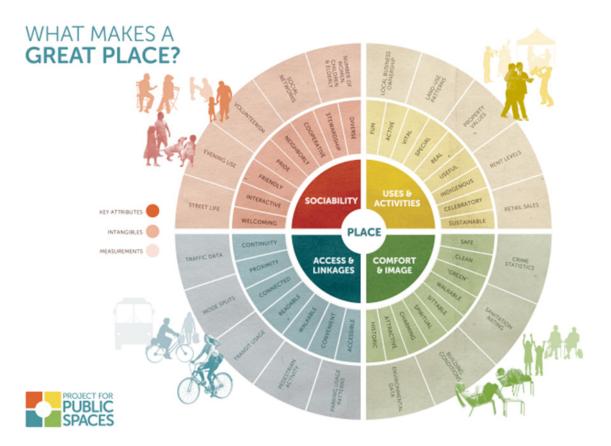
This chapter highlights the importance of a place-led approach, strategic thinking, engaging and empowering stakeholders and delivering short, medium and long-term actions. If the City wishes to continue its 'place' journey the following general information is provided to help kick-start your thinking.

Governance, on every scale, is not set up to create great places. In fact, the current culture and structure of government and civic infrastructure may be the greatest obstacle (more than money, ideas, talent, infrastructure, etc.) to successful Placemaking.

Currently, no department or community organization is in charge of creating good places. Even when everyone is doing their job masterfully, great places generally fall outside of everyone's mission and goals. In fact, in siloed departments the desired outcomes of mobility, economic development, safety, cultural development, tourism, etc. are inevitably in conflict and competition, frequently undermining the public realm that determines their ultimate success.

#### https://www.pps.org/article/toward-place-governance-civic-infrastructure-placemaking

Project for Public Spaces (PPS) is an internationally-recognised leader of placemaking around the world. PPS helped the Metropolitan Redevelopment Authority and City of Perth to transform the Perth Cultural Centre from a previously avoided and troubled space to becoming the welcoming and vibrant cultural heart of Perth.



#### What Makes a Great Place?

what attracts people most, it would appear, is other people.

William H. Whyte



### now. making it happen.

Placemaking, Place Management and Place Activation are often used interchangeably, but it is important to understand the differences as well as the similarities between the terms.

A place-led approach is the best way to create great places. It involves setting a vision with the community, having a clear plan that includes actions by various parties and then implementing the actions in a timely manner.

The recommended place-led approach includes:

- 1. Placemaking: Having one clear vision and identifying the actions to deliver on the vision
- Place Management: Setting quick wins to trial new ideas, and medium and long-term actions for making even greater places. All actions are to be accountable, completed within expected timeframes and will generally include a cross-functional team. The effective governenance of place management should include; proactive leadership, stakeholder engagement, coordination, long-term planning and on-going economic and community measurement.
- 3. Place Activation: A place must have people in order to be "active" or activated. Making places more active should be easy and approachable for everyone and a key goal of the Vision and Action Plan.



Place management can be defined as:

A coordinated, area-based, multistakeholder approach to improve locations, harnessing the skills, experiences and resources of those in the private, public and voluntary sectors.

http://www.placemanagement.org/



## final words (i promise). 2017 Future of Local Government Conference Declaration.

The Local Government Declaration addresses the need for the City to continue working in partnership with its community and thinking locally. Although the City has demonstrated an understanding of community-driven action, it always helps to reinforce and will continue to support the success of future activation and events.

#### The Need for Change

This declaration rests on a belief that the state of the nation and the health of our society depend on community-driven action in the neighbourhood, not just decisions made in parliaments or boardrooms.

Across the world people are concerned about the apparent inability of governments, business and public institutions to address the economic, social and environmental challenges of the 21st Century. Our present ways of thinking and governing are neither coping with the pace of change nor meeting citizens' expectations. There is an urgent need for a fresh approach and responsive leadership.

Many Australians are losing faith in our basic democratic institutions and withdrawing from active participation in civic and cultural life. Our reputation as an inclusive, tolerant and compassionate society is under threat. It's time to explore a new model of governance, one based on a re-energised civil society that draws on the strength and resourcefulness of people working together in diverse local and regional communities – a localist response.

#### The Role of Local Government

Australia's system of government must continue to evolve to meet the challenges of the 21st Century, and it must evolve more quickly. This requires action by all levels of government. Federal and State governments need to rethink their roles, but they cannot and should not try to solve all the problems facing our country on their own. Many of the solutions can only be found within communities, and central governments must respect and leave space for local action and innovation.

Local government has made a good start in addressing these issues, but must work hard to build on its achievements. Councils have a unique mandate to support, represent and give voice to 'communities of place'. They can provide an ideal platform for governments at all levels to strengthen their engagement with communities – and there is also a real opportunity to bring about a renaissance in local government itself. But the world is changing fast: democratic legitimacy and trust must be earned.

#### **Key Principles**

To play a valued and effective role in a new system of community-based governance, councils need the legislative flexibility and scope to take further steps along the road to localism. They should:

- Have the courage to embrace the future and take informed risks to bring about necessary change
- Learn how to be community led, making space for communities to take action themselves, and responding positively to local initiatives
- Deepen their understanding of communities, listening to all their people and engaging with them in new and different ways that reflect community diversity ('Dadirri' deep listening, understanding and communication)
- Empower citizens through participatory and deliberative democracy, including community boards, precinct committees, cooperatives, citizens juries and others
- Embrace new ways of working to ensure that local needs are met through joined-up planning and services
- Forge more local and regional partnerships that address issues and drive change at community, state and federal levels
- Promote local networks, co-production of goods and services, and moves to 'reclaim the Commons'.

In this way we can create a 'New Story' – a narrative of change built on the strengths and uniqueness of each community and place. Local government can provide the foundations for change. It can lead the process of transformation through good governance and sound administration, reinvigorating faith in democracy and citizenship. It can facilitate new forms of communitycentred, bottom-up governance that inspire the confidence and active participation of citizens. It can unleash community resources and help ensure our future wellbeing.

https://www.abcdelearningsites.com.au/future-of-local-government-conference-2017-declaration/





### appendix 1. finer details of the engagement program.

Below is a summary from each engagement exercise to better understand the sentiment of residents and desired principles for future place making.

The following is a general recollection of the discussion between the speaker and attendees of each cultural walk.

#### Walk 1: Saturday, 24 February at 10:15am. Starting point: Southern End of Central Mall

#### First Speaker: Andy Farrant

- Starting point No one in town centre
- Very few people living in town
- Need to be a millionaire to live in Kalamunda Town Centre (referring to the only three apartments in the centre);
- o No housing choice
- o The development does not match the 'feel' of the centre
- o Should be easier to live in town
- Why are tenancies and public spaces vacant?
- Haynes Street Used to have verandah's shop on corner of Railway Pde and Haynes Street used to have a large verandah that wrapped around the street
- New verandah's could have clear glass incorporated to let in light.
- No theme or brand to the town centre used to be a country village
- Happy about underground power
- Require closer conversations with retailers help to innovate
- Need more seating and flowers outside Think about the senses of a town centre Smell, touch, hear... Create an experience and identity of the Hills
- The shopping centre car park is a lost opportunity and example of how not to design your town centre.
- The City needs to develop incentives to encourage good design and development;
- There are some great events and festivals in town used to be an annual soap box derby down Haynes Street. Markets and Vintage Car festival very popular.
- The smells of a place what happened to the Eucalyptus smells of Haynes Street?
- o The centre is becoming the death of a thousand cuts losing the old smells and sounds of a place
- o History Village a complete sound archive, which can be used.
- o Old bus service, bells from library, birds, etc all relate to the character of Kalamunda
- We need to be part of the change to see change

#### Second Speaker: Pat O'Hallaran

- Need to retain the Kindegarden on Barber Street and also make it a place for elderly mix of old and young
- Town Centre used to be alive with Saturday dancing, tennis courts, silent movies with live instruments and a staircase leading to a rooftop garden overlooking the entire centre in the 1930's
- Railway Street should be preserved as a heritage precinct
- Zig Zag Cultural Centre should have active frontages facing Railway Street
- Currently nothing for young people
- o What about Open Air Cinemas?
- o Sense of a share experience
  - This is why night-time economy needs to be considered
  - Stirk Park should be more connected to the town centre
- o Small central park
  - Grassed area for small screen, interesting lighting, noise, activity
- Vacant Site on Haynes St Should be leased to the pub and used as a family beer garden area bring life to the street

#### Third Speaker - Lourdes

- I like the Café's of Haynes street (especially Elevated Grounds) because... very popular, dog-friendly, shops, community friendly, life, business meetings, workshops, muso's hangout space
- Would like to see empty shops and shops that close early used as evening live music gigs
- Enjoys the large tables, which encourage interaction
- Kalamunda has a feeling of getting to know each other
- Entertaining spaces can be improved these spaces make us feel more connected and can provide something to do later in the day when cafes close
- It's good to close Haynes Street for events and entertainment
- "I have never considered how it (town centre) could be done, I've only ever been a critic of what has been done in the past". Comment from a
  participant attending the walk

#### Additional written comments from walk participants

- There should be a better connection between Stirk Park and the Town Centre
- o Possibly create a green public space at the bottom of Haynes Street or at the rear of buildings
- Replace veranda's on Haynes Street
- The southern end of Central Mall is generally very dull and could do with more activity such as a theatre
- More festive and brighter lighting could be installed on Haynes Street
- Possibly public-partnerships available to connect permeability between Stirk Park and Haynes Street
- Require car park upgrades behind Haynes Street
- Sculpture / botanical trail / illuminated art projected on Railway Reserve
- Better maintenance of entry to Bibbulman Track

#### Walk 2: Sunday, 25 February at 9:15am - 10:00am & 10:15am - 11:00am. Starting point: Southern End of Central Mall

#### First Speaker: Michaela and Steve Castledine

- Start at Coles rear car park entry near
- Strange dead zone
- Coles felt the pressure of Aldi and invested in a mural around the building to brighten up the area This was the catalyst for public art...
- o Feeling that this should not be why we are providing art and need a larger strategy for the centre
- o Mixed feelings about murals and public art and their intention
- o Murals are considered a quick win for the council however do not often provide much meaning compared to sculptures and other forms of art.
- Murals can be a reasonable quick fix to brighten derelict buildings and empty shop fronts. Christchurch is a great example
- The City currently does not have an aesthetic feel of architecture
- o A lot of strange buildings and styles, which do not work together
- o Art can provide unity and distraction and help solve these issues
- There is no wayfinding plan or evident vision of how the different areas of the town centre work together
- Need a 10-20 year renewal plan
- Bike track through the town centre connecting some of the trails and other elements to connect areas outside the town centre
- Public Art should make people think about the works and discuss
- o Art is not just decoration and does not need to have an intended function
- o Provides clues to the identity of an area
- o There is opportunity for a better vision and implementation of art in the town centre
- o Public art should make people think
- Artwork at the entry to the Bibbulman Track
- o The Bibbulman Track is great at bringing the area to life and tourist destination
- o Public art communication can be stronger two pieces of art at the entry, which do not communicate or relate to each other also, disparity in funding
  - Need stronger vision to assist with unity of works
  - Artist sign on information board has incorrect information
  - Money also needs to be invested in maintenance currently rubbish and loose leaves, etc covering works

- · Council currently not serious about public art and how it can activate spaces and tell a story about place
- Design of public art needs to work with people and existing environment
- o Stronger connection with City's Arts Officer does create better outcomes
- Open Art Studios Is a gathering of Kalamunda artists every year who open their studios to the general public
- o Could be an opportunity to use in vacant shops
- Cultural centre has a resident studio but is not perceived to be open very often with artists working
- o Needs to be more visible and engaging
- Art often is the final part of strategy instead of being more involved and part of the process
- o Art helps to understand identity

#### Speaker Two: Celia Cheffins, Zig Zag Festival

- The festival has always included a parade from Coles car park down Haynes Street and into Stirk Park.
- Taking notice of the success from the Friday night markets inspired new ideas for improvements
- o This year the festival will move to Haynes Street from Stirk Park to support businesses and provide a youth and adult area from 4pm.
- o Haynes Street will include a large finale stage, festival of 'imagination' and a pop-up bar
- o There will be more opportunities to involve businesses to come onto the street
- Physical enhancements to the street would support the zig zag festival and other events
- o Brighter or more festive lighting
- Making use of empty shops for community groups to undertake creative projects
   Help provide promotion, awareness, activity, etc.
- o A noticeboard to help communicate events and community groups in the area
- o More parklets (creative seating), enclosed areas with shade, hanging gardens, pocket gardens support Garden City and cohesion
- o Small performance stages for community groups, choir and events
- o Why are there no alfresco areas?

#### Speaker Three: Mike Woods, Perth Observatory

- Perception that Kalamunda is further away then it actually is
- o Town Centre and wider area needs a stronger vision to promote tourism, shops and Bickley Valley
- o Improved Social Media
- o Community is the heart of Kalamunda 'A community that's worth visiting'
- Rotunda next to Kad's theatre used to be a prominent community space for small events, musicians, etc but now seems to be forgotten. Not great access for equipment.
- Great artists in the area and can be used to re-engage with community.
- History Village heaps of artefacts, which could be brought into the City and show-off culture and identity Sounds of the past archives, etc.
- Need investment of a Centre Manager to co-ordinate vision, events, businesses, arts, heritage
- Need to do a better job of encouraging people to use the street outside of event times

#### Speaker 4: Cheryl Kampen, Art Markets & Caroline Babbage, Kalamunda Chamber of Commerce

- Last November, a counting exercise was undertaken with 9,300 phone devices counted
- Very rarely do local artists contact about being part of the markets missed opportunity to be improved
- Council needs more social media for local business
- The goal will be to close more streets and expand the markets around Barber Street Great at supporting local businesses and activating Centre
- Would like to brainstorm with businesses on how they can become more involved in market days
- Would like to bring a skating rink to Stirk Park to support businesses
- o Make more things happen in Kalamunda!
- Cheryl has approached Vicinity and they allow her to use the vacant shops for art stalls at her events.
- o Pass on contact to Celia to use for Zig Zag events
- o It would be great if there was someone to coordinate different events and operators in the centre

# Below are general activation comments received during the vision engagement exercise

#### Additional Public Comments

- Better variety of shop offer
- Too many cafes
- Second school crossing
- Village feel needs to be inviting
- o More High Street than retail centre
- Retrofit small shops more federation style with gardens
- Outdoor furniture art and sculptures / photos better architecture
- Small country town set around pleasant gardens
- More grassed shading areas with picnics
- Improved footpath and awning along Haynes Street
- Entry improvement to City
- Hospital done well Open space along Railway Parade
- Stronger connection between Stirk Park and Town Centre need a great link!
- Edible gardens nut and fruit trees
- Fenced dog park
- More street art
- Home in the forest
- Inspiration from tavern
- Trees along the length of Haynes Street
- Recycle bus in public realm
- Footpaths under shade trees
- Development that blends in with local character
- More equipment on playground crosswalks
- Better cohesion of architecture
- Better connectivity through centre of town
- Playground in the mall
- Reduced traffic speeds in town centre
- Haandorf, SA great example
- Lawn garden on corner of streets
- Verandahs, awning and trees in street
- Need more trees
- Passive solar design ecology
- Views of the city / bush
- Crosswalks not vehicle first
- Hanging gardens
- Work with businesses to fill and activate shops
- Bike racks throughout the street
- Use topography to advantage
- Prioritise people over cars
- Activate empty spaces
- More accommodation needed
- Pop-Up food stalls, art and crafts in central mall
- Vertical Gardens

- Public space in KADS Theatre should be the centre
- Open mall to traffic
- Jack Healey Centre Opportunity for expansion
- Consolidate parking
- Use laneways for better connectivity
- Zebra crossings needed
- More trees and a pedestrian crossing on Canning Road

• Markets should have a stronger business focus rather than local growers

- Place Jacaranda's down centre of Hayne's Street
- Better use of heritage elements in town
- More alfresco and Shade
- Edible gardens
- No visual pollution
- Hammock Hotel
- Colourful laneways
- Open Streets for dancing

General Brainstorming Notes:

- Jane Nordie S.A. Central Mall
- Youth Space / Generational Integration Space
- Youth Jamming Zone
- Community centre with mental health support
- Multicultural centre
- Dances in History Village
- Sing Songs around Piano in History Village

• "The Kalamunda Gift' Hampers with collection of local products

- Bridge the Generation Gap young and old social integration
- Bring local musicians into town
- Encourage buskers on Haynes St and weekends
- Clost off Haynes St
- Businesses need to be open later
- Arched trees (deciduous) enclose spaces for shade
- Street trees edible trees, involve orcharists in planning
- Implementation of planting and maintenance involve residents

to take ownership with herbs and understanding plantings

- Movie Nights Classics KADS Theatre?
- More street art and edible gardens
- More parking
- Dog friendly venues
- Wine bar more life in the village
- Public ping-pong tables
- No ugly neon signage.

# APPENDIX C BUSHFIRE MANAGEMENT PLAN



## Kalamunda Activity Centre

Bushfire Management Plan (Strategic planning proposal)

Prepared for City of Kalamunda by Strategen

March 2019





# Kalamunda Activity Centre

Bushfire Management Plan (Strategic planning proposal)

Strategen is a trading name of Strategen Environmental Consultants Pty Ltd Level 1, 50 Subiaco Square Road Subiaco WA 6008 ACN: 056 190 419

March 2019

#### Limitations

#### Scope of services

This report ("the report") has been prepared by Strategen Environmental Consultants Pty Ltd (Strategen) in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

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In preparing the report, Strategen has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen has also not attempted to determine whether any material matter has been omitted from the data. Strategen will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen. The making of any assumption does not imply that Strategen has made any enquiry to verify the correctness of that assumption.

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#### Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

#### Document control

Report Version	Revision No.         Purpose         Strategen author         Reviewed by	Burboso	Stratagon outbor	Boyiowed by	Submitted to Client	
Report Version		Reviewed by	Form	Date		
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#### Client: City of Kalamunda

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### 1. Proposal details

### 1.1 Background

Urbis, on behalf of the City of Kalamunda are preparing an Activity Centre Plan (ACP) for the Kalamunda Town Centre, to guide future development within the ACP area (the project area; Figure 1). The ACP (Appendix 1) identifies the continuation and development of following land uses within the project area:

- residential
- mixed use
- local open space
- centre
- public purpose.

### 1.2 Site description

The project area is situated in the existing Kalamunda Town Centre locality, and is bound to the west by regional road; Kalamunda Road/Canning Road. The project area is surrounded by (see Figure 1):

- a primary school and local open space to the north-west
- predominantly residential land uses to the south-west, with isolated areas of local open space
- residential land uses and parks and recreation reserves to the east, including the Middle Helena Catchment Area and Jorgensen Park.
- residential land uses, Kalamunda District Community Hospital, parks and recreation reserves (Kalamunda National Park) and local open space to the north.

The entire project area is designated as bushfire prone on the WA *Map of Bush Fire Prone Areas* (DFES 2018; see Plate 1).



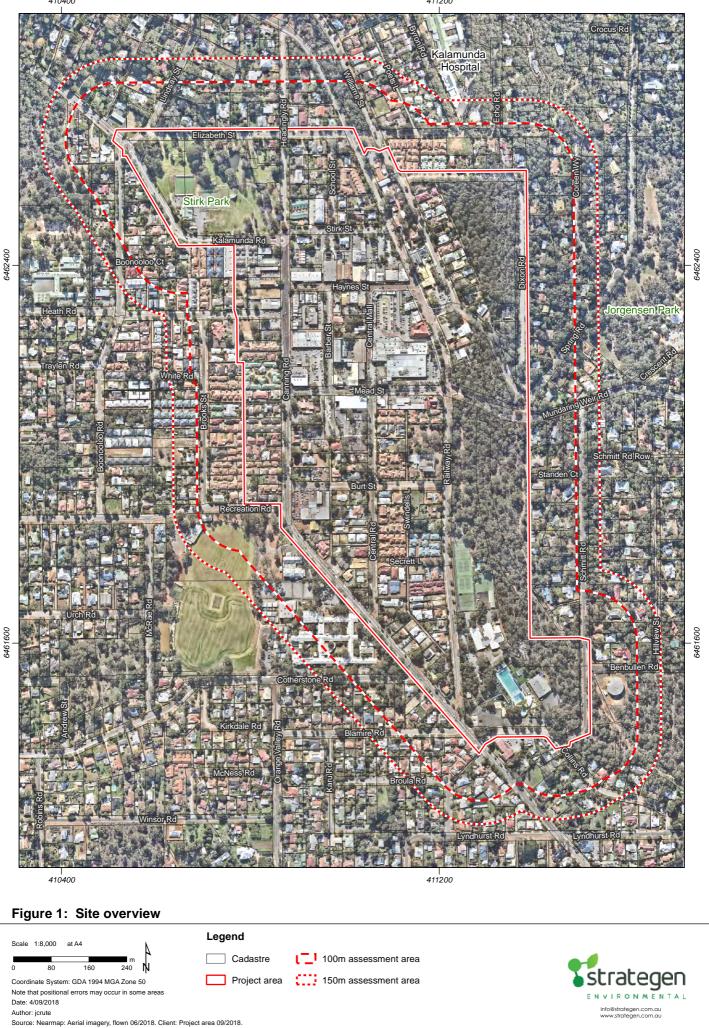
Plate 1: Bush Fire Prone Area mapping, as indicated in pink



### 1.3 Purpose

This Bushfire Management Plan (BMP) has been prepared to address requirements under Policy Measure 6.3 of *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015) and *Guidelines for Planning in Bushfire-Prone Areas* (the Guidelines; WAPC 2017).





Path: Q:\Consult\2017\URB\URB17501\01\_GIS\_documents\ArcMap\_documents\URB17501\_G006\_RevB.mxd

### 2. Environmental considerations

Table 1 provides a summary of the environmental attributes potential occurring within the project area, based on a search of publicly available environmental data. Given the high-level planning stage of the ACP, it is anticipated that any impacts to ecological values will be determined and quantified at future planning stages where detailed development design is known.

Environmental value	Present within or adjacent to project area (Y/N)	Description			
Environmentally Sensitive Area	Ν	N/A.			
Wetlands	Ν	N/A.			
Waterways Y		A drainage line is located within the project area within Stirk Park which directs drainage away from the project area, under Elizabeth St via culverts, and west toward the Swan River. Any future landscaping or revegetation within Stirk Park will need to give consideration to ensuring that a bushfire risk is			
Potential Threatened	N	not introduced to nearby residents. Based on publicly available data, there are no known TECs			
Ecological Communities		within the project area.			
(TECs) listed under the EPBC Act		This may be confirmed through a flora and vegetation assessment prior to clearing of native vegetation (where necessary).			
Potential for Threatened and Priority flora to occur	Y	According to a search of NatureMap (DBCA 2018) a total of 6 Threatened, 28 Priority flora species have been recorded within 5 km of the project area.			
		Any clearing of native vegetation within the project area will be subject to assessment through the planning process, a native vegetation clearing permit application (Part V EP Act) and potentially under the EPBC Act (where applicable).			
Potential habitat for threatened fauna species	Y	Vegetation within the project area contains habitat for Carnaby's black cockatoo (Endangered), Baudin's Black Cockatoo (Endangered) and the Forrest Red-tailed Black Cockatoo (Vulnerable) protected under the <i>Environment</i> <i>Conservation and Biodiversity Conservation Act 1999</i> , and <i>Wildlife Conservation Act 1950</i> .			
		Vegetation within the project area may contain habitat for other conservation significant fauna. According to a search of NatureMap (DBCA 2018) a total of 7 Threatened, 7 Priority and 2 'other specially protected' fauna species have been recorded within 5 km of the project area.			
		Any clearing of native vegetation within the project area will be subject to assessment through the planning process, a native vegetation clearing permit application (Part V EP Act) and potentially under the EPBC Act (where applicable).			
Bush Forever sites	Ν	N/A.			
Swan Bioplan Regionally Significant Areas	N	N/A.			
DBCA legislated lands and waters (includes National Park, Conservation Park, Nature Reserve, marine reserves, State forest and timber reserve)	N	N/A.			

Table 1: Summary of environmental values



Environmental value	Present within or adjacent to project area (Y/N)	Description
DBCA land of interest (includes some areas of UCL, freehold purchased by State and some unvested Crown reserves)	N	N/A.
Vegetation associations or complexes with <30% of Pre-European extent remaining outside of constrained areas	N	Heddle Complex: Dwellingup D2 (82% remaining). Beard Association: West Darling 3 (86% remaining).

### 2.1 Native vegetation – modification and clearing

The majority of the project area comprises existing development and is either non-vegetated, or managed in a low-threat state (as per Clauses 2.2.3.2 (e) and (f) of AS3959 (SA 2009)). Remnant vegetation is limited to the eastern portion of the project area, and occurs in relatively large and intact parcels, as well as fragmented plots within private landholdings. While the northern parcel of remnant vegetation (northern portion of Plot 6; Figure 2) is proposed to be partially developed for residential purposes, the remaining areas of remnant vegetation within the project area are proposed to be retained as 'Local Open Space', with the exception of isolated clearing which may be required to accommodate appropriate asset protection zones (APZs) or vehicular access (as outlined in Table 3).

Potential environmental impacts resulting from implementation of the proposal will be addressed in accordance with standard State and Commonwealth legislative requirements under the *Environmental Protection Act 1986* and *Environment Protection and Biodiversity Conservation Act 1999*, during future planning and development processes.

In response to identification of the above environmental values, future development within the project area should aim to (where possible) avoid clearing of native vegetation through the strategic location of lot boundaries and building envelopes, as well as construction of dwellings to BAL-29 to minimise impacts from Asset Protection Zones (APZs).

### 2.2 Revegetation / Landscape Plans

No revegetation is proposed as part of the proposal.

A Public Realm Master Plan is being prepared by Urbis for the project area. Any landscaping proposed in the vicinity of habitable buildings will consist of low fuel managed gardens and street scaping, consistent with Clause 2.2.3.2 (f) of AS3959. Any exceptions to this should be assessed on a case-by-case by case basis to ensure that the landscaping works do not introduce a bushfire risk to adjacent development.



### 3. Bushfire hazard level assessment

The BHL assessment was undertaken in accordance with Appendix 2 of the Guidelines. The assessment methodology categorises the bushfire hazard level as low, moderate or extreme based on the vegetation and slope within 150 metres of a site. This provides an indication of the likely impact of a bushfire event associated with vegetation within and adjacent to the project area. The BHL provides an indication of the likely intensity of a bushfire and the likely level of bushfire attack on a site by categorising the hazard.

### 3.1 Assessment inputs

#### 3.1.1 Classified vegetation and effective slope

Strategen assessed classified vegetation and exclusions within 150 m of proposed development through on-ground verification on 23 and 24 July 2018 in accordance with *AS 3959—2009 Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2009). Results are depicted Figure 2 and georeferenced site photos are contained in Appendix 2.

Strategen assessed effective slope under classified vegetation through on-ground verification in accordance with AS 3959. Results are depicted in Figure 2. The vegetation classifications assessed as part of the BHL will require further analysis at future planning stages to support the preparation of a BAL contour map in accordance with the requirements of SPP3.7, particularly in relation to vegetation within private landholdings east of the project area.

A summary of the assessed classified vegetation, effective slope and exclusions are provided in Table 2.

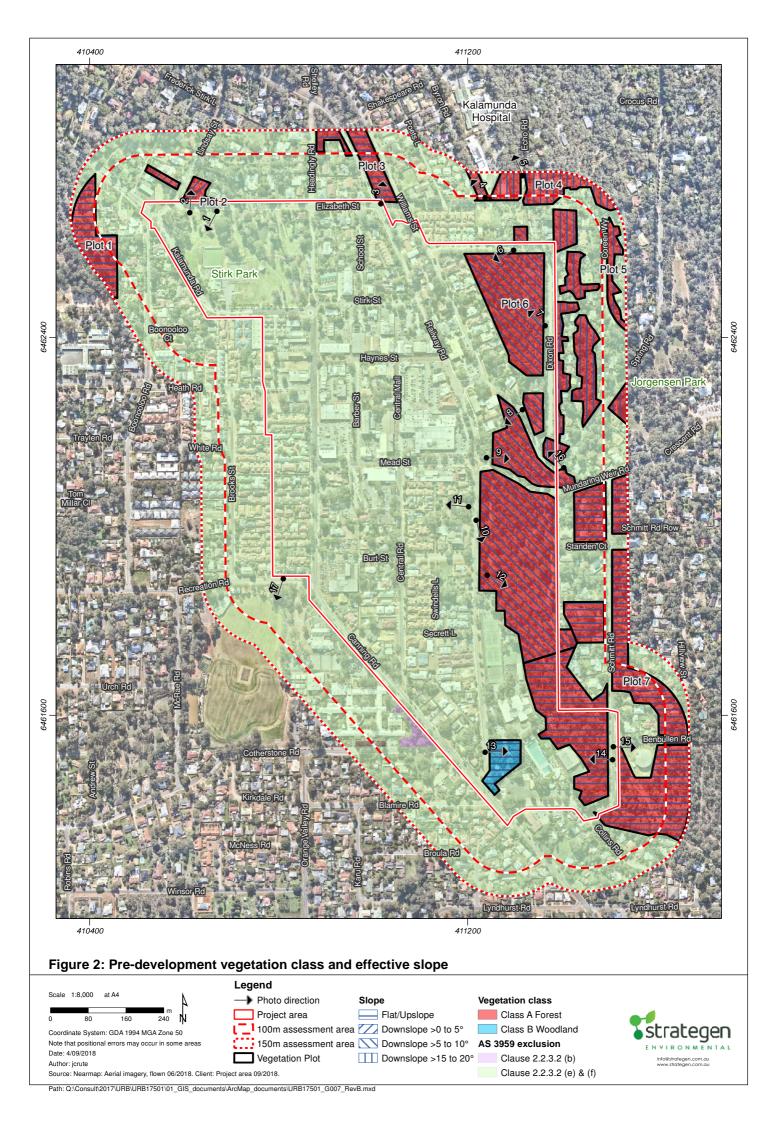
Vegetation Applied vegetation plot classification/exclusion		Effective slope under the classified vegetation (degrees)	Hazard Level	
1	Class A forest	Flat/ upslope	Extreme	
2	Class A forest	Downslope 0 to 5 degrees	Extreme	
3	Class A forest	Flat/ upslope	Extreme	
4	Class A forest	Downslope 0 to 5 degrees	Extreme	
5	Class A forest	Downslope 15 to 20 degrees	Extreme	
6	Class A forest	Downslope 5 to 10 degrees	Extreme	
7	Class A forest	Flat/ upslope	Extreme	
8	Class B woodland	Flat/ upslope	Extreme	
9	Exclusion 2.2.3.2 (b)	N/A	Low (except where within 100 m of Extreme hazard)	
10	Exclusion 2.2.3.2 (e) and (f)	N/A	Low (except where within 100 m of Extreme hazard)	

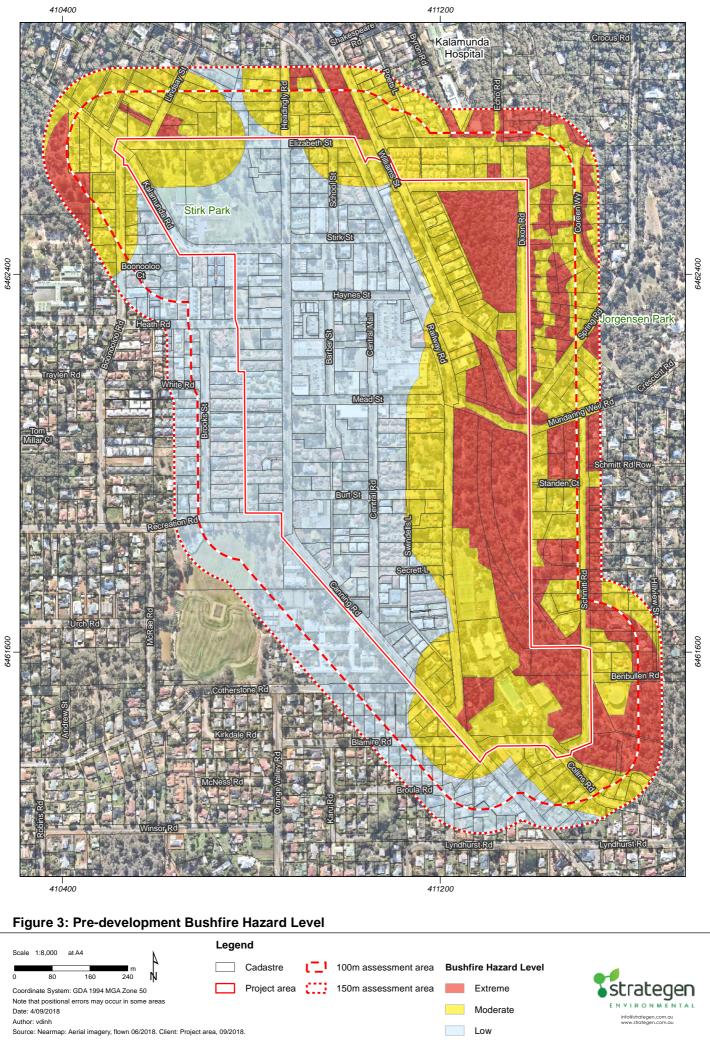
Table 2: Summary of classified vegetation and exclusions

### 3.2 Assessment outputs

The results of the BHL assessment are provided in Figure 3 and are discussed in Section 4.







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### 4. Identification of bushfire hazard issues

### 4.1 Bushfire hazard levels

The eastern portion of the project area was identified to have a predominantly 'Extreme' BHL attributed to the presence of Class A forest and Class B woodland within areas proposed as 'Parks and Recreation' and 'Residential' within the ACP. Low-threat and non-vegetated areas within 100 m of Class A forest and Class B woodland vegetation are considered to have a 'Moderate' BHL as a result of their proximity to bushfire fuels.

The eastern portion of the project area is predominantly non-vegetated or in a low-threat managed state. As such these areas have a 'Low' BHL'.

### 4.2 Bushfire hazard issues

Classified vegetation has been identified within the project area and surrounding local area which has the potential to have a significant bushfire impact on proposed development if unmanaged. There is a considerable bushfire hazard associated with vegetation in the eastern portion of the project area within areas proposed to be retained as 'Local Open Space', as well as private landholdings to the east of the project area. Given the vast areas of national parks and State forest east of the project area, there is also significant landscape scale bushfire risk to the project area with the potential for extended fire runs through heavily vegetated forest.

As such, future development within 100 m of classified vegetation should incorporate suitable levels of defendable space, compliant APZs, access provisions, fire fighting water supply and increased building construction standards at the various bushland interfaces outlined above.

Following provision of these design measures, Strategen considers the bushfire risk and associated hazards are manageable through adoption of standard Guideline acceptable solutions.



### 5. Assessment against the bushfire protection criteria

### 5.1 Compliance table

An acceptable solutions assessment against the bushfire protection criteria is provided in Table 3.

Table 3. Bushine pro	Method of			
Bushfire protection criteria	compliance	Proposed bushfire management strategies		
	Acceptable solutions			
Element 1: Location	A1.1 Development location	Prior to subdivision of lots or development of new habitable buildings, a BAL assessment (or BAL contour assessment) will be undertaken to ensure that proposed buildings are able to accommodate appropriate setbacks and have the capacity to achieve minimum APZ requirements for a rating of BAL-29 or lower.		
		Particular consideration will need to be given to the area proposed to accommodate 'Residential' land uses, at the northern end of Plot 6 (refer to Figure 2), which will potentially be exposed to elevated BAL ratings from Class A forest vegetation within Plot 5 to the east.		
Element 2: Siting and design	A2.1 Asset Protection Zone	Prior to subdivision of lots or development of new habitable buildings, a BAL assessment (or BAL contour assessment) will be undertaken to determine the minimum APZ requirements for a building to achieve a rating of BAL-29 or lower.		
		APZs will be to subject to ongoing management in accordance with standards outlined in the Guidelines (see Appendix 2) and any requirements of the City's annual Fire Hazard Reduction Notice (Appendix 3).		
Element 3: Vehicular access	A3.1 Two access routes.	The existing public road network within and adjacent to the project area provides occupants with the option of travelling to more than two different destinations including north-west along Kalamunda Road, and south-east along Canning Road.		
		Any future development within 100 m of classified vegetation, such as subdivision of the proposed residential area (northern portion of Plot 6; Figure 2), will need to ensure that the road network is designed to provide two different vehicular access routes which connect to the public road network and provide safe access/ egress to two different destinations.		
	A3.2 Public road	Any new public roads proposed will need to be constructed to relevant technical requirements under the Guidelines (see Table 4).		
	A3.3 Cul-de-sac (including a dead- end-road)	Cul-de-sacs should be avoided in bushfire prone areas. Where they cannot be avoided, any proposed cul-de-sacs (at future planning stages) will need to be less than 200 m in length, will include minimum 17.5 m diameter turn-around heads and will be constructed to relevant technical requirements under the Guidelines (see Table 4).		
	A3.4 Battle-axe	Any battle-axe lots proposed as part of future planning and development proposals, will need to have access- legs less than 600 m in length and will be constructed to relevant technical requirements under the Guidelines (see Table 4), including passing bays at 200 m intervals and turn-around areas for fire appliances where battle- axes are longer than 500 m.		

Table 3: Bushfire protection criteria



Bushfire protection	Method of compliance	Proposed bushfire management strategies			
criteria	Acceptable solutions				
	A3.5 Private driveway longer than 50 m	<ul> <li>Any private driveways longer than 50 m proposed as part of future planning and development proposals, will be constructed to relevant technical requirements under the Guidelines (see Table 4), including passing bays if driveways are longer than 200 m and turn-around areas for fire appliances where driveways are longer than 500 m.</li> <li>Where a vehicular route does not provide through access to a public road, an emergency access way is to be provided as an alternative link to a public road during emergencies.</li> </ul>			
	A3.6 Emergency access way				
		Any emergency access ways (EAWs) proposed as part of future planning and development proposals, will need to be constructed to relevant technical requirements under the Guidelines (see Table 4), and will need to be signposted and gates kept unlocked at all times. Each respective landowner will be responsible for maintaining the EAW where it occurs on their land OR following establishment the City will responsible for maintaining the EAW.			
		In accordance with Acceptable Solution A3.6 the EAW will need to be no further than 600 m from a public road at any single point.			
	A3.7 Fire service access routes (perimeter roads)	Where necessary as part of future planning and development proposals, fire service access routes should be established to provide access within and around the edge of the subdivision and related development to provide direct access to bushfire prone areas for fire fighters, and link between public road networks for firefighting purposes. Fire service access routes are to be signposted and located no further than 600 m from a public road, and must meet the requirements of the Guidelines (see Table 4), including turn around points every 500 m.			
	A3.8 Firebreak width	Land owners/ managers are required to install and maintain firebreaks in accordance with the City's annua Fire Hazard Reduction Notice (Appendix 3).			
		Future planning and development proposals which will have a lot size greater than 0.5 ha will be required to have a minimum 3 m firebreak installed and maintained in accordance with the requirements of the Guidelines.			
Element 4: Water	A4.1 Reticulated areas	Future development will need to be either:			
	A4.2 Non-reticulated areas	connected to reticulated water with water hydrants located at 200 m intervals along any proposed public road networks in accordance with the Water Corporation's No. 63 Water Reticulation Standard			
	A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	<ul> <li>(A4.1), or</li> <li>install a dedicated 50 kL fire fighting emergency water tank (one per 25 lots) to be vested with the City, with turn-around points as per the Guidelines (A4.2), or</li> <li>install a dedicated 10 kL fire fighting emergency water tank, to be maintained by prospective landowners</li> </ul>			
		(applicable to developments creating 1 additional lot only; A4.3).			

Public road	Cul-de-sac	Private driveway	Emergency access way	Fire service access routes
6*	6	4	6*	6*
6	6	6	6	6
4.5	N/A	4.5	4.5	4.5
1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
15	15	15	15	15
1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
8.5	8.5	8.5	8.5	8.5
	6* 6 4.5 1 in 10 15 1 in 33	6*     6       6     6       4.5     N/A       1 in 10     1 in 10       15     15       1 in 33     1 in 33	6*         6         4           6         6         6           4.5         N/A         4.5           1 in 10         1 in 10         1 in 10           15         15         15           1 in 33         1 in 33         1 in 33	Public road         Cui-de-sac         Private driveway         access way           6*         6         4         6*           6         6         6         6           4.5         N/A         4.5         4.5           1 in 10         1 in 10         1 in 10         1 in 10           15         15         15         15           1 in 33         1 in 33         1 in 33         1 in 33

Table 4: Vehicular access technical requirements



# 6. Responsibilities for implementation and management of the bushfire measures

Development within the project area may occur over a long-term timeframe. The below information provides guidance on bushfire assessment and planning requirements specific to each future planning stage.

### 6.1 Statutory requirements

Applicable legislation, standards, supporting guidelines and local government provisions that determine or influence bushfire requirements for future planning stages within the project area include:

- Bush Fires Act 1954
- State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7; WAPC 2015)
- Planning and Development (Local Planning Schemes) Regulations 2015 (deemed planning provisions)
- Building Act 2011 and Building Regulations 2012 (Building Regulations)
- Building Code of Australia (BCA)
- Australian Standard AS 3959-2009 Construction of Buildings in Bushfire Prone Areas (AS 3959-2009: SA 2009)
- Guidelines for Planning in Bushfire Prone Areas (the Guidelines; WAPC 2017)
- Local Government annual firebreak notices.

### 6.2 Planning stage requirements

#### 6.2.1 Subdivision applications

SPP 3.7 policy measure 6.4 requires subdivision applications to be accompanied by the following information in accordance with the Guidelines:

- 1. A BAL Contour Map or BAL assessment to determine the indicative acceptable BAL ratings across the subject site.
- 2. The identification of any bushfire hazard issues arising from the BAL Contour Map.
- 3. An assessment against the bushfire protection criteria requirements demonstrating compliance within the boundary of the subdivision site.

This information can be provided in the form of a BMP or an amended BMP where one has been previously endorsed.



#### 6.2.2 Development applications

Development applications include any application to carry out development or to change land use, but excludes applications for single houses or ancillary dwellings on lots less than 1,100 m<sup>2</sup>.

SPP 3.7 policy measure 6.5 requires development applications to be accompanied by the following information:

1. A BAL assessment.

or

A BAL Contour Map that has been prepared for an approved subdivision clearly showing the indicative acceptable BAL rating across the subject site.

- 2. The identification of any bushfire hazard issues arising from the BAL Contour Map or BAL assessment.
- 3. An assessment against the bushfire protection criteria requirements demonstrating compliance within the boundary of the development site.

This information can be provided in the form of a BMP or an amended BMP where one has been previously endorsed.

Development applications for high-risk or vulnerable land-uses (proposed in future), will need to comply with Policy Measure 6.6 of SPP 3.7 which requires them to be accompanied by a Bushfire Risk Management Plan and Bushfire Emergency Evacuation Plan (BRMP, BEEP; respectively).

High-risk land uses as defined under the Guidelines include (for example) service stations, landfill sites, bulk storage of hazardous materials, fuel depots and certain heavy industries. Vulnerable as defined under the Guidelines include hospitals, nursing homes and aged care facilities, childcare centres, educational establishments and tourist accommodation.

#### 6.2.3 Building permits

For most building works a building permit is required and the permit authority will be the relevant local government. The permit authority is also responsible for enforcement and dealing with non-compliance in relation to applicable building standards.

For single houses or ancillary dwellings on sites 1,100 m<sup>2</sup> or greater, other habitable buildings<sup>1</sup> (other than a single house of ancillary dwelling) or specified buildings<sup>2</sup> in Bushfire Prone areas, under the deemed planning provisions a BAL assessment is required, where a BAL Contour Map does not exist from a previous approved proposal. If the BAL assessment or BAL Contour Map identifies the development site as BAL-40 or BAL-FZ, a development application and planning approval is required.

For development on sites less than 1,100 m<sup>2</sup> in Bushfire Prone areas the bushfire construction requirements under the Building Act and BCA may still apply, which also includes undertaking a BAL assessment, where a BAL Contour Map does not exist from a previous approved proposal.

Building permit applications must demonstrate compliance with applicable BCA bushfire construction requirements.



<sup>&</sup>lt;sup>1</sup> Habitable building as defined under SPP 3.7 means a permanent or temporary structure that is fully or partially enclosed and has at least one wall of solid material and a roof of solid material and is used by people for living, working, studying or being entertained.

<sup>&</sup>lt;sup>2</sup> Specified building means a structure identified in a local planning scheme as a building to which the deemed provisions apply.

The BCA bushfire construction requirements only apply to Class 1a (single dwelling), Class 1b (accommodation, grouped dwellings), Class 2 (apartments), Class 3 (accommodation, schools, health-care, detention centre) buildings, other structures and decks (Class 10a) associated with these buildings and major alterations/additions to residential buildings.

The bushfire construction provisions of the BCA do not apply to Class 4 - Class 9 buildings (mixed use, commercial, industrial buildings or public facilities). If planning approval is required for this type of development, the planning process will apply the bushfire protection criteria to ensure that the optimal outcome is achieved for bushfire protection, such as appropriate siting of buildings, provision of water supply etc. For Class 4 – Class 9 buildings, applicants have the discretion to utilise none, any or all of the elements of AS3959-2009 in the construction of buildings.

### 6.3 Bushfire management measures

Given that the entire project area is currently identified as a bushfire prone area, any future strategic planning documents, strategic planning proposals, subdivision and development applications located within the project area will need to comply with the requirements of SPP 3.7 and the associated Guidelines.

Ensuring compliance with SPP3.7 and the Guidelines will require implementation of the following measures:

- undertaking a BAL assessment (or BAL contour assessment) to support future subdivision and development applications, or building licences (developer/ landowner)
- ensuring future lots/ habitable buildings are located in an area which is not subject to a rating higher than BAL-29 (developer/ landowner)
- ensuring future lots/ habitable buildings can accommodate appropriate APZs (developer)
- ensuring occupants of future development areas are provided with two different vehicular access routes which connect to the public road network and provide safe access/ egress to two different destinations (developer)
- ensure that proposed public and private road/ driveway infrastructure is constructed in accordance with A3.1 to A3.7 of the Guidelines (where applicable; developer)
- ensure that firebreaks are installed in accordance with the Guidelines and the City's Fire Hazard Reduction Notice (developer/ landowner)
- ensure an appropriate water supply is provided to any future lots/ habitable buildings through either reticulated water supply or water tanks, in accordance with A4.1, A4.2 or A4.3 of the Guidelines (developer).

In addition, the following management measures may apply, depending on the nature of any future proposals within the project area:

- <u>On-site staging buffers</u>: if future development (and therefore clearing) is to occur on a staged basis, clearing in advance of adjacent areas may need to occur to ensure building construction is not inhibited by a temporary vegetation extent located within adjacent development stages yet to be cleared. This can be achieved by ensuring that each approved stage subject to construction is surrounded by a 100 m wide (or other distance confirmed by an accredited bushfire practitioner), on-site cleared or low threat buffer prior to development (not including vegetation proposed to be retained). Once the buffers are created, they will need to be maintained on a regular and ongoing basis at a fuel load less than 2 t/ha to achieve a low threat minimal fuel condition all year round until such time that the buffer area is developed as part of the next development stage. This will assist in managing the current on-site temporary vegetation hazards.
- <u>Vehicle access staging</u>: if development (and therefore construction of vehicle access) is to occur on a staged basis, vehicle access arrangements will need to ensure that all occupiers and visitors are provided with at least two vehicular access routes at all stages. This can be achieved via construction of access in advance of stages or through provision of temporary emergency access ways until two formal access roads are available.



- <u>Fuel management within cleared vacant lots</u>: cleared lots awaiting development may need to be managed on a regular and ongoing basis to ensure that no bushfire hazard is introduced to adjacent lots/ buildings.
- <u>Road verge fuel management</u>: surrounding road verges that have been excluded as low-threat (Clause 2.2.3.2 (f) of AS3959) will need to continue to be managed to ensure the understorey and surface fuels remain in a low threat, minimal fuel condition in accordance with Clause 2.2.3.2 (f) of AS 3959. Ongoing road verge management is the responsibility of the City.
- <u>Restrictive covenant on lots with areas of BAL-40 and/or BAL-FZ</u>: development of habitable buildings within portions of lots impacted by areas of BAL-40 and/or BAL-FZ will be restricted via application of a subdivision condition, such as:

A restrictive covenant to the benefit of the local government, pursuant to section 129BA of the Transfer of Land Act 1893, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of the land within areas that have been assessed as BAL-40 or BAL-Flame Zone. Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to state as follows: 'No habitable buildings are to be built within areas identified as BAL-40 or BAL-Flame Zone.'

- <u>Notification on title</u>: notification is to be placed on the Title of proposed lots subject to BAL-12.5 or higher (either through condition of subdivision or other head of power) to ensure landowners/proponents and prospective purchasers are aware that their lot is subject to an approved BMP and BAL assessment, however, since the lot is situated within a designated bushfire prone area (at creation of title), the BAL for proposed buildings may, at the discretion of the City, need to be confirmed at the development application or building permit stage.
- <u>BAL assessment at future stages</u>: a BAL assessment will be required for any proposed development within a bushfire prone area, to determine the separation distances, APZs and construction standards required to mitigate the bushfire hazard.
- <u>Building construction standards</u>: Class 1a, Class 1b, Class 2 or Class 3 residential buildings, and any associated Class 10a buildings, in bushfire prone areas will be required to meet the applicable construction requirements of AS 3959. It is recommended that where practical, non-residential (building classes other than those listed above) habitable buildings also adopt bushfire construction measures relevant to the assessed BAL.
- <u>High risk and vulnerable land uses</u>: where high-risk or vulnerable land-uses are proposed in future, planning and development applications will need to comply with Policy Measure 6.6 of SPP 3.7 which requires them to be accompanied by a Bushfire Risk Management Plan and Bushfire Emergency Evacuation Plan (BRMP, BEEP; respectively).
- <u>Compliance with annual firebreak notice</u>: developers, land managers and prospective land purchasers are to comply with the City's annual firebreak notice (refer to Appendix 3)
- <u>BAL compliance and/or individual lot BAL assessment at future stages</u>: a BAL compliance report and/or individual lot BAL assessment may be prepared at the discretion of the City/WAPC following completion of subdivisional works and prior to lot title to validate and confirm the accuracy of BAL assessments depicted in the BMP or demonstrate any change in the assessed BAL or other management measures documented in this BMP, which may occur as a result of changes in building location, vegetation class or bushfire management approach.



### 7. References

DBCA 2018, NatureMap online database, Government of Western Australia. Access 07/08/18 via *https://naturemap.dpaw.wa.gov.au/*.

Department of Fire and Emergency Services (DFES) 2018, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: *https://maps.slip.wa.gov.au/landgate/bushfireprone/* 

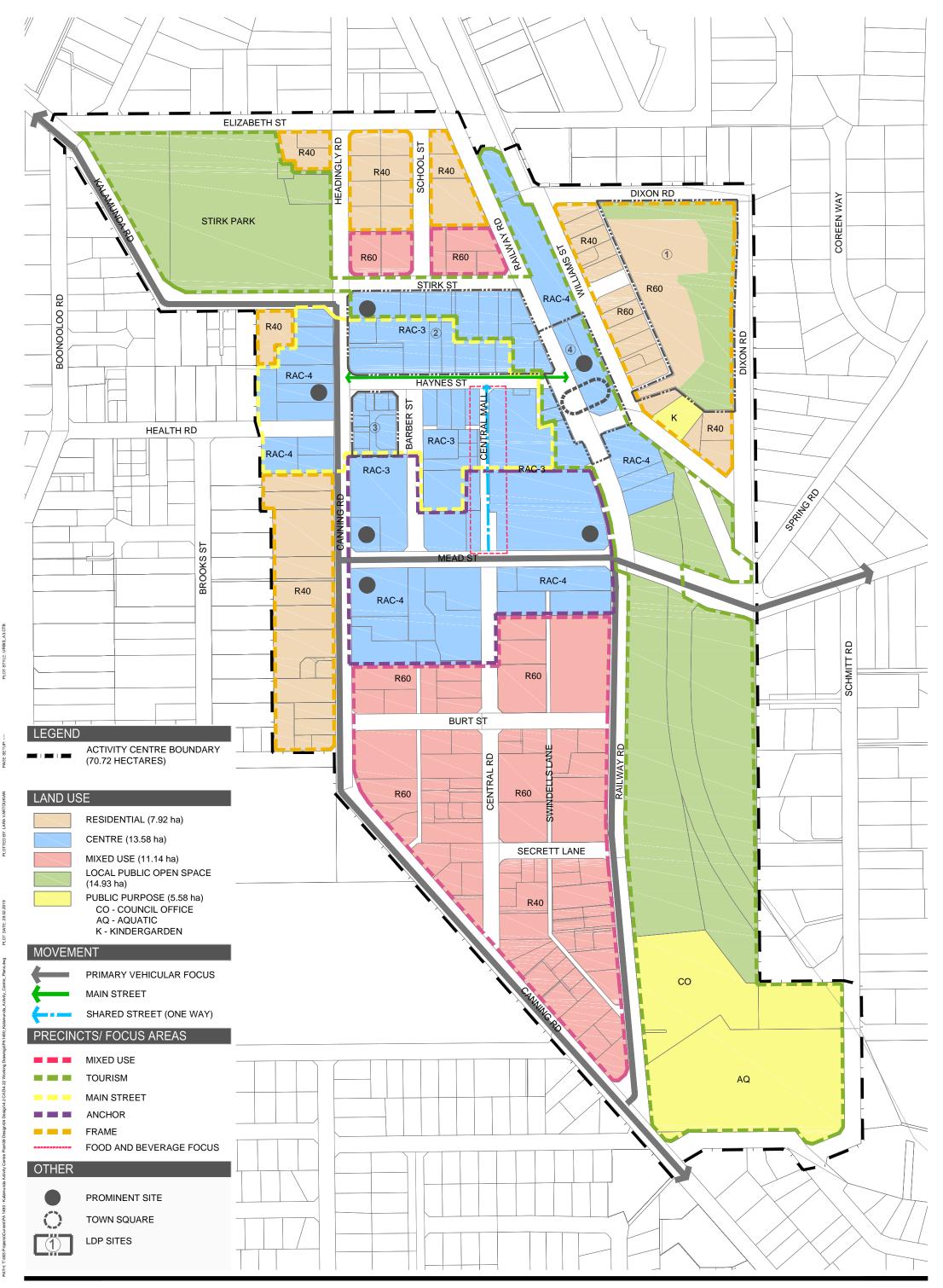
Standards Australia (SA) 2009, Australian Standard AS 3959–2009 Construction of Buildings in Bushfireprone Areas, Standards Australia, Sydney.

Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.

Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.



Appendix 1 City of Kalamunda Activity Centre Plan





### KALAMUNDA ACTIVITY CENTRE DRAFT ACTIVITY CENTRE PLAN

Level 14, The Quadrant, 1 William Street | Perth WA 6000 Australia | +61 8 9346 0500 | URBIS Pty Ltd | ABN 50 105 256 228

#### DISCLAIMER

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Appendix 2 Site photographs



Photo Point 1: Managed low-threat vegetation excluded under Clause 2.2.3.2 (f)

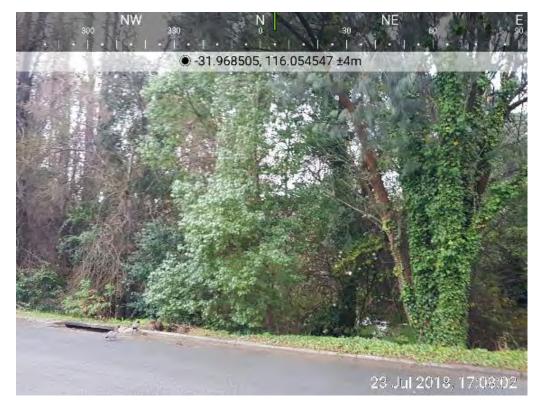


Photo Point 2: Class A forest within private property north of Elizabeth Street



Photo Point 3: Class A forest within the Railway Road reserve

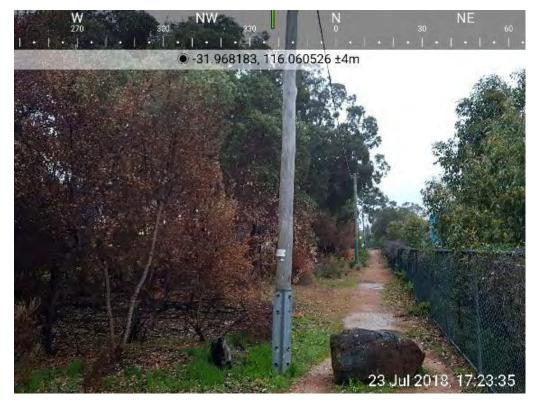


Photo Point 4: Class A forest within Byron Road reserve (recently burnt)



Photo Point 5: Class A forest on steep slopes west of Echo Road



Photo Point 6: Class A forest along Dixon Road



Photo Point 7: Class A forest along Dixon Road



Photo Point 8: Class A forest west of Spring Road

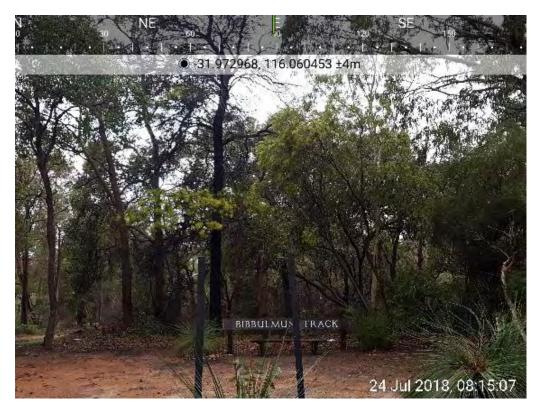


Photo Point 9: Class A forest east of Railway Road



Photo Point 10: Class A forest east of Railway Road



Photo Point 11: Managed vegetation excluded under Clause 2.2.3.2 (f) of AS3959



Photo Point 12: Class A forest within 'Parks and Recreation' reserve east of Railway Road



Photo Point 13: Class B woodland south of City of Kalamunda chambers



Photo Point 14: Class A forest west of Schmitt Road



Photo Point 15: Areas excluded form classification under Clause 2.2.3.2 (e) and (f) of AS3959



Photo Point 16: Class A forest within the Standen Court road reserve and private property



Photo Point 17: Managed vegetation north of Kalamunda Senior Highschool

Appendix 3 City of Kalamunda Fire Hazard Reduction Notice

# FIRE HAZARD REDUCTION NOTICE

Bush Fires Act 1954

## Notice to Owners and/or Occupiers of Land situated within the City of Kalamunda



As a measure to assist in the control and prevention of bushfires and pursuant to the powers contained in Section 33 of the *Bush Fires Act 1954 (WA)*, as the property owner or occupier of land within the City of Kalamunda, you are hereby required **before 1 November 2018** to comply with the below conditions.

The applicable works outlined below, **must be completed before 1 November 2018** and maintained **up to and including 31 March 2019**.

Persons who fail to comply with the requirements of this Notice may be issued with an infringement notice penalty (\$250) or prosecuted with an increased penalty (Maximum penalty \$5,000). Additionally, the City of Kalamunda may carry out the required work at cost to the owner/occupier.

# ALL VACANT LAND

#### **SLASH GRASS**

Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

# VACANT LAND OVER 2000m<sup>2</sup>

#### SLASH GRASS

Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

#### ] INSTALL FIRE BREAK

Install and maintain a 3m wide by 4m high clearance, bare mineral earth, trafficable fire break immediately inside the entire perimeter. A reticulated and maintained green lawn may be accepted in lieu of a fire break.

# PROPERTIES 4000m<sup>2</sup> AND UNDER

#### SLASH GRASS

Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

#### **CLEAN GUTTERS**

Ensure the roofs, gutters and walls of all buildings are free of flammable matter.

#### **REMOVE DFM** (Dead Flammable Material)

Maintain all dead flammable material below 8 tonne per hectare. (See definition fuel load)

# PROPERTIES OVER 4000m<sup>2</sup>

#### SLASH GRASS

Have all flammable matter except living trees, shrubs and plants under cultivation, slashed, mowed or trimmed down by other means to a height no greater than 50mm across the entire property.

#### **CLEAN GUTTERS**

Ensure the roofs, gutters and walls of all buildings are free of flammable matter.

REMOVE DFM (Dead Flammable Material) Maintain all dead flammable material below 8 tonne per hectare. (See definition fuel load)

#### INSTALL FIRE BREAK

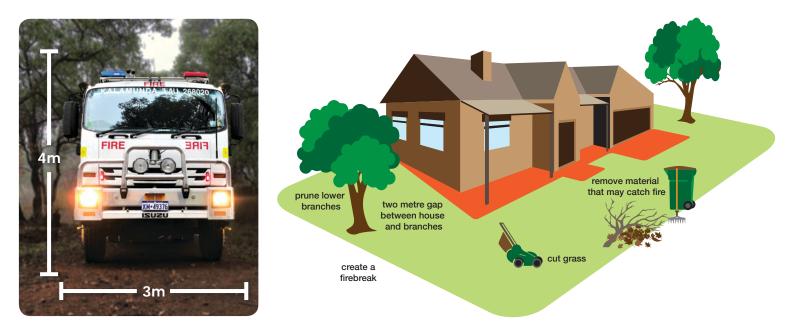
Install and maintain a 3m wide by 4m high clearance, bare mineral earth, trafficable fire break immediately inside the entire perimeter. A reticulated and maintained green lawn maybe accepted in lieu of a fire break.

#### ASSET PROTECTION ZONE (APZ)

Install and maintain an APZ 20m fuel reduced zone, around buildings or an asset of value which extends from the outermost point, whether residential, commercial, industrial or environmental. Fuel reduced is a reduction in the vegetation sufficient to reduce the impact of bushfire onto that asset.

- Trees over 5m in height must be under pruned to a height of 2m from the ground.
- Trees or shrubs within 2m of the asset, must be pruned to a height no greater than 2m.
- Fuel load within 20m of the asset must be kept to a minimum.

# City of Kalamunda 2018/2019 Fire Hazard Reduction Notice



# **ADDITIONAL WORKS**

In addition to the noted requirements, regardless of land size and location, the City of Kalamunda or its duly authorised officer(s) may require you to undertake additional works on your property to improve access and/ or undertake further hazard reduction (Additional Works) where, in the opinion of the officer, such Additional Works are necessary to prevent the outbreak and/or the spread of a bush fire.

# FIREBREAK VARIATIONS

If you consider for any reason that it is impractical to clear firebreaks as required by this Notice, or if natural features render firebreaks unnecessary, you may apply in writing to the City of Kalamunda or its duly authorised officers, not later than 1 October 2018, for alternative positions, or other methods of fire prevention on your land.

If permission is not granted, you must comply with the requirements of this Notice. This applies to variations to the Asset Protection Zone as well. The Chief Bush Fire Control Officer reserves the right to review and revoke any variation granted at any time.



# FUEL DUMPS AND DEPOTS

You are required to remove all flammable matter within (10) metres of where fuel drums, fuel ramps or fuel dumps are located, and where fuel drums, whether containing fuel or not, are.

By order of the City of Kalamunda.

Rhonda Hardy CHIEF EXECUTIVE OFFICER

Phone 9257 9999 Email enquiries@kalamunda.wa.gov.au Web www.kalamunda.wa.gov.au/fire

# DEFINITIONS

#### **Fuel load**

This is the leaf litter on the ground inclusive of leaves, twigs (up to 6mm diameter) and bark. A litter depth of 15mm from the top of the layer to the mineral earth beneath is indicative of approximately 8 tonnes per hectare.



# APPENDIX D EMPLOYMENT & RETAIL ANALYSIS

# KALAMUNDA ACTIVITY CENTRE PLAN – EMPLOYMENT AND RETAIL ANALYSIS

# **DRAFT REPORT**

Shire of Kalamunda



MAY 2018

This report is dated May 2018 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (Urbis) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of City of Kalamunda (Instructing Party) for the purpose of research and analysis (Purpose) and not for any other purpose or use. Urbis expressly disclaims any liability to the Instructing Party who relies or purports to rely on this report for any purpose other than the Purpose and to any party other than the Instructing Party who relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events including wars, civil unrest, economic disruption, financial market disruption, business cycles, industrial disputes, labour difficulties, political action and changes of government or law, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or made in relation to or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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Project codePA 1490Report numberDraft Report

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# INTRODUCTION

# INTRODUCTION

# **BACKGROUND AND PURPOSE**

This analysis has been prepared by Urbis to support the development of the Kalamunda Activity Centre Plan. The analysis is intended to provide the context and evidence base for the activity centre plan and to provide guidance on the appropriate quantum and timing of future floorspace provision within the town centre.

This analysis explores key demographic factors, household types, income distribution, dwelling distribution and population projections. The purpose of this task is to understand the current and future retail needs of local residents.

The analysis additionally explores the distribution of employment and floorspace within the activity centre based on the State Government's Land Use and Employment Survey (LUES). The purpose of this task is to explore the ability to concentrate employment uses over and above retail in the centre, which usually means attracting key population servicing uses like civic, health, administration and education functions as well as office-based businesses.

The retail needs assessment is the core focus of this analysis. This task considers the potential for supportable new floorspace in the town centre out to 2027 based on population and retail expenditure projections. The retail needs analysis also considers the extent of current and future competing retail supply in order to understand the future role and function of the activity centre's retail businesses.

# **STUDY STRUCTURE**

This study is comprised of the following sections:

- · Key Findings summary of the study's findings and recommendations;
- Demographic Profile overview of demographic and socio-economic attributes of the surrounding residential neighbourhood;
- Economics Profile overview of employment and worker attributes in Kalamunda;
- Centre Floorspace Review review of floorspace and employment within the Kalamunda activity centre;
- Trade Area Analysis analysis of the retail expenditure patterns in the Kalamunda activity centre's trade area;
- Retail Competition overview of distribution of retail centres in the wider area and competitive positioning of the Kalamunda activity centre; and
- Retail Needs Assessment assessment of current and future retail demand.

# **KEY FINDINGS**

6

# **KEY FINDINGS**

- **Convenience Offering**: The Kalamunda activity centre currently accommodates a mixture of standalone retail stores, small multi-tenancy retail properties and the Kalamunda Central Shopping Centre. The vast majority of retail shops are considered to be convenience retail offerings which is a reflection of the relatively low level of population density within Kalamunda and surrounds and the proximity of higher order centres (e.g. Midland).
- Low Development Activity: The activity centre was estimated to have 20,700 square metres of retail floorspace as of 2017. The only notable growth in retail over the past decade is an Aldi store (equivalent to 1,600 square metres). Unlike many of Perth's other district centres, the Kalamunda activity centre is not home to a discount department store or a large number of specialty non-food retailers.
- Low Population Growth: Across the defined retail trade area – which extends from Maida Vale to the west, Lesmurdie in the south, Pauls Valley in the East and Helena Valley in the north – population growth has been limited. Over the 2012 to 2017 period, the trade area' population increased by only 0.1% per annum. This represents relatively low growth compared to other outer-ring areas in Perth and reflects the established nature of the area and lack of major planned development areas and infill development activity. A moderate decline in the resident population in the surrounding suburbs (defined by the suburbs of Kalamunda, Maida Vale and Gooseberry Hill) is expected to be attributable to declining household sizes as residents age and increased rental vacancy rates. generally older families, couples and singles. There is a relatively low level of young families despite the housing stock consisting predominantly of large family homes.

- Below Average Turnover: Based on Property Council and Urbis databases, the activity centre is considered to be trading at levels approximately 20% below benchmark district centres and large neighbourhood centres. Moreover, the activity centre has a high level of vacant floorspace (equivalent to more than 3,000 square metres) of which some of this floorspace could accommodate retail uses.
- Limited Retail Demand: The lack of population growth combined with geographical constraints that limit visitation to the centre from the wider area are considered key reasons behind low levels of retail development activity in the centre and below average turnover volumes. Additionally, the retail offering is dispersed across a large area and it is not co-located with other destinational uses (e.g. hospital, administration building, etc.) and the public realm does not adequately encourage trip linking. The lack of residential population growth will limit the extent of retail demand growth in the catchment. Any future redevelopment or expansion of retail provision in the activity centre will thus likely require increased visitor / tertiary trade and / or increased market shares. That is, the activity centre will need to draw a greater share of spending in order to support redevelopment and / or expansion of the retail offering.

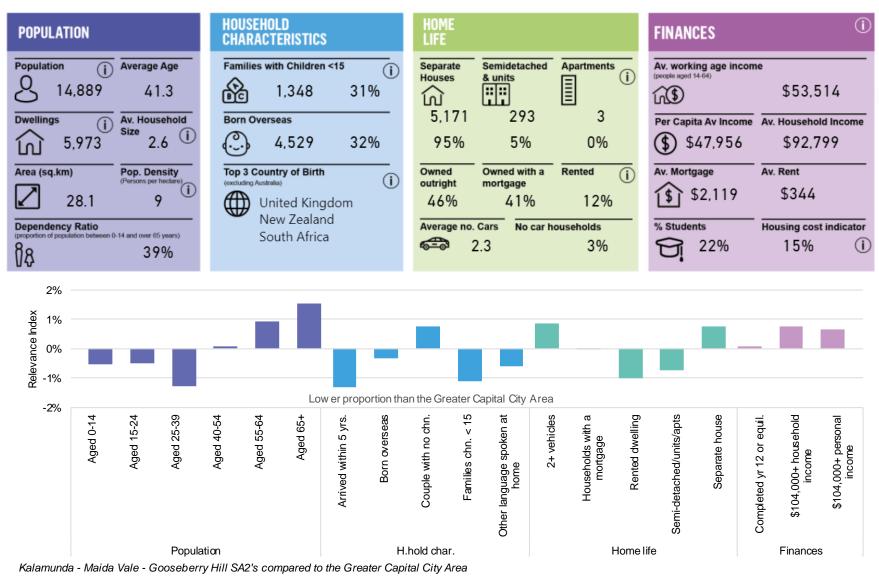
# **RETAIL DEMAND PROJECTIONS**

- Low Demand Growth: Based on forecast population growth levels in the trade area, per capita real expenditure growth and stable visitation levels, the need for additional retail floorspace is expected to be limited to approximately 1,500 to 2,500 square metres by 2027 on a business as usual basis. However, given below average trading levels and current high vacancy levels, this demand growth may not eventuate into development activity.
- Focus on Increased Desirability and Visitation: Given the retail modelling under a business as usual scenario suggests that retail expansion will be limited in the activity centre, the focus should be on measures that increase the desirability of the centre. Initiatives should focus on increasing population levels within the immediate area. increasing visitor expenditure and increasing triplinking and co-location. Urbis assessed the potential demand if public realm and associated activation and policy control initiatives encourage increased expenditure in the activity centre. Under this scenario, both trading levels and market shares increase and translate into future additional demand equivalent to 2,800 to 3,800 square metres. Whilst this scenario is not a forecast, it provides an indication of the potential demand outcomes if the centre improves its desirability to residents and visitors as a place to visit and shop.

Scenario	2027 Market Share Capture	Indicative Spend Capture	Implied Sq.m	Implied Net New Floorspace Demand (approx.)
Business As Usual	18%	\$137,550,000	22,500 - 23,500	1,500 - 2,500
Improved share, improved productivity	21%	\$157,200,000	24,000 - 25,000	2,800 - 3,800
Source: Urbis				

# **DEMOGRAPHIC PROFILE**

# **DEMOGRAPHIC SNAPSHOT**



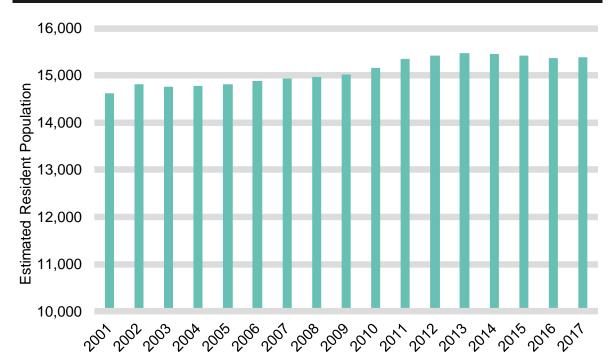
Source: Based on ABS 2016 Census Data

# **POPULATION AND DEMOGRAPHIC ATTRIBUTES**

## **KEY FINDINGS**

#### Population levels have been relatively stable over the past five years in the region. An ageing population, declining household sizes and increased rental vacancy levels have resulted in a moderate decline in the estimated resident population over this period.

# **ESTIMATED RESIDENT POPULATION**

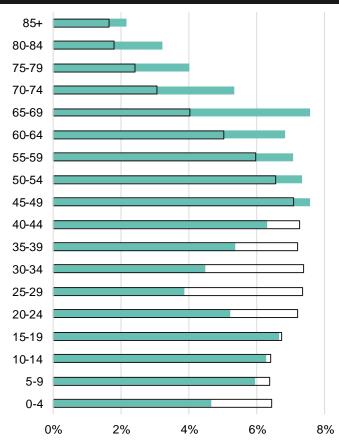


# **AGE STRUCTURE**

## **KEY FINDINGS**

- The region was estimated to have a relatively older age profile than the Perth average. As shown to the right, the region had a particularly large baby boomer cohort as of 2016 and a large number of residents aged 80 and above.
- The demography points to the area being a location for older more settled families, coupes without children and lone person households. It is not a strong destination for younger families although presentation of the area as a viable lifestyle destination for such may improve this demographic over time.

## **PROPORTION OF POPULATION BY AGE- SA2 VS GREATER PERTH**



SA2's compared to the Greater Capital City Area Source: Urbis, based on ABS 2016 Census Data

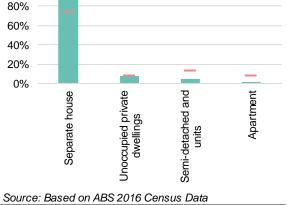
# **HOUSING STOCK ATTRIBUTES**

### **KEY FINDINGS**

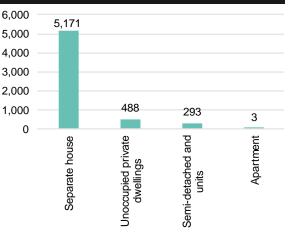
- The region had a larger proportion of separate houses accounting for 87% (5,171 houses) of all occupied dwellings as of 2016. This is above the Greater Perth benchmark by 14%. Moreover, nearly 55% (3,002 houses) of dwellings in the region had four or more bedrooms compared to 45% across Perth.
- The dwelling stock implies that the area is able to accommodate families however the lack of smaller and diverse housing products may potentially limit the retention and attraction of other cohorts.

### **DWELLING STRUCTURE PROPORTION**



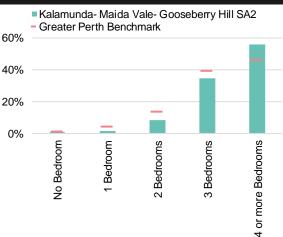


# **TOTAL OCCUPIED DWELLINGS**

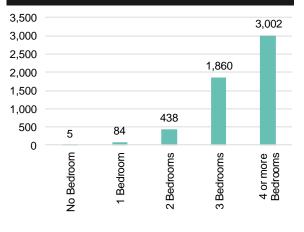


#### Source: Based on ABS 2016 Census Data

#### NUMBER OF BEDROOMS PROPORTION



### **DWELLING STOCK BY BEDROOMS**

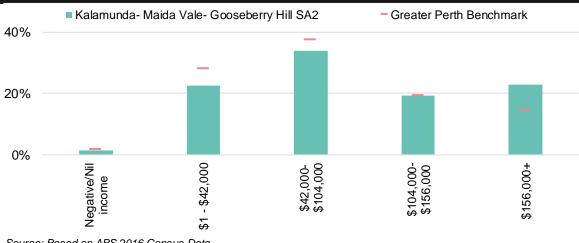


# **HOUSEHOLD INCOME ATTRIBUTES**

## **KEY FINDINGS**

 Residents within the region were found to, on average, live in medium to high income households. There was a particularly large number of households found to be earning more than \$156,000 per annum compared to Perth-wide averages.

# TOTAL HOUSEHOLD INCOME, 2016 (PER ANNUM)



Source: Based on ABS 2016 Census Data

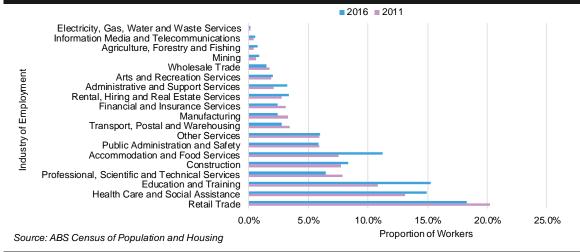
# **ECONOMIC PROFILE**

# **INDUSTRY COMPOSITION**

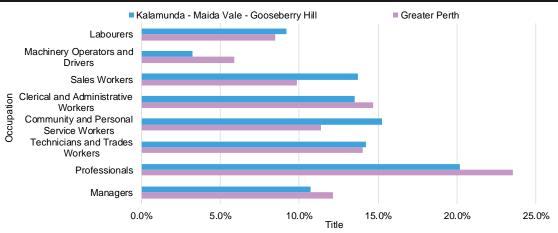
### **KEY FINDINGS**

- As of the 2016 Census, there were estimated to be approximately 3,350 people working in the region (i.e. Kalamunda, Maida Vale and Gooseberry Hill). This number has increased from 3,000 jobs as of 2011, with growth driven by health, hospitality and education sectors. Of note, the number of retail sector jobs was steady over the five-year period.
- Worker Incomes are lower in Kalamunda than they are in Greater Perth, with 70.9% of all workers receiving incomes of under \$65,000, while only 57.9% of all workers across Greater Perth had an income under \$65,000 in 2016.
- In line with the lower incomes observed in Kalamunda, there is a relatively low proportion of high earning occupations, such as professionals and managers, and a higher proportion of typically lower paying occupations such as sales workers, and community service workers.

### **EMPLOYMENT BY INDUSTRY**



### **EMPLOYMENT BY OCCUPATION**



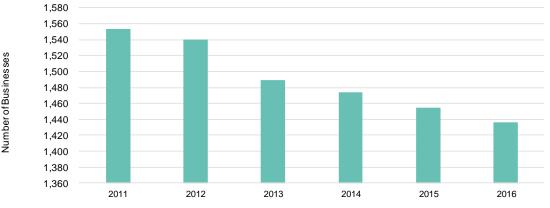
Source: ABS Census Population and Housing

# **BUSINESS ATTRIBUTES**

## **KEY FINDINGS**

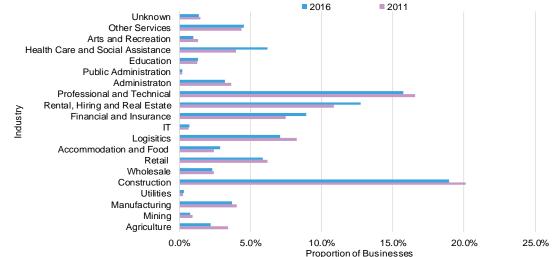
- The number of registered businesses in the region has been steadily decreasing over the past 5 years, falling from 1,553 to 1,436 during this period. The industry which saw the most substantial declines was the construction industry, losing 40 businesses from 2011 to 2016 (many of which were sole traders).
- The largest proportion of businesses are in the construction industry, followed by businesses in the professional and technical services industry. The proportion of all businesses in these sectors have been declining over the past five years, in line with deteriorating business conditions, particularly in residential construction. It is important to note that a large share of these businesses are sole traders (i.e. non employing businesses).
- The businesses that have increased in proportion of total businesses is health care and social assistance, as well as rental, hiring and real estate services, and financial and insurance services. Of note, 27 additional health care and social assistance businesses have been registered in the region since 2011.
- Employment self-sufficiency (ESS) is relatively low in the Kalamunda area, with approximately 6,881 workers residing in Kalamunda, while there are only 3,353 people working there. This gives a selfsufficiency rate of 48.7%. While this is not inherently problematic for economic development, higher levels of ESS can help to optimise investment in public infrastructure and support shorter commute times.

**REGISTERED BUSINESSES, 2011-16** 



Source: ABS Business Counts, Catalogue No. 8165.0

# **BUSINESSES BY INDUSTRY SECTOR**



Source: ABS Business Counts, Catalogue No. 8165.0

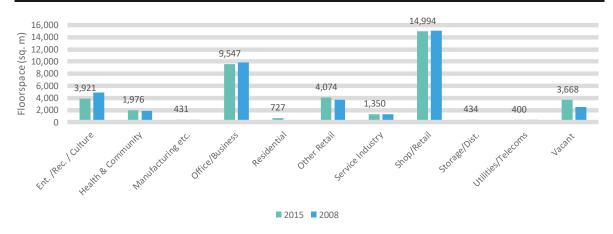
# **CENTRE FLOORSPACE** REVIEW

# **FLOORSPACE AND EMPLOYMENT ATTRIBUTES**

## **KEY FINDINGS**

- According to the Department of Planning, Lands and Heritage's Land Use and Employment Survey, the land use composition of floorspace within the Kalamunda ACP has not changed substantially from 2008 to 2015, with only 2,800 sq. m of new floorspace over this period (note, Aldi was developed subsequent to the survey and is not included in this analysis).
- Notably, vacancy levels over this period increased significantly to the equivalent of 3,700 sq. m. as of 2015 (equivalent to 8.8%). Vacancy rates remain high, with an estimated 12 properties available for lease as of May 2018 in the activity centre.
- Shop retail forms the largest category of floorspace though there is a notable level of office-based uses, health and recreation uses and other retail (i.e. bulky goods).
- Within the shop retail floorspace, there were approximately 33 shops. The most significant floorspace was for supermarkets, followed by food catering (2,900 sq. m.).
- Kalamunda Central is approximately 23% larger than the comparable single supermarket centre benchmark however it is smaller than comparable with district centre shopping centres given the lack of a national brand discount department store.
   Based on reported turnover per square metre, this shopping centre is performing at approximately only about 80% of benchmark levels.
- There were an estimated 1,400 jobs within the activity centre as of 2015 according to this survey. This equates to 42% of employment in the broader region and 9.7% of jobs within the City of Kalamunda.

## **DISTRIBUTION OF FLOORSPACE BY USAGE TYPE - 2015**



### **DISTRIBUTION OF FLOORSPACE BY USAGE TYPE - 2015**

Sector	Full Time Employment	Part Time Employment	Total	%
Entertainment/Recreation/Culture	26	64	90	6%
Health/Welfare/Community Services	18	39	57	4%
Manufacturing/Processing/Fabrication	4	5	9	1%
Office/Business	210	195	405	29%
Other Retail	70	43	113	8%
Service Industry	18	4	22	2%
Shop/Retail	213	488	701	50%
Storage/Distribution	1	2	3	0%
Utilities/Communications	3	3	6	0%

\*\* Analysis based on LUES complex number 750. This excludes community uses within the ACP boundary east of Railway Road.

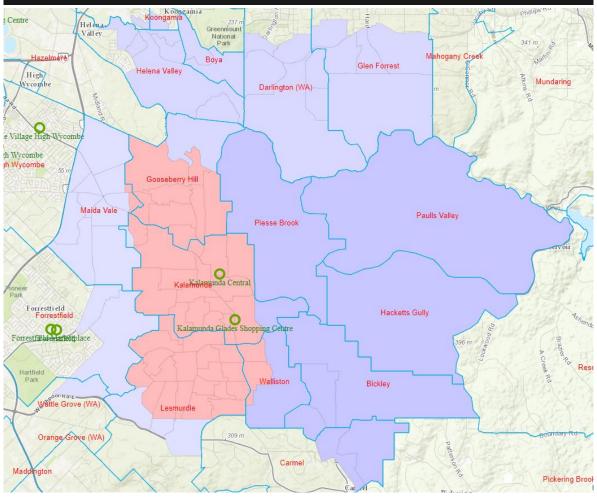
# **TRADE AREA ANALYSIS**

# **TRADE AREA DEFINITION**

# **KEY FINDINGS**

- The definition of a trade area for a retail development is based on a range of factors including the strength, range and appeal of shops/services provided in the core area, the location, the quality and relative offer of competing centres/precincts, road and public transport accessibility, and physical and geographical barriers.
- Based on an assessment of these attributes, the Kalamunda activity centre trade area has been defined as a central primary catchment and three secondary catchments.
- The primary catchment broadly corresponds to the suburbs of Kalamunda, the majority of Gooseberry Hill to the north and Lesmurdie to the south and the western portion of Walliston. Depending on the role and scale of a centre, the primary catchment typically represents approximately 50% to 70% of spending in a centre.
- The extent of the secondary catchment west and secondary catchment north are limited by accessibility and the proximity of convenience-based centres in the wider area.
- In addition to the catchment areas, spending from residents residing outside these areas forms a considerable level of demand. Whilst visitation estimates are not accurately known, tertiary (i.e. non-resident) trade is expected to represent approximately 10-20% of spending in the activity centre.

### KALAMUNDA TOWN CENTRE MAIN TRADE AREA AND RETAIL SUPPLY



# **POPULATION GROWTH**

## **KEY FINDINGS**

- The level of population growth in the trade area has been very low over the 2012 to 2017 period. Despite Perth's population increasing considerably over this period, population levels only moderately increased and are projected to increase by approximately 1,090 persons over the coming decade.
- The established nature of surrounding urban areas combined with an ageing profile implies that household sizes will decrease. Growth will therefore be driven by moderate infill development in Kalamunda and growth within the secondary north and west catchments.
- The lack of residential population growth will limit the extent of retail demand growth in the catchment. Any future redevelopment or expansion of retail provision in the activity centre will likely require increased visitor / tertiary trade and / or increased market shares.

POPULATION PROJECTION	S			
	2012	2017	2022	2027
Total Primary	18,840	18,850	18,980	19,190
Secondary:				
West	6,310	6,270	6,450	6,810
East	2,110	2,030	2,090	2,220
North	7,780	8,000	8,090	8,020
Total Secondary	16,200	16,300	16,630	17,050
Total Trade Area	35,040	35,150	35,610	36,240
1. As at June 30.				

Source: ABS; Western Australia Tomorrow 2015; SAFi; Urbis

## **PROJECTED POPULATION GROWTH RATES**

	Annual Populati	on Growth (	no.)	Annual Population Growth (%)				
	12-17	17-22	22-27	12-17	17-22	22-27		
Total Primary	2	26	42	0.0%	0.1%	0.2%		
Total Secondary	20	66	84	0.1%	0.4%	0.5%		
Total Trade Area	22	92	126	0.1%	0.3%	0.4%		

1. A s at June 30.

Source: ABS; Western Australia Tomorrow 2015; SAFi; Urbis

# **DEMOGRAPHIC ATTRIBUTES**

## **KEY FINDINGS**

- In addition to the number of residents in the trade area, the demographic and socio-economic attributes are an important driver of the retail expenditure levels and needs in an area.
- Based on a review of trade area resident characteristics, there are a number of attributes that support above average retail expenditure. These include:
- Marginally higher per capita and household incomes (+3% and +4% respectively);
- A lower than average incidence of younger persons and families with children; and
- A higher incidence of home owners and purchasers (implying lower mortgage costs).

### **CATCHMENT DEMOGRAPHICS VARIATION FROM PERTH AVERAGE**



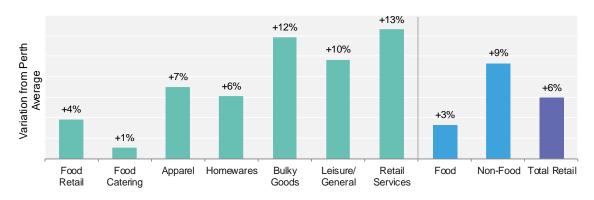
Source: ABS; Urbis

# **RETAIL EXPENDITURE ATTRIBUTES**

## **KEY FINDINGS**

- Urbis derived estimates of the average retail expenditure of residents in the trade area using MarketInfo. MarketInfo is an independently formulated model and is used by the majority of retail economists in understanding the retail floorspace needs of an area. This model estimates an area's propensity to spend on retail goods based on a range of socio-economic characteristics.
- Within the trade area, there is a relatively high level of per capita expenditure across all spending categories, particularly in the non-food sector. Per capita retail expenditure, on average, is estimated to be 6% higher than the Perth average.

# RETAIL EXPENDITURE BY CATEGORY, TRADE AREA VERSUS PERTH AVERAGE



Source: ABS; MarketInfo; Urbis

# **RETAIL EXPENDITURE PROJECTIONS**

## **KEY FINDINGS**

- It is important to note that the retail market is not immune to structural changes that are occurring in the economy and society. The retail sector in Australia is being tested by numerous factors, including, but not limited to:
- Changing consumers consumers are altering their trading patterns, with higher levels of retail spending devoted to experiential items such as sporting events, concerts, restaurants and cafes;
- Online trading online trading is increasing much faster than traditional 'bricks and mortar' stores, (additionally, retail outlets are devoting more resources to accommodating both online and instore customers);
- Low wage growth with real growth in retail expenditure challenged by wage and other spending pressures; and
- Regulatory changes WA is playing catch up to more mature retail markets, with trading law changes activating centres for longer hours.
- Urbis adopted a set of assumptions that recognise changing expenditure patterns and growth. Based on these assumptions, retail expenditure across the trade area is expected to increase from \$567m to \$655m over the coming decade.
- The vast majority of this growth is expected to be driven by real expenditure growth (per capita).
   There is therefore a risk that – if economic conditions do not improve as expected – growth to this degree will not materialise.

## **RETAIL EXPENDITURE PROJECTIONS BY CATEGORY (\$ MILLIONS)**

Food Retail	Food Catering	Apparel	Home- w ares	Bulky Goods	Leisure/ General	Retail Services	Total Retail	Annual Growth	=	Pop Growth	+	Per Cap Spend Growth
Trade Are	a:											
135	32	28	22	36	39	12	305					
140	35	30	24	39	42	13	322	1.3%		0.2%		1.1%
148	38	33	27	42	45	15	348	1.5%		0.2%		1.3%
ide Area:												
252	60	52	41	68	71	22	567					
257	63	54	43	71	74	23	584	1.2%		0.3%		1.0%
280	72	62	51	80	83	28	655	1.6%		0.3%		1.3%
	Retail Trade Are 135 140 148 de Area: 252 257	Retail         Catering           Trade Area:         32           135         32           140         35           148         38           ade Area:         252           257         63	Retail         Catering         Apparel           Trade Area:         135         32         28           140         35         30         34           148         38         33         33           ide Area:         252         60         52           257         63         54	Retail         Catering         Apparel         w ares           Trade Area:	Retail         Catering         Apparel         w ares         Goods           Trade Area:         135         32         28         22         36           140         35         30         24         39           148         38         33         27         42           ide Area:         252         60         52         41         68           257         63         54         43         71	Retail         Catering         Apparel         w ares         Goods         General           Trade Area:	Retail         Catering         Apparel         w ares         Goods         General         Services           Trade Area:         135         32         28         22         36         39         12           140         35         30         24         39         42         13           148         38         33         27         42         45         15           ide Area:         252         60         52         41         68         71         22           257         63         54         43         71         74         23	Retail         Catering         Apparel         wares         Goods         General         Services         Retail           Trade Area:         135         32         28         22         36         39         12         305           140         35         30         24         39         42         13         322           148         38         33         27         42         45         15         348           ide Area:         ZE52         60         52         41         68         71         22         567           257         63         54         43         71         74         23         584	Retail         Catering         Apparel         w ares         Goods         General         Services         Retail         Growth           Trade Area:         135         32         28         22         36         39         12 <b>305</b> 140         35         30         24         39         42         13 <b>322</b> <i>1.3%</i> 148         38         33         27         42         45         15 <b>348</b> <i>1.5%</i> ide Area:         252         60         52         41         68         71         22 <b>567</b> 257         63         54         43         71         74         23 <b>584</b> <i>1.2%</i>	Retail         Catering         Apparel         w ares         Goods         General         Services         Retail         Growth         =           Trade Area:         135         32         28         22         36         39         12         305	Retail         Catering         Apparel         w ares         Goods         General         Services         Retail         Growth         =         Growth           Trade Area:         135         32         28         22         36         39         12         305	Food RetailFood CateringApparelHome- w aresBulky GoodsLeisure/ GeneralRetailTotal RetailAnnual Growth $Pop$ Growth+Trade Area:1353228223639123051403530243942133221.3%0.2%1483833274245153481.5%0.2%ide Area:2526052416871225672576354437174235841.2%0.3%

Source: ABS; MarketInfo; Urbis

# **RETAIL EXPENDITURE PROJECTIONS**

## **KEY FINDINGS**

- As a relative share of overall catchment expenditure, in the ten years to 2027, food retail is projected to soften slightly to just under 43% of the total spend. All other sectors are forecast to experience a slight increase in their relative share.
- · Proportionally, growth in retail services is expected to increase significantly. This reflects the changing nature of expenditure.
- · It is important to note that this analysis does not include expenditure that occurs in the catchment by residents, but rather the quantum of expenditure of residents.

## **TOTAL CATCHMENT RETAIL SPENDING - 2017**

	Food Retail	Food Catering	Apparel	Home- w ares	Bulky Goods	Leisure/ General	Retail Services	Total Retail
Primary:								
Total Primary	135	32	28	22	36	39	12	305
Secondary:								
West	45	11	9	7	13	12	4	100
East	15	3	3	2	4	4	1	33
North	58	14	12	9	16	16	5	129
Total Secondary	117	28	24	19	32	32	10	262
Total Trade Area	252	60	52	41	68	71	22	567
Source: ABS: MarketInfo: Urbis								

Source: ABS; MarketInfo; Urbis

## **TOTAL CATCHMENT RETAIL SPENDING - 2027**

	Food Retail	Food Catering	Apparel	Home- w ares	Bulky Goods	Leisure/ General	Retail Services	Total Retail
Primary:								
Total Primary	148	38	33	27	42	45	15	348
Secondary:								
West	52	13	11	9	16	15	5	121
East	17	4	4	3	5	5	2	40
North	62	16	14	11	18	18	6	146
Total Secondary	132	34	29	23	38	38	13	307
Total Trade Area	280	72	62	51	80	83	28	655
Source: A B S: MarketInfo: Urbin								

Source: ABS; MarketInfo; Urbis

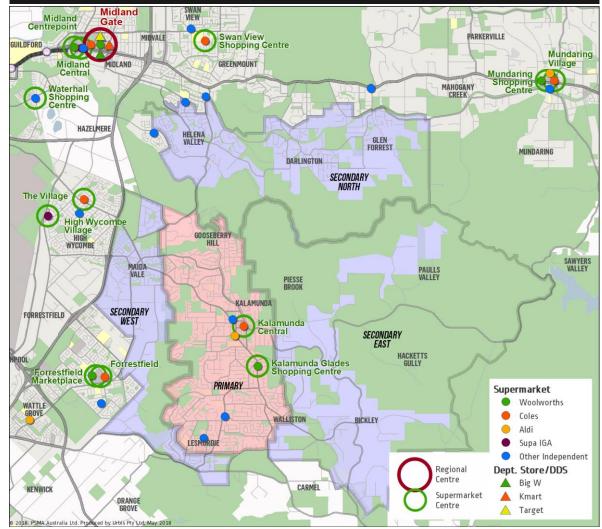
# **RETAIL COMPETITION**

## **RETAIL HIERARCHY**

#### **KEY FINDINGS**

- The Kalamunda activity centre is located in the Perth's north-east corridor. The activity centre is defined as a district centre. Other district centres in the wider area include Forrestfield and Mundaring. Meanwhile, Midland – as a strategic metropolitan centre – is the largest centre in the corridor and caters to the largest range of retail, health, office and civic uses in the area.
- Competition within the trade area is limited to local convenience centres and Kalamunda Glades Shopping Centre – a Woolworths supermarketanchored neighbourhood centre.
- Geographical and physical barriers have a much greater effect on the extent of the trade area than retail competition. Nonetheless, the proximity of Kalamunda Glades Shopping to the south and local and neighbourhood offerings in High Wycombe have a limiting impact on retail demand at the Kalamunda activity centre.

#### **CATCHMENT CENTRES AND KEY STORES**



## **COMPETITION POSITIONING**

#### **KEY FINDINGS**

- Within the catchment as profiled there was a total of 28,200 sq. m of PLUC 5 Shop Retail floorspace (net lettable area) as of 2015. The table also illustrates the level floorspace within shopping centres in the catchment based on Urbis and Property Council databases equivalent to 19,000 sq.m.
- The dominant shopping centre in the catchment is the Kalamunda Central Shopping Centre with an estimated 7,300 sq. m of retail floorspace. Of note however, is that the centre accounts for just 40% of the total retail floorspace in the Kalamunda activity centre.
- A recent addition to the floorspace in the activity centre is a stand alone Aldi store with floorspace equivalent to approximately 1,600 sq. m.
- We note that while there are a number of plans and concepts to upgrade the presentation and access to centres within the catchment, including Kalamunda Central and the Sanderson IGA, it is our understanding that there are no plans to introduce new retail floorspace within the catchment.

#### **RETAIL SUPPLY - KEY CENTRES WITHIN AND OUTSIDE THE CATCHMENT**

Complex No.	Complex Name	Shop Retail and Other Retail Floorspace (Sq. m)	Key Centre	Key Centre Retail Floorspace (Sq. m)	Key Tenants
Within Catchment					
750	Kalamunda Centre	19,068	Kalamunda Central Shopping Centre	7,300	Coles,
752	Gooseberry Hill	895	Gooseberry Hill Village	895	
754	Kalamunda Glades	3,760	Kalamunda Glades	4,983	Woolworths
755	Sanderson	2,197	Sanderson IGA	2,729	IGA
757	Lesmurdie	700	Lesmurdie IGA	1,080	IGA
Not identified	Aldi Kalamunda	1,600	Aldi	1,600	Aldi
Total		28,220		18,587	
Outside Catchment (K	ey Centres Only)				
751	Forrestfield Forum	13,271	Forrestfield Forum & Market Place	11,600	Coles, Woolworths
758 & 768	High Wycombe & High Wycombe Hotel	6,944	The Village High Wycombe & High Wycombe Village	5,809	Coles, Supa IGA
Total		20,215		17,409	
Source: Urbis					

Source: Urbis

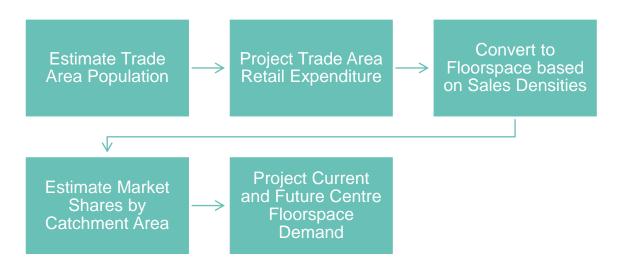
# RETAIL NEEDS ASSESSMENT

## **APPROACH**

#### METHODOLOGY

- Retail expenditure estimates noted earlier in the report form a core input into estimates of total retail floorspace demand. In order to convert these expenditure estimates to floorspace levels, Urbis applied sales densities to each retail category. Sales densities are the dollar sales per square metre of floorspace required to sustainably operate that use in the trade area.
- For example, an average supermarket may need \$7,500 of sales per square metre per annum to continue to operate that space at a commercially viable level. This is a broad average, with some supermarkets in inner metropolitan markets requiring \$8,500 of sales per square metre per annum to operate viably and regional areas requiring lower spending of approximately \$6,500 per square metre.
- Industry sales densities are based on the Urbis Retail Benchmarks database. This database is an annual survey of operating turnover of thousands of retail tenancies across the country.
- In order to understand demand for floorspace within the Kalamunda activity centre, Urbis estimated current market shares by catchment area and tertiary trade levels.
- Urbis projected centre floorspace demand based on a business as usual scenario and a higher growth scenario.

#### **RETAIL FLOORSPACE DEMAND STEPS**



## **FLOORSPACE DEMAND ESTIMATES**

#### **KEY FINDINGS**

- Retail tenancies are estimated to be underperforming, on average, compared to Perthwide benchmarks. This is evidenced by turnover input for Kalamunda Central, the high level of vacancies in the centre and advertised lease costs. Overall, the activity centre is estimated to attract approximately \$121 million of retail expenditure per annum (as of 2017).
- Current demand in the Kalamunda activity centre is expected to be driven heavily by the primary catchment. The primary catchment is estimated to support approximately 60-65% of expenditure in activity centre – equating to a market share of 25%.
- Whilst population growth is expected to be larger within the secondary north and west catchments, there is a high level of competition in these suburbs that captures a large – and potentially increasing – share of additional retail expenditure. As such, the secondary catchments are expected to support approximately 20-25% of expenditure in the catchment – equating to a market share of 10%.
- A review of Tourism Research Australia visitor data suggests that visitation levels are equivalent to approximately 350-400 day trips per day, on average. Additionally, input through community and business engagement suggest that visitation – especially weekend visitation – forms a critical component of patronage and revenue within the activity centre. As such, this analysis assumes that tertiary trade contributes approximately 15% of turnover within the activity centre.
- Given the relative under-trading performance of the activity centre, future redevelopment and expansion of retail provision will require increased population growth, market shares and / or visitor expenditure.

#### **TURNOVER ESTIMATES, 2017**

	Floorspace (sq. m.)	Turnover (p.a.)	Sales Density (\$ / sq. m.)
Shop Retail	16,600	\$106,738,000	\$6,430
Other Retail	4,100	\$14,350,000	\$3,500
Total Retail	20,700	\$121,000,000	\$5,845

#### **MARKET SHARE ESTIMATES, 2017**

	Primary Catchment	Secondary Catchments	Total Trade Area	Total Centre (inc. tertiary)
Retail Expenditure	\$305,000,000	262,000,000	\$567,000,000	-
Centre Sales	\$76,250,000	\$26,200,000	\$102,450,000	\$121,000,000
Market Shares	25%	10%	18%	-

## **FLOORSPACE SCENARIOS**

#### **KEY FINDINGS**

- Urbis assessed two scenarios in order to understand the likely level of future demand for retail floorspace within the activity centre.
- Scenario one is a business as usual scenario whereby the activity centre is able to maintain its market shares over the coming decade. Under this scenario, the overall retail expenditure captured by the centre is estimated to increase by \$16.5 million to \$137.5 million. This equates to an additional 1,500 – 2,500 sq. m of retail floorspace demand.
- Scenario two proposes a higher market share and visitor expenditure capture and a 10% improvement in the average turnover levels per square metre (to levels still below comparable benchmarks). Whilst this scenario is not a forecast, it provides an indication of the potential demand outcomes if the centre improves its desirability to residents and visitors as a place to visit and shop. Under this scenario, this overall retail expenditure capture increases by \$36.1 million to \$157.2 million. This scenario suggests an additional 2,800 3,800 sq. m of retail floorspace might be required by 2027.

#### KALAMUNDA TOWN CENTRE FLOORSPACE SCENARIOS

Scenario	2027 Market Share Capture	Indicative Spend Capture	Implied Sq.m	Implied Net New Floorspace Demand (approx.)
Business As Usual	18%	\$137,550,000	22,500 - 23,500	1,500 - 2,500
Improved share, improved productivity	21%	\$157,200,000	24,000 - 25,000	2,800 - 3,800
0 1111				

Source: Urbis



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## APPENDIX E HISTORICAL & ABORIGINAL BASELINE ASSESSMENT

# KALAMUNDA ACTIVITY CENTRE HISTORICAL AND ABORIGINAL HERITAGE BASELINE ASSESSMENT

15 DECEMBER 2017 PA1490 DRAFT PREPARED FOR KALAMUNDA CITY COUNCIL



#### URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	PA1490
Report Number	1 - Draft

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You must read the important disclaimer appearing within the body of this report.

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## **EXECUTIVE SUMMARY**

This report has been prepared to provides an overview of the known historic the Aboriginal heritage values in and around the Study Area, to provide a baseline understanding of future investigation, planning, and consultation that may be required for delivery of the Kalamunda Activity Centre Plan (KACP).

Assessment has been desktop based and has involved research into the development of the area, searches of historic and Aboriginal heritage registers and databases and a review of previous cultural heritage assessments undertaken in and around the Study Area.

A total of 25 heritage listings for historic places were identified within the Study area, including one precinct comprising 11 places. Two places were identified as having a State level of heritage value – Stirk Cottage and the Kalamunda Hotel and Original Kalamunda Hotel. Remaining registered heritage places were recorded as having a local level of heritage value.

Aboriginal heritage searches identified three known sites within the Study Area, two of which are registered. The Poison Gully Creek site is located in the northern portion of the Study Area, while the Helena River site is located along the eastern boundary. Both sites are listed as mystical sites with intangible heritage values, and as such detailed information on their location and significance is unknown without further investigation or assessment.

It is recommended that known heritage places, including their heritage curtilages be mapped and recorded appropriately in the KACP. Consideration should also be given to consultation with the Kalamunda and District Historical Society and the Whadjuk People, to identify any sites of value within the Study Area that have not been included on heritage registers and to explore any opportunities for interpretation of the heritage values of the area in the future activity centre.

## 1. INTRODUCTION

Urbis Pty Ltd (Urbis) has been commissioned by the City of Kalamunda to deliver an Activity Centre Plan for Kalamunda Town Centre (the Study Area).

This report presents a baseline assessment of the constraints and opportunities arising from the historic heritage and Aboriginal heritage values of the place.

## 1.1. SITE LOCATION

Kalamunda is located at the eastern limits of the Perth Metropolitan Area. It is approximately 25km east of the Perth CBC, and is generally sited between the Kalamunda National Park and Mundy Regional Park.

The irregularly-shaped Study Area generally comprises the town centre of Kalamunda. It is generally bounded at north by Elizabeth Street, east by the alignments of Dixon Road and Schmitt Road, south generally by Collins Road, and west by Canning and Kalamunda Roads.

The Study Area in relation to Perth is shown in Figure 1, and the Study Area boundary is shown in Figure 2.

### 1.2. REPORT PURPOSE

To deliver the Kalamunda Activity Centre Plan (KACP), a high-level identification of the constraints and opportunities arising from the place's existing planning framework, local environmental context, and physical site constraints is required. This will afford understanding of matters that require future investigation or analysis for the future planning of the Study Area.

This report provides an overview of the known historic heritage values of the Study Area, and the Aboriginal heritage values in and around the Study Area, to provide a baseline understanding of future investigation, planning, and consultation that may be required for delivery of the KACP.

### 1.3. METHODOLOGY

The preparation of this baseline assessment has involved the following:

- Search of the Western Australia 'inHerit' database of historic heritage places;
- Search of the Department of Planning, Lands and Heritage Aboriginal Heritage Inquiry System (AHIS) database;
- Review of relevant literature to provide a brief Ethnohistorical background of the Study Area and surrounds, to provide context for an understanding of the heritage values of the place.

#### 1.3.1. Limitations

This assessment has been undertaken at desktop level only;

- A site inspection for the purposes of heritage assessment or identification has not been undertaken;
- No consultation with Aboriginal groups has been undertaken for the purposes of this assessment;
- Searching the AIHS database has been online only via the public search tool. No site files have been reviewed.

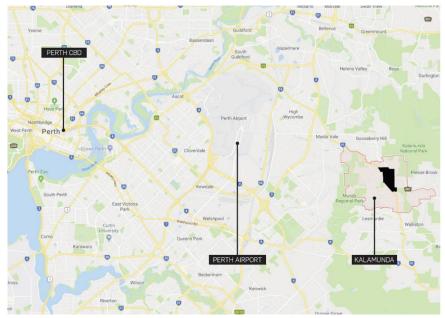


Figure 1 - Study Area, indicated in black, with proximity to Perth

Source: Urbis 2017

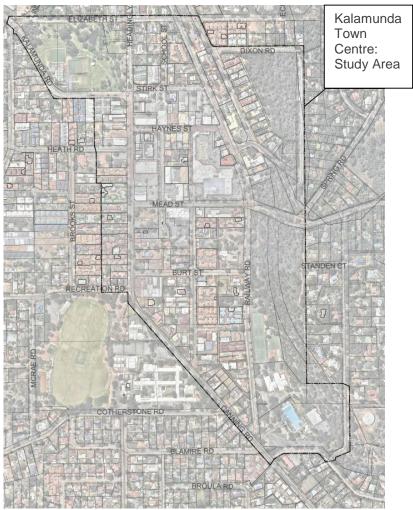


Figure 2 – Study Area

Source: Urbis 2017

## 2. ETHNOHISTORICAL BACKGROUND

This Section is presented to provide context for an understanding of the heritage values of the Study Area.

The Shire of Kalamunda *Municipal Heritage Inventory* (Hocking Heritage Studio (HHS) 2015) provides a comprehensive documentation of the history and development of Kalamunda. The Section below is based on information contained in that document.

The brief background information about the Aboriginal history of the Study Area and surrounds has largely been adapted from the South West Aboriginal Land and Sea Council (2017), and previous archaeological or desktop assessments relevant to the area.

Limited additional research has been undertaken, and is referenced where necessary.

### 2.1. ABORIGINAL BACKGROUND

The south-west of Western Australia is recognised as having been originally inhabited by the Noongar peoples. The Noongar comprise 14 different language groups, with Whadjuk (or Wajuk) geographically sited in the Perth region. Whilst there are challenges to Tindale's allocation of tribal boundaries (Yates Heritage Consulting 2014), the territory of the Whadjuk is described by Tindale (1974 in Amergin Consulting 2013:21) as being *from the Swan River and northern and eastern tributaries inland to beyond Mount Helena; at Kalamunda, Armadale, Victoria Planes, South of Toodyay, and western vicinity of York; at Perth; south along the coast to near Pinjarra.* 

Traditionally, the Noongar observed six seasons (first and second summers, autumn, first and second rains and wildflower season), which dictated subsistence patterns and occupational behaviour (South-West Aboriginal Land and Sea Council (SWALSC) 2017). Hunting and gathering of terrestrial resources was most common, as the south-west Aboriginal peoples were inland people rather than coastal (Yates Heritage Consulting 2014). Diet was diverse, including berries, honey, roots and tubers, goanna, witchetty grubs, kangaroo, emu and birds' eggs, and fishing was commonplace. Around Kalamunda these activities were mostly undertaken in the area's Karri and Jarrah forests. Production of stone tools was an important activity to aid resource procurement and use, with axes, scrapers, hafted blades and spears used for hunting and cutting of meats; and mullers and grindstones commonly used for working seeds and grains.

There was traditionally a strong division of labour for resource acquisition, with men undertaking fishing and hunting, and women usually conducting gathering, but women are also recognised as having specialised skills in hunting turtles and frogs (SWALSC 2017). These terrestrial resources were not only used for subsistence, but for all aspects of life, such as the use of skins for cloaks, sinew for stone tool hafting; and natural resources collected, such as bark, reeds and grasses were also used for making weapons, bags, ceremonial items such as head dresses, and some were used medicinally (SWALSC 2017).

Nature, and all natural features are believed to have been created by ancestral spirit beings, and by conducting ceremony as custodians of the land, Aboriginal people would regenerate and reinvigorate places of spiritual significance and continue generational links to ancestral spirit beings (Berndt 1979 in Human Terrains 2016; Yates Heritage Consulting 2014). The passing down of Dreaming stories and ceremony as part of oral tradition was an essential component of Noongar culture and spirituality.

Noongar spirituality is centred around the *Waugul*, the rainbow serpent and giver of all life. The Darling Ranges represent the body of the *Waugul*, and its movement across the landscape created the courses of the region's watercourses, particularly the Swan and Canning Rivers. The *Waugul* is present in all water sources of the south-west, including wetlands (SWALSC 2017; Human Terrains 2016).

Strang and Langton (2002,2004; 2006 in Amergin Consulting 2012) identify the central importance of water in Aboriginal cosmologies, and a cultural responsibility for Aboriginal people to look after water and associated spiritual beings. Watercourses often served as territorial 'boundaries', and sites of trade and ceremony. Amergin Consulting further cite researchers (2012:19) who note that notions of 'water is life' and 'water is the birth of everything' underpin Noongar beliefs about the natural order of all things. Many water sources, and tracks connecting them, are recognised sites of economic development, places of law, birth, marriage, occupation, camping, and death for Whadjuk people (Human Terrains 2016). The seasonal movement of family groups often followed water courses and associated tracks, believed to have been formed by ancestral spirit beings (Human Terrains 2016).

The arrival of the British and establishment of the Swan River Colony encroached on the traditional lands of the Noongar, resulting in restriction of traditional subsistence practices. Where possible, the Noongar stayed on Country but this often required working for farmers for very little pay, and a gradual dependence on government rations.

## 2.2. 19<sup>TH</sup> CENTURY SETTLEMENT AND DEVELOPMENT

Initial British settlement in the early 19<sup>th</sup> Century was centred on the Swan River Colony, established on the Swan River at present-day Perth, in 1829. Settlement of the Kalamunda region did not occur until the late 1800s, likely on account of the difficult terrain and thickly timbered landscape of the Darling Range (HHS 2015).

In 1864, seeking to exploit the Jarrah timbers, a sawmill was established on the Canning River by Benjamin Mason. The families who came to the region to work at the mill eventually established the foundations of Carmel, Walliston and Pickering Brook (HHS 2015:21), and the Mason & Co tramway was the second railway in the Swan River Colony (Kalamunda and Districts Historical Society 2017).

The first blocks in Gooseberry Hill (Kalamunda) were taken up in the early 1870s, and generally used for sheep grazing. It was commonplace in the early years of settlement to have farming land, yet live in an alternative location; or to lease property to others to clear and establish (HHS 2015:22). William Mead was one of the first settlers to own and occupy his farm, establishing a dwelling in 1873. Small farms and dwellings were gradually established in the wider area, and in 1881, Frederick Stirk established his property, Headingly Hill, with his wife Elizabeth. The establishment of this property would ultimately lay the foundation for the future town site of Kalamunda.



Picture 1 – Stirk family outside the Stirk Cottage, c1898 Source: *Picture Kalamunda Image No 64900* 



Picture 2 – Strawberry garden at Headingly Hill, with Stirk Cottage at rear, c1890s

#### Source: Picture Kalamunda Image No 112800

The original mill established by Mason had ceased operation by the 1890s, but this industry was revived by Edward Keane, who established the settlement of Canning Mills and created a track between there and Gooseberry Hill which ultimately formed the alignment of present-day Canning Road. Keane also established the vital rail link between the area and Midland in 1891.

Two of Perth's wealthier citizens, Hon Septimus Burt KC and Colonel Edward William Haynes established a property near to the future township of Kalamunda, called Woodlupine. This property was leased to Ah Ling, a Chinese gardener who established an orange orchard. Legislation introduced in 1920 restricted the arrival of Chinese workers, but up until then, Chinese market gardens were a dominant feature of the local landscape particularly the flat lands near the Swan River. These market gardens, including orchards, not only supplied the local market but also the growing population of Perth (HHS 2015:23).

Local European settlers also took an interest in agricultural pursuits, many of whom set up their gardens following losses in the goldfields of Kalgoorlie. The success of the agricultural industry led to the formation of the Darling Range Vine and Fruitgrowers Association in 1895, and the following year the Kalamunda Agricultural Hall was established, becoming the site of the annual Gooseberry Hill Show until after WWII (HHS 2015:24). An Honour Roll would later be established at the Hall, commemorating those who served in WWI. It is noted that the original Roll was later replaced (Picture 4), likely in 1927 when the current Roll was dedicated. A second memorial would be established near the Agricultural Hall following WWII, commemorating those who served in the overseas battlefields.





Picture 3 – Kalamunda Agricultural Hall, 1890s Source: All We Need is Right Here (allweneedisrighthere.org)

Picture 4 – Honour Roll at Agricultural Hall Source: *Monument Australia* 



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Picture 5 - Kalamunda WWII Memorial, 1949

Source: State Library of Western Australia, Call No 008070D

### 2.3. EARLY 20TH CENTURY DEVELOPMENT

Arising from the establishment of the Stirk farm, the future town site of Kalamunda was surveyed c1898. In 1901 the town, "Kalamunda", was officially declared and the first land auctions in the township took place that year. Figure 3 shows the eastern boundary of the surveyed town site as Railway Road, adjacent to the Upper Darling Range Railway line. This line was also known as the 'Zig-Zag railway line'. The figure also shows the location of a siding.

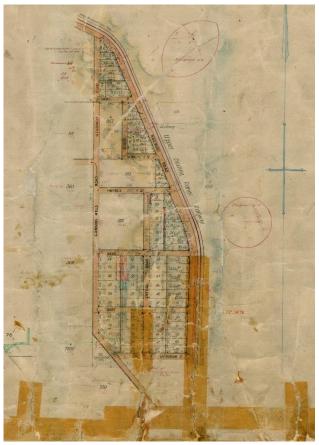


Figure 3 - Kalamunda subdivision 1898. The location shown is encompassed by the Study Area

Source: State Records Office of Western Australia, Series 235, Cons 3868, Item 181

The population of Kalamunda and the local area had been steadily increasing, in a large part on account of the success of the Jarrah mills at Canning. The siding could no longer support the capacity of the rail traffic, and a railway station was established at "Kalamunnda" in the early 1900s. The increased access to the township via rail provided further incentive for settlement, and the early 1900s saw much development in the township. This included a two-story brick hotel, commercial stores, private cottage with post office, and a Methodist Church.

Additionally, the Darling Range Roads Board delivered telephone services, sanitary service and a recreation area near the Agricultural Hall (HHS 2015:26-28). The Roads Board would become the Shire of Kalamunda in 1961 following the passing of the *Local Government Act 1961* (HHS 2015), and City of Kalamunda in 2017 (Picture Kalamunda, Image No 221602).



Picture 6 – Kalamunnda Railway Station, c1900 Source: *Picture Kalamunda, Image No. 19700* 



Picture 7 – First Kalamunda Hotel, c1902 Source: All We Need is Right Here (allweneedisrighthere.org)



Picture 8 – Synott's Shop, corner of Haynes and Railway Street, 1914.

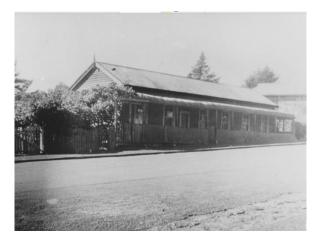


Picture 9 – Railway Street, c1918-1920 Source: *Picture Kalamunda, Image No 20400* 

Source: Picture Kalamunda, Image No 12800

Medical facilities were established in Kalamunda in the 1920s. A residence and surgery was established in Central Road for Dr Yule in the early 1920s, however Picture Kalamunda notes that the rooms and resident of Dr Yule (Dr Smythe-Yule) was located on Railway Road (Image No. 231700). A small hospital was established in the 'Brown House' in Haynes Street and operated by a resident nurse who also provided medical assistance in nearby Lesmurdie. Additional surgical consulting rooms were constructed along Central Road for Dr Barber who occupied that premises for some 20 years.

The 1920s to 1940s saw the establishment of a number of community facilities for the local residents, including facilities for recreation, and facilities to serve community needs. Throughout the 1920s, recreational facilities included Mr Secrett's tennis courts in Haynes Street, and Mr Wallis' swimming pool, tennis courts, cricket pitch and croquet lawn at his property in Lawnbrook Street (HSS 2015:33). Dances and picture shows were held at the Agricultural Hall from 1926, and a variety of fund-raising events were held at the RSL Hall following its construction in c1940.



Picture 10 – The 'Brown House' at 2 Haynes Street, 1925

Source: Picture Kalamunda, Image No 20600



Picture 11 – Hayne's Street, showing Secrett's Tennis Courts

Source: Picture Kalamunda, Image No 29100



Picture 12 – Opening of the RSL building, c1940

Source: Picture Kalamunda, Image No. 91600

Kalamunda first received electricity supply in 1921, and an official Post Office in 1923. The Post Office was located on Railway Road, but it was moved to the Kalamunda Historical Village in 1975. The image at Picture 13 shows the relocation of the building, and also shows that some modification occurred to the building over time, including a projecting gabled extension at the main elevation. A bus service began operating from 1926, and the town received a new railway station building in 1927. The new station building was erected next to the old, and was reported to be the largest and most important station on the Upper Darling Range Railway, and the only one with a raised platform (Picture Kalamunda Image No 193800). The rail and bus services to the area significantly increased tourism. In 1927 a new hotel was constructed on Railway Road, adjoining the original, and several guest houses were established in the area.



Picture 13 – Post and Telegraph Office, 1925 Source: *Picture Kalamunda, Image No. 192400* 



Picture 14 – Relocation of the Post Office, 1974 Source: *Picture Kalamunda, Image No. 46800* 



Picture 15 – Bus on the Kalamunda-Perth Bus Service, 1931 Source: State Library of WA, slaw\_b3894783\_1



Picture 16 – New railway station building, 1949 Source: Picture Kalamunda, Image No. 193800



Picture 17 – Kalamunda Hotels, 1946

Source: Picture Kalamunda, Image No. 72400

A new Roads Board building was constructed in the 1930s, to serve as its administration office. The Board remained there until moving to new premises in Railway Road in 1978 (Picture Kalamunda Image No 221602). A Kalamunda Branch of the Bush Fire Brigade was formed by the Roads board in 1940, to attempt to reduce the almost constant risk of bushfire in the area; however, a fire station would not be established until the 1950s.



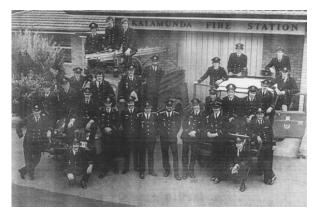


Picture 18 – Darling Range Roads Board, Canning Street

Source: Picture Kalamunda, Image No. 221602

Picture 19 – Kalamunda Registration and Police Office, formerly Roads Board Office

Source: Picture Kalamunda, Image No. 99400



Picture 20 – Kalamunda Fire Brigade 20th birthday, 1979

Source: Picture Kalamunda, Image No. 289600



Picture 21 – Haynes Street Kalamunda Source: State Library of Western Australia call no 008065D

In 1948 the Roads Board purchased the block of land which formed the original land of the Stirk property to create a recreation reserve. Later, in 1959, the reserve known as Stirk Park was drained and landscaped, and the original cottage restored by community volunteers (HHS 2015).

## 2.4. MID 20TH CENTURY TO PRESENT

Widespread road improvements in the 1940s led to increased accessibility to Kalamunda and environs by road. This also facilitated increased traffic of goods via road, and the increased accessibility of the interior by road led to the closure of many of the local guesthouses due to low patronage. These factors contributed to the closure of the railway in 1949.

Significantly, in 1953 a pipeline was laid, supplying reliable water to Kalamunda the following year. A police station was also opened in 1955, and a high school in 1959.

The Kalamunda Shire Council commenced an ambitious programme of residential construction and establishment of more community services from the 1960s (HHS 2015). A large Italian population arrived in the region under various Government schemes, and were instrumental in the establishment of Roman Catholic Churches and schools in the local area. A public library was constructed at the top of Haynes Street in 1963, which was later modified and functioned as the Zig Zag Cultural Centre until opening of a new centre c2011.

By the end of the 1960s, the Shire of Kalamunda was the second fastest growing suburb in Western Australia (HHS 2015:36). The town of Kalamunda rapidly became an urban residential area with a bush character, and its population comprised both permanent residents and commuters. Shopping centres, commercial offices, support services, a new post office and private hospital were constructed throughout the 1960s and 1970s. The Kalamunda History Village was created in 1970, and many of the town's older buildings were relocated to the village including the railway buildings, residences, school house and the post office. The History Village is one of the many pursuits of the Kalamunda and Districts Historical Society. Today, local industry includes orcharding, horticulture, animal agistment, poultry, grazing and some sawmilling (City of Kalamunda 2017).



Picture 22 – Holy Family Catholic Church, 1954 Source: *Picture Kalamunda, Image No. 169400* 



Picture 23 – Public Library, 1969 Source: State Library of Western Australia, Image slwa\_b3430721\_1

## 3. HISTORIC HERITAGE

This section provides an assessment of the known historic heritage values within the study.

## 3.1. LEGISLATIVE CONTEXT

#### 3.1.1. State Legislation

The identification, conservation and protection of places and areas of State cultural heritage significance are provided for in the *Heritage of Western Australia Act 1990* (the Heritage Act). The Heritage Act identifies 'cultural heritage significance' as *in relation to a place, the relative value which that place has in terms of its aesthetic, historic, scientific, or social significance, for the present community and future generations*. Part 2, section 5 establishes the Heritage Council of Western Australia, and section 46 of provides for the Register of Heritage Places. Section 48 furthers this, affording the designation of Historic Precincts, which includes a group of places that together form a precinct which is of cultural significance, whether or not each individual place has heritage value in its own right.

Under the State Planning Policy 3.5 (Historic Heritage Conservation; prepared under Part 3 of the *Planning and Development Act 2005*) any development, including changes, works or demolition, to a state-registered place requires approval from the responsible planning authority – usually the Western Australian Planning Commission, or a local government, with advice provided by the Heritage Council. Any proposed development of heritage places requires assessment of whether the proposed act will adversely affect the significance of the heritage place, including effects from location, bulk, form or appearance of proposed development.

The State Planning Policy 3.5 provides relevant considerations for development assessment, and development control principles that cover alterations, extensions, chance of use or demolition affecting a heritage place; and development within heritage areas.

#### 3.1.2. Local Legislation

Section 45 (1) of the Heritage Act requires local governments to compile and maintain an inventory of buildings within its district which in its opinion are, or may become, of cultural heritage significance. These local government inventories are widely known as 'municipal inventories'.

The conservation and protection of places and areas of local significance is provided for in the *Planning and Development Act 2005*, which enables local governments to protect heritage places and objects in local planning schemes. Local town planning schemes also enable to designation of Heritage Areas. Heritage places in Kalamunda are protected under the Part 7 of the Shire of Kalamunda Local Planning Scheme No. 3 (26/09/2017).

Building work on places entered in the Register of Heritage Places under the Heritage Act, requires approval of the relevant level of government, depending on the level of heritage listing of the place. This includes proposed demolition of a heritage place, and building work on the interior of a heritage building even if its exterior appearance will not be materially affected. A Heritage Impact Assessment is the most likely form of assessment required prior to granting any approvals to work on heritage places, including heritage areas.

### 3.2. INHERIT DATABASE

Searches of the Western Australia 'inHerit' database was undertaken in December 2017. This register provides a comprehensive database of heritage places and listing in the State, including the State Register, local government inventories, and other non-government lists.

The Municipal Heritage Inventory for the Shire of Kalamunda was also cross-referenced with the results of the inherit search.

### 3.3. SEARCH RESULTS

The database yielded 42 results for listed places within the Study Area. However, cross-referencing with the Municipal Inventory demonstrated that several entries were 'not recommended for inclusion', and there were some double-ups of numbering on account of multiple names/former names for places. Additionally, the History Village Precinct is entered as a Precinct, with its 11 individual places also entered.

Two places within the Study Area are entered on the State Register. The results are shown below, and mapped at Figure 4.

Table 1: Historic Heritage Entries

inHerit Database Number	Name	Location	Listing	Other Information/ Non-Statutory Listings
1251	Kalamunda Hotel and Original Kalamunda Hotel (24787)	43-45 Railway Road	State Register	Also classified by the National Trust Listed on the Fire & Rescue Service
1253	Stirk Cottage	18 Kalamunda Road	State Register Municipal Inventory	Heritage Inventory Register of the National Estate Classified by National Trust
1250	Road Board Office (fmr)	31 Canning Street	Municipal Inventory	Also known as Police Station/RTA Office
1254	Kalamunda Agricultural Hall	48 Canning Road	Municipal Inventory	Register of the National Estate
1257	St Barnabas Anglican Church	40 Railway Road	Municipal Inventory	Anglican Church Inventory
10359	Holy Family Church	23 Railway Road	Municipal Inventory	Catholic Church Inventory
10362	Turner Residence (fmr)	33 Canning Road	Municipal Inventory	Other Name: Kalamunda Toy Library
10364	RSL Hall	35 Canning Road	Municipal Inventory	
10365	Kalamunda War Memorial	Kosta Oval, Canning Road	Municipal Inventory	
10385	St Barnabas Church	6 Central Road	Municipal Inventory	Other Names: Ambulance Hall/ KADS Hall/Town Square Theatre
10386	Dr's Residence (fmr)	26 Central Road	Municipal Inventory	
10436	Driscoll's Pharmacy	14 Haynes Street	Municipal Inventory	
10452	Stirk Park (including Memorial Trees,	Stirk Park, Kalamunda Road	Municipal Inventory	Other Names: The Dairy Block,

inHerit Database Number	Name	Location	Listing	Other Information/ Non-Statutory Listings
	Connie Anderson Memorial Seat)			Kalamunda Honour Avenue
10512	Burkhardt Seat and Pine Trees	44 Railway Road	Municipal Inventory	
10515	The Hills Gallery	55 Railway Road	Municipal Inventory	Other Names: Cefn, Kalamunda House, Mrs Heath's Boarding House
10517	History Village Precinct		Municipal Inventory	Incorporates: Chambers House (24796) Post Office (24852) Small Post Office (24781) Small Station Building (25340) Big Station Building (24784) Ellis' Cottage (24795) Kalamunda Public Library (24642) Kalamunda State School Building (24800) Kalamunda Railway Station (17584) Herb Circle (17583) McCullagh Cottage (24778)
10536	Secrett's House (fmr)	4 School Street	Municipal Inventory	
13123	Methodist Church (fmr)	7 Mead Street	Municipal Inventory	Other Name: Mundukal Kalamunda Uniting Church (1256) Register of the National Estate

inHerit Database Number	Name	Location	Listing	Other Information/ Non-Statutory Listings
				Classified by National Trust
24787	Old Kalamunda Hotel	43 Railway Road	Municipal Inventory	
24797	Kalamunda Hotel	43 Railway Road	Municipal Inventory	
10434	Thai on the Hill Restaurant	2 Haynes Street	Municipal Inventory	Other Name: Williners Restaurant (fmr)
10513 10514	Kalambra Open Air Picture Gardens (fmr) – site of	47 Railway Road	Merryweather Oud Real Estate	Two separate entries on inHerit. Municipal Inventory identifies as the same site with alternative name.
14520	Kalamunda Fire Station	38 Central Road		Fire & Rescue Service Heritage Inventory
17448	Kalamunda Traffic Office	Cnr Mead Street & Central Road		No information regarding listing is recorded

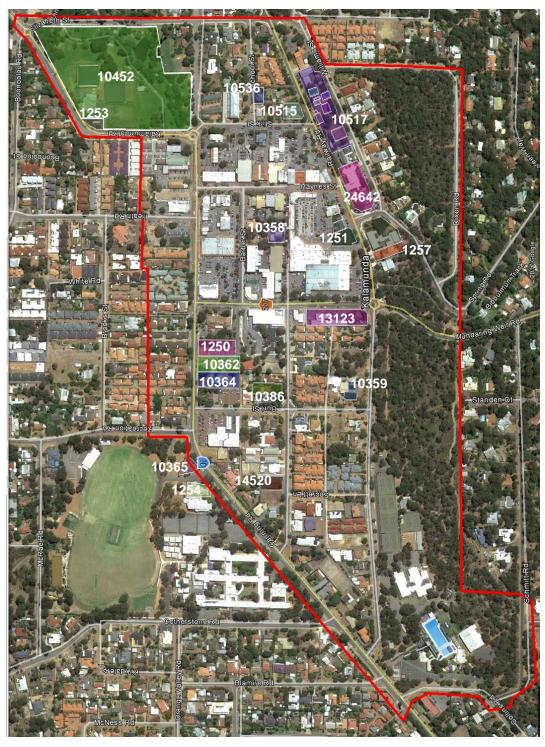


Figure 4 – Heritage Places Source: Urbis 2017

## 4. ABORIGINAL HERITAGE

## 4.1. LEGISLATIVE CONTEXT

Aboriginal heritage in Western Australia is protected by the *Aboriginal Heritage Act 1972* (AHA). It is important to note that all Aboriginal sites that meet the definitions presented below are protected, regardless of whether or not they are officially registered sites.

Section 5 of the AHA defines an Aboriginal site as:

- a) any place of importance and significance where persons of Aboriginal descent have, or appear to have, left any object, natural or artificial, used for, or made or adapted for use for, any purpose connected with the traditional cultural life of the Aboriginal people, past or present;
- b) any sacred, ritual or ceremonial site, which is of importance and special significance to persons of Aboriginal descent;
- c) any place which, in the opinion of the Committee, is or was associated with the Aboriginal people and which is of historical, anthropological, archaeological or ethnographical interest and should be preserved because of its importance and significance to the cultural heritage of the State; and
- d) any place where objects to which this Act applies are traditionally stored, or to which, under the provisions of this Act, such objects have been taken or removed.

Aboriginal site types are diverse and can be in the form of artefacts, mythical sites, repositories, ceremonial sites, grinding grooves, burials, engravings, middens, paintings, or scarred trees (not an exhaustive list). The Aboriginal Heritage Due Diligence Guidelines (Department of Aboriginal Affairs 2013) notes that the views of Aboriginal people are a key factor in assessing and identifying sites. Appropriately qualified anthropologists, archaeologists and historians can also provide valuable assistance.

The Register of Aboriginal sites is established under section 38 of the AHA. All land users are obliged to comply with the provisions of the AHA. Under section 17 of the AHA, a person who excavates, destroys, damages, conceals or in any way alters any Aboriginal site commits an offence, unless he or she acts with the authorisation of the Registrar of Aboriginal Sites (Registrar) under section 16 or the consent of the Minister of Aboriginal Affairs (Minister) under section 18.

### 4.2. **REGISTERED SITES**

A search of the Aboriginal Heritage Information System (AHIS) was undertaken in December 2017, using a custom search area centred on the Study Area.

Two Registered sites were identified as potentially having curtilages which extend into the Study Area. These sites types include:

- Mythological site: a place that is connected to the great spirit ancestors, in their various manifestations, of the 'Dreamtime' which continues to the important and of special significance to persons of Aboriginal descent;
- Ceremonial site: a place used for a formal act or series of acts prescribed by ritual, belief in a
  mythological manifestation, religious belief or observance, protocol or convention that is connected with
  the traditional cultural life of Aboriginal people past or present;
- Repository/Cache: a place where cultural or utilitarian objects are/were taken, or stored, by Aboriginal people, either past or present.

One Other Heritage Place was also identified within the Study Area, a scarred tree, defined as a place with one or more tree(s), living or dead, that has been modified by Aboriginal people by removing the bark or wood resulting in the formation of a scar. This sort of modification was and is frequently done for the making of implements, tools, or other materials that were used in traditional cultural practices.

More detailed information on these sites is provided below.

#### 4.2.1. Site 3758: Helena River

This site is a mythical site, identified as a ceremonial, mythical, repository/cache. Information about this site, including access to site file is restricted, with female access only. For the purposes of this assessment, the

site has been identified through the public search tool (online AHIS) only. On account of the restricted nature of the site details, the exact site location and/or curtilage is not presented. The blue polygon shown in Figures 5 and 6 indicates the general location of the site. Figure 6 demonstrates the breadth of this site.



Figure 5 – Searched Area and site 3758. Site indicated by blue polygon, Study Area indicated by white rectangle

Source: AHIS

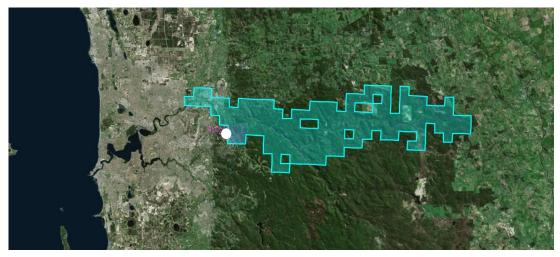


Figure 6 – Searched Area and site 25023. Site indicated by blue polygon, Study Area indicated by white circle

#### Source: AHIS

Although file access is restricted, several other Aboriginal heritage desktop reports and field assessments have been undertaken in the Kalamunda region, and information about this site has been ascertained from these sources.

Helena River site is a listed mythological site, understood to be based on the *Waugul*, and first identified in 1985 (Amergin 2013). The polygon designating the boundary of the site is broad, and presented as such in the public database on account of the restricted access to knowledge. Ethnosciences (2011) note that the boundary actually follows the contours of the Helena River, and Amergin (2013) note that in the South Guildford area the boundary corresponds with a drainage feature associated with the river system, and the

boundary extends 30m either side of the centre line of the drain. It is further noted that specific areas along the river are identified as areas of significance.

#### 4.2.2. Registered Site 25023: Poison Gully Creek

This site is a mythical site, identified as a birth place and water source. Information about this site, including access to site file is restricted, with female access only. For the purposes of this assessment, the site has been identified through the public search tool (online AHIS) only. On account of the restricted nature of the site details, the exact site location and/or curtilage is not presented. The blue polygon shown in Figures 7 and 8 indicates the general location of the site.



Figure 7 – Searched Area and site 25023. Site indicated by blue polygon, Study Area indicated by white rectangle



Figure 8 – Searched Area and site 25023. Site indicated by blue polygon, Study Area indicated by white rectangle

Source: AHIS

As with site 3758 above, access to the knowledge about this site is restricted; however it has been discussed in other desktop assessments and field surveys. Information about the site is presented below and adapted from Amergin Consulting (2013).

Source: AHIS

Poison Gully Creek is a Registered mythological/ceremonial site. It is associated with a minor waterway which runs from the hills around Guildford to the east through Forrestfield. The aboriginal informants consulted with during the preparation of the Amergin report, stated in 2008 that the boundary for this site extends for 30m-50m on either side of the creek's back. The original path of the watercourse is heavily disrupted in places.

This site is understood to have been identified by an anthropologist during survey in 1995, but not registered until 2008 following consultation with senior Aboriginal women. According to the associated report, one group of Aboriginal informants from the Nyungar Circle of Elders identified the whole length of Poison Gully Creek as a site relating to 'women's business'. The informants reported the creek to be a significant site, with both mythological and historical significance. The Aboriginal women interviewed in 2008 stated the entire length of Poison Gully Creek from Kalamunda to Munday Swamp had been a popular place to camp with plentiful supplies of good fresh water, jilgies and turtles.

The informants believed Poison Gully Creek had a significance for Aboriginal women as an area related to 'birthing'. The area was a good place for 'birthing' with access to water, food and red gum medicine. Traditional use of red gum medicine mixed with water was discussed, as was the use of ash and goanna oil on babies. The Aboriginal women were concerned about the environmental impact on Munday Swamp due to the lack of flow into that wetland.

#### 4.2.3. Other Heritage Place 17064: Lot 608 Dixon Road Kalamunda

This site lies within the Study Area. It is identified as a modified tree. Its status is an "Other Heritage Place" – Stored Data/ Not a Site. This shows that place 17064 does not meet the assessment under Section 5 of the AHA. The site location is shown in Figure 9 below.



Figure 9 – Searched Area and site 17064

Source: AHIS

### 4.3. NATIVE TITLE

The *Native Title Act 1993* (Cwlth) (NTA) provides for the recognition and protection of native title rights and interests by which people have maintained a traditional connection to their land and waters since sovereignty. The NTA further provides that native title rights have been extinguished over land that has been subject to particular grants of land tenure (e.g. freehold and leasehold). By contrast, regardless of the underlying land tenure, the AHA applies to all land in Western Australia.

For the purposes of assessment of Aboriginal heritage places, it is important to note that Native Title applies to land tenure and land rights, whilst the AHA affords protection for tangible or intangible Aboriginal heritage sites.

The south-western area has a complex arrangement of Native Title and Indigenous Land Use Agreements (ILUAs). This will be summarised below.

#### 4.3.1. Future Acts

A future act is a proposal to deal with land in a way that affects native title rights and interests. Under the NTA and future acts provisions, native title claim groups have the right to be consulted with, comment on, object and/or negotiate future acts. A future act will be invalid to the extent it affects native title unless it complies with the procedures set out in the NTA. These procedures vary depending on the nature of the future act. Future Acts can include:

- Exploration;
- Mining;
- Prospecting;
- Building public infrastructure;
- Tourist resorts;

- Water licenses;
- Some legislative changes; and
- Some lease renewals.

#### 4.3.2. Indigenous Land Use Agreements

An Indigenous Land Use Agreement (ILUA) is a voluntary agreement between a native title group and others about the use of land and waters. These agreements allow people to negotiate flexible, pragmatic agreements to suit their particular circumstances. ILUAs can cover topics such as:

- native title holders agreeing to a future development;
- how native title rights coexist with the rights of other people;
- access to an area;
- extinguishment of native title;
- compensation;
- employment and economic opportunities for native title groups;
- cultural heritage; and/or
- mining.

## 4.4. NATIVE TITLE: SEARCH RESULTS

A search of the National Native Title Tribunal (NNTT) 'Native Title Vision' (NTV) was undertaken in December 2017. An active native title claim, the Whadjuk People (WC2011/2009) exists over a broad area around Perth, including the Study Area. This area is shown in Figure 10 below.

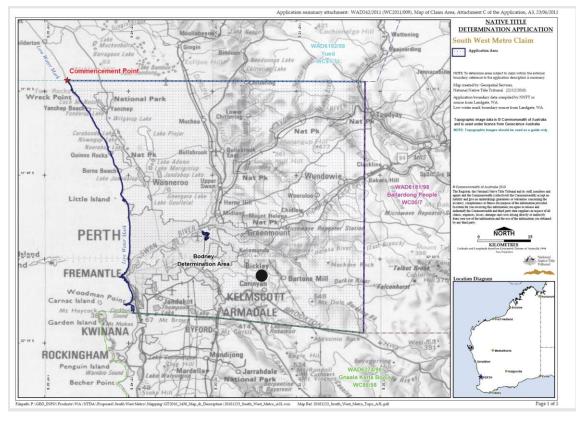


Figure 10 – Boundary of Native Title area WC2011/009, with approximate location of Study Area indicated by black circle *Source: NNTT* 

#### 4.4.1. South West Native Title Settlement

The South West Native Title Settlement (the Settlement) is the largest native title settlement in Australian history, and will encompass approximately 200,000 km2 of land in the south west of Western Australia. The Settlement will surrender Native Title over the determined area, in exchange for a multi-faceted package of benefits for the claimants. The Whadjuk People are one of six Noongar groups that are establishing ILUAs under the Settlement, and are represented by the South West Aboriginal Land and Sea Council. Application for registration of the Whadjuk ILUA was submitted in August 2017 and registration decision is pending.

Once the ILUA is in place, Native Title rights, as defined under the NTA will be annulled. However, the ILUA is presently unregistered, therefore Native Title is still presumed to exist over the Crown Lands subject to the native title claim presented in Section 4.4 of this report.

If the Settlement is overturned, Native Title may still be found to exist over the native title registration area. If this is the case, future development within this area may constitute a Future Act under s39 of the NTA.

#### 4.4.1.1. Noongar Standard Heritage Agreement

The provisions of the Noongar Standard Heritage Agreement (NSHA) apply when proposing an Aboriginal heritage survey on Noongar land to assess potential impacts of a proposed action on Aboriginal heritage.

The NSHA is a new agreement for the south west that will provide a uniform and efficient approach to heritage surveys and land approvals under the AHA. The NSHA came into effect in 2015 and requires government departments, agencies and instrumentalities to enter into a NSHA with the relevant ILUA group when conducting Aboriginal heritage surveys in an ILUA area, unless they have an existing heritage agreement.

## 5. SUMMARY AND RECOMMENDATIONS

The following section provides a summary of the potential historic heritage and Aboriginal heritage issues that may impact on the formation of the KACP, and future activities associated with its implementation.

## 5.1. HISTORIC HERITAGE

There are a number of known historic heritage places within the Study Area that are included on the WA State Register, and the Kalamunda Municipal Inventory. These places should be identified in the KACP, to ensure they are considered in any future development of the activity centre. Where future development is proposed, including new development adjacent to heritage places, internal refurbishment of heritage places, or proposed demolition of heritage places, impact assessments will be required to be prepared and approved by the relevant level of government prior to any works taking place.

The Kalamunda and District Historical Society manages a heritage trail in the town. Consideration could be given to consultation with the Society to investigate further interpretive opportunities in future.

## 5.2. ABORIGINAL HERITAGE

The Study Area is generally developed, and as such future works within these developed areas is unlikely to impact on any unknown Aboriginal sites.

However there are undeveloped areas within the Study Area where potential for Aboriginal cultural heritage significance to remain. Therefore, it is recommended that a full Due Diligence Assessment be prepared in accordance with the Due Diligence Guidelines to provide a more comprehensive understanding of the boundaries and significant aspects of the Registered sites 25023 and 3758 and whether any future works or development of the activity centre may impact on cultural values.

A scarred tree has been identified in the undeveloped land in the north-east of the Study Area. Its current condition is unknown. The eastern boundary of the Study Area includes two sections of relatively undeveloped land, which is mapped as native vegetation. There is potential for previously unknown tangible Aboriginal heritage sites, such as artefact scatters, to be present in these areas.

Where future works to those undeveloped areas is proposed, an Aboriginal heritage survey should be undertaken to assess its potential for Aboriginal heritage sites. The provisions of the NSHA are understood to apply if survey is proposed. Where works are proposed in the north-eastern undeveloped land, the scarred tree should be located and recorded if impacts to it are proposed.

Consideration should also be given to consultation with representatives of the Whadjuk People, to explore any opportunities for interpretation of the Aboriginal heritage values of the area in the future activity centre.

There are complex issues in the south west regarding native title, ILUAs and the Settlement. The application by the Whadjuk for registration of their ILUA is pending. It is recommended that consultation occur with the Land, Approvals and Native Title Unit of the Government of Western Australia, to understand and keep up to date with the progress of the ILUA, and associated future implications. Advice may also be sought from a qualified Native Title lawyer.

# DISCLAIMER

This report is dated 15 December 2017 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Kalamunda City Council (**Instructing Party**) for the purpose of Heritage Assessment (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.



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# APPENDIX F TRANSPORT ASSESSMENT

# **KALAMUNDA ACTIVITY CENTRE PLAN**

**Transport Assessment** 

**Prepared for:** City of Kalamunda

SLR Ref: 620.12121.00000-R01 Version No: v1.1 March 2019



# EXECUTIVE SUMMARY

# PREPARED BY

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# **BASIS OF REPORT**

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with City of Kalamunda (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

# DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
620.12121.00000-R01-v1.0	13 September 2018	Benjamin Park	Kris Stone	Kris Stone
620.12121.00000-R01-v1.1	6 March 2019	Benjamin Park	Kris Stone	Kris Stone

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#### APPENDICES

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- Appendix B Road Cross-Section Plans
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# **1** Introduction

The Kalamunda Activity Centre Plan will facilitate the ongoing development of the Kalamunda town centre, shaping its future positioning as a contemporary, attractive and functional centre for residents and visitors. The town centre is at a crossroad, whereby its future and function need an effective combination of vision and practical implementation to enable its ongoing relevance and commerciality whilst retaining key of its character and identity.

This Transport Assessment has been prepared in relation to the Kalamunda Activity Centre Plan which has been prepared in collaboration with a multi-disciplinary project team. The Activity Centre Plans include comprehensive:

- Design guidelines for private and public realms
- Economic and retail analysis
- Transport and parking analysis
- Infrastructure and servicing analysis
- Bushfire management plans; and
- Community and stakeholder engagement.

#### 1.1 Purpose

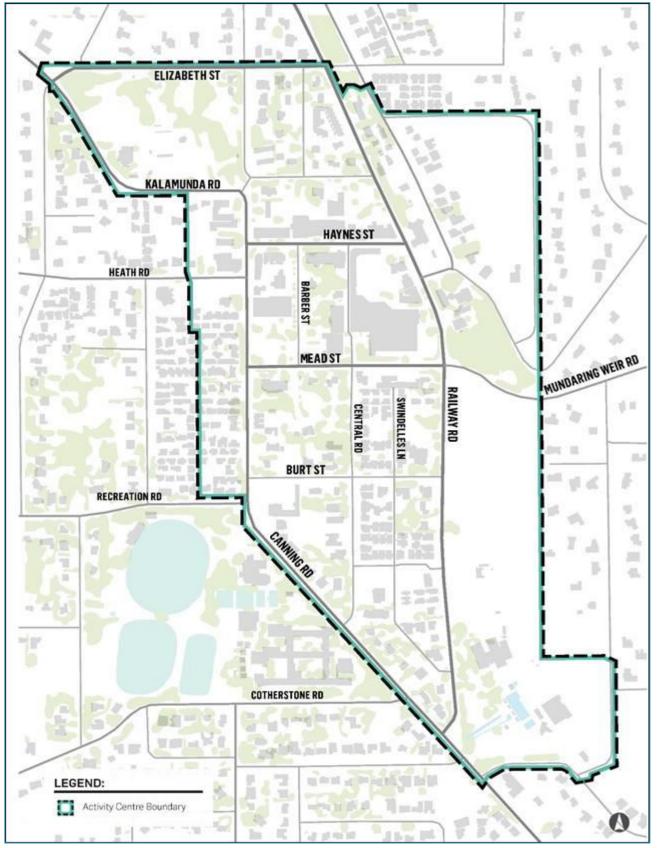
The purpose of the Kalamunda Activity Centre Plan is to facilitate the development of a district activity centre in Kalamunda, Western Australia, as contemplated and planned for in a variety of state and local planning documents.

This Transport Assessment accompanies the Kalamunda Activity Centre Plan.

# 1.2 Study Area

The Kalamunda Activity Centre Plan study area is illustrated on Figure 1 overleaf.





# **1.3** Transport Assessment Scope

This Transport Assessment outlines the key considerations and findings of the traffic and car parking analysis which has informed the activity centre planning. The key objectives of the assessment are to:

- Evaluate the proposed internal transport networks with respect to:
  - accessibility
  - safety
  - car parking
- Evaluate the level of non-vehicle integration (public and active transport)
- Determine the impacts of the traffic generated by the activity centre plan area on the surrounding land uses; and
- Determine the impacts of the traffic generated by the activity centre plan area on the surrounding transport networks.

### **1.4 Transport Assessment Structure**

The Transport Assessment has been documented in the following structure:

- 1. Introductionss
- 2. Background
- 3. Existing situation
- 4. Road network
- 5. Public transport
- 6. Active transport
- 7. Traffic capacity
- 8. Car parking
- 9. Conclusions.

# 2 Background

Several key traffic engineering studies have been prepared on behalf of the City for the Kalamunda in the period 2011-present. SLR Consulting has reviewed, adopted, and expanded upon the findings of these studies in the process of developing and informing the activity centre planning.

- Parking Study, Kalamunda Town Centre (Shawmac, August 2011)
- Intersection Layout and Level of Service Study (Opus, May 2016)
- *Kalamunda Bicycle Plan* (Cardno and City of Kalamunda, November 2017)
- Local Area Traffic Management Study Canning Road and Mead Street (Cardno, July 2018)
- Kalamunda Town Centre Pedestrian Crossing Assessment (GHD, July 2018).

# 2.1 Parking Study, Kalamunda Town Centre - Shawmac – 2011

Shawmac undertook a comprehensive parking study in 2011 with the purpose of developing a strategy for the management of parking supply within the Kalamunda town centre.

The study comprised physical surveys of parking supply and demand including the quantification of on/offstreet parking utilisation. The assessment also involved a desktop analysis of the car parking requirement for the then current situation and a presumed redevelopment scenario. Comparisons were made between the observed parking demand and that required in accordance with the Local Planning Scheme (LSP 3).

The study also assessed the traffic generation and impact on the local road network in association with a presumed future development scenario. The key findings of the 2011 Shawmac study were:

- Surveyed parking demands are low in comparison to the available supply, generally
- On-street parking had a higher utilisation compared to off-street parking. Haynes Street was observed as having a peak utilisation of 98% on the surveyed weekday and weekend days
- Surveyed parking demands are low in comparison to the Planning Scheme requirement indicating that the rate specified in planning documents was too high
- A significant parking shortfall approximating 1,400 spaces was projected in association with the presumed future land use scenario
- The then current road network was determined as sufficient in catering for projected future traffic demands, albeit the Canning Road / Mead Street intersection would require upgrading.

# 2.2 Intersection Layout and Level of Service Study – Opus – 2016

Opus assessed the 2015 and 2031 road network operations with the aim of identifying intersection capacity improvements. The study comprised physical surveys of traffic demands and a desktop analysis of intersection performance utilising SIDRA. The study assumed a background demand growth rate of 1.5% per annum.

The key findings of the 2016 Opus study were:

• Traffic demands were established to be growing at approximately 1-3% per annum

- The road network was determined as having sufficient capacity to cater for the surveyed 2015 traffic demands, albeit the right turn movements from Mead Street and Heath Road to Canning Road were assessed as having higher delays (26-37 seconds)
- The future road network was determined as generally operating within capacity thresholds, except at the intersections of Canning Road/Mead Street and Canning Road/Heath Road where Degrees of Saturation (DOS) and delays exceeded acceptable limits
- Capacity improvements were recommended at Canning Road/Mead Street and Canning Road/Heath Road.

# 2.3 Kalamunda Bicycle Plan – Cardno and City of Kalamunda – 2017

Cardno undertook the technical assessment which informed the City of Kalamunda's Bicycle Plan which, at the time of writing this report, has been finalised and available for review.

The study reviewed previous planning, key origins and destinations, bicycle demand and travelled route surveys and crashes involving bicycles to determine a recommended bicycle facility hierarchy which was then resolved into an infrastructure implementation schedule.

# 2.4 Local Area Traffic Management Study – Canning Road and Mead Street – Cardno – 2018

Cardno undertook an assessment of possible Local Area Traffic Management (LATM) solutions that would address stated resident concerns relating to the right turn from Mead Street into Canning Road, which as per the LOS Study completed by Opus, would ultimately exceed DOS thresholds in the future if its existing intersection configuration were to be retained.

The assessment recommended a capacity upgrade that would deliver an additional intersection approach lane on the Mead Street approach to Canning Road such that there are separate left and right turn lanes. Whilst there was no analysis of the upgrade benefit, the new lane would improve performance.

SLR understands that the City of Kalamunda is progressing with the installation of the Cardno recommended upgrade.

# 2.5 Kalamunda Town Centre Pedestrian Crossing Assessment – GHD – 2018

GHD was engaged to assess pedestrian crossings within the Kalamunda town centre, specifically located on, and in close proximity to Haynes Street. The study concluded that none of the eight subject locations met or exceeded the Main Roads Western Australia (MRWA) warrants for the installation of zebra crossing, principally because of a lack of combined traffic and pedestrian demands. Additional safety upgrades or optimisations were recommended based on the result of on-site inspections.

# **3** Existing Situation

## 3.1 Road Network Infrastructure

The existing road network encapsulating the Kalamunda Activity Centre consists of a range of different road classifications, as defined by the Main Roads Western Australia (MRWA) *Road Information Mapping System*.

The functional hierarchy of the higher order routes including Canning Road, Mandaring Weir Road, Haynes Street and Mead Street is likely to remain consistent given their connectivity and role in the broader network. Whilst the form of the road connections may be altered as part of the activity centre plan, the hierarchical function of these connections is generally maintained, unless future road function is significantly altered.

The hierarchy of the key roads within the Kalamunda Activity Centre is illustrated overleaf on Figure 2.

It is anticipated that based on the form and function of the existing connections, the daily traffic demands utilising each road type can be classified as per this hierarchy. The daily traffic demands summarised in Table 1 should be considered for each road hierarchy designation.

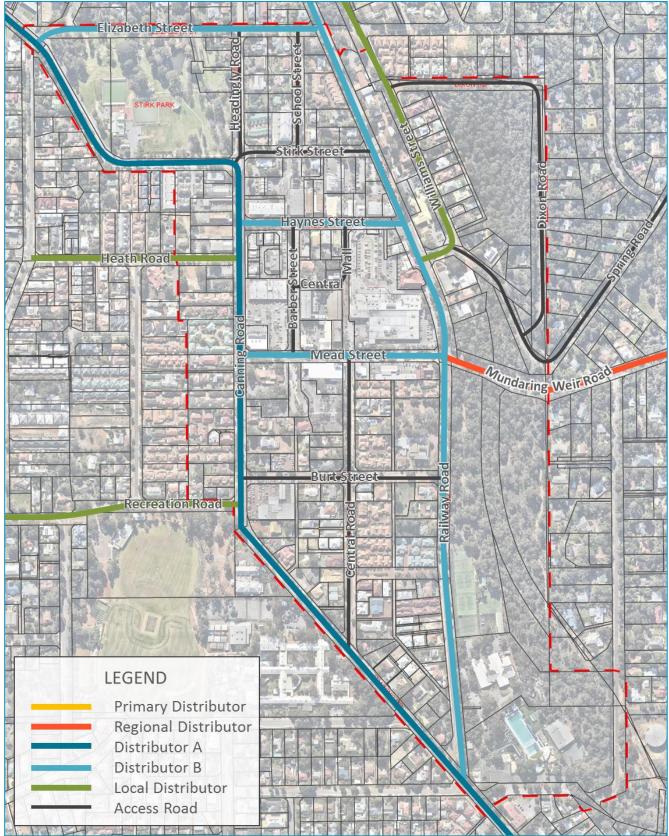
Road Classification	Number of Lanes	Typical Speed Limits	Typical Volumes (vpd)	
Regional Distributor	2-4	60km/hr- 80km/hr	>15,000	
Distributor A	2	60km/hr-70km/hr	10,000 - 15,000	
Distributor B	2	50km/hr	5,000 - 10,000	
Local Distributor	2	50km/hr	3,000 – 5,000	
Access Road	2	40km/hr-50km/hr	<3,000	

#### Table 1 Road Hierarchy Characteristics

Recent traffic demand data was sourced from the City of Kalamunda by way of consultant investigations conducted on behalf of the City. The most pertinent demand data is summarised in Table 2.

Road	Count Location	Year of Data	Average Weekday Demand (vpd)	85 <sup>th</sup> Percentile Speed (km/h)
	North of Burt Street	2011	4,863	60.5
Railway Road	North of Burt Street	2013	5,384	56
	South of Burt Street	2015	5,038	61
Coursing Dood	North of Burt Street	2012	11,255	57
Canning Road	North of Burt Street	2015	7,857	57
Haynes Street	West of Barber Street	2015	3,726	30
	West of Railway Road	2015	3,081	31
	West of Railway Road	2011	4,091	42.1
Maad Chuash	West of Railway Road	2015	4,521	35
Mead Street	West of Central Road	2015	4,543	45
	West of Barber Street	2015	4,209	41
Daybay Ctraat	South of Nestobrae Lane	2015	1,638	37
Barber Street	South of Haynes Street	2015	1,789	28

#### Table 2Recent Surveyed Traffic Demands



#### Figure 2 Kalamunda Activity Centre Road Hierarchy

# **3.2** Traffic Operations

Based on turning movement surveys and analysis undertaken by Opus in 2016, the existing road network can be assessed as operating well within typically accepted performance thresholds during the peak hour periods. Table 3 reproduces the key performance metrics reporting by Opus for the study intersections situated within the study area.

Intersection	Critical Intersection Approach Level of Service	Intersection Degree of Saturation	95 <sup>th</sup> Percentile Vehicle Queue (veh)
Haynes St / Barber St	А	0.12	0.4
Haynes St / Canning Rd	В	0.33	1.1
Haynes St / Railway Rd	А	0.24	0.6
Canning Rd / Heath Rd	С	0.35	1.6
Mead St / Barber St	А	0.13	0.5
Canning Rd / Mead St	С	0.40	2.2
Mead St / Railway Rd	А	0.37	2.3
Canning Rd / Stirk Rd	А	0.49	3.6

Table 3	2015 Road	Network	Intersection	Performance
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The Table 3 results clearly indicate that recent traffic demands can be accommodated by the current road network with Degree of Saturation (DOS), Level of Service (Los) and queues all being within reasonable performance thresholds.

The 2015 Opus findings are still considered applicable to the current situation given recent traffic growth has been limited and there have been no significant local redevelopments or road network changes.

# 3.3 Safety (Crash History)

Crash data has been sourced from MRWA for the Kalamunda Activity Centre study extents for the periods between 1 January 2013 and 31 December 2017. Table 4 summarises all crashes within the extents based on severity and unit type (i.e. car, bicycle, pedestrian, etc).

that Tone book and			Cras	h Severity		
Unit Type Involved	Fatal	Hospital	Medical	PDO Major	PDO Minor	Total
Bicycle			1		1	2
Bus				2	4	6
Car	1	3	19	61	50	134
Four Wheel Drive (Not Car Design)			2	4	5	11
Motor Cycle		3	1	4	2	10
Multi - Seated Van				1		1
Panel Van				4	3	7
Pedestrian	2	2				4
Station Wagon	1	1	3	15	18	38
Truck				3	3	6
Utility			2	24	10	36
Not Identified		1	3	19	9	32
Total	4	10	31	137	105	287

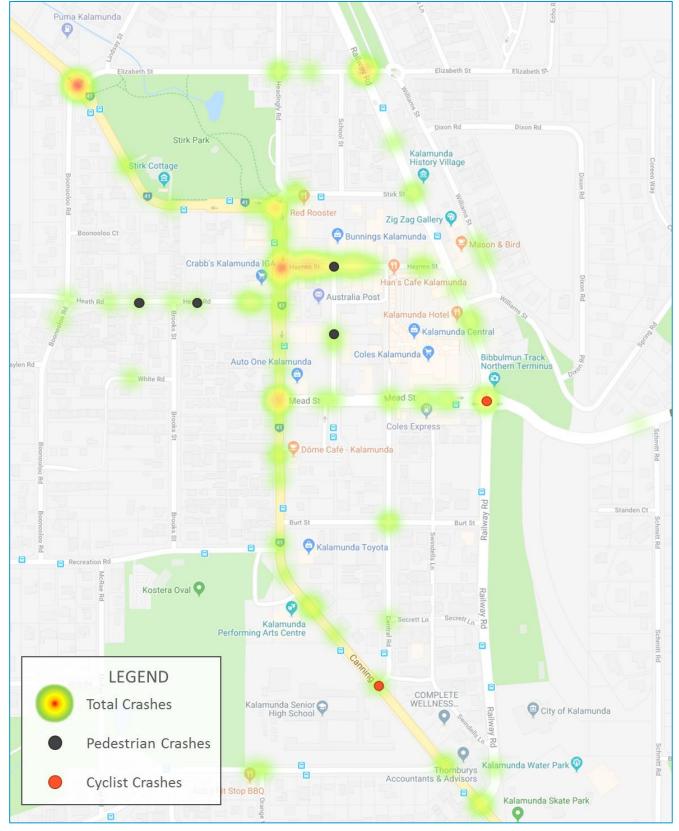
#### Table 4 Crash History Matrix (2013-2017)

The data summarised in Table 4 indicates that the majority of crashes within the Kalamunda study extents involved multiple vehicle conflicts, and typically resulted in property damage only (PDO).

Of the four crashes resulting in a fatality (and of four total crashes involving pedestrians), it is understood that two of these occurred recently in December 2017, and involved elderly members of the community, aged between 86 and 93 (both drivers and pedestrians involved). Whilst this sudden spike in fatal pedestrian crashes is a substantial outlier from the remaining data-set, it is considered that the extreme ages of the road users involved have a significant role in the crash occurrence, potentially causing slower reaction times or lack of general road awareness. Nevertheless, these crashes have been considered in the overall road enhancement strategy, particularly in areas of high pedestrian traffic.

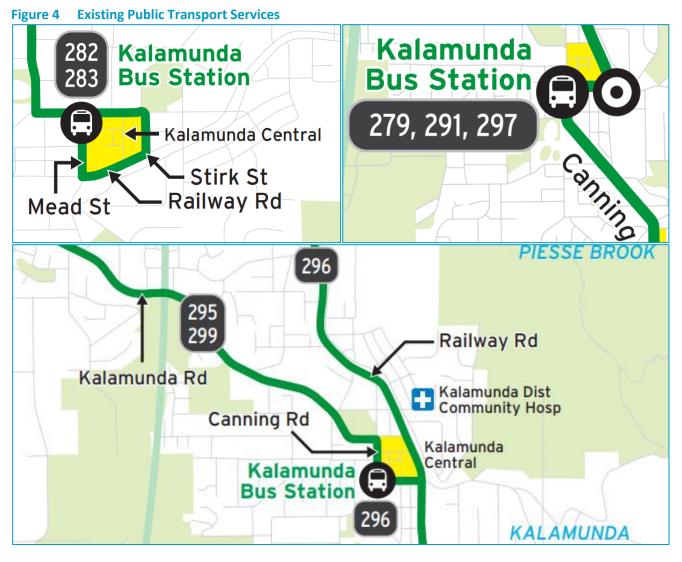
For ease of reference, the location of all crashes has been illustrated on Figure 3 overleaf, which includes heat mapping that represents clusters of crashes. In addition to these crash clusters, SLR has superimposed the crashes associated with pedestrians and cyclists to determine if there are any crash clusters for active transit users. It does not appear that there are any trends with regards to pedestrian or cyclist crashes that would be a result of existing design deficiencies.





# 3.4 Public Transport

The Kalamunda Bus Station is located on the southern leg of the Mead Street/Barber Street intersection. Eight bus services utilise the station with approach/departure routes travelling along Railway Parade and Canning Road. Bus routes that service the station include 279, 282, 283, 291, 295, 296, 297, and 299.



Other bus stops are also located on Canning Road (north/south bound), Mead Street (east/west bound), and Railway Road. There are no other public transport services within the study area. Service frequencies vary by time-of-day and by service but can approach <15 minutes in peak hour periods.

# 3.5 Active Travel

AS reported in Section 3.3, there have been several traffic crashes that have resulted in pedestrian fatalities, two of which occurred within the most recent 9-10 months.

Pedestrian path facilities located in verges are generally low quality and users are subject to numerous conflict points where vehicles must cross the verge to enter/exit development sites and intersections.

The format and design criteria of existing crossing facilities throughout the study area vary significantly and there is a lack of consistency of design philosophy or approach.

Mid-block connectivity/legibility is limited through development sites given existing buildings and significant off-street car parking facilities. The lack of midblock crossings is important as it requires pedestrians either travel significantly longer distances than desirable, or, forces users to navigate through car parking and vehicle circulation areas that at night have poor levels of passive surveillance.

On-street line-marked or dedicated off-street separated bicycle facilities are non-existent within the study area.

# 4 Activity Centre Plan Proposal

# 4.1 **Priorities**

The *Kalamunda Visioning Document* prepared by Urbis for the purposes of informing the Activity Centre Plan development framework outlines a number of areas of improvement suggested by key stakeholders. The primary transport focus of these improvements included improving pedestrian connectivity and wayfinding. Representatives of the City also identified a series of priorities, the combined set summarised below as:

- 1. Improved accessibility to public transport facilities
- 2. Active transport connectivity, amenity, and safety
  - a. Pedestrians
  - b. Cyclists
- 3. Confirmation of current/projected traffic operations
- 4. Confirmation of current/projected car parking situation.

### 4.2 Key Transport Proposal of the Activity Centre Plan

The following is a summary of the key transport related items which form part of the Activity Centsre Plan:

- Enhanced integration of transport interchange with activity centre core
- Improvement to urban design and built form to support:
  - Pedestrian mobility and safety
  - Cyclist mobility and safety
  - Space activation and improvement in passive surveillance and security
- Sustainable car parking provision.

These items are addressed throughout this assessment.

# 4.3 Proposed Road Network Structure and Hierarchy

Table 5 outlines the key priorities that were noted during stakeholder engagement. These were used in the determination of the function and intended design intent of the recommended road hierarchy and cross-section forms that would also support the Activity Centre Plan urban design and economic revitalisation goals.

Investigations regarding road hierarchy also made reference to the projected traffic demands reported earlier herein in Section 3.

Road Classification	Prioritised User Groups	Key Function	Future Considerations & Design Intent
Canning Road	<ul> <li>Private Vehicles</li> <li>Buses</li> <li>Cyclists</li> </ul>	<ul> <li>Operates as the primary north-south route through Kalamunda</li> <li>Carries significant vehicle and cycle traffic through the town to south- eastern destinations from Perth</li> </ul>	<ul> <li>General function to remain consistent with existing use</li> <li>Provision of enhanced pedestrian and cycle connectivity</li> </ul>
Mead Street	<ul><li>Private Vehicles</li><li>Cyclists</li></ul>	<ul> <li>Operates as the primary east-west route through Kalamunda</li> <li>Carries significant vehicle and cycle traffic through the town to south- eastern destinations from Perth</li> </ul>	<ul> <li>General function to remain consistent with existing use</li> <li>Provision of enhanced cycle facilities to the allow east-west travel.</li> </ul>
Haynes Street	<ul> <li>Private Vehicles</li> <li>Pedestrians</li> </ul>	<ul> <li>Activated lower order road that services pedestrian and vehicle access to surrounding retail tenancies</li> </ul>	<ul> <li>Reduction in private vehicle emphasis along road connection</li> <li>Provision of enhanced tenancy frontages with wide verges encouraging pedestrian use</li> <li>Restrict servicing access for lots fronting Haynes Street such to minimise vehicle crossing on main pedestrian spine.<sup>1</sup></li> </ul>
Railway Road	<ul> <li>Private Vehicles</li> <li>Pedestrians</li> <li>Cyclists</li> </ul>	<ul> <li>A north-south route that operates similarly to Canning Road with a smaller traffic throughput</li> <li>Provides pedestrian access to various community facilities along the eastern activity centre boundary.</li> </ul>	<ul> <li>Enhanced road formation to encourage safe travel by pedestrians and cyclists.</li> </ul>
Barber Street	<ul><li> Private</li><li> Vehicles</li><li> Pedestrians</li></ul>	<ul> <li>Activated lower order road that services pedestrian and vehicle access to surrounding retail tenancies</li> </ul>	<ul> <li>Existing functionality to generally be maintained.</li> </ul>
Central Mall	• Pedestrians	<ul> <li>Provides pedestrian connectivity to a somewhat underutilised outdoor shopping mall</li> <li>Single one-way laneway for private vehicle and service vehicle access to rear of tenancies</li> </ul>	<ul> <li>Provide an enhanced share-way street to reprioritise movements by active users encouraging connectivity to shops.</li> <li>Allow infrequent access from service vehicles and high priority private vehicles (i.e. PWD and Taxis / Rideshares)</li> </ul>
Stirk Street	<ul><li>Private Vehicles</li><li>Pedestrians</li></ul>	<ul> <li>Minor east-west connection that services access to parking and servicing facilities for Haynes St tenancies</li> <li>Occasional pedestrian utilisation between Stirk Park and surrounding uses.</li> </ul>	<ul> <li>Existing functionality to generally be maintained</li> </ul>

#### Table 5Key Road Functions

<sup>1</sup> Servicing strategy for individual lots to be determined during detailed application phase. Servicing access to primarily be gained via Stirk Street using access easements through various landholders, however would be assessed on a case-by-case basis.

# 4.4 **Pedestrian Facilities**

A series of pedestrian facilities improvements are warranted in response to existing deficiencies and also the increased demands likely to result from the Activity Centre Plan improvements. There is existing demand and potential increased demand for pedestrian trips between the following key land uses/destinations:

- Zig Zag Gallery and community services
- Bibbulmun Track entrance
- Coles Kalamunda and surrounding shops
- Kalamunda Bus Station
- Stirk Park
- Kalamunda IGA
- Jack Healey Centre
- City of Kalamunda offices; and
- Community pool.

The desire lines generated from the connection of these major uses has been illustrated on Figure 5, which highlights key pedestrian crossing locations along the central road network.

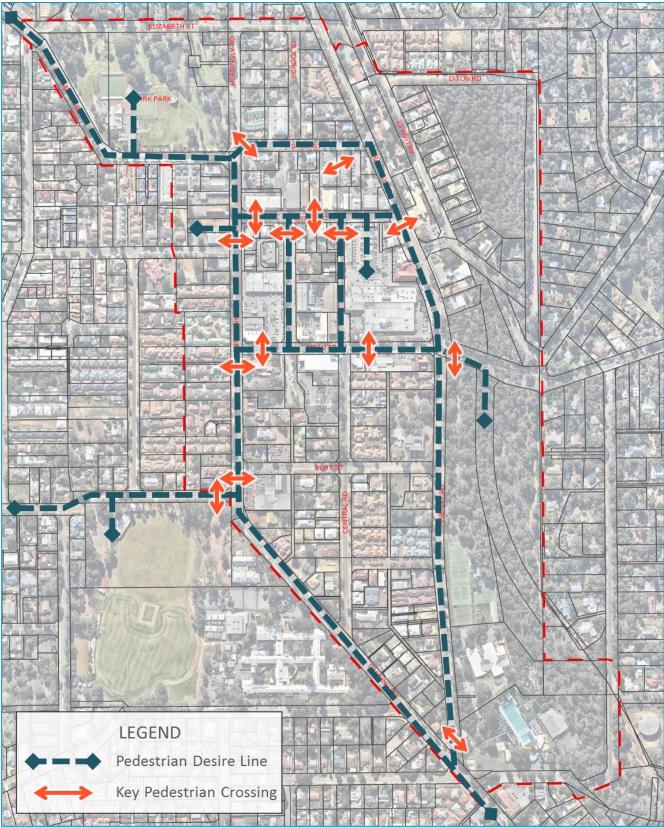


Figure 5 Pedestrian Desire Lines and Key Crossing Locations

Note: Key Pedestrian Crossings illustrated above do not necessarily confirm the suitability of an exiting crossing, however just confirm location of road crossings where the pedestrian desire line intersects with a significant roadway.

#### 4.4.1 Investigation

In 2018, GHD undertook a study assessing the suitability of several pedestrian crossings within the town centre, principally on/near Haynes Street. The GHD *Pedestrian Crossing Assessment* report included traffic and pedestrian surveys and evaluated the demand of the eight crossing locations illustrated at Figure 6.



Figure 6 Key Crossing Locations – Design Recommendations

The GHD assessment concluded that none of the eight crossing locations strictly met the minimum demand thresholds for combined pedestrian and vehicle iteration that would warrant a line marked zebra crossing.

Furthermore, it has been identified by site observations that pedestrian crossing facilities are inconsistent in their location, design (dimensions and line marking/signage).

It is considered critical that pedestrian crossing facilities are improved such that they are as consistent across the activity centre area so that users (motorists and pedestrians) are aware of their responsibilities and intended actions do not require site specific interpretation on a case by case basis.

#### 4.4.2 Recommendation

In addition to the rectification of the issues identified in the GHD pedestrian crossing study, SLR has identified a number of recommended upgrades to each of these key crossings based on the future demand anticipated throughout the activity centre.

Given the enhanced pedestrian focus envisaged along Haynes St as a part of the ACP, recommended design treatments have been provided in Table 6 to be provided as a part of the modified and revitalised street form. All crossing locations, except those located on Canning Road should comprise the following elements:

- Install TGSIs at all crossing points
- Raised crossing with contrasting pavement treatment
- Reduced crossing distance with kerb build-outs and lane narrowing
- Parking restrictions on approach/departure to improve sight lines.

Crossing ID	Street Name	Recommended Modifications
1	Canning Road	<ul><li>Install TGSIs at all crossing points</li><li>Install dedicated zebra crossing</li></ul>
2	Haynes Street	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> </ul>
3	Haynes Street	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> </ul>
4	Barber Street	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> <li>Repair kerb</li> </ul>
5	Central Mall	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> <li>Align ramps with clear travel route</li> <li>Upgrade drainage treatment for safer crossing</li> </ul>
6	Haynes Street	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> </ul>
7	Railway Road	<ul> <li>Install TGSIs at all crossing points</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> <li>Repair kerb</li> </ul>
8	Railway Road	<ul> <li>Install TGSIs at all crossing points</li> <li>Implement raised crossing with contrasting pavement treatment</li> <li>Reduce crossing distance with kerb build-outs and lane narrowing</li> <li>Apply parking restrictions to improve sight lines</li> </ul>

#### Table 6Summary of GHD Recommendations

It is recommended that all crossing locations on roads of similar function incorporate a consistent form so that users (motorists and pedestrians, etc.) expectations and behaviours are consistent. This will reduce confusion when comparing the current arrangements which consist of many different crossing treatments.

# 4.5 Cyclist Facilities

Previous studies and planning documents prepared on behalf of the City have outlined recommended improvements to the bicycle network. These studies, in combination with site observations and investigations have informed the Activity Centre Plan bicycle network.

#### 4.5.1 Investigation

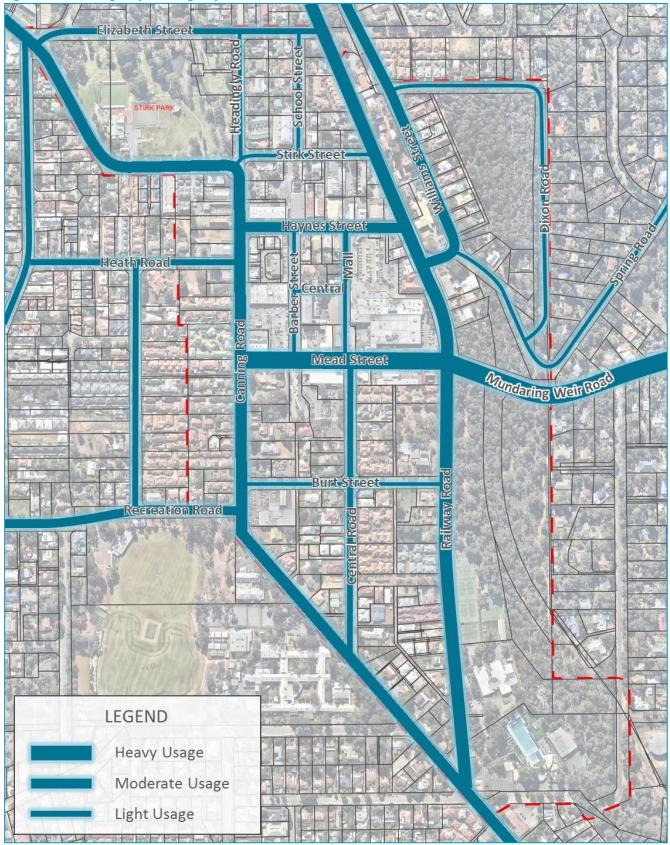
The City of Kalamunda Bicycle Plan identifies Canning Road and Railway Road as Strategic routes which "provide safe and direct connections between Principal Routes and major trip generators such as shopping centres, industrial areas or major health, education, sporting and civic facilities" (City of Kalamunda 2017). The Plan also defines Central Road and Headingly Street as a Safe Active Streets which are lower order, lower speed (<30km/h) routes where cyclists and vehicles share the street pavement.

SLR Consulting sourced bicycle demand data from Strava to supplement the demands surveys collected by Cardno in their City of Kalamunda Bicycle Plan technical reporting. The Strava heat map data has been evaluated with recognition made of the fact that cyclists who typically use and post ride data to Strava are recreational or 'sport' cyclists, not commuters of convenience cyclists. Accordingly, certain routes may be overrepresented in terms of their relative use, i.e. mountainous ride favoured by recreational cyclists.

Figure 7 overleaf has been developed to categorise the existing bicycle demand by route based on a review of the prior studies and information collected by SLR.

It is evident from the bicycle data that there is a significant demand for trips along Canning Road, Mead Street, and Railway Road. Other, lower order connections cater for lower levels of rider demand and can be typically described as local or parallel routes.

#### Figure 7 Existing Bicycle Usage by Route



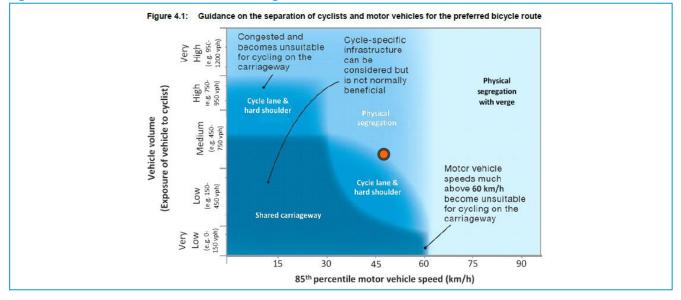
#### 4.5.2 Recommendation

Whilst the Cardno technical report and City of Kalamunda Bicycle Plan do not identify specific facility upgrades within the Kalamunda town centre area, SLR has identified a number of road segments that warrant improved on-road facilities, including:

- Canning Road: dedicated on-street bicycle lanes
- Mead Street: dedicated on-street bicycle lanes

Whilst the Cardno technical reporting and City of Kalamunda Bicycle Plan do not identify upgrades on these specific segments, the installation of on-street facilities would be consistent with their designation as Strategic Routes (Canning Road) and an extension of a Training Route (Mundaring Weir Road). The designation of these dedicated on-street facilities is supported by the existing demand data available on Figure 8 overleaf that identifies this route as one of the most trafficable roads within the ACP area.

Austroads Guide to Traffic Management provides recommended cycle infrastructure based on existing traffic volumes and speeds along a subject road section. Based on available traffic data (referenced in Section 4.6 overleaf) Canning Road currently carries approximately 500vph in each direction during peak periods and has an 85<sup>th</sup> percentile speed of 47km/hr. Based on this data, the Austroads guidance would suggest that on-road cycle paths would be appropriate considering existing traffic demands, as illustrated in Figure 8.



#### Figure 8 Austroads Guide to Traffic Management Part 5 extract

Importantly, the design treatment recommended for Canning Road is consistent with that proposed in the Bicycle Plan for another segment approximately 500m south of the study area. The delivery of similar treatments on this route would ensure continuity for all road users, minimising the risk of unnecessary conflict. The road hierarchy and cross-section figures included at Appendix A and Appendix B respectively illustrate the extent and form of the recommended on-road cycle lanes.

Dedicated, on-street facilities are not strictly warranted on other roads/streets within the study area. An approach consistent with the previously defined Safe Active Streets would be reasonable on other lower order, connecting streets where speeds and demands permit, i.e. Central Road, Burt Street, Haynes Street, Stirk Street, Headingly Street, Heath Road, and Elizabeth Street.

# 4.6 Network Performance and Capacity

Road network operational modelling of the current and anticipated land use scenarios projected to arise in the town centre have been conducted by SLR Consulting in addition to that undertaken previously by Opus and Shawmac.

The three prior technical studies completed in 2011, 2016 and 2018 have each addressed road performance during the peak hour periods in some respect.

- *Parking Study, Kalamunda Town Centre* (Shawmac, August 2011)
- Intersection Layout and Level of Service Study (Opus, May 2016)
- Local Area Traffic Management Study Canning Road and Mead Street (Cardno, July 2018).

The most comprehensive road network modelling undertaken in 2011 (Shawmac) and 2016 (Opus) has been critically reviewed in resolving:

- 1. The need, or otherwise, for capacity upgrades
- 2. The road hierarchy and cross-sectional form.

#### 4.6.1 Intersections

Prior studies have identified that the following intersection operations are constrained, at present and under future land use scenarios that are more conservative than that now projected as part of the current Activity Centre planning:

- Canning Road / Mead Street right turn from Mead Street operating with excessive delays
- Canning Road / Heath Road right turn from Heath Road operating with excessive delays.

With respect to Canning Road / Mead Street, the City of Kalamunda has advised that capacity improvements to address current deficiencies are planned. The upgrades consist of a new lane on the Mead Street approach which will provide dedicated lanes for left and right turning traffic.

Table 7 summarises SIDRA modelling prepared by SLR Consulting with respect to the proposed Mead Street upgrade.

Assessment Scenario		Degree of Saturation	Average Delay	Critical Delay / Level of Service	95 <sup>th</sup> Percentile Vehicle Queue (veh)
2015	Existing (Single Lane) Approach	0.418	3.9	28.5 / D	2.1
	Committed Dual Lane Approach	0.414	3.7	26.1 / D	2.1
2031	Existing (Single Lane) Approach	0.750	6.1	53.0 / F	4.4
	Committed Dual Lane Approach	0.548	4.6	45.4/ E	2.3

#### Table 7 Canning Road / Mead Street – Committed Upgrade to Mead Street Approach

It is clear from Table 7 that the committed upgrading of the Mead Street approach will not provide sufficient capacity at the 2031 time horizon assuming background growth approximating 1.5% per annum from 2015 is achieved. Only the right turn from Mead Street to Canning Road operates beyond typically accepted performance thresholds; therefore, there are two possible solutions that would address this capacity issue:

- 1. Signalise the intersection
- 2. Restrict right turn movement from Mead Street.

A roundabout option has not been identified as it formed part of prior recommendations made by Opus given SLR's understanding that it was not favoured by the City of Kalamunda because of possible land resumption requirements.

Option 1 is recommended on the basis of this study given the banning of the right turn would only shift demand to another, possibly more critical intersection like Haynes Street which is undesirable. Signalisation of the intersection could be accommodated with no additional land resumptions given the already wide road reserve. Signalisation would have the additional benefit of also improving pedestrian safety and amenity at the intersection.

SIDRA modelling of the Canning Road / Heath Road intersection was undertaken to evaluate and confirm the prior 2016 Opus finding which indicated over capacity operations, but no upgrading proposal.

Assessment Scenario	Degree of Saturation	Average Delay	Critical Delay / Level of Service	95 <sup>th</sup> Percentile Vehicle Queue (veh)
2015	0.402	2.9	32.3 / D	1.8
2031	0.797	6.2	75.0 / F	5.1

#### Table 8 Canning Road / Heath Road – Existing Arrangement

The Table 8 results indicate that the existing right turn delays will increase significantly by 2031, even with relatively low 1.5% per annum background traffic growth from 2015. Similar to that identified earlier for Canning Road / Mead Street, there are two possible solutions that could be progressed to mitigate the right turn issue being signalisation or the banning/restriction of the right turn movement out of Heath Road.

In this instance, the banning or restriction of the right turn movement is preferred (Option 2) given the proximity of the intersection to Haynes Street (55m) would introduce potential up/down stream consequences along Canning Road. Additionally, movements wishing to turn right out of Heath Road have the ability to redistribute to other reasonable routes.

Given the significance of road functions, further traffic analysis is recommended at the following intersections to investigate potential safety or operational upgrades that would provide network benefit:

- Canning Road / Railway Road intersection
- Canning Road / Recreational Road intersection.

It is anticipated that upgrades to these two intersections would include, but not be limited to the following:

- Channelised right turn treatments (short or full-length)
- Localised parking restrictions that would improve sight lines and allow vehicle passing
- Splitter island treatments on minor road legs including pedestrian refuge.

#### 4.6.2 Road Segments

The 2031 traffic demand projections made by Opus in 2016 and reproduced in Table 9 are considered reasonable and conservative with respect to the future demands projected in relation to the Activity Centre Plan.

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Road Name	Road Classification	Volume Thresholds	2015 Surveyed Volumes	2031 Forecast Volumes					
Canning Road	Distributor A	10,000 - 15,000	7,857	9,743					
Mead Street	Distributor B	5,000 - 10,000	4,209	5,219					
Haynes Street	Distributor B	5,000 - 10,000	3,081	3,820					
Railway Road	Distributor B	5,000 - 10,000	5,038	6,247					
Barber Street	Access Road	<3,000	1,789	2,218					
Central Mall	Access Road	<3,000	0	0					
Stirk Street	Access Road	<3,000	2,827*	3,505					
Heath Road	Local Distributor	3,000 – 5,000	2,252	2792					

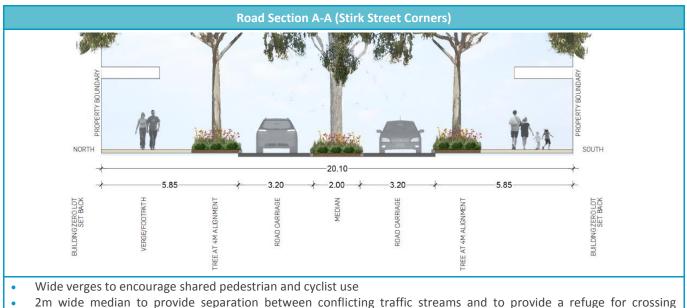
#### Table 9 Road Hierarchy Thresholds – Surveyed Daily Volumes

\*Note: No data for 2015, supplemented with 2011 counts

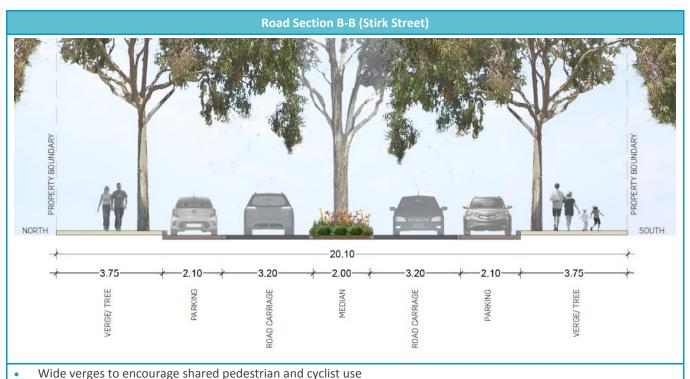
These road segment demand estimates have been adopted for the purposes of developing the Appendix A road hierarchy and Appendix B cross-section solutions – also discussed in the following section.

### 4.7 Road Network Cross-Sections

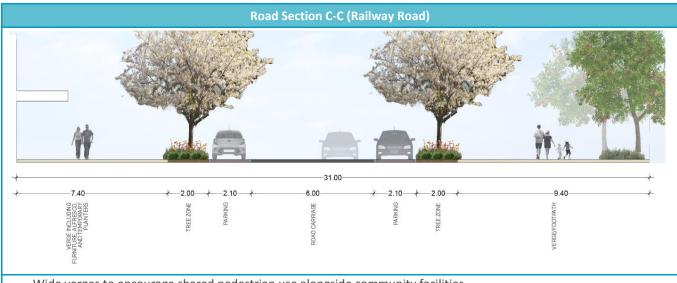
The street/road cross-sections introduced here and included at Appendix B have been developed by the combined team in response to the urban design priorities and also such that they are appropriate with regards to the anticipated function and demand of the roads/streets.



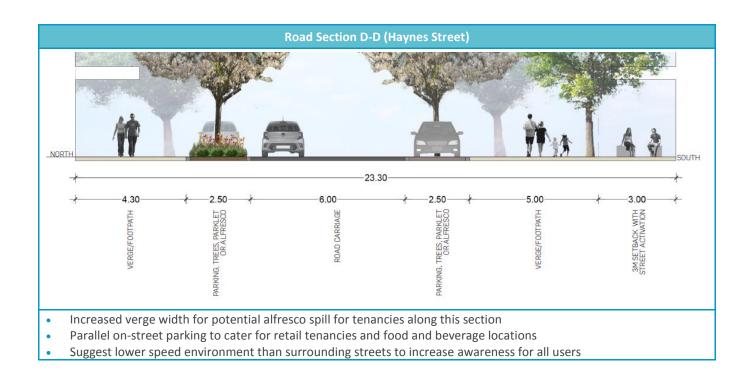
 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossir pedestrians

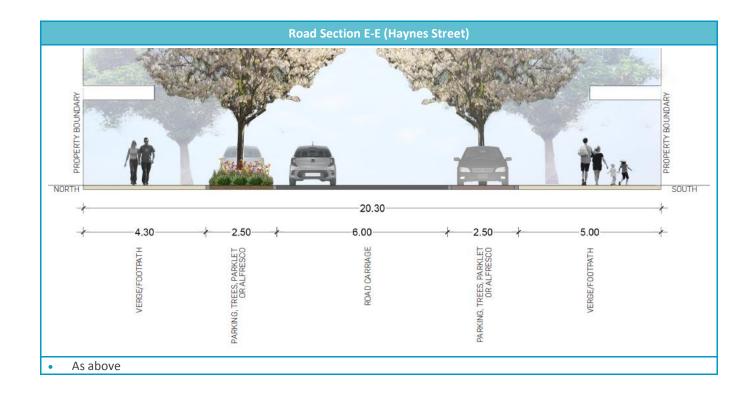


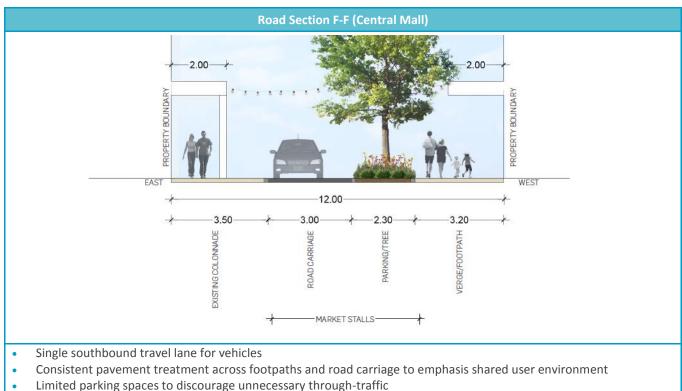
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians
- Parallel on-street parking to cater for retail tenancies to the south and residential properties to the north



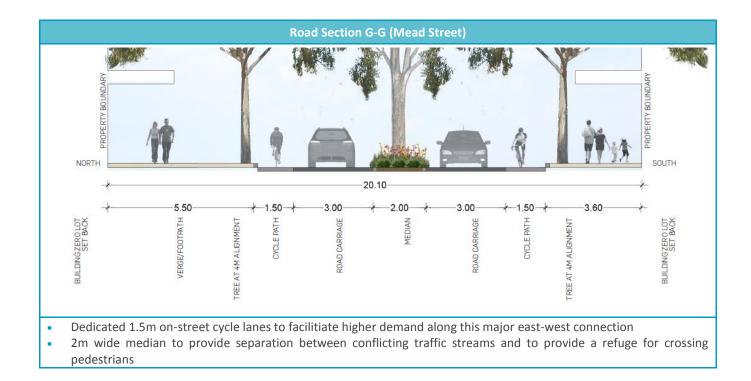
- Wide verges to encourage shared pedestrian use alongside community facilities
- Wider than standard verges to allow for off-street cycle travel (potential protected lane) in lieu of an on-street lane
- Parallel on-street parking to cater for retail tenancies and community facilities
- Threshold treatment and shared space to town square to allow for community events.

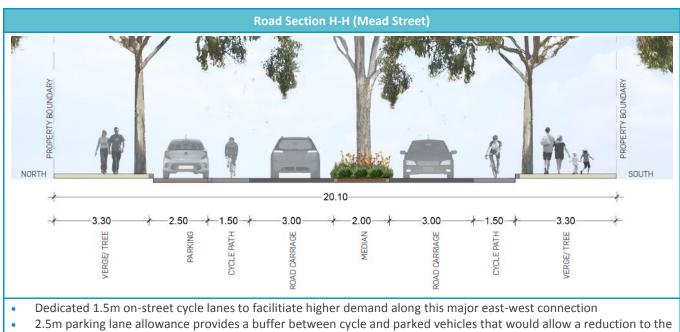




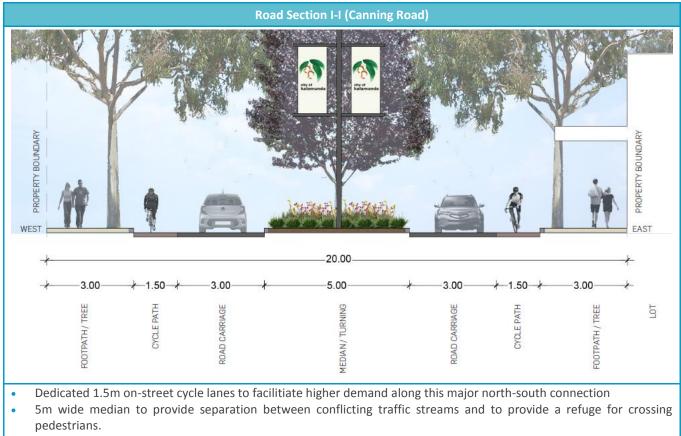


Limited parking spaces to discourage diffecessary through training
 Limited shared space width so as to reinforce low traffic speeds

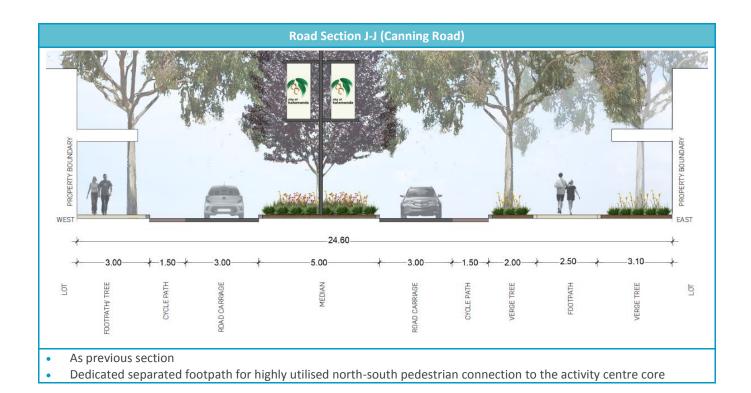


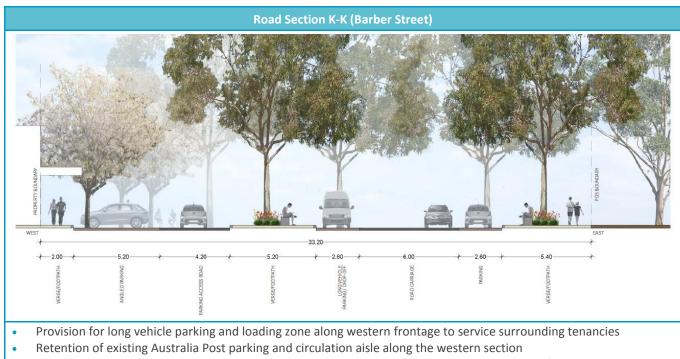


- risk of bicycle collision with car doors
- 2m wide median to provide separation between conflicting traffic streams and to provide a refuge for crossing pedestrians
- Single parking lane to provide access to retail tenancies and activity centre core to the north



• Median will also accommodate dedicated turning lanes where required.





Wide footpaths on both sides to accommodate pedestrian movement to existing bus terminal from Haynes Street

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# 4.8 Road Network Connectivity

The Activity Centre Plan proposes the following major changes to the existing road network arrangements (layout and connectivity):

- 1. Central Mall reconfiguration to allow one-way vehicle movement
- 2. Town Square threshold treatment.

These changes were identified in response to urban design and revitalisation priorities/goals, being:

- Improve amenity and of the activity centre area
- Improve market holding capacity.

### 4.8.1 Central Mall Investigation

The Central Mall does not currently permit vehicle traffic between the Central Road (Kalamunda Central car park north of Mead Street) and Nestobrae Lane south of Haynes Street.

The Pedestrian Priority Zone (PPZ) / Shareway arrangement would differ to the current situation in that vehicles would be legally permitted to travel through the link formed between Mead Street and Haynes Street. Both north and southbound one-way options were examined.

The high-level findings of the north vs south review can be summarised as:

- A southbound arrangement would introduce:
  - Operational impacts on Haynes Street as vehicles entering the Shareway would queue and block Haynes Street while they are waiting for opposing pedestrians and westbound traffic
  - Operational and legibility issues at the Mead Street intersection which would be directly opposite the existing Central Road intersection, thereby creating an unsignalised four-way intersection
  - Safety concerns as vehicles entering the Shareway from Haynes Street would turn across the southern pedestrian verge at higher speeds compared given the preceding road environment
- A northbound arrangement would provide:
  - Flexibility for the intersection with Haynes Street to be reconfigured to left in/left out should this be desired to improve traffic flow and/or pedestrian safety. Sight distance would be achieved through the localised restriction of car parking in close proximity to the intersection
  - Safer interactions between vehicles and pedestrians given vehicles would only approach the conflict area from the 10km/h Shareway, perpendicular to Haynes Street with good sight lines
- The north and southbound arrangements are similar with respect to:
  - Their convenience and ability to service fronting development
  - Their ability to connect with the Central Mall that extends to Barber Street.

Whilst the reconfiguration of the pedestrian Central Mall isn't required to address or mitigate traffic or transport issues, it is seen to improve or provide for the following:

- Increased amenity for pedestrians and cyclists given the higher standard of urban design and activation
- Potential for more convenient loading opportunities for fronting/nearby businesses
- Potential for improved parking opportunities for persons with a disability
- Potential for pick-up/set-down facilities for taxis and ride-share.

### 4.8.2 Recommendation

Whilst Perth specific examples are limited at this time, the PPZ / Shareway approach would be consistent with that recently approved by the City of Perth for the Hay Street Pedestrian Priority Zone project. Figure 9 outlines other Australian and New Zealand examples of similar installations.





Source: Google (2018)

The urban design of the shared street should allow local traffic but discourage through or unnecessary trips. This can be achieved via a combination of the following:

- The PPZ/Shareway should be signed as a Shared Zone and vehicles accordingly be legally subjected to a 10km/h speed limit
- Adoption of design elements incorporating the following:

- Contrasting surface/pavement treatment which reinforces that it is not a typical road with threshold treatments at vehicle entries/exits
- Flush levels between pedestrian spaces and shared spaces
- Bollards, paving and other streetscape furniture delineating exclusive pedestrian spaces from shared vehicle/pedestrian spaces
- Limited shared space width so as to reinforce low traffic speeds
- Constrained number of parking and loading opportunities
  - Parking only for persons with a disability or special purpose, i.e. emergency vehicles
  - Loading only during pre-determined periods and taxi/rideshare at other times of day.

### 4.8.3 Town Square Investigation

The raising of the Railway Road pavement surface between Haynes Street Williams Street has been investigated as an urban design treatment to improve pedestrian connectivity east of Haynes Street and which could be closed to vehicular traffic during events. The treatment would be approximately 40m in length.

### 4.8.4 Town Square Investigation

Traffic and pedestrian surveys undertaken in 2018 (Table 10) indicate traffic demands on Railway Road immediately south of Haynes Street exceed 400-500vph for the majority of the day whilst pedestrian movements are generally low.

Time (hour starting)	Мо	nday	Tue	sday	Wedn	esday	Thu	rsday	Frie	day	Weekday	Average
6:00 AM	87	(3)	93	(4)	87	(2)	94	(0)	95	(1)	91	(2)
7:00 AM	255	(0)	280	(2)	280	(1)	269	(4)	237	(2)	264	(2)
8:00 AM	608	(4)	578	(6)	593	(2)	604	(5)	536	(10)	584	(5)
9:00 AM	428	(41)	422	(14)	430	(15)	460	(10)	476	(17)	443	(19)
10:00 AM	413	(10)	382	(8)	414	(16)	420	(13)	469	(28)	420	(15)
11:00 AM	475	(35)	427	(19)	476	(19)	488	(12)	492	(31)	472	(23)
12:00 PM	494	(33)	495	(22)	532	(20)	465	(10)	482	(21)	494	(21)
1:00 PM	413	(4)	380	(17)	526	(30)	367	(7)	504	(27)	438	(17)
2:00 PM	506	(11)	524	(12)	544	(6)	501	(6)	526	(35)	520	(14)
3:00 PM	619	(11)	637	(17)	658	(10)	655	(14)	651	(14)	644	(13)
4:00PM	535	(5)	513	(12)	541	(14)	557	(2)	600	(8)	549	(8)
5:00 PM	439	(5)	517	(9)	455	(3)	507	(6)	516	(8)	487	(6)

### Table 10 Railway Road Traffic Demand South of Haynes Street

## Vehicle demands

(##) Pedestrian crossing demands

When closed to traffic during events, traffic otherwise using this segment of Railway Road would be required to divert via other routes north-south routes including either/both Canning Road and Williams Street. At this time, it isn't understood how frequently, how long, and on what days this section of road could be closed in support of events.

### 4.8.5 Town Square Recommendation

A Traffic Management Plan should be prepared with supporting analysis to determine impacts and mitigation strategies associated with closing the segment of Railway Road during events.

The existing combination of traffic and pedestrian movements is not projected to change materially on typical (non-market/non-event days). Accordingly, the facility should not be signed as a Shared Zone as it the overwhelmingly majority of use is by vehicles and is not 'shared'.

Pedestrians crossing Railway Road would therefore do so as per a typical road crossing which could be accommodated within the raised segment. A lower speed limit is recommended in this zone to support amenity improvements.

The design of the raised threshold should incorporate similar principles to that outlined in Section 4.9.2, being:

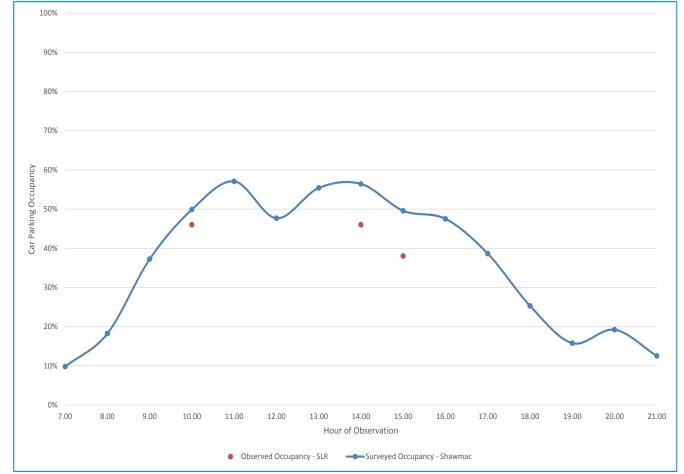
- Contrasting surface/pavement treatment
- Flush levels between pedestrian verge
- Bollards, paving and other streetscape furniture delineating exclusive pedestrian spaces roadway
- Limited road cross-section to reinforce low traffic speeds

# 5 Car Parking

# 5.1 Existing Utilisation

Car parking surveys completed in 2011 by Shawmac indicate that whilst some parking areas were well utilised during peak periods, i.e. (75-100% occupancy), the cumulative peak demand observed across the wider activity centre area was relatively low and did not exceed ~60% of the available supply. Figures 10 and 11 summarise the parking demand profile surveyed by Shawmac in 2010 and also three discrete desktop observations made by SLR Consulting using aerial imagery.

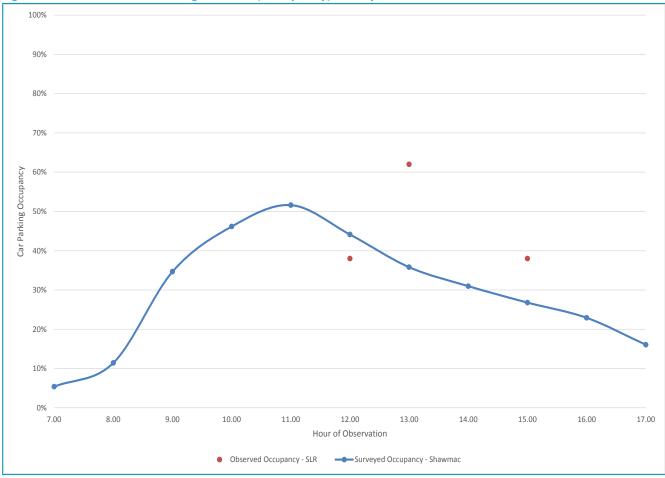
Note, the Shawmac study area is smaller than that adopted for the Activity Centre Plan; hence, occupancy is reported as a comparative output for both data sets to enable some type of comparison to be made.



### Figure 10 Weekday Car Parking Demand (Occupancy) Survey/Observations

The following can be surmised regarding the Figure 10 parking occupancy survey/observations:

- On and off-street parking demands across the activity centre area did not exceed 60%
- Despite observations being made across a period of several years and on different days, the occupancies are generally consistent
- The demand profile is reasonably flat between 10AM and 3-4PM.





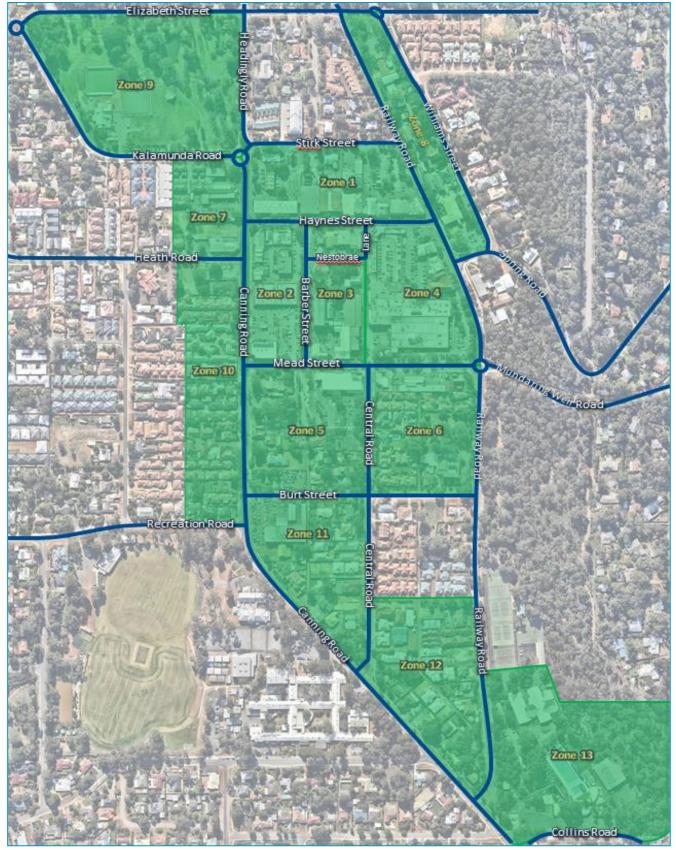
The following can be surmised regarding the Figure 11 parking occupancy survey/observations:

- On and off-street parking demands across the activity centre area did not exceed 60%, even on market days
- Despite observations being made across a period of several years and on different days, the occupancies are generally consistent albeit there is greater variance when compared to the weekday sample
- The demand profile has a pronounced peak occurring at 11AM and demands taper off into the afternoon/evening. SLR desktop observations confirm that the profile is less consistent than that reported for the weekday sample.

Many of the on-street parking supplies were surveyed as having peak occupancies in the order of 40-75%. Typically, on-street parking is much more heavily used and this result indicates that there is an oversupply of street parking. Based on the quantitative 2011 car parking demand surveys and a qualitative review of the study area, there also appears to be an oversupply of off-street car parking within the study area.

The SLR desktop assessment of parking demand utilised aerial imagery to expand upon the prior 2011 Shawmac findings. The car parking assessment zone categorisation is illustrated in Figure 12 which was developed as an extension of that originally prepared by Shawmac so zonal results could be compared.

### Figure 12 Parking Study Zoning System



Tables 11 and 12 summarise the SLR desktop parking occupancy findings for the instantaneous demand captured at the time of the aerial fly-over. These same findings are illustrated graphically at Appendix C.

7					
Zone	08/09/2011	02/04/2014	12/02/2018	Average Occupancy	
1	41%	41%	37%	40%	
2	55%	45%	41%	47%	
3	51%	40%	37%	43%	
4	59%	62%	54%	58%	
5	45%	54%	27%	42%	
6	68%	46%	58%	57%	
7	71%	56%	47%	58%	
8	34%	42%	34%	37%	
9	9%	52%	18%	26%	
10	50%	35%	61%	49%	
11	77%	81%	50%	69%	
12	35%	48%	44%	42%	
13	26%	22%	23%	24%	
Average Occupancy	48%	48%	41%		

Table 11 Weekday Parking Occupancy

### Table 12 Weekend (Market Day) Parking Occupancy

7					
Zone	27/05/2012	02/11/2013	04/06/2017	Average Occupancy	
1	72%	34%	44%	50%	
2	89%	51%	36%	59%	
3	87%	59%	40%	62%	
4	94%	71%	76%	80%	
5	42%	19%	39%	33%	
6	55%	8%	33%	32%	
7	23%	10%	21%	18%	
8	83%	41%	61%	62%	
9	75%	65%	25%	55%	
10	79%	44%	45%	56%	
11	0%	18%	0%	6%	
12	2%	0%	0%	1%	
13	0%	0%	10%	3%	
Average Occupancy	54%	32%	33%		

Consistent with the Shawmac findings, the expanded desktop observations made by SLR Consulting also confirm that the current/recent demand for car parking is materially lower than the available off and on-street supply. Peak weekday parking utilisation approaches 70-80% only for a few zones.

In comparing the Table 13 and 14 findings, it is evident that parking demands are higher on weekends, particularly during market events. Parking occupancy approaches 90-100% in central areas on market days; however, it is still <50% in outer zones. Accordingly, it can be determined that:

- The demand for parking on weekdays and non-market weekend days is comparatively low, lower than that which can be determined in accordance with the Planning Scheme rates
- The demand for parking on market weekend days is significantly higher than other days, however, there is still underutilised parking available in the outer zones of the study area.

The 2011 Opus study identified that for core Zones 1-8, a theoretical parking requirement of 1,987 spaces when calculated in accordance with the then current Planning Scheme. This equated to a <u>requirement</u> rate of 6.1 spaces per 100sq.m of then current floor area.

For the same core Zones 1-8, Opus also identified an off-street parking supply of 1,575 spaces which equated to a <u>supply</u> rate of 4.8 spaces per 100sq.m of combined use. The SLR desktop audit relied on aerial imagery and hence may be prone to some survey error. To address this issue, the same aerial imagery review process was also undertaken for the 2011 situation so the observable difference could be quantified.

This approach identified only minor changes in the available off-street car parking supply within the core Zones 1-8. The most significant change occurred as a result of the development of Central Heights at 10 Barber Street which redeveloped a pre-existing at-grade car park. For the purposes of this study, the supply rates are assumed to be generally the same given there has been an opposing increase in floor area.

# 5.2 State Planning Policy 4.2 Comparison

The State Planning Policy 4.2 Activity Centres for Perth and Peel describes a sustainable car parking rate of provision:

- 2 spaces per 100sq.m for showrooms and office
- 4-5 spaces per 100sq.m for shops.

Based on the car parking studies completed to date, the existing rate of <u>requirement</u> and <u>supply</u> for parking exceeds these rates within the Kalamunda Activity Centre area.

# 5.3 Local Government Car Parking Rate Comparison

A comparison of the planning scheme requirements/rates for car parking provision has been undertaken with regard to the City of Kalamunda and a selection of other Western Australian local government areas. The reason for the review or benchmarking is due to the Shawmac and SLR parking demand assessments both confirming that the actual car parking demand is significantly less than that which would be required in accordance with the City's Planning Scheme.

The parking requirement rates for similar/comparative uses is summarised in Table 13 overleaf.

### Table 13 Comparison of Local Government Car Parking Requirements

	Local Government Area								
Land Use	Kalamunda	Belmont	Gosnells	Mundaring	South Perth				
Amusement Parlour	7 spaces per 100sq.m	10 spaces per 100sq.m	N/A	1 space per 10sq.m	N/A				
Art Gallery	1 space per employee	N/A	N/A	N/A	N/A				
Bed & Breakfast	1 space per bedroom plus 2 spaces for the primary residence	N/A	N/A	1 space per bedroom plus residential requirement	N/A				
Betting Agency	7 spaces per 100sq.m	10 space per 100sq.m	N/A	N/A	N/A				
Childcare Centre	1 space per employee plus 1 space per 10 children	1 space per employee plus 1 space per 8 children	1 space per employee plus 1 space per 10 children	1 space per employee plus 1 space per 8 children	1 space per employee plus 1 space per 10 children				
Cinema / Theatre	1 space per 2.5sq.m (seating area)	N/A	1 space per 2.5sq.m (seating area)	1 space per 4 persons	1 spaces per 5sq.m auditorium area				
Civic Use	1 space per 5 persons	1 space per 4 persons	1 space per 4 persons	N/A	N/A				
Community Purpose	1 space per 5 persons	N/A	N/A	N/A	N/A				
Consulting Rooms	4 spaces per medical practitioner plus 1 space per staff	4 spaces per medical practitioner	4 spaces per medical practitioner	5 spaces per 1 consulting room	1 space per 19sq.m plus 1 space per employee				
School	1 space per staff member, plus: 1 space per 3 students (pre-primary) 14 drop-of spaces per 100 students (primary) 7 drop-off spaces per 100 students (secondary)	1 space per 4 students (pre-primary) 1 space per classroom (primary) 1 space per 25 year 12 students (secondary)	<ol> <li>space per staff member, plus:</li> <li>space per 2 students (pre-primary)</li> <li>drop-of spaces per 100 students (primary)</li> <li>drop-off spaces per 100 students (secondary)</li> </ol>	1 space per staff member, plus: 1 space per 2 students (pre-primary) 14 drop-of spaces per 100 students (primary) 7 drop-off spaces per 100 students (secondary)	N/A				
Fast Food	10 spaces per 100sq.m	1 space per 4 persons	1 space per 2.5sq.m queueing area plus 1 space per 5sq.m dining area	The greater of: 1 space per 10sq.m or 6 spaces	N/A				
Health/Fitness	5 spaces per 100sq.m	5 spaces per 100sq.m	1 space per 20sq.m	N/A	N/A				
Hotel/Motel	1 space per unit plus 1 space per 4 restaurant seats plus 1 space per 5sq.m bar/other public area	1 space per bedroom	1 space per bedroom plus 1 space per 2sq.m bar area plus 1 space per 4sq.m lounge area	1 space per employee plus 1 space per 2.5sq.m indoor licenced area plus 1 space per 5sq.m outdoor licensed area plus the greater of 1 space per 6 seats of 1 space per 4.5sq.m	1 space per bedroom plus 1 space per 3sq.m of public area				
Market	6 spaces per 100sq.m	N/A	N/A	N/A	N/A				
Medical Centre	6 spaces per practitioner plus 1 per staff	4 spaces per practitioner plus 5 spaces per 100sq.m public space	N/A	5 spaces per consulting room	N/A				
Night Club	1 space per 2.5sq.m bar/public area plus 1 space per 5sq.m lounge area	1 space per 4 persons	1 space per 2sq.m bar area plus 1 space per 4sq.m lounge area	N/A	1 space per 5sq.m				
Office	4 spaces per 100sq.m	1 space per 30sq.m or 1 space per employee, whichever is greater	1 space per 30sq.m plus 1 space per 10sq.m for public areas	1 space per 35sq.m	1 space per 25sq.m				
Place of Worship	1 space per 5sq.m	1 space per 4 persons	Greater of 1 space per 4 seats/persons or 1 space per 2.5sq.m seating area	1 space per 4 persons	1 space per 5sq.m				
Reception Centre	1 space per 4 persons or 1 space per 5sq.m of dining area, whichever is greater	1 space per 4 persons	1 space per employee plus the greater of: 1 space per 4 seats / 4 persons / 4sq.m seating area	N/A	1 space per 5sq.m				
Restaurant	1 space per 4 persons	1 space per 4 persons	1 space per employee plus the greater of: 1 space per 4 seats / 4 persons / 4sq.m seating area	The greater of: 1 space per 10sq.m or 6 spaces	1 space per 5sq.m dining area				
Shop	5 spaces per 100sq.m	6 spaces per 100sq.m	1 space per 15sq.m	1 space per 12.5sq.m	1 space per 25sq.m				
Tavern	1 space per 2sq.m bar and public area or 1 space per 4sq.m lounge area		1 space per bedroom plus 1 space per 2sq.m bar area plus 1 space per 4sq.m lounge area	N/A	1 space per 3sq.m public area				

## 5.4 Recommendation and Strategies

Generally, the City of Kalamunda Planning Scheme rates are comparable to those required in other local government areas; however, based on the level of current parking oversupply, it may be reasonable that some of the land use rates are reduced.

The combined rate of existing requirement and supply are higher than that noted in SPP 4.2.

It is recommended that Planning Scheme rates could be reduced based on the comparative requirement stated in other planning instruments, and also the parking study results which confirm an existing oversupply of parking.

Whilst the determination of a suite of land use parking rates is outside the scope of this study; it would be reasonable to adopt an upper limit range rate of 4.2-4.5 spaces per 100sq.m for retail uses and 2 spaces per 100sq.m for office uses. These rates represent a reduction in the requirement and supply parking rate approximating 7-40% respectively.

On the basis of the above, the overall parking strategy for the Centre is as follows:

- Provide an integrated set of land uses that will enable reciprocal parking, thereby reducing overall demand
- Transition towards more consistent seven-day trading as opposed to the current weekday and weekend disparity arising from market led trade, assisting to spread traffic and parking demands over an extended period
- Prepare, implement and commit to a parking management strategy
- Prioritise the provision (location and quantum) for older persons and those with disabilities in response to the current and projected Kalamunda demographics
- Conceal parking in basements and behind or above street level to promote an active street environment and one that reduces significant at-grade car parking supplies.
- Dedicated parking for persons with disabilities (PWD) to be provided in several locations across the Kalamunda Town Centre, located ideally proximate to land uses that would be visited by these user groups (including to, but not limited to, medical centres, community facilities, post office, banks, shopping centres).
- On-street or public PWD parking should always be located in areas that feature a substantial clearance zone within the verge (equal to the size of the carpark) that would allow PWD to enter and exit vehicles without obstructions.

# 6 **Conclusions**

This study has provided an assessment of the transport network impacts associated with and determined a framework by which to develop the various uses of the Kalamunda Activity Centre. In undertaking this study, various policy and guideline documents have been used, of particular note:

- State Planning Policy 4.2
- Transport Assessment Guidelines for Developments Volume 2 Structure Plans; and
- City of Kalamunda Planning Scheme.

The assessment has been based on a future design horizon (2031) consistent with prior transport studies. A review of the transport networks concluded the following:

- The existing centre has good access to higher order roads for vehicles from local and regional areas
- The roads and intersections within the Kalamunda centre operate well within typically adopted performance thresholds, except for:
  - The right turn from Mead Street to Canning Road
  - The right turn from Heath Road to Canning Road
- The Kalamunda centre is serviced by moderate frequency public transport services (bus), with appropriate pedestrian connections to and from the bus terminal to surrounding uses.
- Pedestrian facilities and amenity are generally average-poor with road crossings and mid-block connections being limited
- Dedicated cycling facilities are not provided
- Road crashes are not a-typical, although there have been several fatal pedestrian crashes in recent history and all involve persons aged older than 80 which may require a more detailed evaluation
- There is significant, underutilised on and off-street car parking, albeit occupancy does increase on market days. Reductions in the rate of supply for parking should be adopted to promote both sustainable travel choices and an improved urban design outcome.

Improvements to the Central Mall are also proposed and would accommodate one-way traffic movement. This change is proposed in response to urban design goals/priorities that seek to improve amenity and vibrancy in the activity centre core.

A comprehensive assessment of the future traffic impacts was not undertaken specifically as part of this study, instead prior analysis undertaken by Shawmac (2011) and Opus (2016) was critically examined to ensure that it was still fit for purpose and adequately addressed the now current projections for land use, yield and population projected as part of the Kalamunda Activity Centre Plan. The findings identified that upgrade works were warranted at the following locations:

- Canning Road / Mead Street
- Canning Road / Heath Road

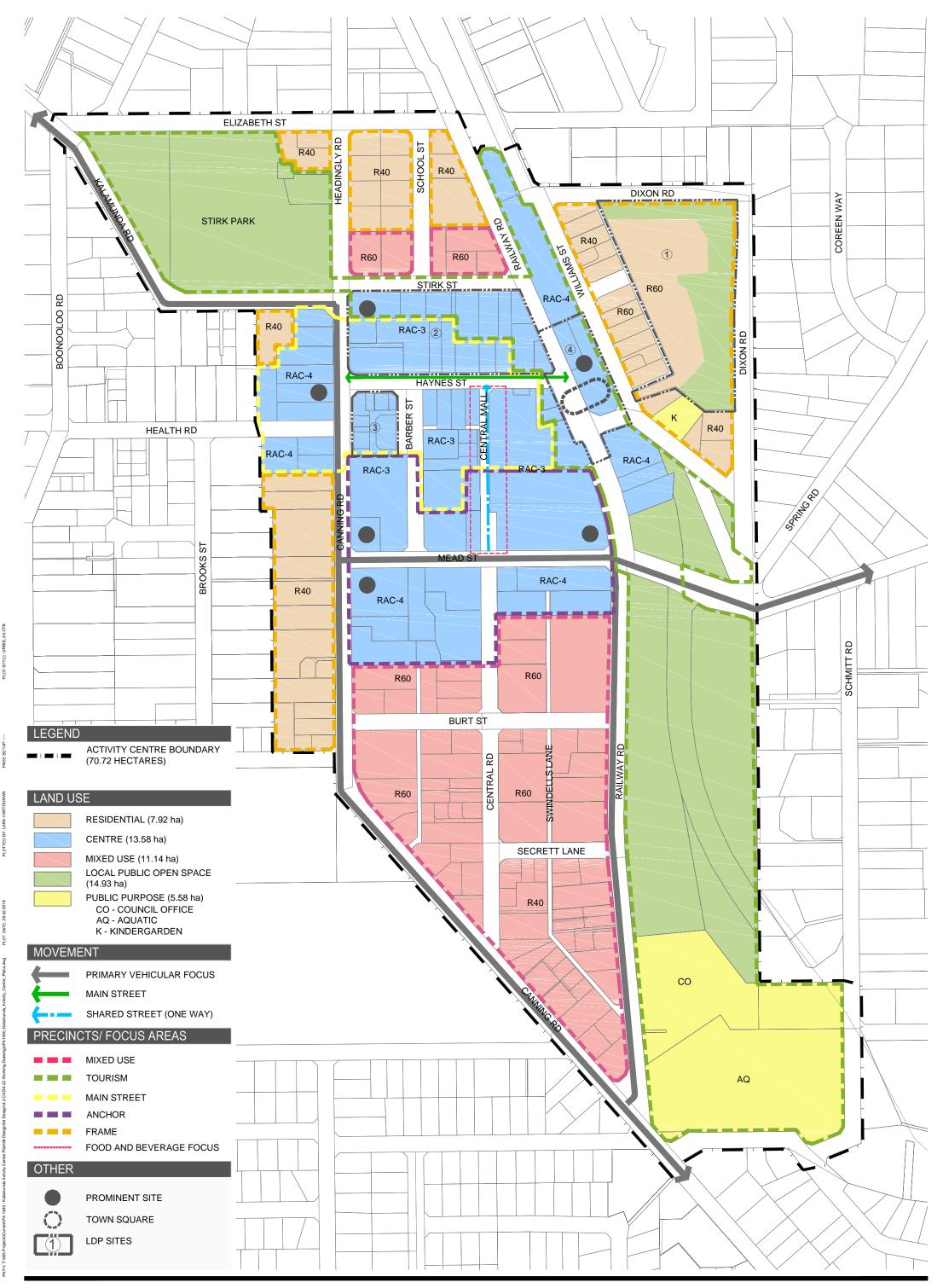
Based on discussions with City Kalamunda officers, capacity improvement works are already proposed and committed on the Mead Street approach. In the future, this intersection may also need to be signalised should the improvements not provide sufficient capacity. At the intersection of Heath Road, the restriction of the right turn out to Canning Road is recommended at such time that delays are deemed to be too great.

# **APPENDIX A**

Kalamunda Activity Centre Plans









## KALAMUNDA ACTIVITY CENTRE DRAFT ACTIVITY CENTRE PLAN

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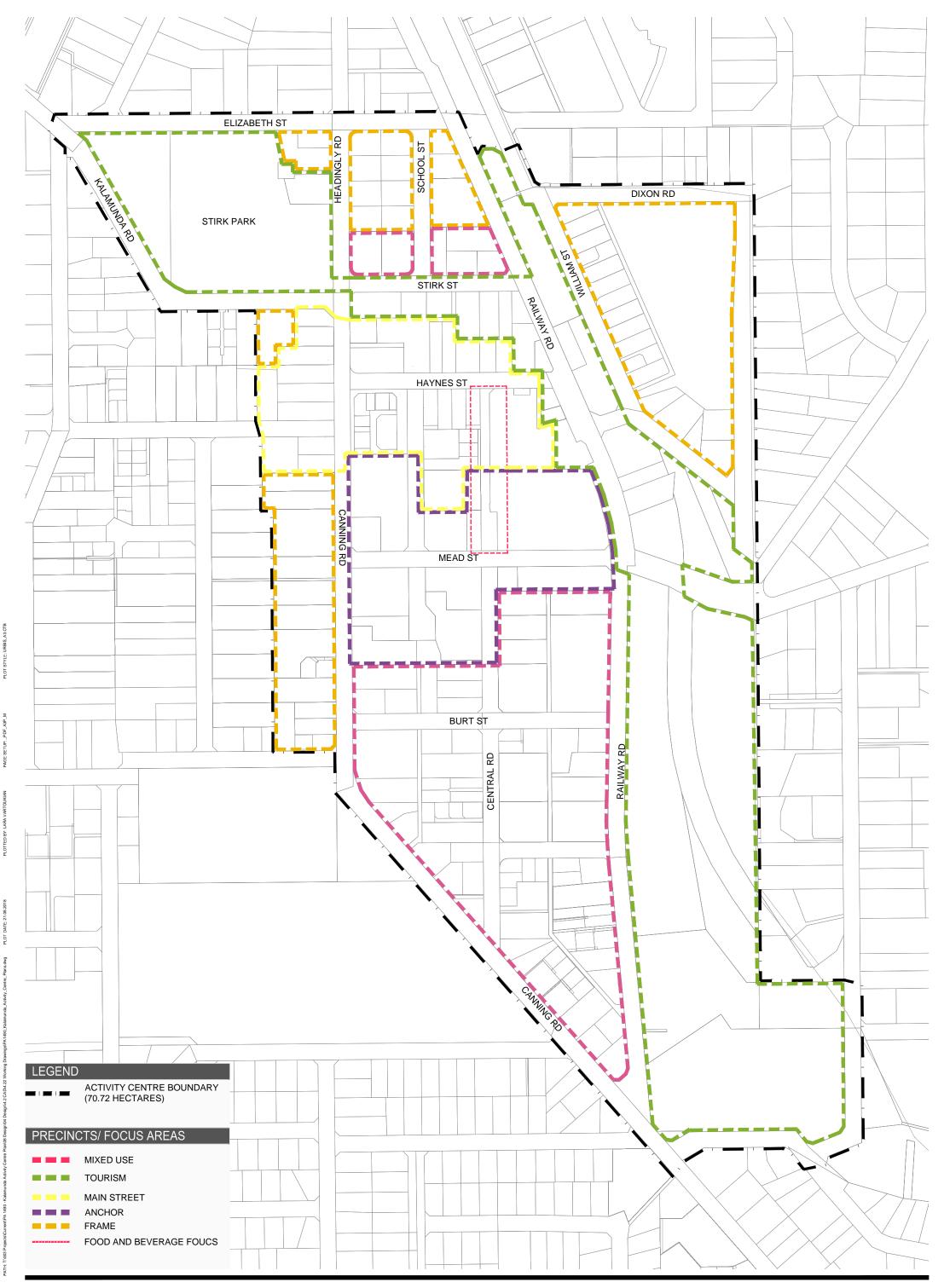
### KALAMUNDA ACTIVITY CENTRE DRAFT MOVEMENT

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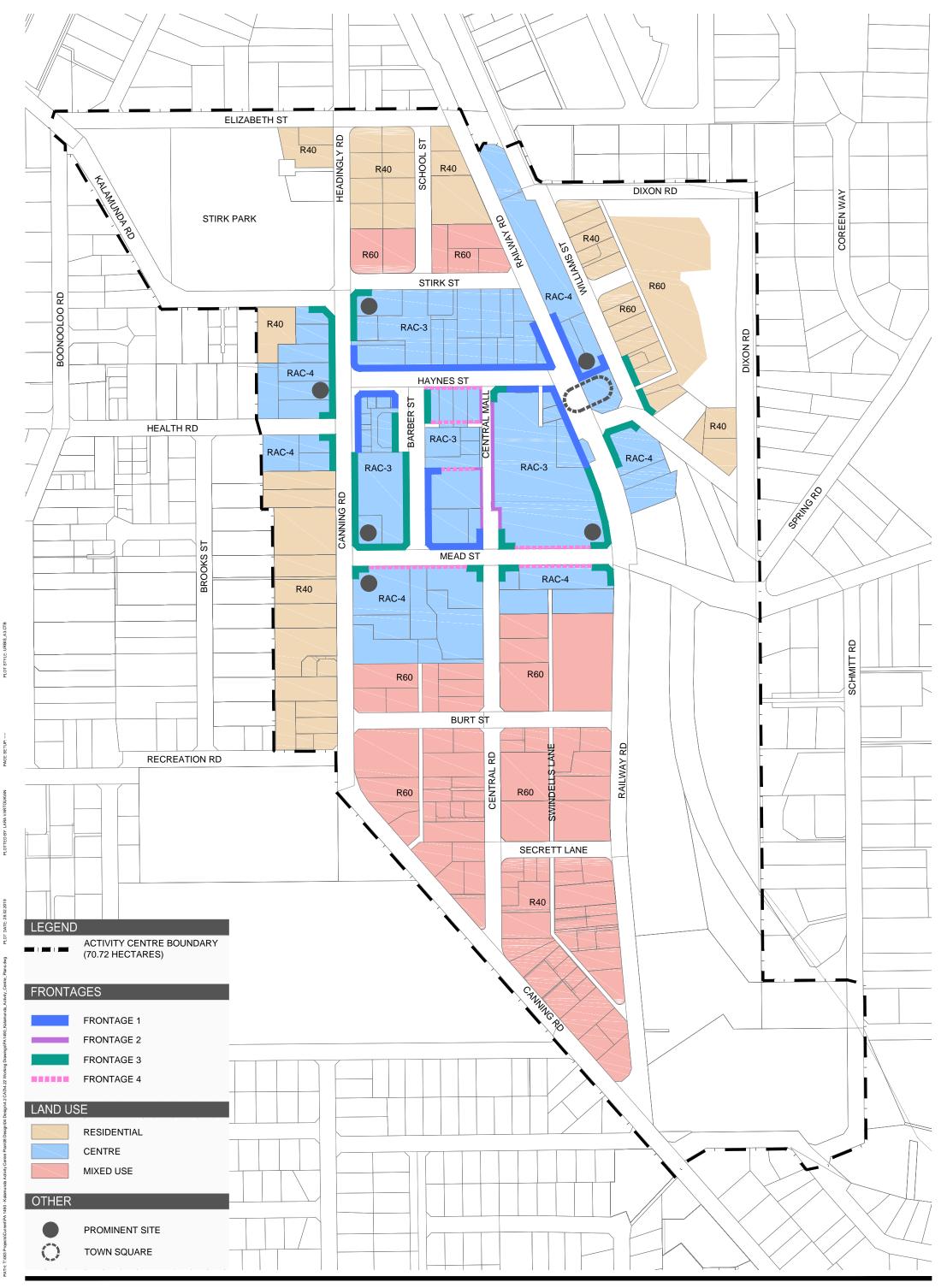


## KALAMUNDA ACTIVITY CENTRE DRAFT PRECINCTS

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### KALAMUNDA ACTIVITY CENTRE DRAFT **BUILT FORM**

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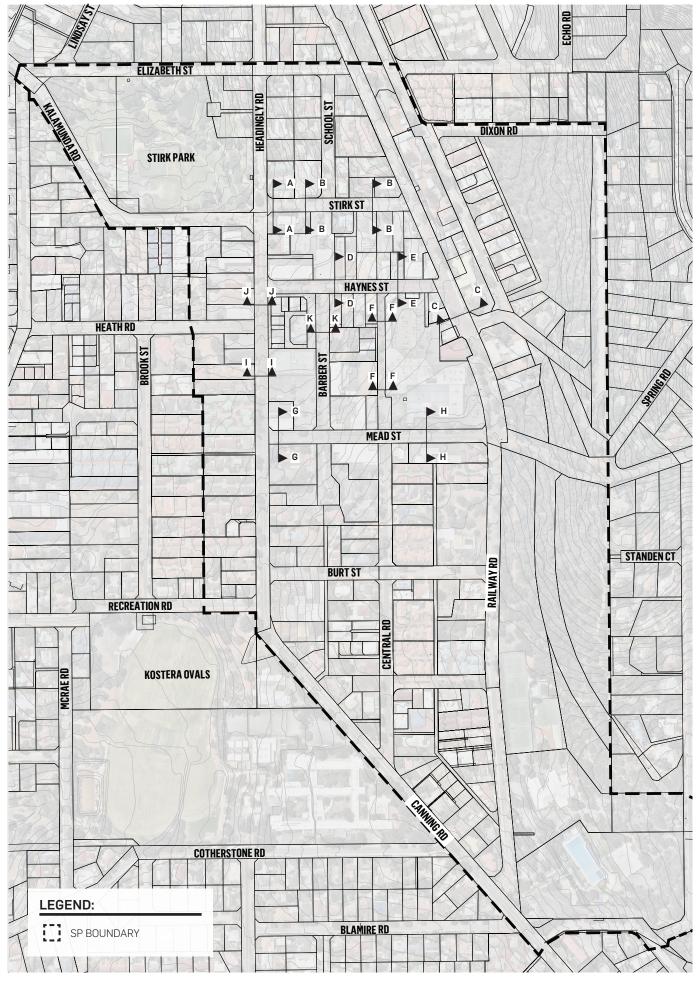




Road Cross-Section Plans







**KALAMUNDA ACTIVITY CENTRE** 

STREET TYPOLOGIES SECTIONS





REV: A

1:6000 @ A4





# **KALAMUNDA ACTIVITY CENTRE** STREET SECTION A-A (CORNERS)



DATE: 22.08.2018 **JOB NO:** PA1490 DWG NO: SC-001 REV: A











DATE: 22.08.2018 JOB NO: PA1490 DWG NO: SC-003 REV: A

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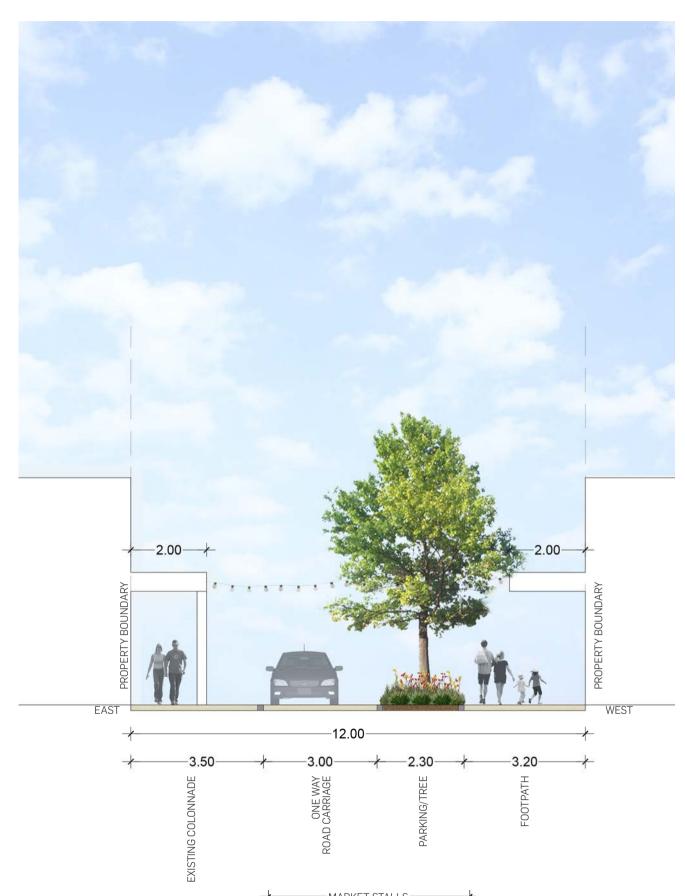
KALAMUNDA ACTIVITY CENTRE STREET SECTION D-D URBIS

DATE: 22.08.2018 **JOB NO:** PA1490 DWG NO: SC-004 1:100 @ A3 REV: A



KALAMUNDA ACTIVITY CENTRE STREET SECTION E-E URBIS

DATE: 22.08.2018 **JOB NO:** PA1490 DWG NO: SC-005 1:100 @ A3 0 1 2 3 REV: A













# **KALAMUNDA ACTIVITY CENTRE** STREET SECTION G-G (CORNERS)



DATE: 22.08.2018 JOB NO: PA1490 DWG NO: SC-007 REV: A







DATE: 22.08.2018 **JOB NO:** PA1490 DWG NO: SC-008





**JOB NO:** PA1490 DWG NO: SC-009 1:100 @ A3 0 1 2 3 4 5 REV: A

# DATE: 05.09.2018









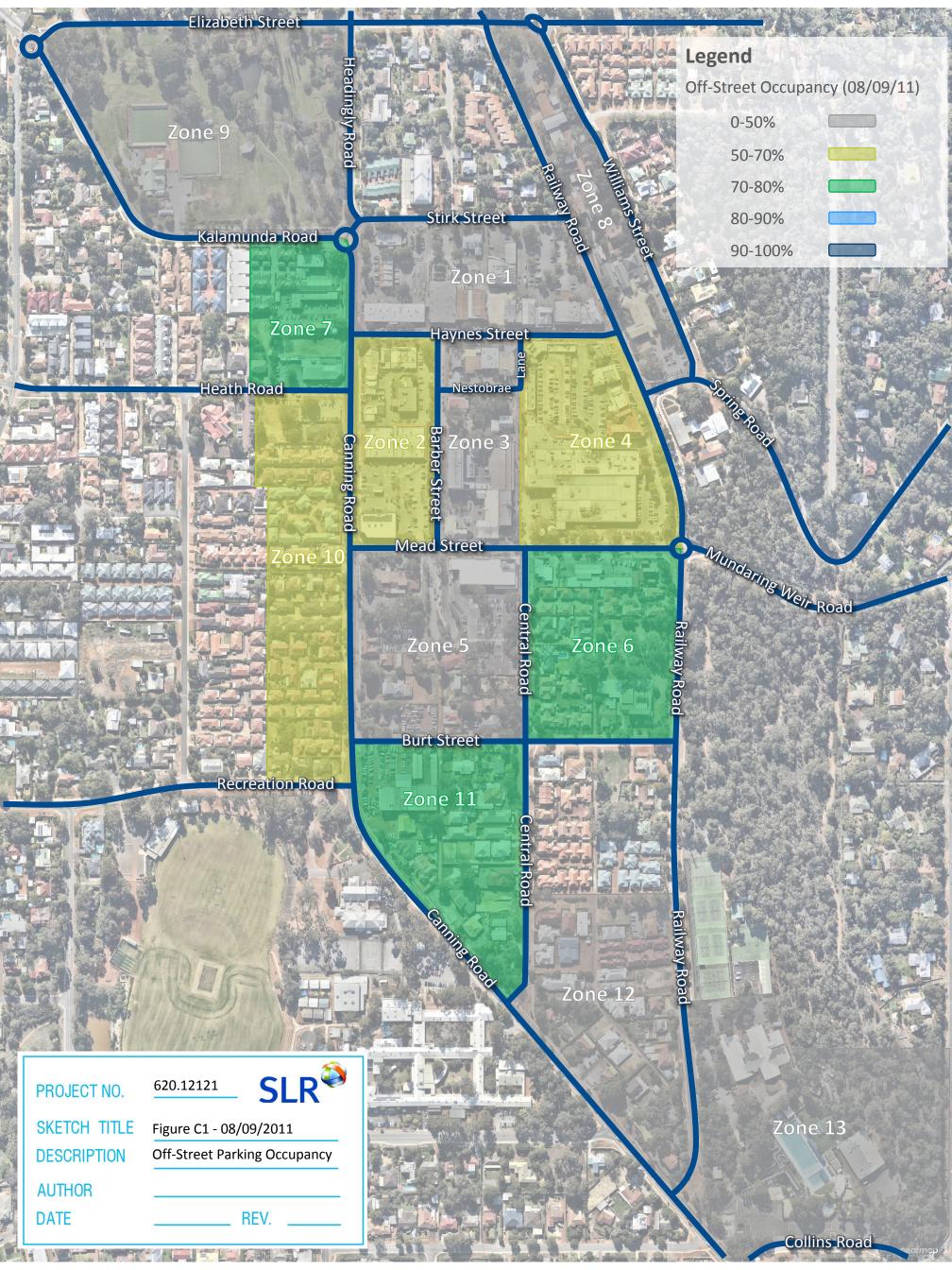
REV: A

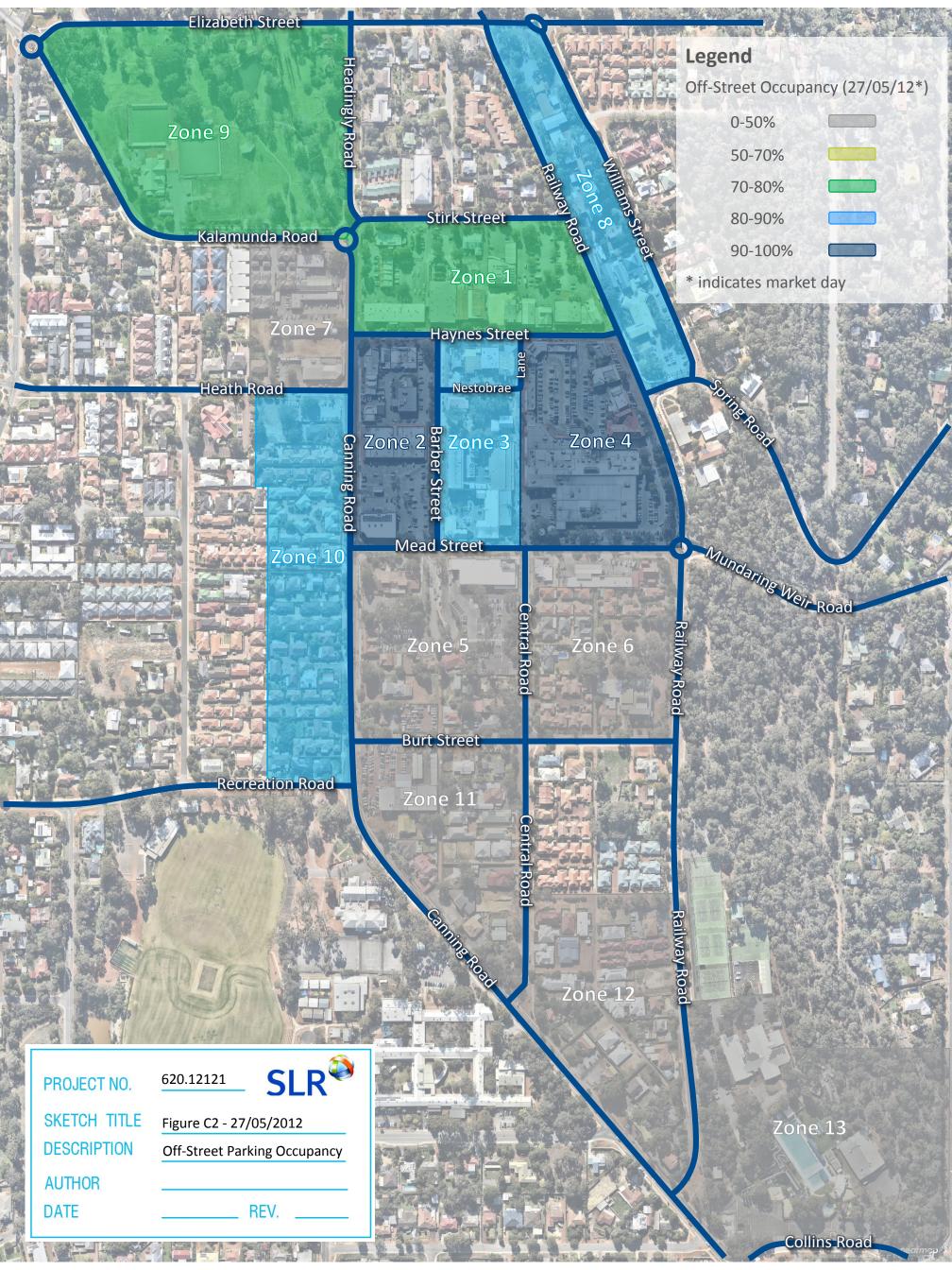
# **APPENDIX C**

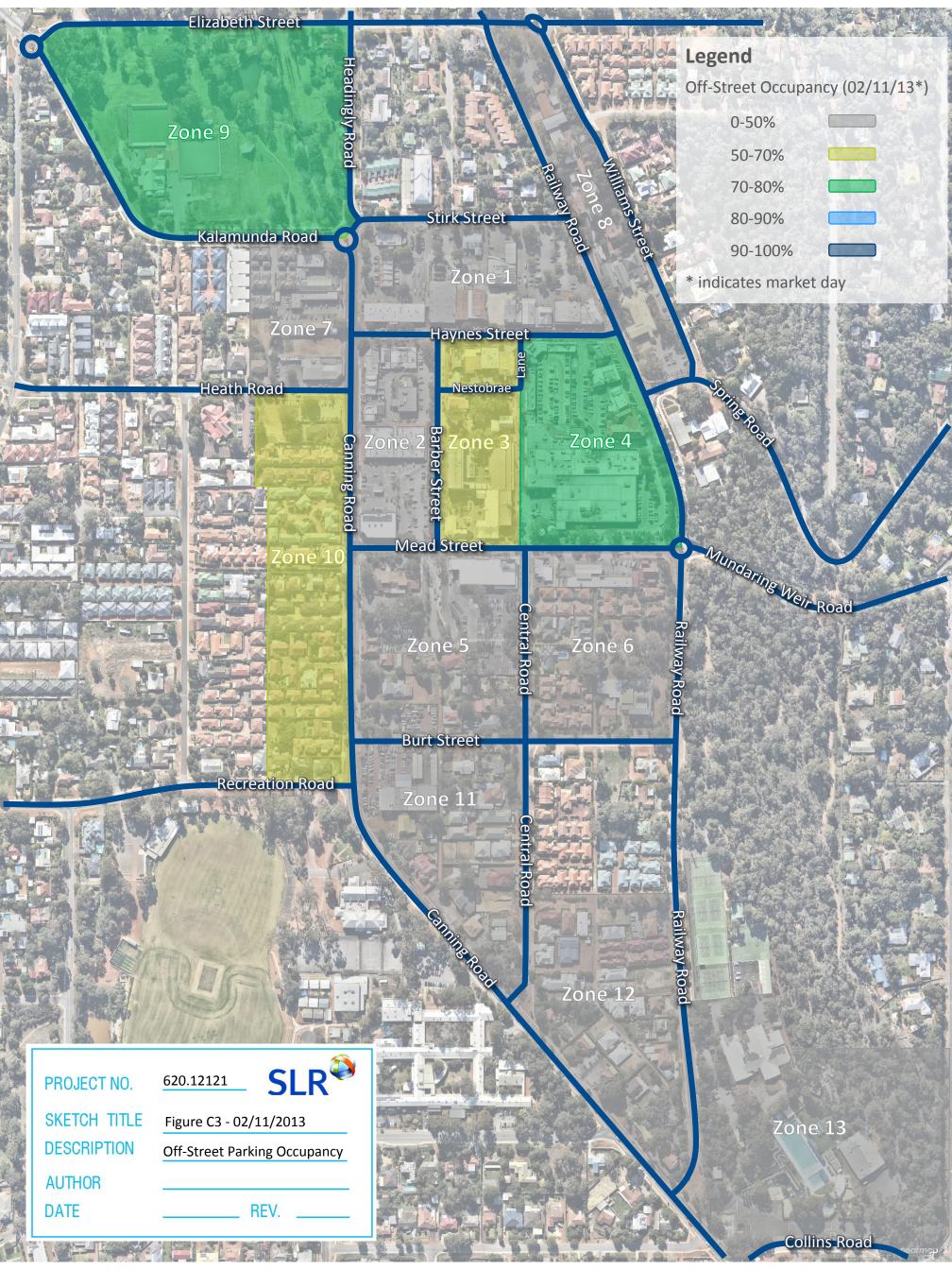
Car Parking Demand Observations

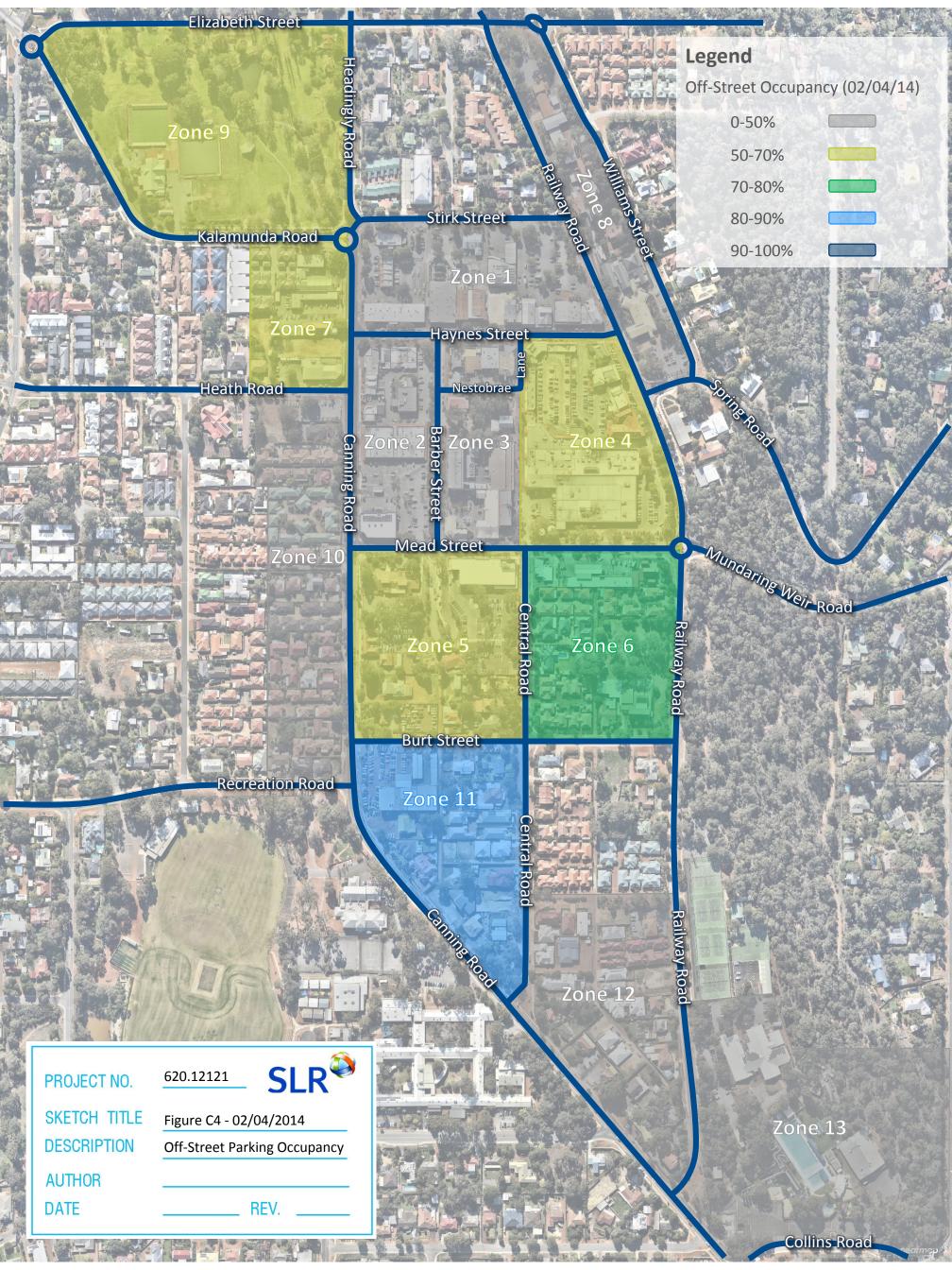


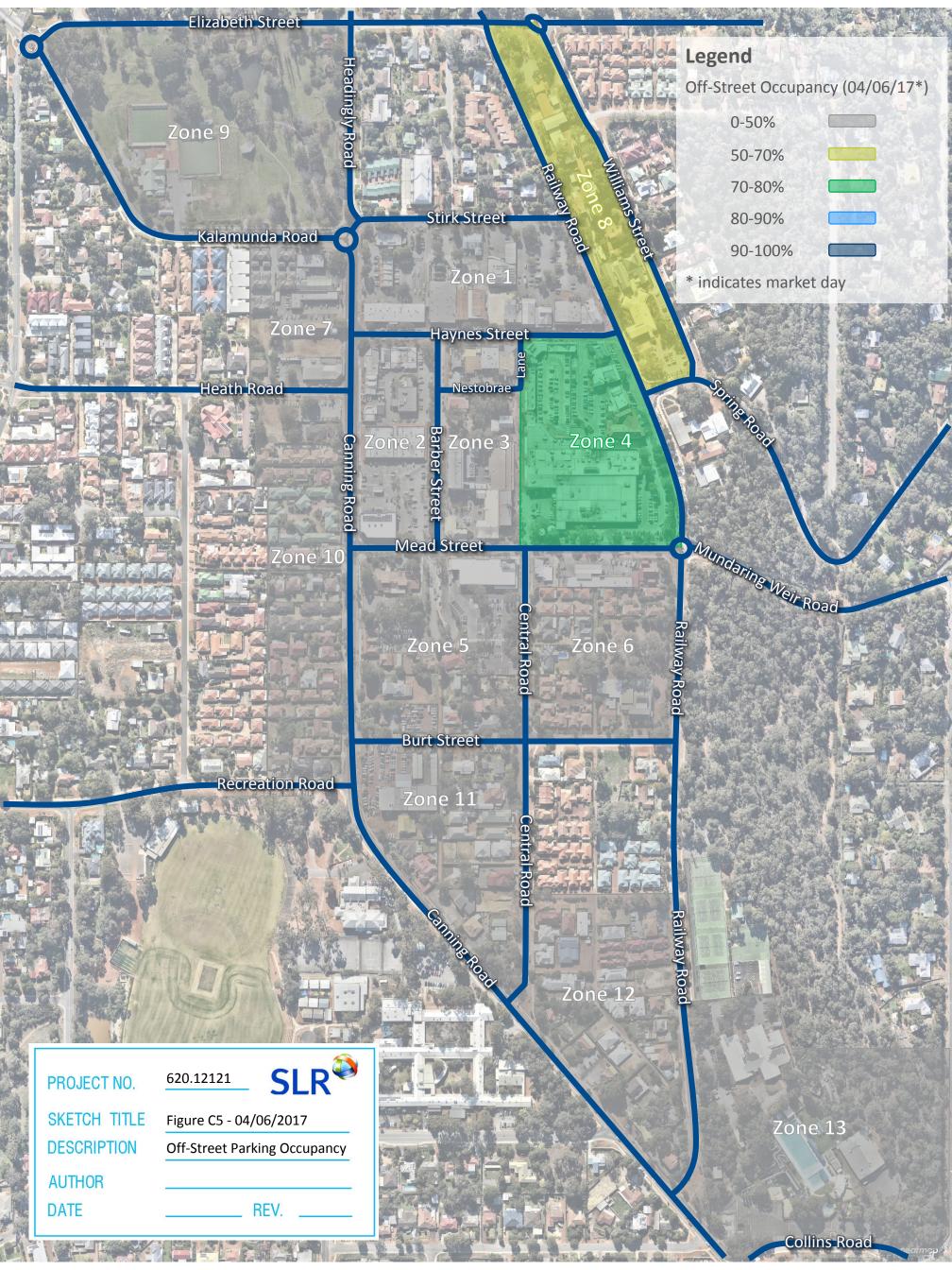


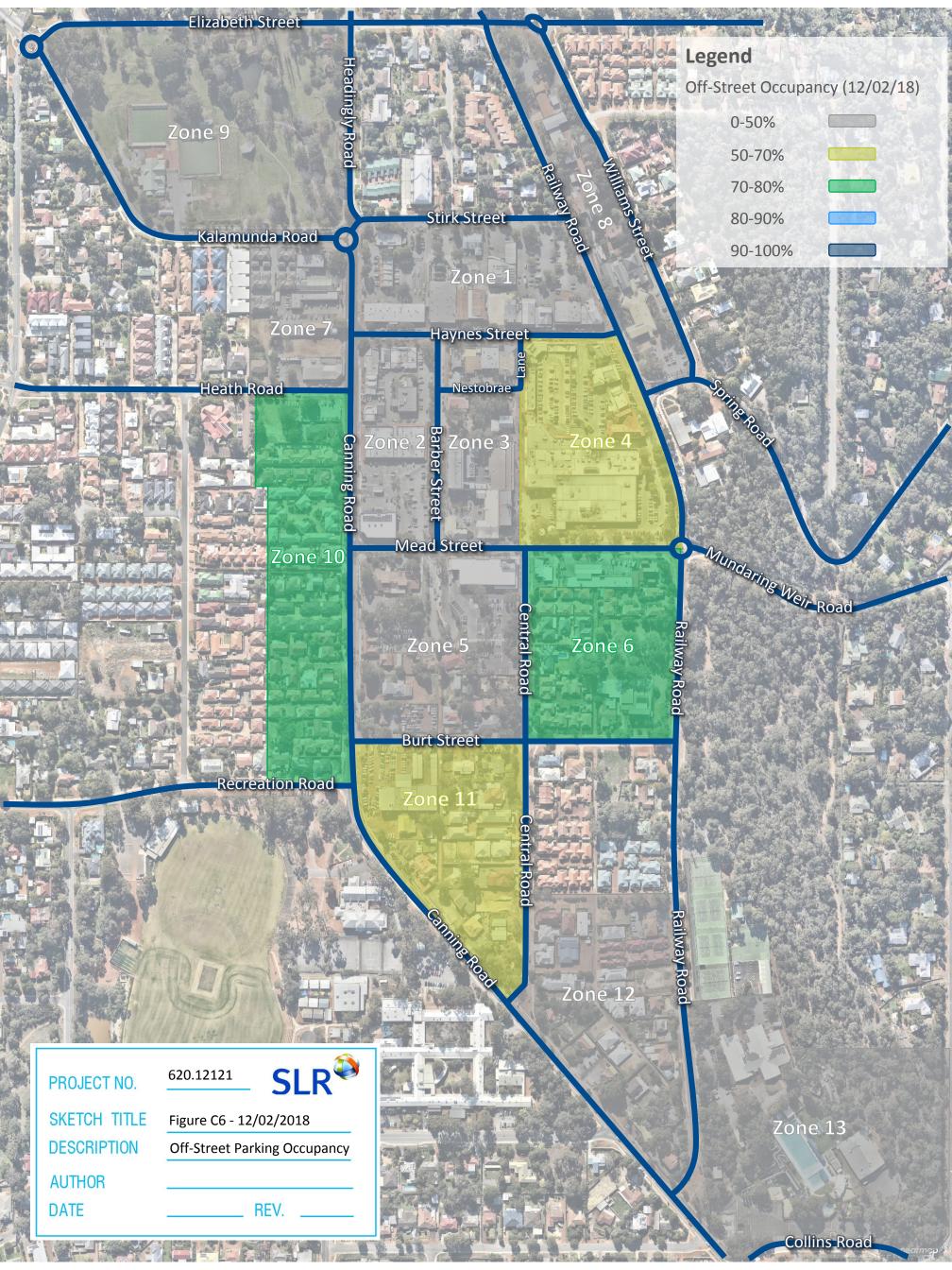
























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# APPENDIX G ENGINEERING SERVICES REPORT



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# **Kalamunda Activity Centre**

# **ENGINEERING SERVICING REPORT**



#### INTEGRITY

We are open, honest, and consistent in our principles and conduct, so we're able to build trusted relationships with our clients and partners.

#### RESPECT

We treat everyone with respect and dignity and develop relationships founded on understanding and trust.

#### ACCOUNTABILITY

We always assume responsibility for our actions and make decisions in line with our economic, social, and ethical obligations.

#### EXCELLENCE

We pursue excellence in everything we do, challenging ourselves to look beyond the obvious and ensure ongoing improvement. This page has been intentionally left blank.



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# 1 Key Objectives

This engineering report has been prepared by JDSi to assist with the compilation of the Kalamunda Activity Centre Plan (KACP). The key objectives of this report are to:

- Undertake all necessary infrastructure and servicing investigations and assessments to support the Activity Centre Plan.
- Identify infrastructure and servicing constraints and issues to be addressed as part of the implementation.

This engineering report is based on a desktop study which covers the existing infrastructure servicing the KACP. The study incorporates a review of site characteristics, stormwater drainage and utility services including sewer, water, power, telecommunications and gas.

The findings in this report are largely based on preliminary advice from relevant authorities. The information is current as of October 2018 and may be subject to change as development and planning proceeds in the locality.

## 2 Introduction

The subject site is located approximately 19km east of the Perth CBD in the Shire of Kalamunda and comprises an area of approximately 70ha. The site area is shown on Figure 2.1 and is located within and surrounding the town centre of Kalamunda.

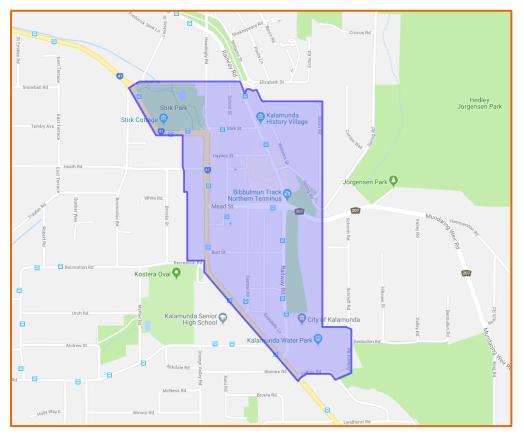


Figure 2.1: Site location (Nearmap, September 2018)

The KACP has been divided into smaller precincts to help identify the different density and building heights forecast across the area (as shown in Figure 2.2 and Table 2.1). JDSi has used this information to determine probable ultimate demands for water, sewer and power utilities. This has been summarised in Table 2.2.



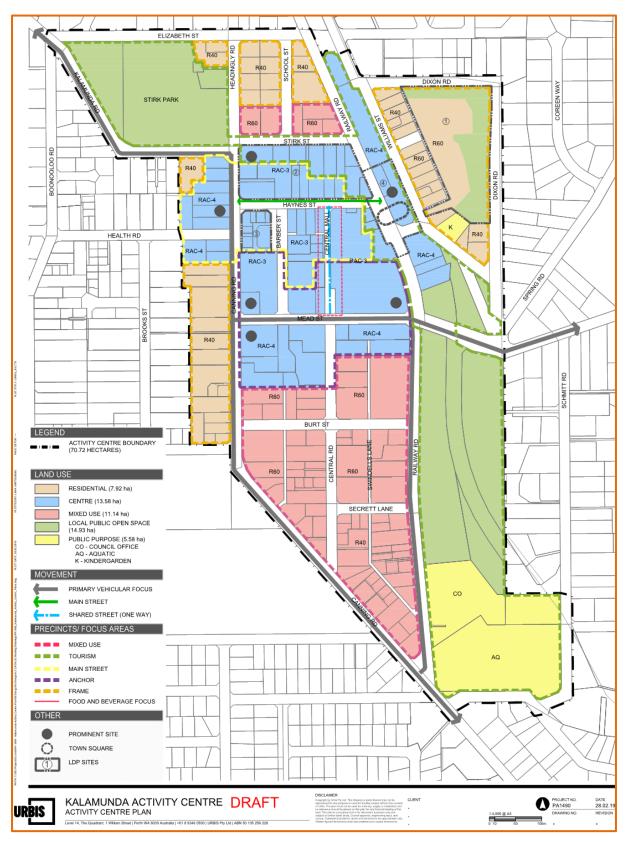


Figure 2.2: Activity Centre Plan (Urbis, February 2019)



#### Table 2.1 Proposed Precinct Densities

		Residential			
Precinct	Commercial	Utilities	Conservation	Equivalent R-Code	
	(ha)	(ha)	(ha)		
Mixed Use - R40	3.4	0.0	0.0	R-40	
Mixed Use - R60	9.7	0.0	0.0	R-60	
Tourism - RAC4	8.7	0.0	0.0	RAC-4	
Tourism - POS	0.0	0.0	13.4	N/A	
Tourism - Public Purpose	6.6	0.0	0.0	R-60	
Main Street - RAC4	3.2	0.0	0.0	RAC-4	
Main Street - RAC3	7.2	0.0	0.0	RAC-3	
Anchor - RAC4	4.9	0.0	0.0	RAC-4	
Anchor - RAC3	6.1	0.0	0.0	RAC-3	
Frame - R40	0.0	0.0	0.0	R-40	
Frame - R60	0.0	0.0	0.0	R-60	
Frame - POS	0.0	0.0	1.5	N/A	
	49.8	0.0	14.9		

#### Table 2.2 Probable Ultimate Demands for Water, Sewer, Power and Gas

	Dwollings	Demands			
Precinct	Dwellings (no.)	Water (L/s)	Sewer (L/s)	Power (MVA)	
Mixed Use - R40	133	13	2	2	
Mixed Use - R60	548	37	6	8	
Tourism - RAC4	204	21	3	6	
Tourism - POS	0	0	0	0	
Tourism - Public Purpose	370	26	5	5	
Main Street - RAC4	74	9	1	2	
Main Street - RAC3	204	20	2	5	
Anchor - RAC4	116	13	2	3	
Anchor - RAC3	171	17	3	4	
Frame - R40	220	13	0	1	
Frame - R60	98	7	0	0	
Frame - POS	0	0	0	0	
Total	2,138	176	23	37	

Please note the probable ultimate demands shown in Table 2.2 are the forecast demands once the area is completely developed to the proposed KACP, and includes already existing dwellings in the forecast model.

This report documents the existing and future servicing requirements to support the planned development. It has been based on JDSi's site observations, local experience gained from various projects and advice received from the various infrastructure stakeholders and utility providers.



# **3 Site Characteristics**

## 3.1 Existing Structures and Vegetation

An aerial of the subject site is shown on Figure 3.1 and provides an overview of the existing structures and extent of vegetation on the site. The site predominantly consists of low rise commercial and residential dwellings along with public and community facilities. To the east of the subject area is significant undeveloped crown reserve.



Figure 3.1: Site aerial (Nearmap, September 2018)



## 3.2 Topography

Low resolution topographical data sourced from the Water Corporation's Electronic Submissions Interface indicates the site comprising of undulating land with grades of up to 1 in 10 in some areas. An excerpt of the topographical data is shown on Figure 3.2 The topographical data is consistent with our visual assessment of the site undertaken utilising "street view" photography sourced from Nearmap

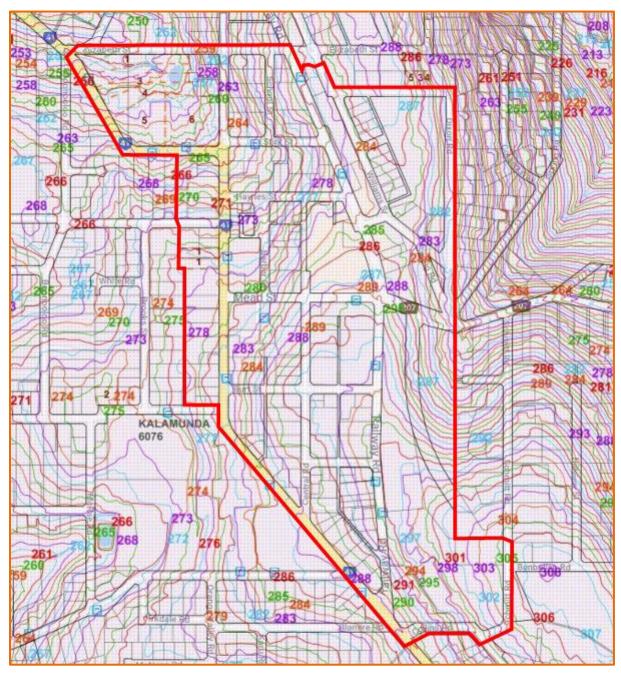


Figure 3.2: Topography (Water Corporation, September 2018)



## 4 Sewer

#### 4.1 Existing Situation

The Water Corporation owns and maintains the sewerage reticulation system across the Perth Metropolitan area.

The subject area possesses several operational Water Corporation gravity sewer lines and two privately owned pump stations. Existing sewer reticulation can be seen in Figure 4.1 highlighted in red. There is the potential for existing sewer lines to be extended in order to service all lots within the site area. Currently the sewer network in the area is collecting and flowing downstream west of the subject area. An investigation would need to be undertaken to determine what amendments to the existing sewer infrastructure would be required to service additional lots and increased lot densities.

All sewer lines in the subject area are standard DN150 PVC pipe, with the exception of a single DN300 gravity line extending from the Kalamunda District Hospital (to the North East of the KACP), south along Williams St, across Haynes Rd and finally exiting the area to the West.

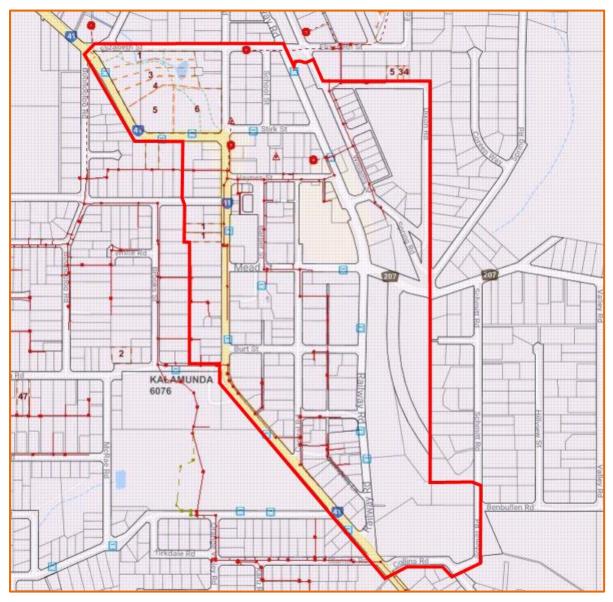


Figure 4.1: Water Corporation Sewer Reticulation Assets (Water Corporation, December 2017)



## 4.2 Current Planning

Whilst the Water Corporation has planning in place across the Perth Metropolitan region, it requires updating as revised re-zoning and Council planning occurs to ensure additional loads are taken into account. The Water Corporation have carried out a review of the current planning based on the forecast dwelling numbers and developable areas for each of the precincts and have provided preliminary advice for the ultimate development. These are outlined in Section 4.3.

#### 4.3 Future Requirements

The Water Corporation's adopted, long term wastewater planning for the Kalamunda Sewer District is attached in Appendix A. The green linework shows the various sub-catchments and assumed SDF's based on ultimate flows arising from the full development at the zonings and density codings shown in the City's current Town Planning Scheme.

The capacity limits of the various 150mm and 225mm retic. sewers will be based on the gravity hydraulic characteristics of gravity sewers (150 sewers typically can accept up to 6 L/s SDF depending on grade; 225 sewers can accept up to 22L/s SDF depending on grade).

JDSi have overlayed the Water Corporation sub-catchments and assumed SDF flows onto the Activity Centre Plan, and it appears the long-term flows from the full development of the proposed land uses can be accommodated in the downstream gravity sewers. However, this would need to be confirmed by Water Corporation following a review of the entire Kalamunda SD planning at some point in the future should the zoning changes be accepted and included in a revised TPS.

## 5 Water Supply

### 5.1 Existing Situation

The water supply assets owned by the Water Corporation within the vicinity of the site are shown on Figure 5.1. No water supply assets owned by other potable water providers were identified by Dial Before You Dig (DBYD) checks of the study area. The subject area is currently well serviced by a network consisting of steel, cast iron and asbestos cement pipes.

Of note, there is a DN460/535/610 steel distribution main running north to south through site towards a water storage facility in the south east corner. Stretching from Headingly Rd, down through Barber St, Central Rd and Canning Rd and across Collins Rd.





Figure 5.1: Water Corporation water reticulation assets (Water Corporation, September 2018)

## 5.2 Current Planning

The Water Corporation undertook a review of its current water distribution network across a large portion of the Perth Metropolitan Region as part of their Pressure Management Program and are looking at implementing District Metered Areas (DMA's) to help identify where losses in their system may be occurring. A DMA is defined as a discrete part of a water distribution network and is created by closing boundary valves or permanently disconnecting pipes to neighbouring areas. This will then allow the Water Corporation to control and meter water into a particular DMA in order to calculate the water balance for that area. This in turn will help to identify any losses within a particular system to allow the Water Corporation to prioritise any maintenance and upgrade works required.



## 5.3 Future Upgrades

Water Corporation have advised that it is not possible to determine if any of this network will need to be upgraded to support servicing of the land use categories indicated in the draft townsite strategy. Depending on the hydraulic demands of individual land uses or buildings, it is possible that some short sections of retic. main may need to be upgraded, replaced, re-laid or duplicated as necessary.

In Water Corporation's experience, most domestic water services can be adequately provided off 100 or 150mm retic mains. In some instances, particularly with mixed use class buildings under the BCA, or high rise, multi-storey buildings, the fire servicing requirements under the BCA drive the need for a large domestic fire service which can't be provided off a 100mm main. In these cases, the developer/builder/landowner will need to fund and undertake a water retic. main upgrade.

# 6 **Power Supply**

## 6.1 Existing Situation

Western Power owns and operates the electrical supply network within the area and therefore all electrical supply equipment and cables will need to be installed in accordance with Western Power UDS specifications. Western Power's high voltage (HV) assets located within the study area are shown on Figure 6.1. These include an existing 132kV transmission line and several high voltage distribution line assets.

The site area currently uses a combination of overhead and underground power networks. To improve the amenity of the town centre overhead lines may be moved underground. As planning progresses, discussion with Western Power and the City of Kalamunda would need to occur regarding this.

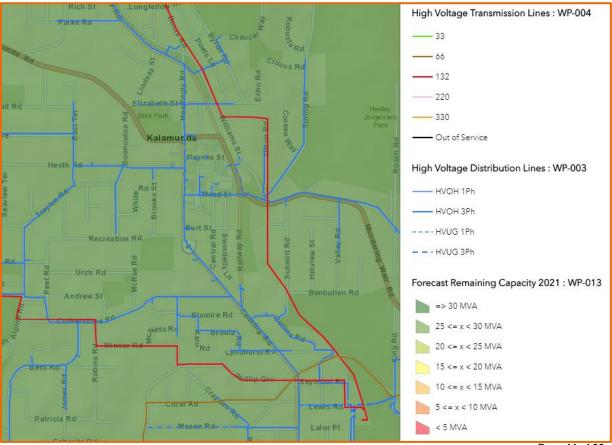




Figure 6.1: HV Assets and Forecasted Capacity (Western Power Network Capacity Mapping Tool), September 2018)

#### 6.2 Current Planning

Western Power regularly monitor their current network demand and take into account proposed Council Structure Plans to forecast potential network shortfalls across their expansive network. While they currently have planning forecasts showing remaining capacity until 2036, Western Power will not allow the reservation of power supply for any future development. It is on a "first come, first serve" basis and, therefore, Western Power cannot advise with any certainty where the power supply to support the future development of the KACP will come from.

#### 6.3 Future Upgrades

Based on the forecast loading, JDSi has calculated the required power demand for the ultimate development of the KACP to be in the order of 37MVA. A summary of the forecast demands is shown in Table 6.1 below.

	Dwellings		Demands		
Precinct	[no.]	Commercial [ha]	Utilities [ha]	Conservation [ha]	Power [MVA]
Mixed Use - R40	133	3.4	0.0	0.0	2
Mixed Use - R60	548	9.7	0.0	0.0	8
Tourism - RAC4	204	8.7	0.0	0.0	6
Tourism - POS	0	0.0	0.0	13.4	0
Tourism - Public Purpose	370	6.6	0.0	0.0	5
Main Street - RAC4	74	3.2	0.0	0.0	2
Main Street - RAC3	204	7.2	0.0	0.0	5
Anchor - RAC4	116	4.9	0.0	0.0	3
Anchor - RAC3	171	6.1	0.0	0.0	4
Frame - R40	220	0.0	0.0	0.0	1
Frame - R60	98	0.0	0.0	0.0	0
Frame - POS	0	0.0	0.0	1.5	0
Total	2,138	49.8	0.0	14.9	37

Table 6.1 – Forecast Power Demands for the KACP

The Western Power Network Capacity Mapping Tool indicates forecasted capacity of the subject area to be in excess of 30 MVA in 2021 and remains over 30 MVA in the 2026 and 2031 projections. This suggests that there would be sufficient capacity to service a rise in power demand following an increase in zoning density.

Western Power have advised they are willing to set up a working group with the City to work through planning of the area and review timing of developments to better inform both the City and themselves of the future upgrades required, and to help plan the upgrades through either their future network upgrading program, or working with the City and developers should upgrades be required due to specific development projects.



# 7 Telecommunications

### 7.1 Existing Situation

The National Broadband Network (NBN) rollout map indicates that the KACP is well serviced with NBN currently. An excerpt of the rollout map is shown on Figure 6.1. Early discussions with NBN should be undertaken to ensure adequate servicing for future planning requirements.

In addition to NBN there is an Optus fibre cabling along the entire length of Railway Road within the site, continuing along Canning Road to the south. There are also widespread Telstra assets present throughout the subject area.

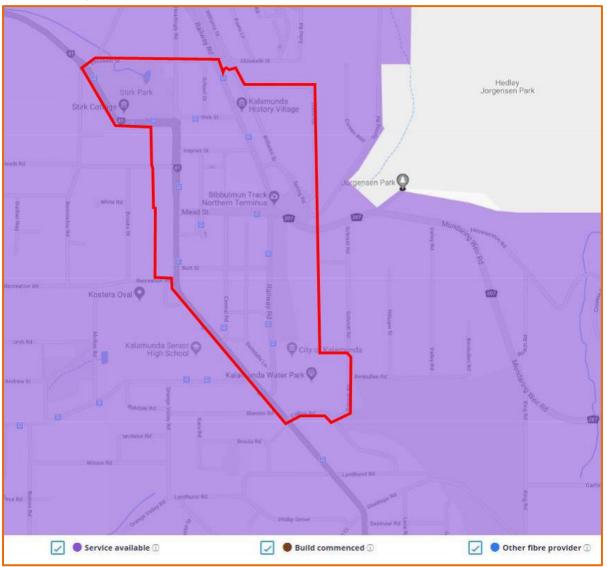


Figure 7.1: NBN rollout map (NBN Co, September 2018)

## 7.2 Future Upgrades

NBN have advised they have capacity to meet the required demands of the KACP as development occurs. It will assess each application on a case by case basis to determine load demand and will work with the developer to provide the relevant infrastructure.

General communication services for development will consist of the installation of a standard pit and pipe network in accordance with NBN Co guidelines and standards. The current design practice for road reserves, pavement and verge provisions will make adequate allowance for services including broadband in accordance with the agreed Utilities Service Providers handbook. There will be some local land requirements for equipment sites, similar to current provisions which



will be accommodated at detailed subdivision stage. In addition to headworks charges for development works, developers will be required to cover the costs of trenching and ducting for the infrastructure, however NBN Co will cover the other costs of installing fibre infrastructure, including backhaul. All communication assets within the development will remain in the ownership of the provider and easements will need to be granted in favour of the service provider.

## 8 Gas

### 8.1 Existing Infrastructure

ATCO Gas infrastructure is well reticulated through the KACP area. No High-pressure mains exist, however an extensive network of medium pressure 70kPa PVC lines and lot connections are present throughout the site. ATCO gas will provide additional advice on the capacity to service the subject area once proposed changes to the current planning are finalised.

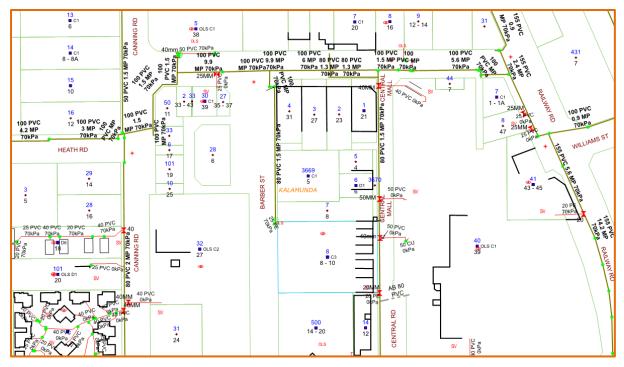


Figure 8.1: ATCO Gas Infrastructure Plan Excerpt

#### 8.2 Future Upgrades

ATCO Gas has advised the existing gas network has capacity to supply most of the proposed growth. Any growth above current capacity has been identified in ATCO Gas' forward planning, and reinforcement will be undertaken as part of standard network growth. This will ensure gas is available to this area as it grows.

## 9 Drainage

#### 9.1 Existing Situation

The City of Kalamunda have advised they do not have any planning / management strategies currently in place for the subject area. They do, however, have plans to upgrade drainage within Barber Street, Haynes Street, Canning Road and Kalamunda Road as per Figure 9.1.





Figure 9.1: Proposed Drainage Upgrades, Kalamunda City Centre (City of Kalamunda, 2017)

A portion of the proposed upgrade works have been completed to date.

#### 9.2 Future Requirements

It is recommended that a detailed drainage study of the KACP area is completed to provide guidance on any further upgrades that may be required to allow future development of the area. It is recommended that this is carried out prior to any further road upgrades within the KACP, to avoid potential reworks being required should drainage infrastructure require upgrading.

Discussions with the City indicated a desire for lot owners to manage their drainage within their lot (up to a 1 in 100 ARI event), with the City to deal with road and POS drainage. However, this would pose quite an onerous condition on the lot owners due to the very low permeability of the ground in the area. Large onsite storage tanks would be required with low flow outlets still needing to be permitted into the City's stormwater drainage network to allow for emptying of the on-site storage. Alternatively, a DCP could be considered for the area to allow the City to maintain/upgrade the drainage network as required. More discussion with the City should be undertaken to determine a direction forward with this issue.



## **10 Key Drivers and Risks**

There are a number of key drivers and risks for a project the magnitude of the KACP upgrade. Some of these are outlined below.

#### 10.1 Key Drivers

The KACP is currently well serviced with power, water, wastewater, telecommunications and gas reticulation, based on the current land use status. However, the proposed increase in population, commercial and retail space, and associated increases in transport, energy and water use, as well as the incorporation of large public areas to attract more visitors to the area, are the key driver forces affecting the existing infrastructure capacities.

These drivers exert direct pressure onto these utilities and ultimately produce a number of challenges which are described below.

#### **10.1.1 Overhead Power**

While a number of overhead power lines have been converted to underground, there are still several HV & LV overhead lines within the KACP precinct. These will restrict road upgrade and verge treatments in these areas, as well as greatly detract from the amenity of the area. JDSi recommend the City liaise with Western Power to discuss opportunities for inclusion in their future State Underground Power Program (SUPP). This program presents an opportunity to share the cost of undergrounding power between the State Government, Western Power, local councils and property owners.



Figure 9.1: Overhead HV & LV Lines in Mead Street (Google Street View, August 2018)



#### 10.1.2 Staging of Works

With over 50Ha of developable land being rezoned, and with a major portion of the area being owned by individual lot owners, staging of the works becomes a very complex situation. Should a majority of landowners wish to develop within a very short timeframe, a significant pressure would be put on a majority of services, forcing upgrades to be required earlier than would be expected through "organic growth". Western Power, ATCO Gas, and to a lesser extent the Water Corporation develop their forward works programs based on a steady rate of development. By staging the re-zoning of particular precincts, and reducing the "instant" impact on services, service reinforcements are more likely to be funded by the utilities as opposed to needing to be funded upfront by the developer.

#### **10.1.3 Collaborative Approach**

Due to the size of the proposed KACP and the impact it will have on multiple service provider assets, JDSi recommends a working group be formed between the City of Kalamunda and the relevant Authorities. This will enable open dialogue between all parties, and help identify required upgrades, critical timing of upgrades, and any potential fatal flaws or network modifications.

The following people would be the initial contact people from the relevant authorities:

Water Corporation:	Ian Kininmonth, Senior Urban Planner		
	lan.Kininmonth@watercorporation.com.au		
Western Power:	Julie Hodges, Customer Relations Consultant		
	julie.hodges@westernpower.com.au		
ATCO Gas:	Chris Pemberton, Senior Business Development Representative		
	chris.pemberton@atcogas.com.au		
NBN Co:	Gillian Murphy, Customer Delivery Specialist		
	gillianmurphy@nbnco.com.au		

#### 10.2 Key Risks

#### **10.2.1 Community Consultation**

Due to the scale of the required upgrades to roads and services, and the extent of time over which these upgrades will need to occur, community consultation will be key to ensuring residents are well informed of the proposed changes, and more importantly timing of any changes that will have a direct impact on those affected. Early community consultation, including public information sessions, community workshops, newsletter drops etc, allows residents to better prepare themselves for any disruptions that will affect their circumstances, which should allow for a smoother rollout of upgrades throughout the KACP.

#### 10.2.2 Health

Because of the brownfield redevelopment nature of the KACP upgrades, it is imperative that appropriate Dust, Noise and Vibration management plans are implemented during construction works so as to minimise any impact on the existing residents. These management plans should comply with all statutory requirements and guidelines, and closely monitored for compliance during the construction works.



# **11 Conclusion**

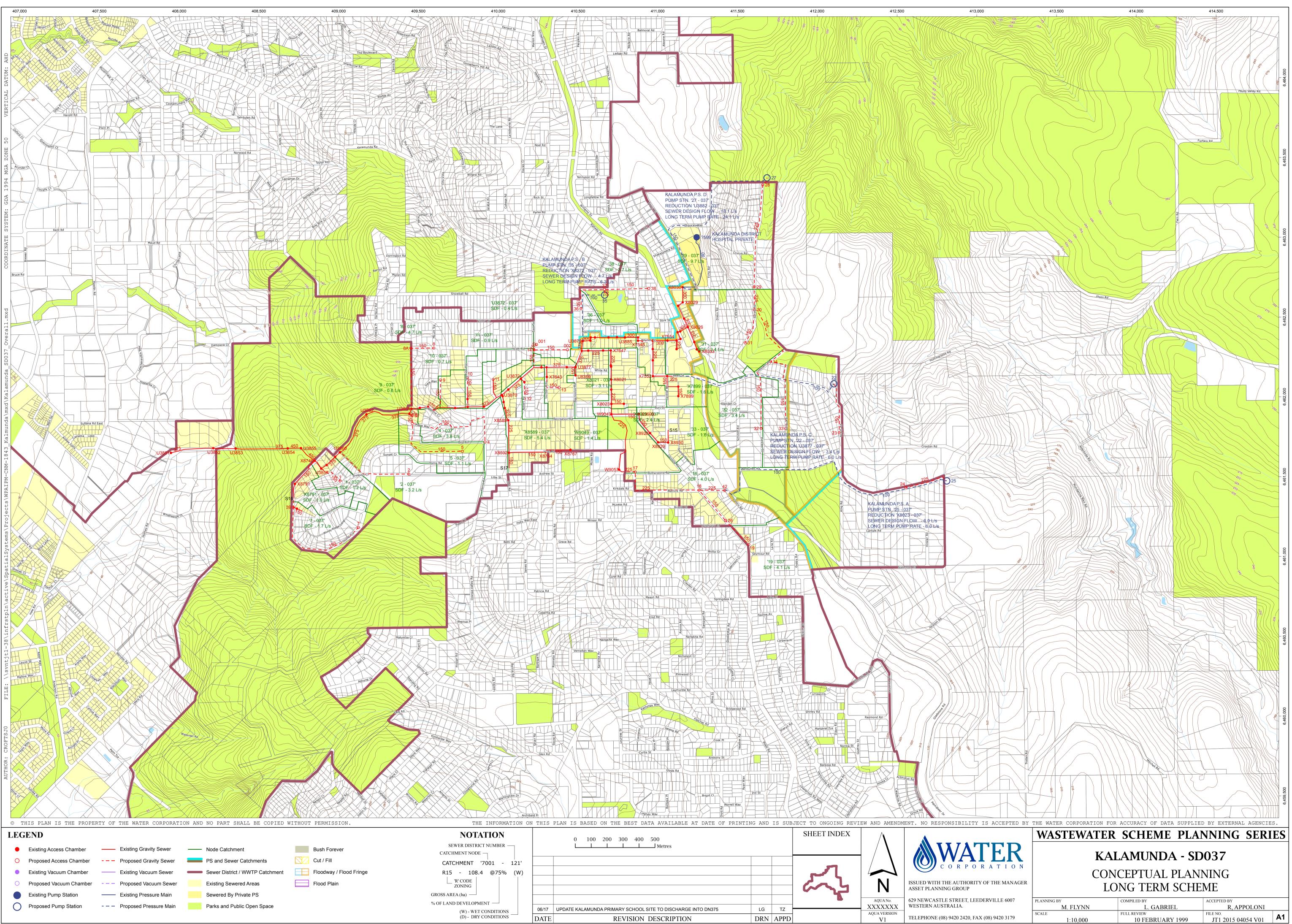
While the area is well serviced by all utilities to meet current demands, several upgrades will be required to meet the ultimate development requirements. These include:

- Potential upgrades to water reticulation subject to development demands (particularly for fire water requirements)
- Potential upgrades to sewer reticulation subject to development demands
- Undergrounding of power as required by Western Power during redevelopment of land
- Potential upgrades to ATCO Gas reticulation subject to development demands

Some of the above upgrades will be carried out by the relevant service authority as "organic growth" of the area occurs (such as pump station upgrades, power and gas reinforcements). However, if there is a development with a singularly high demand, then some or all of the cost to upgrade infrastructure to service the development may be borne by the developer.



# Appendix A – Water Corporation Sewer Conceptual Planning Long Term Scheme





# Appendix B – Water Corporation Advice

## **Peter Royle**

From:	Brett Coombes <brett.coombes@watercorporation.com.au></brett.coombes@watercorporation.com.au>
Sent:	Wednesday, 24 October 2018 12:36 PM
То:	Peter Royle
Subject:	RE: Kalamunda City Centre - Planning Advice Submission
Attachments:	Kalamunda SD conceptual ww planning.pdf; Kalamunda water networks.pdf;
	Kalamunda sewer network.pdf

Peter,

Chas is still away from the office.

Without water demands for all the proposed land uses and long term wastewater flows, it is difficult to provide any useful response to the City's draft strategy in the against the water Corporation's planning. Here are some general comments and issues that you will need to consider and possibly examine further.

#### Water servicing

The Kalamunda town centre area has an established network of water distribution and reticulation mains. The town centre area straddles two water supply zones: the Kalamunda-Lesmurdie High Level zone (generally west of Canning Rd), and the Walliston Lower High Level Zone. The zones are separated by closed zone valves at key points in the system (see attached screen image – purple line is the zone boundary).

The network of existing water reticulation mains (<300mm dia) along local streets that provide services to existing customers are typically 100 or 150mm cast iron, 100 or 150mm AC, with some short lengths of 100P in a couple of locations. It is not possible to determine if any of this network will need to be upgraded to support servicing of the land use categories indicated in the draft townsite strategy. Depending on the hydraulic demands of individual land uses or buildings, it is possible that some short sections of retic. main may need to be upgraded, replaced, re-laid or duplicated as necessary.

In our experience, most domestic water services can be adequately provided off 100 or 150mm retic mains. In some instances, particularly with mixed use class buildings under the BCA, or high rise, multi-storey buildings, the fire servicing requirements under the BCA drive the need for a large domestic fire service which can't be provided off a 100mm main. In these cases, the developer/builder/landowner will need to fund and undertake a water retic. main upgrade.

#### Wastewater servicing

The Water Corporation's sewerage network covers only a part of Kalamunda, including most of the town centre area – see attached image.

The gravity sewers through the town centre area are typically 150 and 225 PVC. The 300PVC Kalamunda Collector Sewer extends from Elizabeth St in the north (takes private pump discharge form the hospital) heading south along Williams St and Railway Rd, and west along Haynes St traversing the town centre.

The Corporation's adopted, long term wastewater planning for the Kalamunda Sewer District is attached for your use. The green linework shows the various sub-catchments and assumed SDF's based on ultimate flows arising from the full development at the zonings and density codings shown in the City's current TPS. The capacity limits of the various 150mm and 225mm retic. sewers will be based on the gravity hydraulic characteristics of gravity sewers (150 sewers typically can accept up to 6 L/s SDF depending on grade; 225 sewers can accept up to 22L/s SDF depending on grade).

You will need to overlay our sub-catchments and assumed SDF flows onto the City's strategy and determine if the long term flows from the full development of the proposed land uses can be accommodated in the downstream gravity sewers.

If the flows arising from the draft town centre strategy are higher than what is allowed for in our planning, then we will need to undertake a review of the entire Kalamunda SD planning at some point in the future. We would usually get our planners to do this review when the zoning actually changes in the City's TPS.

Ultimately, the maximum wastewater flow out of the Kalamunda Sewer District is limited by the capacity of the DN375 outlet sewer. There are no plans or projects on our capital program to duplicate or upgrade the outlet sewer.

Regards

Brett Coombes Senior Urban Planner Assets Planning Group Water Corporation T: (08) 9420 3165

From: Peter Royle [mailto:Peter.Royle@jdsi.com.au]
Sent: Tuesday, 23 October 2018 11:36 AM
To: Chas.Sabato@watercorporation.com.au
Cc: Brett Coombes
Subject: RE: Kalamunda City Centre - Planning Advice Submission

Hi Chas,

Just wanted to touch base with you to see if we would be able to get some comments back this week?

Please feel free to give me a call to discuss if needed.

Kind regards

## **Peter Royle**

SENIOR CIVIL ENGINEER

M: 0413 025 039 P: 08 9227 0595 F: 08 9227 8617 Workzone Level 6, 1 Nash Street Perth WA 6000

PO Box 8523 Perth BC WA 6849



## www.jdsi.com.au

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From: Brett Coombes [mailto:Brett.Coombes@watercorporation.com.au] Sent: Wednesday, 17 October 2018 11:52 AM To: Peter Royle <Peter.Royle@jdsi.com.au> Subject: RE: Kalamunda City Centre - Planning Advice Submission

## Good morning Peter.

We are down a couple of people this week, so we haven't managed to get around to your query. The turnaround time we aim for is 20 days, but we can usually get a first pass advice to you pretty quickly if we have the resources.

Chas Sabato in our team will be your contact point when he returns next week. In the meantime I have attached an excerpt of the Kalamunda Sewer District conceptual wastewater planning showing assumed maximum flows into various gravity reticulation sewers (150 and 225) that head west towards the DN375 outlet main sewer. The green linework shows the various sub-catchments and assumed SDF's based on ultimate flows arising from the full development at the zonings and density codings shown in the City's current TPS. I suggest that you overlay these sub-catchments and flows over the city centre plan and see how your flow yields and flow estimates are apportioned across the various sewers.

If the flows are higher than what is allowed for in our planning (i.e. if SDF's into the 150 sewers are going to be >6/ls and flows into the 225 sewers are going to be >20l/s) then we will need to undertake a review of the entire Kalamunda SD planning at some point in the future. We would usually get our planners to do this review when the zoning actually changes in the City's TPS.

### Regards

**Brett Coombes** Senior Urban Planner **Development Services Branch** 

From: Land Servicing Sent: Wednesday, 17 October 2018 8:51 AM To: Land Planning Subject: FW: Kalamunda City Centre - Planning Advice Submission

**Jan Pryce** Support Officer - Business Services **Development Services** Water Corporation

**E:** Jan.Pryce@watercorporation.com.au

**T:** (08) 9420 2099

**F:** (08) 94203193

A: 629 Newcastle St Leedervile WA 6007

P: P O BOX 100 Leederville WA 6902

Keep in touch 🛛 🕇 💟 🔠 in

W: watercorporation.com.au

From: Peter Royle [mailto:Peter.Royle@jdsi.com.au]
Sent: Wednesday, 17 October 2018 8:45 AM
To: Land Servicing; Building Services
Subject: Kalamunda City Centre - Planning Advice Submission

Hi there,

I submitted an online application for planning advice for the proposed rezoning of the Kalamunda City Centre precinct area, however, I never received a receipt for the online application. I have attached a copy of the proposed changes which was also attached in the application. Also below is a table showing probable dwellings and demands.

			Demands	
Precinct	Dwellings (no.)	Water (L/s)	Sewer (L/s)	Power (MVA)
Mixed Use - D1	195	16	2	3
Mixed Use - D2	685	42	7	8
Tourism - D2	307	26	4	6
Tourism - POS	0	0	0	0
Tourism - Public Purpose	370	26	5	5
Main Street - A1	89	10	1	2
Main Street - A2	255	22	2	5
Anchor - A1	140	14	2	3
Anchor - A2	171	17	3	4
Frame - D1	323	18	0	1
Frame - D2	98	7	0	0
Frame - POS	102	8	0	0
Total	2,733	206	26	38

I have been asked by our client to provide an update on when we may receive advice. It would be good if someone could call to discuss with me to make sure we are on the same track with what is proposed.

Kind regards

## **Peter Royle**

SENIOR CIVIL ENGINEER

M: 0413 025 039 P: 08 9227 0595 F: 08 9227 8617 Workzone Level 6, 1 Nash Street Perth WA 6000

PO Box 8523 Perth BC WA 6849



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# APPENDIX H LANDSCAPE MASTER PLAN



# Kalamunda Activity Centre - Landscape Master Plan



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DATE ISSUED	DESCRIPTION	<b>REVIEWED BY</b>	DATE SUPERSEDED	
21/09/2018	Draft for Review	KN/CoKalamunda	05/03/2019	
06/03/2019	Draft for Review	CoKalamunda	CoKalamunda	

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	OPPORTUNITIES AND CONSTRAINTS MASTER PLAN

4.0 NEXT STEPS

46

THE NET I STATE DOOL

6

Kalamunda is a place borne of community spirit with a strong connection to its heritage.

The town centre serves as a gateway to the hills and as a hub connecting both locals and visitors alike. Its natural bushland setting and traditional village atmosphere are a platform to enhance kalamunda's unique offerings, activities and events, that provides spaces for community interactions and neighbourhood conversations.





# INTRODUCTION

# **1.0 INTRODUCTION**

# WHY A LANDSCAPE MASTER PLAN

Urbis has been engaged by the City of Kalamunda to establish a project vision for the redevelopment and regeneration of the Kalamunda Activity Centre (KAC). This vision is intended to provide strategic direction and inform the Kalamunda Activity Centre Plan; a document required to provide a detailed planning framework for centres and is essential in the context of the Western Australian Planning Commission State Planning Policy 4.2 – Activity Centres for Perth and Peel.

The landscape master plan for the KAC has been informed by community engagement, detailed site assessment, literature review and case studies.

Kalamunda town centre has unique historical and locational qualities and the preparation of the Kalamunda Activity Centre Plan (KACP) and its supporting landscape master plan is critical to shaping its future positioning as a contemporary, attractive and functional centre for residents and visitors.

The town centre is at a crossroad, whereby its future and function need an effective combination of vision and practical implementation to enable its ongoing relevance and commerciality, whilst retaining key character and identity. The current townsite is diverse in nature, land use and design. Heritage, topography and an active, engaged local community provide great opportunities to leverage from.

Critically, the Kalamunda townsite contains some of the trade-marks of a wellperforming district centre, but lacks any real cohesion. The preparation of a landscape master plan provides a framework to respond to, and deliver on, key community priorities. It ensures the unique attributes and values of the Kalamunda town centre, and its community, are retained and form part of a cohesive vision in support of the KAC.

# 1.1 PURPOSE

In 2018 the City of Kalamunda (the City) commenced an Activity Centre Plan (ACP) process to guide the future planning and development decisions for Kalamunda's town centre over the next ten years.

The existing planning framework is no longer performing as required, and a new framework is needed that translates the vision into practical development guidelines which are in the control of local government. The ACP and associated design guidelines need to be both implementable and enforceable.

To guide this process, the City in conjunction with Urbis sought feedback from the community, business owners, landowners and other relevant stakeholders.

The ACP framework incorporates and addresses issues such as regional and local context, transport and movement networks, land use and infrastructure, urban form, resource conservation as well staging and implementation.

The landscape master plan supports this through presenting a consolidated set of townscape improvement opportunities, that will underpin the successful evolution and growth of the Kalamunda town centre. The future and function of the town centre needs a successful combination of a clear vision along with practical implementation, to enable its ongoing relevance whilst retaining its character and identity. This landscape master plan supports the vision and provides a framework to assist the City in the prioritisation and delivery of a capital works program to the benefit of the local community, retailers and visitors.

All concepts of public realm areas and interfaces in this document are indicative only, and aim to articulate the principles of what is required in each area.

## 1.2 RELATIONSHIP TO OTHER DOCUMENTS

The Kalamunda Activity Centre landscape master plan has been developed with regards to several other key documents to assist the City and community with the visioning and delivery of public realm within the Kalamunda Activity Centre core.

The master plan has been prepared in conjunction with the following documents:

- · Kalamunda Activity Centre Plan;
- Kalamunda Activity Centre Built Form
   Design Guidelines; and
- Kalamunda Activity Centre Public Art Policy.
- Kalamunda Activity Centre Vision Report

This landscape master plan has been prepared with due regard to the following strategic documents:

- Metropolitan Region Scheme;
- Perth and Peel @ 3.5 million, including North-East Sub-Regional Planning Framework;
- LPS 3;
- Kalamunda Town Centre Planning and Urban Design Guidelines (in effect as of 20 June 2011);
- SPP 3.5 Historic Heritage Conservation;
- SPP 3.7 Planning in Bushfire Prone Areas ;
- SPP 7 Design for the Built Environment (October 2016);
- Liveable Neighbourhoods (2009) and Draft Liveable Neighbourhoods (2015);
- City of Kalamunda Local Planning Strategy 2010; and
- Stirk Park Master Plan.

## **1.3 PRINCIPLES AND OBJECTIVES**

The following over-arching principles and objectives have been developed to inform the Kalamunda Activity Centre Plan and apply to the landscape master lan. These have been derived from and respond to the specific site characteristics, project aspirations and influences that were identified during the development of the KACP. Refer the KAPC for a full list of objectives.

THEME		OBJECTIVES
<u>कि</u>	CHARACTER HOME IN THE FORREST	<ul> <li>Development a new 'main street' environment along Hayne Street supported by Central Mall, Mead Street, Barber Street Canning Road and Railway Road.</li> <li>Connect the cultural elements of the town centre to create a meaningful and cohesive story.</li> </ul>
, С, С, С,	<b>COMMUNITY</b> A PLACE FOR EVERYONE	<ul> <li>Create opportunities for events, festivals, markets and activities to support a vibrant and activated town centre.</li> <li>Encourage co-location of community facilities.</li> <li>Create places that cater for all members of the community from youth to the elderly.</li> </ul>
	LIVE/WORK/ PLAY ALL YOUR DAILY NEEDS	<ul> <li>Enhance safety and vibrancy of the public realm by encouraging passive surveillance and facilitating social interaction.</li> </ul>
0 <sup>,0</sup> ,0	CONNECTED WALK THE CENTRE	<ul> <li>Promote pedestrian and cyclist priority streets that are safe and accessible for all.</li> <li>Encourage walking, cycling and public transport use.</li> <li>Ensure destinations and places are well-connected and legible.</li> </ul>

## 1.4 PRECINCTS AND **OBJECTIVES**

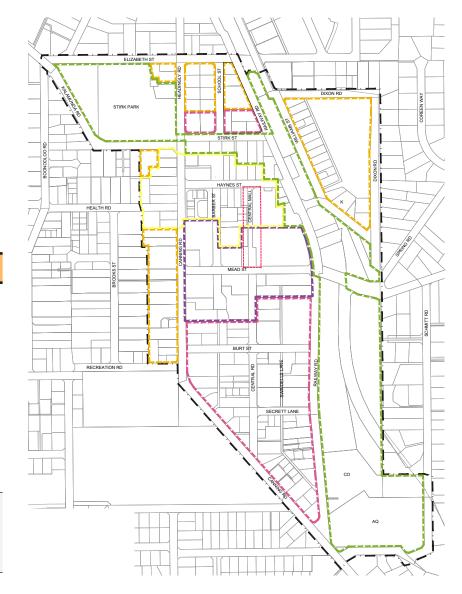
As outlined in the KACP map and precinct map, the activity centre plan area is divided into precincts to guide land use and built form outcomes.

In addition to the overall activity centre objectives, public realm improvements in each of the precincts should respond to the following precinct vision statement and objectives.

### LEGEND:

- 13 ACTIVITY CENTRE BOUNDARY
- MIXED USE PRECINCT
  - TOURISM PRECINCT
  - MAIN STREET PRECINCT
- ANCHOR PRECINCT
  - RESIDENTIAL PRECINCT
  - FOOD AND BEVERAGE FOCUS

PRECINCTS	VISION	OBJECTIVES
MAIN STREET PRECINCT	This precinct will encompass the primary main street anchored by Haynes Street. The precinct should accommodate a mix of commercial, retail, mixed use, food and beverage offerings. The main street will be safe for pedestrian and vehicles alike. Built form will be sympathetic to the character of Kalamunda encouraging development that is an appropriate scale that interacts with the main street element.	<ul> <li>Provide a walkable environment that reduces car dominance on Hayne Street.</li> <li>The provision of an inviting public realm that attracts people to it and encourages people to enjoy the town centre.</li> <li>Provide a safe and pleasant pedestrian environment through opportunities for shade, rest stops, weather protection and footpaths.</li> </ul>
RESIDENTIAL PRECINCT	Consistent with the residential zone, this precinct will provide primarily single and grouped dwelling development in close proximity to the town centre.	



PRECINCTS	VISION	OBJECTIVES	
ANCHOR PRECINCT	This precinct supports larger scale uses that aren't appropriate to a main street but are critical in supporting the diversity and range of commercial offerings in the town centre.	Reduce vehicles in the centre of the precinct and encourage traffic on the outskirts.	
	This precinct is the focus of large format commercial and retail premises centred around Kalamunda Central (including supermarket/s, mini majors etc).		
	Small scale, active uses support the anchor tenants and generate additional employment.		
TOURISM PRECINCT	This precinct is the hub for tourism, culture and heritage for the Kalamunda town centre.	• Encourage uses that focus on tourism attractions to complement the Zig Zag Cultural Centre and heritage character of the town centre.	
	Centred around Railway Road and Zig Zag Culture Centre. Activity in this precinct leverages off the local and regional identity, building on the heritage and character of the town centre.	<ul> <li>Create synergies between Stirk Park including Stirk Cottage, Zig Zag Cultural Centre and Bibbulmun Track.</li> </ul>	
	Compatible land uses are consolidated where appropriate providing synergies between key cultural features of the town centre including Stirk Park and Bibbulmun Track		
MIXED USE PRECINCT	This precinct supports the Kalamunda town centre core as the centre of activity and employment generation.	• Facilitate predominantly residential and mixed-use development that contributes to the walkable catchment of the town centre	
	Land use is predominantly mixed use encouraging residential and small scale commercial uses in accordance with existing planning framework.		
	Small scale professional uses such as home office are encouraged where appropriate.		
FOOD AND BEVERAGE FOCUS AREA (AS IDENTIFIED ON ACTIVITY CENTRE PLAN MAP)	Central Mall provides a focus for food and beverage outlets activating the town centre into the evening hours.	Provide a safe and pleasant pedestrian environment through opportunities for shade, rest stops, weather protection and	
	Central Mall will function as a shared pedestrian/vehicle zone allowing one-way traffic movement to activate the street.	<ul> <li>footpaths.</li> <li>Create an environment where vehicles slow down and pedestrian movement is prioritised.</li> </ul>	
		<ul> <li>Support opportunities for community events such as market days and fairs activating the street in the day and night.</li> <li>Land uses where possible will provide opportunities for alfresco</li> </ul>	







# **2.0 CONTEXT**

# 2.1 HISTORY

Kalamunda has a unique history evolving from the timber and orchard industries and is a popular holiday destination for people from Perth and Fremantle. Kalamunda History Village and Stirk Cottage are an important element of the town's history.

There are a number of known historic heritage places within the KAC area that are included on the WA State Register and the Kalamunda Municipal Inventory. These places should be identified in the Kalamunda Activity Centre Plan (KACP), to ensure they are considered in any future development of the activity centre. Where future development is proposed, including new development adjacent to heritage places, internal refurbishment of heritage places, or proposed demolition of heritage places, impact assessments will be required to be prepared and approved by the relevant level of government prior to any works taking place.

The Kalamunda and District Historical Society manages a heritage trail in the town. Consideration could be given to consultation with the Society to further develop interpretive opportunities identified in ths report.

# 2.2 CONTEXT

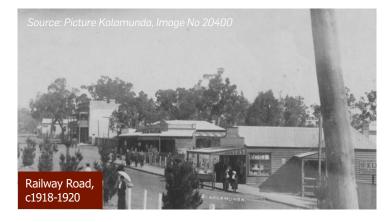
Kalamunda is located in the growing Perth Hills area, is located approximately 25 kilometres from Perth CBD and will have an estimated population of 25,194 by 2050. Kalamunda could be said to be one of the 'first tree change' communities that has grown over time, from a small village to an emerging town centre due to increased vehicular mobility, new urban settlement and the desire for a 'rural lifestyle' in close proximity to Perth CBD.

Present day, wider Kalamunda has a diverse landscape of national and regional parks, State forests, wineries and local industries such as orchards, intensive horticulture and the like. It is also becoming an emerging urban area with expanding industrial and transport hubs in areas such as Forrestfield and High Wycombe, and also an attractive City for families to reside in areas such as Lesmurdie, Maida Vale and Gooseberry Hill.

Taking a closer look at the heart of Kalamunda, the town centre has a mixture of vibrant, energised spaces and streetscapes, while other areas lack a sense of identity and commercial investment resulting in a fragmented town centre. Built on a traditional grid pattern although irregular, the town centre has a mix of lot sizes, building scales and dispersed commercial and retail uses. Former development has been strongly car-orientated to cater for the convenience of motorists. This has resulted in a number of developments failing to contribute to the streetscape with dominant parking areas, large setbacks and minimal street activation or presence.











Source: Picture Kalamunda, Image No 20400





Rd

Prepared by Urbis for City of Kalamun

The KAC study area is generally bound by Stirk Park to the north, Brook Street and Canning Road to the west, the Kalamunda Water Park to the south, and Bibbulmun Track and Dixon Road to the east.

The landscape master plan study area includes the core and frame of the Kalamunda town centre responding to existing land use and built form, movement network, infrastructure provision, community facilities and open space.

# LEGEND

👝 👝 KAC study area Landscape master plan study area





## 2.3 COMMUNITY CONSULTATION

## PURPOSE

In 2018 the City of Kalamunda (the City) commenced an Activity Centre Plan (ACP) process to guide the future planning and development decisions for Kalamunda's town centre over the next ten years.

To guide this process, the City in conjunction with Urbis sought feedback from the community, business owners, landowners and other relevant stakeholders. The following is a summary of this process and outcomes and relevant to the landscape master plan. Refer the KACP for a full summary of the consultation.

Kalamunda town centre has unique historical and locational qualities and the preparation of the landscape master plan is critical to shaping its future positioning as a contemporary, attractive and functional centre for residents and visitors.

## **CONSULTATION PROCESS**

Urbis undertook the first stage of stakeholder and community consultation to seek insights on the local perception of the town centre and how it could better meet local needs and aspirations. This included engagement with local business owners, landowners and tenants, local Chamber of Commerce, local organisations and the broader community.

A consultation program was designed to target the key stakeholders of Kalamunda's town centre area. Multiple opportunities and events were held to ensure that all relevant voices within the City were captured over February and March 2018 including:

- Business owner `coffee chats';
- Central mall pop up stall;
- Farmers market pop up stall;
- Visioning workshop; and
- Online survey.

The business owner coffee chats were attended by 14 business owner(s), whilst an estimate of 30-40 community members attended the Saturday event and 60+ at the Sunday farmers market pop up stalls. Both pop up stalls involved a Jane's Walk with multiple local speakers to guide walking tours through the town centre.

Approximately 10-15 community members joined the Jane Jacobs walks. More than 17 people attended the visioning workshop that was held at the Town Hall on the March 15, 2018. The visioning workshop was highly interactive, enabling attendees to hold discussions about their ideas, visions and insights to guide the future of the town centre facilitated by the City's Officers and Urbis planning and design consultants.

Online consultation was via the City's website, which provided access to a detailed public survey. The survey was conducted over 6 weeks to 30 March 2018, with 44 people completing the survey.



## **KEY THEMES**

The following key themes relevant to the landscape master plan emerged from the consultation;



## LAND USE

- Encourage a night-time economy supported by food and beverage offerings and a variety of retail.
- Consolidate and upgrade community facilities.



## PUBLIC REALM

- Improved streetscape beautification.
- Create a town square / focal point for the town centre.
- More greenery, trees and gardens.
- Improve infrastructure to encourage more events.
- Create soft and hard linkages to the historical and cultural features.
- Create places to play, relax and be entertained.



## CONNECTIVITY

- Safe, accessible and legible pedestrian connections.
- Improvements to wayfinding and signage.
- Provision of cycling facilities and infrastructure.
- Increase connections to green space and green links.
- Improved public transport and connections to existing public transport.



## **BUILT FORM**

- Built form and materials to reflect the character of the town centre.
- Height and density of built form to be sensitive to human scale.
- Encourage a comfortable and welcoming pedestrian environment through awnings, shade structures.



## 2.4 OPPORTUNITIES AND CONSTRAINTS

The following list of opportunities and constraints pertaining to the public realm were developed by the KAC project team following literature review, due diligence and consultation.

#### **OPPORTUNITIES**

#### EXISTING LAND USE AND DEVELOPMENT

- Reinforce Haynes Street as the 'main street' of the town centre. The focus on this main street should be strengthened through future planning and design interventions.
- Reinforce gateways and entries statements to the town centre. There are relatively clear gateway points but little legibility beyond the threshold as to where the town centre is.
- Improve the entrance to the pedestrian mall on Central Mall. This entrance is an important (and highly visible) gateway to the pedestrian mall and weekend markets.
- Connect the town centre to its past by strengthening the physical connections to the adjacent History Village and Stirk Park.
- Create a town square/focal point for the town centre.
- Locate additional civic and government services in the town centre to attract and retain users in the town centre.

#### NATURAL ENVIRONMENT

- Create clear connections (physical or otherwise) to the surrounding natural features including Jorgensen Park, Bibbulmun Track, Stirk Park, walk and bike trails and wine trails etc.
- Provide more greenery, trees and gardens, including native and deciduous trees.
- Capitalise on natural view sheds from the undulating topography. Topography supports views for future tourism and food and beverage uses in northern areas, and lends itself to alfresco offering.
- Utilise existing vegetation as landmarks, as well as to soften and enhance the streetscape in the town centre.

#### INFRASTRUCTURE

• Transition the existing power network to underground power to improve amenity.

#### **OPPORTUNITIES**

#### ACCESS AND MOVEMENT

- Re-open Central Mall connecting Haynes Street and Mead Street. Whilst this will remain as an activated laneway for hosting festivals, food carts, and other activities during market days, by opening it up it can offer on-street parking and entice more permanent activities on non-market days, in turn supporting adjacent retailers.
- Improve pedestrian connections and wayfinding from the bus depot to the town centre and/or review opportunities to relocate the bus depot to Barber Street.
- Improve pedestrian connection and wayfinding from the Bibbulmun Track entry to the town centre.
- Create opportunities for safe, accessible and legible pedestrian connections.
- Investigate street improvements to the pedestrian environment along Railway Road and Stirk Street that work with the Bibbulmun Track improvements and surrounding heritage context.
- Investigate the introduction of dedicated cycle routes through the town centre.
- Investigate street improvements to the pedestrian environment along Canning Road between Stirk Park and Kalamunda Senior High School to encourage walking.

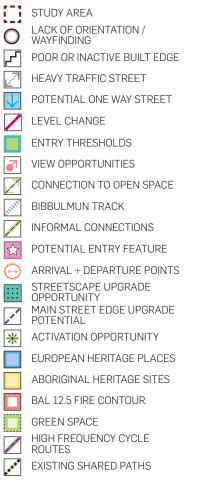
#### PLACEMAKING / SOCIAL INFRASTRUCTURE

- Investigate opportunities to further enhance existing event spaces such as the Town Square Gardens and establish a range of suitable events for this space.
- Establish a hierarchy of street and spaces to improve walkability, general vibrancy (people staying longer and moving around the centre) and business trade.
- Explore opportunities to establish a comprehensive approach to the heritage assets and celebrate and communicate the towns history.
- Potential future opportunities for interpretation of Aboriginal heritage values of the area

#### ECONOMIC

• Encourage weekend markets that serve as a valuable attractor for the town centre.

### LEGEND:



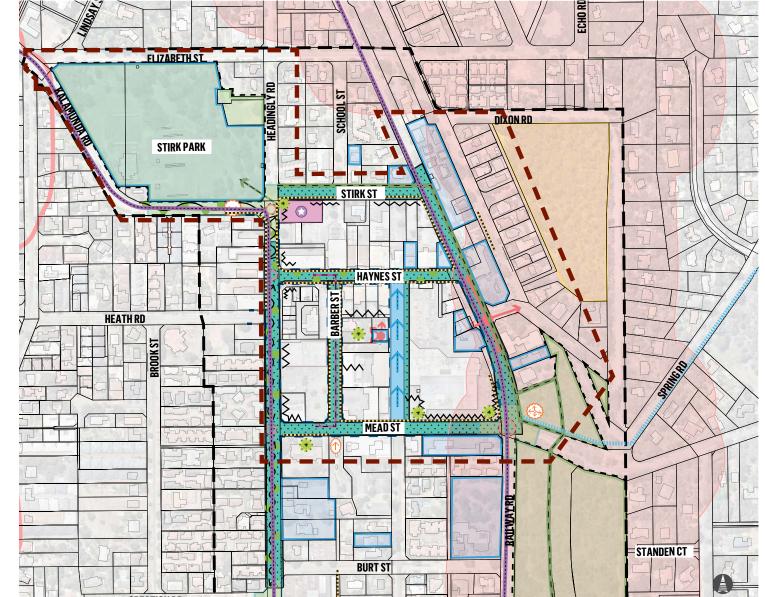


Figure 1: Opportunities and Constraints Plan

#### CONSTRAINTS

#### EXISTING LAND USE AND DEVELOPMENT

- Setbacks and slopes along Barber Street create difficult interfaces between buildings and footpaths.
- Fragmented car parking in the town centre creates legibility challenges, inefficiency, and a spatially inconsistent built fabric along the streets.
- Perceived poor recent examples of density may make any further density proposals more difficult.
- Disparate and separated development across the central city centre has resulted in multiple, competing main streets and poor concentration of activity.

#### NATURAL ENVIRONMENT

- Much of the town centre land is sloping, creating challenges with footpath/ building interface, car parking layouts, and large format buildings.
- Bushfire threat is evident particularly along the eastern portion of the study area.
- Water quality in Poison Gully impacted by litter and silt entering drainage system.
- Detailed drainage study for the town centre has not been completed and would be beneficial to any further planning to ensure recent upgrades can service future development under the KACP.

#### INFRASTRUCTURE

- Streetscape infrastructure is dated and inconsistent across the city centre.
- Poor linking between infrastructure assets such as seating and places to linger such as parklets with adequate shade.
- Currently serviced by overhead powerlines which detract from streetscape amenity.

#### ACCESS AND MOVEMENT

- Poor wayfinding and lack of clear and demarcated into the town centre from entry points.
- Inconsistent and illegible pedestrian crossings throughout the town centre creating an unsafe environment for pedestrians and vehicles.
- Limited access to shops on the pedestrian mall on non-market days.
- Inconsistent shelter and shade on main streets.
- Limited opportunities to link trips specifically between education, recreation, civic and health uses.

#### PLACEMAKING / SOCIAL INFRASTRUCTURE

- There is an aging population that may have specific expectations from the town both in service provision and structure.
- Poor micro-climate does not encourage walking, which adversely effects vibrancy and local business trade.
- No evidence of the overarching public art strategy being implemented.
- Re-development inertia resulting from retaining heritage buildings and maintaining a sense of heritage in the streetscape.





# Master Plan

# **3.0 MASTER PLAN**

# 3.1 VISION

In response to preceding sections, the project team has established the following design vision which balances the characteristics of the site with client aims and objectives and the applicable planning framework.

"Kalamunda is a place borne of community spirit with a strong connection to its heritage.

The town centre serves as a gateway to the hills and as a hub connecting both locals and visitors alike. Its natural bushland setting and traditional village atmosphere are a platform to enhance kalamunda's unique offerings, activities and events and provides spaces for community interactions and neighbourhood conversations."

# 3.2 MASTER PLAN

The landscape approach has been strongly based on the overall philosophy of creating a unique town centre environment informed by the key principles -



Character







Maintaining the existing character of the area, which references history and heritage and celebrates the village character of the town centre, is intrinsic to the overarching landscape design, while also allowing for more contemporary improvements where appropriate.

Careful analysis of the existing public realm function and distribution has been undertaken to ensure a diversity of spaces are distributed within the town centre.

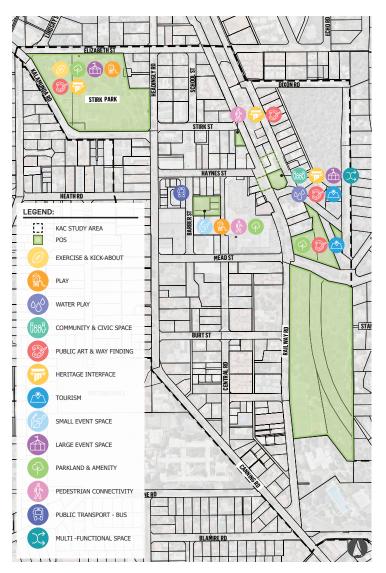
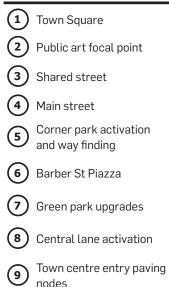


Figure 2: Landscape Typologies

## LEGEND



nodes

'Green' streets

treatment

Heritage/Civic precinct Main street entry

(10)

(11)

(12)



Figure 3: Landscape Master Plan

## 3.3 ELEMENTS

To elucidate the above-mentioned vision, the LMP is divided to four specific elements as follows and which are described in detail within this section.

**Element 1: Town Square** – A scaleable and defined town square that colocates heritage, tourism and community facilities and provides a civic focus for the town centre.

**Element 2: Main Street** – A clearly identifiable Main Street enhancing an already function urban fabric and increasing pedestrian focus and connectivity.

**Element 3: Green Park and Barber St Piazza**– An area of respite and social gathering supported by public transit, hospitality and community facilities.

**Element 4: Journeys** – 'Lost and Found in Kalamunda' clearly defined pedestrian and vehicle routes offering a diversity of experience and choice in a safe and vibrant town centre environment.

The elements are supported by a number of strategies that provide more fine grain detail on the more functional aspects of the public realm.

The degree to which each element and strategy outlined in this document responds to the underlying principles, as outlined above, is indicated by the icons at top of right each section heading.

## LEGEND



- 🔶 Journeys



Figure 4: Landscape Master Plan Elements



A vibrant civic heart embedded in natural and built heritage and showcasing Kalamunda as the gateway to the Bickley Valley. A place to connect, learn and grow.

The Town Square is the focal point of the town centre and is the gathering place for community events, creating a place where the local community is engaged in the ownership and development of culture, and a sense of place. This is key to providing a focus for the community, embedding a sense of identity as the community evolves and in providing the flexibility necessary to support community events such as markets, performances and events.



# LEGEND



### Opportunity

- The location of the Town Square will improve the connection between the existing Zig Zag cultural centre, library and Bibbulmun track.
- The location of the Town Square is on a relatively level area, allowing a more scaleable event space and improved access for all.
- Locating the Town Square in an area with numerous valued assets such as heritage, views, significant vegetation and cultural activities, enables the City to strategically invest in the design and amenity of the area by leveraging these assets, as opposed to trying to create them.
- Facilities such as waterplay, seating and play will allow residents and visitors to gather informally, and through adding a layer of social history, with interpretation and artwork. With close proximity to hospitality and retail the Town Square will become the heart of Kalamunda.
- The Town Square encompasses Railway Rd and connects the current cultural and civic uses to the east, with the heritage buildings with their associated retail and hospitality uses to the west. This area of Railway Rd is proposed to become a shared space with the ability to close this section to traffic for large events.

#### Long-term opportunities

Development of the entire Town Square as shown on the indicative master plan will involve significant planning and capital expenditure. There is opportunity to undertake an alternate version of this proposal as demonstrated opposite.

This option could deliver the following benefits:

- Improved east-west connection across Railway road;
- · Allows for a greater diversity of events;
- Redevelopment the existing library and co-locating this with additional community uses such as performance space, function spaces etc. to assist in consolidating a civic focus for the town centre. Co-location of these facilities and uses into a redeveloped civic heart may also release land in the Activity Centre core that can be used to offset the costs of redevelopment.
- Incorporation of a public art piece to terminate the view on Haynes Street will act as an attractor and aid in wayfinding. Consider opportunities for this to include elevated viewing opportunities to capitalise on the topography and surrounding landscape.

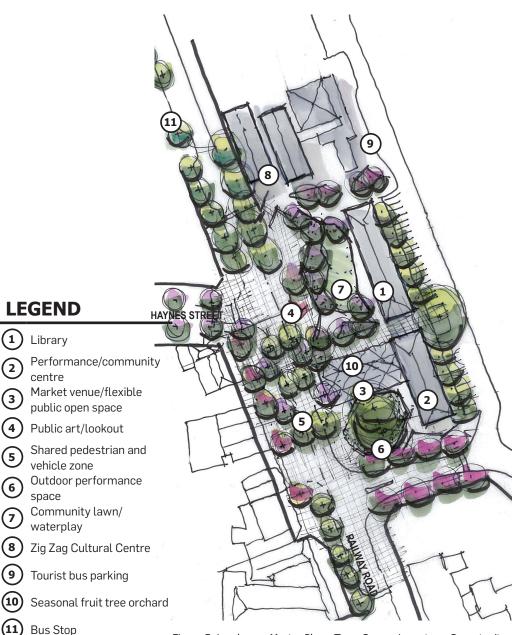
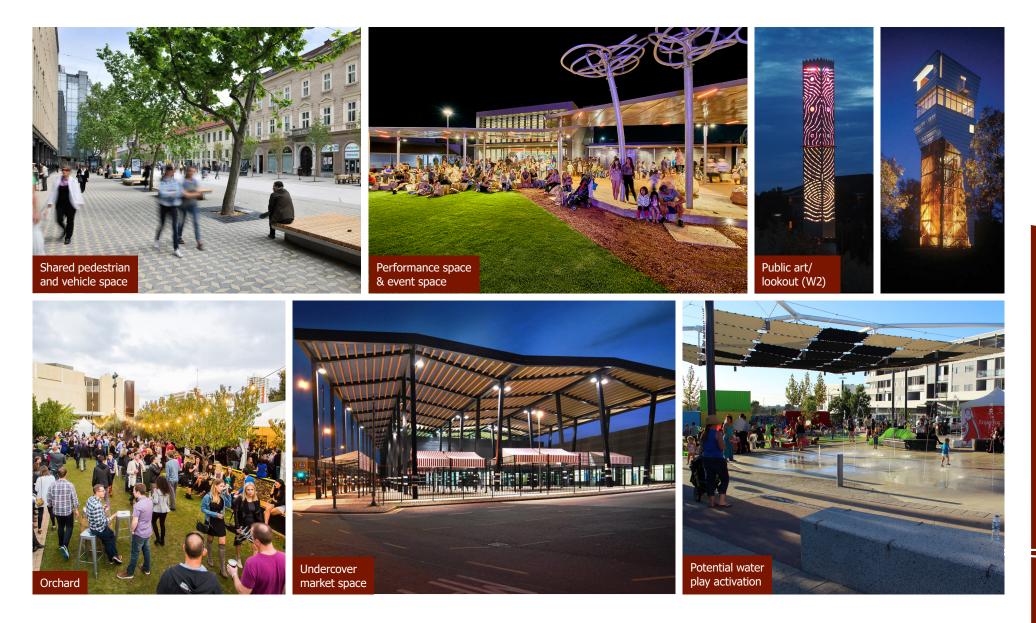


Figure 5: Landscape Master Plan - Town Square Long-term Opportunity





Building on the existing urban fabric of Kalamunda the revitalised Main Street will reinforce the town centre character and support economic uplift through enhancing the pedestrian environment

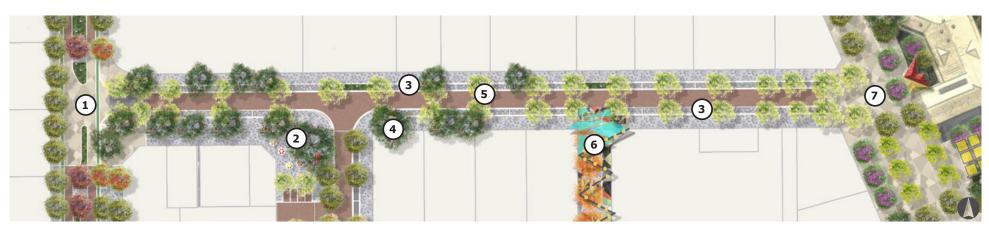
Haynes Street is the traditional retail core of the town centre and still functions as a significant destination. There are a number of interesting and attractive retail offerings along its length that public realm improvements would support. Haynes Street also acts as a connector from Stirk Park, the proposed Barber Street Piazza and Central Lane, to the heritage and civic precinct on Railway Road.

### Opportunity

- Reduce the road pavement width to assist in slowing vehicle traffic and provide an enhanced pedestrian area.
- Maintain and enhance the framed view along Haynes Street between Canning Road and Railway Road through avenue tree planting located between parking bays.
- Remove kerbs to create a hybrid parking/parklet zone that allows for flexible uses dictated by the adjacent retail use.
- Consider provision of services that allow for irrigation of planting and temporary planter boxes.
- Use planting and low bollards to support pedestrian safety.
- Introduce dedicated seating to provide respite along Haynes Street and encourage informal gathering.
- Resurface paths and parking/parklet zone to provide clear material hierarch.

## LEGEND







Prepared by Urbis for City of Kalamunda 27



Building on the existing assets in this location of built form, existing trees and location, the Barber Street Piazza provides a point of respite at the west end of Main Street and an informal gathering place for locals. Diversity of places and spaces are integral to a successful town centre. The Barber Street Piazza provides an opportunity to deliver some vibrancy and a destination at the west end of Haynes St. The proposed piazza extends the existing green park associated with the town hall, creating a link between this valued community space and the Main Street.

### Opportunity

- Reduce the road pavement width to assist in slowing vehicle traffic and provide an enhanced pedestrian area. Pave parking bays and footpaths to create clear vehicle and pedestrian zones
- Provide disabled/large vehicle parking near to the Piazza to improve

connectivity and access to the Main Street for events and acrod permit holders.

- Reconfigure parking to increase pedestrian space and develop the Barber/Haynes street corner into a piazza space incorporating seating, play and lighting.
- Celebrate significant existing trees and introduce additional trees to create a shady grove in the piazza.
- Develop small children's nature playground east of town hall to provide additional amenity in the town core.







Figure 9: Braber Street Piazza









Central Lane will become the heart of Kalamunda's night time economy, delivering an intimate and vibrant urban experience that supports both day and night-time activities and acts as a counterpoint to the more traditional and heritage spaces of the town centre.

Central Lane (previously Central Mall) is proposed to be reinvigorated into a vibrant and urban space that embraces the food and art culture of the Perth Hills. Refurbished as a flexible space that supports both day and night retail and hospitality offerings, the redeveloped lane will also support markets while also allowing adjacent retailers to comfortably trade.

### Opportunity

- Reconfigure to allow 1-way traffic through the lane in a shared street environment.
- Install traffic management structures to allow ease of closure during events and night-time activities.
- Introduce parking opportunities into the lane to support adjacent retailers.
- Plant additional trees to extend existing planting and provide summer shade.
- Install catenary lighting assist in activation and a sense of enclosure.
- Install entry canopy and the north and south ends of the lane to create a sense of arrival and aid in wayfinding.
- Potential to extend treatments to laneways on the north side of Haynes street.

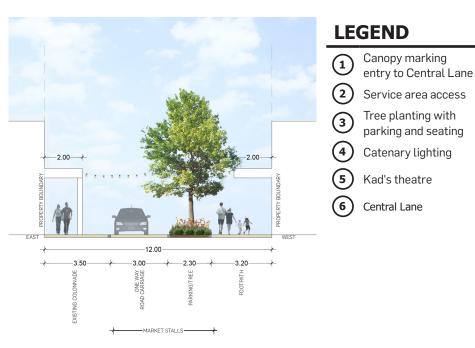
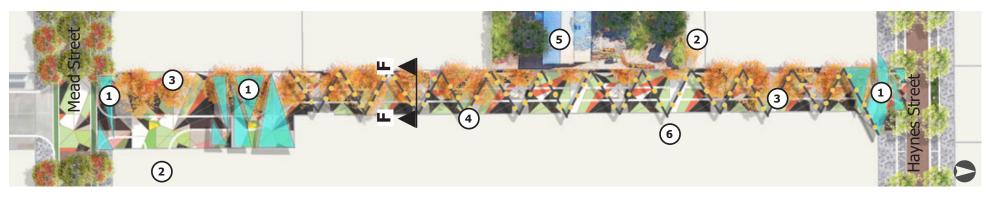
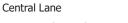
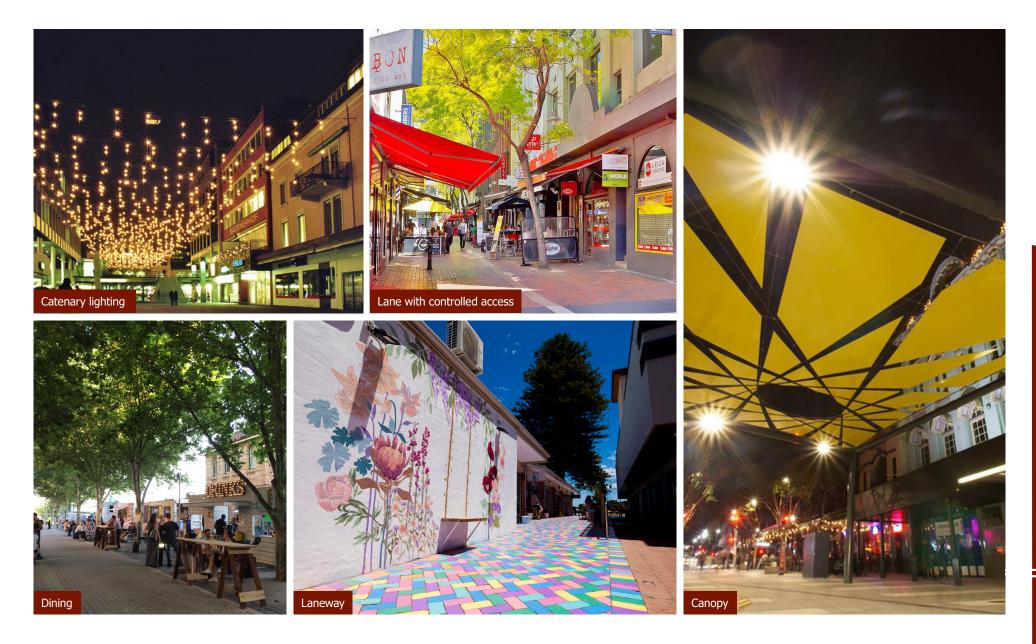


Figure 10: Section F-F









JOURNEY

The key to a successful town centre is to enable both a comfortable and safe pedestrian environment and (by ensuring excellent permeability) to remove barriers to accessing key destinations by foot and bike.

The following pages seek to demonstrate the spatial experience for pedestrians while moving through the various journeys offered within the revitalised town centre.

A key feature of the LMP is journey choice. Importantly, whilst a combination of built form, landscaping and wayfinding tools (lighting and public art) emphasise and activate the primary pedestrian routes through the town centre, such routes may not be desirable for all users at all times of the day and night. As such, it is important to offer alternatives via a legible network of pathways. These are identified in the following figures, with the locations for journey choice highlighted.

### Opportunity

In pursuit of a pedestrianised environment that has a strong identity and supports best practice principles, the following changes are proposed:

- Rationalised road pavements to deliver improved pedestrian spaces and increased activation within road reserves.
- Reconfiguration of central mall to allow 1-way traffic with controlled access.
- Dedicated on road cycleway on Mead St and Canning Rd to support commuter and recreational use.
- Prioritisation of pedestrian movement networks over vehicular within the town centre core.
- Creation of shared space in support of the town square to allow for large civic events.

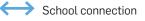
It is envisioned that the town centre will provide a variety of spatial and activity experiences in keeping with the strategy. These 'jewels' on the pedestrian journey act as wayfinding elements and also reduce perceived journey times, encouraging walking and cycling over car-based transit.

The plan supports pedestrian and cycle access to a number of key destinations peripheral to the town centre such as Kalamunda Senior High School, Stirk Park and the Bibbulmun Track.



Figure 11: Journey Plan - Pedestrian

# LEGEND



- Play/art focus
- Urban focus

🔶 Heritage trail

### **Typologies**

There are a number of street typologies that support the revitalised town centre. Some are integral to the proceeding elements, however all typologies have been developed with the following key principles:

- Maximise tree canopy to provide shade, ecological links and prolong life expectancy of hard pavements;
- Integrate adjacent built form outcomes with street typology to ensure a functional and activated town centre;
- Prioritise pedestrian movement and comfort in the town centre core;
- Introduce cycle infrastructure where possible to provide safer recreation and commuter options;
- · Provide on-street parking where possible; and
- Create a clear hierarchy of streets that aid in vehicle wayfinding and movement.
- Provide surface change through material or colour to define vehicle movement and parking zones.

The key typologies are as below and as demonstrated on th following pages:

Main Street - reduces existing road pavement to enhance pedestrian experience with verge tree planting to frame hill views. Refer figure 6 and 7

Barber Street - Supports bus terminus with intergrated parking and pedestrian zones. Refer figure 8.

Central Lane - promotes a shared street environment with one-way vehicular traffic. The shared space is enhanced by flush kerbs, consistent verge and road pavement materials and additional tree planting. Refer figure 10.



Figure 12: Journey Plan - Cycle

## LEGEND



Recreation Cycle - Bike lanes on road/ low speed in lane

←→ Commuter Cycle - Bike lanes on road

Green Street - these streets - Railway Rd, Stirk Street and Mead Street have all been reconfigured to meet the principles above, while still facilitating high levels of vehicle movements around the town centre. The feature of these streets is the increased native tree planting, providing a clear frame for the town centre core.





Figure 13: Section A-A Stirk Street (Corners)

34 Kalamunda Town Centre Landscape Master Plan

Figure 14: Section B-B Stirk Street



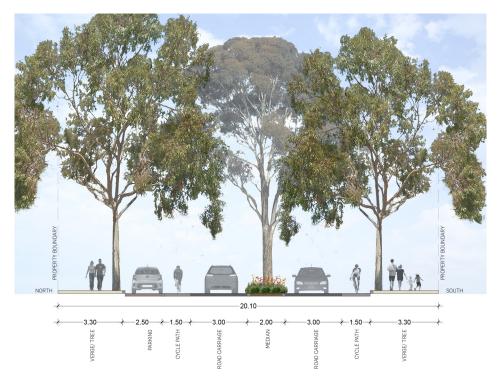


Figure 15: Section G-G Mead Street (Corners)

Figure 16: Section H-H Mead Street

Canning Road - the Canning Road typology promotes access into the town centre while providing a median with additional tree planting to create an attractive and pleasant entry.



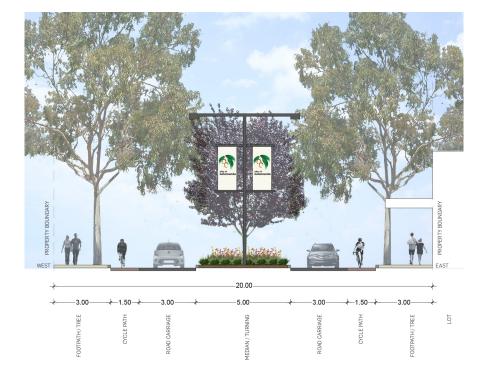




Figure 17: Section I-I Canning Road

Figure 18: Section J-J Canning Road

Town Square - This is a shared space typology associated with the proposed Town Square. This section of the road is proposed to be lifted to create a flush surface from east to west, linking the existing cultural centre and library with the heritage buildings to the west.





Figure 19: Section C-C Town Square (Railway Road)



The thoughts behind the following strategies are based on sound best practice design and respond to the existing character of Kalamunda. Communities that are connected, vibrant, and full of amenity create happy, thriving and popular places that further build on the history of the place, site and culture and those elements that make the place unique.

### PUBLIC ART AND INTERPRETATION

Public art is itself a legacy for the community; a communal benefit that reflects the values of a certain time and place. Public art can therefore contribute to place through providing unique interpretations, effecting social engagement, and through contributing to sustainable development generated through this special creative endeavour.

In identifying opportunities for public art in the Kalamunda Town Centre, a wide range of contemporary public art practices have been identified. These cover a broad range of options for artists to interact with the built and natural environment across the town centre. This includes options for the integration of artworks into the fabric of buildings and urban infrastructure of all types. Integrated artworks will, in many cases, result from collaboration between artist and architect, urban designer or landscape architect.

In addition to the direct interpretation of a place and its history through interpretive signage and commemorative features, there is a role for artworks that creatively explore the towns' past and the stories of the community. Artists can be commissioned to create works that, while not addressing history in a didactic form, explore themes of relevance to local histories.

Increasingly artists are seeking opportunities to intervene in public spaces through temporary public art projects that might be in a place for a few days, or months, depending on the nature of place and project. In many cases these temporary projects will result from an artist initiating the idea, rather than it being directly commissioned by the client.

Public art in the Kalamunda town centre can be classified as:

- Integrated commissioned artworks that are an integral part of a streetscape or building project and involve a collaborative process.
- Stand-alone commissioned site specific sculptural works that are not directly integrated into buildings or streetscape projects.

- Temporary/Ephemeral artworks either commissioned or artist initiated that are of a short-term nature that interact with or activate a place.
- Interpretive commissioned artworks that conceptually allude to or directly reference past events or stories associated with place.

Public art in Kalamunda should build a meaningful connection to place, its people and its heritage. An opportunity for community learning and cultural exchange, public art that integrates and explores local stories can become a discussion point and connection between locals and with visitors.

Interpretive information provides a valuable dimension to the visitor and viewer experience, distinct from the appreciation and experience of contemporary art. Some of the identified artwork opportunities may have no significant relationship to site heritage and interpretation and are focussed on contemporary culture and future aspirations. Similarly, there are sites of historical significance in the town centre which have not been identified as artwork opportunities, but which should be considered for heritage interpretation.

To create a holistic experience and to supplement public art interventions, a series of didactic interpretation trails are proposed to promote education and connection to this unique place. These trails will be identified and developed in conjunction with the relevant local community and historic groups.



Figure 20: Public Art Diagram









 $\longleftrightarrow$  Heritage interpretation trail



### MATERIALS

There are consistent elements and materials that will link the Kalamunda town centre throughout, however it is also important to deliver local variation reflective of the place and use to ensure that movement throughout the town has a sense of progression and a clear identity.

### **Town Square**

Materials used within the Town Square will be more solid and permanent in their appearance, while also featuring highlights of timbers and other lighter forms. The use of local stone and timber will provide the permanence that the Town Square represents. This area is the heart of the community and will utilise materials that are robust, hard wearing and readily available to support high use. Manufactured finishes will provide colour and movement, with inspiration taken from the adjacent bushland areas.

### **Main Street**

Materials used along Haynes Street will be graduated in their appearance, acting as a transitional space between the Town Square and the Barber Street Piazza. The graduation will be expressed through changes in finishes and colours rather than introducing new materials, reflecting the evolution from a natural/heritage to urban environment within the town center. For example, paving finishes will subtly shift from rougher shotblast finishes at the town square to smoother more refined finishes closer to the west end and timber elements will evolve from solid, large elements to refined, discrete uses further west.

### **Central Lane and Barber Street Piazza**

The redeveloped Central Lane and Barber Street Piazza provide the opportunity for the town centre to embrace a more dynamic and artistic palette of materials and finishes. These spaces will deliver a more contemporary spatial experience into the town centre and provide a contrast to the heritage and civic spaces, supporting alternative uses and delivering diversity.





### Sustainability

It is important to acknowledge that all constructed elements within the public realm will have an embodied energy (the fuels/power, materials, human resources etc) that was used to produce and install them. Along with this, all built items will ultimately be removed or degrade naturally.

Factoring this into the choices of materials and the sources of those materials, will be essential to ensure that the redevelopment is as sustainable as possible, not just in regard to the immediate environment but also globally.

There is opportunity to implement native seed collection and propagation to provide provenance specific species suitable for landscape plantings. Other opportunities exist to capture and re-use materials from the area, such as local timber from maintenance works, rock and boulders, transplants of suitable trees and shrub and site mulch.

Selected products should also reflect community needs and accessibility requirements, particularly in regards to senior friendly seating, visual definition and lumination levels.



#### **Colour Palette**

The vision of Kalamunda as a village set in a natural setting is a powerful and readily achievable aspiration, provided integrated design and delivery is undertaken. To further reinforce the natural aesthetic, use of a colour palette that reflects the local bushland colours within the public realm is encouraged. Olive based greens and browns broken by splashes of colour taken from the ephemeral and vibrant colours found in the seasonal wildflowers in surrounding bushland will serve to contribute to a harmonious, integrated and sophisticated public realm interest in keeping with the built form that surrounds it.





### **TREE RETENTION**

Contextual and site analysis identified a number of existing native and exotic trees that are integral to the function and identity of the Kalamunda town center.

In addition to being an environmentally sensitive approach to design, retention of existing mature tree canopy and understorey vegetation (where possible) within the Kalamunda Town Centre is central to maintaining and enhancing a clear 'Kalamunda' identity.

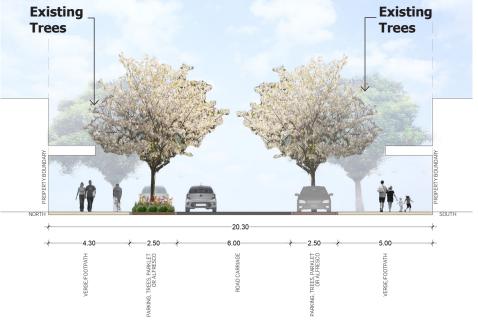
The proposed landscape master plan has carefully considered the location of existing trees and has sought to compliment rather than supplant the existing plantings. Haynes Street has a secondary avenue of tree planting proposed, allowing the retention of existing street trees, and medians have been proposed on Stirk Street and Mead Street to supplement the existing tree species.

### PLANTING

The selections of the street trees throughout the various streetscapes are driven by the following factors:

- Enhance and support the movement network through provision of shade, function and wayfinding as necessary
- Proximity to built form.
- Shading from building heights.
- Location/proximity to POS areas.
- Striking an endemic vs exotic balance with regards to Aboriginal and European heritage.

The following diagram provides a design hierarchy and a proposed selection of tree species. These species are proposed based on the overall thematic considerations for each street and the observed success of existing trees in the town centre and surrounds











# Next Steps

## **4.0 NEXT STEPS**

The Kalamunda landscape master plan is intended to be used to provide strong design guidance for the Activity centre and future public realm improvements. The plan and report may be used for feasibility purposes to interrogate and consider the relative merits of the plan proposed.

The time and cost that could be attributed to the entire master plan is above the capacity of the City of Kalamunda's current funding and staffing, which will necessitate a Feasibility Framework being devised to tackle this project.

Following adoption of the Kalamunda Activity Centre Plan, a Feasibility Framework and Implementation Plan will be prepared. This will be based on ongoing consultation and assessment of project feasibility and the funding arrangements available and anticipated.

Opportunities for low cost interim activation strategies and projects which could be used to test ideas without expending large amounts of money will also be developed.

The Implementation Plan will be developed with due consideration of the City's ability to fund projects through the long term financial plan and annual budgets and will also identify which projects could potentially receive external funding.

The Implementation Plan will be the basis for the City to progress more detailed planning and design based on specific elements and strategies identified in section 3 and as per the table set out in figure.

Post-feasibility, whether implemented in its entirety or key elements, we recommend further testing and refinement of the master plan to enable greater certainty.

Matters to be recommended for further action include:

- Arborist assessment of all existing trees in the town centre for viability, heritage value and longevity;
- Co-ordination of services alignments to enable tree retention and additional planting;
- Design of levels, drainage and road alignments;
- Undertake spatial needs analysis of central mall markets to determine current and future needs and;
- Liaison with MRWA regarding pedestrian crossings on Canning Rd and pavement treatments.

SHORT TERM	SHORT-MEDIUM TERM	LONG TERM
Haynes Street (Main St)	Central Mall	Town Square
	Green Park Upgrades	Corner Park Activation
	Barber Street	
	Mead Street	
	Stirk Street	
	Railway Road	

Figure 23: City of Kalamunda Project Priorities

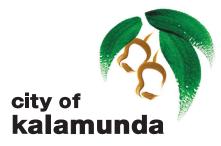
### **QUICK WINS**

The following list outlines projects or partial projects that could be delivered by the City without significant expenditure. This is in recognition that the time and cost that could be attributed to the entire list of elements and strategies is above the capacity of the City of Kalamunda's current funding and staffing, which will necessitate a Feasibility Framework being devised to tackle this project. The projects identified below will enable the City to demonstrate to the community and stakeholders their committment to realisation of the Master Plan prior to detailed feasibility studies.

- Trial event closure of Railway Rd as per figure 5 in conjunction with community event or markets within the town square precinct.
- Undertake tree planting within existing medians on Canning road.
- Introduce seating along Haynes street. This seating can be relocated or re-used when upgrade works commence.
- Upgrade and install pedestrian crossings in accordance with the KACP traffic report.

### ACKNOWLEDGEMENTS

The following people and organisations are acknowledged for their assistance and contribution towards the development of the Kalamunda Town Centre Landscape Master Plan



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