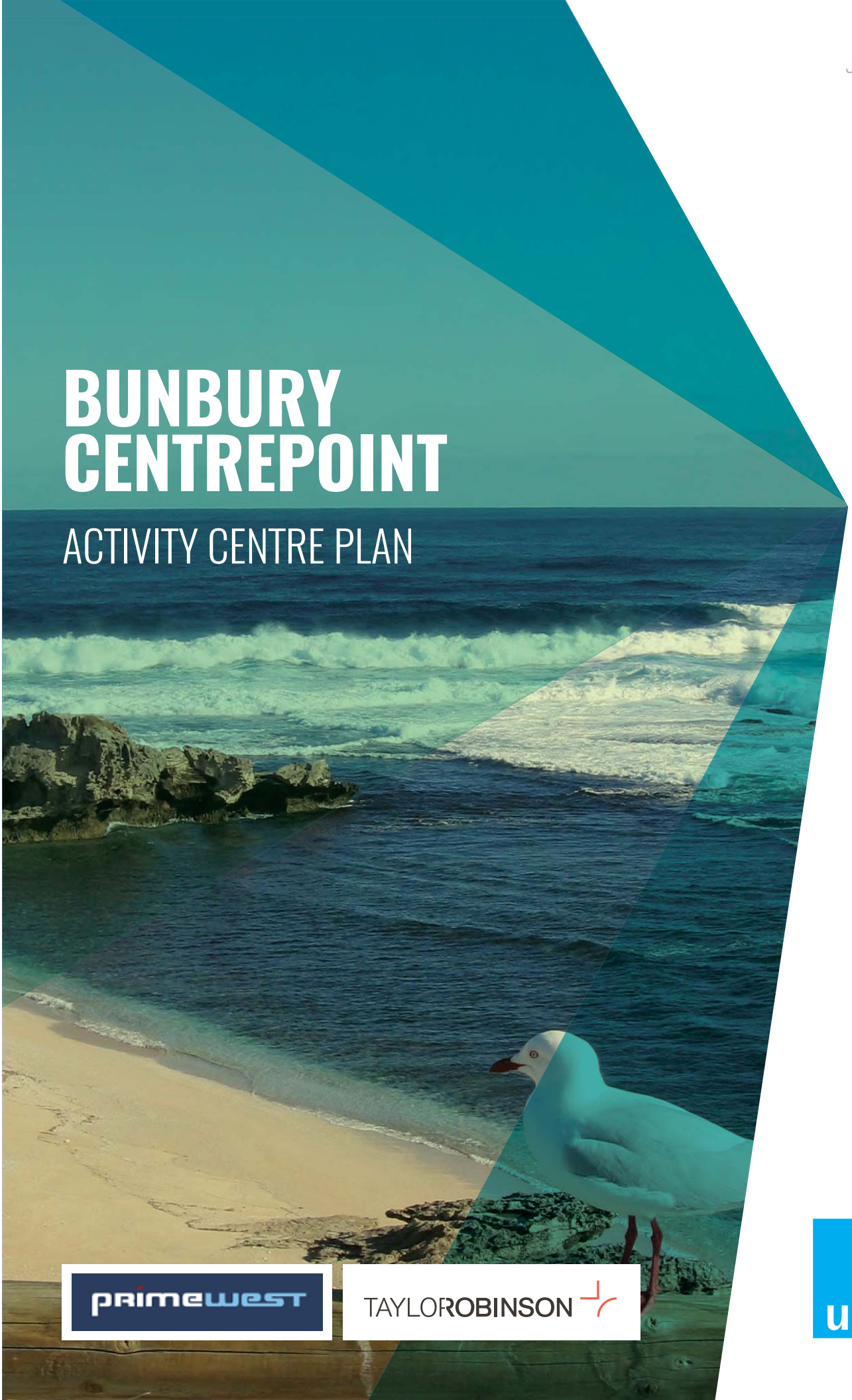
JULY 2017

BUNBURY CENTREPOINT

ACTIVITY CENTRE PLAN



primewest

TAYLORROBINSON

urbis

ENDORSEMENT PAGE

This Activity Centre Plan is prepared under the provisions of the City of Bunbury Town Planning Scheme No. 7.

IT IS CERTIFIED THAT THIS Activity Centre Plan WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

13 July 2017

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

13 July 2017 Date

13 July 2027 Date of Expiry

TABLE OF AMENDMENTS

AMENDMENT NO.	SUMMARY OF THE AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY THE WAPC

EXECUTIVE SUMMARY

The land that is the subject of this Activity Centre Plan is located in the Bunbury City Centre, which has the status of a 'Regional Centre' – the only centre of such kind in the Great Bunbury Region Scheme Area.

It is important that form and function within the City Centre (including land use) is consistent with that identified in the Activity Centres for Greater Bunbury Policy. In this way, it can be assured that the Centre is fully realised in terms of its retail, service and commercial offerings in the context of its regional status. It will also ensure the Regional Centre is protected from the loss of regional-level uses/forms to lower order Centres elsewhere, and contrary to planned outcomes.

On this basis the Activity Centre Plan's primary aim is to identify land within the Regional Centre for the establishment of a department store. Such a retail offering is presently absent from the City Centre.

In terms of development control, the built form controls applicable to the Activity Centre Plan area would simply be per the Local Planning Scheme. Should alternate built form controls be sought at some time in the future, this may be achieved via an amendment to this Activity Centre Plan, which is the first to be developed for the Bunbury City Centre.

The majority of the Activity Centre Plan area is subject to a development approval to upgrade the same. That approval permits an additional 2,064sqm floor space excluding food court seating area in addition to the existing 21,303 sqm floor space for the entire Activity Centre Plan. This further illustrates the minor nature of the Activity Centre Plan proposal and its primary focus on securing a particular land use (department store) outcome.

The inclusion of surrounding sites, being the Stirling Centre, Centrepoint Bunbury Shopping Centre and the Paisley Centre has been to provide a complete picture of the locality and the interactions between key sites within the city centre, including how they interrelate with each other. It also allows for a greater understanding of how the department store and the overall large format retail precinct sits within the wider Bunbury City Centre, strengthening its position as the Primary Regional Centre for the south west.

ITEM	DATA
Total area covered by the Activity Centre Plan	5.776 hectares
Total area covered by the Activity Centre Plan 5.776 hectares	Major retail – 22,000m^2 Mini major retail 5000m^2 Specialty Retail 6000m^2 Food and Beverage 2500m^2 Commercial 1000m^2 *excluding 561m^2 Foodcourt Seating Area
Estimated commercial floor space	36,500 net lettable area

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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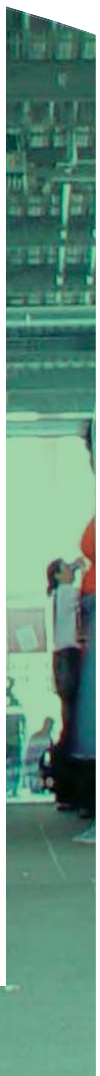


PART 1
IMPLEMENTATION

1.1 ACTIVITY CENTRE PLAN AREA

The Activity Centre Plan applies to the land identified within the black dashed line on PLAN 1– Bunbury Centrepoint Activity Centre Plan. The Activity Centre Plan is identified as the Centrepoint Activity Centre Plan (Centrepoint ACP).

1.2 OPERATION

This Activity Centre Plan comes into effect on the date that it is adopted by the Western Australian Planning Commission.

1.3 OBJECTIVES

The objectives of the Centrepoint ACP are set out below. Satisfying these objectives will ensure the overall vision is met.

- To provide for the ongoing use and development of the land within the Centrepoint ACP area in a manner consistent with its Primary Regional Centre status and with the ACGBP
- To create certainty for the establishment of a department store within the Centrepoint ACP area
- To create a certain planning environment for the establishment of the department store
- To protect the Primary Regional Centre from the siphoning of regional level retail to outside of the Primary Regional Centre
- Enable the growth of the retail sector to allow for a high quality retail experience to support the centre's role as a regional retail destination.
- Appropriately manage traffic, car parking and accessibility issues with a particular focus on improving walking, cycling and public transport accessibility.
- Facilitate viable, enduring and high quality development, with development designed to present well to street frontages and public spaces.

1.4 DEVELOPMENT CONTROL

Development shall be per the Local Planning Scheme and applicable policies.

It is expected that future development applications will satisfy the following development requirements:

- Feature elements which enhance the streetscape are strongly encouraged
- Multi-storey car parks shall incorporate screening devices or architectural features where directly fronting a street of other public place
- Street fronting building facades are to be articulated and all street fronting facades and frontages shall be designed and finished with high quality materials and finishes.
- Building facades and frontages should highlight a vertical emphasis wherever possible to help break up the appearance of buildings.
- Extensive blank walls, facades and featureless glazing facing streets or public spaces is to be avoided.
- Developments are to be designed to present well to and activate street frontages and address public open space interface.
- Development within the Activity Centre Plan requires appropriate high quality landscaping and public spaces to be provided consistent with an urban city centre environment, to the satisfaction of the City of Bunbury.
- Service areas and car parking are to be predominately screened from public view.
- Provide opportunities for signage to integrate and complement the architectural design of the buildings.
- Development within the Cornwall Street Precinct should be built up to the front property boundary (Stirling Street} other than to allow for alfresco dining, building articulation or other architectural elements.
- Air conditioners and other services to be screened so they do not detract from the streetscape.
- Corner sites - Buildings to give additional prominence to the street corner by using landmark features. In particular, but not limited to the identified 'landmark site'.
- Parapet walls/boundary walls are to be visually interesting to avoid flat monotonous lines.

1.5 ADDITIONAL INFORMATION

ADDITIONAL INFORMATION	APPROVAL STAGE	CONSULTATION	CONTENTS
Transport Impact Assessment	Submitted and endorsed with development application	Not applicable	Retail floor area, total parking requirement, parking to be provided on site, parking to be provided off-site, service vehicle access/parking/ unloading arrangements
Landscape Management Plan	Submitted with development application (approval as condition)	Not applicable	

The scope and requirements of the Transport Impact Assessment shall be to the satisfaction of the City of Bunbury.

The following documents may be required to be provided with the development application (as requested by the City of Bunbury}:

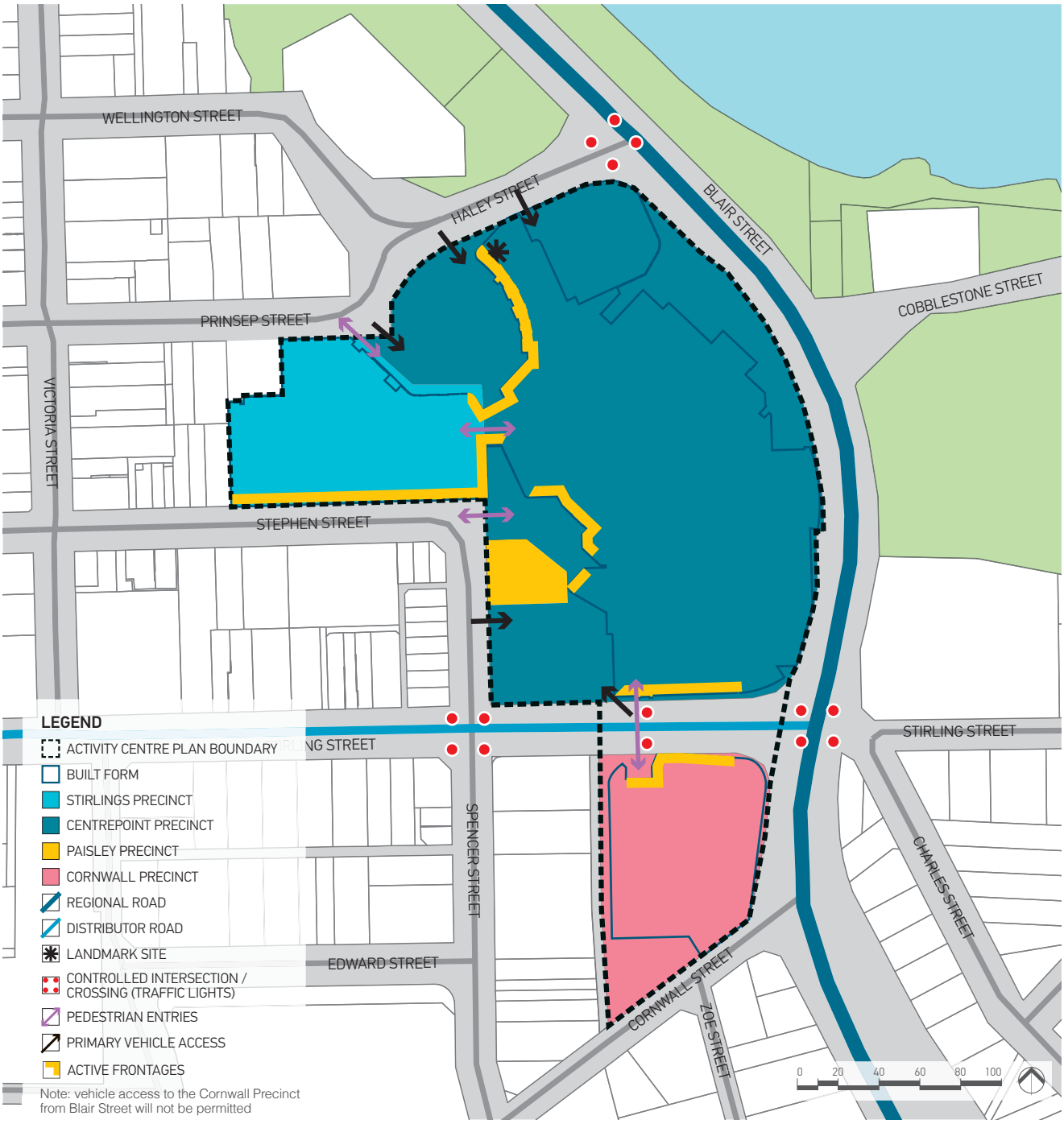
- Stormwater and Drainage Management Plan
- Traffic Management Plan
- Pedestrian and Cycling Access Plan
- Delivery Management Plan
- Construction Management and Phasing Plan
- Waste Management Plan
- Signage Precinct Plan

1.6 VARIATIONS

If a development application does not comply with the development criteria prescribed by this Activity Centre Plan, the local government may vary any development criteria where it is satisfied that:

a) Such a variation will not prejudice the achievement of the objectives of this Activity Centre Plan, and

b) The orderly and proper planning and amenity of the precinct are maintained.



PLAN 1 - BUNBURY CENTREPOINT ACTIVITY CENTRE PLAN

PART 2
EXPLANATORY SECTION

1.0 CENTREPOINT ACTIVITY CENTRE ACTIVITY CENTRE PLAN BACKGROUND

1.1 INTRODUCTION AND PURPOSE

This Activity Centre Plan (ACP) provides the framework to guide future development and land use within the ACP area, which is an integral component of the Bunbury Regional Centre. It has been prepared to fulfil the requirements of the Activity Centres for Greater Bunbury Policy (ACGBP). The ACP is aimed at securing a department store as a land use in the ACP area. This is important to:

- Ensure that the attributes of the Regional Centre per the ACGBP are realised
- Provide a certain planning framework to enable the same
- Protect the Regional Centre from the syphoning of regional-level retail to other non-regional centres

Part 1 of this ACP contains statutory provisions to guide the department store use and development.

Part 2 of the ACP provides supporting information, explanation and technical reporting to both justify and inform Part 1 outcomes.

1.1.1 VISION

The vision for the ACP is to provide for a high amenity, economically viable regional centre, which services the greater Bunbury region through high quality connected spaces, a variety of retail offerings, and a built form that is integrated with the wider Bunbury city centre.

The ACP area will exhibit a distinct sense of place and a high level of integration across all elements of the ACP. The establishment the department store as facilitated by the ACP will support the status of the area as part of the Primary Regional Centre for Bunbury and the wider region.

Movement:

- Improve to vehicular access points, particularly along Prinsep Street, Hayley Street, Arthur Street, Stirling Street , Blair Street and Cornwall Street;
- Improve to parts of the surrounding roads and intersections;
- Improve to sections of pedestrian paths surrounding the site;
- Provide bicycle parking and end-of-trip facilities for visitors and staff;
- Improve connectivity to Bicentennial Square and the Bus Station so that it is better connected to the Centre; and
- Integrate the existing surrounding pedestrian and cycle network. Improve pedestrian safety and the efficient flow of pedestrian and cyclist traffic to and from the Centre.

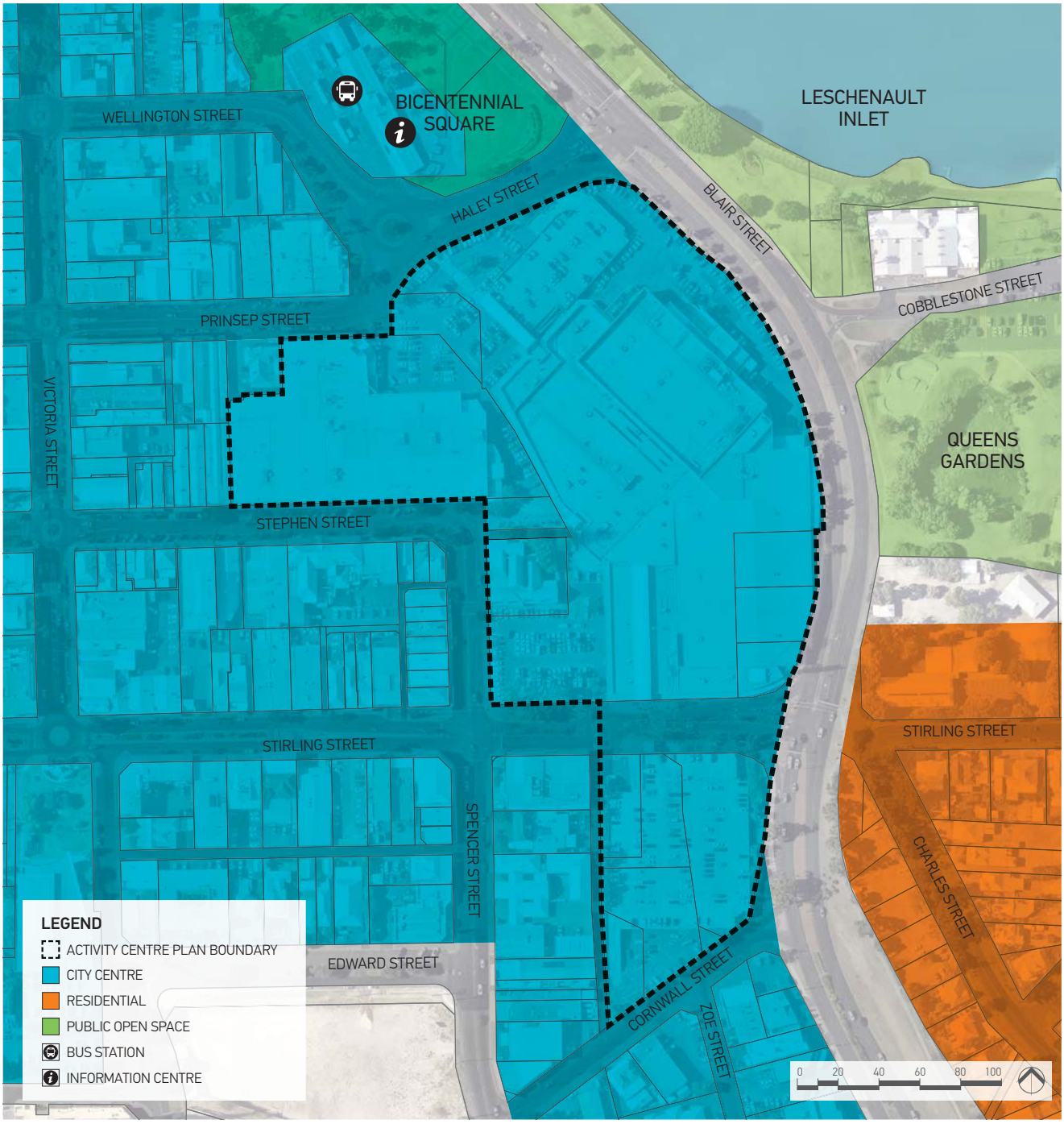


FIGURE 1: LOCATION PLAN

Activity:

- Provide & stimulate significant private investment into the Bunbury City Centre;
- Include a greater mix of uses including a range of 'after trading hours' activities, commercial, eating, leisure and entertainment uses to achieve a vibrant active mixed use centre;
- To provide for the full range of shopping, office, administrative, social, recreation, entertainment and community services
- Improve the retail offer including specialty retail, national and international retailers;
- Create additional employment opportunities after the completion of the proposed development, as well as employment opportunities during the construction phase; and
- Increase the mix of land use opportunities to the main streets.

Streetscape:

- Ground Floor Frontage - Tenancies facing the street portray an attractive and inviting frontage.
- Entry Points - Entrances to be designed to enable safe and comfortable access and building entrances are to be clearly defined.
- Activity & Uses - Create an active, vibrant and safe city centre by reinforcing the interface between internal and external uses along the street front and by providing passive surveillance.
- Safety & Surveillance - Public and private areas are to be either visible and safe or screened and illuminated in such a way as to ensure a high quality safe and comfortable outdoor environment prevails.
- Screening - Air conditioners and other services do not detract from the streetscape.
- Signage - Advertising Signs shall be in accordance with the City's Advertising Signs Policy. Sound Attenuation - Noise from non-residential uses does not adversely affect the amenity of residential development.
- Adaptability - Developments continue to be appropriate over time for a range of uses.

Urban Form:

- Improve overall building aesthetics, particularly the existing retail component of this part of the City Centre;
- Expand the main street environment with opportunities for a range of 'after trading hours' activity and mix of uses;
- Create more main street frontages to the existing box style development;
- Heritage - Development should demonstrate an effective integrated relationship with heritage elements, in particular Paisley House and surrounds.
- Improve integration of the Centre with the surrounds; and
- 'Sleeve' portions of the retail component of the Centre with active frontages.

Built Form & Design

- Heights - Building height and scale to be appropriate to its site and context.
- Setbacks - To strengthen the continuity of the streetscapes and provide continual weather protection for pedestrians.
- Corner Sites - Buildings to give additional prominence to the street corner by using landmark features.
- Multi Storey Car Parks - Multi storey car parks to be appropriately screen from the street and to have a positive impact on the streetscape.
- Facades - Building facades are to be architecturally interesting.
- Parapets - Parapets are to be visually interesting and to avoid flat monotonous lines.
- Roof Features - Taller buildings to provide landmark features.
- Colour & Materials - Appropriate colours and quality materials are encouraged. The building materials and colours incorporated into the design of the development should acknowledge and reflect the coastal location & locality's heritage as a vibrant port city.

Resource Conservation:

- Minimise reliance on mechanical heating and cooling through a series of design measures such as insulation rating of the building fabric, thermal performance of external glazing and control of sun penetration;
- Minimise water use through the use of water efficiency initiatives such as installation of waterless urinals and drip irrigation in garden beds;
- Reduce car use given the improved connection to the Bus Station and provision of facilities for pedestrians and cyclists; and Improvements to the microclimate around the Centre with the use of built form methods and landscaping.
- To facilitate the creation of employment within the centre so as to reduce the demand for travel, and enhance the level of self-sufficiency.

Safety & Amenity

- Create a high level of pedestrian amenity through the provision of active streetscapes, interactive frontages and improved weather shelter;
- Deliver high quality built form that creates a distinctive urban form and enables safety and security through passive surveillance; and
- Create public and private spaces that are safe, attractive and surrounded by active vibrant uses that will become the focal / meeting point of the centre.

1.2 GENERAL LAND DESCRIPTION

The Centrepoint ACP includes land presently utilised for the Centrepoint and Stirling Shopping Centres. A recent development application proposes to integrate and upgrade these centres. This ACP proposes to extend the integrated shopping centre southwards across Stirling Street to incorporate an existing public car park site. The car park (bounded by Stirling Street, Blair Street, Cornwall Street and private land holdings) will accommodate a future department store.

1.2.1 LOCATION

The Centrepoint ACP is located within the Bunbury City Centre as depicted in Figure 1 - Location Plan

1.2.2 AREA AND LAND USE

The Centrepoint ACP includes 5.25ha of City Centre zoned land. The current land use is characterised by large format retail and car parking. It also includes a heritage building and a surrounding public forecourt. Figure 1 identifies these various elements of the ACP area as follows:

- Stirling Centre
- Centrepoint Shopping Centre
- Cornwall Street Parking Station
- Paisley Centre

The current uses are consistent with those anticipated for a Primary Regional Centre such as the Bunbury city centre; however, they are in need of renewal and expansion. This has been facilitated in part by the recent planning approval to upgrade the Stirling and Centrepoint Shopping Centres. This ACP further facilitates the process of renewal and expansion by specifically providing for a department store, consistent with the provisions of the ACGBP.

1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The Centrepoint ACP is predominantly owned by Primewest with the secondary landowners being the State of Western Australia (reserves under management order to the City of Bunbury) and the City of Bunbury.

Legal descriptions and landowners are depicted in Figure 2.

1.3 PLANNING FRAMEWORK

This section describes the planning context for the ACP from both a statutory and strategic perspective. As an introductory summary, the primary outcome is to ensure that a department store will be located in the ACP area. The ACP will further ensure this will occur in a manner that is fully integrated with the existing Stirling and Centrepoint Shopping Centres.

A ACP is required to be prepared in accordance with the ACGBP where major development is proposed. This ACP satisfies such requirement and in so-doing enables the development of a department store, also consistent with the ACGBP.

Development and land use will simply be per the Local Planning Scheme and relevant policies (as was the recent development application).

1.3.1 STATUTORY PLANNING - ZONING AND RESERVATIONS

Greater Bunbury Region Scheme

The Centrepoint ACP is zoned 'Regional Centre' in the Greater Bunbury Region Scheme (GBRS). Clause 12 of the Scheme defines the zone as:

"Regional Centre — The Bunbury central business district where commercial, civic, cultural, residential, service and administration serving the region are located."

The land use and development facilitated by this proposal is consistent with the zoning of the land under the GBRS. This facilitation will help prevent the establishment of a department store external to the Primary Regional Centre, contrary to the ACGBP.

City of Bunbury Local Planning Scheme No. 7

The Centrepoint ACP is located within the City Centre zone of Town Planning Scheme No.7 (TPS 7). The objectives of the City Centre zone are as follows:

"To provide for a broad range of uses including administrative, civic, cultural, entertainment, educational, residential, recreational, retail and hospitality/tourist as well as other commercial functions and activities which assist in maintaining and promoting the primacy of the Bunbury Central Business District -

a) within the local government area; and

b) as the Regional Centre within the Bunbury Wellington Region."

The land use and development facilitated by this proposal is consistent with the zoning of the land under TPS 7.

This Activity Centre Plan proposes no change to the development standards (parking, plot ratio, heights, etc.) contained within TPS 7 and the relevant policy framework. Land use permissibility is also per TPS 7.

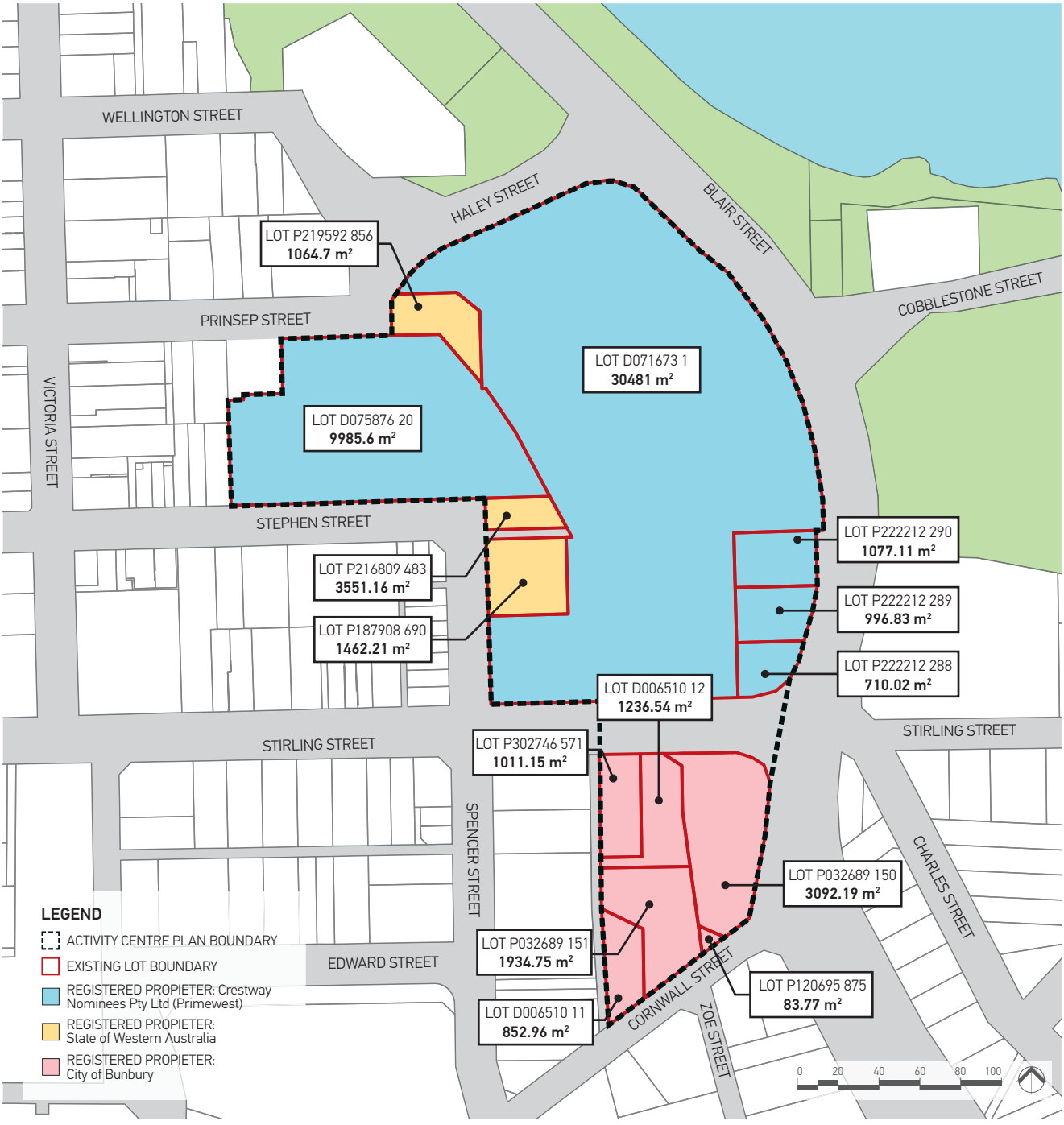


FIGURE 2: LEGAL DESCRIPTION AND LAND OWNERSHIP

1.3.2 STRATEGIC PLANNING

1.3.2.1 THE GREATER BUNBURY STRATEGY 2013

The WA Planning Commission's (WAPC's) Greater Bunbury Strategy guides urban and regional land use planning, growth and infrastructure delivery in the region to facilitate a robust, diverse and sustainable economy. The strategy is premised on a series of integrated layers:

- Settlement hierarchy
- Activity centres network
- Movement network
- Green network

The Strategy identifies a hierarchy of activity centres along with their functions, typical characteristics and performance targets. The Strategy advocates that the City Centre remain in its current location. The outcomes of the strategy have been reflected in the ACGBP, which is discussed in detail at section 1.3.3.

This report demonstrates compliance with the ACGBP and therefore, by extension, the Greater Bunbury Strategy.

1.3.2.2 CITY VISION STRATEGY (2007)

The City of Bunbury's City Vision Strategy aims to achieve sustainable development within the City of Bunbury community over a 25 year period. Based on the 'triple bottom line' ethos, the plan sets out environmental, social and economic goals and strategies which require all subsequent plans and policies to be aligned.

The goals and strategies identified in the Strategy are vast and varied, and have been segmented into recommendations for specific areas of the City. The key recommendation from this strategy of relevance to this ACP is to finalise a commercial centres strategy for Greater Bunbury to ensure the appropriate and sustainable commercial growth of the City.

This recommendation has been satisfied via the ACGP.
This report demonstrates compliance with the ACGBP and therefore, by extension, the City Vision Strategy.

1.3.2.3 LOCAL PLANNING STRATEGY FOR ACTIVITY CENTRES AND NEIGHBOURHOODS

The Local Planning Strategy for Activity Centres and Neighbourhoods (LPSACN) was adopted by the City in March 2011. The LPSACN has a strong focus on the growth of lower order centres and adopts a more flexible approach in terms of floorspace allocations to activity centres compared to that of State strategies and policies.

In the past, the Bunbury City Centre accounted for 70% of the City's total "Shop/Retail" floorspace, 96% of its "Other" floorspace and 92% of its "Office/Business" floorspace. However, since 2006 these percentages have fallen. In response, the LPSACN suggests that steps should be taken to stem such reductions if the vitality of the City Centre is to be maintained.

This ACP is consistent with the LPSACN by reason that it is part of a wider proposal to restore the status of the City Centre in terms of form and function. It will enable the establishment of a department store to reflect the primacy of the Primary Regional Centre and ensure that such use cannot be siphoned from the City Centre contrary to strategic planning.

1.3.3 ACTIVITY CENTRES FOR GREATER BUNBURY POLICY

The WAPC's ACGBP applies to the entire GBRS. It specifies high level requirements for the planning and development of new activity centres and the redevelopment, and renewal of existing centres within the City of Bunbury and the Shires of Capel, Dardanup and Harvey.

A key focus of the Policy is to ensure the strategic distribution of activity centres to meet different levels of community need, specifically through the application of an activity centre hierarchy. A key theme of the policy is to ensure that development outside of the Bunbury City Centre does not adversely affect or undermine the City Centre as the Primary Regional Centre. The outcomes sought by this ACP are consistent with such theme.

Importantly, the ACGBP identifies a range of performance indicators that each type of centre per the hierarchy should exhibit – for example, with respect of floor space, retail type and catchment. Measurement of this ACP against these characteristics is included in section 2.1.2.1.

It should be noted – as this is the primary purpose of this ACP – that the ACGBP identifies 'department store' as a typical retail type within a Primary Regional Centre/City Centre. For no other centre type in the hierarchy is department store identified as a typical use.

This ACP aims to secure a department store within the Primary Regional Centre consistent with the ACGBP. In doing so, the potential to locate a department store outside of the Regional Centre contrary to the ACGBP is restricted.

A retail needs assessment is not a requirement of the ACGBP for proposals in the Primary Regional Centre and, as such, a formal assessment has not been provided with this ACP.

However, the ACGBP requires a Activity Centre Plan to be in place prior to major development within the City Centre. This ACP satisfies such requirement.

In this regard, the ACGBP identifies a range of items to be addressed in Activity Centre Plans. This ACP reflects the same, albeit reconciled with the informational and structural requirements of the WAPC's Activity Centre Plan Framework of 2015.

1.3.4 OTHER APPROVALS AND DECISIONS

In anticipation of this ACP, a minor development application relating to the integrated redevelopment of the Stirling Centre and Centrepoint Shopping Centre was lodged in February 2016. The application is to be determined by a Development Assessment Panel in May 2016.

The key elements of the development application include:

- The addition of 2,064m2 NLA of floor space
- Linking of the Centrepoint Shopping Centre and Stirling Centre via a covered walkway
- Construction of a Prinsep Place food precinct, extending from the northern facade of the Centrepoint Shopping Centre towards Haley Street
- Construction of a new decked parking structure at the corner of Haley Street and Blair Street
- Reconfiguration of existing food and beverage and speciality retail tenancies within the existing centres
- Construction of Paisley Square landscaping area

This ACP has been prepared on the assumption that the above-described works have been approved and implemented.

Any future development and land use over land subject to the existing development application must reflect this ACP, the local planning scheme and relevant policies.

In summary, the development application and ACP are complementary. It illustrates that the ACP is a further step in the renewal, expansion and enhancement of the City Centre in a manner consistent with strategic planning.

1.3.5 PRE LODGEMENT CONSULTATION

Primewest and its project team engaged with City of Bunbury and Department of Planning officers in 2015 in order to review a variety of design options and approaches that would serve leasing-led growth drivers, yet would also ensure appropriate amenity and a quality public realm.

Through continued liaison it was confirmed that the minor redevelopment proposed as part of the development application described at section 1.3.4 would not constitute development of such significance that it must be preceded by a Activity Centre Plan. It was further agreed that prior to any major development occurring, namely the establishment of a department store, a Activity Centre Plan must be prepared, and endorsed by the WAPC.

This ACP reflects the above-mentioned consultation.

2.0 SITE CONDITIONS & CONSTRAINTS

This section describes site characteristics and setting, and demonstrates how the ACP is compatible with the same.

2.1 CONTEXT

2.1.1 REGIONAL CONTEXT

Located 180kms south of Perth, Bunbury is the largest city outside of the Metropolitan region in Western Australia, and is home to approximately a population of around 35,000 (with an annual growth rate of 1.8%). There is a wider population base of 68,000 within the greater Bunbury region (including adjacent centres of Australind, Leschenault, Eaton, Gelorup, Dalyellup and Stratham). Bunbury is the fastest growing regional city within Western Australia.

Bunbury is the key hub for business, industry, and retail within Western Australia's south west. It takes advantage of its adjacent waterfront for commercial, recreational and residential purposes. Residents rely primarily on mining, manufacturing, building and retail industries for employment.

Bunbury's City Centre is identified as the Principal Regional Centre (in the ACGBP). A centre of this kind is earmarked as having the following attributes (by the ACGBP):

- Retail including department stores, discount department stores, supermarkets, specialty shops and personal services
- Office – major offices, government agencies, major institutional uses
- Restaurants and a wide range of entertainment facilities
- Services for the greater Bunbury and south west regions

The Bunbury City Centre in its current form incorporates a number of anticipated uses as set out above, however it lacks a department store. The department store site per the ACP is considered to be the optimum location for such use on the basis that it is a single land holding, within proximity to other 'shopping centre' form within the city centre, and is able to integrate fully with the same.

Other centres such as Bunbury Forum, Parks Centre and Eaton are noted to be classified as district centres, and offering essential services and facilities to the local population. These centres are not designated for a department store under the ACGBP.

Bunbury is serviced by a number of road and rail connections, facilitating the ease of moving goods and people to and from the City. The proposed department store location per the ACP has excellent proximity to these connections, which promotes ease of access – necessary for the regional status of the Primary Regional Centre. The location of the Centrepoint ACP, within the Bunbury City Centre in relation to the regional centres and road network is depicted in Figure 3.

FIGURE 3: REGIONAL CONTEXT

2.1.2 LOCAL CONTEXT

The Centrepoint Bunbury ACP is located within the Bunbury City Centre, an urban area which has been fully built out since its foundation in the mid-1800s. Whilst there are opportunities for redevelopment such as within the Centrepoint ACP, the broad configuration of the City Centre and surrounds, including the road network and block layout is fixed.

The character of Bunbury has largely developed around the natural and cultural assets of the locality, with much of the City Centre being built to take advantage of the water views to the north, east and west. The relatively flat topography of the City Centre itself combined with limited height has created a generally uniform skyline, allowing view lines to be maintained and creating a human scale of form.

Existing development within the Centrepoint ACP includes the Stirling Centre, Centrepoint Shopping Centre, Paisley Centre and a multi-story car park. The shopping centres were both established in the late 1980's with various upgrades occurring over time, with the most recent round of upgrades including the integrated redevelopment of both centres and enhancement of the centre's edges, and private/public realm. The Paisley Centre, built in 1886 is a listed heritage place, as described in latter sections.

The multi-story car park, which is the site of the proposed department store, provides the key opportunity for redevelopment within the Centrepoint ACP area. Because it is in single ownership and does not accommodate any complex or heritage structures, it is ideally suited to the larger scale redevelopment required to support a department store.

Moreover, it allows for the department store to be grouped with land uses of an aligned built form – the Centrepoint and Stirling shopping centres. It allows for these retail elements to be closely integrated through the height, orientation and appearance of buildings (for example) as well as pedestrian connectivity and visual access between the primary uses.

2.1.2.1 ROLE AND TYPICAL FUNCTIONS OF THE PRIMARY REGIONAL CENTRE

As mentioned, the ACGBP identifies a range of performance indicators for each centre type.

This ACP will result in the satisfaction of all such indicators as described in Table 1.

It illustrates that contextually, the ACP is an appropriate planning outcome that is consistent with the strategic planning for the region.

TABLE 1 – SUMMARY OF CONSISTENCY WITH ACTIVITY CENTRES FOR GREATER BUNBURY POLICY

FUNCTION/ CHARCTERISTIC/ PERFORMANCE TARGET	DESCRIPTION (AS PER THE ACGBP)	COMMENTARY
Hierarchy	The Centrepoint ACP is located within the Bunbury city centre, which is identified by the ACGBP as a 'Principal Regional Centre' This is the highest order centre per the ACGBP and includes a range of uses and form not found in other, lower order centres.	
Main Role/Function	The City Centre is the largest of the activity centres, providing the most intensely concentrated development in Greater Bunbury. It has the greatest range of higher order services and jobs and the largest commercial component of any activity centre in Greater Bunbury. The City Centre services greater Bunbury and the South West Region.	Higher order retail functions include a department store, which is identified as a typical use for the Primary Regional Centre but not for any other centre type in the hierarchy. The ACP reinforces the Bunbury City Centre as the Primary Regional Centre by facilitating a department store. This enhances the retail offering within the Primary Regional Centre and will act as a catalyst for further (re)development and renewal. Pegging the land for a department store limits the potential for a department store to be located elsewhere, in lower-order centres contrary to the ACGBP.
Name of Activity Centre	Bunbury Central Business District	

Transport Connectivity and Accessibility	Focus of regional road and rail infrastructure as well as radial bus network	The fully realised Centrepoint ACP will capitalise on existing transport routes/nodes. The location of the Centrepoint ACP enables a high level of connectivity due to proximity to Blair Street and links to high order 'other regional roads' and 'primary regional roads'. The Bunbury bus station located directly to the north of the Centrepoint ACP provides for pedestrian connections for convenient access to the local bus network.
Typical Retail Types	Department Stores Discount Department Stores Supermarkets Specialty Shops Personal Services	As noted previously the primary aim of this ACP is to facilitate the development of a department store and safeguard against the bleeding of such use to other (lower order) centre types.
Typical Office Development	Major offices Commonwealth and State Government agencies Major institutional uses such as courts and local Government office	Consistent with the function of the Primary Regional Centre, various offices and government services are located within the Bunbury city centre, however outside of the Centrepoint ACP. The ability to establish office uses within the Centrepoint ACP is restricted by the existing built form and the built form associated with the future department store. The ACP is particular to a retail format unlikely to be suitable for higher order offices, which are best suited to more appropriate buildings and spaces elsewhere in the city centre. Notwithstanding, 'Office' is a 'Permitted' use within the City Centre zone and they may locate within the ACP area without planning approval.
Entertainment	■ Regional convention centre/theatre\ ■ Exhibition centre (gallery/museum) ■ Restaurants ■ Cinema ■ Amusement parlour ■ Wide range of arts, cultural and entertainment facilities	The Centrepoint ACP will incorporate a range of uses, including a variety of food and beverage offerings. These build upon the food and beverage / restaurant, and entertainment offerings within the Bunbury city centre. Together these offerings work to reinforce the function of Bunbury as a regional attractor. The range of related uses permitted under the TPS 7 as of right include: ■ Restaurant ■ Fast Food Outlet ■ Lunch Bar
Future Indicative Service Population (Trade Area)	Greater Bunbury and South West Regions	The Centrepoint ACP acts as a regional attracter offering a wide range of retail and entertainment activities. In particular, the establishment of a department store - the only one within Western Australia's south west - will widen the trade area. The department store will act as a vital attractor, resulting in cross visitation to the existing shopping centres and wider Bunbury City Centre.

2.1.2.2 NATURAL, CULTURAL AND HISTORICAL HERITAGE

Figure 4 illustrates a range of heritage elements within the Bunbury city centre.

The key heritage consideration is the Paisley Centre located on Arthur Street. The Paisley Centre is listed on the State Register of Heritage Places (Permanent entry, reference No.00330). The City of Bunbury has also listed the property in the TPS 7 Heritage List (reference no.B003) and the site has been adopted into the Local Municipal Inventory. It is also registered as a permanent entry on the National Estate, and classified by the National Trust.

The interface between the Paisley Centre and the Stirling Centre, and Centrepoint Bunbury Shopping Centre was a key consideration in the integrated redevelopment of the Stirling and Centrepoint shopping centres. The Centrepoint ACP further strengthens the requirement for any future development of the centres to respect and reflect the Paisley Centre's heritage value.

Other areas of heritage significance include the Bunbury Rail Station (Heritage Place No. 00331) and the Bunbury Women's Association (Heritage Place No. 07166). There will be no direct impacts on these heritage, however view lines and connections to the Bunbury Rail Station will be strengthened through the redevelopment of the Stirling Centre and Centrepoint Bunbury Shopping Centre.

A review of the Department of Aboriginal Affairs database, and the City of Bunbury Landscape Character Study 2010 confirms there are no Aboriginal sites or places within or adjacent to the Centrepoint ACP.

Whilst not specifically classified as natural heritage, the Queens Gardens and the Leschenault Inlet play a role in defining the character of the Bunbury city centre. This is acknowledged by maintaining connections and view lines to and from the Centrepoint ACP to these features.

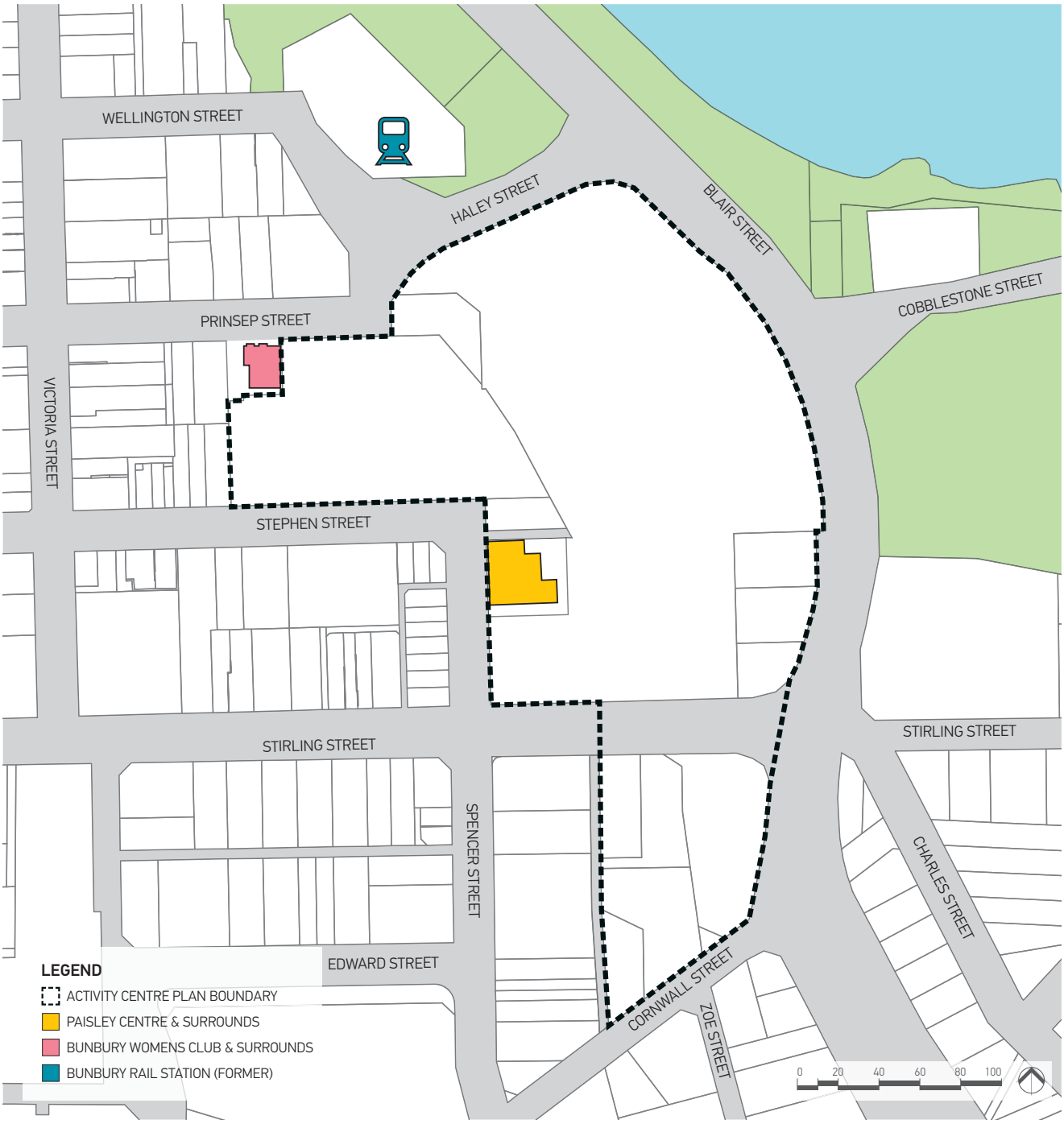


FIGURE 4: LOCATION OF HERITAGE ELEMENTS

2.1.2.3 INTEGRATION WITH THE SURROUNDING AREA

The ACP area is surrounded by a wide range of commercial, mixed business, civic, transport and recreational uses, including;

- Blair Street, a major road located to the east of Centrepoint Shopping Centre, which provides direct access to and from the City Centre
- Victoria Street, Bunbury's 'main street' located to the west. Land use and development in this locality, extending eastwards to Centrepoint is characterised predominantly by street-based retail
- The western end of Stephen Street houses numerous civic uses including a Library, Art Gallery and Bunbury Senior High School
- The Bunbury Information Centre, Transport Depot (Bunbury Bus Station) and Bicentennial Park are located directly to the north of the subject site
- To the east and north-east of the subject site is Queens Gardens with Leschenault Inlet beyond
- To the south, zoning changes from City Centre to Mixed Business with the range of uses transitioning from primarily retail based to commercial and service commercial uses

The relationship between the Centrepoint ACP and its surrounds, in particular frontage interactions, connections and views are depicted within Figure 5.

Existing and future uses within the Centrepoint ACP are highly compatible with surrounding uses, which combine to form the City Centre/Primary Regional Centre. Importantly, the ongoing use and development of the Centrepoint ACP will provide a catalyst for further redevelopment in the wider city centre, to the benefit of the region. The department store will complement and enhance the retail offering of the Primary Regional Centre, consistent with strategic planning.

With land use and development per TPS 7 controls (along with the wider policy framework), future built form (heights, setbacks etc.) will be consistent with the locality and with community expectations.

2.1.2.4 UTILITIES

The Centrepoint ACP is located within an established urban environment, with the built form on site having been in place since the 1980s. Existing infrastructure for utilities such as gas, power, water, telecommunications, wastewater and drainage exists within and around the Centrepoint ACP. Any servicing upgrades and/or modifications will be negotiated between the landowner and service provider.

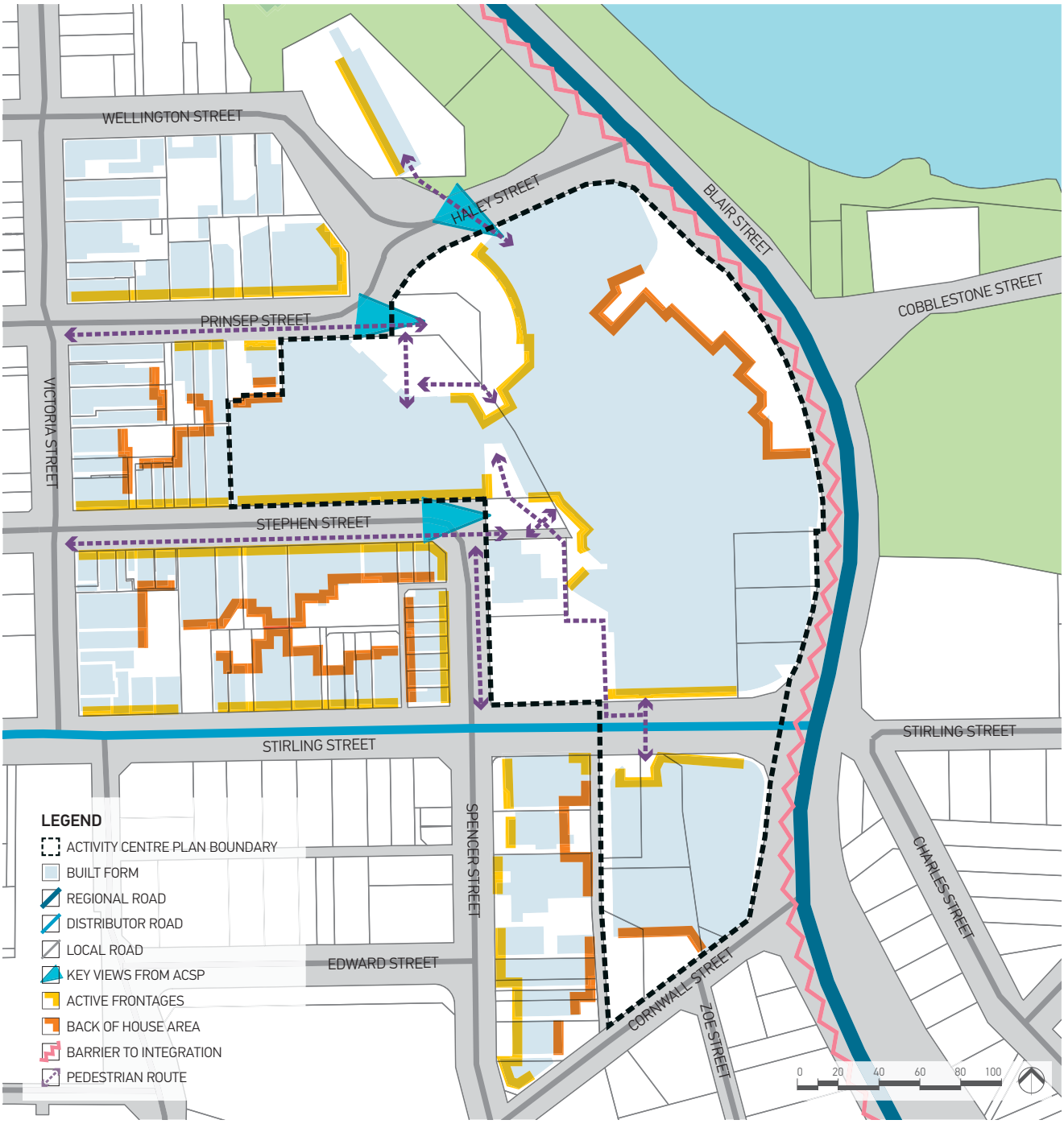


FIGURE 5: RELATIONSHIP WITH SURROUNDING AREA

2.2 SUMMARY OF OPPORTUNITIES AND CONSTRAINTS

An opportunities and constraints analysis was undertaken in order to guide the development parameters for the Centrepoint ACP. A summary of this analysis is set out in Figure 6, with relevant commentary in Table 2 below. The summary illustrates that the proposed ACP is highly compatible with (and responsive to) its setting. We reiterate that the ACP takes advantage of an existing street block pattern. Essentially this means:

- The potential for changes to road layout and lot configuration is limited
- The ACP layout is compatible with setting
- The department store use is ideal to take advantage of the such setting

TABLE 2: OPPORTUNITIES AND CONSTRAINTS

OPPORTUNITIES	SUMMARY
Establishment of department store Wide range of pedestrian routes Maintenance of key views Opportunities for landmark elements Multiple parking areas Proximity of site to bus station Future redevelopment site	The opportunity exists for the activation of facades and further integration of the Centrepoint ACP into the Bunbury city centre. Assisting with this are the wide range of pedestrian routes to, from and through the site, and maintenance of key views to the greater City Centre and public open space. It is acknowledged that the use of the southern lot for car parking does not reflect highest and best use and the opportunity exists for the redevelopment of this site. The location and size of the site ensures it is suitable for the development of a department store, and can accommodate such use without changes to lot configuration or road alignment. Strategic planning identifies a department store as a 'typical' use for the Primary Regional Centre.
CONSTRAINTS	**SUMMARY**
Existing built form / street block layout Blair Street traffic volumes	The Centrepoint ACP and surrounding area is fully built out with limited redevelopment opportunities existing. In some ways this restricts the degree and form of development that might occur. However it also reinforces the suitability of the southern lot to support a department store.
Heritage sites	The traffic volumes and form of Blair Street may be a potential barrier to the activation of development to the east, and pedestrian linkages to the same. Future development proposals should consider the extent of the issue and means to address, as applicable. As mentioned, future development and land use should demonstrate an effective relationship with heritage elements, especially Paisley House and surrounds.

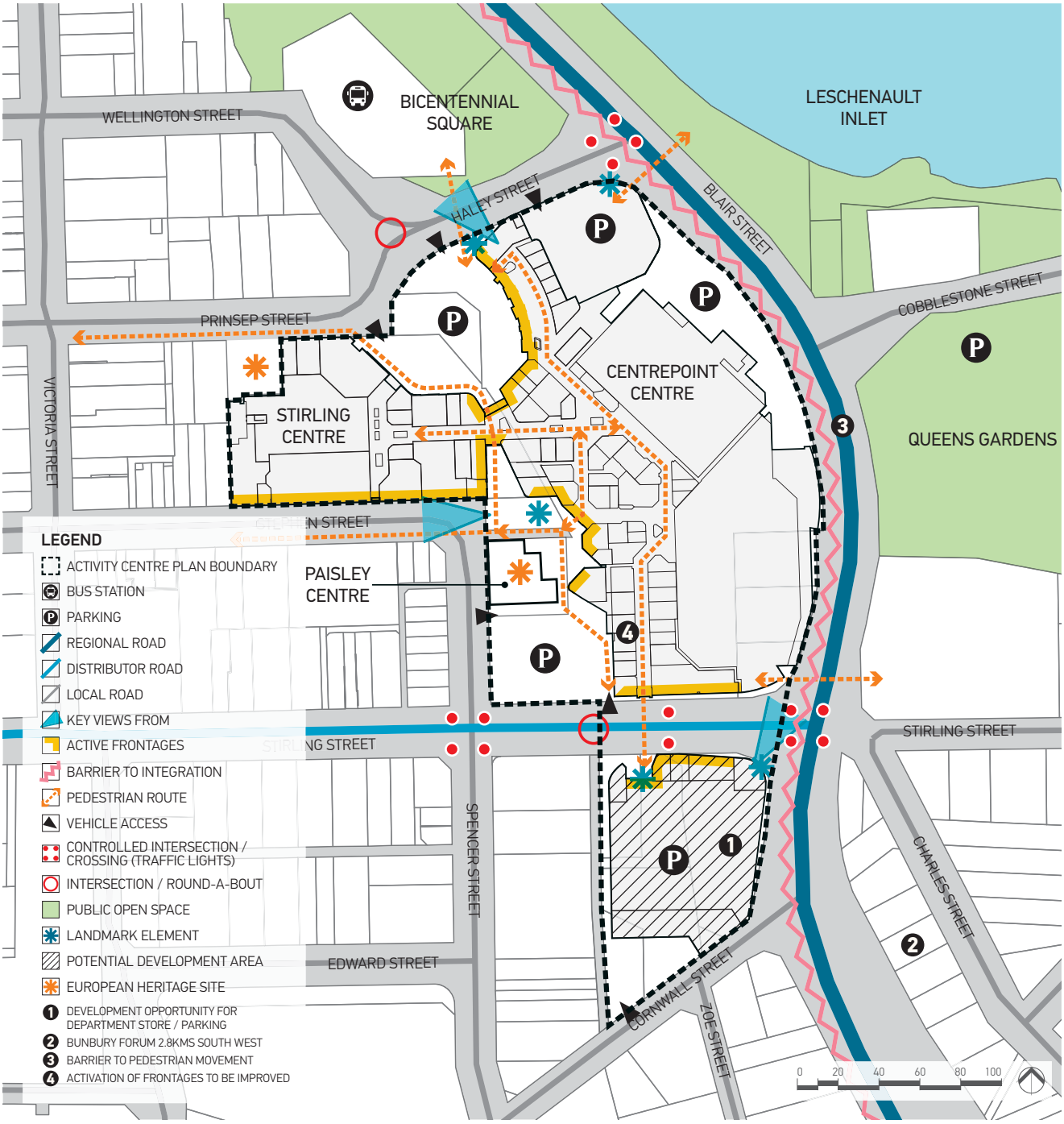


FIGURE 6: OPPORTUNITIES AND CONSTRAINTS

3.0 PROPOSED ACTIVITY

This section describes the current range of land use activity as well as that facilitated by the ACP. It is reiterated that the ACP assumes approval to the previously described development application for the expansion/integration of the Centrepoint and Stirling shopping centres. In this way, this section is largely an account of land use activity already provided for. The purpose of this ACP is predominantly to provide for a department store, as a new (albeit permitted) use within the Primary Regional Centre and consistent with the ACGBP.

3.1 ACTIVITY WITHIN THE CENTREPOINT ACTIVITY CENTRE PLAN

The pattern of activity within a centre, in terms of the type and form of land uses, the mix and location of use, and inter-relationships between those uses; not only affects the economic performance of an activity centre, but also guides the urban form and connections between activities and usability by the community. Realising a cohesive and robust pattern of activity, whilst maintaining flexibility to respond to market demand, enables the development of an activity centre that is optimum in performance for investors and patrons alike.

The range and distribution of activity in each precinct (refer Plan 1) of the Centrepoint ACP is outlined below with the spatial relationship of activity depicted in Figure 7:

Centrepoint Precinct

Existing development consists of Coles, Target and Red Dot Discount Department Stores, and 46 specialist stores, services and food and beverage outlets. The Precinct is particularly well positioned to provide a greater number, quality and diversity of fashion tenancies. Approved redevelopment will provide for additional food and beverage offerings, creating two zones which are structured to operate outside of core opening hours. This will increase the choice and diversity of activity within the ACP area and the Regional Centre in general. Importantly, the distribution of land uses per the development application are such that the Precinct will have a more 'outward' focus, with improved/activated edges to the public realm. This is inclusive of an improved relationship to the Paisley Centre where food and beverage, and retail will interact with an enhanced public plaza.

Stirling Precinct

Existing development consists of the anchor tenant, Best and Less, supported by a range of speciality stores including Priceline, Medibank Private, Witchery and The Reject Shop. Approved redevelopment will provide for an internal restructure, providing an additional anchor tenant, greater food and beverage offerings and a connection to the Centrepoint Shopping Centre.

Paisley Precinct

The relationship between the Centrepoint Precinct and the Paisley Precinct was developed through the development application that facilitated the expansion/integration of the existing shopping centres. Subject to a formal landscaping plan, the Paisley Precinct is characterised by an open public plaza bound by outward focussed retail/food and beverage at Centrepoint, and the Paisley Centre itself.

Cornwall Precinct

Development within the Cornwall Precinct currently consists of a multi-level car parking structure accessed via Stirling Street, Cornwall Street and an un-named laneway located to the west of the site.

Development of this site will include the establishment of a two - three level department store, speciality stores and food and beverage tenancies sleeved in front of the department store fronting Stirling Street and the reconfiguration of the decked parking area and access to the same. The development will provide for additional retail in line with the outcomes set out within the ACGBP, in particular providing for a department store within the Bunbury city centre.

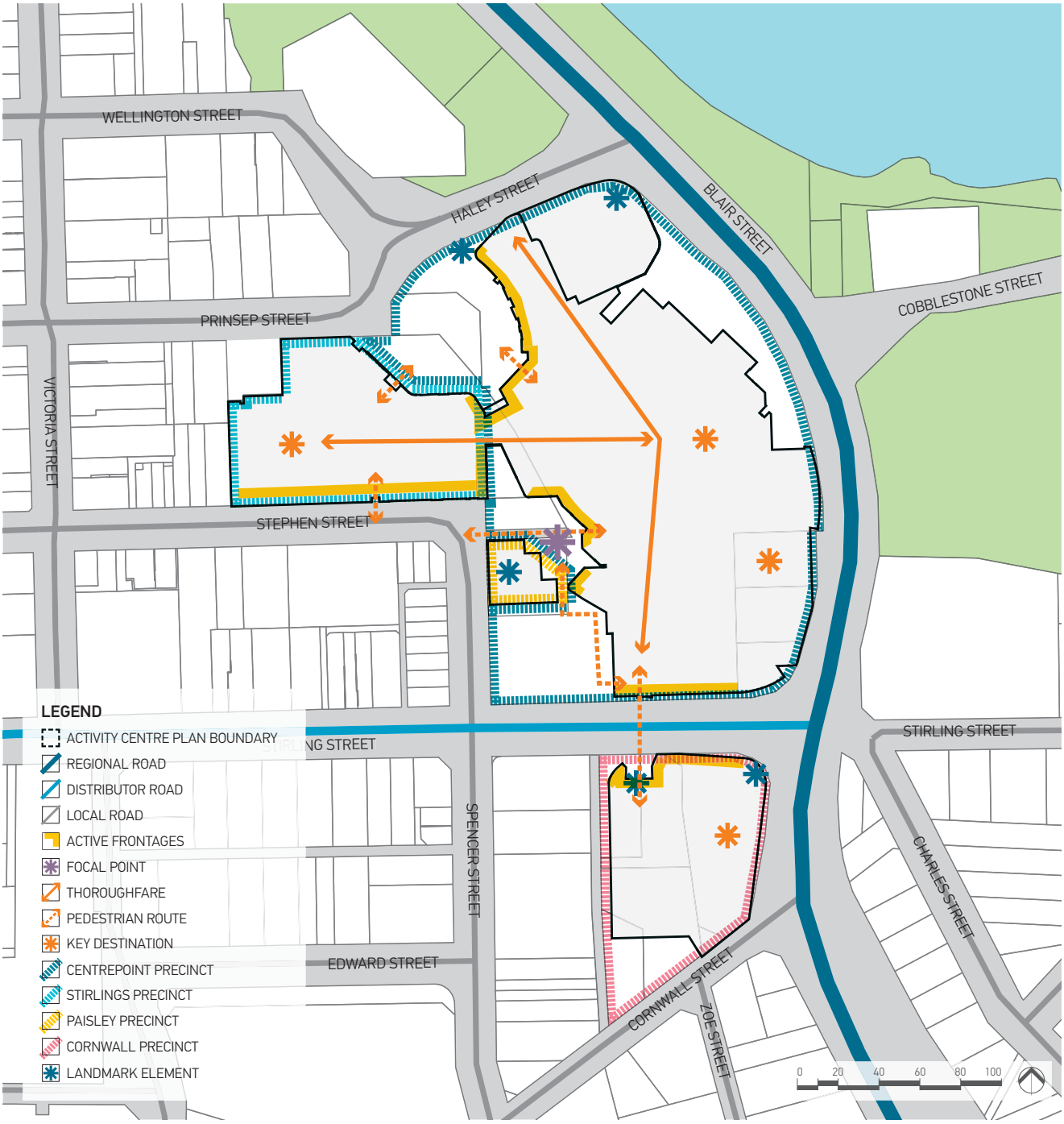


FIGURE 7: PROPOSED SPATIAL RELATIONSHIPS OF ACTIVITIES

3.2 DIVERSITY AND INTENSITY OF ACTIVITY

The existing development within the Centrepoint ACP, being large format retail, incorporates a wide mix of retail-based land uses including: major retail, mini major retail, speciality retail, food and beverage and commercial. The diversity of activities is depicted within Figure 8.

As noted, the primary aim of the ACP is to provide for a department store in the Primary Regional Centre consistent with the ACGBP. This, in combination with the redevelopment of the Stirling/Centrepoint shopping centres will provide for a service offering consistent with the status of the Regional Centre. This offering will be provided in an outwardly-focussed environment that enhances the street/public environment.

Land uses shall be per the Local Planning Scheme.

3.2.1 FLOORSPACE ESTIMATE BY LAND USE

In demonstrating the diversity and intensity of activity within the existing and fully realised Centrepoint ACP floorspace estimates are set out at Table 3. It is noted that these are based on preliminary concepts for the department store and associated speciality retail and will be subject to change at detailed design stage.

TABLE 3 - FLOORSPACE ESTIMATES

LAND USE	EXISTING (M^2)	PROPOSED (M^2)	PERCENTAGE
Major Retail	10140	22,000	60%
Mini Major Retail	2064	5000	14%
Speciality Retail	8105	6000	16%
Food and Beverage	666	2500*	7%
Commercial	302	1000	3%
TOTAL	**21303**	**36,500**	**100%**

* Excludes 561sqm Food Court Seating Area.

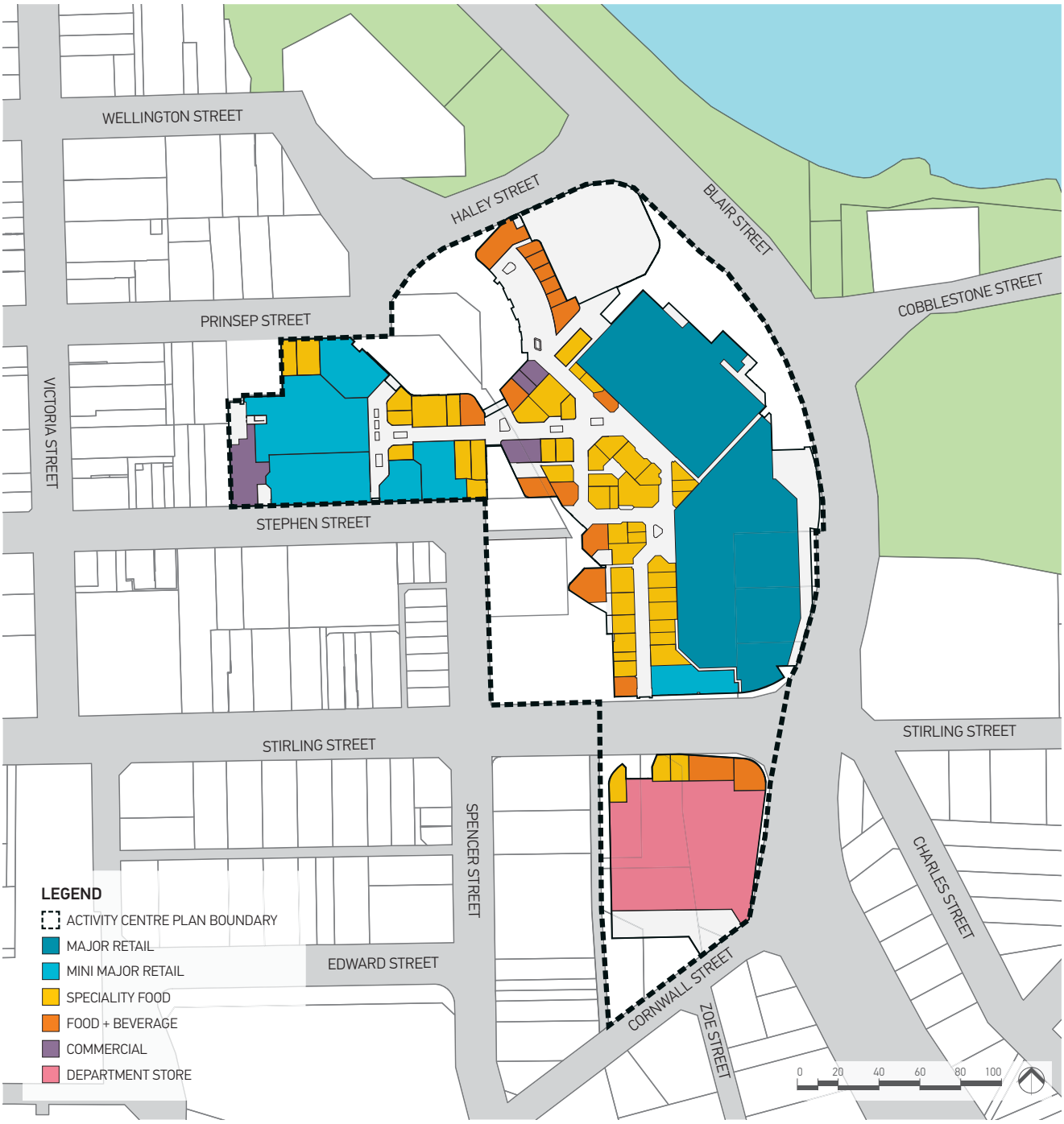


FIGURE 8: DIVERSITY OF ACTIVITIES

3.2.2 PROVISION OF COMMUNITY, CIVIC AND CULTURAL FACILITIES

Due to the established nature of the Bunbury city centre, community, civic and cultural facilities have been provided within the wider area and, as such, further provision of these facilities is not required within the Centrepoint ACP. The location of community, civic and cultural facilities in proximity to the Centrepoint ACP is depicted in Figure 9.

The Paisley Centre, being a museum and art gallery is an important cultural and community facility. The operations of the Paisley Centre in providing services to the community will not be altered by the ACP. Indeed, the space located between the Paisley Precinct, Stirling Precinct and Centrepoint Precinct has the potential to be utilised for community events. The improvements to this space will in any case enhance the function of this space as a public area.

3.3 RESIDENTIAL

The proposed department store (being the primary aim of this ACP) does not have the capacity to accommodate residential land use within the boundaries of the site.

Any future redevelopment of the wider ACP area may wish to consider opportunities to incorporate high density living.

3.4 EMPLOYMENT

3.4.1 NUMBER, RANGE AND DENSITY OF JOBS

The fully realised ACP will be an important employment generator for the region as illustrated by Table 4 below.

The retention of this employment in the City Centre is critical if the form and function of the Primary Regional Centre is to be fully realised in accordance with the ACGBP.

TABLE 4 – ESTIMATED EMPLOYMENT

	EXISTING	PROPOSED
Major Retail	326	708
Mini Major Retail	49	118
Speciality Shops	492	364
Food and Beverage	40	152
Commercial	13	43
TOTAL JOBS	**920**	**1385**

* Major retail figures assume an equal split of floor area between supermarkets and department stores

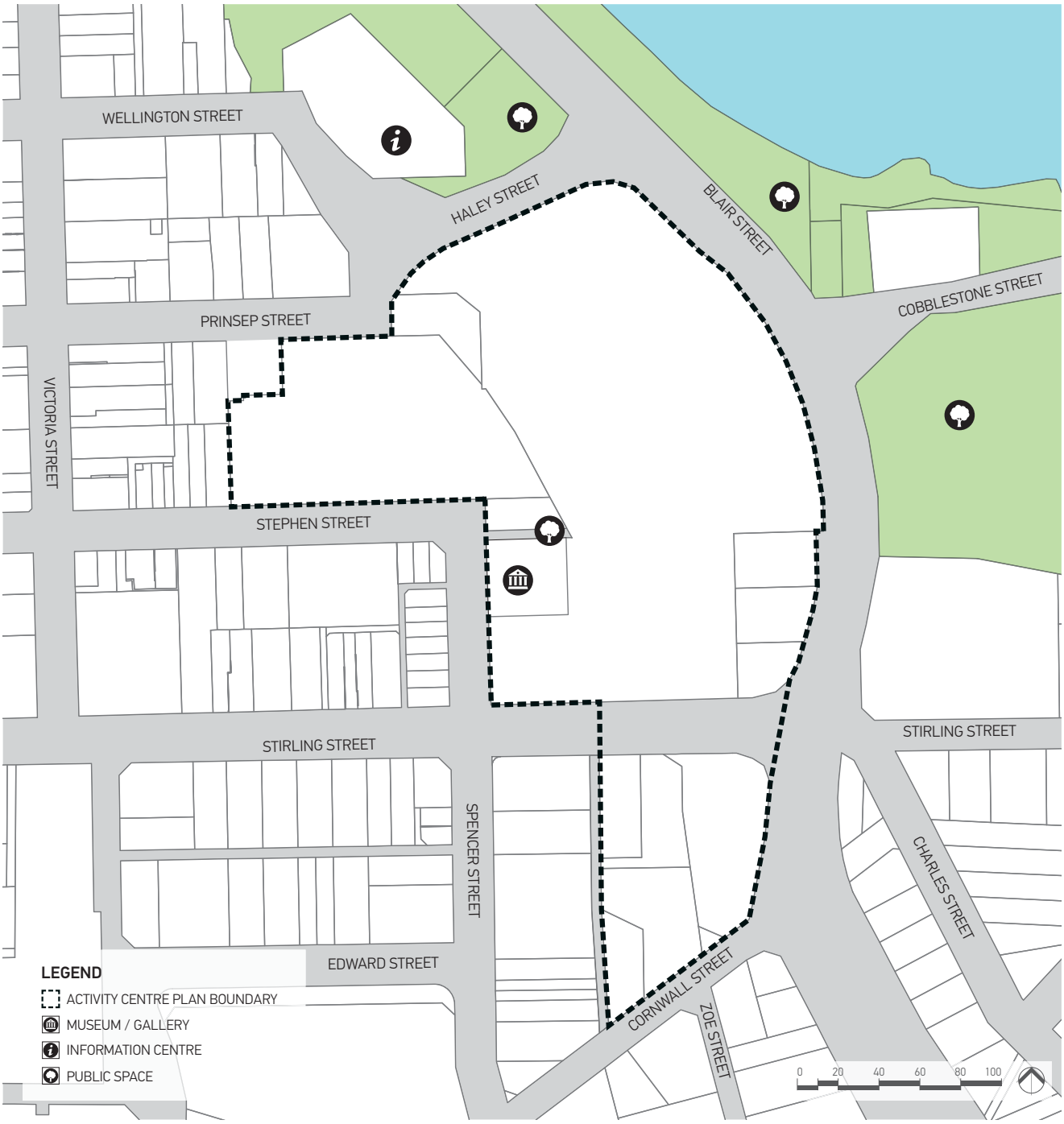
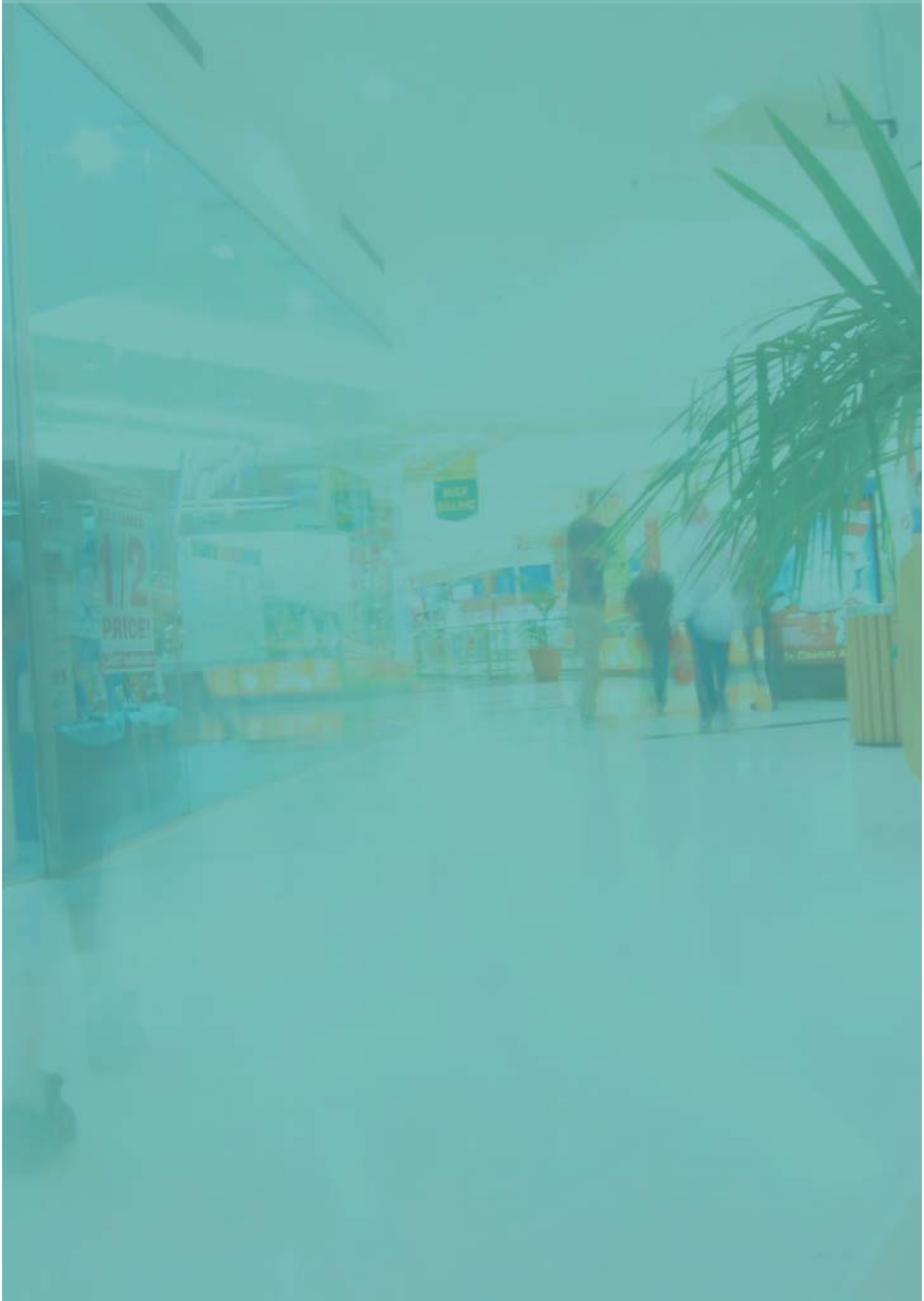


FIGURE 9: LOCATION OF COMMUNITY, CIVIC AND CULTURAL FACILITIES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3.5 RETAIL NEEDS ASSESSMENT

Whilst it is acknowledged that a retail needs assessment is not required within the Bunbury City Centre as per the ACGBP, an assessment of the market potential for the Bunbury Centrepoint Shopping Centre was completed by Urbis in May 2014. It is useful to consider this assessment as it confirms a market and capacity for the proposed department store. Its key findings are summarised below:

- **Trade Area.** The shopping centres within the Centrepoint ACP are estimated to serve a broad trade area covering the urban area of Bunbury as well as adjoining nearby communities, including Collie, Donnybrook and Harvey. This trade area is reflective of the centre's position within the Bunbury City Centre and role as a key fashion shopping destination in the region. This reflects the status of the City Centre as the Primary Regional Centre. A department store is presently missing from the current retail offering.
- **Population.** Bunbury is one of the fastest growing regional cities in Western Australia and over the period from 2007 to 2011, the resident population grew by an average of 2.1% per annum.
- Over the next 10 years, population growth is forecast to remain strong an average 2.4% per annum, adding 4,300 residents per annum from 2011 to 2021. Some 85% of population growth is forecast to occur in the developing northern and southern growth corridors.
- **Demographics.** In terms of the demographic profile of residents and for a regional city, the Bunbury market has reasonably good incomes, 3% above the non-Perth average for Western Australia.
- There is, however, a diverse mix of households, with a significant concentration of retirees in the central area of Bunbury and young families in the developing northern and southern corridors. The growth areas are attracting above average income families which is a positive indicator for retail spending rates in the region.
- **Retail Spending.** In the main trade area associated with the Centrepoint ACP, retail expenditure on food and convenience goods and services is similar to the non-Perth Western Australia average while higher than average spending rates are evident in the discretionary categories (e.g. apparel spend per capita is 4% above average).
- In the year to June 2012, Centrepoint served a retail market of $2.2 billion (including GST). This market is forecast to grow to $3.2 billion by 2021 (expressed in constant $2012 including GST), representing growth of 4% per annum in real terms. In inflated dollar terms market growth is likely to average around 5.5% per annum.
- In the period to 2021, the trade area retail market is forecast to increase by almost 50% (in real terms).
- The forecast rate of growth in the market provides good opportunity for an expansion of retail facilities generally across Bunbury, including those within the Centrepoint ACP.

4.0 URBAN FORM

4.1 INTRODUCTION

The urban form associated with the Bunbury City Centre has been established over a number of years, taking into account local environmental conditions, character, history and development needs. The buildings associated with the Centrepoint Shopping Centre and Stirling Centre are major elements of the built form character of the locality.

The Centrepoint Shopping Centre and Stirling Centre are at a key location within the Bunbury city centre, anchoring the eastern end of Stephen Street. Stephen Street is a vital connection forming an axis with Victoria Street, Bunbury's main street, and is anchored at the western end by a civic precinct containing the City of Bunbury Offices, Police Station and Courts.

Lower-scale 'main street' development and land use characterises the majority of the Bunbury city centre. The Centrepoint Shopping Centre and Stirling Centre combine to provide the only large format retail within the overall Bunbury city centre.

The key principles to achieve the high quality urban form are outlined in the following sections along with the methods for ensuring future development responds appropriately to achieve these principles.

However, given the established development site in addition to the recently approved development application relating to the existing shopping centres, the commentary essentially captures general principles that have already been expressed in design for the centre, and which will be carried forward to any future redevelopment. It should be noted that implementation will be achieved through the application of development requirements under TPS 7 (or any future local planning scheme) and associated policies. Satisfaction of these requirements means that any future development satisfies key urban form principles.

4.2 KEY NODES, LANDMARKS AND VIEW LINES

Key nodes, landmarks and view lines are critical elements in establishing the identity and legibility of the Centrepoint ACP, and links to the surrounding area. They provide strong visual connections between built form components of the Centrepoint ACP and the wider Bunbury city centre.

The Centrepoint ACP includes key nodes / landmark locations as depicted within Figure 10, including:

- Paisley Centre, a significant heritage node
- Paisley Square, private open space
- Prinsep Place (food and beverage)

It should be noted that these landmarks have been effectively planned for through the recently approved development application for the redevelopment/integration of the existing shopping centres.

Any future development across the ACP area must demonstrably illustrate the retention and enhancement of these nodes.

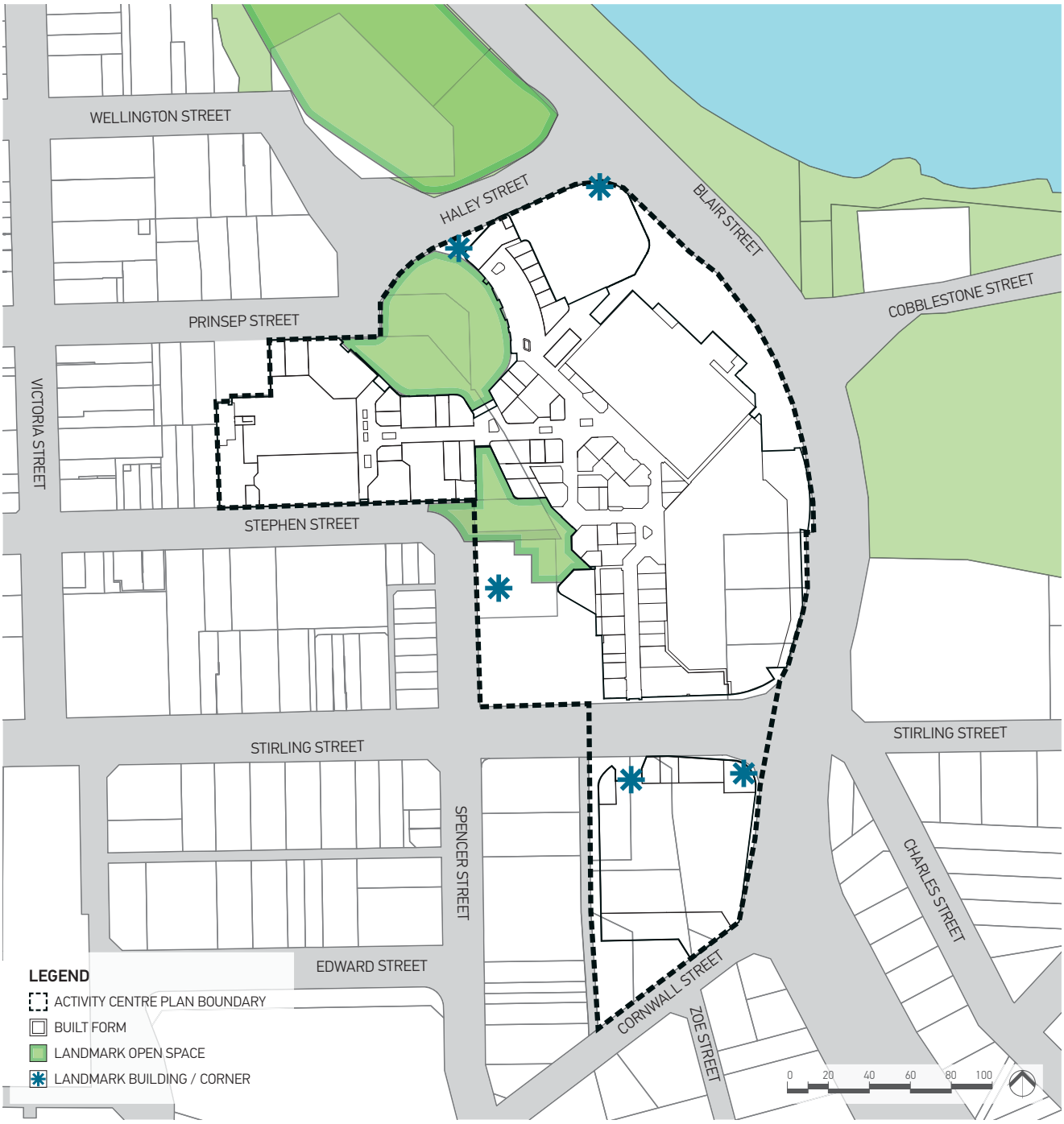


FIGURE 10: LANDMARK LOCATIONS

The Centrepoint ACP includes important view corridors to landmarks such as that depicted within Figure 11 and as set out below:

- West along Stephen Street through to Victoria Street and beyond
- West along Prinsep Street through to Victoria Street and beyond
- Northwards to the Bunbury Transport Depot and Bicentennial Square
- East to the Leschenault Inlet, Bunbury Foreshore and harbour beyond
- Diagonally through the site, across Paisley Square

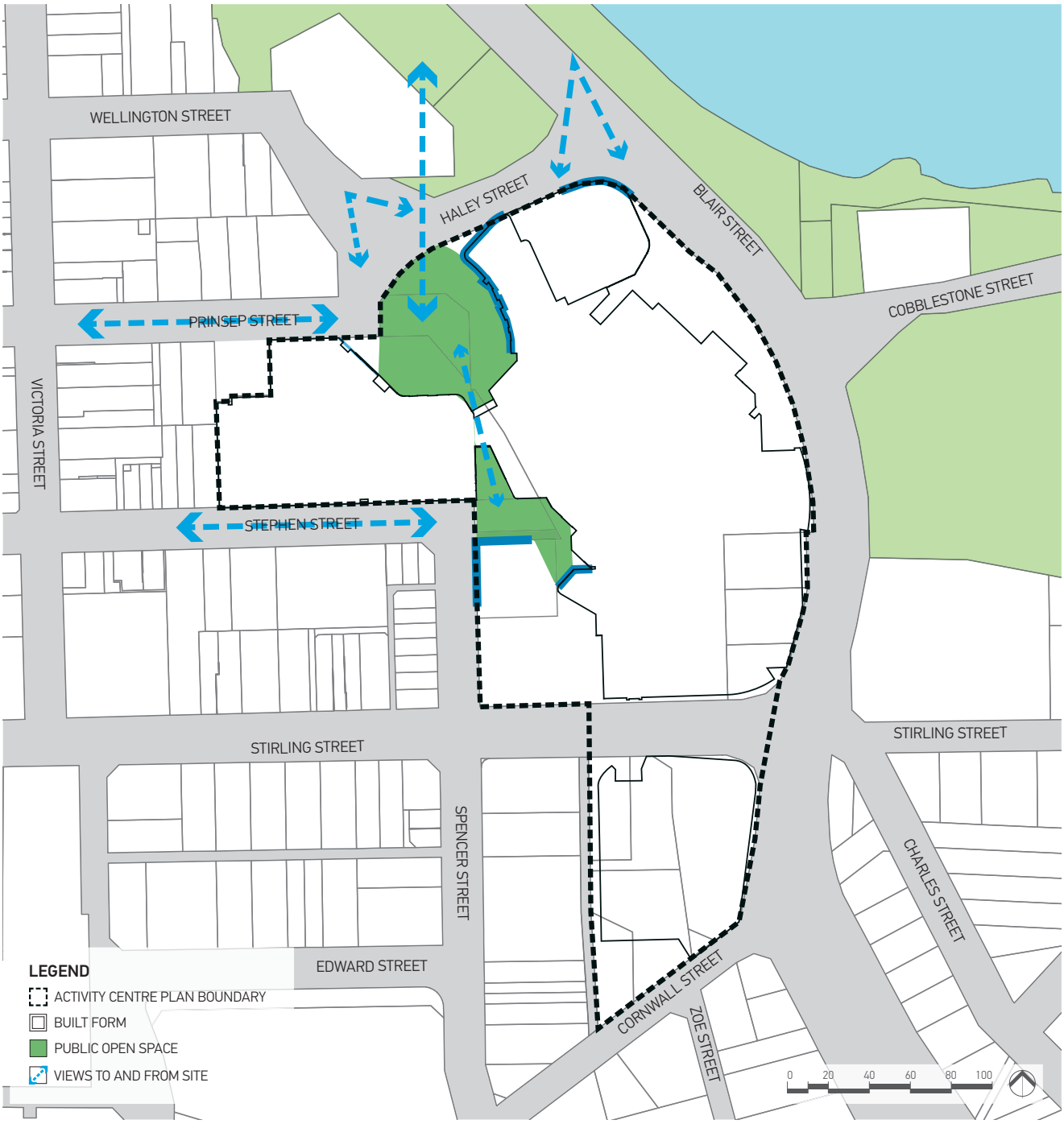


FIGURE 11: VIEWS TO AND FROM THE SITE

4.3 STREET INTERFACE

The nature of the existing development, being large format retail buildings has resulted in predominantly inactive frontages to key streetscapes due to the scale of development and operational requirements. The approved redevelopment of the centres incorporates the activation of frontages to key public spaces such as the Paisley Centre and Haley Street, in addition to a better integrated relationship between the two centres.

Further development in the Centrepoint ACP must balance the operational requirements of the retail activities with creating relationships with the existing surrounding development. Operational requirements such as the provision of back of house areas, provision of car parking and anchor tenants with restrictive layouts can limit the potential for activation to occur.

Streetscape interface and activation considerations for each precinct (as relevant) are set out below with examples of appropriate streetscape interfaces depicted in Figure 12. The proposed interface achieves an appropriate balance between operational and public realm requirements.

With interface improvements already approved for the Centrepoint and Stirling Centres, the ACP proposes the following improvements associated with the proposed department store site:

The existing streetscapes that surround the Cornwall Precinct will ultimately guide which frontages are activated as part of the development. The streetscape interactions are to occur to Stirling Street, responding to the Centrepoint Shopping Centre located to the north. Focus will be on creating a strong relationship between existing development and proposed development, integrating the development and creating strong pedestrian connections, encouraging interactions and the establishment of a high amenity environment.

A secondary frontage to Blair Street shall incorporate appropriate articulation and glazing to create an interesting and high amenity frontage, albeit recognising that this frontage does not provide opportunities for activation due to the existing road, and its location at the edge of the Bunbury city centre.

Back of house components and the entrance to parking shall be provided to Cornwall Street noting sufficient screening of back of house activities shall occur to ensure compatibility between the ACP and mixed business uses to the south of Cornwall Street is achieved as far as practicable.

Figure 12 illustrate the interface types considered desirable for future development. Current Scheme controls are considered adequate to achieve such outcomes.

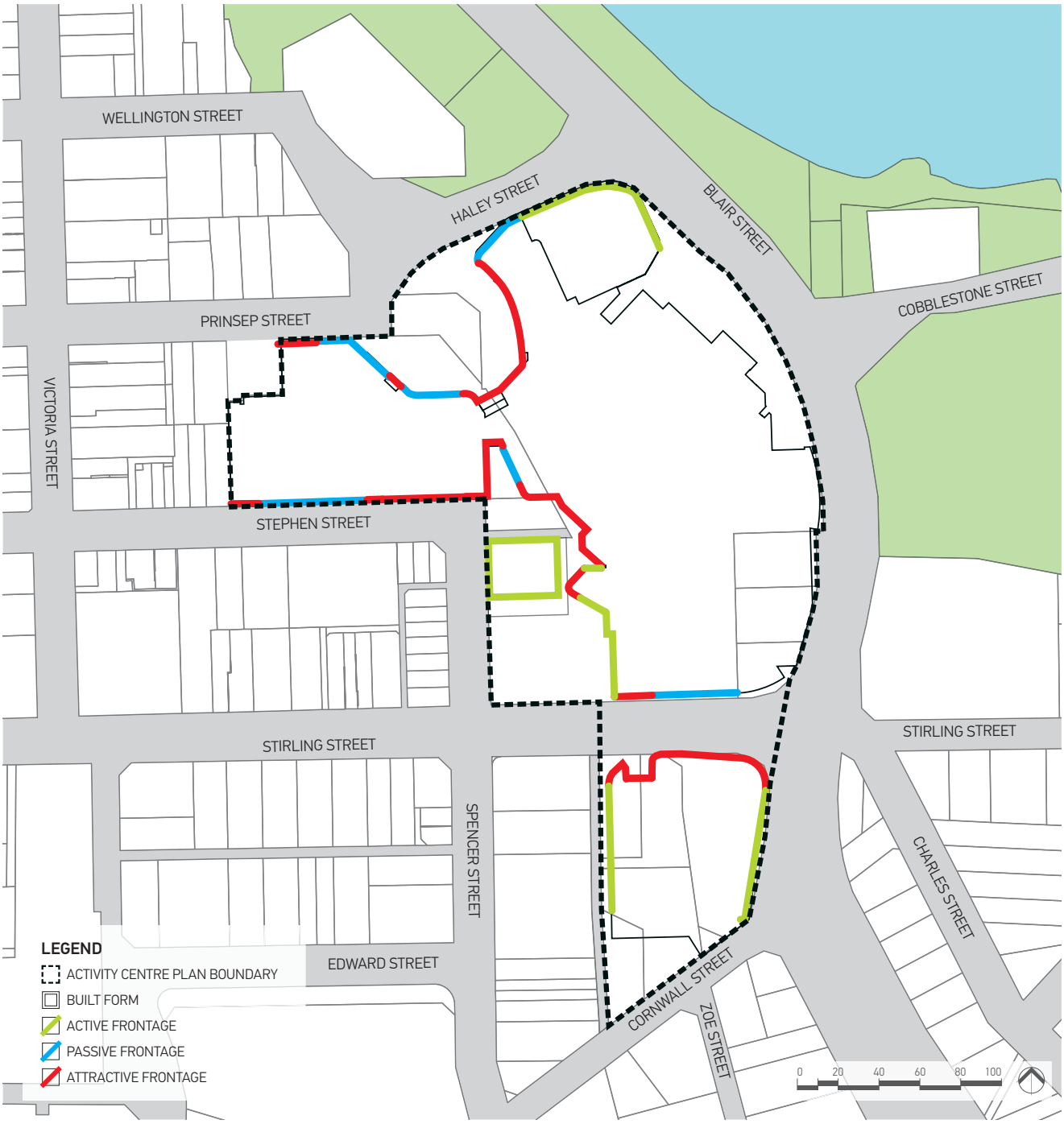


FIGURE 12: STREETSCAPE INTERFACE EXAMPLES

4.3.1 PASSIVE SURVEILLANCE OF STREETS AND PRIVATE SPACES

Ensuring passive surveillance within streetscape interfaces allows for the creation of spaces which are inviting, have a sense of place and feel safe. Establishing safe and inviting spaces within and around the ACP ensures that the urban form responds to the needs of the community, establishing a sense of ownership that will extend beyond the Centrepoint ACP, to the wider Bunbury city centre.

The recent integration of the Stirling Centre and Centrepoint Bunbury Shopping Centre has optimised the surveillance from the existing buildings through the inclusion of open facades, avoiding tight spaces and blind corners, along with significant glazing. The building configuration and materials have been specifically designed to ensure clear and legible direction for patrons, to avoid potential for graffiti and avoid the potential for undesirable access to off-limit areas.

Any further development of these precincts will take into account activation and passive surveillance opportunities for those facades currently limited in surveillance opportunities, being Stephen Street and Stirling Street. Recognising the locations and interactions likely to occur along these frontages, activation should be in the form of high quality building materials, including transparent glazing, and the provision of clear, defined openings to buildings in order to enhance passive surveillance in this area, per TPS 7.

Development of the Cornwall Precinct is to provide activation along the Stirling Street frontage, building on the relationship with the Centrepoint Shopping Centre and creating opportunities for surveillance of Stirling Street. Current TPS 7 provisions are sufficient to achieve the same.

4.3.2 ACTIVE USES AT GROUND FLOOR

As noted within previous sections, the approved built form within the Stirling Precinct, Centrepoint Precinct and Paisley Precinct provide active ground floor uses on key facades as far as possible. Any further development shall consider the incorporation of additional active uses on those facades which are currently lacking, being the facades to Stephen Street and Stirling Street. Examples of activated ground floors are depicted in Figure 13.

The department store site provides further opportunity for the enhancement of streetscapes. Current TPS 7 controls are considered sufficient to ensure desired outcomes.

FIGURE 13: EXAMPLES OF ACTIVATED GROUND FLOORS

4.4 PRIVATE AND PUBLIC OPEN SPACE

The Centrepoint ACP incorporates open space in the form of Paisley Square. Significant consideration of Paisley Square was undertaken during the integration of the Stirling Centre and the Centrepoint Shopping Centre.

The establishment of the department store provides an opportunity for greater connection to Paisley Square and use of the this area.

4.5 LANDSCAPING

Landscaping shall be per the requirements of TPS 7.
Key elements across the ACP area include:

- Extension of internal design into outdoor areas through broad pedestrian walkways and opportunities for seating and passive recreation
- High end paving treatments to create a contiguous pedestrian zone suitable for all users (including those with trolleys or prams and those with disabilities)
- Flexible spaces to allow for informal gatherings, community activities or after hours events
- Areas of terraced decking to provide for seating and lounging areas away from main pedestrian thoroughfares
- Turfed areas to allow for a reducing in paving / provide a cooling effect and to allow for informal play areas for children
- Planting to create shade and to enhance aesthetics for those utilising the area
- Retention of the Norfolk Island Pine and understorey to reflect the history of the site and retain connections with the surrounding coastal environment
- Use of plants and materials which reference the existing character and the history of the Bunbury city centre
- Provision of lighting to provide for evening amenity and safety
- Provision of shading for pedestrian and parking areas
- Landscaped verges and medians to soften the approach and interface on key road frontages
- Clear, legible pedestrian connections through open spaces across the site

The incorporation of the above features can be seen within the landscaping plan at Figure 14.

FIGURE 14: LANDSCAPING PLAN

The legibility provided by the landscaping treatments within the Centrepoint ACP is depicted in Figure 15.

It is a requirement of Part 1 that any future development application for the department store is to be accompanied by a Landscape Plan.

FIGURE 15 – LEGIBILITY

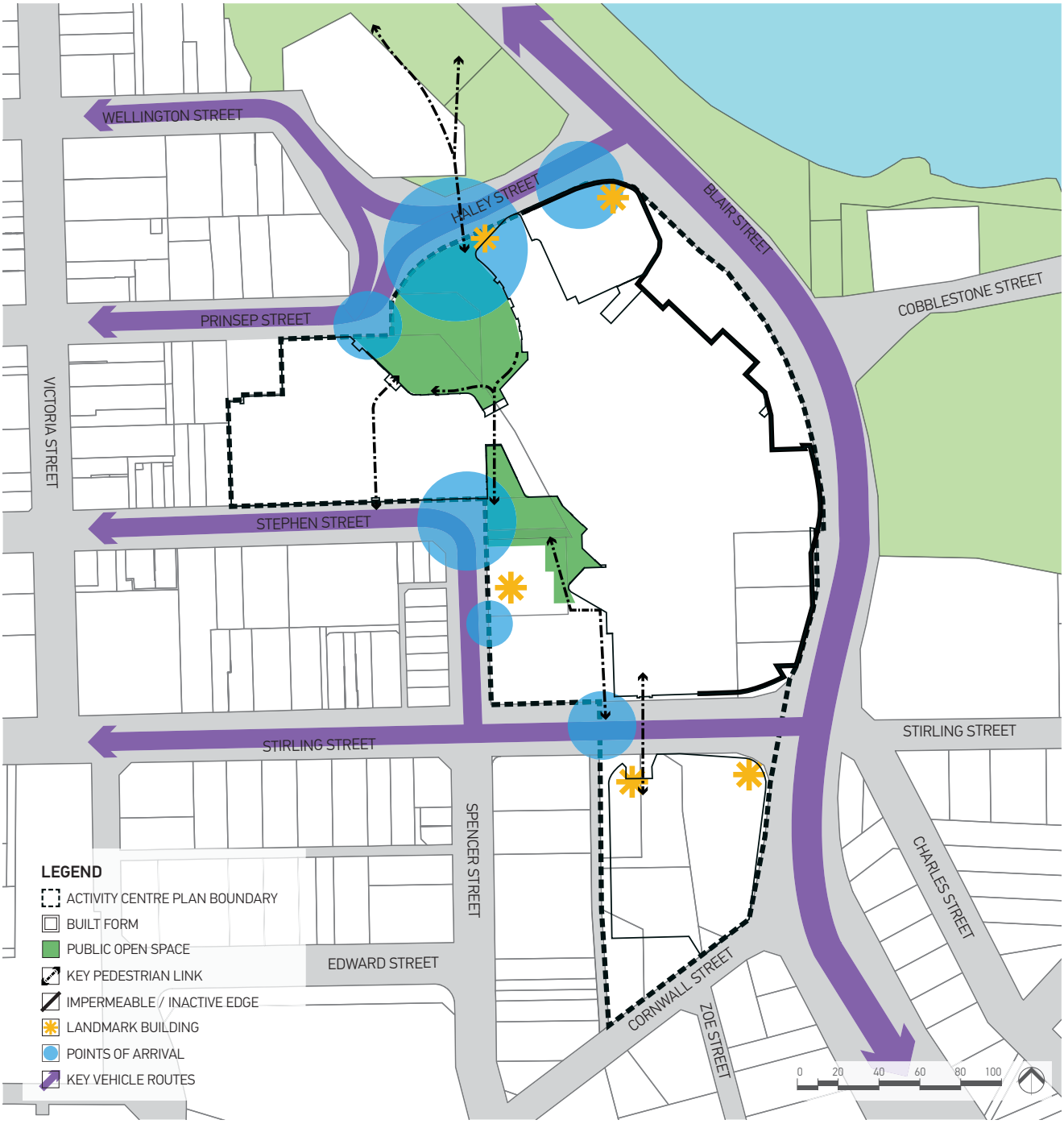


FIGURE 15: LEGIBILITY

5.0 MOVEMENT

5.1 INTRODUCTION AND CONTEXT

Ensuring effective connections to, from and through the Centrepoint ACP is critical in the success of the activity centre.

The Centrepoint ACP is easily accessed by private vehicle, walking, cycling and public transport. The private vehicle is the predominant means of transport to and from the Centrepoint ACP resulting from the nature of the activity, being large format retail, the nature of the surrounding locality, and because as a regional centre the ACP services a very wide catchment, inclusive of a rural catchment in which the private motor vehicle is the primary transport node.

Blair Street, an “other regional road” under the GBRS provides excellent access to the local road network, in addition to providing a linkage (via the “other regional road” network) to the strategic connections of Forrest Highway, South West Highway and Bussell Highway. The road network is outlined within Figure 16.

The ongoing use and development of the Centrepoint ACP does not include any changes to the road network. The Transport assessment at Appendix A confirms that the road network/hierarchy is sufficient to accommodate the full realisation of the ACP.

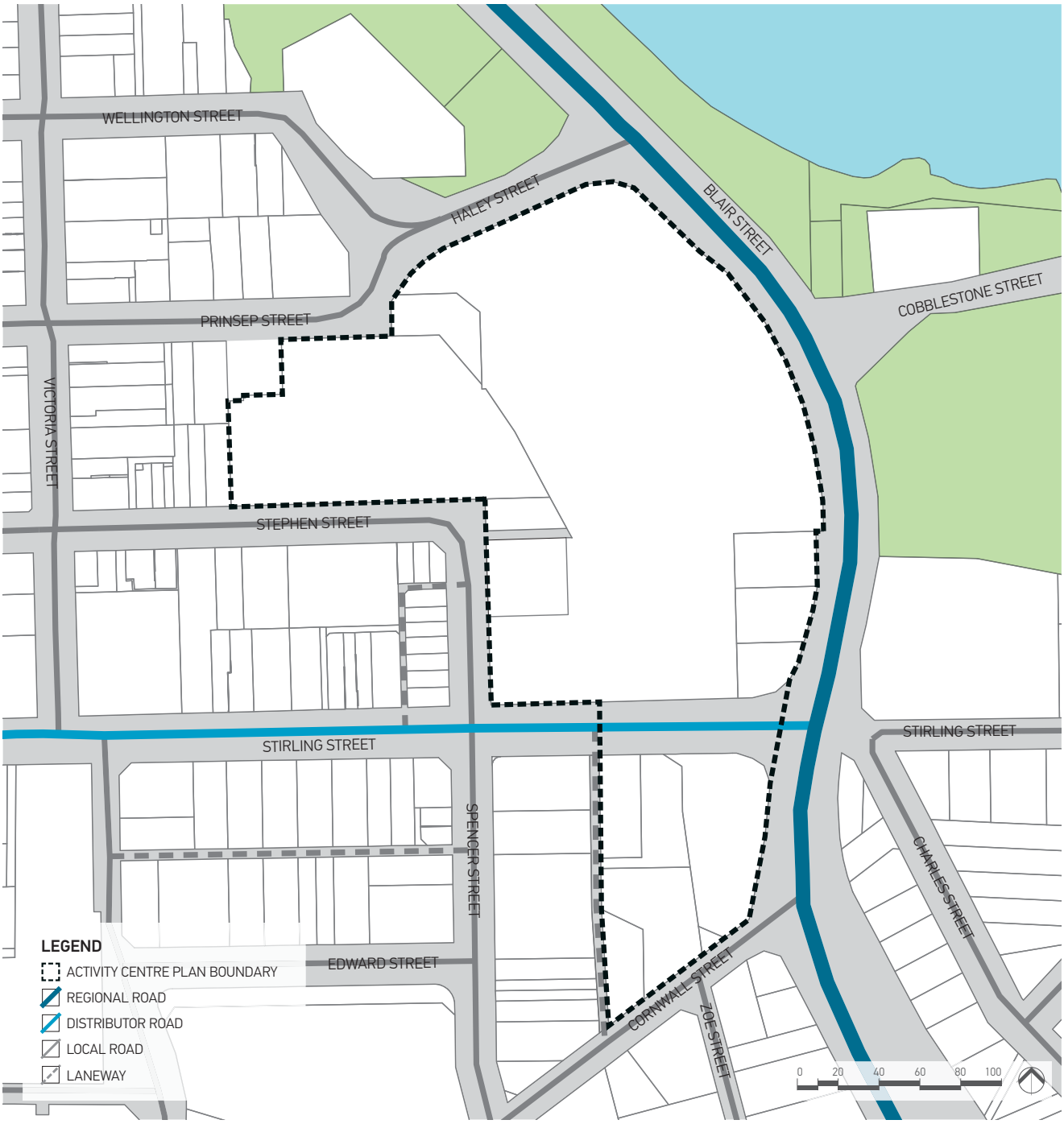


FIGURE 16: ROAD NETWORK / HIERARCHY

5.2 PUBLIC TRANSPORT INFRASTRUCTURE

The Bunbury Bus Station is located to the north of the Centrepoint ACP and is one of the major transport hubs in the south west. Several different bus routes provide services from this station to the greater Bunbury region. The frequency of bus routes is of medium to high frequency during peak periods. Frequency of services significantly reduces outside of peak periods. Existing bus services are shown in Figure 17.

Pedestrian access to the Bunbury Bus Station is facilitated by speed-reduction measures near the intersection of Haley Street and Princep Street. These threshold treatments reinforce the perception of a slow-speed environment alerting drivers that they are entering a highly walkable area and assisting in the creation of a pedestrian-friendly environment.

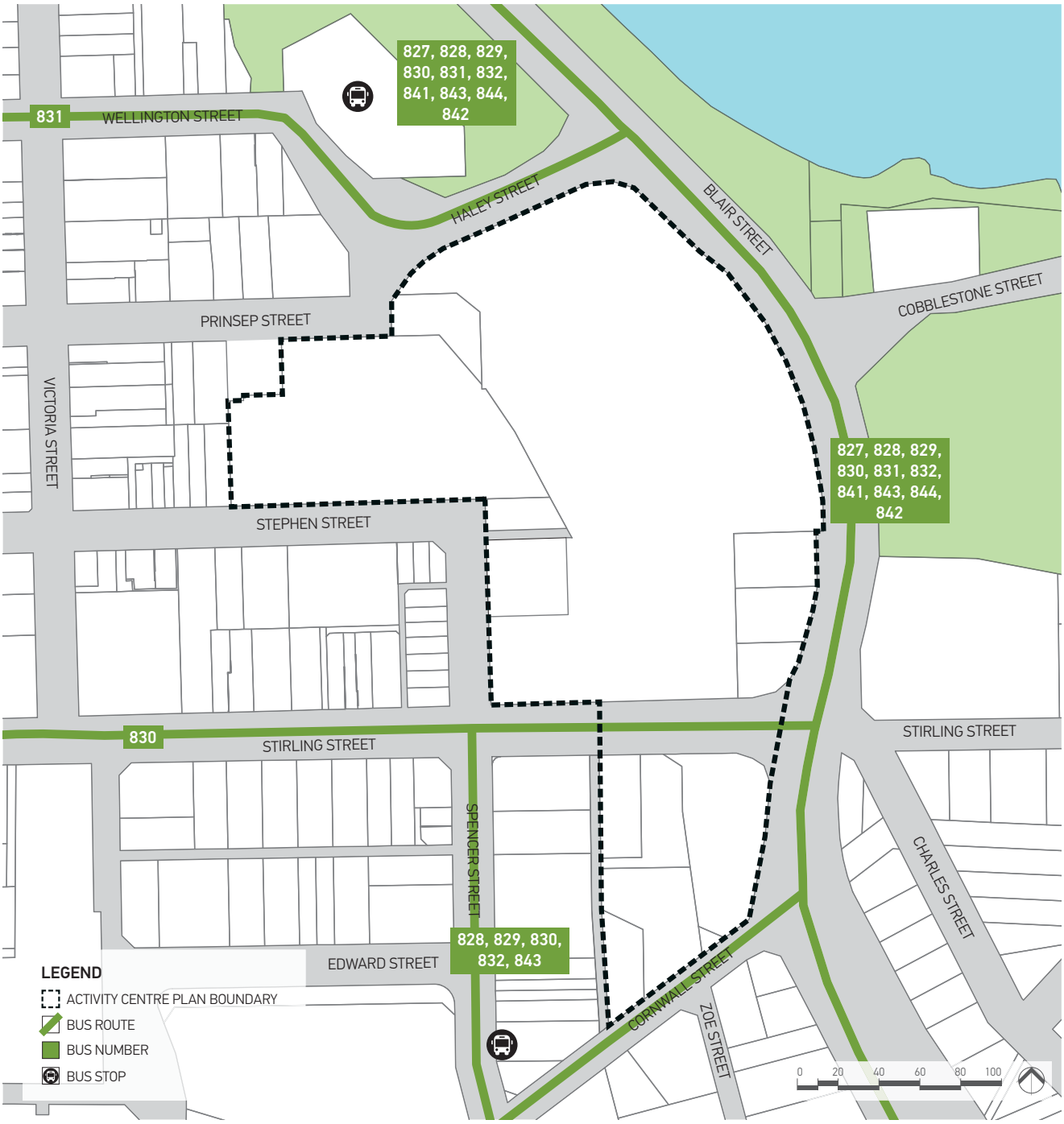


FIGURE 17: PUBLIC TRANSPORT SERVICES

5.3 WALKING AND CYCLING ACCESS

With the exception of Blair Street, surrounding roads provide a high level of pedestrian accessibility, with wide, attractive pedestrian footways and legible layouts, and controlled crossings at key locations. The pedestrian and cycle network in proximity to the Centrepoint ACP is depicted in Figure 18.

Within the Centrepoint ACP, more specifically the car parking areas, pedestrian walkways and crossings will be provided between adjacent footpaths and the access points to buildings or open space. Furthermore, within car parks and pedestrian active areas, vehicle movements will be restricted through infrastructure improvements and traffic control measures, such as red brick paving and speed humps, reducing speed and creating pedestrian-friendly areas. In order to promote pedestrian amenity and safety, way-finding signs, pedestrian walkways and pedestrian crossings will be provided within the car park.

On-road cycle lanes have been proposed in the Bunbury Bicycle Plan (Cardno, 2010) along both sides of Blair Street from Spencer Street to Bussell Highway. This cycleway is designed to improve the local environment for long-distance commuters. An east-west cycleway corridor is also proposed to be constructed along Stirling Street.

Existing on-street cycling routes in the area surrounding the development are proposed by the Bunbury Bicycle Plan to be supplemented and improved to increase the available route options including the upgrade to the intersection of Stirling Street/ Blair Street.

As is expected for large-scale retail centres with some proportion of under croft or basement parking, the Centrepoint ACP includes commuter bicycle parking in secure areas adjacent to vehicular parking, along with locker facilities sufficient to cater for the projected demand.

It is a requirement of Part 1 that any future development application for the department store is to be accompanied by a Transport Assessment.

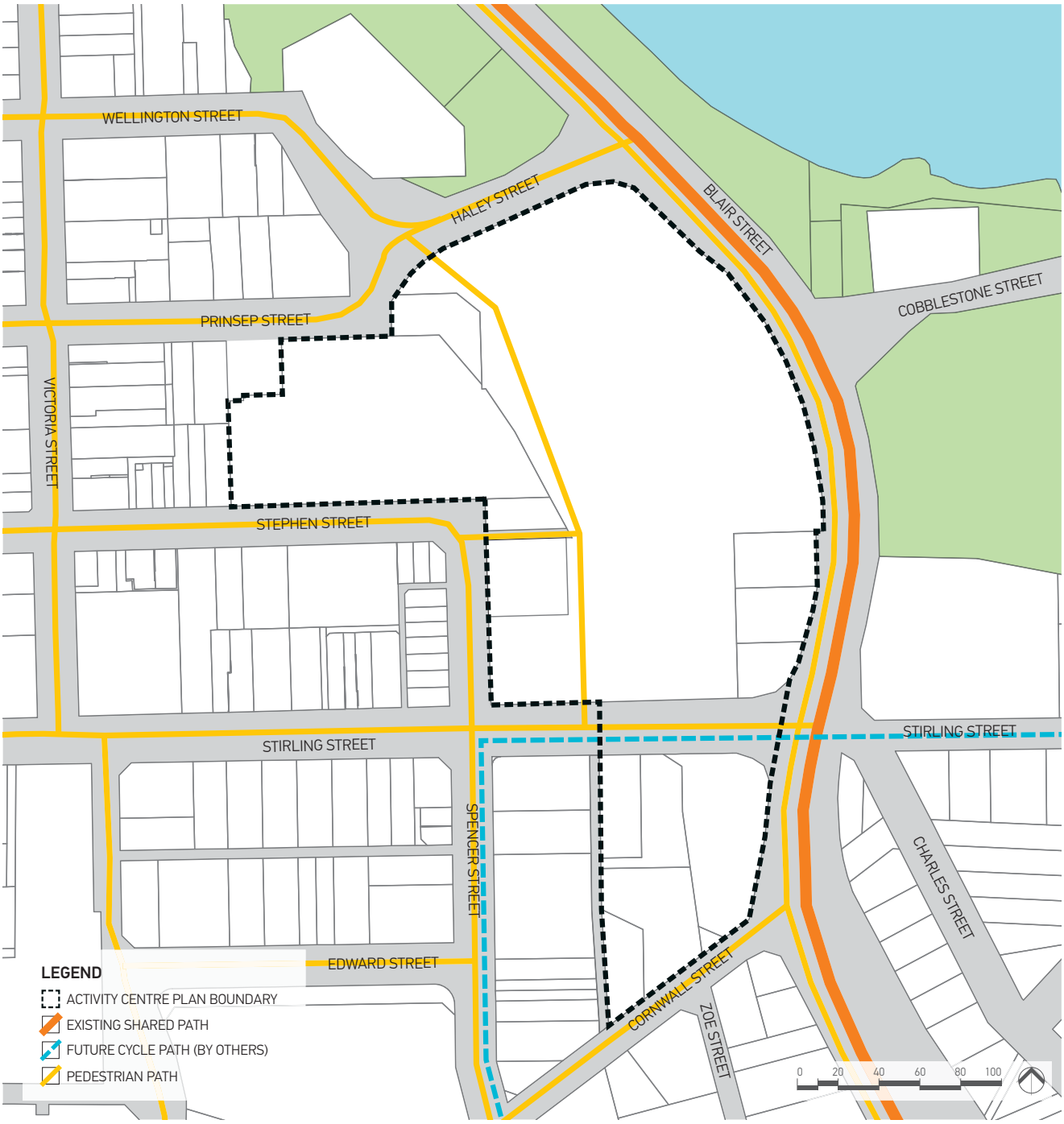


FIGURE 18: WALKING AND CYCLING NETWORK

5.4 TRAFFIC ASSESSMENT

It is a requirement of Part 1 that any future development application for the department store is to be accompanied by a more detailed Transport Assessment which will confirm/specify parking supply, and access.

5.4.1 PRIVATE VEHICLES

In general, the routes used by private vehicles to and from the Centrepoint ACP will be determined by the location of car parking. Car parking is located near the higher-order road network to minimise the volume of traffic in pedestrian-priority areas and to minimise the distance travelled on the pedestrian-priority streets.

The predominant traffic flow is expected to be from the south from Blair Street and turning left into Haley Street then left into the multi-deck car park; staff and delivery traffic will turn left directly off Blair Street.

Secondary traffic from the north-west and on Koombana Drive would travel south on Blair Street and right into Haley Street, then finally left into the multi-deck car park. Traffic turning right from Haley Street into the car park is expected to be the result of occasional trips from the west of Victoria Street and north of Prinsep Street.

It is expected that Blair Street will continue to be a car-priority road, reflecting its function as a major traffic distributor at the eastern edge of the City Centre precinct.

Traffic on other local streets is slowed through reduced speed limits and local area traffic management to facilitate better integration with pedestrian and cycling modes.

5.4.2 DELIVERY AND SERVICE VEHICLES

Loading docks will be accessible from access points on Blair Street, connecting from there to the wider strategic network. Other loading docks will be accessible from Prinsep Street.

5.5 CENTRE PARKING STRATEGY

Access to the car parks is provided via 7 access points:

- Two access points located on Haley Street
- One access located on Prinsep Street
- One access located on Blair Street
- One access located on Stirling Street
- One access located on Arthur Street
- One access located on Cornwall Street

The main approach route to these access points is Blair Street. Blair Street forms the eastern boundary of the Development and extends toward north and south with connections to local roads to the east and west; as such it will be used as a main route to the ACP area by the local traffic from the surrounding area.

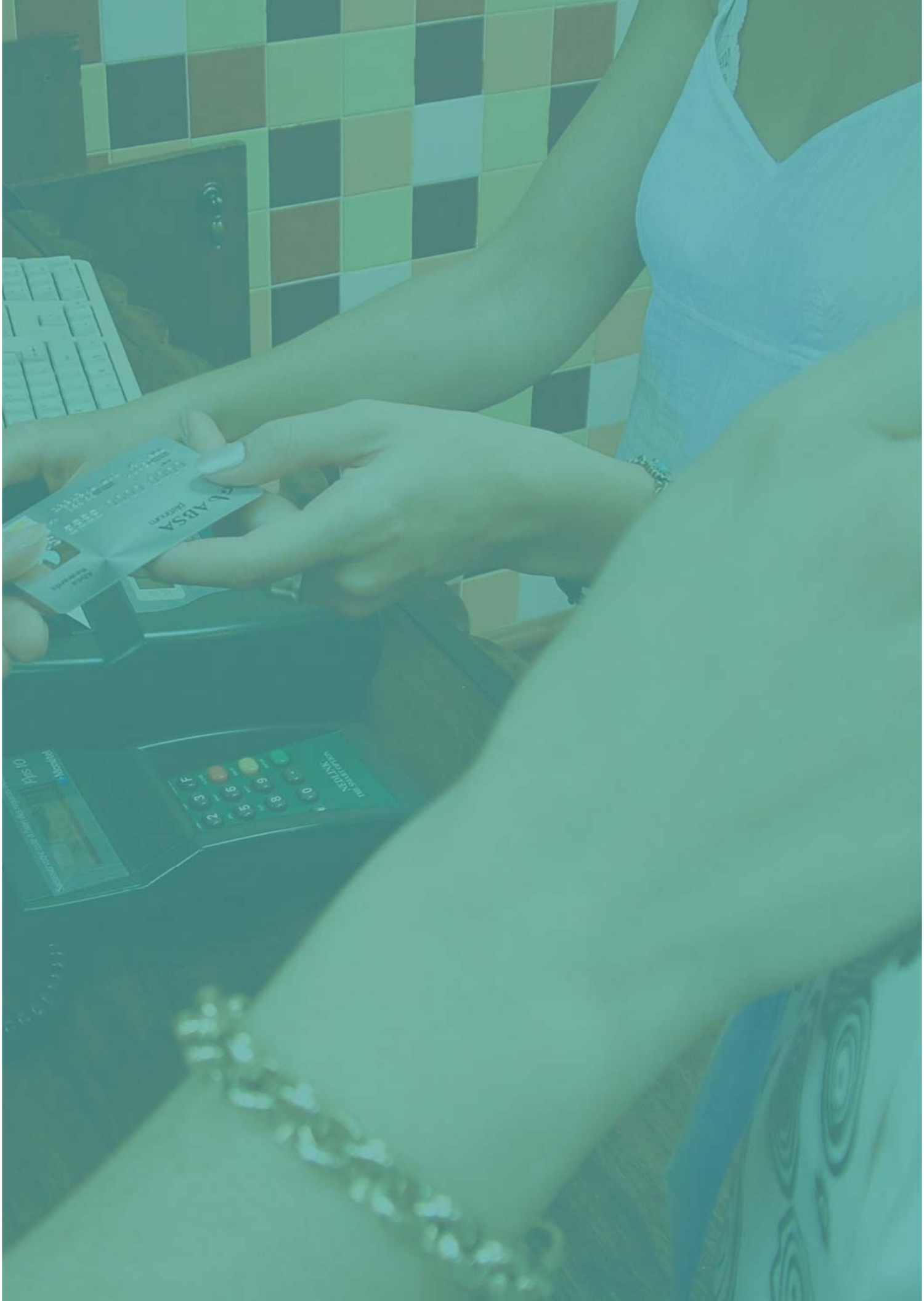
Blair Street is also a strategic route for access to the regional roads such as Bussell and Forrest Highways.

Local traffic accessing the ACP area can also use the car park to the southwest; this car park is located at the corner of Stirling Street and Arthur Street and provides one access on Arthur Street and one access on Stirling Street.

The distance travelled by Development traffic on these roads is expected to be minimal, as the car park accesses are located close to the Blair Street intersections. The location of car parking access should assist to minimise the impact of Development traffic within the City Centre, and thereby promote active transport modes in this area.

The ultimate development facilitated by this Activity Centre Plan, is substantial in so far as it provides for a new department store to be established (a major attractor that will result in additional retail floor space). In this context it will be important to provide for additional car parking. The sale of the Council-owned car park is significant in this regard as it will allow for the required parking by way of an additional tier of parking, to be integrated with the overall development.

Because the ultimate size of the department store is unknown at this time (taking into consideration changing floors space needs, store formats and retail trends), it is not possible to identify with accuracy what the parking demands will be. However, it is important that planning ensures that parking assessment and provision is addressed at the appropriate phase of planning. As such, it is a requirement under Part 1 of the Activity Centre Plan for development applications to be supported by a transport assessment. Part 1 specifies that the assessment must detail floor space, parking requirements and identify the amount of parking to be provided on-site compared to parking provided off-site, as well as servicing vehicles. Infrastructure upgrades are to be addressed in conjunction with the later TIA prepared as part of any future development application for the department store precinct.



6.0 RESOURCE CONSERVATION

6.1 ENERGY AND WATER CONSERVATION

Any further development should consider Ecologically Sustainable Design practices including:

- Minimising energy and water consumption where possible
- Minimising waste and maximising opportunities for recycling of materials both during the construction and operation stages of development
- Utilising construction materials with 'low embodied energy'
- Utilising waterwise landscaping and
- Encouraging the use of energy efficient modes of transport.

A summary of the key energy and water conservation items to be incorporated in new developments are:

- Minimise reliance on mechanical heating and cooling through a series of design measures such as
  - Insulation rating of the building fabric
  - Extent, location and thermal performance of external glazing
  - Use of awnings and other shading devices to control sun penetration
  - Efficiency of air conditioning and ventilation systems
- Efficiency of lighting and power installations
- Minimising water use through the use of water efficiency initiatives such as installation of waterless urinals and drip irrigation in garden beds
- WELS rated tapware
- Sub-metering major tenants and toilets to monitor water use.
- Reducing car use through improving pedestrian connectivity and convenient access to and from the existing Bus Station and provision of facilities for pedestrians and cyclists

6.1.1 ENERGY-EFFICIENT BUILDING ORIENTATION AND DESIGN

The extent, location and thermal performance of external glazing is to be carefully considered in future development to ensure they minimise the reliance on mechanical heating and cooling.

The extent and location of awnings and other shading devices is to be used to control sun penetration.

Future development should aim to improve the existing microclimate around the centre with the use of built form methods and landscaping.

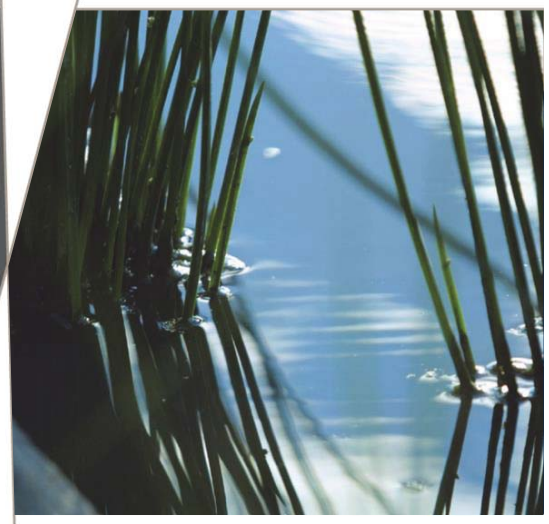
6.1.2 WATER SAVING AND RE-USE OF WATER IN LANDSCAPING AND BUILDINGS

Water sensitive urban design and planting is required for new developments. This should be in the form of passive irrigation of trees, shrubs and grass using rain water harvesting where possible. Further, the developer should be committed to maximise energy & water efficiency within the building itself including during construction. Measures should be put in place to reduce water demand during construction and when the integrated and expanded centre opens.

APPENDIX A
TRANSPORT ASSESSMENT

Transport Impact Assessment

Bunbury Centrepoint Activity Centre Structure Plan



Prepared for
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30 November 2016

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Appendices

Tables

Figures

1 Introduction

1.1 Background

Cardno has been commissioned by Primewest to prepare a Transport Impact Assessment (TIA) in relation to proposed redevelopment of the Bunbury Centrepoint Activity Centre Structure Plan ("the ACSP").

The proposal is an Activity Centre Structure Plan and accordingly this report has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines: Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans* (August 2016), with the checklist included in **Appendix A**.

The ACSP consists of three areas: Centrepoint Precinct, Stirling Precinct and Cornwall Precinct.

Figure 1-1 shows an aerial view of the ACSP.

Figure 1-1 Bunbury Centrepoint, Stirling Precinct and Cornwall Precinct Aerial View

Basemap Source: Nearmap, September 2016

1.2 Previous Assessments and Purpose of Current TIA

Cardno has previously submitted various items of technical work related to the ACSP, including:

> A letter report related to the Centrepoint and Stirling Precincts ("the Centrepoint Redevelopment");

> Various technical submissions including; and

> A Movement Network Report for the wider ACSP, which gave a general overview of transport related to the ACSP.

This current report consists of a Transport Impact Assessment (TIA) in support of the ACSP.

2 Existing Situation

2.1 Existing Land Uses

The existing land uses of the ACSP, determined from the Bunbury Centrepoint and Stirlings Development Application is shown in **Figure 2-1** and summarised in **Table 2-1** below.

Figure 2-1 does not show the Cornwall Precinct part of the site, which is occupied by car parking only (483 of the total 990 bays).

Table 2-1 Summary of Existing Land Uses

Land Use	Existing (m^2)
Major Retail	10,140
Mini Major Retail	2,064
Speciality Retail	8,105
Food + Beverage	666
Commercial	302
TOTAL floorspace area	**21,277**
Car Parking	990 bays

Figure 2-1 Existing Land Uses (excl. Cornwall Precinct which is car parking only)

Source: Bunbury Centrepoint and Stirlings Development Application, 19 April 2016

2.2 Existing Transport Network

2.2.1 Existing Road Network

Figure 1-1 shows the Stirling and Centrepoint Precincts are adjacent and bound by Prinsep Street and Haley Street to the north, Blair Street to the east, Stirling Street and Stephen Street to the south and Arthur Street to the west. The multi-storey car park that currently occupies Cornwall Precinct is situated directly south of the Centrepoint Precinct, separated by Stirling Street and bounded by Blair Street to the east and Cornwall Street to the south.

The classification of these roads are described in **Table 2-1**.

Table 2-1 Summary of Road Hierarchy Classification for Surrounding Roads

Road Name	Road Classification
Blair Street	District Distributor A
Haley Street	Local Access Road
Prinsep Street	Local Access Road
Stephen Street	Local Access Road
Arthur Street	Local Access Road
Stirling Street	Local Distributor Road
Cornwall Street	Local Access Road

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

Primary Distributors (light blue): *provide for major regional and inter-regional traffic movement and carry large volumes of generally fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads.*

Regional Distributors (red): *Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.*

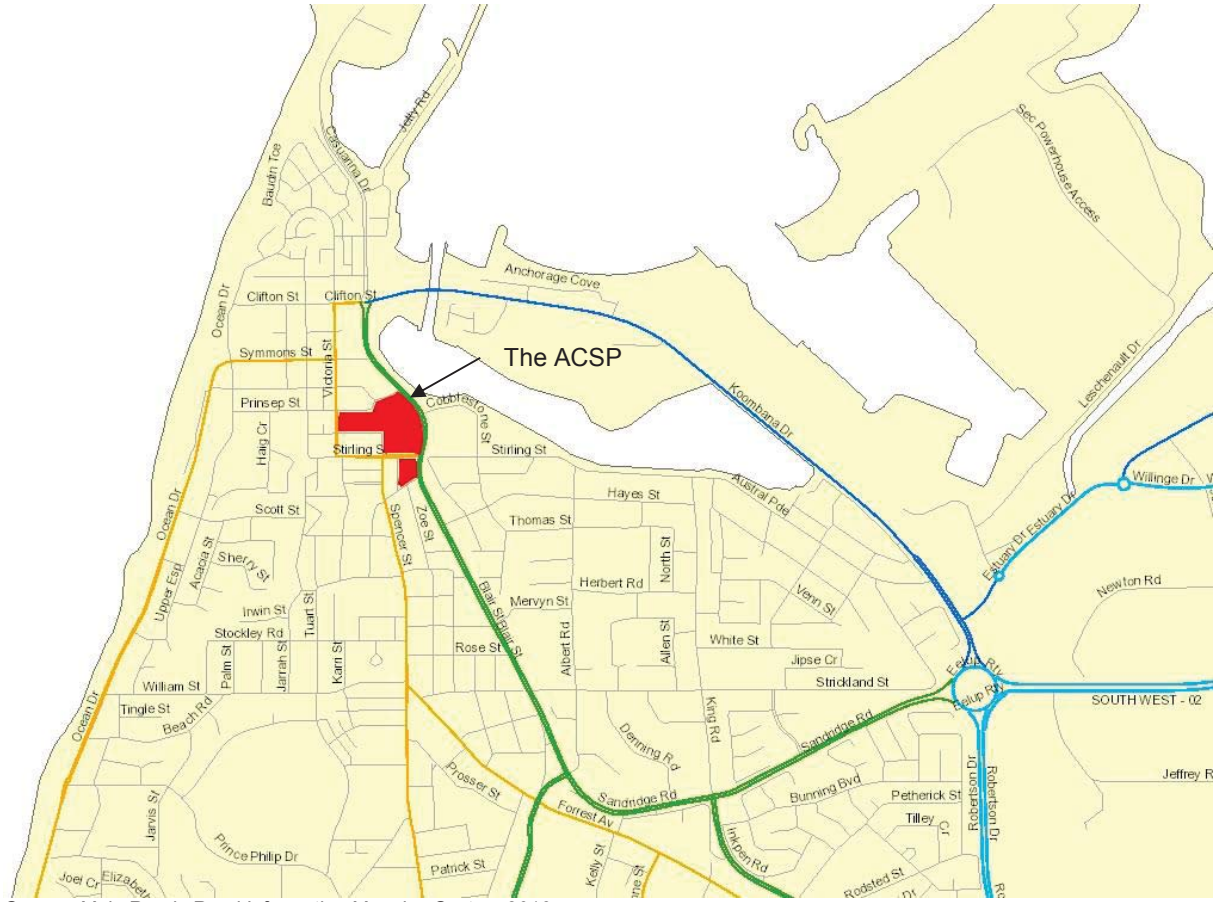
District Distributor A (green): *These carry traffic between industrial, commercial, and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.*

District Distributor B (dark blue): *Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.*

Local Distributors (orange), in built-up areas: *Carry traffic within a cell and link District Distributors or Regional Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local government.*

Access Roads (grey): *Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local government.*

Figure 2-2 Existing Road Network Surrounding the ACSP



Source: Main Roads Road Information Mapping System 2016

2.2.2 Blair Street

Blair Street is classified as a *District Distributor Road A* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 60km/hr. The road is a dual carriageway with two lanes per direction. The road width is approximately 7m for each carriageway. A 2m wide path is provided on each side of the road.

2.2.3 Haley Street

Haley Street is classified as a *Local Access Road* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a dual carriageway with two lanes per direction. The road width is approximately 7m for each carriageway. A 2m and 1.5m wide path are provided on northern and southern sides of the road respectively.

2.2.4 Prinsep Street

Prinsep Street is classified as a *Local Access Road* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a single carriageway with one lane per direction. The road width is approximately 4m for each carriageway. A 2m wide path is provided on southern side of the road.

2.2.5 Stephen Street

Stephen Street is classified as a *Local Access Road* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a single carriageway with one lane per direction. The road width is approximately 4m for each carriageway. A 2m wide path is provided on each side of the road.

2.2.6 Arthur Street

Arthur Street is classified as a *Local Access Road* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a single carriageway with one lane per direction. The road width is approximately 4m for each carriageway. A 2m wide path is provided on each side of the road.

2.2.7 Stirling Street

Stirling Street is classified as a *Local Distributor Road* to Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a dual carriageway with one lane per direction. The road width is approximately 5m for each carriageway. A 2m wide path is provided on each side of the road.

2.2.8 Cornwall Street

Cornwall Street is classified as a *Local Access Road* in the Main Roads WA (MRWA) *Metropolitan Functional Road Hierarchy* with posted speed of 50km/hr. The road is a two-way road without line marking and is approximately 7.5m wide. A 2m wide path is provided on southern side of the road.

2.3 Intersections

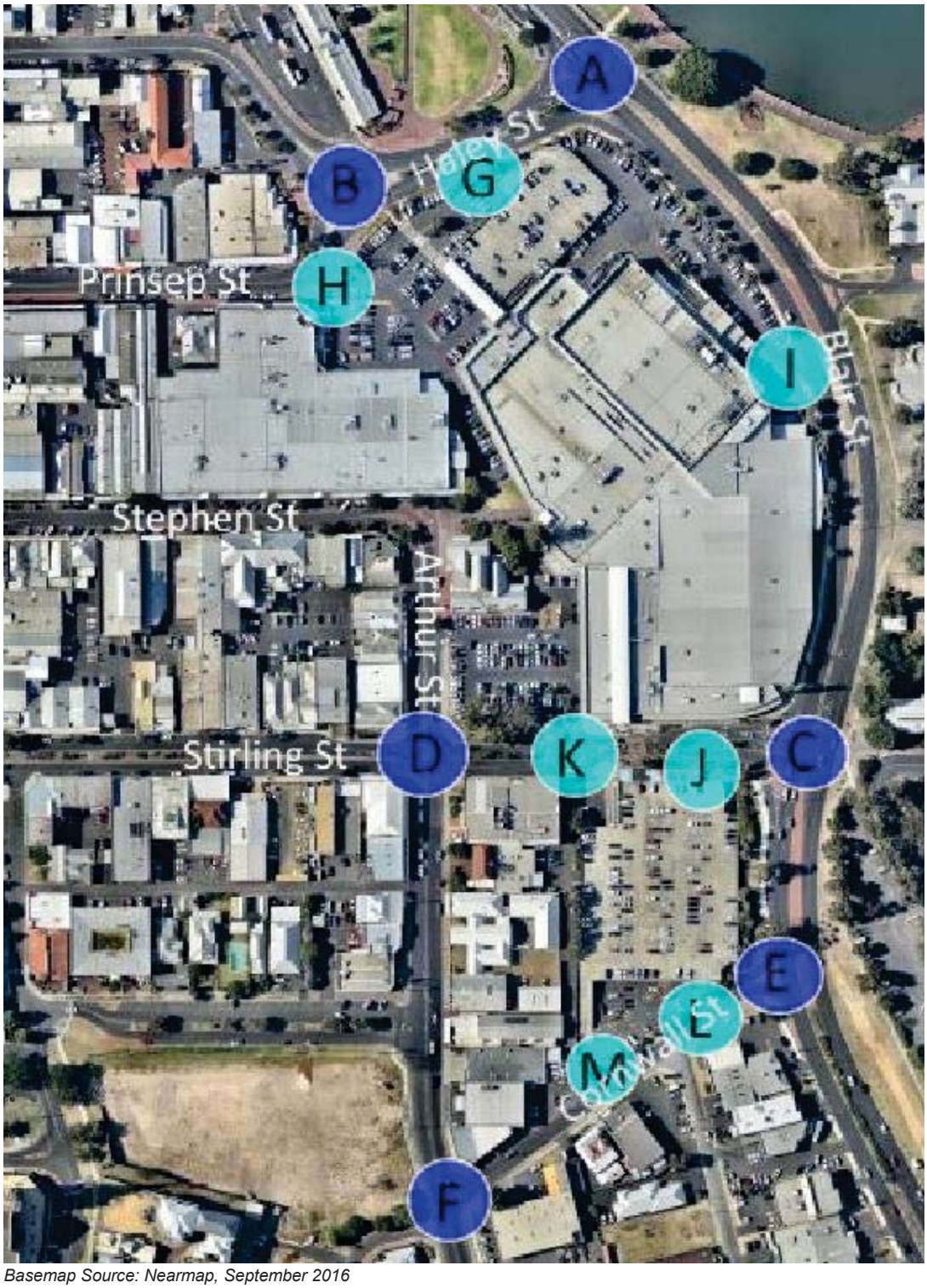
The key intersections considered in this report are shown in **Figure 2-3** below.

The City of Bunbury ("the City") were consulted to discuss the extent of assessment required. From a telephone conversation and email on 13 September 2016, the following details were confirmed:

> The intersections to be assessed are those shown below in **Figure 2.3**.

> The City also raised a concern regarding Access I (refer **Figure 2.3**) due to the use by both heavy vehicles and light vehicles; however, it is considered that this potential conflict could be resolved by the limiting the use of this car park to staff only, who will be informed of the need to be aware of heavy vehicles and who will become familiar with the access and its operation. Furthermore, staff movements will be relatively infrequent as they will generally be parking all-day. The restriction of this car park to staff only is facilitated by the proposed blocking of the existing access to the Haley Street deck car park.

Figure 2-3 Key Intersections



Basemap Source: Nearmap, September 2016

2.3.2 Boundary Road Intersections

The main boundary road intersections considered in this report are and shown as the dark blue points in **Figure 2-3**:

A. ***Blair Street/Haley Street***: A three-way signalised intersection including right-turn pocket on the Blair Street north approach and left-turn pockets for both Haley Street and Blair Street south approach. Pedestrian crossing provisions are provided with actuated crossing facilities on the north Blair Street and Haley Street approaches. The existing layout of this intersection is as shown in **Figure 2-4**.

Figure 2-4 Blair Street/ Haley Street intersection layout

Basemap Source: Nearmap, September 2016

B. ***Prinsep Street/Haley Street/Carmody Place***: A three-way roundabout intersection plus a dedicated bus and taxi approach lane at the north. The existing layout of the intersection is as shown in **Figure 2-5**.

Figure 2-5 Prinsep Street/Haley Street/Carmody Place intersection layout

Basemap Source: Nearmap, September 2016

C. ***Blair Street/Stirling Street***: A three-way signalised intersection including right-turn pocket on the Blair Street north approach and left-turn pocket for both Stirling Street and Blair Street south approach. Pedestrian crossing provisions are provided with actuated crossing facilities on the north Blair Street and Stirling Street. The existing layout of the intersection is as shown in **Figure 2-6**.

Figure 2-6 Blair Street/ Stirling Street intersection layout

Basemap Source: Nearmap, September 2016

D. ***Arthur Street/Stirling Street/Spencer Street***: A four-way signalised intersection including right-turn pocket Stirling Street west approach. Pedestrian crossing provisions are provided with actuated crossing facilities at all approaches. The existing layout of this intersection is as shown in **Figure 2-7**.

Figure 2-7 Arthur Street/Stirling Street/Spencer Street *intersection layout*

Basemap Source: Nearmap, September 2016

E. **Blair Street/Cornwall Street:** A three-way junction with left-in and left-out. An approximately 2.5m wide path at the splitter island as pedestrian stage crossing at Cornwall Street. The existing layout of this junction is as shown in **Figure 2-8.**

Figure 2-8 Blair Street/ Cornwall Street intersection layout

Basemap Source: Nearmap, September 2016

F. **Cornwall Street/Spencer Street/Wexford Lane:** A four-way priority intersection with give way at Cornwall Street and Wexford Lane approaches. The existing layout is as **Figure 2-9.**

Figure 2-9 Cornwall Street/Spencer Street/Wexford Lane intersection layout

Basemap Source: Nearmap, September 2016

2.3.3 Access Intersections

Accesses to the Centrepoint and Stirling Precincts are provided on Haley Street, Prinsep Street, Arthur Street, Stirling Street and Blair Street. The accesses into the Cornwall Precinct (multi-storey car park) are located on Stirling Street and Cornwall Street.

There are currently seven accesses to the ACSP, making access convenient from all directions. The access intersections consist of the following (refer **Figure 2-3** for locations):

Haley Street

G. Priority controlled 3-way intersection west of Blair Street

Prinsep Street

H. Priority controlled 3-way intersection south of Carmody Place

Blair Street

I. Priority controlled 2-way intersection (left-in, left-out) onto Blair Street

Stirling Street

J. Priority-controlled 2-way intersection (left-in, left-out) west of Blair Street

K. Roundabout intersection east of Spencer Street

Cornwall Street

L. Priority-controlled 3-way intersection east of Zoe Street

M. Entry-only priority-controlled intersection west of Zoe Street.

2.4 Existing Traffic Volumes

Existing volumes for the vicinity roads of the ACSP were obtained from Main Roads Traffic Data and City of Bunbury pneumatic tube counts and are summarised as in **Table 2-2** below.

Table 2-2 Existing mid-block traffic volumes during the peak hour (two-way)

Road Name	Location	Year	Vehicles Peak Hour Volumes	
			Weekday	Weekend
Blair Street	South of Koombana Road	2014	1097	869
Haley Street	East of Prinsep and Carmody Roundabout	2015	709	547
Prinsep Street	West of Haley Street	2016	390	332
Carmody Place	North of Haley Street	2016	234	179
Stirling St	East of Spencer Street	2015	823	500
Stirling St	West of Spencer Street	2015	538	409
Cornwall Street	West of Blair Street	2015	200	157
Arthur Street	North of Stirling Street	2015	335	282
Spencer Street	South of Stirling Street	2015	759	485
Sandridge Road	East of Blair Street	2014	1847	1762
Ocean Drive	South of Hastle Street	2009	508	439
Koombana Drive	West of Anchorage Cove	2015	1127	1027

2.5 Existing Public Transport

The Bunbury Bus Station is located to the north of the ACSP and is considered to be within approximately 5 minutes' walking distance (400 metres) from anywhere within the ACSP. The extensive provision of footpaths across the ACSP will aid pedestrian access to the Bus Station

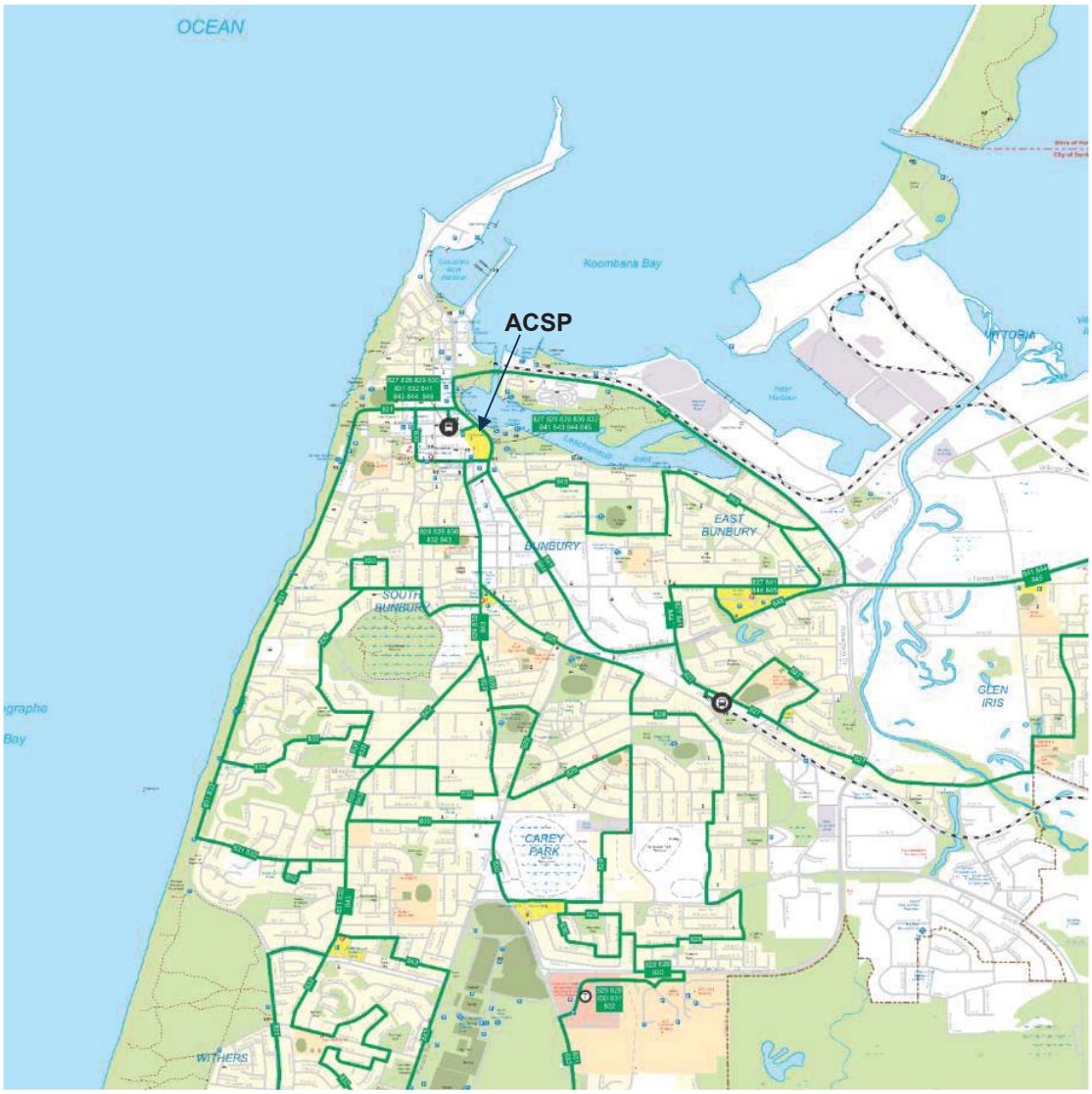
Typical frequency of bus services accessing the ACSP are summarised in and illustrated in **Table 2-3** and **Figure 2-10** below. While these individual routes generally provide low frequency services as they are intended for public transport coverage of relatively distant residential catchments, the convergence of several routes adjacent to the ACSP results in relatively frequent services along Blair Street and Stirling Street.

Table 2-3 Regular Bus Service Frequency

Route	Peak Frequency	Off-Peak Frequency
828 (Bunbury – Health Campus)	60 min	120 min
829 (Bunbury – Health Campus)	60 min	120 min
830 (Bunbury – Health Campus)	60 min	120 min
832 (Bunbury – Health Campus)	60 min	120 min
831(Bunbury - Dalyellup)	120 min	120 min
843 (Bunbury - Dalyellup)	60 min	60 min
827 (Bunbury –Eaton)	60 min	60 min
841 (Bunbury – Kingston)	60 min	60 min
844 (Bunbury –Eaton)	60 min	No service
845 (Bunbury –Eaton/Millbridge)	60 min	60 min

Source: Public Transport Authority, TransBunbury

Figure 2-10 Existing Public Transport Service Surrounding the ACSP

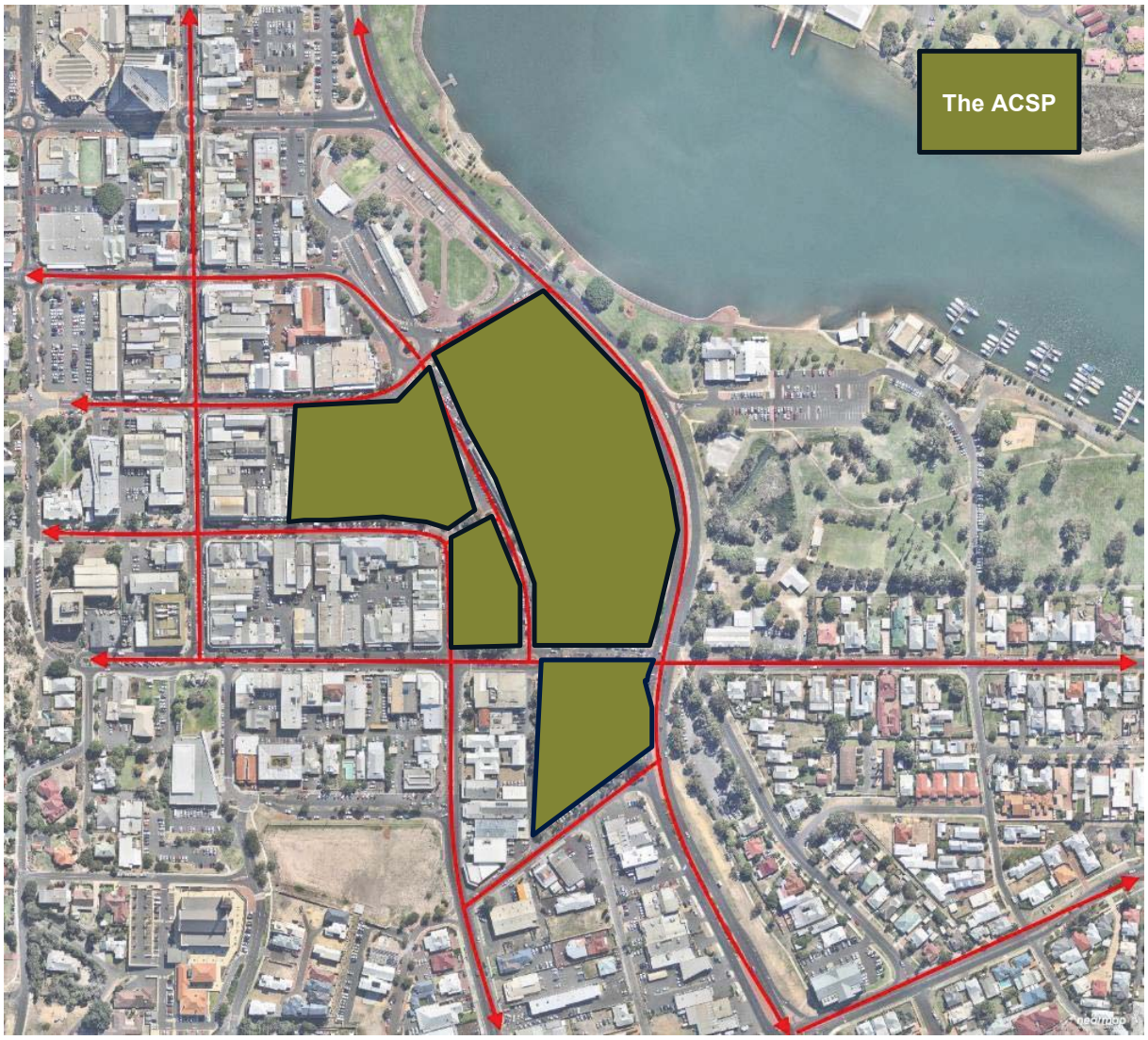


Source: Public Transport Authority, TransBunbury

2.6 Existing Pedestrian/Cycle Networks

The existing pedestrian network in the immediate area surrounding the ACSP is as shown in **Figure 2-11**. The existing network provides good coverage for travel from residential land uses to commercial and retail activity.

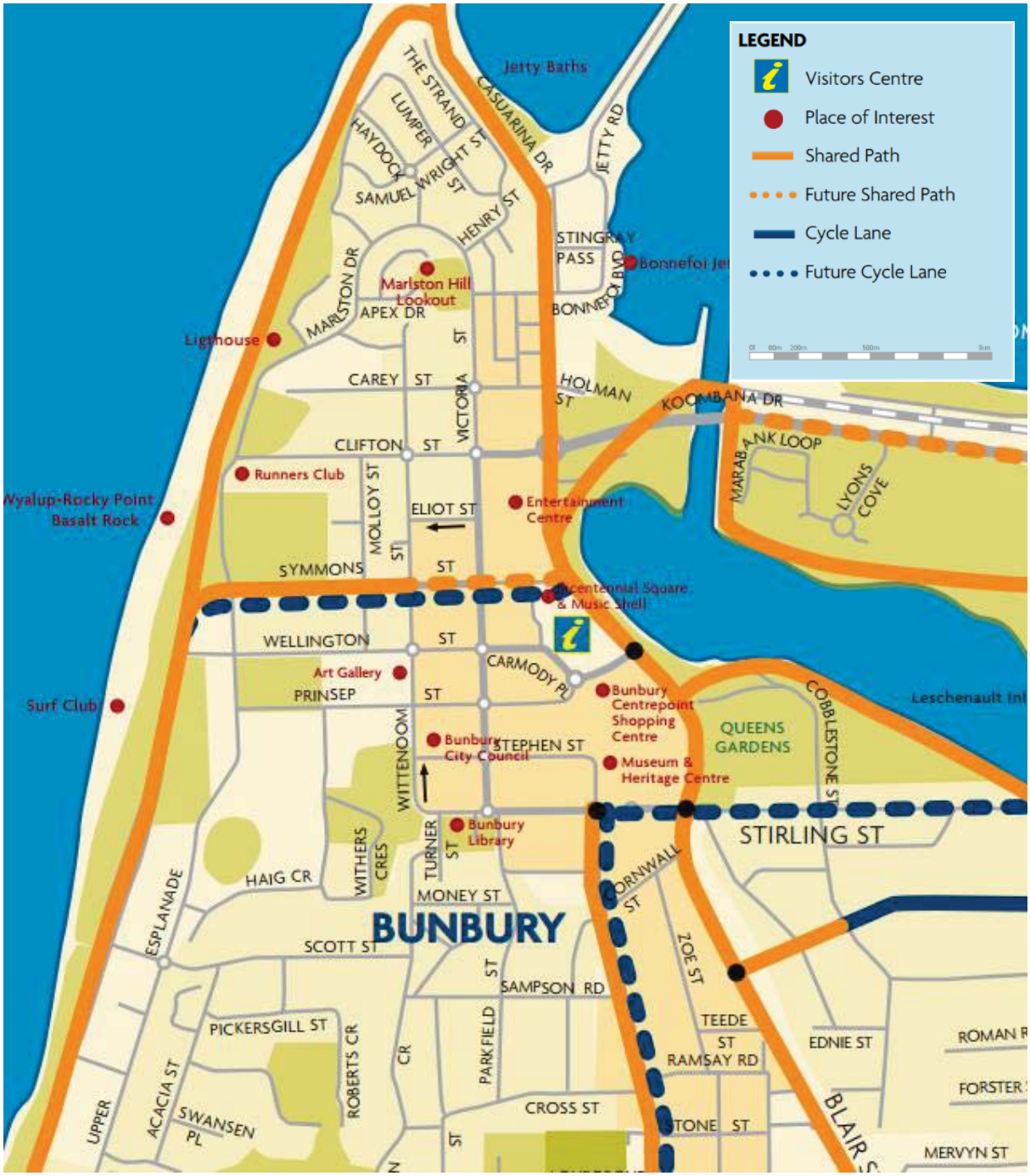
Figure 2-11 Pedestrian Desire Lines (in red)



Basemap source: Nearmap, September 2016

Dedicated cycle lanes and shared path are provided within the South Bunbury Locality. According to the bicycle map, **Figure 2.12** obtained from the City of Bunbury, Blair Street provides shared path for cyclists along the eastern edge of the ACSP, with future connections proposed along Stirling Street to form an east-west spine and connections through to the Spencer Street bike facilities.

Figure 2-12 Bike Network Map



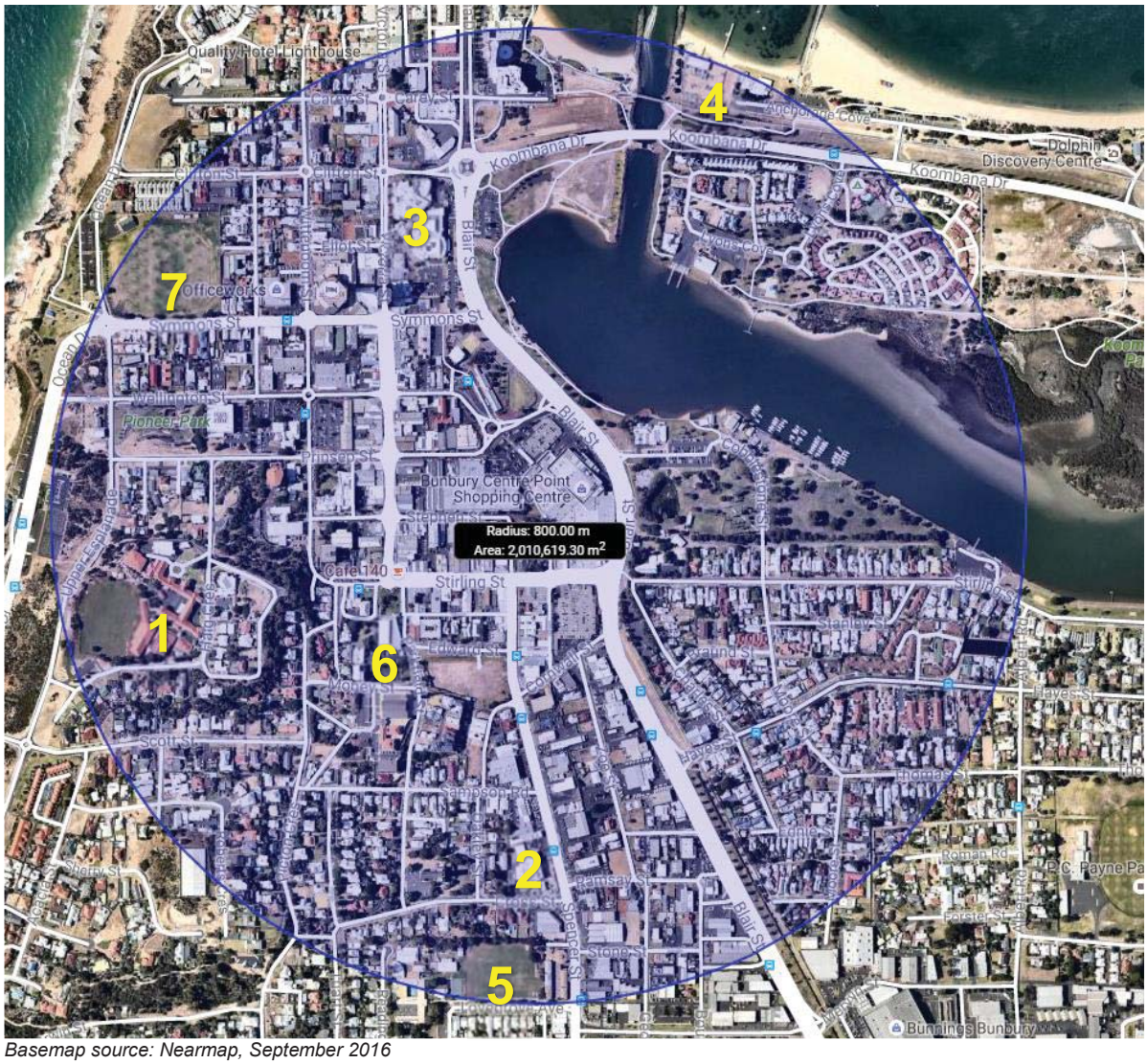
Source: City of Bunbury, 2016

2.7 Existing Attractors and Generators

The major attractors and generators within an 800m radius of the ACSP, besides the existing shopping centres themselves, predominately lie to the south and are summarised below, **Figure 2-13**:

1. Bunbury Senior High School;
2. Bunbury Toyota;
3. Grand Cinemas;
4. Koombana Bay Sailing Club;
5. Bunbury Primary School;
6. Bunbury City and Regional Library;
7. Bunbury Recreation Oval;

Figure 2-13 Attractors and Generators within a 800m radius



Basemap source: Nearmap, September 2016

3 Future Transport Network

3.1 Proposed Changes to External Road Network

3.1.1 Bicentennial Square

A major change is proposed for the surrounding road network to the north of the ACSP, which aims to improve the bus stand and pedestrian access as shown in **Figure 3-1** below. The strategy is to make the streets and shared path network around the inlet more accessible, strengthen the circuit and links to the existing path system, and to improve the pedestrian connection to the Bunbury CBD.

The City plans include additional changes beyond those shown in **Figure 3-1** below; the main traffic changes comprise conversion of Blair Street to a shared street between Haley Street and Simmons Street, then further north to Clifton Street reduction to a single carriageway (1 lane per direction) with a lane for parking which will act as clearways during peak periods. This change has been be analysed in the future assessment year and traffic has been reassigned accordingly.

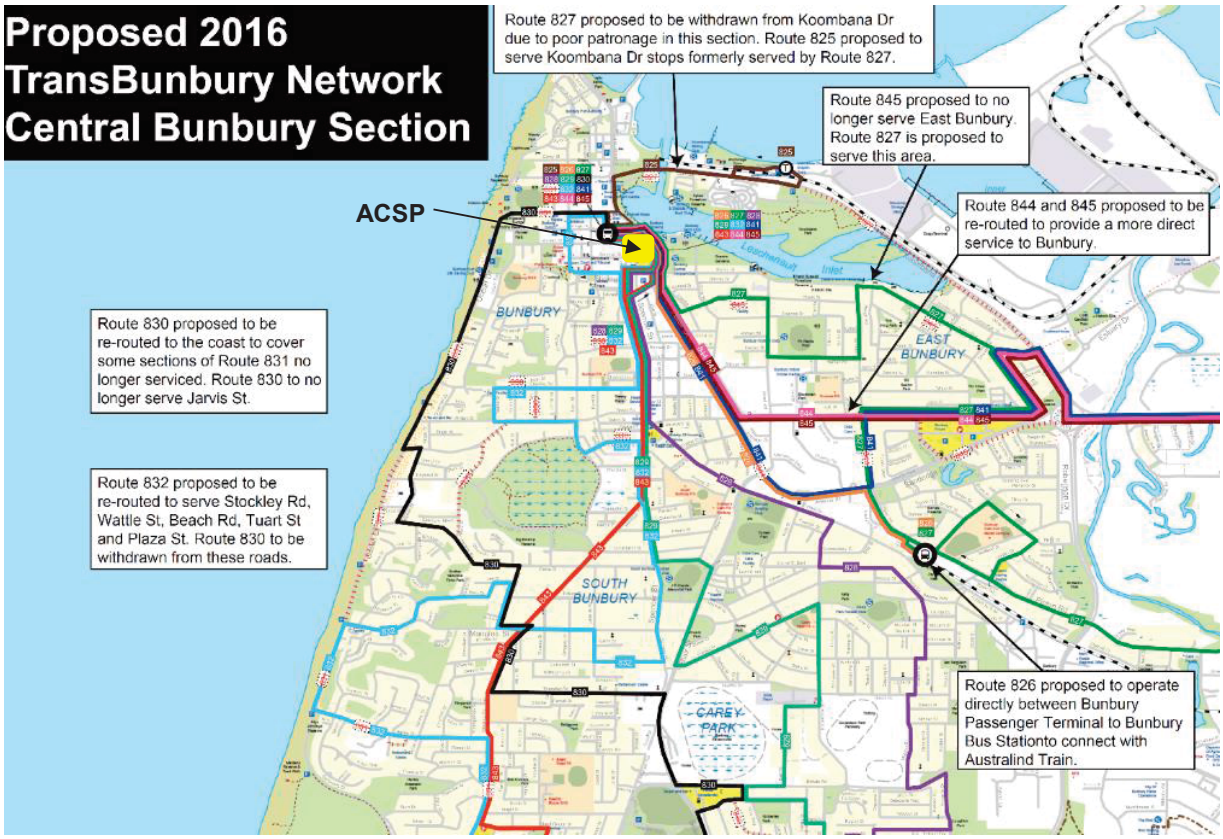
Figure 3-1 Illustrative Plan for Bicentennial Square

Source: City of Bunbury, 2016

3.2 Proposed Changes to Public Transport Network

There are a range of minor changes to the bus routes surrounding the ACSP which are shown in **Figure 3-2**. These changes will improve efficiency and connectivity in the wider network.

Figure 3-2 Proposed 2016 TransBunbury Network Central Bunbury Section



Source: www.PTA.wa.gov.au

3.3 Proposed Changes to External Pedestrian and Cycle Networks

Other than the changes to Bicentennial Square as shown above in **Figure 3-1**, which will improve the flow and connection of pedestrians and cyclists, proposed changes to the network are defined in the Bunbury Bike Plan and captured in the extract from the Bike-It Bunbury Map shown in **Figure 2-12**.

Other improvements to pedestrian and cyclist provision may be considered at the DA stage.

4 Proposed Bunbury Centrepoint Activity Centre Structure Plan

4.1 Regional Context

The Bunbury City Centre is located 180km South of Perth and is one of the fastest growing regional cities in Australia. The Bunbury Centrepoint Redevelopment (part of the ACSP) is shown in **Figure 4-1** and has connections to Bicentennial Square and bus station and also is close to the Bunbury Port.

Figure 4-1 Regional Context of the ACSP

Source: Bunbury Centrepoint and Stirlings Development Application, 19 April 2016

4.2 Proposed Land Uses

The proposed land uses of the ACSP are shown in **Figure 4.2** and summarised in **Table 4-1** below. ('Major Retail' includes the Department Store). Areas are in Gross Lettable Area Retail (GLAR).

A small proportion of the proposed floor area increase is located within the approved DA for the site to the north of Stirling Street, increasing the GLAR by 2,014 m^2 to approximately 12,000m^2. The remaining proposed increase is 13,209 m^2 with the majority of this (approximately 75%) to be accommodated on the at the proposed Department Store Site within the Cornwall Precinct.

Table 4-1 Summary of Existing and Proposed Land Uses

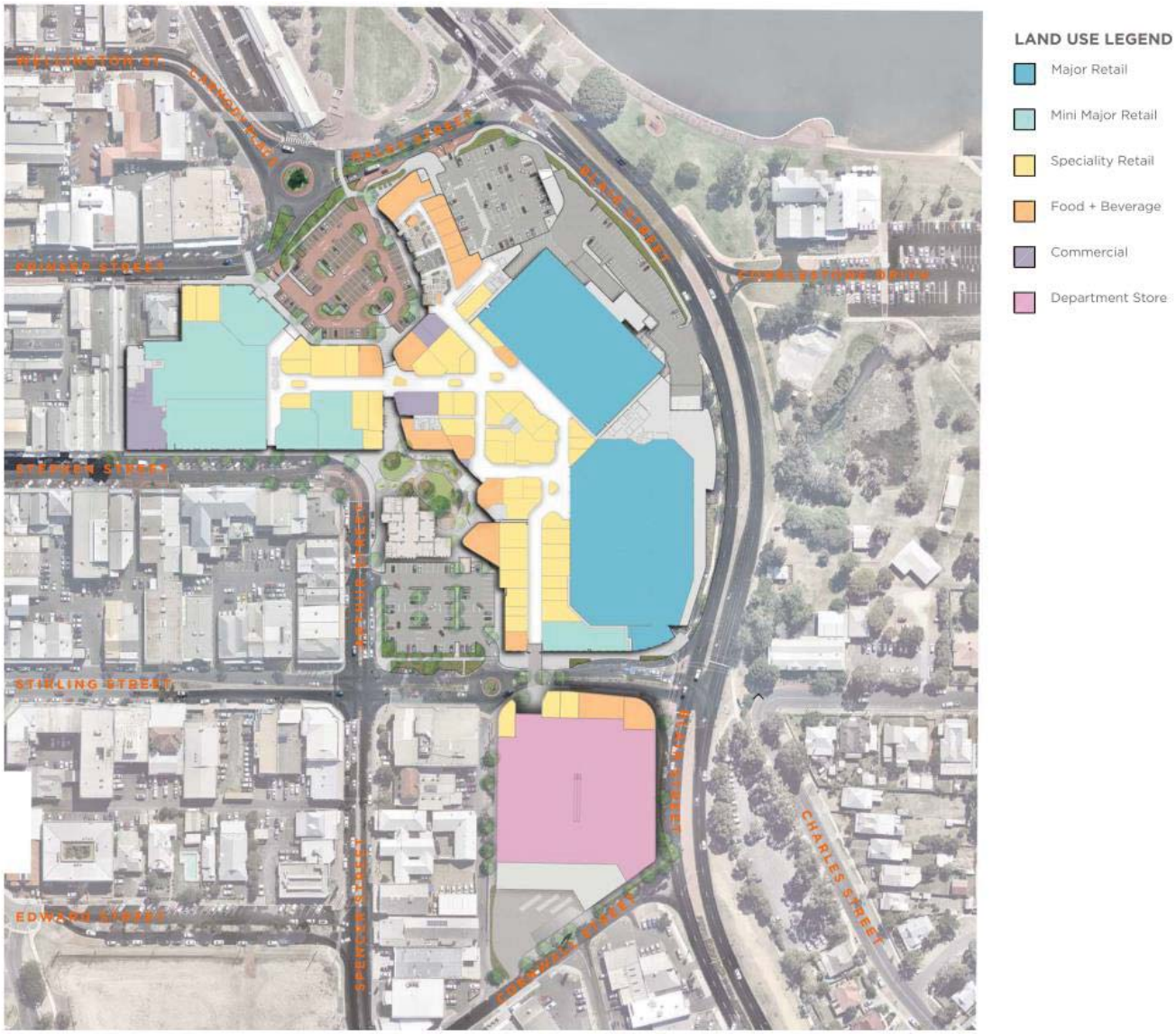
Land Use	Existing (m^2)	Proposed (m^2)
Major Retail	10,140	22,000 (of which, 9,907 m^2 is to be on the Cornwall Precinct site)
Mini Major Retail	2,064	5,000
Speciality Retail	8,105	6,000
Food + Beverage	666	2,500*
Commercial	302	1,000
TOTAL floor space area	**21,277**	**36,500**
Car Parking	990 bays	1,064 bays plus parking for the Department Store which is to be confirmed (refer to **Section 7**)

** Excludes 561sqm Food Court Seating Area.*

4.2.1 Cycle Parking

Details of cycle parking and end-of-trip facilities for cyclists will be considered at the DA stage.

Figure 4-2 Proposed Land Uses - Indicative Layout



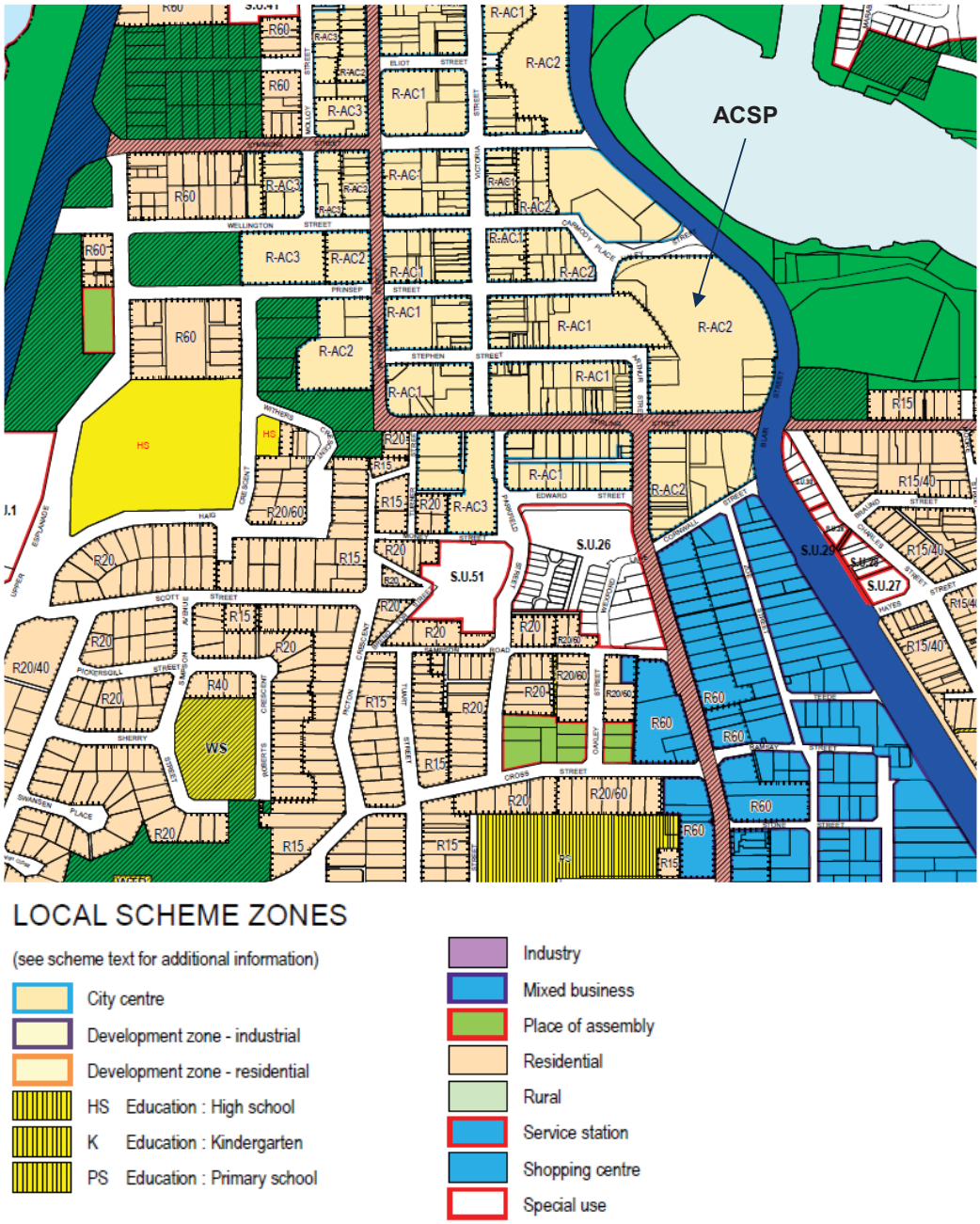
Source: Bunbury Centrepoint and Stirlings Development Application, 19 April 2016, Drawing DA-24

5 Integration with Surrounding Area

5.1 Surrounding Land Uses

According to the City of Bunbury *Local Planning Scheme 7* (LPS 7), the ACSP is currently situated within the City Centre as shown in **Figure 5-1**, and zoned as R-AC2 (Activity Centre). Surrounding land uses include mixed-use development to the north and majority residential land use to the southwest and southeast, within the South Bunbury Locality.

Figure 5-1 Land uses around the ACSP



Source: City of Bunbury Local Planning Scheme 7

5.2 Proposed Changes to Surrounding Land Uses

The proposed change to the surrounding land uses is minimal and unlikely to generate a significant increase in traffic in the local City Centre area. These changes are summarised below:

> Bunbury Plaza Shopping Centre proposes a change to incorporate a supermarket; and

> Riverlea Local Development Plan is a small residential development approximately 3.5km south-east of the ACSP. This LDP was approved by the City in April 2015.

5.3 Level of Accessibility

The ACSP has direct access onto Blair Street, which also links to Forrest Highway, South Western Highway and Bussell Highway 3-4kms south and South east of the ACSP. This ACSP is therefore highly connected via the strategic road network to a wide catchment of local and regional residents.

The existing pedestrian /cycle path in the area surrounding the proposed development provides connectivity within the Bunbury area, via Spencer Street and Blair Street to the south all the way through to Dalyellup, and around the Leschenault Inlet towards Eaton.

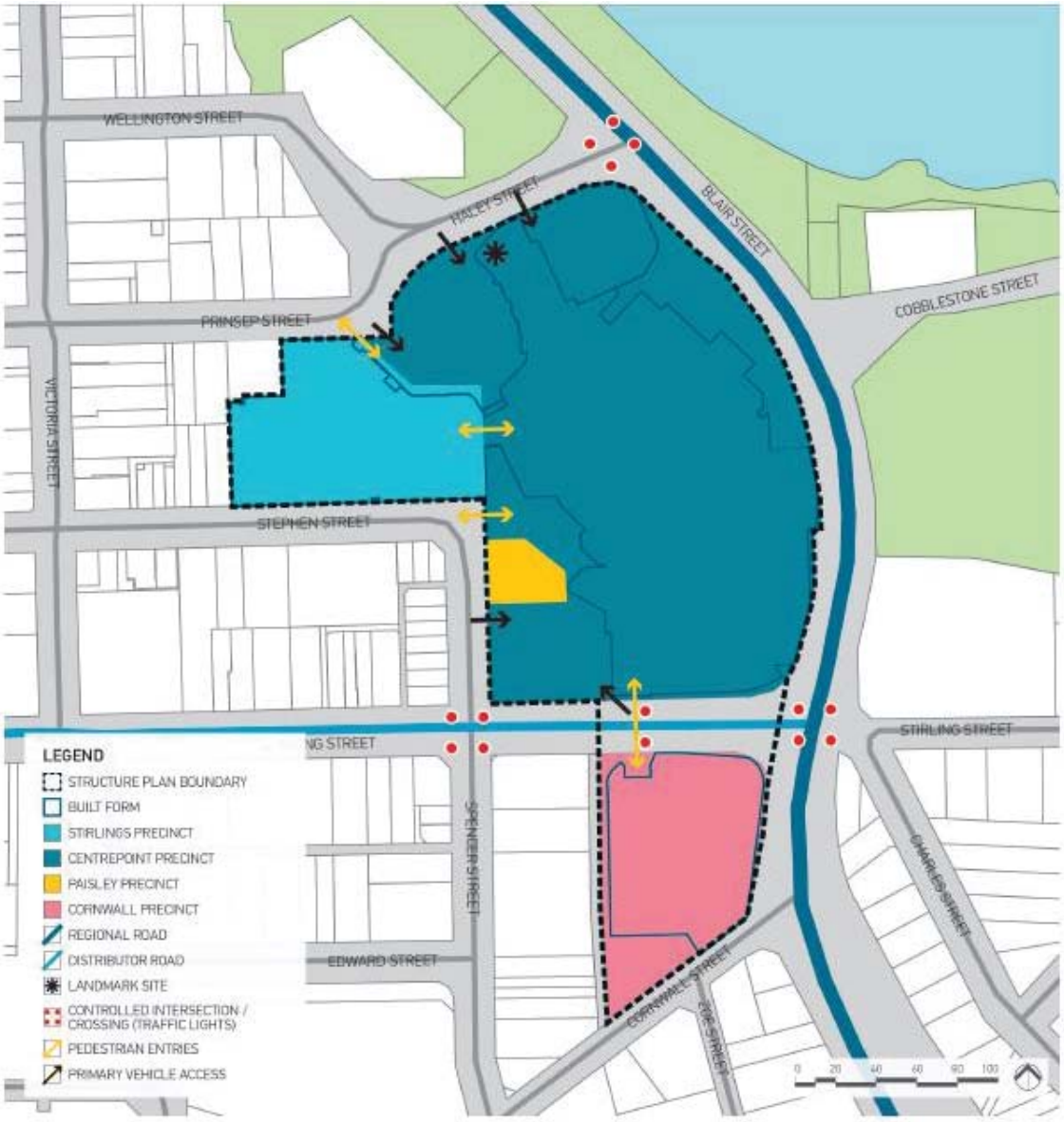
The proximity of the ACSP to the Bunbury Bus Station suggests excellent accessibility via public transport modes.

6 Analysis of Transport Network

6.1 Access Strategy

Vehicular access to the parking areas associated with the ACSP will be provided via Blair Street, Haley Street, Prinsep Street, Stirling Street and Arthur Street. Public access is mainly via pedestrian crossings within the car park structure, with a signalised pedestrian link across Stirling Street to connect the Cornwall Precinct to the Centrepoint Precinct, as shown in **Figure 6-1** below.

Figure 6-1 Access Strategy for the ACSP



Source: Urbis, 2016

6.2 Traffic Generation

6.2.1 Subject Development

Trip generation rates for all land uses have been sourced from the Institute of Transportation Engineers (ITE) "*Trip Generation Manual*" (7th Edition). These rates reflect a high vehicular demand proportion consistent with current behaviour in the greater Bunbury area. However, it is acknowledged that increased density of residential and commercial opportunities within the Bunbury City Centre will result in a reduced demand for private vehicle modes to access the ACSP. The rates used by ITE are therefore considered to be conservative in the context of the long-term ACSP build-out.

The variety of activities in the City Centre, and particularly within the ACSP is expected to foster a high degree of internal trip catchment. These trips will be made on foot between land uses i.e. people who currently drive to the City Centre already will park once and visit other retail, entertainment and restaurant uses within the ACSP. To account for this, a trip reduction factor of 30% has been applied to the ITE trip generation rate shown in **Table 6-1**, this is consistent with the observed reductions in similar City Centre areas (over single-destination suburban generation).

Table 6-1 ITE Trip Generation Rates including a 30% trip reduction factor

Land Use	ITE Land Use Code	70% of Trip Generation Rates (per 100m^2)		
Major Retail	850 – Supermarket	77.04	7.57	9.06
Mini Major Retail	820 – Shopping Centre	32.35	3.75	3.75
Speciality Retail	814 – Speciality Retail Centre	33.40	5.15	3.78
Food + Beverage	932 – High Turnover Restaurant	95.80	10.19	14.17
Commercial	710 – General Office	8.30	1.17	1.12

Source: ITE Trip Generation 7th Edition

The increase in trips resulting from the full build-out of the ACSP is shown in **Table 6-2** below. This traffic growth is significant in the context of the City Centre, and the resulting impact has been assessed in detail in **Section 0**.

Table 6-2 Increase in ACSP trips

Land Use	Existing Trips (Land uses)			Trips After Development(Land uses)		
	AM	PM	WEEKDAY	AM	PM	WEEKDAY
Major Retail	768	919	7,812	1,667	1,993	16,948
Mini Major Retail	78	78	668	188	188	1,618
Speciality Retail	418	307	2,707	309	227	2,004
Food + Beverage	68	95	639	255	355	2,395
Commercial	4	4	26	12	12	83
TOTAL	**1,336**	**1,403**	**11,852**	**2,431**	**2,775**	**23,048**

6.2.2 Background Traffic

Background traffic volumes have been determined using pneumatic tube count data (supplied by the City) for the road mid-blocks and SCATS for the signalised intersections.

6.3 Traffic Distribution

The distribution of the trips to and from the ACSP has been determined from firstly using the number of parking bays and then adjusted by a predicted utilisation percentage during peak periods that attempts to account for location of the car parks and also the major trip generators.

A list of the assumptions made on adjusting the values are summarised below:

> Since there is currently an existing use only the additional trips have been distributed into the existing surrounding road network.

> The Cornwall Precinct car park can only be used at a maximum of 80 percent of capacity by ACSP traffic, as surrounding land uses are assumed to continue using this car park.

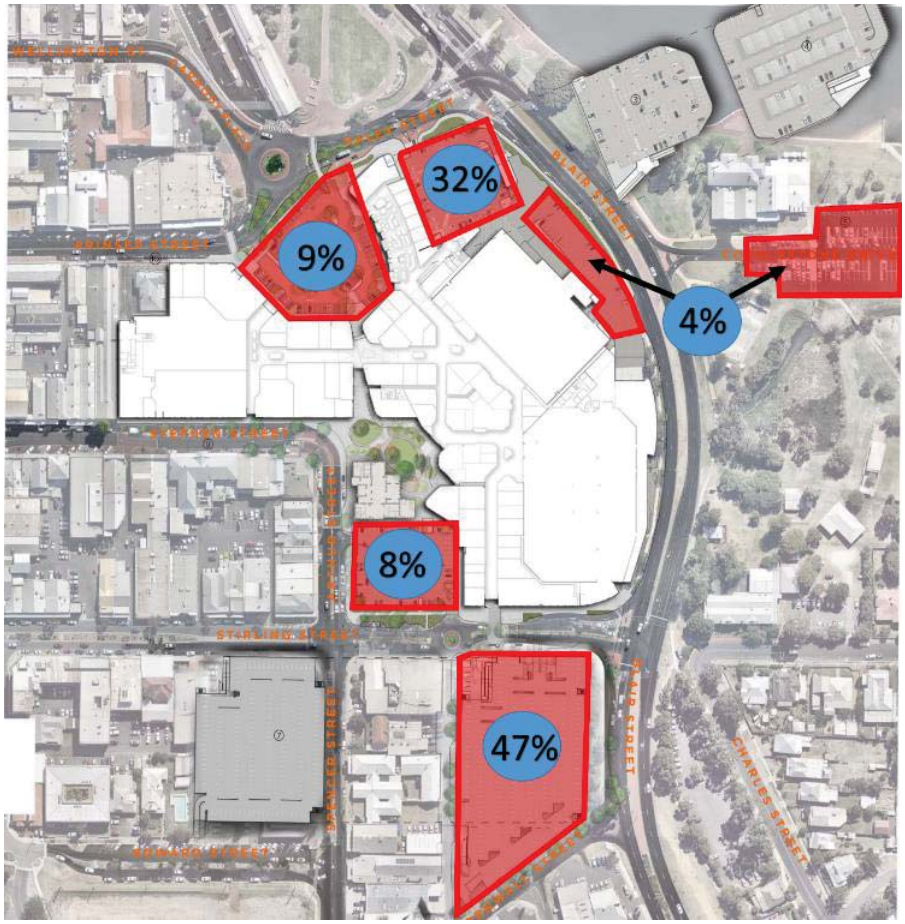
> Distribution of trips into the surrounding network is based on the current turning volumes determined from data supplied from the City.

> The ACSP users that park in the Cornwall Precinct are assumed to access the precinct via Stirling Street. This is a conservative assumption as it concentrates much of the volume – of both the Cornwall Precinct and the precincts north of Stirling Street – on the same access points.

> The peak traffic demands for the City Centre tends to occur on a weekday peak. To determine a conservative assessment of intersection capacity, the higher of the AM and PM demand has been used to assess the intersection performance.

The result of the distribution as a percentage of trips have been shown in **Figure 6-2** below. Details of this distribution methodology are provided as **Appendix B**.

Figure 6-2 Traffic Distribution as a Percentage



Source: Bunbury Centrepoint and Stirlings Development Application, 19 April 2016

6.4 Re-Distribution Impact of Bicentennial Square Project

The redistribution of traffic due to the proposed Bicentennial Square project is considered to be minimal for southbound traffic, as alternative routes from the Clifton Street/Blair Street intersection are equally narrow and provide no additional benefit; upon reaching the 'shared street' section of the scheme at the Simmons Street intersection, diversion to another route would tend to disproportionately increase journey length.

However, for northbound traffic approaching the Blair Street/Haley Street intersection, traffic would be likely to divert to Haley Street, as this provides a more attractive alternative to the 'shared street' section at this point.

Therefore only the following redistribution has been assumed for the purpose of analysis:

> 50% of Northbound through traffic at Blair Street/Haley Street intersection will deviate via Haley Street, turning right at the Carmody Place/Prinsep Street/Haley Street roundabout.

6.5 Assessment Years

The following two scenarios have been analysed as part of this assessment:

> **Existing Scenario** – this scenario reflects the existing traffic volumes and land uses / developments within the ACSP. Where Traffic volumes obtained from the City are not from 2016 they have been factored by a 2% p.a. growth from the date of the counts to the present date. This growth rate of 2% p.a. is consistent with the City's request *(via email, 19 September 2016).*

> **2031 Development Scenario** – this scenario reflects the existing traffic volumes plus growth to year 2031 (full build-out horizon year) plus the ACSP-generated traffic on the network. It also considers the readjustment of traffic flow to appropriated intersection, caused by the future development of Bicentennial Square as described in **Section 3.1.1**.

6.6 Intersection Performance

Key intersections and access points have been assessed using SIDRA v6.1.

The key boundary road intersections analysed include:

> Blair Street/Haley Street;

> Blair Street/Stirling Street;

> Stirling Street/Arthur Street/Spencer Street;

> Carmody Place/Prinsep Street/Haley Street; and

> Cornwall Street/Blair Street.

The key access intersections include:

> Stirling Street Eastern access;

> Stirling Street Western access; and

> Haley Street Westbound.

As mentioned in **Section 6.3**, the ACSP users that park in the Cornwall Precinct are all be assumed to access the precinct via Stirling Street. This is a conservative assumption as it concentrates much of the volume – of both the Cornwall Precinct and the precincts north of Stirling Street – on the same access points.

The traffic volumes were obtained from observation and trip generation, as detailed in previous sections of this report. The identified intersections have been analysed using the SIDRA v6 analysis program. Traffic volumes used for analysis have been taken from the weekday peak period volumes.

This program calculates the performance of intersections based on input parameters, including geometry and traffic volumes. The Degree of Saturation (DOS), Average Delay and 95th Percentile Queue operational measures can be evaluated as follows:

> **Degree of Saturation (DOS)**: is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow up to one for saturated flow or capacity. The generally accepted upper limits for the DOS (where it is considered that the operation of the intersection is constrained) are:
  - **0.80:** Un-signalised intersections.
  - **0.85:** Roundabouts.
  - **0.95:** Signalised intersections.

> **Level of Service (LOS)**: is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 Levels of Service (LoS), designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).

> **Average Delay**: is the average of all travel time delays for vehicles through the intersection. An un-signalised intersection can be considered to be operated at capacity where the average delay exceeds 40 seconds for any movement;

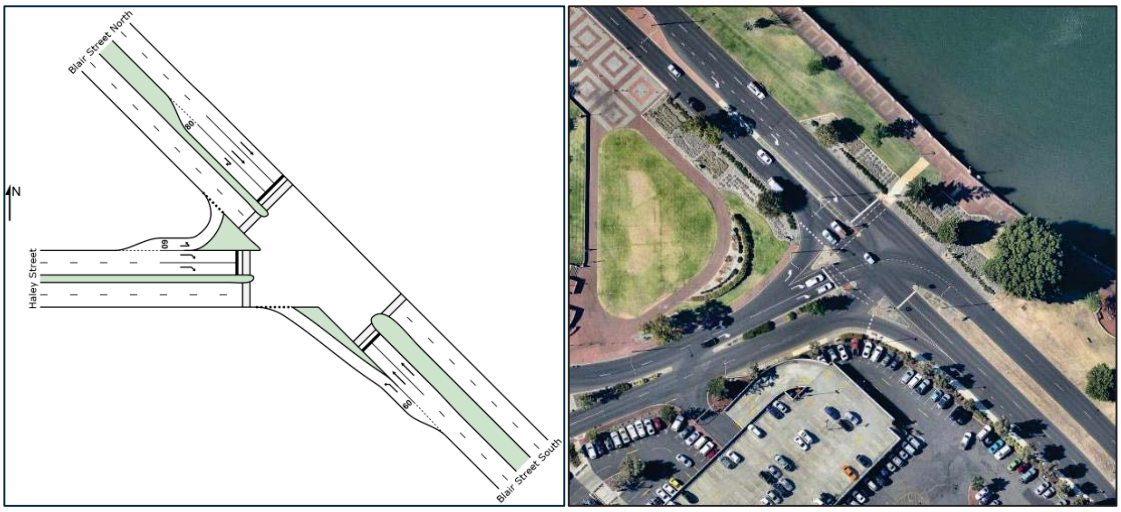
> **95% Queue**: is the queue length below which 95% of all observed queue lengths fall.

6.6.1 Blair Street/Haley Street Intersection

The following presents the results of the analysis of the Blair Street/Haley Street intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-3 is the SIDRA layout representation of the intersection at this location

Figure 6-3 Indicative Layout for the Blair Street/Haley Street Intersection



The results from the SIDRA analysis for the intersection are summarised in **Table 6-3** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-3 SIDRA Outputs for the Blair Street/Haley Street Intersection (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Blair Street South	L	0.34	6	A	19	0.81	14	B	92
	T	0.70	18	B	43	0.52	18	B	21
Blair Street North	T	0.25	5	A	20	0.26	6	A	21
	R	0.78	27	C	35	0.89	33	C	60
Haley Street	L	0.35	8	A	18	0.16	7	A	6
	R	0.70	24	C	30	0.87	28	C	50
All vehicles		**0.78**	**14**	**B**	**43**	**0.89**	**17**	**B**	**92**

As indicated in **Table 6-3,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods with and without consideration of the Bicentennial Square project.

No modifications to this intersection are considered necessary to support the proposed development.

6.6.2 Blair Street/Stirling Street Intersection

The following presents the results of the analysis of the Blair Street/Stirling Street intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-4 is the SIDRA layout representation of the intersection at this location

Figure 6-4 Indicative Layout for the Blair Street/Stirling Street Intersection

The results from the SIDRA analysis for the intersection are summarised in **Table 6-4** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-4 SIDRA Outputs for the Blair Street/Stirling Street Intersection (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Blair Street South	L	0.42	7	A	30	As per 'without' scenario			
	T	0.71	23	C	73				
Blair Street North	T	0.76	25	C	83				
	R	0.69	36	D	33				
Stirling Street	L	0.58	35	C	23				
	R	0.74	36	D	36				
All vehicles		**0.76**	**23**	**C**	**83**				

As indicated in **Table 6-4,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods. Inclusion of the Bicentennial Square project is not anticipated to result in significant redirection of traffic at this location, therefore no additional impact has been identified.

No modifications to this intersection are considered necessary to support the proposed development.

6.6.3 Stirling Street/Arthur Street/Spencer Street Intersection

The following presents the results of the analysis of the Stirling Street/Arthur Street/Spencer Street intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-5 is the SIDRA layout representation of the intersection at this location

Figure 6-5 Indicative Layout for the Stirling Street/Arthur Street/Spencer Street Intersection

The results from the SIDRA analysis for the intersection are summarised in **Table 6-5** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-5 SIDRA Outputs for the Stirling Street/Arthur Street/Spencer Street Intersection (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Spencer Street	L	0.29	23	C	19	As per 'without' scenario			
	T	0.80	25	C	52				
	R	0.80	31	C	52				
Stirling Street East	L	0.81	29	C	80				
	T	0.67	18	B	52				
	R	0.67	23	C	52				
Arthur Street	L	0.22	23	C	14				
	T	0.40	18	B	22				
	R	0.40	24	C	22				
Stirling Street West	L	0.22	13	B	21				
	T	0.22	7	A	21				
	R	0.60	17	B	24				
All vehicles		**0.81**	**22**	**C**	**80**				

As indicated in **Table 6-5,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods. Inclusion of the Bicentennial Square project is not anticipated to result in significant redirection of traffic at this location, therefore no additional impact has been identified.

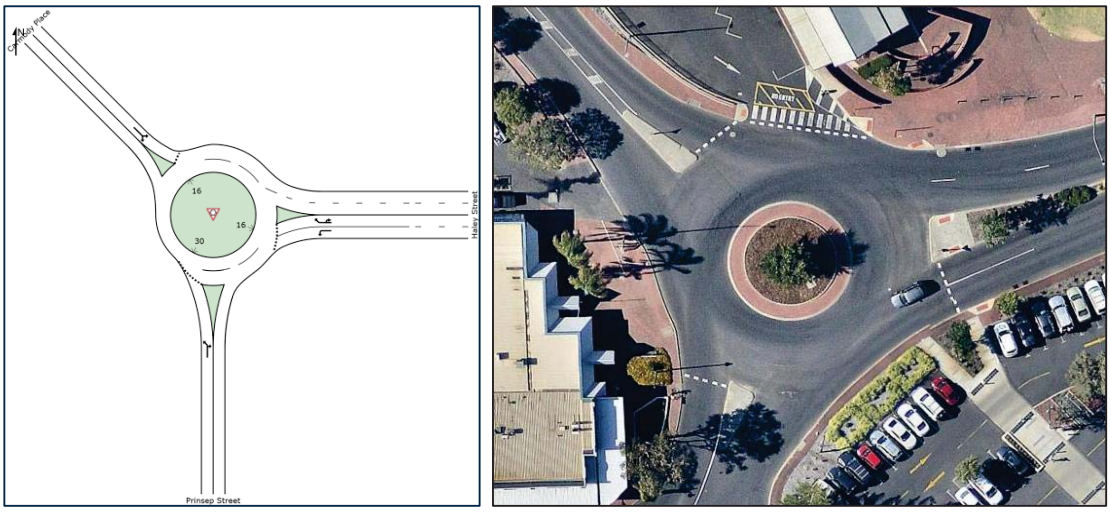
No modifications to this intersection are considered necessary to support the proposed development.

6.6.4 Carmody Place/Prinsep Street/Haley Street Intersection

The following presents the results of the analysis of the Carmody Place/Prinsep Street/Haley Street intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-6 is the SIDRA layout representation of the intersection at this location

Figure 6-6 Indicative Layout for the Carmody Place/Prinsep Street/Haley Street Intersection



The results from the SIDRA analysis for the intersection are summarised in **Table 6-6** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-6 SIDRA Outputs for the Carmody Place/Prinsep Street/Haley Street Intersection (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Prinsep Street	L	0.34	5	A	13	0.42	8	A	19
	R	0.34	11	B	13	0.42	13	B	19
Haley Street	L	0.21	5	A	10	0.25	5	A	12
	R	0.25	8	A	12	0.41	8	A	24
	U	0.25	11	B	12	0.41	11	B	24
Carmody Place	L	0.19	7	A	8	0.19	7	A	8
	R	0.19	10	B	8	0.19	10	B	8
All vehicles		**0.34**	**8**	**A**	**13**	**0.42**	**9**	**A**	**24**

As indicated in **Table 6-6,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods with and without consideration of the Bicentennial Square project.

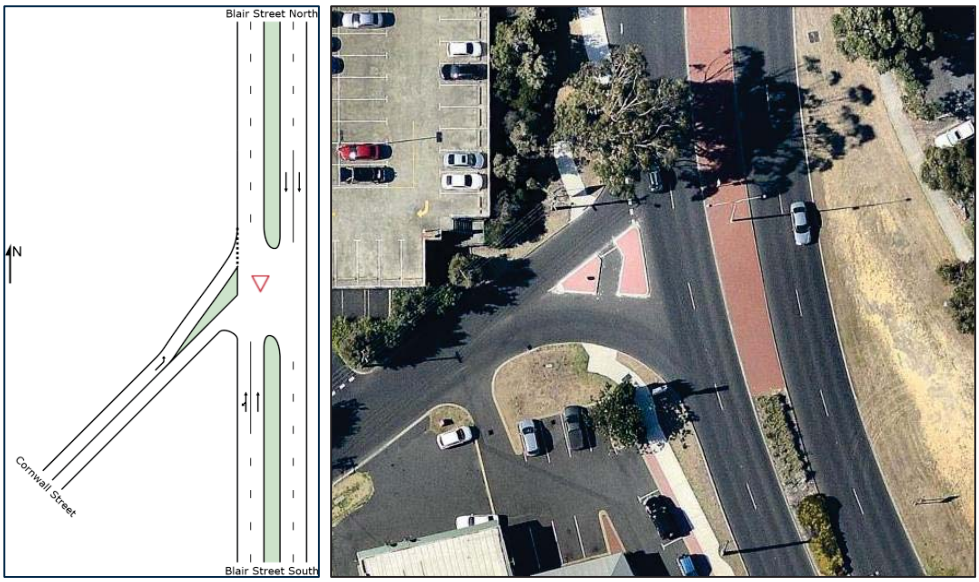
No modifications to this intersection are considered necessary to support the proposed development.

6.6.5 Cornwall Street/Blair Street Intersection

The following presents the results of the analysis of the Cornwall Street/Blair Street Intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-7 is the SIDRA layout representation of the intersection at this location

Figure 6-7 Indicative Layout for the Cornwall Street/Blair Street Intersection



The results from the SIDRA analysis for the intersection are summarised in **Table 6-7** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-7 SIDRA Outputs for the Cornwall Street/Blair Street Intersection (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Blair Street South	L	0.35	7	A	0	As per 'without' scenario			
	T	0.35	0	A	0				
Blair Street North	T	0.29	0	A	0				
Cornwall Street	L	0.19	8	A	5				
All vehicles		**0.35**	**1**	**A**	**5**				

As indicated in **Table 6-7**, the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods. Inclusion of the Bicentennial Square project is not anticipated to result in significant redirection of traffic at this location, therefore no additional impact has been identified.

No modifications to this intersection are considered necessary to support the proposed development.

6.6.6 Access from Stirling Street Eastbound

The following presents the results of the analysis of the Stirling Street Eastbound Access Intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-8 is the SIDRA layout representation of the intersection at this location

Figure 6-8 Indicative Layout for the Access from Stirling Street Eastbound

The results from the SIDRA analysis for the intersection are summarised in **Table 6-8** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-8 SIDRA Outputs for the Access from Stirling Street Eastbound (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Stirling Street East	T	0.51	4	A	33	As per 'without' scenario			
	R	0.51	7	A	33				
Access To Centre	L	0.09	4	A	3				
	R	0.09	7	A	3				
Stirling Street West	L	0.33	3	A	16				
	T	0.33	4	A	16				
All vehicles		**0.51**	**4**	**A**	**33**				

As indicated in **Table 6-8,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods. Inclusion of the Bicentennial Square project is not anticipated to result in significant redirection of traffic at this location, therefore no additional impact has been identified.

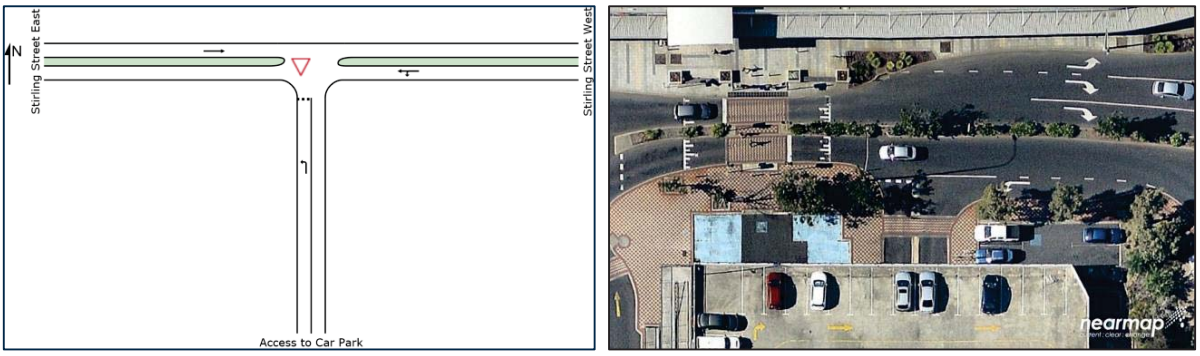
No modifications to this intersection are considered necessary to support the proposed development.

6.6.7 Access from Stirling Street Westbound

The following presents the results of the analysis of the Stirling Street Westbound Access Intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-9 is the SIDRA layout representation of the intersection at this location

Figure 6-9 Indicative Layout for the Access from Stirling Street Westbound



The results from the SIDRA analysis for the intersection are summarised in **Table 6-9** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-9 SIDRA Outputs for the Access from Stirling Street Westbound (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Stirling Street West	L	0.54	3	A	0	As per 'without' scenario			
	T	0.54	0	A	0				
Stirling Street East	T	0.23	0	A	0				
Access to Car Park	L	0.58	6	A	36				
All vehicles		**0.58**	**3**	**A**	**36**				

As indicated in **Table 6-9,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods. Inclusion of the Bicentennial Square project is not anticipated to result in significant redirection of traffic at this location, therefore no additional impact has been identified.

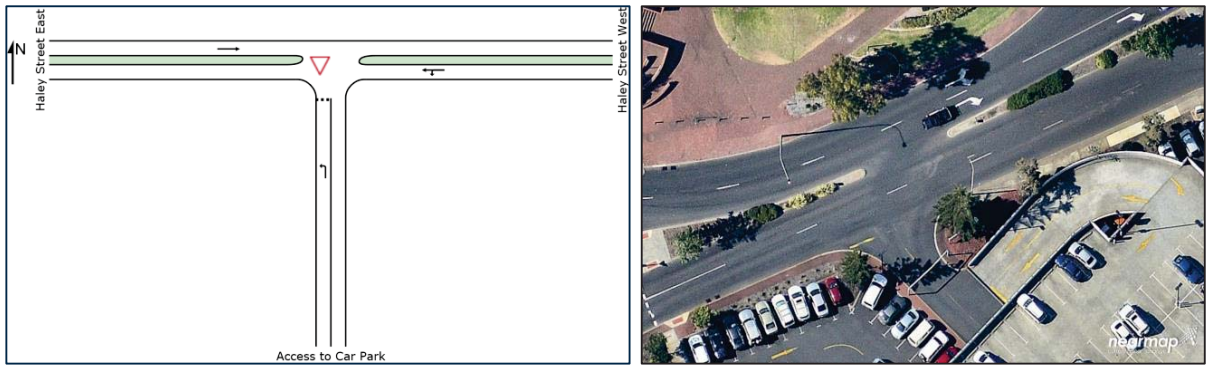
No modifications to this intersection are considered necessary to support the proposed development.

6.6.8 Access from Haley Street Westbound

The following presents the results of the analysis of the Haley Street Westbound Access intersection for the 2031 background traffic scenario with the addition of development traffic of the ACSP.

Figure 6-10 is the SIDRA layout representation of the intersection at this location

Figure 6-10 Indicative Layout for the Haley Street Access Point



The results from the SIDRA analysis for the intersection are summarised in **Table 6-10** for weekday peak hour periods with and without consideration of the Bicentennial Square project implemented.

Table 6-10 SIDRA Outputs for Haley Street Access (2031 Weekday PM Peak)

Intersection Approach		Without Bicentennial Square				With Bicentennial Square			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Access to Car Park	L	0.41	5	A	18	0.62	10	A	30
Haley Street West	L	0.47	3	A	0	0.62	3	A	0
	T	0.47	0	A	0	0.62	0	A	0
Haley Street East	T	0.32	0	A	0	0.37	0	A	0
All vehicles		**0.47**	**2**	**A**	**18**	**0.62**	**2**	**A**	**30**

As indicated in **Table 6-10,** the current intersection configuration has sufficient capacity to accommodate the traffic demand during the weekday peak hour periods with and without consideration of the Bicentennial Square project.

No modifications to this intersection are considered necessary to support the proposed development.

7 Parking Analysis

As detailed in **Section 4**, there are 990 existing car parking bays on the ACSP site, to serve the floor area of 21,303 m^2.

Some of the proposed land uses of the ACSP form part of the land uses within the approved DA for the site to the north of Stirling Street, which will increase the GLAR by 2,014 m^2 above existing; the parking bays to accompany this DA (not the entire ACSP) will be 1,064 in total.

The remaining proposed floor area increase is 13,183 m^2 bringing the total floor area to 36,500 m^2. The indicative plans are for 75% of this increase – i.e. 9,887 m^2 – to be accommodated on the Cornwall Precinct site in the proposed Department Store. The remaining 3,296 m^2 are to be on the site to the north of Stirling Street.

The demand analysis below assesses the required car parking separately for the areas to the north of Stirling Street (Stirling and Centrepoint Precincts) and the Cornwall Precinct to the south of Stirling Street.

7.1 Parking Demand North of Stirling Street

The parking requirements for the ACSP site to the north of Stirling Street have been determined through application of TPS 7 requirements followed by discount factors as allowed for in Local Planning Policy 3.1 "*Access and Parking for Pedestrians, Bicycles and Vehicles*" (adopted 30 November 2010). This process is outlined below:

1. Reference to best-practice guidelines such as the Institute of Transport Engineers' (ITE's) *Parking Generation 4th Edition* suggests that parking demand could be in the order of 4.8-5.7 bays per 100sq.m. This is generally consistent with the City's parking requirement under Table 2 of the *Bunbury Town Planning Scheme No. 7* which requires 1 bay per 20sq.m NLA for 'shop' uses.
2. The proposed food & beverage uses tend to attract patrons at distinct times of day, with a peak demand either at lunch or dinner depending on the type and function of the restaurants in question. Separation of restaurant demand from shopping centre uses tends to overstate the requirements for parking due to the internal synergies between retail and restaurant patronage.
3. The ITE rates described above are considered to be suitable only for isolated suburban areas. The Bunbury City Centre has a much higher level of land use diversity and density than a standard Metropolitan shopping centre precinct, which would support a lower parking rate than the typical development. This is a result of a higher proportion of walking trips to retail and entertainment destinations during the daytime peak. Further, Bunbury's location as the dominant destination in the wider catchment may reduce the impact of development increase on peak patronage, due to the lower number of alternative destinations within the wider catchment. In other words, the Site is likely to be attracting the bulk of retail and restaurant trips in its existing form; and the main impact of the increased development size is likely to be an increase in choice for customers, resulting in higher numbers of trips between the greater diversity of tenancies within the Site.
4. Detailed analysis has previously been undertaken for a Metropolitan Perth shopping centre with mixed uses in a regional hub. This site is quite similar to the Bunbury Centrepoint site. This analysis determined percentage factors of the peak parking demand at different times for various uses, i.e. Food, Supermarket, Retail and Commercial. For each use, the peak parking demand was determined and also the percentage of that peak demand at each of the following times: weekday noon; weekday evening; Saturday noon; Saturday evening. This analysis then returned the resultant parking required at each of these times, including the total across all uses. The result was a maximum total parking demand, at the busiest time, which was approximately 95% of the total parking demand that would occur if the peak times all coincided.
5. The above shared parking discount is allowed for in Local Planning Policy 3.1 "*Access and Parking for Pedestrians, Bicycles and Vehicles*" (adopted 30 November 2010). Paragraph 10.1 of that policy allows for such a shared parking system where there is a legal agreement in place to enable reciprocal parking.

6. In addition, this Policy allows for a 10% reduction in parking where there is a practicable and convenient alternative transport mode to the private motor vehicle. It is considered that the location of the Bunbury Bus Station within 400 metres of the Site satisfies this requirement.

7. These rates and discount factors are applied in **Table 7.1** below.

Table 7-1 ACSP Parking Requirements: North of Stirling Street only

Land Use	TPS7 requirement	NLA (sqm)	Required Parking Bays
Shopping Centre north of Stirling Street	1 bay per 20sqm	26,613	1,331
		10% Discount for Bus Station Proximity	133
		Approximate shared trip factor discount of 5%	62
		Total Statutory requirement for ACSP north of Stirling Street	**1,136**
		Proposed parking provision	1,064
		Theoretical parking deficit	**72 bays**

Source of floor area data: Taylor Robinson, 2016

The high degree of land use synergy present in the Bunbury City Centre has been identified in **Section 6.2** and projected to result in a 30% reduction in trip generation. The effect on parking is unlikely to be as substantial, as it applies only to internal trips taken from outside the ACSP parking supply. However, it is extremely likely that the benefits of the City Centre location will create more than a 10% reduction in parking demand. The proposed parking supply (including the existing quantum within the Cornwall Street car park) is therefore considered to be sufficient to accommodate all ACSP uses north of Stirling Street.

7.2 Parking Demand at Cornwall Precinct

Cornwall Precinct, the site between Cornwall Street, Stirling Street, Blair Street and Spencer Street, is currently occupied by a multi-deck car park of 483 parking bays. As shown in **Section 4** of this TIA and detailed above, the ACSP proposes a 9,887 m^2 Department Store for this site; as such, the existing car parking will need to be replaced as well as parking provided for the Department Store itself. A car park is to be constructed over the Department Store for this purpose.

However, from discussions with the City, it is understood that some of the replacement parking is to be provided elsewhere by the City, sufficient to accommodate existing use of parking by employees and additional public parking in support of City centre demands. The number of parking bays to be provided, as a result of the Department Store and loss of existing parking, is yet to be determined.

With the development of a new department store proposed for the Cornwall Precinct, a reallocation of the current parking and future parking needs to be considered carefully. It is important to consider location-specific factors which will have a reducing effect on the demand for parking.

Due to the long-term nature of the ACSP, a definitive parking supply has not yet been determined. However a thorough consideration of parking management requirements has been completed and shown below in **Section 7.3**.

7.3 Future Parking Demand and Parking Management

The Cornwall Street parking precinct is understood to host long-stay employee parking for proximal businesses. In the short-medium term, alternative parking locations for these employees is in scarce supply and therefore accommodation of this demand provides a substantial benefit to the City Centre. It is understood that the City is pursuing options to provide alternative public parking which would be available in the longer-term to support long-stay employee use.

The proposed function of the Cornwall Street parking references the needs for continued function of parking in the City, as follows:

> The Cornwall Street car park will allocate specific long-stay bays within the retained supply for use by employees of the ACSP and surrounding catchment through the interim period. These bays would be provided at an appropriate daily fee, sufficient to support the intent of the surrounding parking supply, but while retaining a high occupancy level. The number of long-stay parking bays will depend on the ultimate requirements of the ACSP, but would not restrict the number of such bays below what is currently available (existing use is understood to be 100-150 bays).

> Additional short-stay bays will be constructed to accommodate the proposed land-uses. The ultimate requirement for parking is yet to be determined, and is interrelated with the ultimate parking management scenario, but will take into account the effects of internal trip capture (i.e. the mix and density of land uses within and near the ACSP), proximity of public transport, and the high quality of local pedestrian and cycling infrastructure.

> Future parking will assist to reinforce the desired City Centre Parking Strategy, gradually introducing pricing signals to shift long-stay parking towards the periphery, while retaining inner-city parking for high-impact functions, i.e. off-street parking for retail, restaurant, entertainment and commercial visitors; on-street parking for buses, taxis, loading and other short-stay functions.

> While on-site parking will need to be sufficient to accommodate the demand from the ACSP, it will also provide public parking for the balance of the City Centre. Given this, the car parking associated with the ACSP should be considered as one component of a parking system that extends across the City Centre, and integral to the function of the City as a whole.

7.4 Recommendations for Parking Assessment

The ACSP is an integral part of the City Centre, and provides a component of the overall parking supply. The future provision of parking within the ACSP, particularly in the Cornwall Precinct, is intimately related to the needs of the City Centre as a whole.

As such, determination of the supply on this site should reflect the parking goals of the City, and be considered in the context of the ultimate parking environment, consisting of on-road, private and public parking within the ACSP and across the City Centre.

This report therefore recommends a Bunbury City Centre Parking Assessment, conducted by the City, with participation by Primewest and other key parking providers. In this way a parking management system can be created which operates with maximum efficiency and support the aims of the City's Parking Strategy.

It should be stressed that this Assessment could be completed after approval of the ACSP and should be at the City's expense; it is a City-wide issue that is beyond the responsibility of Primewest.

8 Crash Assessment

A crash assessment for the surrounding road network of the ACSP has been completed. The assessment covers all the recorded accidents in between 1 January 2011 and 31 December 2015 at the following intersections and sections of road:

> Blair Street, between Cornwall Street and Haley Street excluding the Haley Street, Stirling Street and Cornwall Street intersections (see **Table 8-1**);

> Haley Street and Prinsep Street, between Blair Street and Victoria Street and excluding the Blair Street, Carmody Place/Prinsep Street and Victoria Street intersections (see **Table 8-2**);

> Stephen St and Arthur Street, excluding the Victoria Street and Stirling Street intersections (see **Table 8-3**);

> Stirling Street, between Arthur Street and Blair Street excluding the intersection of Blair Street and Arthur Street/Spencer Street intersections (see **Table 8-4**);

> Cornwall Street, between Blair Street and Spencer Street including the Spencer Street/Wexford Lane and Blair Street intersections (see **Table 8-5**);

> Blair Street and Haley Street intersection (see **Table 8-6**);

> Blair Street and Stirling Street intersection (see **Table 8-7**); and

> Stirling Street, Arthur Street and Spencer Street intersection (see **Table 8-8**).

> The data has been summarised and presented in the following tables.

Table 8-1 Crash Data for Blair Street between Cornwall Street and Haley Street

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle		1			1	2
Right Turn Thru						
Rear End				1		1
Sideswipe Same Direction					1	1
Hit Object				1		1
Non Collision						
Others						
Total		**1**		**2**	**2**	**5**

Table 8-2 Crash Data for Haley Street and Prinsep Street between Blair Street and Victoria Street

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle				2	1	3
Right Turn Thru						
Rear End						
Sideswipe Same Direction						
Hit Object						
Non Collision						
Others				2		2
Total				**4**	**1**	**5**

Table 8-3 Crash Data for Stephen Street and Arthur Street

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle				1		1
Right Turn Thru						
Rear End					1	1
Sideswipe Same Direction					2	2
Hit Object						
Non Collision						
Others					2	2
Total				**1**	**5**	**6**

Table 8-4 Crash Data for Stirling Street between Blair Street and Arthur Street

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle						
Right Turn Thru						
Rear End				4		4
Sideswipe Same Direction						
Hit Object						
Non Collision						
Others					1	1
Total				**4**	**1**	**5**

Table 8-5 Crash Data for Cornwall Street including intersections

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle				2	4	6
Right Turn Thru						
Rear End						
Sideswipe Same Direction						
Hit Object						
Non Collision						
Others						
Total				**3**	**4**	**6**

Table 8-6 Blair Street and Haley Street intersection

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle			1	1		2
Right Turn Thru						
Rear End					1	1
Sideswipe Same Direction					3	3
Hit Object						
Non Collision						
Others					1	1
Total			**1**	**1**	**5**	**7**

Table 8-7 Blair Street and Stirling Street intersection

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle						
Right Turn Thru						
Rear End				5		5
Sideswipe Same Direction					1	1
Hit Object					2	2
Non Collision						
Others					1	1
Total				**5**	**4**	**9**

Table 8-8 Stirling Street, Spencer Street and Arthur Street intersection

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle						
Right Turn Thru				4	1	5
Rear End					1	1
Sideswipe Same Direction				1		1
Hit Object				3		3
Non Collision						
Others				1	1	2
Total				**9**	**3**	**12**

From the above crash assessment it should be noted that there is no recorded crash incident at the Haley Street, Prinsep Street and Carmody Place intersection.

There have been no fatalities on or at any of the above roads or intersections. Only 1 crash resulted in non-hospital medical attention at the Blair Street and Haley Street intersection and only 1 involved hospital attention along Blair Street. The local traffic environment is therefore considered to be relatively safe, with no significant concentrations of crashes that would suggest modifications to intersection geometry or operation on safety grounds.

9 Site-Specific Issues for ACSP

During consultation with the City, the following issues were raised.

9.1 Cornwall Street/Spencer Street Intersection

This is a current area of concern due to sight line problems. Discussions within City have taken place with regard to a possible future change to signals or a roundabout.

This is not anticipated to result in any adverse impacts to intersection operation.

9.2 Lane Priorities at Stirling Street/Spencer Street/Arthur Street

The City is considering changing lane priorities at this intersection to create a more efficient intersection. Any modifications to improve the function of this intersection would be of benefit to the ACSP.

9.3 Road Network Proposals

The City has informed Cardno of an additional road network proposal:

> Reduction of Blair St to a single lane in each direction between Haley Street and Symmons Street, to create a shared zone for increased connectivity to the foreshore – see Section 3 under 'Bicentennial Square'.

The impact of these proposals has been considered through application of first-principles trip generation, distribution and assignment factors, and through SIDRA intersection modelling.

The results of this analysis indicate that the Bicentennial Square upgrade is unlikely to have a significant impact on many of the vehicular trips, due to the circuitous nature of alternative routes. However, there are many benefits to pedestrian and cycling access to the eastern edge of the City Centre, and stronger connections to the recreation space near the Inlet.

10 Conclusion

The conclusions for the Bunbury Centrepoint ACSP Transport Impact Assessment (TIA) are as follows:

> The land uses within the ACSP will generate an estimated 2,431 two-way trips during the AM peak hour period and 2,775 trips during the PM peak hour period on a typical weekday.

> SIDRA analysis of the intersections within the study area showed that the existing and new intersections within the study area have sufficient capacity to operate satisfactorily for all scenarios considered as part of this assessment.

> Vehicular access to the parking areas associated with the ACSP will be provided via the access points along; Haley Street, Prinsep Street, Blair Street, Stirling Street and Arthur Street.

> The proposed car parking within the ACSP, prior to the redevelopment of the Cornwall Precinct is considered to be sufficient to support the proposed function.

> The level of parking supply for the full build-out of the ACSP is not fully finalised and will need to be determined in consultation with the City, and in consideration for the overall parking provision for the City Centre. It is recommended that a City Centre Parking Assessment be completed by the City, in coordination with Primewest and other key stakeholders to ensure effective ongoing function for parking in the City Centre.

Bunbury Centrepoint Activity Centre
Structure Plan

APPENDIX A

WAPC GUIDELINES CHECKILIST, AUGUST 2016

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Item	Provided	Comments
Summary		
Introduction/Background	Section 1	
Structure plan proposal	Section 4	
Regional context	Section 4.1	
Proposed land uses	Section 4.2	
Table of land uses and quantities	Table 4-1	
Major attractors/ generators	Section 5.1	
Specific Issues	Section 9	
Existing situation	Section 2	
Existing land uses within structure plan	Section 2	
Existing land uses within 800 metres of structure plan area	Section 2	
Existing road network within structure plan area	Section 2.2.1	
Existing pedestrian/ cycle network within structure plan area	Section 2.6	
Existing public transport services within structure plan area	Section 2.5	
Existing road network within 2 (or 5) km of structure plan area	Section 2.2.1	
Traffic flows on road within structure plan area (PM and/or AM peak hours)	Section 2.4	
Traffic flows on road within 2 (or 5) km of structure plan area (AM and/or PM peak hours)	Section 2.4	
Existing pedestrian/cycle networks within 800m of structure plan area	Section 2.6	
Existing public transport services within 800m of structure plan area	Section 2.5	
Proposed internal transport networks	Section 3	
Changes/additions to existing road network or proposed new road network	Section 3.1	
Road reservation widths	Section 3.1	
Road cross-sections & speed limits	Section 3.1.1	
Intersection controls	Section **Error! Reference source not found.**	
Pedestrian/cycle networks and crossing facilities	Section 3.3	
Public transport routes	Section 3.2	
Changes to external transport networks	Section 5.2	
Road network	Section 3.1	
Intersection controls	Section 3.1	
Pedestrian/cycle networks and crossing facilities	Section 3.3	

Public transport services	Section 3.2	
Integration with surrounding area	Section 5	
Trip attractors/generators within 800 metres	Section 5.1	
Proposed changes to land uses within 800 metres	Section 5.2	
Travel desire lines from structure plan to these attractors/generators	Section 5.3	
Adequacy of external support networks	Section 5.3	
Deficiencies in external transport network	Section 5.3	
Remedial measure to address deficiencies	Section 5.3	
Analysis of internal transport network	Section 6	
Assessment year(s) and time period(s)	Section 6.5	
Structure plan generated traffic	Section 6.2	
Extraneous (through) traffic	Section 6.2.1	
Design traffic flows (that is, total traffic)	Section 0	
Road cross-section	Sections 2.2 and 3.1	
Intersection controls	Section 0	
Access strategy	Section 0	
Pedestrian/cycle networks	Section 3.3	
Safe routes to schools	N.A.	
Pedestrian permeability & efficiency	Sections 2.6 and 3.3	
Access to public transport	Section 3.2	
Analysis of external transport networks		
Extent of analysis	Section 6.6	
Base flows for assessment year(s)	Section 6.5	
Total traffic flows	Section 6.6	
Road cross-sections	Section 6.6	
Intersection layout & controls	Section 6.6	
Pedestrian/cycle networks	Sections 2.6 and 3.3	
Conclusions	Section 10	

Bunbury Centrepoint Activity Centre
Structure Plan

APPENDIX B

EXISTING AND PROPOSED TRAFFIC

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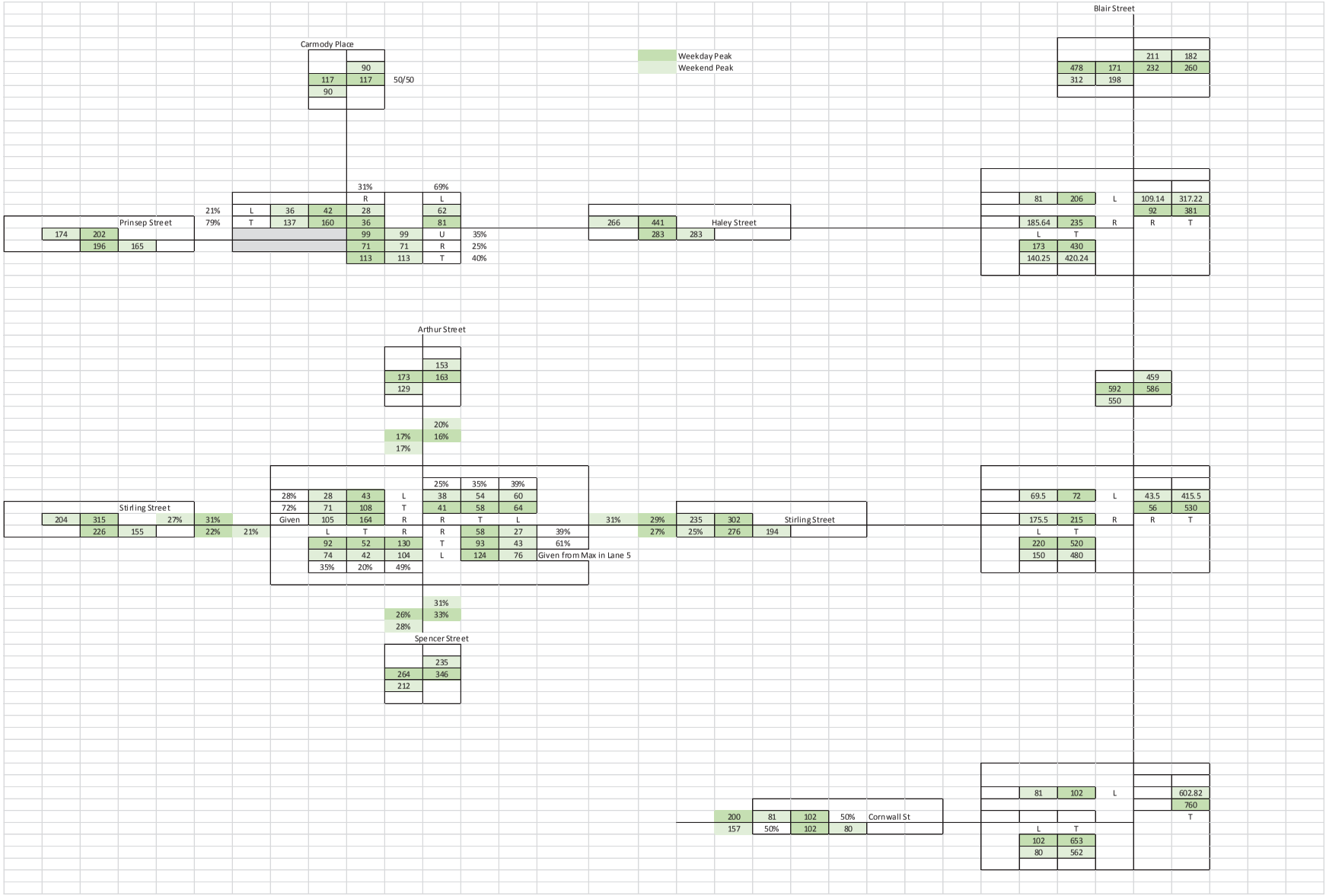
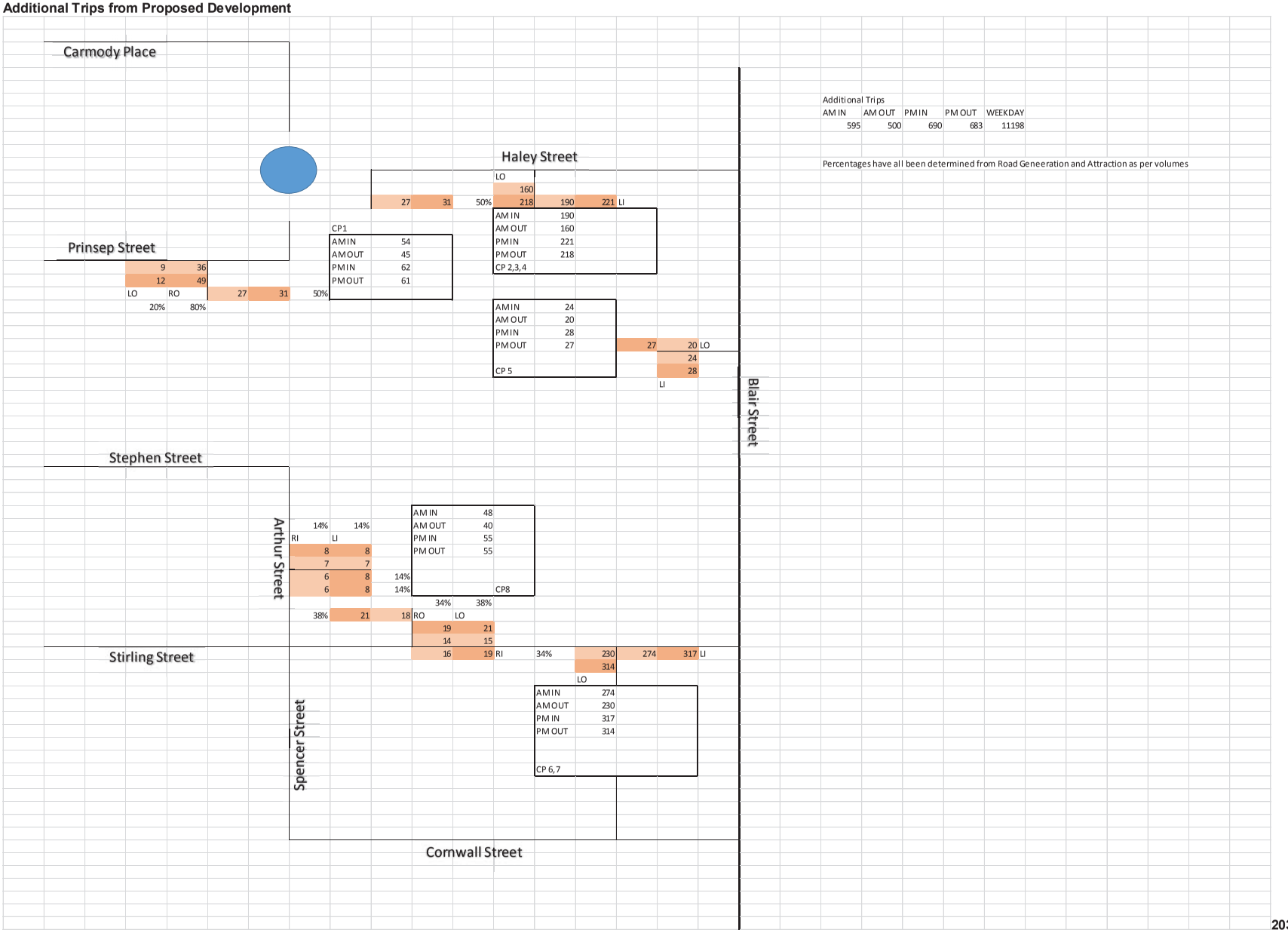
2016 Scenario for Network



Additional Trips from Proposed Development



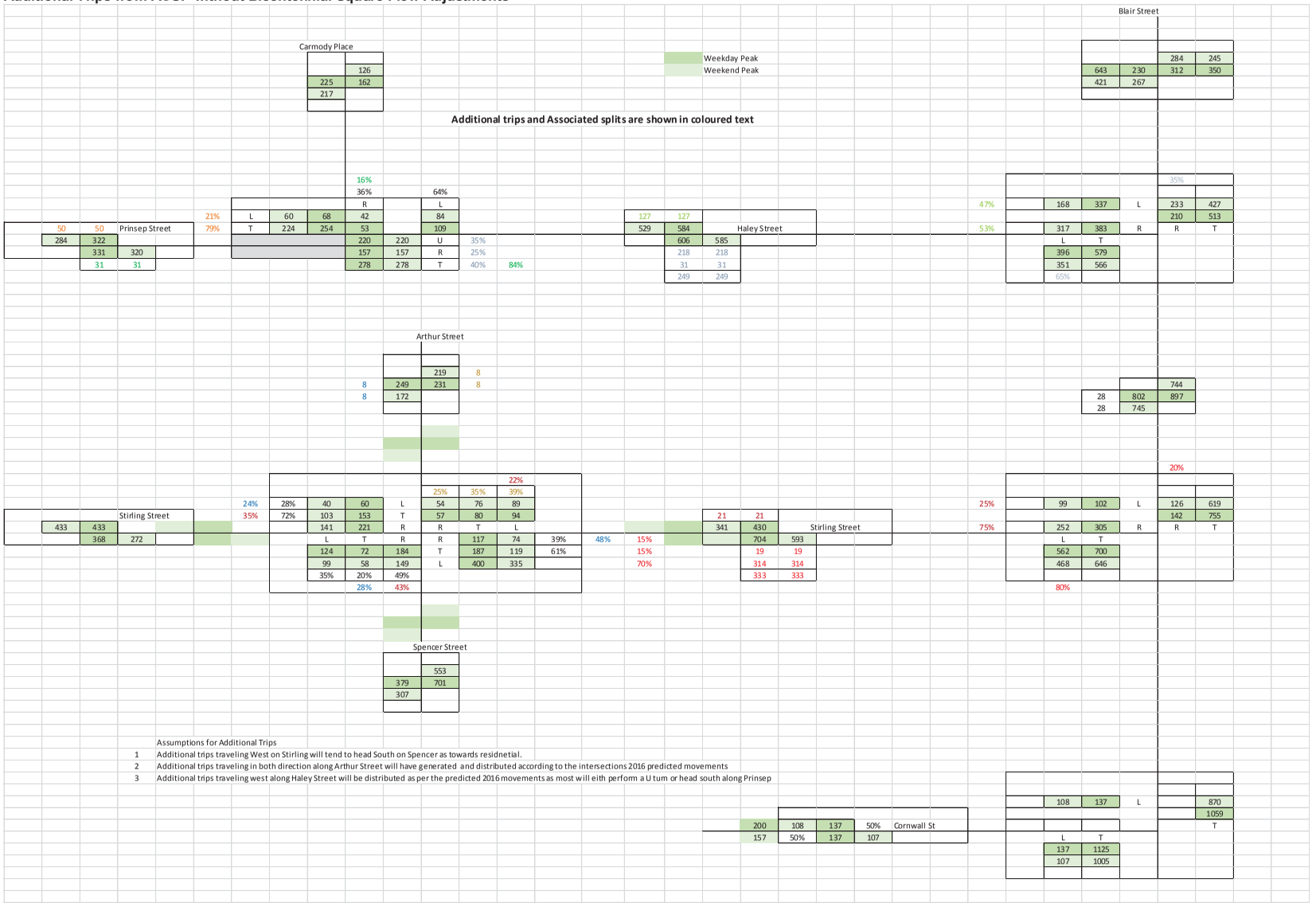
Additional Trips

AM IN	AM OUT	PM IN	PM OUT	WEEKDAY
595	500	690	683	11198

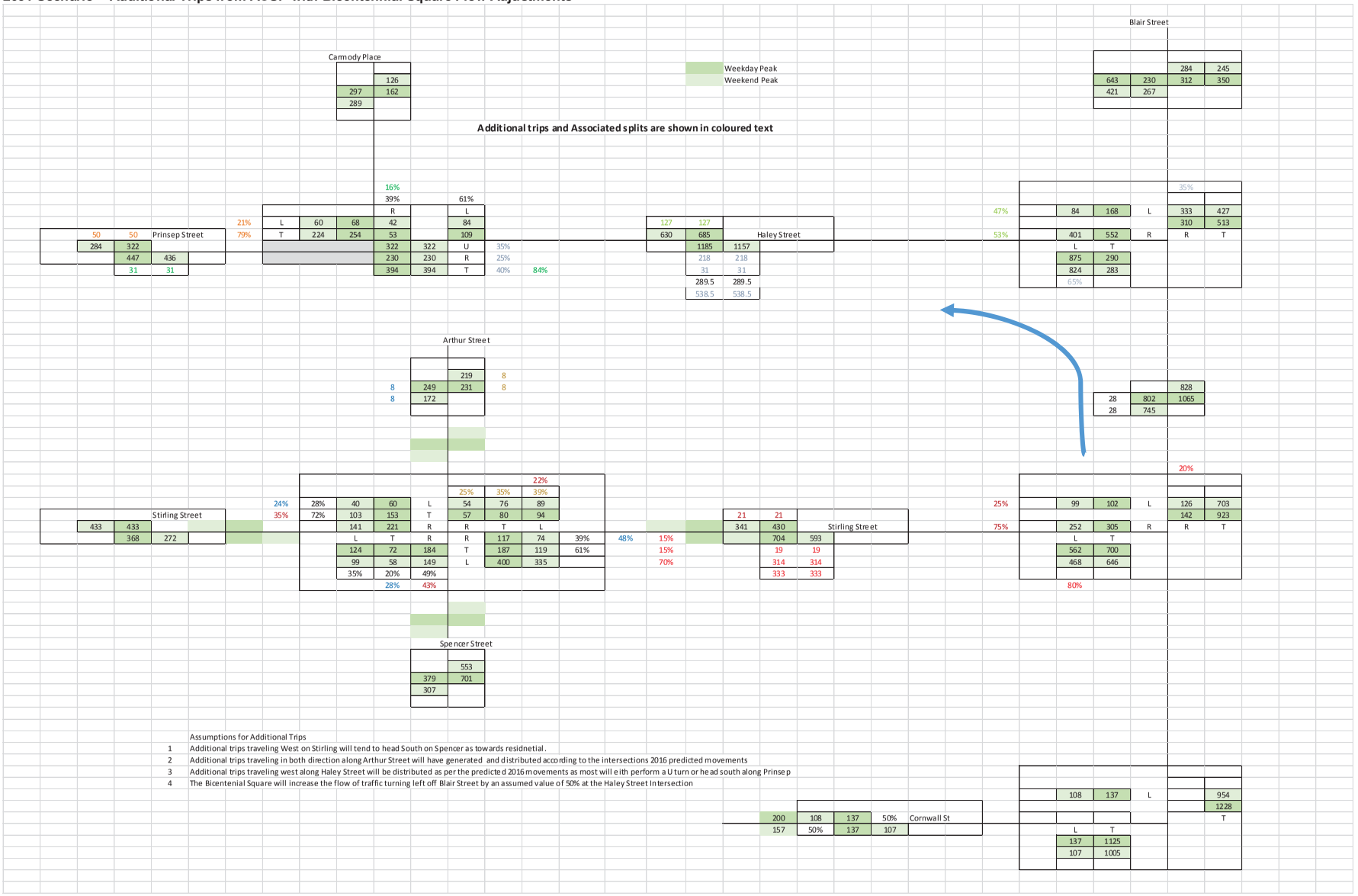
Percentages have all been determined from Road Geneeration and Attraction as per volumes

2031 Scenario +

Additional Trips from ACSP without Bicentennial Square Flow Adjustments



2031 Scenario + Additional Trips from ACSP with Bicentennial Square Flow Adjustments



Assumptions for Additional Trips

1. Additional trips traveling West on Stirling will tend to head South on Spencer as towards residnetial.
2. Additional trips traveling in both direction along Arthur Street will have generated and distributed according to the intersections 2016 predicted movements
3. Additional trips traveling west along Haley Street will be distributed as per the predicted 2016 movements as most will eith perform a U turn or head south along Prinsep
4. The Bicentenial Square will increase the flow of traffic turning left off Blair Street by an assumed value of 50% at the Haley Street Intersection

Bunbury Centrepoint Activity Centre
Structure Plan

APPENDIX C

SIDRA OUTPUTS

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MOVEMENT SUMMARY

Site: Blair Street/Haley Street intersection Weekday

New Site
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Practical Cycle Time)Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
SouthEast: Blair Street South											
21a	L1	417	0.0	0.339	5.9	LOS A	2.7	18.6	0.51	0.66	43.2
22	T1	609	0.0	0.695	17.5	LOS B	6.1	42.8	0.97	0.87	46.6
Approach		1026	0.0	0.695	12.8	LOS B	6.1	42.8	0.78	0.79	45.6
NorthWest: Blair Street North											
28	T1	540	0.0	0.252	5.1	LOS A	2.8	19.6	0.55	0.47	55.3
29b	R3	221	0.0	0.777	26.8	LOS C	4.9	34.6	1.00	0.98	30.8
Approach		761	0.0	0.777	11.4	LOS B	4.9	34.6	0.68	0.62	47.8
West: Haley Street											
10b	L3	355	0.0	0.354	8.3	LOS A	2.5	17.7	0.55	0.70	47.2
12a	R1	403	0.0	0.703	23.7	LOS C	4.3	29.9	1.00	0.90	34.5
Approach		758	0.0	0.703	16.5	LOS B	4.3	29.9	0.79	0.81	39.6
All Vehicles		2545	0.0	0.777	13.5	LOS B	6.1	42.8	0.75	0.74	44.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Blair Street/Haley Street intersection With Bicentennial

New Site
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Practical Cycle Time)Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
SouthEast: Blair Street South											
21a	L1	921	0.0	0.813	13.6	LOS B	13.1	91.9	0.84	0.96	37.5
22	T1	305	0.0	0.522	18.4	LOS B	3.0	21.0	0.97	0.77	46.1
Approach		1226	0.0	0.813	14.8	LOS B	13.1	91.9	0.87	0.91	40.2
NorthWest: Blair Street North											
28	T1	540	0.0	0.264	5.7	LOS A	3.0	20.7	0.58	0.49	54.8
29b	R3	326	0.0	0.892	32.5	LOS C	8.6	60.4	1.00	1.18	28.5
Approach		866	0.0	0.892	15.8	LOS B	8.6	60.4	0.74	0.75	44.0
West: Haley Street											
10b	L3	177	0.0	0.158	7.0	LOS A	0.8	5.8	0.40	0.65	48.4
12a	R1	581	0.0	0.868	28.4	LOS C	7.1	49.8	1.00	1.12	32.1
Approach		758	0.0	0.868	23.4	LOS C	7.1	49.8	0.86	1.01	34.9
All Vehicles		2851	0.0	0.892	17.4	LOS B	13.1	91.9	0.83	0.89	40.1

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Blair Street/Stirling Street Intersection Weekday

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Blair Street South											
1	L2	592	0.0	0.421	7.4	LOS A	4.2	29.5	0.38	0.66	46.9
2	T1	737	0.0	0.709	23.3	LOS C	10.5	73.3	0.96	0.86	43.4
Approach		1328	0.0	0.709	16.2	LOS B	10.5	73.3	0.70	0.77	44.4
North: Blair Street North											
8	T1	795	0.0	0.764	25.0	LOS C	11.9	83.3	0.98	0.92	42.5
9	R2	149	0.0	0.690	36.3	LOS D	4.7	32.7	1.00	0.86	28.3
Approach		944	0.0	0.764	26.8	LOS C	11.9	83.3	0.98	0.91	40.6
West: Stirling Street											
10	L2	107	0.0	0.578	34.7	LOS C	3.3	23.0	1.00	0.80	29.6
12	R2	321	0.0	0.741	35.8	LOS D	5.1	35.9	1.00	0.89	28.7
Approach		428	0.0	0.741	35.5	LOS D	5.1	35.9	1.00	0.87	28.9
All Vehicles		2701	0.0	0.764	23.0	LOS C	11.9	83.3	0.85	0.84	40.5

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Arthur Street/Stirling Street/Spencer Street Weekday

New Site
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Practical Cycle Time)Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Spencer Street											
1	L2	131	0.0	0.293	23.0	LOS C	2.7	19.0	0.86	0.76	42.7
2	T1	76	0.0	0.799	25.4	LOS C	7.5	52.2	1.00	0.99	40.5
3	R2	194	0.0	0.799	30.9	LOS C	7.5	52.2	1.00	0.99	39.6
Approach		400	0.0	0.799	27.3	LOS C	7.5	52.2	0.95	0.91	40.7
East: Stirling Street East											
4	L2	421	0.0	0.810	28.7	LOS C	11.4	79.5	0.99	0.96	40.0
5	T1	197	0.0	0.666	17.5	LOS B	7.4	51.5	0.92	0.84	45.3
6	R2	123	0.0	0.666	23.0	LOS C	7.4	51.5	0.92	0.84	44.2
Approach		741	0.0	0.810	24.8	LOS C	11.4	79.5	0.96	0.91	42.0
North: Arthur Street											
7	L2	99	0.0	0.222	22.6	LOS C	2.0	14.1	0.84	0.75	42.9
8	T1	84	0.0	0.401	18.2	LOS B	3.1	22.0	0.88	0.74	44.9
9	R2	60	0.0	0.401	23.7	LOS C	3.1	22.0	0.88	0.74	43.8
Approach		243	0.0	0.401	21.4	LOS C	3.1	22.0	0.87	0.75	43.8
West: Stirling Street West											
10	L2	63	0.0	0.224	12.6	LOS B	3.0	21.0	0.58	0.55	51.3
11	T1	161	0.0	0.224	7.1	LOS A	3.0	21.0	0.58	0.55	52.5
12	R2	233	0.0	0.600	17.0	LOS B	3.5	24.3	0.96	0.81	45.7
Approach		457	0.0	0.600	12.9	LOS B	3.5	24.3	0.77	0.68	48.7
All Vehicles		1841	0.0	0.810	21.9	LOS C	11.4	79.5	0.90	0.83	43.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Prinsep Street/Haley Street/Carmody Place - weekday

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Prinsep Street											
1a	L1	72	0.0	0.342	5.3	LOS A	1.9	13.0	0.54	0.72	42.9
3	R2	267	0.0	0.342	11.0	LOS B	1.9	13.0	0.54	0.72	35.4
Approach		339	0.0	0.342	9.8	LOS A	1.9	13.0	0.54	0.72	37.0
East: Haley Street											
4	L2	293	0.0	0.212	4.6	LOS A	1.4	9.5	0.23	0.49	41.7
6a	R1	165	0.0	0.246	8.0	LOS A	1.7	11.8	0.22	0.61	39.3
6u	U	232	0.0	0.246	11.1	LOS B	1.7	11.8	0.22	0.61	31.9
Approach		689	0.0	0.246	7.6	LOS A	1.7	11.8	0.22	0.56	37.5
NorthWest: Carmody Place											
27a	L1	115	0.0	0.189	6.8	LOS A	1.1	7.6	0.61	0.69	35.9
29a	R1	56	0.0	0.189	10.4	LOS B	1.1	7.6	0.61	0.69	42.2
Approach		171	0.0	0.189	8.0	LOS A	1.1	7.6	0.61	0.69	38.0
All Vehicles		1199	0.0	0.342	8.3	LOS A	1.9	13.0	0.37	0.63	37.4

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Prinsep Street/Haley Street/Carmody Place With Bicentennial

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Prinsep Street											
1a	L1	72	0.0	0.422	7.6	LOS A	2.7	18.7	0.73	0.87	40.1
3	R2	267	0.0	0.422	13.4	LOS B	2.7	18.7	0.73	0.87	33.0
Approach		339	0.0	0.422	12.2	LOS B	2.7	18.7	0.73	0.87	34.5
East: Haley Street											
4	L2	323	0.0	0.250	4.7	LOS A	1.7	11.6	0.24	0.49	41.6
6a	R1	440	0.0	0.410	8.0	LOS A	3.4	23.8	0.26	0.59	39.7
6u	U	232	0.0	0.410	11.1	LOS B	3.4	23.8	0.26	0.59	32.1
Approach		995	0.0	0.410	7.6	LOS A	3.4	23.8	0.26	0.56	38.4
NorthWest: Carmody Place											
27a	L1	115	0.0	0.192	6.8	LOS A	1.1	7.9	0.63	0.70	35.8
29a	R1	56	0.0	0.192	10.4	LOS B	1.1	7.9	0.63	0.70	42.1
Approach		171	0.0	0.192	8.0	LOS A	1.1	7.9	0.63	0.70	37.9
All Vehicles		1504	0.0	0.422	8.7	LOS A	3.4	23.8	0.40	0.64	37.3

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Blair Street/Cornwall Street weekday

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Blair Street South											
1b	L3	144	0.0	0.348	6.5	LOS A	0.0	0.0	0.00	0.15	57.4
2	T1	1184	0.0	0.348	0.0	LOS A	0.0	0.0	0.00	0.06	59.3
Approach		1328	0.0	0.348	0.7	NA	0.0	0.0	0.00	0.07	59.1
North: Blair Street North											
8	T1	1115	0.0	0.286	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1115	0.0	0.286	0.0	NA	0.0	0.0	0.00	0.00	59.9
SouthWest: Cornwall Street											
30a	L1	144	0.0	0.186	7.5	LOS A	0.7	4.8	0.52	0.75	52.0
Approach		144	0.0	0.186	7.5	LOS A	0.7	4.8	0.52	0.75	52.0
All Vehicles		2587	0.0	0.348	0.8	NA	0.7	4.8	0.03	0.08	59.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Stirling Street Eastbound Access weekday

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Stirling Street East											
5	T1	721	0.0	0.511	3.6	LOS A	4.8	33.4	0.26	0.45	32.4
6	R2	40	0.0	0.511	6.5	LOS A	4.8	33.4	0.26	0.45	28.3
Approach		761	0.0	0.511	3.7	LOS A	4.8	33.4	0.26	0.45	32.2
North: Access to Centre											
7	L2	43	0.0	0.091	3.9	LOS A	0.5	3.3	0.54	0.66	23.0
9	R2	39	0.0	0.091	6.9	LOS A	0.5	3.3	0.54	0.66	22.4
Approach		82	0.0	0.091	5.3	LOS A	0.5	3.3	0.54	0.66	22.7
West: Stirling Street West											
10	L2	45	0.0	0.332	3.3	LOS A	2.2	15.5	0.19	0.45	29.7
11	T1	437	0.0	0.332	3.5	LOS A	2.2	15.5	0.19	0.45	33.2
Approach		482	0.0	0.332	3.5	LOS A	2.2	15.5	0.19	0.45	33.0
All Vehicles		1325	0.0	0.511	3.7	LOS A	4.8	33.4	0.25	0.46	31.9

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: Stirling Street Westbound Access Weekday

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Access to Car Park											
1	L2	660	0.0	0.583	5.9	LOS A	5.2	36.4	0.62	0.87	16.3
Approach		660	0.0	0.583	5.9	LOS A	5.2	36.4	0.62	0.87	16.3
East: Stirling Street West											
4	L2	624	0.0	0.536	2.7	LOS A	0.0	0.0	0.00	0.33	30.3
5	T1	391	0.0	0.536	0.0	LOS A	0.0	0.0	0.00	0.33	39.6
Approach		1015	0.0	0.536	1.7	NA	0.0	0.0	0.00	0.33	33.7
West: Stirling Street East											
11	T1	453	0.0	0.232	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		453	0.0	0.232	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		2127	0.0	0.583	2.6	NA	5.2	36.4	0.19	0.43	27.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: Haley Street Westbound Access Weekday

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	ODMov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV				Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Access to Car Park											
1	L2	459	0.0	0.413	4.8	LOS A	2.5	17.5	0.54	0.75	18.2
Approach		459	0.0	0.413	4.8	LOS A	2.5	17.5	0.54	0.75	18.2
East: Haley Street West											
4	L2	475	0.0	0.465	2.7	LOS A	0.0	0.0	0.00	0.29	31.4
5	T1	408	0.0	0.465	0.0	LOS A	0.0	0.0	0.00	0.29	41.2
Approach		883	0.0	0.465	1.4	NA	0.0	0.0	0.00	0.29	35.8
West: Haley Street East											
11	T1	615	0.0	0.315	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		615	0.0	0.315	0.0	NA	0.0	0.0	0.00	0.00	59.9
All Vehicles		1957	0.0	0.465	1.8	NA	2.5	17.5	0.13	0.31	33.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: Haley Street Westbound Access With Bicentennial

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Access to Car Park											
1	L2	459	0.0	0.615	9.6	LOS A	4.3	29.9	0.76	1.07	11.9
Approach		459	0.0	0.615	9.6	LOS A	4.3	29.9	0.76	1.07	11.9
East: Haley Street West											
4	L2	475	0.0	0.622	2.7	LOS A	0.0	0.0	0.00	0.22	33.7
5	T1	714	0.0	0.622	0.0	LOS A	0.0	0.0	0.00	0.22	44.6
Approach		1188	0.0	0.622	1.1	NA	0.0	0.0	0.00	0.22	40.0
West: Haley Street East											
11	T1	721	0.0	0.370	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		721	0.0	0.370	0.0	NA	0.0	0.0	0.00	0.00	59.9
All Vehicles		2368	0.0	0.622	2.4	NA	4.3	29.9	0.15	0.32	30.1

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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