CITY OF STIRLING

Local Planning Strategy

PART 1

Endorsed by the
Western Australian Planning Commission

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Disclaimer

City of **Stirling**
City of Choice

Local Planning
Strategy
October 2019
Part 1

Contents

1. Introduction

The Local Planning Strategy sets the vision and long-term planning directions for the City of Stirling over the next decade and beyond.

All land-use planning decisions within the City of Stirling will be made to further the objectives of this Local Planning Strategy.
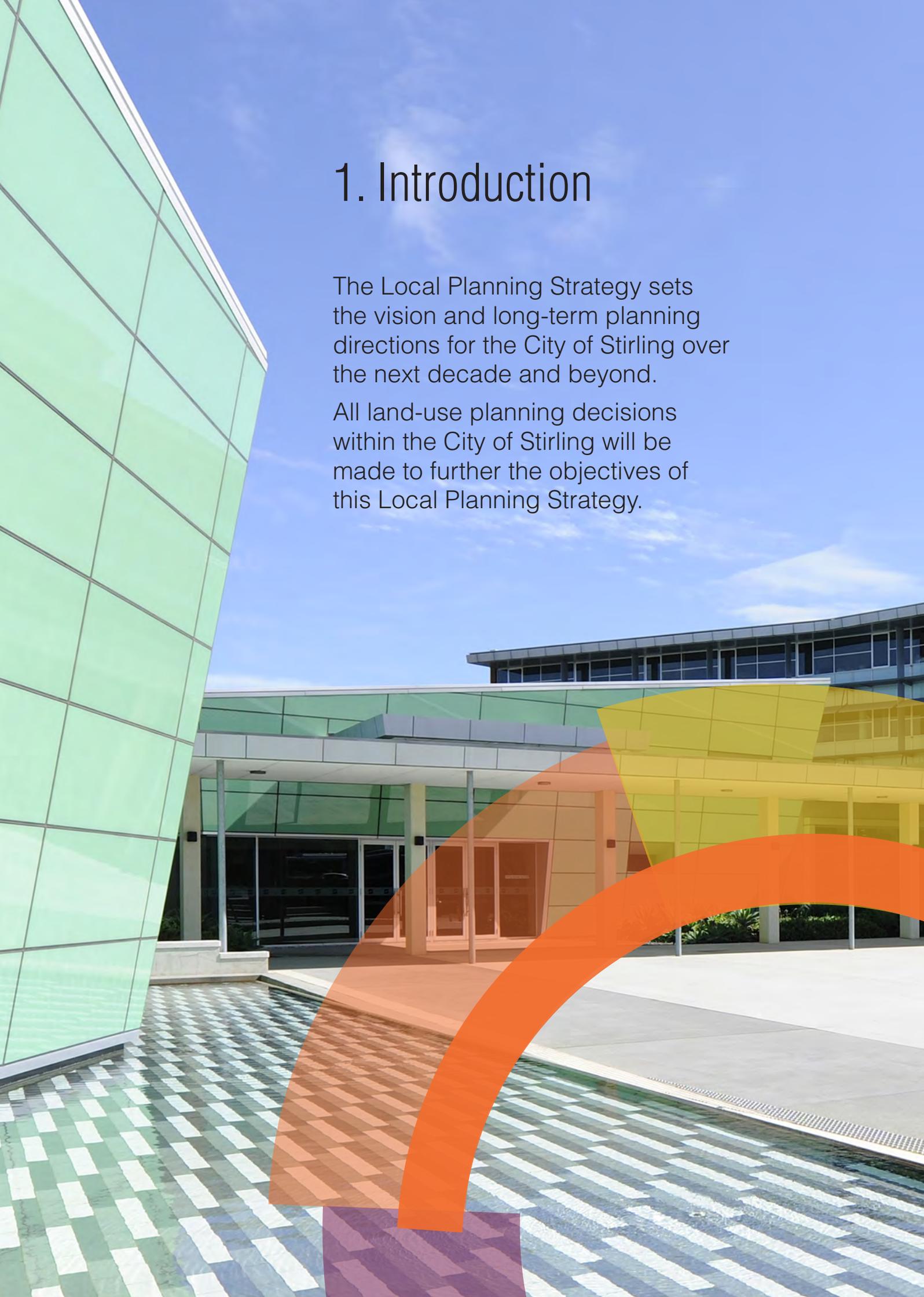
2. The Strategy

This Local Planning Strategy has been prepared in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Western Australian Planning Commission's *Local Planning Manual (March 2010).*

The Strategy provides the strategic land use planning direction for the City of Stirling. The Strategy provides guidance for:

- Decisions and amendments relating to the City's Local Planning Scheme;

- Undertaking a future Local Planning Scheme review;

- Strategic Planning Projects; and

- Infrastructure investment priorities.

This Strategy is presented in two parts:

Part 1 provides the Vision, the Strategic Planning Objectives, and the Strategic Focus Areas. It identifies Strategic Focus Areas with key issues, responses and actions. The Local Planning Strategy Map is shown in Appendix 1.

Part 2 of the Strategy contains the background analysis, which is presented under nine Strategic Focus Areas. Each Strategic Focus Area is discussed within the individual chapters of Part 2 of the Strategy.

Part 1 of the Strategy needs to be read in conjunction with the relevant sections of Part 2. The actions identified within this strategy are subject to being supported through the City's Corporate Business Planning and Budgeting processes.

3. Vision

The Vision for the Local Planning Strategy is:

Focus investment, jobs and growth on corridors and centres around transit; improve the quality of suburbs and centres and the overall liveability of the City.

The City is committed to delivering high quality urban places and spaces, where people will choose to live, work, visit and invest. The City of Stirling will have a range of safe and thriving neighbourhoods with a range of housing, employment, and recreational opportunities. The City will ensure its natural environment is protected and enhanced.

City's Strategic Community Plan		Local Planning Strategy
Sustainable Environment and Engaged Communities	⟷	Prioritise Growth and Investment in Activity Centres and Corridors
Prosperous City	⟷	Keep the jobs we have now and grow them
Accessible and Connected City	⟷	Transport and land use will be coordinated and integrated
Liveable City and Thriving Neighbourhoods	⟷	Improving the quality and liveability of the City

3.1 Local Planning Strategy Objectives

The Local Planning Strategy has four Strategic Planning Objectives to support the Vision. The objectives of the Local Planning Strategy link with the themes of the City's *Strategic Community Plan 2016 – 2026:*

The City of Stirling will value, protect and improve the environment by reducing the impact of our activities through consolidating growth in Activity Centres and Corridors and protecting natural habitats. These Activity Centres and Corridors will be places where people from diverse backgrounds will feel included and respected, and be able to participate in community life. The City's tree canopy will be protected and enhanced.

The City of Stirling will be recognised as a great place to work, invest and do business. It will offer jobs locally and ensure that land use planning and built form protects and creates jobs. The City of Stirling will make the most of its great tourism potential.

Getting around the City of Stirling will be convenient, safe and affordable whether by foot, cycle, public transport or car. People should be easily able to meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home.

We will have vibrant Activity Centres and Corridors complemented by attractive Local Neighbourhoods. There will be a range of housing options to suit every lifestyle and stage of life. The City's neighbourhoods will have a strong sense of place and identity. Community facilities will ideally be located within Activity Centres and Corridors.

4. Strategic Planning Objectives

4.1 Objective 1: Prioritise Growth and Investment in Activity Centres and Corridors

The City of Stirling will value, protect and improve the environment by reducing the impact of our activities through consolidating growth in Activity Centres and Corridors and protecting natural habitats. These Activity Centres and Corridors will be places where people from diverse backgrounds will feel included and respected, and be able to participate in community life. The City's tree canopy will be protected and enhanced.

The City's Activity Centres and Corridors need to be transformed over time from car dominated environments to places that are attractive and easy for people to walk around, cycle and catch public transport. The City's Activity Centres and Corridors also need to be the focus for a substantial increase in housing, employment opportunities and community facilities and services.

4.1.1 Activity Centres

The City of Stirling has 79 Activity Centres (Table 14, Part 2), ranging in size from the Stirling City Centre, which is designated as a Strategic Regional Centre to Local Centres of which there are 48 and many only comprise of one shop.

The great diversity of Activity Centres within the City of Stirling provides significant opportunity to accommodate the City's growth while providing a range of housing types, employment, business, recreation, public spaces and prioritise alternative transport over the private motor vehicle.

Centres defined under the State Governments Planning framework, particularly *State Planning Policy 4.2 Activity Centres for Perth and Peel* are required to prepare Activity Centre Plans as part of any substantial increase in retail floor space. Activity

Centre Plans need to be prepared for the City's District, Secondary and Strategic Regional Centres Activity Centre. Plans need to identify how residential housing will be incorporated, including how non-retail businesses will be developed in Centres. Where a District, Neighbourhood or Local Centre is located along an Activity Corridor and a substantial increase in retail floor space is not contemplated, the Centre Plan may be developed as part of an Activity Corridor Study.

State Planning Policy 4.2 Activity Centres for Perth and Peel does not require Local and Neighbourhood Centres to produce Activity Centre Plans. However, where necessary the City may require the preparation of a similar but less detailed Local Development Plan before any substantial development in or adjoining a Local or Neighbourhood Centre is commenced. The City's place based Better Suburbs Program, along with other place based planning projects, will be the main delivery vehicle for the City in undertaking these Local Development Plans.

The Local Planning Strategy focuses on planning for and encouraging appropriate investment that supports the (re)development of well-designed Centres, focussed around a 'main street', with fine-grained urban form and streets that are people-friendly. The 'main street' design approach ensures that buildings front streets, public plazas and/or parks and not car parking. 'Main street' designed Centres will create a strong and identifiable sense of place.

Through this Strategy, the City has identified a number of centres in which retail floor space increases are supported only if the centres improve their design, i.e create a 'main street' and improve amenity for pedestrians.

4.1.2 Activity Corridors

The City of Stirling has 36 Activity Corridors (Table 17, Part 2) which are divided into three classes:

- Class 1 – Major regional public transport routes, above 30,000 vehicles per day;
- Class 2 – Major public transport routes, between 15,000 and 30,000 vehicles per day; and
- Class 3 – Generally have public transport routes and less than 15,000 vehicles.

Activity Corridors provide a vital connection between Activity Centres along key public transport routes within the City. Activity Corridors have a key role to play in the growth of the City and will:

- Be a focus for population and employment growth;
- Provide increased and diversified employment;
- Provide enhanced public transport and other alternative transport infrastructure;
- Create or build on an existing identity;
- Advance economic and social development and exchange; and
- Incorporate Centre Plans or Local Development Plans for Centres where appropriate.

4.2   Objective 2 : Keep the Jobs We Have Now and Grow Them

The City of Stirling will be recognised as a great place to work, invest and do business. It will offer jobs locally and ensure that land use planning and built form protects and creates jobs. The City of Stirling will make the most of its great tourism potential.

The City of Stirling is seeking to attract national and international investment and employment by creating places of high amenity with fit for purpose infrastructure.

4.2.1   State Government Direction

Perth and Peel @3.5million and *Central Sub-Regional Planning Framework* acknowledge that the Central sub-region enjoys a high level of employment self-sufficiency. The productivity of Perth is affected by many factors including efficiency of infrastructure, connectivity between businesses, people, ideas, goods and services and liveability.

4.2.2   Activity Centres

The Local Planning Strategy recognises the City's ambition to transform the Stirling City Centre and the Herdsman Glendalough Area into the second CBD for the Perth Metropolitan Region. The City has a planning framework in place that aims to transform the Stirling City Centre and Herdsman Glendalough Area into Perth's second CBD that is accessible, connected to the metropolitan public transport network with light rail, and delivers a substantial increase in employment and housing. The Local Planning Strategy encourages accumluation of high value export oriented employment in the area.

The Mirrabooka Town Centre will also transform into a major regional employment hub with the introduction of a more diverse range of employment activities, including health and office uses accessible by high frequency public transport to a regional catchment.

Karrinyup Regional Centre will also transform from a predominantly retail centre to a centre with greater residential intensity and a more diverse range of employment activities. However, due to a lack of regional alternative transport networks, it will be limited to providing local and district employment opportunities outside of retail uses.

The Local Planning Strategy also recognises the City's 76 other Activity Centres (Table 14, Part 2) as key areas of employment that will continue to diversify from single use retail centres into mixed use centres with a variety of employment types focussed on local and district level employment.

4.2.3   Activity Corridors

The City's 36 Activity Corridors (Table 17, Part 2) are spread evenly throughout the City linking Activity Centres along key public transport routes.

The City's class one and class two Activity Corridors will deliver the majority of employment around mixed use transit nodes. Parts of these Activity Corridors run through the City's major Activity Centres which are where the greatest intensity of employment will be found.

The City's class three Corridors are mainly focussed on providing local employment opportunities throughout the City of Stirling.

4.2.4   Specialised Centres

The City of Stirling has one s pecialised centre being the Edith Cowan University campus in Mt Lawley. This centre together with the adjacent Mt Lawley Senior high School is a focus for education within the City of Stirling. It will continue to develop and grow into an internationally recognised education hub with a significant amount of land for future growth, further education employment opportunities as well as student housing.

4.2.5   Tourism

Scarborough Beach is being transformed into Western Australia's largest beachside tourism precinct. Significant investment in public infrastructure has been undertaken, leading to urban renewal projects by the private sector including new tourism accommodation and residential apartments being developed. This ensures that Scarborough is Western Australia's most recognisable beach destination. The Local Planning Strategy seeks to ensure that Scarborough reaches this potential by planning for light rail to connect to the Central Business District ensuring that visitors have comfortable, convenient access to Perth's premier beachside precinct.

Stirling City Centre will become a major hub for business and shopping tourism services in addition to becoming Perth's Second CBD. Stirling City Centre is ideally located between the Perth Central Business District and Scarborough Beach and along the future light rail line.

The City's other major tourist drawcards are Beaufort Street, Mount Lawley and the bay of beaches between Trigg and Watermans Bay.

Overall the Local Planning Strategy aims to build on the City's significant tourism opportunities and encourage more day trippers and overnight stays, by providing and retaining a range of short stay accommodation within the City.

4.3 Objective 3 : Transport and Land Use Will Be Coordinated and Integrated

Getting around the City of Stirling will be convenient, safe and affordable whether by foot, cycle, public transport or car. People should be easily able to meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home.

4.3.1 Where Have We Been

The City is characterised by a range of different types of development that have occurred over the last 130 years. Large parts of the City were developed post 1940's during a period when the motor car was dominant and living and working areas were separated. The City has some areas that were developed in the era of the tramways where people living in mixed use areas was more common. In more recent times the City has added an additional 47,000 residents over the last ten years mainly in the back gardens of the R40 zoned areas.

Fortunately the majority of the City's post 1940's suburbs were constructed around a legible grid pattern of roads and only a few areas were developed with a non-legible cul-de-sac pattern of roads. Within the City of Stirling the road network has been built to its reserve capacity with no ability to provide any major increase in vehicle capacity. There has been a continuing decline in the use of cars per person within the City of Stirling and all of the City's major arterial corridors have shown little or no increase in traffic volumes over the last 10 years.

This is contrasted by a general increase in public transport use within the City of Stirling over the last decade with a number of new high frequency bus routes delivered. There are two rail lines in the City of Stirling with three rail stations serving over 225,000 people.

4.3.2 Where Are We Going

Perth and Peel @3.5million and the *Central Sub-regional Planning Framework* identify a 'connected city' model as the preferred growth scenario for the Metropolitan Perth and Peel regions. A key characteristic of this model is intensifying higher density residential development within and adjacent to Activity Centres. The State Government has allocated the City of Stirling a target of a minimum additional 60,330 dwellings in the *Central Sub-regional Planning Framework.*

The Local Planning Strategy outlines a clear position that the City of Stirling will transform into a Local Government that has a series of mixed use Activity Centres connected by Activity Corridors with new public transport links. These Activity Centres and Corridors will potentially accommodate an additional 50,000 residents over the next 10 years. Higher densities within and adjacent to Activity Centres and Corridors will transition to lower densities next to existing residential suburbs. The Local Planning Strategy aims to ensure that public transport, walking and cycling use will become the predominant form of transport within the City's Activity Centres and Corridors. Achieving this goal is contingent on State Government investment priorities for Public Transport infrastructure.

The provision of upfront alternative transport infrastructure (public transport, walking and cycling)

is critical to achieve the infill targets and to achieve an integration of land-use and transport. This includes implementing the necessary funding models to ensure the upfront provision of enabling infrastructure by all levels of Government collaborating with the private sector.

The City of Stirling will continue to work with the State Government on proposed light rail networks and advancements to existing public transport networks to achieve the infill targets.

The City will review (and develop if required) the relevant planning policy provisions to allow for reduced car parking standards in areas well serviced by public transport as well as Centres and Corridors.

Outside of Activity Corridors and Activity Centres the character of the City's low density suburbs will be maintained, which will continue to provide a diversity of housing for]the community.

4.4   Objective 4 : Improving the Quality and Liveability of the City

We will have vibrant Activity Centres and Corridors complemented by attractive Local Neighbourhoods. There will be a range of housing options to suit every lifestyle and stage of life. The City's neighbourhoods will have a strong sense of place and identity. Community facilities will ideally be located within Activity Centres and Corridors.

4.4.1   Density

The City acknowledges the importance of increasing residential density to provide for population growth. When planning for the location of additional dwellings, the City will contribute to the goal of *Perth and Peel @3.5million* by providing more housing within existing developed areas (infill development). The management of this growth needs to ensure that existing residential amenity is not adversely affected by infill development. Many of the City's localities are valued because of their built form, gardens and spaces. By allowing ad-hoc infill development, there is potential for the characteristics valued by the community to be lost. Gardens, trees and spaces of suburban areas have important environmental benefits that need protecting. The Local Planning Strategy provides for targeted increases in residential densities and seeks to maintain the character of most of the City's suburban areas.

4.4.2   Natural Resources

Growth within the City places pressure on natural resources and has environmental costs. The impacts of development need to be managed sustainably on both small and large scales. Land use planning can assist to protect, conserve, manage and enhance our water resources. As water resources are limited, it is important that development at all levels incorporate 'Water Sensitive Urban Design' principles.

4.4.3   Housing Targets

The City will deliver the planning frameworks that enable the City to meet the State Government's housing targets for the City of Stirling, with 75% of infill in and around the City's Activity Centres and Corridors and the remaining 25% of infill in the City's medium density areas.

However, this requires a significant change from the current situation where most of the dwelling growth is occurring in the back gardens of the medium density areas. To shift this dwelling growth to the City's Activity Centres and Corridors the provision of new transport infrastructure and funding to improve the quality of Centres and Corridors is required.

Planning frameworks alone will not deliver infill in Activity Centres and Corridors.

This will require Federal, State and Local Governments together with the private sector to fund and deliver transport infrastructure and amenity improvements.

4.4.4   Environmental Impacts

The major environmental impact facing the City is the significant loss of tree canopy. The City is losing tree canopy at an alarming rate and on a business as usual approach will see the City's tree canopy reduced to 6%. However, the City is preparing an urban forest strategy that is aiming to arrest this decline and target a tree canopy cover of 18%. The loss of tree canopy has a number of significant impacts, including:

- Increase in the urban heat island effect resulting in increased energy usage for cooling; and
- Loss of biodiversity, including a number of bird species.

The loss of tree canopy is mainly in the City's medium residential density areas due to infill development in the back gardens. Even by increasing the tree canopy coverage on publically owned land i.e. streets, parks etc.) the overall tree canopy coverage will decline.

The Local Planning Strategy identifies the need for a review of the medium density residential design code to improve streetscape and design outcomes and to see trees incorporated into development in the City's medium density areas. A review of the Residential Design Codes is required to ensure a greater tree canopy in lower density areas. The protection of existing trees on all private property is also an important policy position to help reach the 18% tree canopy coverage.

There are a number of other environmental issues facing the City, including:

- Loss of biodiversity due to more development;
- Drying climate, resulting in loss of wetlands and a reduction in water allocation; and
- Climate change resulting in coastal erosion.

The City is aiming to ensure that its water usage targets are met through a reduction in water use on the City's parks and reserves through the use of hydro zoning. For coastal erosion the City is undertaking Coastal Hazard Risk Management and Adaptation Planning to address coastal erosion and protect the City's vulnerable assets including public roads and public buildings.

4.4.5   Dwellings and Demographics

Current Trends

The City has seen considerable population growth over the last 10 years (47,000 additional people), and this has resulted in changing demographics:

- 4.6% increase in family households;
- 1.2% decrease in single households;
- 25% increase in people aged 25 – 34;
- 0.4% increase in people aged over 65;
- 23.5% increase in people born overseas.

All of the major demographic changes predicted by the City's *Local Housing Strategy (2009),* which at the time reflected Australia wide trends, have not occurred. It is suggested that the recent economic boom saw a significant increase in the amount of young people moving to the City which kept the proportion of people over 65 relatively stable. In addition the significant increase in house prices may have resulted in an increase in family households (against trends) and decrease in single households.

These latest changes are against the long term trend of the last 50 years. This either reflects a significant change in demographics or that the economic boom has been an anomaly in the long term trend. The City will continue to monitor demographic changes over the next 10 years, and act accordingly.

In terms of housing diversity, the City has previously (mid 1990's) rezoned large areas of the City for grouped dwelling housing to meet the anticipated growth in smaller household sizes, single households and an ageing population.

However, the opposite has occurred with family households having increased and the proportion of aged people remaining stable, with single households having declined.

Over the last 10 years there has been a trend of less single houses and more apartments, town houses and semi-detached dwellings. Tables 1 and 2 indicate that the City of Stirling has an oversupply of areas zoned R30 and R40 and is at risk of not having enough areas coded R20 to cater for family households.

Future Trends

Future population trends are difficult to predict due to a number of external factors, such as economic and political (e.g. commodity prices and immigration policies), but certain growth can be predicted if assumptions about future levels of fertility, mortality, internal migration and overseas migration are used based on historical data.

The Australian Bureau of Statistics produces three sets of population forecasts; high (A), medium (B) and low (C). Series B largely reflects current trends in fertility, life expectancy at birth and immigration, whereas series A and series C are based on high and low assumptions for each of these variables.

Under series B, Perth is projected to experience the highest percentage growth (187%) of Australia's capital cities, increasing from 1.9 million people (mid 2012) to 5.5 million in 2061. The population of Perth is projected to overtake that of Brisbane in around 15 years' time, when they both reach 3 million people in 2028. By 2061 it is expected that 85% of Western Australians will be living in Perth (78% in mid-2012).

The median age of the population of Western Australia is projected to increase from 36 years (mid 2012) to between 40.1 years and 43.5 years in 2061. Births will continue to exceed the number of deaths during the projection period, resulting in a natural increase. This natural increase will slowly rise before starting to decline.

Required Dwelling Mix

The Local Planning Strategy aims to maintain the existing low density areas (R25 and below) to provide the required housing and open space for families. It also aims to limit the amount of R30 and R40 areas whilst endeavouring to improve the design of dwellings in these areas and increase tree canopy coverage.

The provision of new apartments and town houses should primarily occur (75% of infill) in the City's Activity Centres and Corridors which will provide a high level of accessibility to services and facilities.

4.4.6 Housing Design

The City's housing stock has seen considerable change over the last 10 to 15 years. Some of this change is a result of changing development standards (Residential Design Codes) and others are a result of changes in the higher socio economic areas and decreasing affordability for the City's bottom 40% of income earners.

This has seen the following occur:

- Lower density areas (R25 and below) have seen a general increase in dwelling size and an increase in building coverage and a reduction in open space and tree coverage;

- Medium density areas (R30 to R60) have seen a significant increase in hard paved areas, a decrease in soft landscaped area as well as an increase in building coverage. This has led to a reduction in open space which has resulted in a significant loss of tree coverage;

- High density areas (R80 and above) have also seen an increase in hard paved areas, a decrease in soft landscaped areas as well as increases in building coverage which has resulted in a loss of tree coverage.

A major cause of these changes has been the reduction by the State Government of the minimum lot area, the amount of open space required and the required setbacks to boundaries.

Other notable housing design issues are:

- Car parking facing the street on the ground level (and not dwellings);

- Poor communal open space in multiple dwelling developments; and

- Increase in the use of screening from balconies and habitable windows to comply with overlooking requirements, resulting in no outlook from some dwellings.

The Local Planning Strategy aims to facilitate a significant change in the design of all housing to increase the quality and quantity of open space, increase tree coverage on private property and improve the outlook from dwellings.

Table 1 – % of Family Households, % of R20 areas and % of single house

	% of Households	% of R20 areas in the City of Stirling	% of Single Houses in the City of Stirling
Family households	65%	42%	59.3%

Table 2 – % of Single Households, % of R30 and R40 areas and % of other dwellings

	% of Households	% of R30 and R40 areas in the City of Stirling	% of Semi detached, town houses and apartments in the City of Stirling
Single households	30%	48%	40.5%

4.4.7 Sense of Place

A sense of place is an important aspect of creating communities. Creating a sense of place is a combination of many factors that build a community. The Local Planning Strategy can help facilitate the creation of a sense of place, but it will require the community working collaboratively with the City to develop its own unique sense of place.

The Local Planning Strategy through future detailed planning will aim to:

- Require housing designs that relate to the character of each community;

- Require the scale and design of Centres, Corridors and other meeting places that are compatible with the character of each area;

- Require public art and street furniture to be incorporated into development proposals to build a sense of place; and

- Require landscaping and street trees that are appropriate to each locality.

4.4.8 Recreation and Public Open Space

The City of Stirling has a diverse range of open space and recreational facilities. Some parts of the City have abundant facilities and open space whilst others have levels which are below the benchmark standards. The City will continue to experience significant population growth and will need additional facilities and open space to meet growing demand in certain areas. The City will work to establish funding models to support public open space provision and improvement for urban infill to contribute towards the increase in public open space and recreation facilities.

The City's existing *Public Open Space Strategy* provides a classification of the types of public open spaces that are required for a changing population. The aims of this strategy are to:

- Develop a public open space plan based on open space per capita, rather than a percentage of land;

- Develop community needs assessments for projects that determine the appropriate community facilities required;

- Develop a funding model to finance the acquisition of new open space and the construction of new recreation facilities for the growing population; and

- Coordinate the location of new open space and recreation facilities to match the City's growth area along Corridors and around Centres.

4.4.9 Heritage and Conservation

The City contains important places of both Indigenous and European heritage, many of which have been identified and protected under Commonwealth, State and Local heritage legislation. The City will ensure that the significance of these places are considered and preserved. Heritage values will be considered as part of any redevelopment within the City's 'Heritage Protection Areas', and will support the continued identification and protection of heritage places into the future.

Development will not occur in important and sensitive biodiversity areas. When planning for growth, these areas will be identified and protected.

5. Strategic Focus Areas

Perth and Peel @ 3.5 million

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City of Stirling Strategic Community Plan

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City of Stirling Local Planning Strategy

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Strategic Planning Objectives

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Prioritise Growth and investment in Activity centres and corridors	Keep the jobs we have now and grow them	Transport and land use will be coordinated and integrated	Improving the quality and liveability of the city

↓ ↓ Stategic Focus Areas ↓ ↓

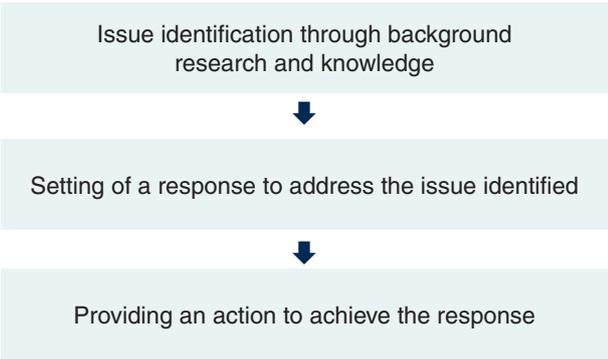| Prioritise Growth and investment in Activity centres and corridors	Keep the jobs we have now and grow them	Transport and land use will be coordinated and integrated	Improving the quality and liveability of the city
Physical Features, Climate, Natural Heritage, Natural Resource Management.	Economy and Employment.	Population and Housing	Physical Features, Climate, Natural Heritage, Natural Resource Management.
Population and Housing	Retail and Commercial	Economy and Employment.	Population and Housing
Economy and Employment.	Tourism and Visitors	Retail and Commercial	Economy and Employment.
Retail and Commercial	Infrastructure and Utilities	Tourism and Visitors	Retail and Commercial
Tourism and Visitors		Recreation and Community Facilities	Tourism and Visitors
Recreation and Community Facilities		Urban Design and Heritage	Recreation and Community Facilities
Urban Design and Heritage		Traffic and Transport	Urban Design and Heritage
Traffic and Transport		Infrastructure and Utilities	Traffic and Transport
Infrastructure and Utilities			

In order to provide guidance on delivering the Vision through the Strategic Planning themes, the Strategy identifies nine Strategic Focus Areas:

1. Physical Features, Climate, Natural Heritage, Natural Resource Management	2. Economy and Employment	3. Population and Housing
4. Retail and Commercial	5. Tourism and Visitors	6. Recreation and Community Facilities
7. Urban Design and Heritage	8. Traffic and Transport	9. Infrastructure and Utilities

Each of these nine strategic focus areas have been derived from the Western Australian Planning Commission's *Local Planning Manual,* and have been utilised in Part 2 of the Local Planning Strategy to provide background context and to identify key issues that the City is needing to address.

This issue identification approach allows the City to focus on resolving issues across a wide range of areas through the setting of key responses, and providing dedicated achievable actions to ultimately deliver the Strategic Vision and the four Strategic Planning Themes.

Issue identification through background research and knowledge

⬇

Setting of a response to address the issue identified

⬇

Providing an action to achieve the response

The Strategic Focus Areas are outlined below with a description of the key issues, responses and actions. Timeframes have been allocated under the following headings:

- Ongoing   Projects underway or activities that are normally undertaken routinely;
- Short   0 – 5 year time frame;
- Medium   5 – 10 year time frame; and
- Long   10 + year time frame.

5.1   Physical Features, Climate, Natural Heritage, Natural Resource Management

Key Issue 1.1
Population growth and increasing density may impact on natural resources, flora, fauna, biodiversity and cultural heritage.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Continue addressing resource and natural/ cultural heritage conservation, and manage impacts of population growth on the environment.	Investigate including a 'Conservation Zone' into the Local Planning Scheme.	Short	CoS (City Planning)
	Ensure water management plans are undertaken when required and implemented through water sensitive urban design.	Ongoing	CoS (City Planning)
	Ensure flora and fauna surveys are undertaken when required.	Ongoing	CoS (City Planning)
	Ensure acid-sulphate soil management plans are undertaken when required and implemented.	Ongoing	CoS (City Planning)
	Ensure Indigenous heritage plans are undertaken when required and the findings implemented.	Ongoing	CoS (City Planning)
Improve the City's tree canopy within the City's built environment.	Develop and implement an Urban Forest Strategy (including a planning framework) which addresses both public and private tree preservation.	Short	CoS (City Planning)
	Continue to work with the Department of Planning / WAPC on the review and development of the medium density residential design codes.	Short	CoS (City Planning)
Explore opportunities to raise emphasis on sustainability in development.	Incorporate sustainability provisions into the Local Planning Scheme and as part of major projects. (e.g. Activity Centres, Corridors and Better Suburbs projects)	Ongoing	CoS (City Planning)

Key Issue 1.2
Bushfire is a Risk.

Response	Actions	Delivery Timeframe	Lead delivery Department
Comply with State Planning Bushfire Policy.	Implement State Planning Policy 3.7 Bushfire Policy and associated guidelines.	Ongoing	CoS (City Planning)

Key Issue 1.3
The City needs to adapt to challenges presented by Climate Change.

Response	Actions	Delivery Timeframe	Lead delivery Department
Ensure the findings of the City's Climate Change Adaption Plan are integrated into the Local Planning Scheme.	Implement the findings of the Climate Change Adaption Plan and incorporate them into the Local Planning Scheme.	Medium	CoS (City Planning)
Comply with the City's Coastal Foreshore Management Planning and the State Coastal Planning Policy.	Implement the City's Coastal Foreshore Management Planning and the State Coastal Planning Policy.	Ongoing	CoS (Recreation and Parks)

5.2   Population and Housing

Key Issue 2.1
Residential growth is happening in back-gardens and not in Activity Centres or along Activity Corridors.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Focus residential growth around Activity Centres and Corridors.	Continue to work with the Department of Planning / WAPC to ensure most growth occurs in Activity Centres and Corridors and not in back gardens.	Ongoing	CoS (City Planning)
	Regularly monitor and report on dwelling growth and location in the City.	Ongoing	CoS (City Planning)
	Support higher density residential development in Activity Centres and along identified Corridors as part of detailed planning or place based planning studies.	Ongoing	CoS (City Planning)
	Investigate detailed and Local Planning Scheme provisions to require a mandatory residential component in Activity Centres and Corridors.	Ongoing	CoS (City Planning)
Protect areas coded 'R20' and below for larger households and green-space.	In areas coded 'R20' and below only allow Local Planning Scheme zoning changes to areas around Activity Centres and along Corridors as part of detailed planning (such as an Activity Centre plan) or the 'Better Suburbs' program.	Short – Medium	CoS (City Planning)

Key Issue 2.2
Housing demand is shifting away from single detached dwellings due to an ageing population and a decrease in average household size. This is not supported by the existing housing stock within the City.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure land is suitably zoned to provide a range of residential accommodation.	Provide for multiple dwellings only in Activity Centres and identified Corridors as part of detailed planning (such as an Activity Centre plan) or the 'Better Suburbs' program.	Ongoing	CoS (City Planning)
	Support medium and high density residential near Corridors, and low density residential away from Corridors, as part of detailed planning (such as an Activity Centre plan) or the 'Better Suburbs' program.	Ongoing	CoS (City Planning)
	Support the Department of Housing's provision of affordable dwellings in appropriate locations, including investigating the possible rezoning of significant sized land parcel as part of place based planning studies.	Ongoing	CoS (City Planning)
Provide for smaller, affordable and adaptable dwellings near Activity Centres and Corridors.	Provide appropriate zonings to promote developments that include diverse, adaptable and affordable housing near Activity Centres and along identified Corridors as part of place based planning studies.	Ongoing	CoS (City Planning)

5.3 Economy and Employment

Key Issue 3.1			
No formal identification of employment areas and types of employment in those areas.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify employment areas and the types of employment within those areas.	Ensure a hierarchy of employment areas and types of employment are identified through the City's Economic Development Plan.	Medium	CoS (City Planning)
	Ensure employment areas and types of employment are identified through the City's Activity Centre and Corridor Plans.	Ongoing	CoS (City Planning)
Develop the Stirling City Centre/Herdsman Glendalough Area as a future primary employment hub within the City of Stirling.	Adopt and implement the Stirling City Centre and Herdsman-Glendalough Structure Plans.	Medium	CoS (City Planning)

Key Issue 3.2			
Our Activity Centres and Corridors do not have a diverse range of employment.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Encourage integrated economic development based on the City's *Economic Development Strategy*.	Ensure land-use and Local Planning Scheme zoning support the City's *Economic Development Strategy*.	Medium	CoS (City Planning)
	Advocate and attract a diversity of employment opportunities within Activity Centres and Corridors.	Long	CoS (City Planning)
Ensure investment in infrastructure is prioritised towards supporting Activity Centres and Corridors.	Align infrastructure investment decisions to support development in Activity Centres and along Corridors.	Ongoing	CoS (Engineering Design and Operations)
Ensure Local Planning Scheme provisions and planning policies allow for a diverse land uses that support a range of employment in the City's Activity Centres and Corridors.	Focus the City's employment growth from Herdsman to Scarborough along Scarborough Beach Road.	Ongoing	CoS (City Planning)
	Develop Activity Centre and Corridor Plans, and place based planning studies.	Ongoing	CoS (City Planning)

Key Issue 3.3			
The City's industrial areas are being diluted with other non-industrial uses.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Protect the industrial land supply (Balcatta, Osborne Park) from non-industrial uses where appropriate.	Do not rezone any industrial land except in accordance with an adopted structure plan, and the City's *Industrial Land In Transition Strategy*.	Ongoing	CoS (City Planning)
Enable existing bulky good uses to remain in appropriate locations.	Implement the City's *Industrial Land In Transition Strategy*.	Short	CoS (City Planning)

5.4   Retail and Commercial

Key Issue 4.1			
Many of the City's residents do not have non-car access to convenience shopping.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify existing centres and their walkable catchments within the City, and allow for the growth of existing Activity Centres and potential new Activity Centres in areas that are under-represented.	Allow for rezoning of land to Local Centre in areas where the acceptable criteria can be met.	Ongoing	CoS (City Planning)
	Allow existing Activity Centres to grow and move up the Centres hierarchy where the acceptable criteria can be met.	Ongoing	CoS (City Planning)
	Develop Activity Centre Plans for regional and district centres, along with Local Development Plans for neighbourhood centres through place based planning.	Ongoing	CoS (City Planning)

Key Issue 4.2			
Lack of diversity of non-residential uses within Activity Centres and Corridors.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Ensure the City has an up-to-date database of economic land uses within Activity Centres and Corridors.	Monitor, record and investigate State Government floor space and land use data as it becomes available.	Ongoing	CoS (City Planning)
Ensure the future viability of Activity Centres by supporting a variety of non-residential uses within them, and by restricting spot commercial rezonings which do not adjoin Activity Centres.	Only support Local Planning Scheme amendments for commercial, medical and business uses within or adjoining existing Activity Centres or as part of detailed planning (such as an Activity Centre plan) or the 'Better Suburbs' program.	Ongoing	CoS (City Planning)

Key Issue 4.3			
Big Activity Centres are growing at the expense of smaller Activity Centres.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Encourage development in local and neighbourhood centres.	Allow for Local and Neighbourhood Centres to increase floor space to encourage redevelopment.	Ongoing	CoS (City Planning)
	Undertake place based planning to plan for growth in Local and Neighbourhood Centres and co-ordinate the City's investment in infrastructure.	Short	CoS (City Planning and Infrastructure Directorate)
Ensure the State planning hierarchy of centres is maintained.	Review the Local Planning Scheme to support the Activity Centres hierarchy.	Medium	CoS (City Planning)
	Review the City's commercial zonings to differentiate between the City's Activity Centres hierarchy.	Long	CoS (City Planning)

Key Issue 4.4 **Large format retail outside of centres is growing at the expense of development within identified centres.**			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Do not support new large format retail in industrial areas and only formalise existing large format uses.	Do not rezone any further industrial land outside of adopted structure plans, except in accordance with the City's *Industrial Land In Transition Strategy*.	Ongoing	CoS (City Planning)
	Implement the City's *Industrial Land In Transition Strategy*.	Short	CoS (City Planning)

5.5   Tourism and Visitors

Key Issue 5.1 **The City has limited tourist infrastructure to support its tourism assets (e.g. beach, centres and heritage areas).**			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify and provide for short term visitor accommodation within identified tourism areas.	Review the Local Planning Scheme to ensure short-stay accommodation is permitted in appropriate locations.	Short	CoS (City Planning)
Ensure land uses (e.g. entertainment) support tourism within the City.	Review the Local Planning Scheme to ensure that zoning within identified tourist areas support land uses which will contribute to the tourism economy.	Short	CoS (City Planning)
Link Scarborough Beach and the City's other tourism attractors to the Perth CBD via high quality public transport.	Work with Federal, State Government, private sector and other Local Governments to advance proposed light rail networks to the coast.	Ongoing	CoS (City Planning)

5.6 Recreation and Community Facilities

Key Issue 6.1
The City's investment in recreation and community facilities does not always support the urban growth in centres and corridors.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure the location and type of recreational and community facilities support the development of Activity Centres and Corridors.	Endeavour to locate community and recreational infrastructure within Activity Centres and along corridors to support their development.	Ongoing	CoS (City Planning, Engineering Operations, Community Services and Recreation)

Key Issue 6.2
There is a lack of Public Open Space in some areas.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure that public open space is sufficient and adaptable, in order to meet the various needs of the community.	Review, adopt and continue to implementation of the City's Public Open Space Strategy.	Ongoing	CoS (Recreation)
	Adopt a Local Planning Policy and undertake a Local Planning Scheme amendment for improved cash in lieu for Public Open Space in Local Planning Scheme.	Short – Medium	CoS (City Planning)

Key Issue 6.3
The changing demographics and usage is resulting in different demands for recreational and community facilities.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Provide high quality community facilitates which meet the changing recreational and community needs of the City's residents.	Undertake community needs assessments and detailed plans as part of Activity Centres and Corridor Plans, and place based planning studies.	Ongoing	CoS (City Planning)
	Develop a Strategy and subsequent delivery plan that addresses the sustainable provision of recreational and community facilities to meet community needs.	Ongoing	CoS (City Planning)

5.7 Urban Design and Heritage

Key Issue 7.1 Current redevelopment and residential infill is resulting in a loss of trees, reduction in private open space, and poor design.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Ensure development results in improved design that accommodates green spaces and trees.	Undertake detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program to improve the design of development occurring in the City's suburbs, Activity Centres and Corridors. Focus on greening private spaces, providing more tree cover (both private and public spaces) and improving the quality of places and streets.	Ongoing	CoS (City Planning)
	Establish a professional design review process to ensure a high standard of development and ensure the City's Planning Framework results in quality design.	Long	CoS (City Planning)

Key Issue 7.2 The City's centres and corridors are poorly designed and lack a mixture of uses.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Support street block sizes that promote the use of public transport, cycling and walking.	Ensure Activity Centre and Corridor plans, along with place based planning projects such as the 'Better Suburbs' program promote smaller street block sizes and incorporate 'main streets' to improve walking, cycling and public transport use.	Medium	CoS (City Planning)
Ensure buildings address and activate the street.	Require suitably located non-residential development to have an active frontage to the street through Activity Centre and Corridor plans or place based planning projects such as the 'Better Suburbs' program.	Ongoing	CoS (City Planning)
	Include provisions within the City's Planning Framework to avoid non-residential car parking fronting and dominating the street.	Medium	CoS (City Planning)
Increase public spaces in centres.	Require new, or upgraded public spaces to be provided as part of Activity Centre and Corridor Plans or place based planning projects such as the 'Better Suburbs' program	Ongoing	CoS (City Planning)
Ensure a mixture of uses.	Ensure that a mixture of residential, non-retail, community and recreational uses are mandatory requirements in the planning framework of Activity Centres and Corridors or place based planning projects such as the 'Better Suburbs' program.	Ongoing	CoS (City Planning)

Key Issue 7.3			
The quality of the public realm in some locations of the City is poor.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Ensure the City's streetscapes are green, shady and tidy.	Develop and adopt a street design framework to ensure footpaths, street trees, street furniture and embayed (indented) parking is provided.	Short	CoS (City Planning)
	Identify priority locations for streetscape upgrades.	Medium	CoS (City Planning)
Require public art and/or street furniture as part of higher density development.	Develop and implement a Public Art Policy.	Medium	CoS (City Planning)

Key Issue 7.4			
Development does not always address crime prevention.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Ensure developments within the City address crime prevention.	Incorporate 'Crime Prevention Through Urban Design' principles into existing planning policies, Activity Centre and Corridor plans and place based planning projects such as the 'Better Suburbs' program.	Ongoing	CoS (City Planning)

Key Issue 7.5			
The City's heritage protection measures are often challenged.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Protect the built heritage within the City.	Implement the City's *Heritage Management Strategy*.	On going	CoS (City Planning and Community Development)
	Review residential coding of the Heritage Protection Area to remove any conflict with heritage protection objectives.	Medium	CoS (City Planning)
	Maintain and monitor the City's existing heritage protection system to ensure that it is robust.	Ongoing	CoS (City Planning)

5.8   Traffic and Transport

Key Issue 8.1
Managing car parking is increasingly challenging as the City intensifies.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Limit car parking in industrial areas, Activity Centres and Corridors to match the road capacity.	Implement parking provisions that limit car parking to match road capacity in industrial areas, Activity Centres and Corridors.	Medium	CoS (City Planning)
Ensure the City's parking management and statutory provisions keep pace with the City's growth.	Review and monitor the City's parking management and statutory planning parking provisions regularly.	Long	CoS (City Planning)
	Develop and adopt a public parking plan to address public parking provision and management.	Medium	CoS (City Planning)

Key Issue 8.2
The lack of permanent public transport infrastructure leads to uncertainty for development (e.g. light rail).

Response	Actions	Delivery Timeframe	Lead Delivery Department
Advocate and plan for more permanent public transport infrastructure.	Work with Federal and State Governments, the private sector and other local governments to advance proposed light/heavy rail networks and other rapid public transport routes.	Ongoing	CoS (City Planning)
	Ensure all Activity Centre and Corridor Plans incorporate improved public transport options (including possible light rail where appropriate).	Ongoing	CoS (City Planning)

Key Issue 8.3
There are poor public transport links between centres and employment areas in the City.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Advocate for new, better services and more frequent public transport options.	Work with the Public Transport Authority and the Department of Transport to provide better public transport options.	Ongoing	CoS (City Planning)

Key Issue 8.4
Many of the City's roads are at capacity and have poor walking and cycling infrastructure.

Response	Actions	Delivery Timeframe	Lead Delivery Department
On affected corridors, plan to accommodate high capacity public transport.	Identify and secure appropriate road reservations to accommodate high frequency public transport, as part of Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)
Provide alternatives to the use of private motor vehicles such as more walking and cycling infrastructure.	Develop and implement a transport network plan to increase walking and cycling.	Short	CoS (Engineering Design)
	Investigate improving cycling and pedestrian infrastructure as part of the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)
	Ensure the planning framework is robust to ensure developers provide footpaths and cycling infrastructure including end-of-trip facilities as part of their developments.	Ongoing	CoS (City Planning)

Key Issue 8.5			
The City has a large number of rights-of-way that are under-utilised.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Ensure that rights-of-way within the City are upgraded and that development fronts the right-of-way.	Ensure the City's *Rights-of-Way Strategy* is implemented.	Ongoing	CoS (Engineering Design and Approvals)

5.9   Infrastructure and Utilities

Key Issue 9.1			
There is no funding model and governance for the provision of utilities in some centres leading to uncertainty.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Develop funding and governance models to assist in the delivery of improved utilities.	Identify centres with limited utility capacity and work with utility providers and State Government on funding and governance arrangements to improve capacity.	Ongoing	CoS (City Planning)

Key Issue 9.2			
There is a lack of understanding of the infrastructure capacity needs within the growth areas of the City.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify any areas within the City where services are lacking.	Undertake utility assessments as part of the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)

Key Issue 9.3			
The majority of streets in the City have above-ground power.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Recognise that undergrounding power can assist in urban design outcomes.	Ensure underground power is considered in the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (Engineering Operations)
Progress with undergrounding powerlines within the City.	Support and submit underground power grant proposals where necessary, including investigating associated funding models.	Ongoing	CoS (Engineering Design)

6. Implementation and Review

6.1 Implementation of the Strategy

The City's implementation of this Local Planning Strategy will be guided by two central principles; Flexibility and Timeliness.
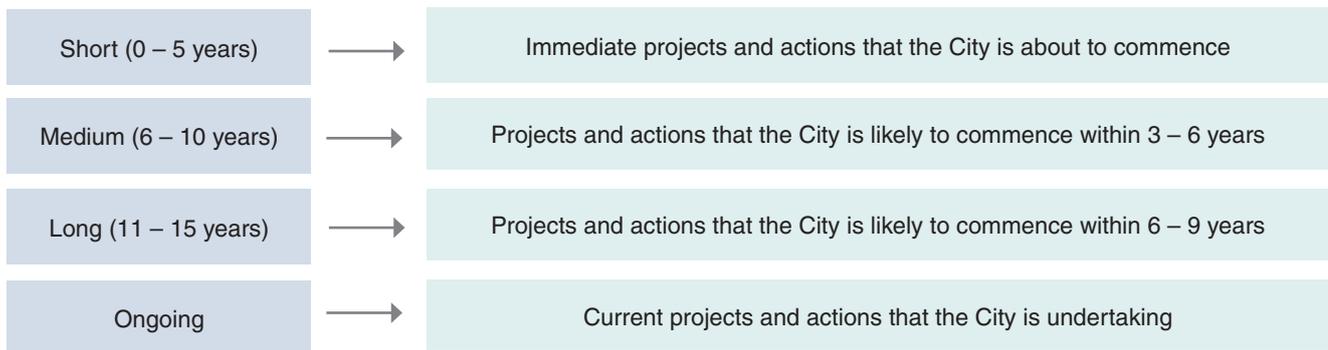
6.1.1 Flexibility

There is a need for planning to be responsive to changing needs, values and possibilities. For this reason, the City prefers an approach that reduces the rigidity of a standards based controls in favour of a more flexible and adaptive performance-based approach.

Related to the above principle, there is the need for this Local Planning Strategy to be a 'living document' that can integrate the findings of planning projects and appropriately respond to changes in corporate and/or strategic direction. It is envisaged that the Local Planning Strategy contains a suitable broad strategic direction for the next 10 years.

Delivery Timeframes

This is not intended to be a physical timeframe but more to assist in the setting of priorities over the whole 10 year lifespan of this Strategy. These priorities may also change over time due to other factors and projects.

The City currently has a large number of strategic projects in both development and implementation stages. There is a need to allow these projects the time they require to properly address the relevant issues, and to link their findings/outcomes with the Local Planning Scheme as they are completed. At the same time, it is important not to delay urgent actions such as Scheme amendments while these projects, some of which are likely to take some years, are completed. A delivery timeframe against each action to allow ongoing monitoring of the Plan's implementation and to assist in future business planning.

Short (0 – 5 years)	Immediate projects and actions that the City is about to commence
Medium (6 – 10 years)	Projects and actions that the City is likely to commence within 3 – 6 years
Long (11 – 15 years)	Projects and actions that the City is likely to commence within 6 – 9 years
Ongoing	Current projects and actions that the City is undertaking

6.2 Delivering the Strategy

Specific actions have been developed to assist in the implementation of this Local Planning Strategy. These actions set out a possible project, or solution, that assists the City to address the key issue.

6.2.1 City led delivery

The lead City department for delivering each action has been identified. This will assist in setting a clear responsibility as to who will be the main driver for delivering the action.

Some of the proposed actions involve further research, consultation, and the establishment of strategic priorities by Council. They are therefore not described in detail in this document. It is likely that some will result in the development of additional policies and/or amendments to the Local Planning Scheme.

The City will be seeking to deliver the majority of the Strategies objectives by undertaking Activity Centre and Corridor Plans, and place based planning studies, such as the Betters Suburbs program.

However, the City only has a limited amount of resources at its disposal, and it cannot undertake all the required detailed planning required at the same time. It will therefore progress detailed planning as and when resources become available.

6.2.2 Private and State Government agency led delivery

Private led amendments to the Local Planning Scheme will be considered on an individual basis, and against the objectives and timeframes of this Strategy.

Location based private led amendments to the Local Planning Scheme maybe considered where they meet the objectives of this Strategy where detailed planning has been undertaken and where community engagement has occurred to assist in the development of the amendment plan before it is submitted.

 The level and boundaries of the detailed planning required will be determined by the City. As as guide it is envisaged as follows;

• Activity Centres – a distance equal to the walkable catchment setout in the *criteria for extensions to existing centres and creation of new centres* section (7.3.8 and table 42) of this Strategy.

• Activity Corridors – the length of approximately two to three street blocks (several hundred metres) on both sides of the corridor.

• State Government land holdings (e.g. Department of Housing) – where significant land parcels can be consolidated (compaired to the locality) and/or where they are located within the walkable catchments of Activity Centres or along Corridors.

Other location based private led amendments outside of these Activity Centres and Corridors (regardless of the level of detailed planning) are unlikely to be supported until such time as the City undertakes a place based planning approach over the locatity.

6.3 Monitoring and Reporting

The City will report annually on the progress of the actions, and the delivery of the actions will form the City's Strategic Planning workflow into the future.

LEGEND

- Corridor Class 1
- Corridor Class 2
- Corridor Class 3
- Strategic Metropolitan Centre
- Secondary Centre
- District Centre
- Neighbourhood Centre
- Local Centre
- Industrial Area
- Specialised Centre
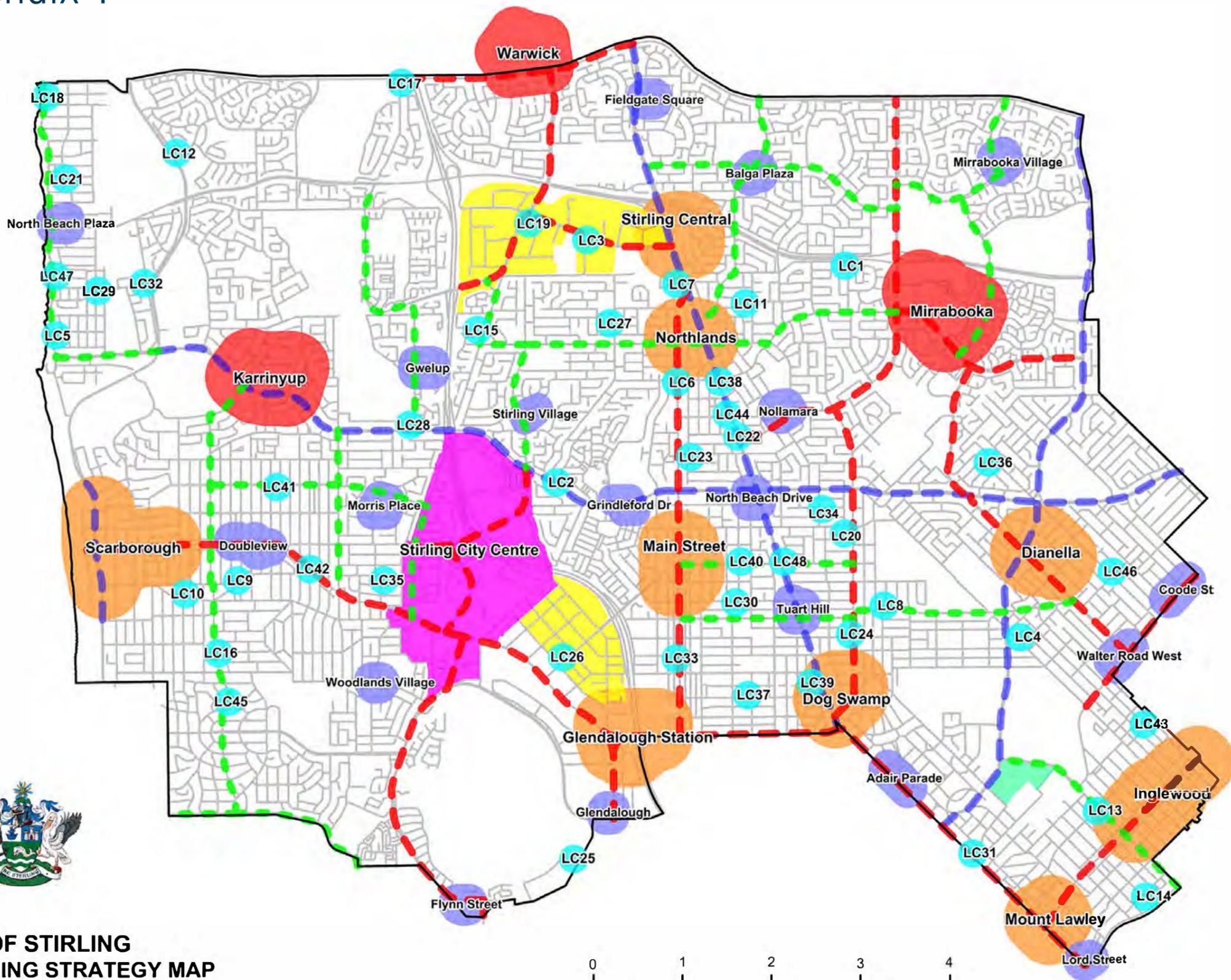
CITY OF STIRLING
LOCAL PLANNING STRATEGY MAP
Updated - 22 August 2019
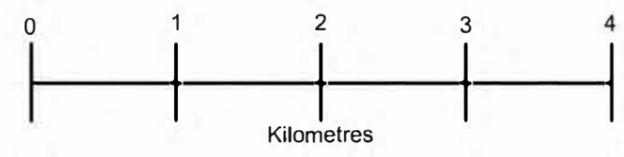
Scaled to A3
2cm = 1km

0   1   2   3   4
Kilometres

Note THIS MAP SHOULD NOT BE RELIED UPON FOR DEVELOPMENT RELATED PURPOSES AND SPECIFIC INFORMATION. THIS INFORMATION SHOULD BE CONFIRMED BY CONTACTING THE CITY OF STIRLING.

ADVERTISING

The City of Stirling's Local Planning Strategy certified for advertising on

Signed for and on behalf of the Western Australian Planning Commission

Certified for advertising under WAPC correspondence dated 17/11/2017

_____

an officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date   17 November 2017
_____

ADOPTED

The City of Stirling herby adopts the Local Planning Strategy, at the meeting of the Council
held on the _____ 18 _____ day of September 2018

_____

Mayor

_____

Chief Executive Officer

ENDORSEMENT

Endorsed by the Western Australian Planning Commission on

_____

an officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date   25 October 2019
_____

Notes

CITY OF STIRLING

Local Planning Strategy

PART 2

Western Australian Planning Commission

GOVERNMENT OF WESTERN AUSTRALIA

Endorsed by the
Western Australian Planning Commission

25TH OCTOBER 2019

Local Planning Strategy

October 2019

Part 2

City of Stirling
City of Choice

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1. Introduction

1.1 Purpose Of The Local Planning Strategy

The Local Planning Strategy sets out the long-term planning directions for the City. In particular it sets out planning objectives, policy statements and recommended actions associated with housing, commercial property, recreation, transport, environmental and heritage issues over the next 10 to 15 years. The Local Planning Strategy demonstrates an integrated approach to planning, including consideration of social, environmental, cultural and economic aspects.

It also provides the rationale for the zones and provisions in the City's Local Planning Scheme (The Scheme), which will be the principal mechanism for implementation of the Local Planning Strategy. The Scheme and Strategy will be updated at regular intervals in subsequent years.

This document is to be taken into consideration by the City when making planning decisions and will carry significant weight in planning appeals. Any changes to the adopted document will require public advertising and adoption by the Council.

1.2 Regulatory Framework For A Local Planning Strategy

Local governments are required to prepare local planning strategies under the *Planning and Development (Local Planning Schemes) Regulations 2015*.

According to regulation 11(2) of the *Regulations 2015*, a local planning strategy shall:

- Set out the long-term planning directions for the local government;

- Apply any State or Regional planning policy that is relevant to the strategy; and

- Provide the rationale for any zoning or classification of land under the local planning scheme.

The West Australian Planning Commission (WAPC) is required to certify that the Local Planning Strategy is consistent with regulation 11(2) prior to the local government proceeding to advertise. This was obtained on the 27th November 2017 and the Draft Local Planning Strategy was subsequently advertised on the 3rd April 2018 in accordance with regulation 13 of the Planning and Development (Local Planning Schemes) Regulations 2015.

As per clause 2, Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, the Local Planning Strategy sets out the long-term planning directions for the Scheme area. This provides a connection between the strategic vision and objectives of the local government and the statutory controls of the local planning scheme.

Pursuant to regulation 17 of the *Regulations 2015*, the Local Planning Strategy may be amended by an amendment prepared by the local government and endorsed by the WAPC.

1.3 Contents Of The Local Planning Strategy

The development of the Local Planning Strategy incorporated the following processes:

- The links between strategic planning at the local government level and State and Regional level;

- Informed by and informs the City's Strategic Community Plan;

- A description of the key characteristics of the local government, its regional context and major planning issues;

- Land use and development opportunities and constraints that provide a context for local planning decisions;

- A statement of principles, objectives and actions explaining the strategic direction which the local government is seeking to pursue; and

- An outline of how the Local Planning Strategy will be implemented including planning scheme measures and local government and State Government proposals to facilitate development and land use management.
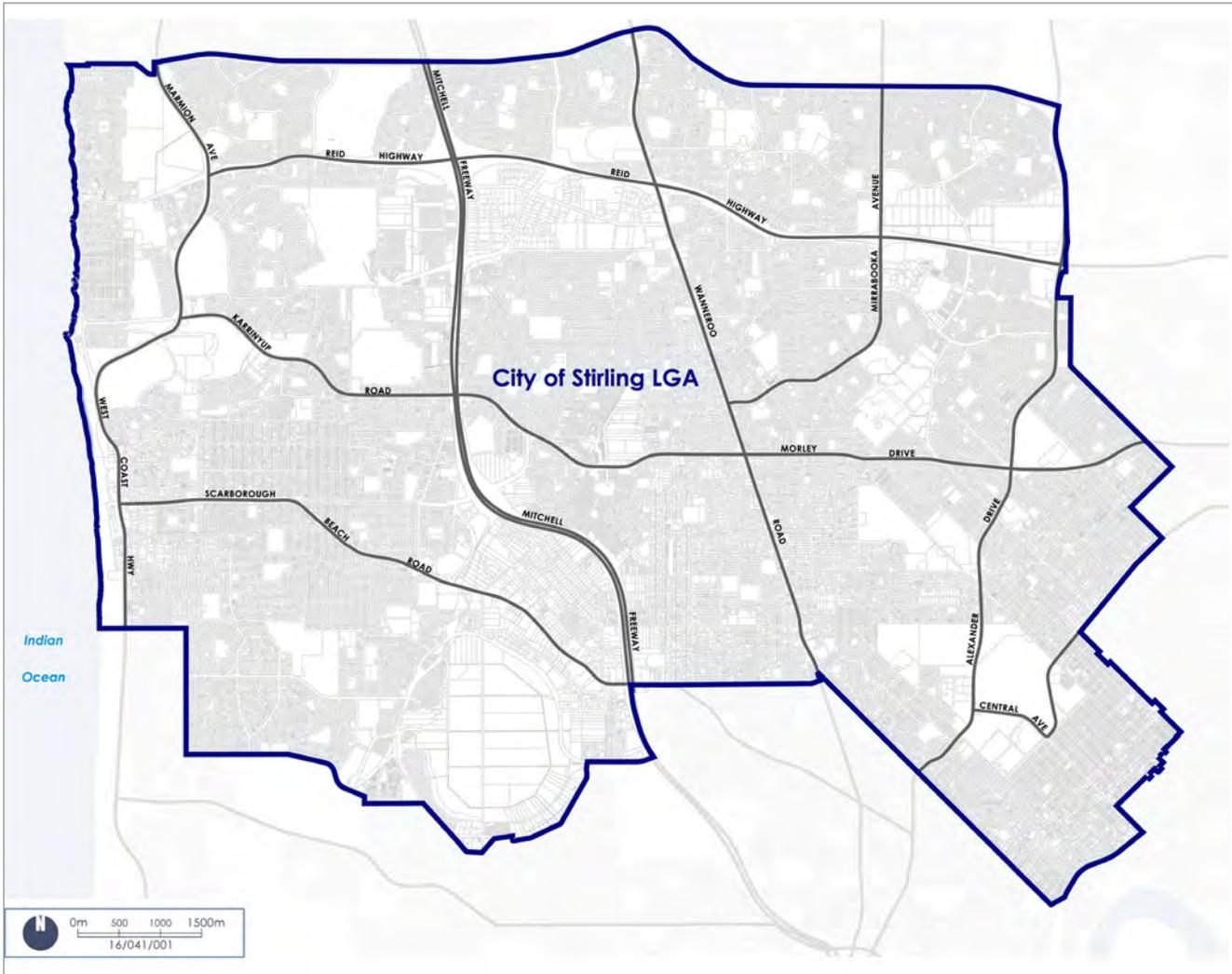

Figure 1: City of Stirling Local Government Area (Source: City of Stirling)

2. State and Regional Planning Context

2.1 Introduction

The following review of the State and Regional planning context describes the statutory and policy framework within which the Local Planning Strategy and Scheme operate. This section identifies the context within which the City has prepared its planning objectives to take into account a changing future. It discusses the Strategy and Regional planning context and describes the Strategy and Policy framework within which the Local Planning Strategy and Scheme operate.

2.2 State Planning Strategy

Prepared by the Department of Planning, under the guidance of the WAPC and approved by State Cabinet in April 2014, the State Planning Strategy (SPS) presents a vision for Western Australia to 2050 and beyond based on a framework of planning principles, strategic goals and State strategic directions.

The SPS defines planning for sustained prosperity in terms of a:

- **Diverse state**: offering a diversity of ecosystems, landscapes, enterprises, people and cultures.

- **Liveable state**: the place of choice for the brightest and best.

- **Connected state**: as connected to the rest of the world as any other place.

- **Collaborative state**: enabling alignments that progress the State's sustained growth and prosperity.

The SPS envisages that by 2050 Western Australia will double its current population and will have a diversity of interconnected and vibrant communities and regional centres that are healthy, resilient, active, prosperous, and respectful of differences.

The six inter-related principles of the SPS apply to all regions within the State:

- **Community**: enable diverse, affordable, accessible and safe communities;

- **Economy**: facilitate trade, investment, innovation, employment and community betterment;

- **Environment**: conserve the State's natural assets through sustainable development;

- **Infrastructure**: ensure infrastructure supports development;

- **Regional development**: build the competitive and collaborative advantages of the regions; and

- **Governance**: build community confidence in development processes and practices.

Implications

Each of the above principles are associated with specific strategies, actions and criteria which have been considered in developing the Local Planning Strategy, with each of these elements being embodied into this document.

2.3 State Sustainability Strategy

The State Sustainability Strategy is an over arching framework aimed at integrating the concept of sustainability into all aspects of governance and development. It has particular relevance in the protection of the environment, the sustainable management of natural resources, and in the planning and operation of settlements that reduce our ecological footprint and enhance the quality of life for all communities. The State Sustainability Strategy is based on a Sustainability Framework of eleven sustainability principles, six visions for Western Australia, six goals for government and 42 priority areas for action.

Implications

The Local Planning Strategy acknowledges that the principles of sustainability need to be embraced to achieve the actions of the State Sustainability Strategy and reduce the ecological footprint of the community. As such these principles are followed throughout the Local Planning Strategy.

2.4 State Planning Framework

2.4.1 State Planning Policies

State Planning Policies (SPPs) are made by the WAPC under Part 3 section 25 of the *Planning and Development Act 2005* and apply to all land within Western Australia. Responsible authorities are required to have due regard to SPPs in preparing strategies, planning schemes, scheme amendments and applications for subdivision and development.

The SPPs considered to be relevant to the City of Stirling are outlined below.

SPP 1 – State Planning Framework Policy

The State Planning Framework Policy (SPP 1) unites existing state and regional policies, strategies and guidelines within a central framework to provide a context for decision-making on land use and development in Western Australia.

Implications

Under SPP 1, the City's Local Planning Strategy and Scheme must be consistent with the SPPs and other listed strategic and statutory policies of the WAPC. As such the policy directions within these state polices are followed throughout the Local Planning Strategy.

SPP 2 – Environment And Natural Resources

SPP 2 defines the principles and considerations that represent good and responsible planning in terms of environmental and natural resource issues within the framework of the SPS.

The objectives of the policy are to:

- Integrate environment and natural resource management with broader land use planning and decision-making;

- Protect, conserve and enhance the natural environment; and

- Promote and assist in the wise and sustainable use and management of natural resources.

The policy is supplemented by more detailed planning policies regarding natural resource matters that require additional information and guidance. The policy sets out matters that should be taken into consideration in planning strategies, schemes and decision-making.

Implications

The protection and conservation of the natural environment has been given consideration in the Local Planning Strategy (section 4 of this document). The Local Planning Strategy recognises that there are conflicts between land use and the protection of natural resources. Giving consideration to potential impacts of development on the environment, community lifestyle preferences, and economic values is considered essential.

In order to achieve the best outcome for the City these values should be addressed as a component of decision-making within areas designated as urban or future urban or within development areas.

Where possible and appropriate, the development of land should ensure the protection of environmental features such as remnant vegetation, coastal foreshore areas and water resources. This could be achieved through the design of the district and local open space network.

SPP 2.6 – State Coastal Planning Policy

The purpose of State Coastal Planning Policy (SPP 2.6) is to provide guidance on managing development and land use change; establishment of foreshore reserves; and to protect, conserve and enhance coastal values.

SPP 2.6 applies to the coast throughout Western Australia with the objectives to:

- Protect, conserve and enhance coastal values, particularly in areas of landscape, nature conservation, indigenous and cultural significance;

- Provide for public foreshore areas and access to these on the coast;

- Ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities; and

- Ensure that the location of coastal facilities and development takes into account coastal processes including erosion, accretion, storm surge, tides, wave conditions, sea level change, and biophysical criteria.

Implications

The City of Stirling manages 6.5km of coastline and this SPP is given due regard (sections 4, 8 and 9 of this document). The Local Planning Strategy aims to strike a balance between natural coastal areas and acknowledging recreational, residential, commercial and ecological values.

There is increasing pressure on coastal foreshores and their natural resources. A major coastal metropolitan attractor is Scarborough Beach, which is now being revitalised through the Metropolitan Redevelopment Authority's Master Plan and Redevelopment Scheme.

SPP 2.6 outlines the requirements for coastal foreshore reserves and development setbacks for physical processes. Planning within coastal areas shall respect the existing economic, social and environmental values and ensure these are maintained whilst undertaking risk adaptation and mitigation.

SPP 2.7 – Public Drinking Water Source

SPP 2.7 provides for the protection and conservation of public water supplies, which are obtained from groundwater and surface water sources. These sources of water are valuable for public consumption and other private land use activities. Both surface water and groundwater catchments are under pressure from competing uses including industry, intensive agriculture, landfill sites and urban development. Care is needed to ensure that land use and development do not pollute groundwater and surface water, make them unsuitable for human consumption, nor reduce recharge of the aquifer, and thus the quantity of water available for abstraction.

Implications

The Local Planning Strategy (sections 4 and 10 of this document) recognises that careful land use planning is needed to protect surface water and groundwater sources, and that development needs to be compatible with the management of public drinking water resources. The management and use of water resources should be given an appropriate level of consideration at each stage of the planning process.

Water efficiency, reuse and adaptation will be an important consideration into the future. Land use and development will need to be compatible with the protection and long-term management of water resources.

SPP 2.8 – Bushland Policy For The Perth Metropolitan Region

SPP 2.8 addresses the protection and management of regionally significant bushland identified for protection in Bush Forever. SPP 2.8 provides the policy and implementation framework for Bush Forever Protection Areas.

Nine (9) Bush Forever (BF) Protection Areas are identified within the local government area, including:

- BF43 (Dianella Drive, Nollamara);
- BF203 (Big Carine Swamp, Carine);
- BF204 (Star Swamp, Watermans Bay);
- BF212 (Lake Gwelup, Gwelup);
- BF280 (corner Morley Drive and Alexander Drive, Dianella);
- BF281 (Herdsman Lake, Herdsman);
- BF308 (Trigg Beach/Trigg Bushland, Trigg/Karrinyup);
- BF310 (Scarborough Beach, Scarborough); and
- BF385 (north-side of Reid Highway, Mirrabooka).

This policy is aimed at providing a framework for the protection and management of bushland in the Perth Metropolitan Region to secure long term biodiversity and associated environmental values. The policy recognises the protection and management of significant bushland areas as a fundamental consideration in the planning process, while also seeking to integrate and balance wider environmental, social and economic considerations. In general terms, the policy does not prevent development where it is consistent with the policy measures and other planning and environmental considerations.

The Local Planning Strategy recognises and has regard to the Bush Forever Sites. These sites are representative of regional ecosystems and habitats and are protected and conserved for their biodiversity.

Implications

The Local Planning Strategy (section 4 of this document) recognises that bushland plays a vital role in green infrastructure, and the protection and management of bushland is needed to achieve wider biodiversity and sustainability outcomes.

Several Bush Forever sites exist in the City of Stirling and it is acknowledged that these sites need to be protected and conserved as development around these sites increase. Any land use and development associated with bushland areas should provide for an improved environmental outcome.

SPP 2.9 – Water Resources

This policy provides clarification and additional guidance to planning decision-makers for consideration of water resources. The objectives of this policy are to:

- Protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/or environmental values;
- Assist in ensuring the availability of suitable water resources to maintain essential requirements for human and all other biological life with attention to maintaining or improving the quality and quantity of water resources; and
- Promote and assist in the management and sustainable use of water resources.

Implications

The Local Planning Strategy (sections 4 and 10 of this document) recognises that successful management of water resource issues lies in maintaining its protection and prevention of potential adverse impacts of development on water quality and quantity. Land use and development is to be compatible with the protection and long-term management of water resources.

SPP 3.0 – Urban Growth And Settlement

The overall aim of SPP 3 is to facilitate sustainable patterns of urban growth and settlement by setting out the requirements of sustainable communities and accommodating urban growth and change. SPP 3 sets out the principles and considerations which apply to planning for urban growth and settlements in Western Australia and identifies the following seven policy measures that form the basis of the policy:

- Creating sustainable communities;
- Managing urban growth and settlement across Western Australia;
- Managing growth in Metropolitan Perth;
- Planning for liveable neighbourhoods;
- Coordination of services and infrastructure;
- Managing rural-residential growth; and
- Planning for Aboriginal Communities.

Implications

The Local Planning Strategy (sections 4, 5, 9, 10, and 12 of this document) acknowledges the infill targets identified for the City of Stirling under Perth and Peel @3.5million and associated State and Regional Planning Framework. The Local Planning Strategy seeks to identify sufficient land to meet future population and housing needs. In identifying locations to meet this demand, the City will be seeking to accommodate new development and infill opportunities within the City's Activity Centres and along corridors.

SPP 3.1 – Residential Design Codes

The Residential Design Codes (R-Codes) control the design and development of housing throughout the City. The purpose of the R-Codes is to provide local governments, the community and the development industry with a comprehensive tool for the control of the built form and density of residential development throughout Western Australia.

Its principal uses are:

- At a strategic level, to ensure that there is an appropriate choice and distribution of housing types and densities to meet the needs of the community as a whole; and

- At a detailed level, to ensure that the design and planning of residential development occurs in a way that is appropriate to the needs of its occupants and respectful of the amenity of the locality.

Implications

The Local Planning Strategy (sections 5, and 10 of this document) acknowledges that uniform residential development standards along with a range of choices for housing type and design are important for the community.

The City's restriction on the number of multiple dwellings in certain areas coded 'R40' and below within the City, sought to retain the character and amenity of typically suburban areas. By discouraging inappropriate development, the City is maintaining the local community's expectations for this type of infill development being directed towards centres and activity corridors. The City will continue to advocate for improved development outcomes and improvement to the R-Codes.

SPP 3.5 – Historic Heritage Conservation

This policy sets out the principles of sound and responsible planning for the conservation and protection of Western Australia's historic heritage. The objectives of this policy are:

- To conserve places and areas of historic heritage significance;

- To ensure that development does not adversely affect the significance of heritage places and areas;

- To ensure that heritage significance at both the State and local levels is given due weight in planning decision-making; and

- To provide improved certainty to landowners and the community about the planning processes for heritage identification, conservation and protection.

Implications

The City of Stirling has designated heritage areas which require protection and conservation. The Local Planning Strategy (section 10 of this document) acknowledges that care needs to be taken to minimise the extent to which land use zoning and other planning controls conflict with, or undermine, heritage conservation objectives. Consideration will be given to the provision of additional guidance for development within the designated heritage areas or individual properties.

The City has adopted a Heritage Management Strategy which provides the heritage conservation framework for the local government area. Planning for the City should have regard to the implementation of the Actions contained within the Heritage Management Strategy.

SPP 3.6 – Development Contributions For Infrastructure

The policy sets out the principles and considerations that apply to development contributions for the provision of infrastructure in new and established urban areas, and the form, content and process to be followed. The policy provides the system for planning and charging development contributions (development contribution plans) and the charges which apply and how the funds will be spent.

Implications

The Local Planning Strategy (sections 10 and 12 of this document) provides the strategic basis for the requirement for development contribution plans, particularly given planned population growth and development and the requirement for additional common infrastructure and community facilities. The City's goals for social and economic growth will be considered in determining the role of development contribution plans in the City, and the ability for Development Contribution Plans to adequately and efficiently recover the cost of growth from developers.

SPP 3.7 – Planning In Bushfire Prone Areas

This policy forms the foundation for land use planning to address bushfire risk management in Western Australia. SPP 3.7 is used to inform and guide decision makers, referral authorities and proponents on achieving acceptable fire protection outcomes on planning proposals in bushfire prone areas.

In support of SPP 3.7 and pursuant to SPP 3.4 – Natural Hazards and Disasters, the Planning for Bushfire Protection Guidelines set out a range of matters that need to be addressed at various stages of the planning process, to provide an appropriate level of protection to life and property from bushfires, and avoid inappropriately located or designed land use, subdivision and development on land where a bushfire risk is identified.

Several areas of natural vegetation have been mapped and are identified as Bushfire Prone Areas by the Department of Fire and Emergency Services within the City of Stirling.

SPP 3.7 has been taken into consideration when drafting the Local Planning Strategy (section 4 of this document) and in determining potential areas of land use conflict. Bushfire risk management measures and protection criteria will be considered and satisfied at subsequent stages of the planning process.

SPP 4.1 – Industrial Interface

This policy seeks (in part), to protect industry, infrastructure and special uses from the encroachment of incompatible land uses, and to provide for the safety and amenity of land uses surrounding industry. The objectives of the policy are to:

- Protect industry and/or essential infrastructure from encroachment by those land uses that would be sensitive to impacts and adversely impact their efficient operations;

- Provide for the development of industry and/or the provision of essential infrastructure in a way that maximises amenity, minimises environmental and health impacts and takes account of risk to nearby sensitive land uses; and

- Promote compatible uses in areas affected by off-site impacts of industry and/or essential infrastructure.

Local planning schemes are the preferred basis for identifying and managing buffers and land use and development by means of the appropriate statutory mechanism such as special control areas or through structure planning.

Implications

Several large Industrial areas exist within the City of Stirling. The Local Planning Strategy (section 6 of this document) shall inform the Local Planning Scheme in identifying and ensuring they are appropriately zoned and protected.

SPP 4.2 – Activity Centres For Perth And Peel

SPP 4.2 outlines a hierarchy of Activity Centres and specifies the broad planning requirements for the planning and development of new Activity Centres and the redevelopment and renewal of existing centres in Perth and Peel. The term 'Activity Centres' has been adopted by State government to identify centres with a more intensive mix of uses, higher levels of activity, and good transport integration. It states that a diversity of land uses promotes a more equitable distribution of services, facilities and employment and an overall reduction in travel demand.

The following Activity Centres are identified within the hierarchy in SPP 4.2:

- **Strategic Metropolitan Centre** – Stirling City Centre is a Strategic Metropolitan Centre according to the hierarchy. Strategic metropolitan centres are the main regional Activity Centres, and provide the full range of economic and community services necessary for the communities in their catchments.

- **Secondary Centres** – Karrinyup and Mirrabooka are Secondary Centres. These centres share similar characteristics with strategic metropolitan centres but generally serve smaller catchments, are less diverse and have fewer employment opportunities. They are considered to perform an important economic role and provide essential services to their catchment.

- **District Centres** – Inglewood, Dianella, Dog Swamp, Glendalough, Main Street, Mount Lawley, Northlands, Scarborough, and Stirling Central are the nine District Centres within the City of Stirling. The primary focus of these centres is to service the daily and weekly needs of local residents.

- **Neighbourhood Centres** – The City of Stirling has identified 17 Neighbourhood Centres within its local government area. These centres service a smaller catchment than district centres and provide for daily and weekly household shopping needs, community facilities and a small range of convenience services for their catchment. These centres also provide opportunities for future medium-density residential development under a place based planning approach.

- **Local Centres** – SPP 4.2 applies to Activity Centres classified as 'Neighbourhood' and above and does not technically apply to Local Centres. Local Centres would be any centre with a shop-retail floorspace under 1,500m^2 NLA. These are expected to be located within convenient walking and cycling distance of most homes, and are intended to provide shopping facilities to serve the daily needs of the local community.

SPP 4.2 outlines Activity Centre functions, typical characteristics, and performance targets. These are detailed for the main role and function of centres. The characteristics describe the level of transport connectivity and accessibility; typical retail types; typical office development. The hierarchy of centres defines indicative service population areas; walkable catchments for residential density targets; and residential density targets per gross hectare. A diversity performance target (mix of land uses) is allocated to strategic metropolitan centres, secondary centres and district centres. The SPP 4.2 Characteristics are illustrated in Table 1 below.

Table 1: SPP 4.2 Characteristics Table (Source: State Planning Policy 4.2 – Activity Centres for Perth and Peel)

Typical Characteristics	Strategic metropolitan centres	Secondary centres	District centres	Neighbourhood centres
Main role/ function	Strategic metropolitan centres are the main regional Activity Centres. They are multipurpose centres that provide a diversity of uses. These centres provide the full range of economic and community services necessary for the communities in their catchments.	Secondary centres share similar characteristics with strategic metropolitan centres but serve smaller catchments and offer a more limited range of services, facilities and employment opportunities. They perform an important role in the City's economy, and provide essential services to their catchments.	District centres have a greater focus on servicing the daily and weekly needs of residents. Their relatively smaller scale catchment enables them to have a greater local community focus and provide services, facilities and job opportunities that reflect the particular needs of their catchments.	Neighbourhood centres provide for daily and weekly household shopping needs, community facilities and a small range of other convenience services.
Transport connectivity and accessibility	Important focus for passenger rail and high frequency bus networks.	Important focus for passenger rail and/or high frequency bus network.	Focal point for bus network.	Stopping / transfer point for bus network.
Typical retail types	• Department store/s • Discount department stores • Supermarkets • Full range of specialty shops	• Department store/s • Discount department stores • Supermarkets • Specialty shops	• Discount department stores • Supermarkets • Convenience goods • Small scale comparison shopping • Personal services • Some specialty shops	• Supermarket/s • Personal services • Convenience shops
Typical Office development	• Major offices • State government agencies	• Major offices • Professional and service businesses	• District level office development • Local professional services	• Local professional services
Future indicative service population (trade) area	150,000-300,000 persons	Up to 150,000 persons	20,000-50,000 persons	2,000-15,000 persons (about 1km radius)
Walkable Catchment for residential density target	800m	400m	400m	200m
Residential density target per gross hectare	Minimum / Desirable	Minimum / Desirable	Minimum / Desirable	Minimum / Desirable
	30 / 45	25 / 35	20 / 30	15 / 25

Implications

SPP 4.2 is highly relevant to the City of Stirling, which still has predominantly retail-focused centres. The Local Planning Strategy (sections 5, 6, 7, and 11 of this document) acknowledges that careful planning is required to promote the shift to centres that have a mix of uses, higher activity levels and support a range of transport options for the community.

Activity Centres will play an important role in meeting the infill targets identified for the City of Stirling in Perth and Peel @3.5 million and the associated framework. The strategic direction for commercial Activity Centres is reflected in the Local Planning Strategy to achieve optimal development. Land use and zoning in and around Activity Centres shall allow for intensification of use and mixed use development opportunities to develop, but not undermine the sustainability of other existing and particularly smaller Activity Centres.

The Stirling Strategic Metropolitan Centre is the prominent centre within the local government area. Together with the adjacent Herdsman Glendalough Area, it is poised to be the second largest employment location outside of the Perth CBD. The successful transformation of the Stirling City Centre rests on the delivery of high quality public transport, and additional public infrastructure. Safe and frequent public transport services will encourage modal shift from private vehicles as well as provide a catalyst for redevelopment. The development of the Stirling City Centre and the Herdsman Glendalough Area are guided by structure plans and design guidelines.

Each Secondary and District Centre requires an Activity Centre structure plan. The expansion and future expectation of these centres are discussed further within the Retail and Commercial section (7). The future development at Neighbourhood and Local level Activity Centres, will be undertaken using a place based planning approach.

SPP 5.2 – Telecommunications Infrastructure

This policy primarily considers the visual impact of telecommunication network infrastructure on the appearance of buildings or structures. The objectives of this policy are to:

- Facilitate the provision of telecommunications infrastructure in an efficient and environmentally responsible manner to meet community needs;

- Manage the environmental, cultural heritage, visual and social impacts of telecommunications infrastructure;

- Ensure that telecommunications infrastructure is included in relevant planning processes as essential infrastructure for business, personal and emergency reasons; and

- Promote a consistent approach in the preparation, assessment and determination of planning decisions for telecommunications infrastructure.

The policy provides guidance on the siting, location and design of above and below ground telecommunications infrastructure.

Implications

This policy has been given due regard within the Local Planning Strategy (section 12 of this document), particularly with respect to land use permissibility and environmental, cultural heritage, social and visual landscape values that may be compromised as a result of telecommunications infrastructure.

SPP 5.4 – Road and Rail Noise

This policy aims to promote a system in which sustainable land use and transport are mutually compatible. It seeks to minimise the adverse impacts of transport noise without placing unreasonable restrictions on noise-sensitive residential development, or adding unduly to the cost of transport infrastructure. The policy applies to proposals for noise-sensitive development in the vicinity of major transport corridors or freight handling facilities, construction of major roads and railways, redevelopment of major roads and railways and freight handling facilities.

Implications

The Local Planning Strategy (sections 5 and 11 of this document) recognises the need to give consideration to the impacts of transport noise on noise-sensitive developments, as well as to the compatibility of development with transport networks. Suitable land use and development opportunities shall be identified within the vicinity of major transport corridors. Planning controls to ensure compatibility of land use shall be applied at the appropriate stages of the planning process.

2.5   Strategic Planning Framework

2.5.1   Perth And Peel @3.5Million

Perth and Peel @3.5million is a suite of strategic documents published by the Western Australian Planning Commission in March 2018, that seeks to realise the vision for future growth of the Perth and Peel Regions as encapsulated in the preceding Directions 2031 and Beyond and State Sustainability Strategy 2050 documents. It incorporates a series of draft planning frameworks that respond to deepening and emerging challenges, with a unified, long-term growth strategy for land use and infrastructure over a timeframe of 35-40 years.

The vision of Perth and Peel @3.5million is:

"When Perth reaches a population of 3.5 million people, it will continue to be an innovative 21st century city delivering distinctive Western Australian lifestyle choices and global opportunities."

Perth and Peel @3.5million recognises that a "connected city" pattern of development is the preferred approach for balancing urban infill and fringe development. A number of overarching objectives are therefore going to be implemented through the Central Sub-regional Planning Framework:

- **Consolidated Urban Form** – continue to achieve more consolidated development in appropriate locations. Managing the scale of population and urban growth expected by 2031 will not only require more effective use of existing developed areas, but more efficient use of new land released for development.

- **Economy and Employment** – promote employment within strategic metropolitan centres and strategic industrial centres. A network and hierarchy of centres that provide a more equitable distribution of jobs, services and amenity throughout the city.

- **Community and Social Infrastructure** – providing a range of community and social infrastructure to enhance the health and wellbeing of an increasingly dense population. Finding ways to co-locate or optimise facilities and infrastructure will ensure efficient allocation of resources.

- **Movement and Access** – an integrated system of public and private transport networks that are designed to support and reinforce the Activity Centres network, and reduce the time, cost and impact of travel.

- **Service Infrastructure** – efficient provision of services as well as understanding the need, planning for and protection of infrastructure corridors.

- **Environment and Landscape** – a network of parks, reserves and conservation areas that support biodiversity, preserve natural amenity and protect valuable natural resources.

- **Natural Resources** – recognising the impacts of our City on available natural resources and aiming for improving our sustainability.

Implications

Key elements of the Perth and Peel @3.5million document are outlined below:

- The Central sub-region will contribute to 32.5% of the population by 2050, bringing its population close to 1.2 million people;

- Key residential growth targets, including 47% (213,130) additional dwellings as infill, are identified as being needed for the Central sub-region based on the preferred "Connected City" model of growth;

- The City of Stirling is within the Central sub-region, and will need to provide a minimum of 60,330 more dwellings by 2050.

The Local Planning Strategy (sections 5, 6, 7, 10, and 11 of this document) recognises the importance of the key elements identified in Perth and Peel @3.5million and acknowledges that achieving the targets set out in the document requires detailed planning and consistent effort.

Directions 2031 Report Cards (2013 and 2014)

The Directions 2031 Report Card (2013) applied housing targets for local government areas in the Central sub-region. Stirling was reported to have 20.09 dwellings per hectare in 2013. The following Table 2 outlines the targets for the City of Stirling.

Between 2012 and 2013 it was reported that the Central sub-region recorded an average 2.8% growth rate, up from 2.6% for the period of June 2011 to June 2012.

As reported in the Directions 2031 Report Card (2014), Stirling had achieved over 20% as a percentage of its first five yearly infill target.

In its 2014 Directions 2031 Report Card the Department of Planning mentioned it was developing a draft Urban Consolidation Plan informed by the Scarborough Beach Road Activity Corridor Framework. The draft Urban Consolidation Plan would investigate increased densities and a greater mix of suitable land uses.

Implications

The Local Planning Strategy recognises the importance of monitoring and meeting the key elements identified in Directions 2031 Report Card, and acknowledges that achieving the targets set out in the document requires detailed planning, consistent stakeholder engagement and infrastructure investment.

Central Sub-Regional Planning Framework

The Central Sub-Regional Planning Framework (adopted March 2018) provides a framework for delivering the objectives of Perth and Peel @3.5million within the central Perth metropolitan region. The document is intended to aid in linking state and local government strategic planning, particularly in the review of structure plans and local planning strategies.

The Framework encourages corridor planning to take into account the simultaneous integration of land use and transport and take into account the spatial requirements for both components. The Framework notes that the Department of Transport is reviewing the transport network and defining the high-level public transport routes.

The Central Sub-Regional Planning Framework sets the City of Stirling a minimum target of 60,330 infill dwellings by 2050, of which 45,248 of those dwellings (75%) would be expected to occur within Activity Centres and Corridors. The remaining 15,082 dwellings would be expected to be located in the existing suburbs.

With respect to the Local Planning Strategy, the Framework (refer Figure 2) provides the following guidance:

- Stirling is identified to provide a minimum of 60,330 dwellings as its local government contribution to the infill housing targets for the Central sub-region;

- Figure 3 identifies the Activity Centres, which are also reflected in SPP 4.2 – Activity Centres for Perth and Peel; and

- Figure 2 identifies the proposed activity corridors which aim to link Activity Centres and station precincts to support modal shift, as well as maximising jobs and dwellings in walkable distance to public transport. Activity Corridors are promoted as a way of achieving better transport and land use outcomes.

Implications

The Framework is highly relevant to the City of Stirling and the Local Planning Strategy supports growth in the right locations and encourages a mix of housing types.

The Local Planning Strategy (sections 5, 6, 7, 10, and 11 of this document) highlights opportunities where high quality residential redevelopment can be achieved, in close proximity to transport, open space, commercial and employment precincts. The Local Planning Strategy promotes housing diversity and creating employment opportunities in Activity Centres; showing possible locations for future growth; and highlighting the essential service infrastructure that will be necessary to support these developments in the medium to long term. Housing Targets for City of Stirling over time up to 2050 are shown in table 2 below (Source: The Central Sub-Regional Planning Framework, 2018)

Table 2: Housing Targets for City of Stirling (Source: The Central Sub-Regional Planning Framework, 2018)

Local Government Area	2011-2016	2016-2021	2021-2026	2026-2031	Total Additional Dwellings to 2031	Additional Dwellings After 2031	Total Dwellings to 3.5M
Stirling	10,310	8,060	9,210	7,770	35,350	24,980	60,330

Legend

— Sub-region boundary

Framework land uses

- Green network (MRS only)
- Activity centre
- Urban corridor
- Station precinct
- Industrial centre
- Public purposes
- Waterway

Redevelopment area

Rail

●— Passenger rail/station - existing

◉— Passenger rail/station - proposed Stage 1 METRONET

– – Passenger rail - further investigation

○ Passenger station - further investigation

Railway alignment subject to further planning - refer to text in Part 5.3 of the Framework.

⬛ Fremantle Port

★ Kewdale freight terminal

- - - High-frequency public transit

NOTE: This is a conceptual representation of broad planning intentions within the sub-region. Further planning processes and decision-making under relevant legislation will need to be undertaken, including with reference to amendment of statutory instruments and detailed planning.

N

0   1   2   3   4
kilometres

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Base information supplied by Western Australian Land Information Authority SLIP 944-2017-1
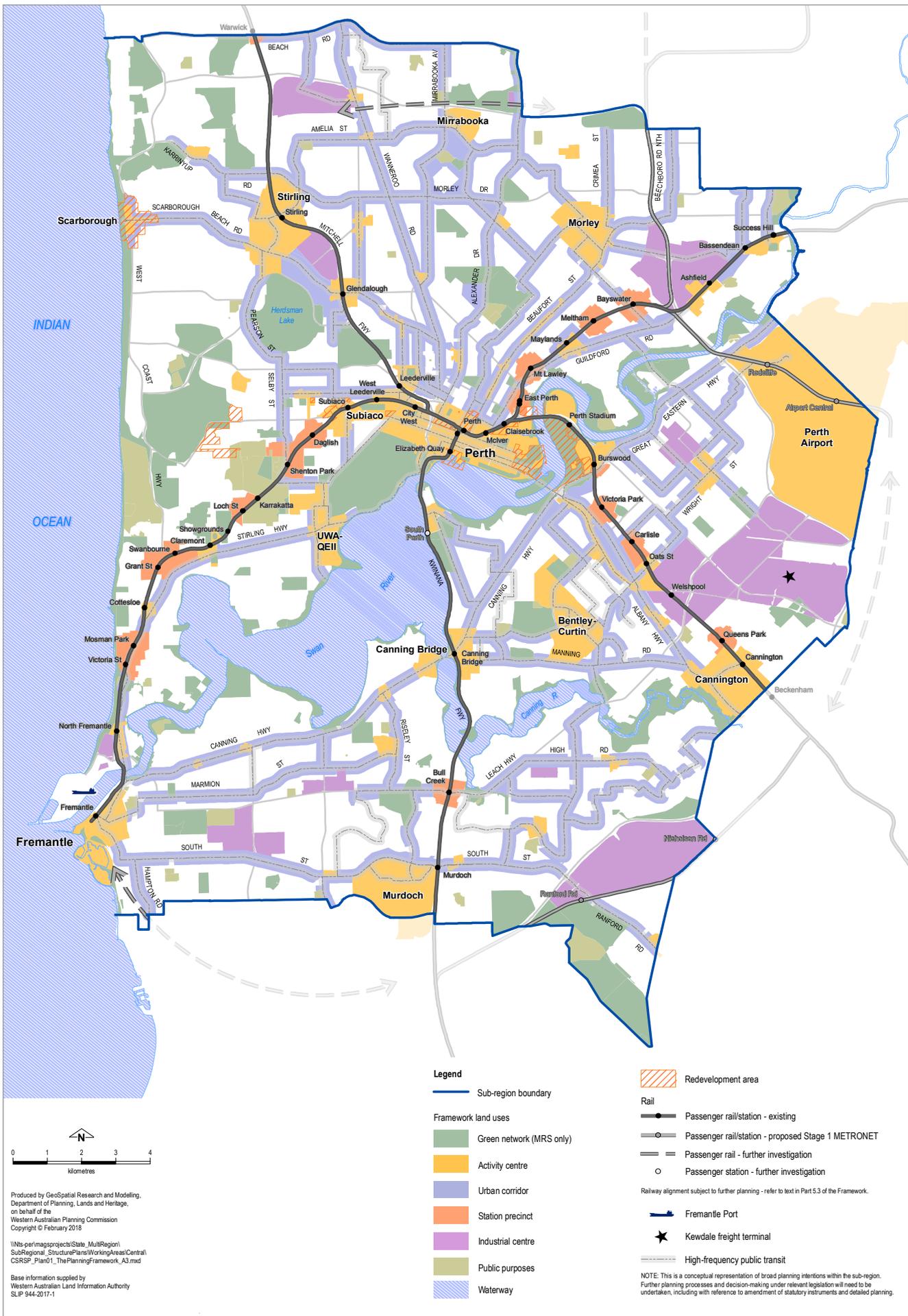
Figure 2:   Central Sub-Regional Planning Framework (Source: Department of Planning).
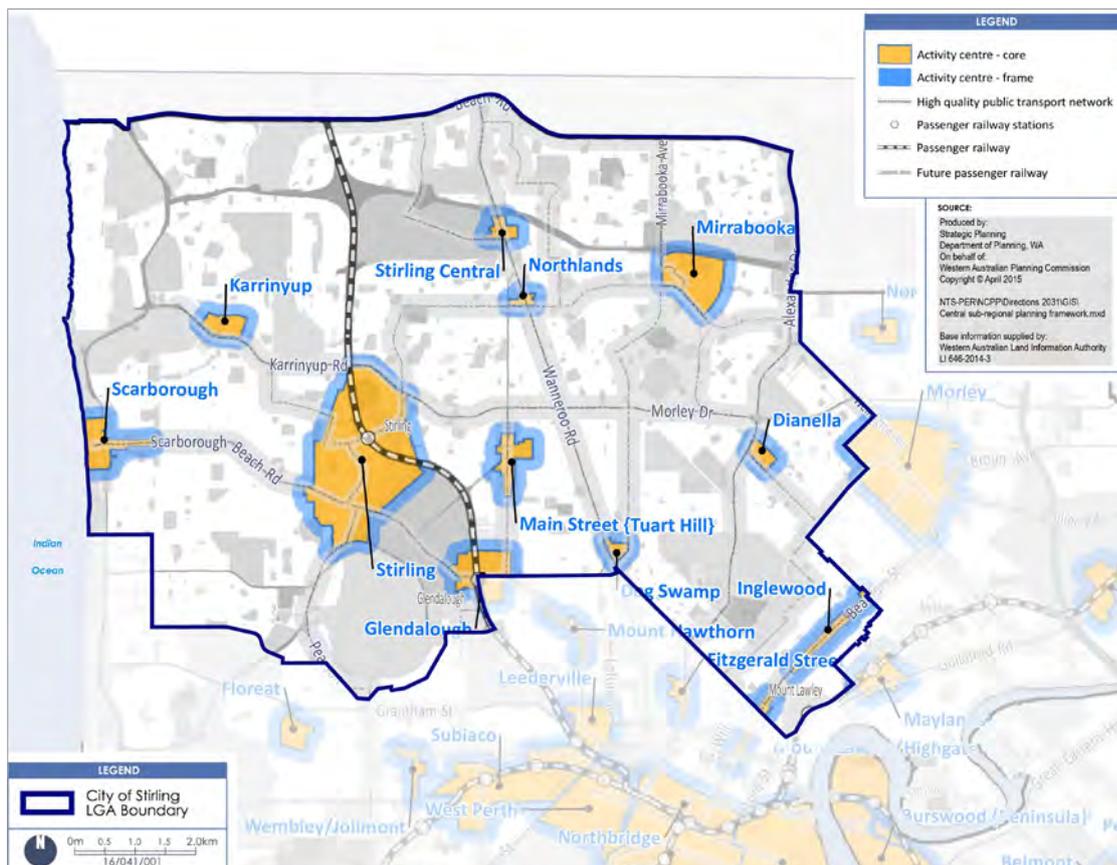
Figure 3: Activity Centres as set out in SPP 4.2 – Activity Centres for Perth and Peel (Source: Department of Planning)

Draft Perth Coastal Planning Strategy

The draft Perth Coastal Planning Strategy (PCPS) is to provide guidance and support to decision-making on the future land use, development and conservation of the Perth metropolitan coastline from Two Rocks to Singleton. The PCPS makes recommendations for 56 coastal precincts, three of which are located within the City.

The WAPC resolved in 2011 to integrate the PCPS into the Directions 2031 and Beyond strategy, to ensure coastal planning of precincts was appropriate and complementary to the Directions 2031 Activity Centres hierarchy. The coastal centres identified in the PCPS are now more broadly considered through Perth and Peel @3.5million.

Implications

The Local Planning Strategy recognises the importance of and the challenges faced in the conservation of the foreshore environment. The City shall protect the natural coastal areas and acknowledging its value from a recreational, residential, commercial and ecological perspective.

2.5.2 Perth Transport Plan For 3.5 Million People And Beyond

In March 2018, the Department of Transport, Main Roads Western Australia and the Public Transport Authority adopted the Perth and Peel @3.5 million – The Transport Network document. This document is a strategic planning document that has been developed as a vision for Perth's future transport network. The Transport Network document identifies a range of strategies to alleviate road congestion such as the appropriate management, upgrading and offering of feasible public transport options which can:

- encourage people to work near where they live;
- promote and encourage employment opportunities which meet the skill base of the local commuting population;
- improve integration of transport within activity centres;
- investigate transport options, including new routes and technology;
- provide movement network improvements including upgrades and extensions of road, rail and transit priority routes; and
- identify new regional road networks in new urban and industrial development areas and connections to existing and proposed freight infrastructure.

Public transport infrastructure has been prioritised through METRONET to support the vision to deliver sensitive, sustainable and vibrant communities. This strategic infrastructure investment will provide an opportunity for the optimisation of improved infill opportunities. Easy movement of people and freight is a key to economic development, so it is critical to integrate urban and employment centres with efficient transport infrastructure and services. Achieving the most efficient use of current and proposed transport networks, services and social infrastructure is a critical element of planning for this future population growth within a consolidated urban form.

A Central sub-region 2050 Public Transport Network plan is shown at Figure 4. The various components of the plan are discussed in the Traffic and Transport section.
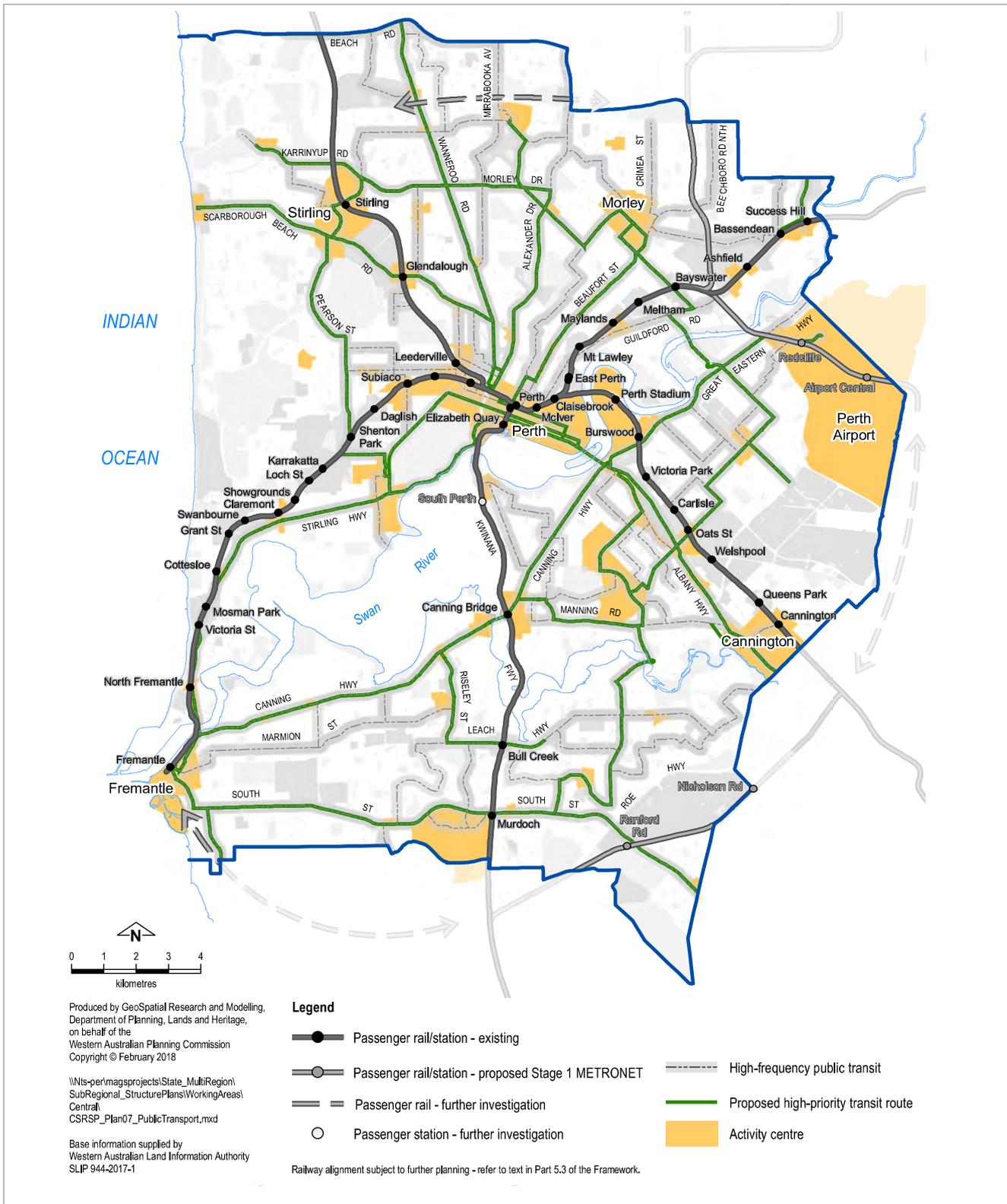
Figure 4: Central sub-region 2050 Public Transport Network plan (Source: Department of Transport)

The Perth and Peel @3.5million Transport Network document does not identify key time frames or funding of public transport network expansion. In some circumstances, the local government may seek to fund transport infrastructure. Mechanisms are available to the local government, including rates, loans, user-pays systems, Federal Government grants, public private partnerships, incentivised contributions through planning instruments, or a combination of these.

Implications

The Local Planning Strategy (sections 5 and 11 of this document) recognises the need for an integrated and efficient public transport system. It gives consideration to the transportation opportunities where high quality residential, commercial and other land use and redevelopment can be achieved.

In enabling the City of Stirling to reach the development goals set under Perth and Peel @3.5 million, some of the identified elements in the plan may require delivery earlier than the State Government intends, such as rapid transit along Scarborough Beach Road.

The State Government and the City have both undertaken a significant amount of planning for the Scarborough Beach Road Activity Corridor, as discussed in the following section 2.5.3 (and also refer to the Economy and Employment section and the Retail and Commercial section for discussion on the Stirling City Centre and Herdsman Glendalough Area).

2.5.3 Scarborough Beach Road Activity Corridor Framework

The Scarborough Beach Road Activity Corridor Framework was prepared by the WAPC and the City of Stirling to set out a vision for 50,000 residents, 40,000 jobs, priority public transport, pedestrian and cycling infrastructure, and an improved built form. It was adopted by the City in August 2016. Detailed planning for Scarborough Beach Road within the City of Stirling follows Perth and Peel @3.5million and the Scarborough Beach Road Activity Corridor Framework, with the Department of Planning undertaking amendments to the Metropolitan Region Scheme to facilitate development outcomes.

The Scarborough Beach Road Activity Corridor Framework identifies the subject area as an important linkage between the Stirling City Centre and Glendalough Train Station, with the potential for two future local nodes along the Scarborough Beach Road alignment. The future vision for the locality identifies:

- A stronger visual interface with the street facilitated by higher density, multi-storey built form outcomes with reduced front setbacks;

- Improved transportation linkages and the strong integration of public transport, cycling and walking throughout the subject area;

- Introduction of residential development once a higher level of amenity and accessibility is achieved;

- A significant upgrade to Scarborough Beach Road with the addition of dedicated transit lanes, off-street cycle lanes, on-street parking and generous pedestrian facilities to connect with the station; and

- A highly improved public domain, with the introduction of informal meeting places, high quality landscaping, street trees and street furniture.

Implications

The Local Planning Strategy (sections 5, 6, 7,8, 10 11 and 12 of this document) recognises that the Scarborough Beach Road Activity Corridor Framework identifies the need for integration of higher density, mixed use development along major corridors, including Scarborough Beach Road, Jon Sanders Drive, Hutton Street and Selby Street.

In addition to the incorporation of residential development within the mixed use precincts, the Scarborough Beach Road Activity Corridor Framework proposes to incorporate residential development south of Scarborough Beach Road and within an 800-1,000m catchment of the Glendalough Train Station.

2.6 Other Strategic And Operational Policies

In addition to the above, the WAPC has adopted a wide range of strategic/operational policies to guide its decision-making and advice on subdivision and development applications. These policies apply when the City and the WAPC consider applications for rezoning of the Scheme or general subdivision/development within the City of Stirling.

The following Strategic Policies apply to the City of Stirling and have been taken into account in the preparation of the Local Planning Strategy.

2.6.1 Government Sewerage Policy: Perth Metropolitan Region (Planning Bulletin 7)

The Government Sewerage Policy (1995) requires that reticulated sewerage be available to all new subdivisions in the Perth Metropolitan Region unless special conditions exist. Reticulated sewerage is essential to eliminate potential health and environmental risks associated with septic systems and assist in the orderly development and redevelopment of land.

Implications

The Local Planning Strategy (sections 12 of this document) recognises that reticulated sewerage is an important infrastructure provision as part of development. A portion of the Osborne Park Industrial Area remains un-sewered and over time, further provision of sewerage infrastructure will be required.

2.6.2 Liveable Neighbourhoods

Liveable Neighbourhoods is an operational policy for the design and assessment of structure plans and subdivision for new urban areas in the metropolitan area and country centres. Liveable Neighbourhoods is applied in the design and approval of urban development, structure planning and subdivision for greenfield sites and for the redevelopment of large brownfield and urban infill sites.

Implications

Liveable Neighbourhoods is acknowledged in the Local Planning Strategy (sections 5, 9 and 10 of this document) to be of importance in the sustainable development of communities. The relevant planning for significant redevelopment and infill opportunities within the City of Stirling shall be undertaken in accordance with design criteria set out in Liveable Neighbourhoods.

2.6.3 Regional Residential Design Guidelines For The Perth Metropolitan Region (1994)

The purpose of these guidelines is to provide for a wider range of housing for the needs of traditional family housing and also for the changing demographic of Perth. The five key principles of these guidelines are:

- Provide opportunity for a wider range of housing types throughout the metropolitan region;
- Encourage the retention and enhancement of existing suburb amenity;
- Promote efficient use of public utility services;
- Provide a framework for local governments to prepare local housing strategies; and
- Assist local governments to identify precincts for the protection/promotion of various housing types.

Implications

The Local Planning Strategy (sections 5 and 10 of this document) acknowledges that a range of housing choice is important to the various types of households living in the City of Stirling. The Local Planning Strategy seeks to protect the character and housing typology for families within the suburbs, whilst focusing higher densities and a range of housing types in Activity Centres and along Corridors.

2.6.4 Urban Bushland Strategy (1995)

The Urban Bushland Strategy is the precursor to Bush Forever (refer section 2.4.1.5) and establishes the framework for the detailed planning for the protection and conservation of bushland within the Perth Metropolitan Region.

Implications

The Local Planning Strategy (section 4 of this document) recognises that bushland plays a vital role in green infrastructure and the protection and management of bushland is needed to achieve wider biodiversity and sustainability outcomes. Any land use and development associated with bushland areas should provide for an improved environmental outcome.

2.6.5 Development Control Policies

In addition to the above the WAPC has adopted a range of operational Development Control (DC) policies to guide its decision making on subdivision and development applications. These policies apply when the City and the WAPC consider applications for subdivision or development within the City:

- DC 1.1 Subdivision of Land-General Principles (2004)
- DC 1.2 Development Control-General Principles (2004)
- DC 1.3 Strata Titles (2009)
- DC 1.4 Functional Road Classification for Planning (1998)
- DC 1.5 Bicycle Planning (1998)
- DC 1.6 Planning to Support Transit Use and Transit Oriented Development (2006)
- DC 1.7 General Road Planning (1998)
- DC 1.9 Amendments to Region Schemes (2010)
- DC 2.2 Residential Subdivision (2013)
- DC 2.3 Public Open Space in Residential Areas (2002)
- DC 2.4 School Sites (1998)
- DC 2.6 Residential Road Planning (1998)
- DC 4.1 Industrial Subdivision (1988)
- DC 4.2 Planning for Hazards and Safety (1991)
- DC 5.1 Regional Roads (Vehicular Access) (1998)
- DC 5.3 Use of Land Reserved for Parks and Recreation and Open Space (2011)

2.6.6 Other Local Government Planning Instruments

Local government based structure plans provide for the comprehensive planning of particular locations. These plans are outlined as follows:

- Stirling City Centre Activity Centre Plan (refer Economic and Employment and the Retail and Commercial sections);
- Herdsman Glendalough Structure Plan (refer Economic and Employment section);
- Mirrabooka Secondary Centre Structure Plan (refer Economic and Employment and the Retail and Commercial sections);
- Local Structure Plan – 459 and 463 North Beach Road, Gwelup; and
- Part of the Dianella Media Zone Structure Plan.

2.7 Metropolitan Region Scheme

The Metropolitan Region Scheme (MRS) was introduced in 1963 and is the overarching statutory planning scheme for the Metropolitan Region. The MRS is the regional framework within which local planning schemes are used to control the more detailed use and development of land at the local level. To ensure consistency between Schemes at the regional and local levels, Section 123 of the *Planning and Development Act 2005* requires local planning schemes to be consistent with the relevant region scheme (the MRS). The City's local planning scheme, therefore, must reflect the land use pattern established in the MRS.

Table 3 indicates the MRS zones and reservations that currently apply within the local government area:

Under Clause 32 of the MRS the WAPC may define classes of development or development within specific Planning Control Areas to be forwarded to the WAPC for consideration and approval.

There are currently five Clause 32 resolutions specifically relevant to the City of Stirling:

- Innaloo/Osborne Park;
- Glendalough/Osborne Park;
- Scarborough Foreshore Area (currently within the Scarborough Redevelopment Area);
- Scarborough Beach Road West; and
- Shopping Centre Developments (of defined sizes).

Implications

The WAPC has published referral requirements for nominated locations within the City of Stirling. The referrals are for applications for development of the classes and locations specified in the Schedule 1 of the Resolution under Clause 32 of the MRS.

Table 3: MRS Zones And Reservations (Source: Metropolitan Region Scheme)

Reserves	Zones
Parks and Recreation Public Purposes (High Schools, Universities, Hospitals, etc) Primary Regional Roads Other Regional Roads	Urban Urban Deferred Central City Area Industrial

2.8 Neighbouring Local Governments – Strategic Direction

Several of the local governments (Joondalup, Wanneroo, Swan, Vincent, Cambridge, and Bayswater) abutting the City of Stirling, have an endorsed Local Planning Strategy. Each local government has prepared a Strategic Community Plan.

The content of these documents indicates that the City of Stirling is heading in the same direction, with the general goals and aims being reflected across the local government areas. The City is keen to work with neighbouring authorities and recognises the importance of cross-boundary working groups, to achieve consistent community gains.

2.8.1 City Of Joondalup

The City of Joondalup has prepared a Local Planning Strategy in accordance with the City's statutory requirements under the *Planning and Development Act 2005*. The draft Strategy was adopted at the Ordinary Council Meeting held in July 2014, and was endorsed by the Western Australian Planning Commission in November 2017.

Vision

The vision for the City of Joondalup as outlined in its Strategic Community Plan as "A Global City: bold, creative and prosperous".

Objectives/Aims

The objectives of the Local Planning Strategy are:

- To develop and consolidate the City Centre as the Strategic Metropolitan Centre for the North West sub region and aspire to achieve Primary Centre status.
- To provide additional and more diverse housing to cater for an ageing population and changing household

structures.

- To develop attractive, successful commercial centres that are accessible and well-connected to residents.
- To achieve greater employment self-sufficiency.
- To ensure existing transport routes are used to their full capability by locating intensive land uses with significant trip generating potential in close proximity to those routes, and adjacent to railway stations.
- To enhance cycling and pedestrian networks.
- To protect and enhance the natural and built environment within the City.
- To ensure public open space is easily accessible and provides protection for vegetation and biodiversity, amenity and quality recreational opportunities.
- To protect and promote buildings, objects and places of heritage significance.

2.8.2 City Of Swan

The City of Swan has an adopted Local Planning Strategy endorsed by the WAPC.

Vision

The vision for the City of Swan as outlined in its Strategic Community Plan is "One City – Diverse Places".

Objectives/Aims

The aims of the Local Planning Strategy are:

- Liveable Neighbourhoods: To provide for a range of compatible housing and associated development, in neighbourhoods with a distinctive community identity and high levels of safety and amenity.

- Successful Commerce: To provide for safe, convenient, attractive and viable commercial facilities, which meet the diverse needs of the community with respect to the retail distribution of goods and commercial services, and contribute towards a high level of employment self-sufficiency for the resident workforce.

- Environmentally Acceptable Industry: To provide for a range of conveniently located and environmentally acceptable industrial enterprise which will meet the needs of the wider community, strengthen the economic base of the City and contribute towards a high level of employment self-sufficiency for the resident workforce.

- Sustainable Rural Settlements: To provide opportunities for continued and sustainable rural settlements in locations with access to appropriate community services and infrastructure and where future development will not prejudice landscape and natural resource values.

- Productive Agriculture: To promote the sustainable and productive use and management of agricultural land of particular regional and local significance.

- Sensitive Resource Management: To ensure the judicious management of natural environmental resources of particular regional and local significance, and limit the environmental impact associated with the use or development of land.

- Heritage and Character Protection: To promote the conservation of places of particular cultural significance.

- Efficient and Integrated Transport: To ensure the development of a safe, effective and convenient system of movement for both people and goods

2.8.3 City Of Vincent

Following the Vincent Vision consultation program, the City of Vincent adopted its draft Local Planning Strategy and draft Town Planning Scheme No. 2 and advertised the documents in 2014. The Western Australian Planning Commission endorsed the City of Vincent's Local Planning Strategy in late 2016. The City of Vincent Local Planning Scheme No.2 was gazetted in May 2018.

Vision

The vision for the City of Vincent as outlined in the Strategic Community Plan is "A sustainable and caring community built with vibrancy and diversity".

Objectives/Aims

Some of the objectives of the Local Planning Strategy include:

- Promoting and safeguarding the health, safety and convenience and general welfare of the inhabitants of the City;

- Recognising the historical developments of the municipality and its contribution to the identity of the City's residential and commercial centres and associated sense of place;

- Integrating land uses and transport systems throughout the district;

- Achieving quality urban design outcomes for public and private areas that provide the City with high levels of amenity;

- Catering for the diversity of demands, interests and lifestyles by facilitating and encouraging the provision of a wide range and choice in housing to support the changing social needs of the community, including the ageing population and affordability;

- Co-ordinating and ensuring that development is carried out in an efficient, sustainable and responsible manner that integrates consideration of economic, social and environmental goals and reduces the City's carbon footprint;

- Ensuring that planning at the local level is consistent with the Metropolitan Region Scheme and State Planning Policy;

- Improving access into and around the district, and ensuring safe and convenient movement of people, including pedestrians, cyclists, public transport users and motorists;

- Maintaining and enhancing the network of open space to cater for active and passive recreation, consistent with the needs of the community;

- Assisting employment and economic growth by ensuring suitable planning provisions to support a variety of retail, commercial, entertainment and tourism developments in key locations, to provide employment self-sufficiency and self-containment; and

- Providing a flexible and robust strategic and statutory planning framework for the City that can readily adapt to forecasted growth and market trends as they arise.

2.8.4 Town Of Cambridge

The Town of Cambridge has prepared a draft Local Planning Strategy, and preliminary advertising of that document occurred in August 2018. The draft Local Planning Strategy will be considered by Council prior to being referred to the Western Australian Planning Commission to seek certification to undertake formal consultation. The final adoption of the Town of Cambridge Local Planning Strategy is expected to occur in 2020.

2.8.5 City Of Wanneroo

The City of Wanneroo is currently preparing a Local Planning Strategy to provide strategic direction for future town planning and development. The preparation of the Local Planning Strategy commenced in August 2016. A draft is expected to be produced by late 2019.

2.8.6 City Of Bayswater

The City of Bayswater has commenced their Local Planning Strategy. Informal community engagement occurred in late 2017 – early 2018, and a draft Local Planning Strategy is expected to be presented to Council in early 2019.

2.8.7 Consultation With Neighbouring Local Governments

The City has previously consulted with each neighbouring local government in regards to the Local Area Planning Project Areas, and is actively involved with the following local governments with these on-going projects:

City of Vincent

- Scarborough Beach Road Activity corridor study;
- Herdsman and Glendalough Structure planning; and
- Beaufort Street Activity Corridor.

City of Bayswater

- Morley/Galleria Activity Centre Plan.

City of Joondalup

- Warwick Activity Centre Plan; and
- Coastal Planning.

2.9 City Of Stirling Strategic Community Planning And Corporate Planning

The strategic foundation for the City's Local Planning Strategy derives from the Strategic Community Plan 2016 – 2026 Vision and Mission, respectively:

The City of Stirling will be a place where people choose to live, work, visit and invest. We will have safe and thriving neighbourhoods with a range of housing, employment and recreational opportunities. We will engage with our diverse community to help shape our future into the City of Stirling – City of Choice.

Our Mission:

To serve the City's diverse community through delivering efficient, responsive and sustainable services.

Our Values:

The City of Stirling's core values are:

- *Integrity*
- *Community Participation*
- *Accountability*
- *Respect*
- *Environment*
- *Diversity*

The objectives of the Local Planning Strategy align with the objectives of the City of Stirling Strategic Community Plan. These objectives have been developed during the community visioning process for the entire City and have been agreed upon by Council. Within the Local Planning Strategy the implications of these objectives focus on land use planning and built form, and how the City can best address local community values while planning for growth.

While the Local Planning Strategy guides local development and most actions have a specific local focus it is understood that the City relates to a far greater metropolitan community and as such the Local Planning Strategy also responds to the objectives of the State Planning Strategy, Directions 2031 and Beyond and Perth and Peel @3.5million.

This part of the Strategy (Part 2) is presented in nine themes. For each theme the background research and analysis is undertaken considering the City's Strategic Objectives.

As a result of this analysis a number of key issues are identified and responses to these issues are discussed in Part 1 of the Strategy.

The objectives which form the basis for the background research and analysis have been extracted from the relevant sections from the City of Stirling's Strategic Community Plan and align with the following objectives:

Liveable City and Thriving Neighbourhoods

The City of Stirling will have beautiful streetscapes, open spaces and a range of housing choices creating a strong sense of place. People will be encouraged to be active through a variety of exciting events and recreational activities. Residents will feel safe and there will be access to quality health and care services to meet the changing needs of the community. To help achieve this, through the Local Planning Strategy:

- Our suburbs will have their own unique character based on the heritage, high-quality built infrastructure and a strong sense of community in each neighbourhood;
- There will be a choice of housing size, style and price to meet the needs of our residents and infill development will be managed to preserve amenity within the City of Stirling;
- There will be well designed, clean and maintained streets, tree canopy cover will be valued and there will be ready access to parks and open space, creating a welcoming, attractive environment that supports the wellbeing of the community;
- The City will be a leader in community safety, addressing crime and antisocial behaviour by working with the community to make people feel safer while living, visiting and working in the City of Stirling;
- The City will promote public health and wellbeing and there will be a range of quality health and care services to meet the changing needs of our community; and
- There will be a choice of sport, leisure, lifelong learning, arts and events for everyone in the City of Stirling.

Sustainable Environment

The City of Stirling will value, protect and improve the environment by using natural resources wisely, reducing the impact of our activities on the environment and protecting wildlife and natural habitats. The City will support and encourage everyone in the community to work for a sustainable future. To help achieve this, through the Local Planning Strategy:

- The City's energy use and greenhouse gas emissions will be reduced and the community will be supported and encouraged to do the same;
- Development Intensification will be focussed along Activity Corridors and Centres;
- Innovative solutions will be implemented to reduce our water use and the City will be working with our community to reduce water consumption; and
- Our wildlife and natural habitats will be protected and enhanced and the community will be supported to protect and preserve the City's biodiversity.

Engaged Communities

The City of Stirling will be a place where people from diverse backgrounds will feel included and respected. Residents will be informed and involved in important local issues and encouraged to participate in community life. To help achieve this, through the Local Planning Strategy:

- The City will be a place where diversity is celebrated, people live together in harmony and there is universal access to services;

- The City will be a place where people of all ages and diverse backgrounds can pursue their interests; and

- The City will be in touch with local residents, listen to what people have to say and offer many ways for residents to provide feedback and participate in decision making.

Accessible and Connected City

The City of Stirling will be accessible with sustainable transport solutions, safer roads and parking availability. Improved technology will create a connected community with many of the City's services available online. To help achieve this, through the Local Planning Strategy:

- People will be able to meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home;

- Accessibility for pedestrians, cyclists and public transport users will be improved;

- Parking spaces will be well managed to meet the current and future demands of a growing and prosperous City; and

- Accessing the City's services online will be user friendly and straight forward.

Prosperous City

The City of Stirling will be fostering business development and employment opportunities making it a great place to invest. Our attractions and events will stimulate tourism, increasing the number of visitors to our City to help achieve this, through the Strategy:

- The City will be facilitating business development and employment opportunities making it an investment location of choice; and

- The City will be promoting visitor attractions and conducting events to enhance tourism in the area.

2.10 Summary Of Key Issues Of State And Regional Planning Context

The Local Planning Strategy has been prepared whilst having regard to the City's Strategic Community Plan 2016 – 2026. An audit of strategic community plans and local planning strategies found that the Local Planning Strategy aligns with the visions, aspirations and objectives of neighbouring local governments.

The Local Planning Strategy has been prepared having due regard to the State Planning Framework, and it aligns with the relevant State Planning Policies. The implementation of these matters will progressively be undertaken through the preparation and adoption of subsequent strategies that will complement the Local Planning Strategy, such as (not an exhaustive list):

- Integrated Catchment Management Strategy;

- Local Biodiversity Strategy (2010);

- Scarborough Beach Road West Activity Corridor Strategy (2015);

- Local Housing Strategy (2010);

- Industrial Areas in Transition Management Strategy (2004);

- Herdsman Glendalough Integrated Transport Strategy (2014);

- Retail Modelling and Centres Strategy (2016);

- Public Open Space Strategy (2008);

- Heritage Management Strategy (2016);

- Integrated Transport Strategy (2009); and

- Rights of Way Management Strategy (2009).

The Local Planning Strategy also spatially reflects the planning for the Central sub-region, including the Activity Centres and Activity Corridors. The Stirling City Centre and Herdsman Glendalough Area will be the focus for employment growth. The corridor along Scarborough Beach Road is being targeted in a way that it is expected to significantly contribute towards the State government's targets for additional housing as per Perth and Peel @3.5million. The Local Planning Strategy is seeking an integrated outcome whereby the significant growth in population and employment is in close proximity to public transport services.

Through consolidating development towards the Stirling City Centre, key employment areas and activity corridors, this maximises public infrastructure investment and ensures that population growth can be achieved without a significant level of impact on the amenity and character of the surrounding community.

2.10.1 Key Issues

The key issues distilled from the background research and analysis of each of the eleven themes within Part 1, and that are subsequently contained in Part 2, are all relevant to the Local Planning Strategy's consideration of the State and Regional Planning Context.

3. Local Profile

3.1   Introduction

The City of Stirling is located 8km north of Perth and covers a total land area of just over 100 square kilometres. It is the largest local government authority in Western Australia in terms of population, consisting of approximately 227,000 residents spread across over 30 suburbs.

3.2   Sustainable Development

Sustainable development has been of growing importance since the publication Our Common Future in 1987 (also known as the Brundtland Report). Local Agenda 21 was formulated in 1989 at the United Nations Conference on Environment & Development. Local Agenda 21 is a comprehensive plan of action that contains statements of principles for sustainable development, and provides a means of implementation at all levels of government. It is a voluntary action plan and is a valuable resource to government.

The City of Stirling believes that sustainable development is an important issue and acknowledges that it has a vital role to play at the local level. Through the City's Sustainability Policy and its governance role, Council seeks to advance and strengthen the four interdependent and mutually reinforcing pillars of sustainability – environmental protection, social development, economic development and governance in the Stirling local government area.

3.2.1   Key Principles

The following eight principles provide a set of core values that underpin the City's Sustainability Policy on operational, strategic and governance issues, and guide decision making:

Principle One: Long-term decision making

All decisions will reflect and give equal importance to the long-term impacts on the community, environment and economy as well as the achievement of shorter-term goals.

Principle Two: Fairness for all generations

The City will manage resources in a way that ensures that our children and grandchildren will also enjoy sufficient resources, and that everyone will have access to those resources.

Principle Three: Improving lives and human rights

The decisions that we make for our benefit today are not at someone else's expense and we work to improve the lives of everyone in our community.

Principle Four: Environmentally and socially responsible development

The planning and development of our City and public places will be done in the most environmentally and people friendly way that is possible.

Principle Five: Acting with precaution

When the City identifies a threat of serious or irreversible environmental harm it will take action based upon reasonable knowledge, rather than waiting for absolute proof of the consequences.

Principle Six: Conserving the natural environment and biodiversity

The City will strive to protect, retain, enhance and manage the diversity of animal, plant and human life within the City of Stirling, and the rest of the world.

Principle Seven: Minimising the impact of operations, goods and services

In everything it does and buys the City will consider the environmental and social resources that have been used to produce those things, the impacts from their disposal and use, as well as cost.

Principle Eight: Accountability, transparency and engagement

The City will report its performance clearly, accurately and fully and involve the community in decision making.

The City is committed to applying the policy in the following ways:

- The City is managed, planned and developed in accordance with sustainability principles and practices;

- The City's activities and operations support sustainability;

- The City promotes and encourages sustainability in the community; and

- Developing new policies to ensure specific sustainability outcomes are implemented.

3.3 A Brief History Of Development In Stirling

The City of Stirling lies within the area known as Mooro country, part of a greater area of land traditionally occupied by the Nyoongar people. Prior to European colonisation, the Nyoongars of the Mooro moved through the country to take advantage of each season's offerings, living on the coastal plain's wetland chain in the hot seasons and moving inland as the weather cooled.

Although the Swan River colony was first established in 1829, European settlement of the area now known as the City of Stirling remained sparse throughout the nineteenth century. Land with river frontage was the first to be occupied and farming on the Maylands Peninsula occurred from 1830 onwards. During the 1870s, small farming settlements began to spring up around the many wetlands in the area, and by the 1880s the first beach cottages were being built at North Beach. In 1898, subdivision of garden smallholdings occurred in Maylands, which became established as a primarily blue-collar suburb in the ensuing decades.

Subdivisions in Osborne Park commenced from 1903 and coincided with the construction of tramlines from Oxford Street along Scarborough Beach Road, and from Main Street to Royal Street. By 1907 a thriving centre had developed in Osborne Park. Prior to 1920, the area was particularly popular with migrants from southern Europe and China, who established market gardens there. Market Garden subdivisions were also set up in the areas of Yokine, Dianella and Balga between the years 1901 and 1912.

The Killarney Estate subdivision of Scarborough was proposed in 1904. However, the take up rate of this subdivision was slow and it attracted only a few settlers until the land was resumed and re-subdivided by the State Housing Commission in 1945.

The first residential subdivisions in Mount Lawley were undertaken in the early 1900s with land releases in 1902 and 1913, while the first surveys of the neighbouring Inglewood were carried out in the 1890s. The area was not substantially developed until the 1920s when a tramline along Beaufort Street was constructed.

The inter war period saw the residential in-filling of previously subdivided areas. By 1921, permanent settlements had been established in Osborne Park, North Beach, Maylands, Inglewood and Mount Lawley.

In the immediate post World War Two period, the Workers' Homes Board (subsequently known as the State Housing Commission, Homeswest, Ministry of Housing & Works and currently, the Housing Authority) began to move into the municipality with the construction of homes in Joondanna and Glendalough. The areas of Doubleview, Scarborough, Innaloo and North Innaloo were all subdivided and developed in the period circa 1950. It was during this period that the State Housing Commission resumed land in and around the Nollamara, Balga and Yirrigan areas.

In the post World War Two period, infill development continued in the suburbs of Menora and Coolbinia and subdivision was patterned on the then fashionable garden suburb style.

The late 1950s saw the industrialisation of much of Osborne Park and the continued expansion by the State Housing Commission in the area. The suburbs of Wembley Downs, Churchlands and Woodlands were settled from the 1960s and development of the Innaloo Shopping Centre was commenced in 1967. Karrinyup and the Karrinyup Shopping Centre, Dianella, Nollamara and Balga were also developed in this period. Carine was developed in the 1970s and the City of Stirling continued to experience expanded development in the ensuing years.

4. Physical Features, Climate, Natural Heritage, Natural Resource Management

4.1 Introduction

The City is well endowed with natural areas with 616 hectares of bushland dispersed over 68 local government vested reserves, 33 wetland sites and 6.5km of coastal dunes and beaches. The bushland reserves range in size from 0.2 to 100 hectares of which 8 are regionally significant.

The City of Stirling experiences a Mediterranean climate, one of hot dry summers and mild, cool wet winters. Approximately 80% of rainfall occurs between the months of May and September, but there has been a substantial decline in winter rainfall. The changing climate will challenge the City and its community on social and environmental fronts, including impacts on flora and fauna ecosystems, coastal erosion and heat waves.

4.2 Background

4.2.1 Current Trends

The major environmental impact facing the City is the significant loss of tree canopy. The City is losing tree canopy at an alarming rate and on a business as usual approach will see the City's tree canopy reduce to 6%. The loss of tree canopy has a number of significant impacts, including:

- Increase in the urban heat island effect resulting in increased energy usage for cooling; and

- Loss of biodiversity, including a number of bird species.

The loss of tree canopy is mainly in the City's medium density areas due to infill in the back gardens. However it is also occurring within all privately owned land areas. Even by increasing the tree canopy coverage on public owned land, the overall tree canopy coverage will still decline.

There has also been a substantial loss of biodiversity due to development of areas with natural vegetation. This will continue to occur with a number of natural vegetation areas currently not protected from a legislative perspective.

The global climate is changing as a consequence of increased concentrations of greenhouse gas emissions in the atmosphere. These increased concentrations are largely the result of human activities. There is significant evidence that climate change is already having an impact on human and natural communities.

Within the City of Stirling the current impacts of climate change include:

- Increasing coastal erosion due to sea level rise;

- Increased bushfire risk due to increasing drying climate and an increase in temperatures; and

- Substantial impact on visual amenity.

4.2.2 Future Trends

The projected climate change impacts for the City of Stirling (extracted from "Water Forever, Water Corporation", and "Adapting to our Changing Climate, Department of Environment and Conservation") the overall South-West Region of Western Australia impacts include:

- South Western Australia is expected to become warmer with more hot days and fewer cold nights;

- Growth in peak summer energy demand is likely, due to air-conditioning use, which may increase the risk of blackouts;

- Warmer temperatures and population growth are likely to cause a rise in heat related illness and death for those over 65;

- Warmer conditions may also help spread insect-borne, water-borne and food-borne disease further south;

- Increased stress on water supply is possible due to increased demand and climate-driven changes;

- Possible decline in annual rainfall and higher evaporation is likely to reduce runoff to rivers;

- More frequent and severe droughts are likely;

- Increases in extreme storm events are expected to cause more flash flooding;

- Sea level rise and storm surge inundation may impact on coastal areas and associated development and infrastructure;

- Reduction in ground water levels may trigger soil acidification and cause land subsidence; and

- Reduction in allocation of water for reticulation of reserves due to reduced ground water levels.

4.3   Local Context And Future Possibilities

4.3.1   Physical Features

Wetlands

The City's 33 wetland sites are largely ephemeral and groundwater fed. Most occur along the line of depression between the Quindalup and Spearwood Dune systems. The major wetlands of prominence and recognised as Environmental Protection Policy wetlands (holding State value) include:

- Careniup Balcatta;
- Careniup Exmouth;
- Careniup Sarus;
- Careniup Willowbank;
- Careniup Grassbird Pending;
- Carine ROS;
- Dog Swamp;
- Jackadder Lake;
- Lake Gwelup;
- Maurie Hamer Park; and
- Star Swamp.

The City's Wetlands will be under increasing pressure from a drying hotter climate and strategies aimed at maintaining current ground water levels, including reduction in extraction of ground water and reinjection of waste water will be critical in maintaining these valuable wetlands.

Coastal Landscape

The City's 6.5km of coastal dunes, stretching from the Peasholm Street Dog Beach northwards to Watermans Bay, are largely classed as Quindalup Dunes (Safety Bay Sands) and Spearwood Dunes (sands derived from Tamala Limestone). The variations in the City's coastal landform largely determine the vegetation associations and habitat opportunities. Native vegetation on coastal landforms are species that are tolerant of strong prevailing winds, salt spray, shifting growth substrates and low soil moisture conditions.

4.3.2   Climate Change

Coastal Planning

The risk to the coastal environment and coastal development from climate change will increase overtime. The City has undertaken a number of studies into the impacts of climate change on the coastal environment. These studies are required to be consolidated into an overarching Coastal Strategy for the City of Stirling. Figure 5 highlights the proposed framework to deal with coastal planning within the City of Stirling.
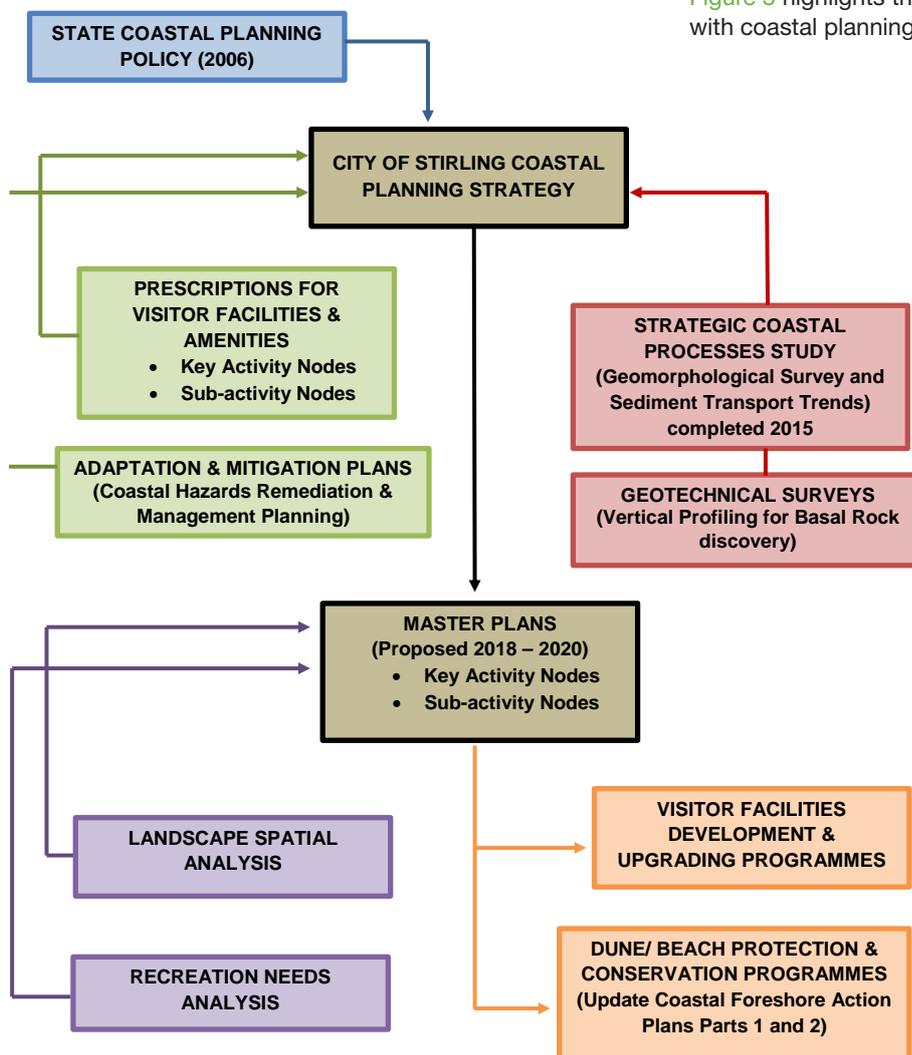
Figure 5:
Proposed coastal planning framework for the City of Stirling (Source: City of Stirling)

Storm Surge And Flooding

While climate change will result in reduced rainfall in some parts of Western Australia, it may also present a higher risk of more intense rainfall events in the south west and far north of Western Australia and subsequent flooding in some areas. The increased risk of climatic and weather extremes resulting in flooding in coastal and flood prone areas adds pressure to the drainage and waste water system. This in turn puts financial pressure on local government to upgrade, maintain and repair storm water infrastructure. There is also an associated flood hazard of water contamination and thus human health risks due to drainage/sewerage inundation.

Bushfire Risk

With a warming and drying climate the impacts of bushfires is expected to increase significantly in bushfire prone areas. Western Australia's bushfire season runs between November and April in the South-West.

State Planning Policy 3.7 Planning in Bushfire Prone Areas seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. It applies to all higher order strategic planning documents, strategic planning proposals, subdivision and development applications located in designated bushfire prone areas (unless exemptions apply).

It also provides the State Government's bushfire planning requirements which apply to all new planning proposals for habitable buildings (e.g. house, restaurant, office, etc.) or specified buildings in areas designated as bushfire prone. The Map of Bushfire Prone Areas (Figure 6) identifies several parts of the City of Stirling as bushfire prone.

Draft bushfire prone areas
100m buffer from draft bushfire prone areas

DRAFT BUSHFIRE PRONE AREAS FOR DISCUSSION
DECMEMBER 2014
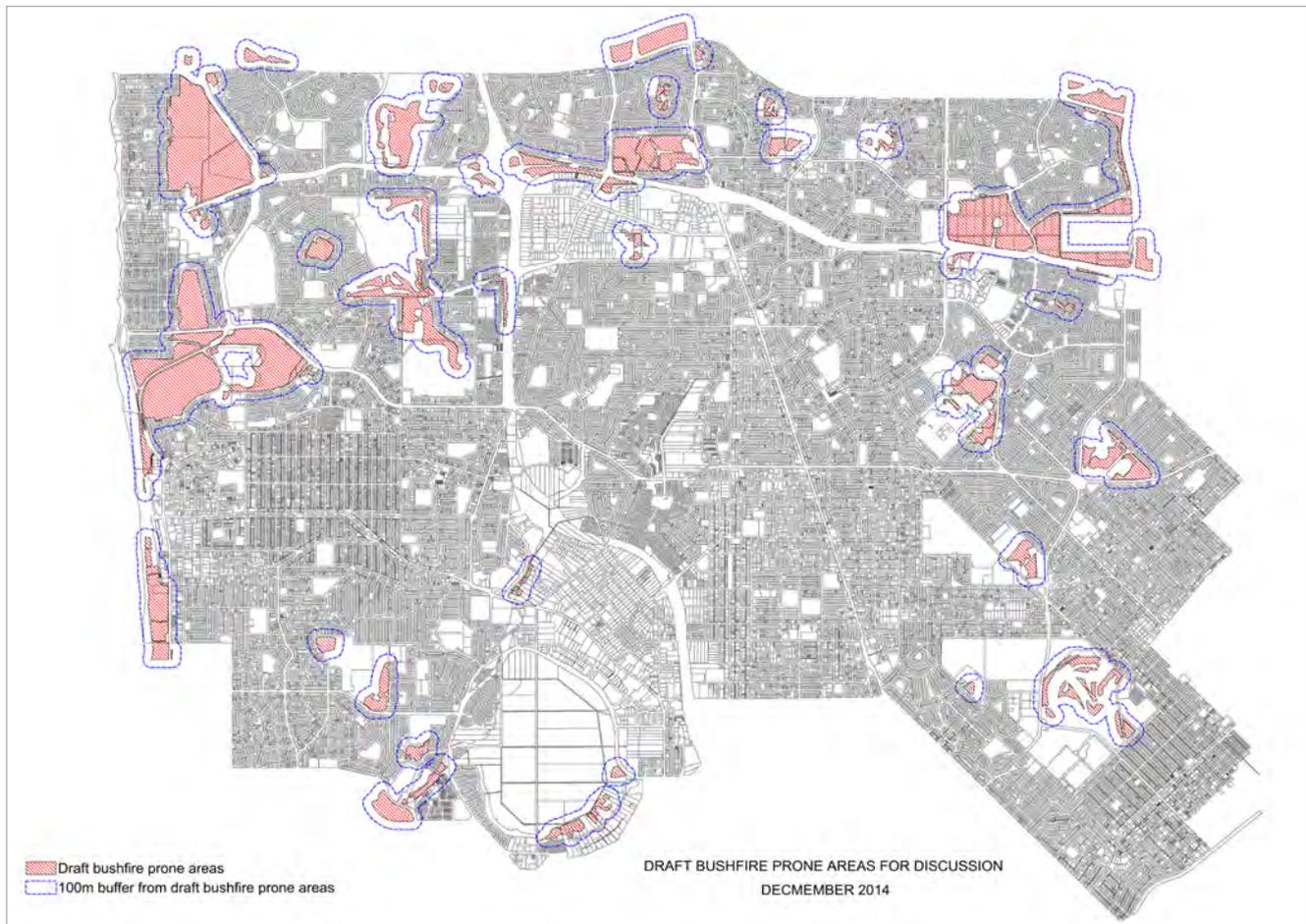
Figure 6: BushFire Prone Areas within the City of Stirling (Source: City of Stirling)

Sustainability

Sustainable development is an important issue and the City acknowledges that it has a vital role to play at the local level. Through the City's Sustainability Policy and its governance role, Council seeks to advance and strengthen the four interdependent and mutually reinforcing pillars of sustainability – environmental protection, social development, economic development and governance in the Stirling local government area.

The following eight principles provide a set of core values that underpin the City's Sustainability Policy on operational, strategic and governance issues, and guide decision making:

- Long-term decision making;
- Fairness for all generations;
- Improving lives and human rights;
- Environmentally and socially responsible development;
- Acting with precaution;
- Conserving the natural environment and biodiversity;
- Minimising the impact of operations, goods and services; and
- Accountability, transparency and engagement.

4.3.3 Natural And Cultural Heritage

Natural Heritage

The City of Stirling has adopted a Local Biodiversity Strategy (2010). The Local Biodiversity Strategy recommends that a series of regional ecological linkages be provided and protected (Figure 7). The vision statement is "to establish local biodiversity as a core community value". The vision statement was supported by the following principles:

- All ecological communities locally represented must be protected to ensure retention in perpetuity;
- The conservation of locally significant natural areas is just as important as those that are regionally significant;
- Natural ecosystems must be given the opportunity to naturally regenerate before resorting to re-vegetation;
- The highest biodiversity value natural areas should be given greater conservation priority over other areas;
- Threats to natural ecosystems are mostly human induced; conservation strategies should therefore be based on this assumption;
- The conservation of natural areas as a legitimate form of land use must be recognized to ensure protection of these areas;
- Community engagement is vital to perpetuating biodiversity into the future; and
- The conservation of natural areas must by necessity be adopted as a long-term perspective.
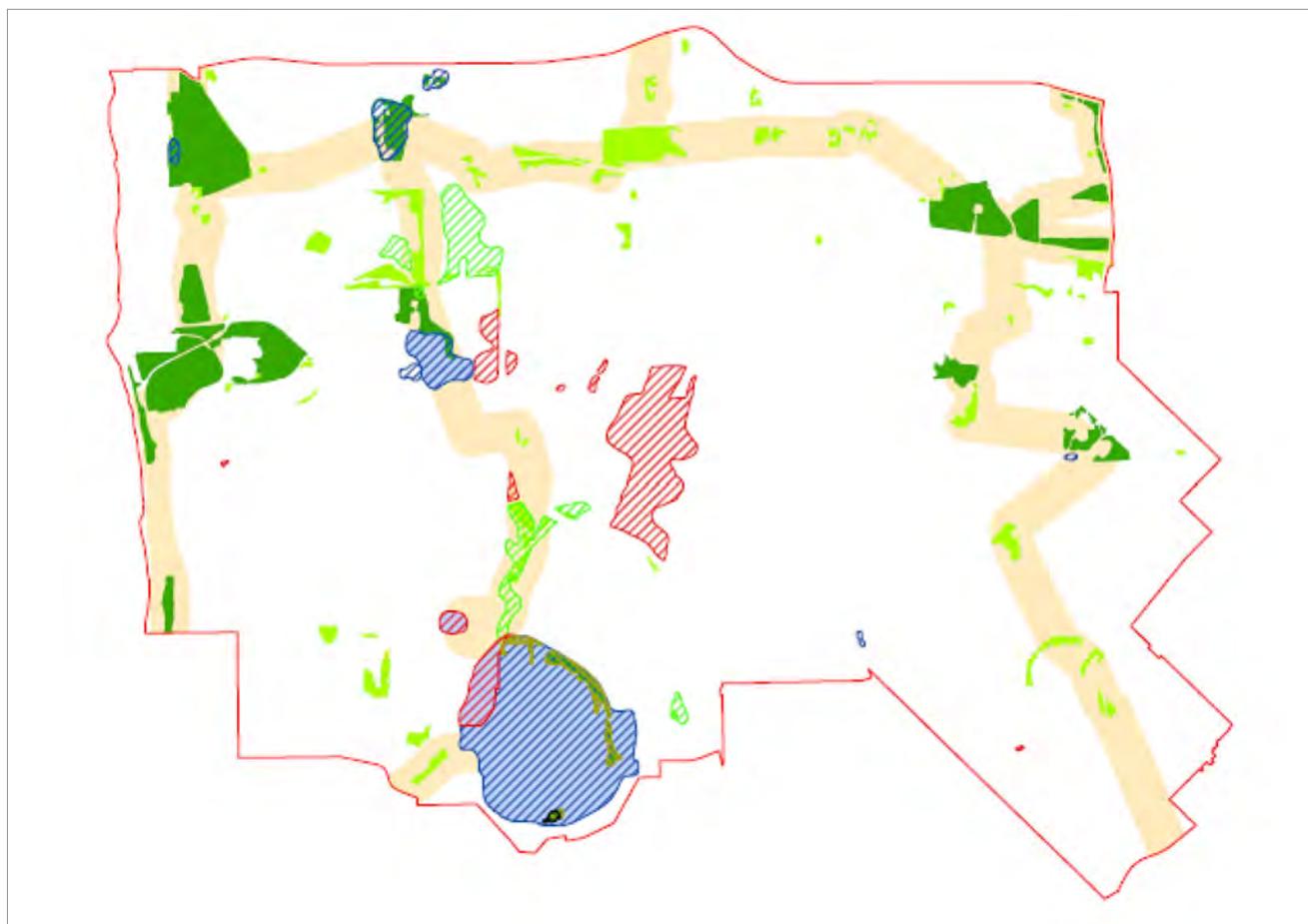
Figure 7: Regional Ecological Linkages within the City of Stirling. (Source: City of Stirling)

A summary of the City's biodiversity status is below:

- A total of 737.9 hectares of bushland of which 381.2 hectares are vested in the City over 70 reserves, 15.2 hectares of potentially to be vested and 341.5 hectares under other agencies/authorities;

- 33 wetland sites;

- 6.5km of coastline;

- Eight regionally significant natural areas (including Bush Forever sites); and

- 44 locally significant natural areas;

- Five vegetation complexes – Quindalup, Cottesloe Central and South, Herdsman, Karrakatta central and South, Bassendean Central and South – all well below the 30% National threshold level for retention;

- Eight endangered/threatened flora;

- 274 species of native fauna (including 110 bird, 46 reptile and andamphibian and 14 mammal and 104 invertebrate species);

- 16 endangered/threatened fauna.

Table 4 and Table 5 outline the rare flora and threatened fauna within the City of Stirling.

Table 4: Endangered / Threatened Flora (Source: Local Biodiversity Strategy, City of Stirling)

Species	Conservation Status	Site Location
Hibbertia glomerata subsp. gingensis	Priority 1	Dianella Regional Open Space #
Eremaea asterocarpa subsp. brachyclada	Priority 1	Dianella Regional Open Space #
Eremaea acutifolia (Rusty eremaea)	Priority 2	Dianella Regional Open Space, Appleblossom Polyantha
Acacia benthamii	Priority 2	Princess Wallington Reserve, Star Swamp Reserve, Dianella Regional Open Space
Amocrinum gracillium (Lily)	Priority 2	Appleblossom Polyantha, Richard Guelfi Reserve
Calectasia browneana (Blue-tinsel lily)	Priority 2	Dianella Regional Open Space #
Stylidium pseudocaespitosum	Priority 2	Dianella Regional Open Space
Synaphea aephynsa	Priority 3	Dianella Regional Open Space #
Tetratheca parvifoia	Priority 3	Dianella Regional Open Space
Tetratheca pilifera	Priority 3	Esperanto Martin Reserve
Jacksonia sericea	Priority 4	Appleblossom Polyantha, Princess Wallington Reserve, Dryandra Pendula Reserve, Fragrant Gardens Reserve, Heritage Park, Honeywell Oakleaf Reserve, Rannoch Tay Earn Reserve, Sandover Reserve, Richard Guelfi Reserve, Star Swamp Reserve, Trigg Bushland Reserve, Wanneroo Blissett Cope Reserve, Dianella Regional Open Space
Grevillea thelemanniana subsp. Preisii	Priority 4	North Beach Coastal Reserve
Grevillea thelemanniana subsp. Preisii	Priority 4	Watermans Bay Coastal Reserve
Anigozanthus humilis subsp. Chrysanthus (Golden cats paw)	Priority 4	Dianella Regional Open Space
Caladenia longicauda subsp. Cicvola	Priority 4	Dianella Regional Open Space
Stylidum striatum (Fan-leaved trigger plant)	Priority 4	Dianella Regional Open Space #
Stylidium inversiflorum	Priority 4	Dianella Regional Open Space
Caladenia hugellii (Grand spider orchid)	Declared Rare	Dianella Regional Open Space
Banksia oligantha (Holly-leaved banksia)	Declared Rare	Dianella Regional Open Space, Richard Guelfi Reserve
Calectasia cyanea (Blue-tinsel lily)	Declared Rare	Dianella Regional Open Space, Cottonwood Cres Bushland Reserve
Calytrix breviseta subsp. breviseta	Declared Rare	Dianella Regional Open Space

Table 5: Endangered / Threatened Fauna (Source: Local Biodiversity Strategy, City of Stirling)

Species	Conservation Status	Site Location
Botaurus poiciloptius (Australian bittern)	Specially Protected (as per Schedule 1 of Wildlife Conservation Act: fauna that is rare or is likely to become extinct)	Herdsman Lake Regional Park
Falco peregrinus (Peregrine falcon)	Specially Protected (as per schedule 1 of Wildlife Conservation Act: fauna that is rare or is likely to become extinct)	Herdsman Lake Regional Park
Calyptorhynchus latirostris (Carnaby's black cockatoo)	Endangered (as per EPBC Act)	Star Swamp Bushland Reserve, Cottonwood Cres Bushland Reserve, Dianella Regional Open Space, Richard Guelfi Reserve, Herb Elliott Reserve
Leioproctus douglasiellus Native bee)	Endangered (as per EPBC Act)	Breckler Park Bushland Richard Guelfi Reserve
Calyptorhynchus baudinii (Baudin's black cockatoo)	Threatened (as per EPBC Act)	Breckler Park Bushland, Cottonwood Cres Bushland Reserve
Rostratula benghalensis australis (Australian painted snipe)	Vulnerable (as per EPBC Act)	Herdsman Lake Regional Park
Merops ornatus (Rainbow bee-eater)	Migratory Species (as per EPBC Act)	Star Swamp Reserve, Dianella Regional Open Space, Cottonwood Crescent, Eastland Molloy Reserve, Lake Gwelup Reserve, Spoonbill Shearwater Reserve, Appleblossom Polyantha, Carine Regional Open Space, Careniup Swamp Wetlands, Trigg Bushland Reserve

Table 6: City of Stirling Vegetation Types and Soil Complexes (Source: Local Biodiversity Strategy, City of Stirling)

Vegetation Complex	Structural Description	Pre-European Extent		Remaining Extent	
		Total (ha)	%	Total (ha)	%
Bassendean Complex Central & South	Vegetation ranges from woodland of *Eucalyptus marginata / Allocasuarina fraseriana*. *Banksia spp.* and sedgelands on the moister sites. This area includes the transition of *Eucalyptus marginata* and *Eucalyptus toditiana* in the vicinity of Perth.	1,268	12	30	4
Cottesloe Complex Central & South	Mosaic of woodland of *Eucalyptus gompho-cephala* and open forest of *E. gomphocephala / Eucalyptus marginata / Corymbia calophylla*; closed health on limestone outcrops	1,894	18	311	42
Herdsman Complex	Sedgelands and fringing woodland of *Eucalyptus rudis* and *Melaleuca spp*.	1,486	14	68	9
Karrakatta Complex Central & South	Predominantly open forest of *Eucalyptus gomphocephala / Eucalyptus marginata / Corymbia calophylla* and woodland of *Eucalyptus marginata* and *Banksia* spp.	5,463	52	301	41
Quindalup Complex	Coastal dune complex consisting of mainly two alliances viz. (1) the strand and fore dune alliance and (2) the mobile and stable dune alliance. Local variations include the low closed forest of *Melaleuca lanceolata / Callitris preissii* and the closed scrub of *Acacia rostellifera*.	407	4	28	4

Cultural Heritage

There are several Aboriginal heritage sites within the City's boundaries. The Department of Aboriginal Affairs maintains a database of site locations on the Aboriginal Heritage Inquiry System (AHIS). There are other sacred sites within the City's boundaries of which locations cannot be disclosed.

4.3.4   Natural Resources

Vegetation Types And Soil Complexes

The City's natural areas traverse a wide range of terrain and contain a number of vegetation types (Mattiske & Procter 2007). Five (5) Vegetation Complexes have been discovered in the City of Stirling, which refer to the patterning of vegetation at the regional level based on determining factors such as landform, soil and climate. The Vegetation Complexes are:

- Quindalup;

- Cottesloe Central and South;

- Herdsman;

- Karrakatta Central and South; and

- Bassendean Central and South.

These vegetation complexes offer a range of flora and fauna structures and the City has determined the extent of these vegetation complexes and the areas are provided in Table 6.

Acid Sulphate Soils

Since the problem of Acid Sulphate Soils (ASS) was first identified in 2001, the City has undertaken significant research in comprehending the nature of ASS, the extent of their occurrence and development of remediation strategies.

Declining winter precipitation is resulting in declining water tables, with the ground water table on average fallen by two metres in the past 30 years. This movement risks exposing layers of peat to the air, triggering acidification and a release of arsenic, aluminium and sulphuric acid in the soils and groundwater.

Acidification of the aquifer can contaminate and poison wetland ecosystems and corrode hard infrastructure such as building foundations and roads.

To reduce acidic water and soil levels, the City of Stirling in collaboration with Edith Cowan University has installed a groundwater treatment system on one of the islands of the southern lake at Spoonbill Shearwater Reserve. The higher than average ASS have been caused by land developments in the area, releasing various previously stable soil minerals, including iron and arsenic, into local groundwater flows.

The City has also identified the most vulnerable areas of the City for ASS (refer Figure 8).

For residential development applications that are in affected ASS areas, the City has introduced procedures that are based on the WAPC's Planning Bulletin 64 approved by the Department of Environment Regulation.
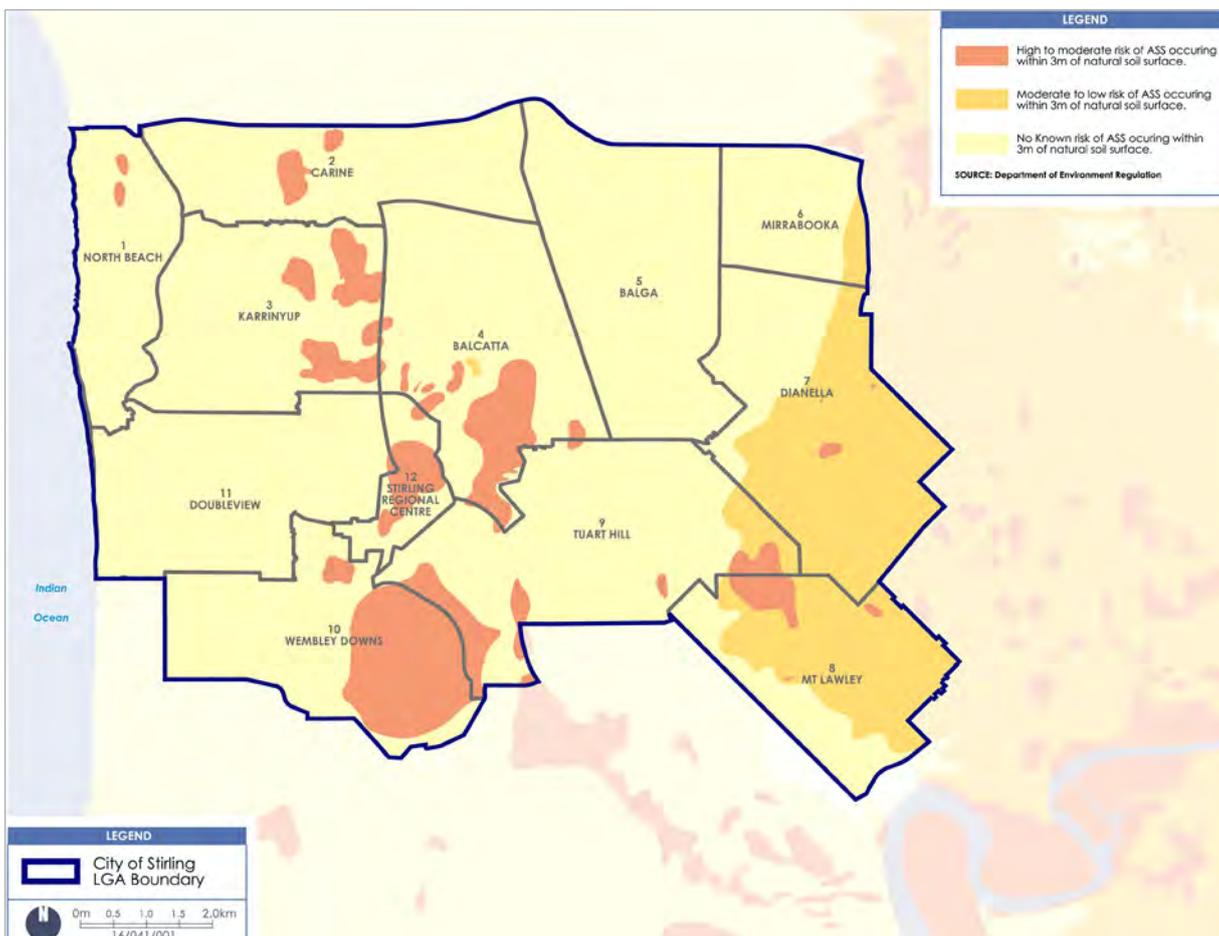
Figure 8: City of Stirling – Acid Sulphate Soil Risk (Source: Department of Water and Environmental Regulation.)

Loss Of Urban Tree Canopy

Tree canopy across the City of Stirling is declining at a substantial rate, due mostly to the large scale removal of trees from private land to allow for infill development (refer Figure 9. Approximately 75 trees are removed each week somewhere in the City, mostly from residential land. If this trend continues, almost half of the tree canopy in residential areas will be lost over the next 15 years, leaving only 6% of residential land being shaded by trees.

Key facts and figures regarding tree canopy loss are summarised below:

• 18% - the tree canopy target by 2030 set by Council for the City;

• 9.4% - the existing canopy cover on residential land in 2015;

• 5.2% - the projected canopy cover on residential land by 2030 if nothing changes;

• 12.4% - the projected canopy cover across the City by 2030 if nothing changes;

• 58,000 - the number of trees that could be lost across the City by 2030 if nothing changes;

• 105,000 - the number of trees required to be planted by the City on verges between 2015 and 2030 in an effort to reach the 18% canopy target; and

• $51.6 Million - the estimated amount of money that would need to be spent by 2030 to replace tree canopy lost on residential land at the current rate.

The City of Stirling is in the process of introducing tree protection regulations for private residential properties, and has recently initiated changes to its planning framework. The City is also investigating a comprehensive tree protection framework that will include a general tree protection rule to preserve trees on development sites.

The retention of existing trees or planting of replacement trees on development sites and abutting road reserves will play a role in assisting to achieve the 18% tree canopy cover target set by Council. This would also result in positive amenity impacts for residents and improve local streetscapes.

To assist in the retention and provision of the urban tree canopy the City will develop an Urban Forest Strategy and subsequent framework (through local planning scheme amendments and local planning policy) that will seek to:

• Encourage the retention of existing significant trees;

• Require replacement trees to be planted on-site at a ratio of one tree per 500m²; and

• Outlining the objectives and development requirements for tree management.
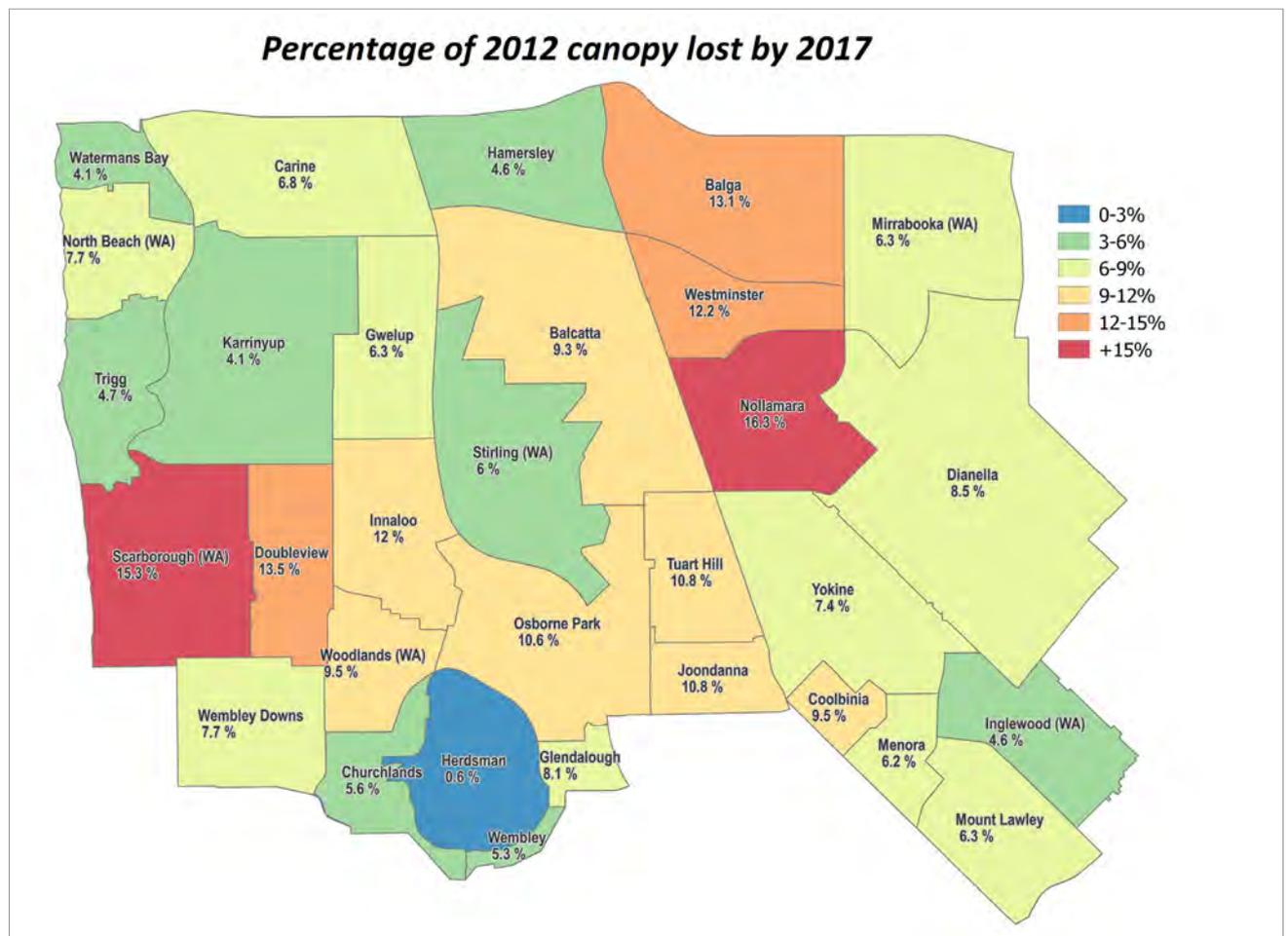
Figure 9: City of Stirling Canopy Loss 2012-2016 (Source: City of Stirling)

4.3.5 Water Management

Based on work completed by the CSIRO and the Bureau of Meteorology, over the next 50 years, the south west of Western Australia is expected to experience further declines in rainfall due to climate change. This will have a significant impact on water availability for households, business industry and local government.

The Water Corporation develops and maintains the water supply, wastewater and main drainage systems throughout the Perth Metropolitan Region. Water Corporation has developed a 50 year plan called Water Forever, to guide the management of Western Australia's water supply to the year 2050. The challenge for Water Forever is to provide water for all in an even drier climate with twice as many people; and with less environmental impact. The key objectives that underpin the plan are:

- Reducing water consumption;
- Increasing water recycling; and
- Developing new water sources.

Water Forever has adopted a climate scenario that predicts a 20% decline in rainfall by 2030 and a 40% decline in rainfall by 2060. Based on the planning assumption of reduced rainfall combined with a growing population, it is estimated that an additional 120 gigalitres of water will be required by 2030 – more than 40% of current annual water use.

Since 2001, the average water use per person has decreased by 20%. Even with these savings however, Perth remains one of the highest water using cities in Australia. More can be done to reduce water use and adapt to the changing climate. It is expected that we will need to progressively change the way residential gardens, public parks and ovals are landscaped to adapt to changing conditions.

The Department of Water released the Better Urban Water Management document in 2008. This document details the requirements for water management and the agencies responsible for the aspects of the management cycle. Local governments are generally responsible for detailed ecological, surface and groundwater investigations as well as defining management arrangements and responsibilities for urban water management. Local governments are also responsible for preparing district water management strategies which in turn provide input for Local Planning Strategies. Although the City is in the process of developing an Integrated Catchment Management Strategy, the information is not yet available to feed into this document.

Water Protection Areas

Drinking water sourced from aquifers is protected by the declaration of Underground Water Pollution Control Areas (UWPCAs) and Public Drinking Water Source Areas (PDWSA's) as a proclamation under the Metropolitan Water Supply, Sewerage and Drainage Act 1909.

Priority 3 source protection areas are defined to manage the risk of pollution of the water source and are declared over land where water supply sources need to co-exist with other land uses such as residential, commercial and light industrial developments; although there is some restriction on potentially highly polluting land uses. There are two Priority 3 Water Protection Areas located within the City of Stirling, Gwelup and one proposed at Mirrabooka.
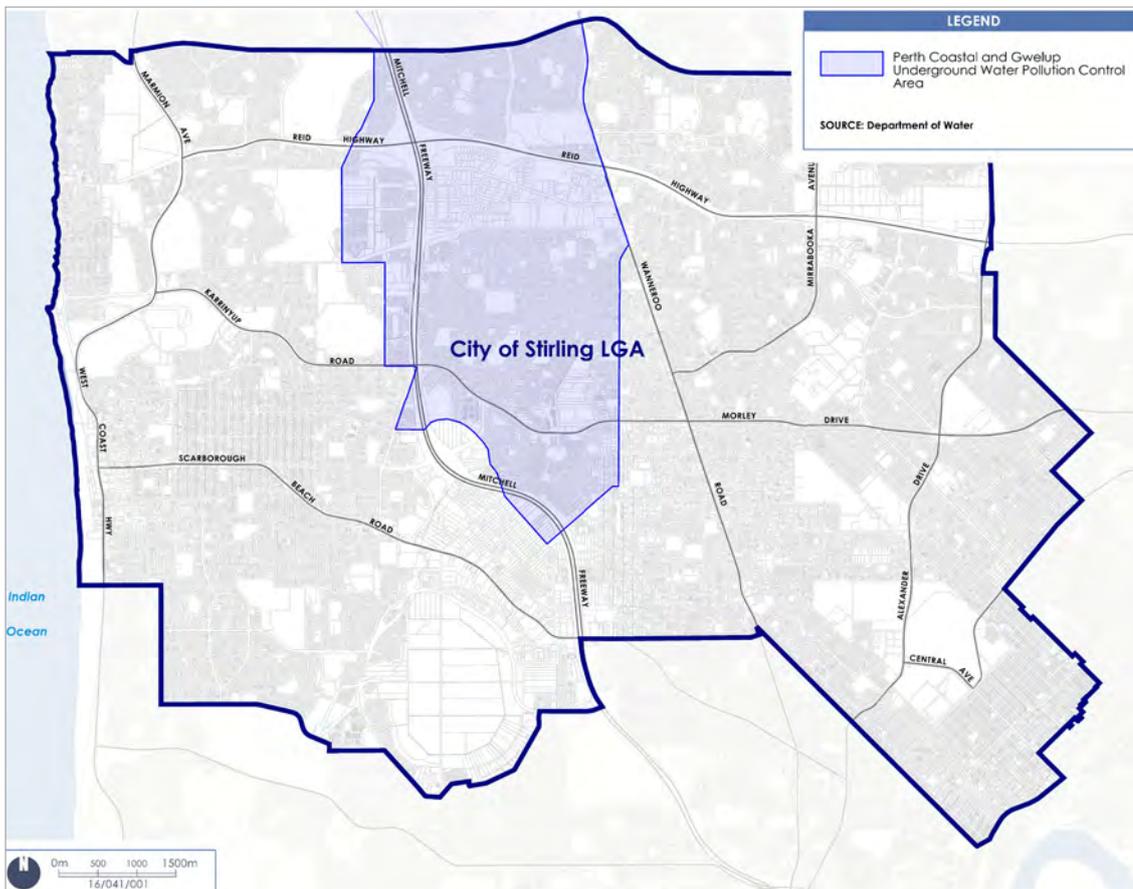
Figure 10: Perth Coastal and Gwelup UWPCA (Source: Department of Water)

Perth Coastal And Gwelup UWPCA

The Perth Coastal and Gwelup UWPCA was proclaimed as at its gazettal date 14 December 1973 (refer Figure 10). The Perth Coastal and Gwelup Underground Water Pollution Control Area drinking water source protection review (November 2012) recommends to "combine and amend the boundary of the Perth Coastal UWPCA and Gwelup UWPCA under the Metropolitan Water Supply, Sewerage and Drainage Act 1909. The new area is to be called the Perth Coastal and Gwelup UWPCA". Proclamation of this public drinking water source area (PDWSA) is planned to be arranged in the 2016-2017 financial year by the Department of Water. The 2012 Review also recommends to "prepare a drinking water source protection plan within five years, building on the 2007 assessment and this 2012 review". It is understood that at this stage, the Department of Water has identified other higher-priority reviews, and it is unlikely that this report will be reviewed in 2017-2018.

West Mirrabooka PDWSA

The boundary of the West Mirrabooka PDWSA (refer Figure 11) is yet to be proclaimed under the Metropolitan Water Supply, Sewerage and Drainage Act 1909. The West Mirrabooka Public Drinking Water Source Area drinking water source protection assessment (November 2011) makes three key recommendations:

1. Discuss water quality protection measures for the proposed West Mirrabooka PDWSA with the Cities of Stirling, Swan and Wanneroo. (Department of Water);

2. Given the advanced level of development in the proposed West Mirrabooka PDWSA, proclamation under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* could occur based on the information in this drinking water source protection assessment. (Department of Water); and

3. If required, and subject to recommendations 1 and 2, prepare a drinking water source protection plan for the proposed West Mirrabooka PDWSA.

Proclamation of the West Mirrabooka PDWSA was planned to be arranged during the 2016-2017 but has yet to be finalised. Preparation of a drinking water source protection plan for the proposed West Mirrabooka PDWSA may not be required by the Department of Water at this stage.

Groundwater

Fresh groundwater aquifers are currently used to meet Western Australian water demand, and climate change reduces their capacity to replenish rivers and support wetlands. Lower dam inflow from lower rainfall increases the use of groundwater aquifers for consumption and consequently also increases pressure on rivers and wetlands.

The City currently uses groundwater to maintain most of the reserves and public open space in the municipality. At the moment the City's groundwater use is below the allocated limit set by the Water Corporation. The City is attempting to decrease groundwater use on reserves and public open space through a series of initiatives such as Watersmart Parks which includes hydrozoning. If a reserve or park is found to not be in need of a grassed area, the grass maybe removed and replanting with native and drought tolerant species could occur. These areas then require less groundwater irrigation.

4.4 Summary Of Key Issues, Responses And Actions

4.4.1 Natural Environment

The City of Stirling is a fast growing local authority in the Central Sub Region of the Perth Metropolitan Area. With a minimum additional 60,330 expected to be required by 2050 the City will continue to see significant infill development that places pressure on the natural environment.

This infill development has directly caused significant loss of tree canopy in the City. This is the most significant environmental issue facing the City of Stirling. Measures to arrest this loss include additional street tree planting in public lands, protection of existing bushland, as well as new development standards for all development that ensure retention and space to enable an increase in the tree canopy.

Infill development is also placing significant pressure on the City's remaining bushland and biodiversity. New measures to protect the current bushland and biodiversity need to be developed.

Infill development is also occurring in the last remaining swamp areas of the City where Acid Sulphate Soils and groundwater issues are evident. Local Water Management Plans and Acid Sulphate Soils Management Plans will be required when redeveloping these areas.
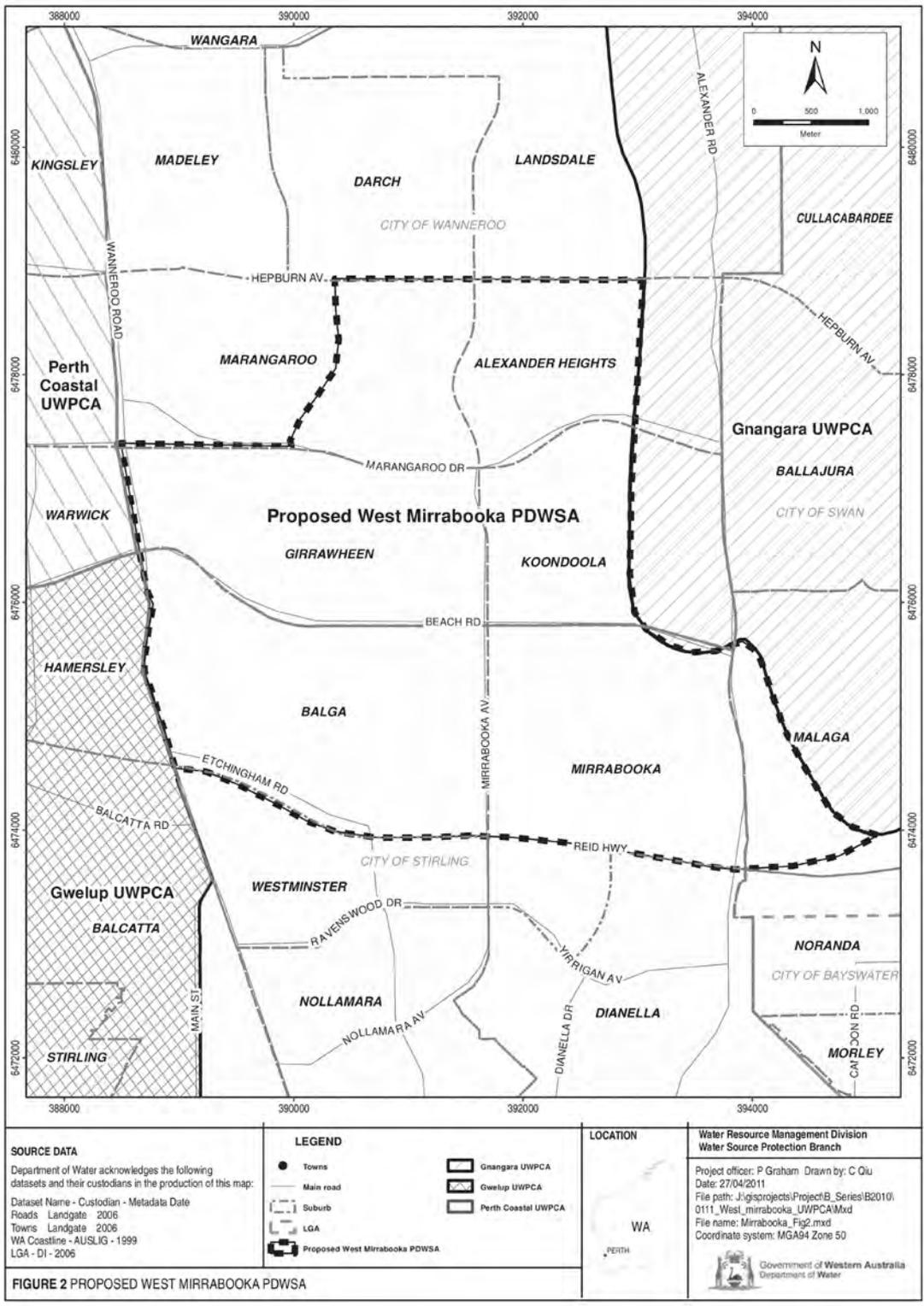
Figure 11: Proposed West Mirrabooka PDWSA (Source: Department of Water)

4.4.2 Bushfires

The projections indicate the potential warming of average temperatures and decline in rainfall will lead to drier vegetation and increased bushfire risk. The City will need to update bushfire risk mapping on an annual basis to ensure compliance with SPP 3.7 Planning in Bushfire Prone Areas.

4.4.3 Climate Change

Climate Change is likely to be one of the main environmental challenges that the City of Stirling faces over the coming decades, including coastal erosion, drying climate and severe weather events. The City needs to develop relevant strategies to identify the risks and implement actions to mitigate these risks, including a coastal strategy, climate change adaption plan.

Key Issue 1.1
Population growth and increasing density may impact on natural resources, flora, fauna, biodiversity and cultural heritage.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Continue addressing resource and natural/cultural heritage conservation, and manage impacts of population growth on the environment.	Investigate including a 'Conservation Zone' into the Local Planning Scheme.	Short	CoS (City Planning)
	Ensure water management plans are undertaken when required and implemented through water sensitive urban design.	Ongoing	CoS (City Planning)
	Ensure flora and fauna surveys are undertaken when required.	Ongoing	CoS (City Planning)
	Ensure acid-sulphate soil management plans are undertaken when required and implemented.	Ongoing	CoS (City Planning)
	Ensure Indigenous heritage plans are undertaken when required and the findings implemented.	Ongoing	CoS (City Planning)
Improve the City's tree canopy within the City's built environment.	Develop and implement an Urban Forest Strategy (including a planning framework) which addresses both public and private tree preservation.	Short	CoS (City Planning)
	Continue to work with the Department of Planning, Lands and Heritage / WAPC on the review and development of the medium design residential codes.	Short	CoS (City Planning)
Explore opportunities to raise emphasis on sustainability in development.	Incorporate sustainability provisions into the Local Planning Scheme and as part of major projects. (e.g. Activity Centres, Corridors and Better Suburbs projects)	Ongoing	CoS (City Planning)

Key Issue 1.2
Bushfire is a Risk.

Response	Actions	Delivery Timeframe	Lead delivery Department
Comply with State Planning Bushfire Policy.	Implement State Planning Policy 3.7 Bushfire Policy and associated guidelines.	Ongoing	CoS (City Planning)

Key Issue 1.3
The City needs to adapt to challenges presented by Climate Change.

Response	Actions	Delivery Timeframe	Lead delivery Department
Ensure the findings of the City's Climate Change Adaption Plan are integrated into the Local Planning Scheme.	Implement the findings of the Climate Change Adaption Plan and incorporate them into the Local Planning Scheme.	Medium	CoS (City Planning)
Comply with the City's Coastal Foreshore Management Planning and the State Coastal Planning Policy.	Implement the City's Coastal Foreshore Management Planning and the State Coastal Planning Policy.	Ongoing	CoS (Recreation and Parks)

5. Population And Housing

5.1 Introduction

The estimated resident population of Western Australia (WA) was 2.47 million people (ABS 2016 Census), which represented 11% of the total Australian population. WA's population increased by 1.3% (33,200 people) between 2014 and 2015. This was just under the national growth rate of 1.4%.

In 2016 the population of the Greater Perth area was 1.94 million people, with the City's population standing at 210,208 persons. Between 2006 and 2016, Greater Perth increased by 28.2% (445,132 people) with the City of Stirling growing by 19.5% (35,961 people).

WA's population density at June 2016 was 1.0 person per square kilometre (sq km). This was the second lowest of all the states and territories after the Northern Territory (0.2 people per sq km), and compares with 3.1 people per sq km for Australia as a whole. The Greater Perth area had a population density of 320 people per sq km in 2016, while the City of Stirling had a population density of 2100 people per sq km.

5.2 Background

5.2.1 Current Trends

The City has seen considerable population growth over the last 10 years (31,100 additional people), and this has resulted in changing demographics:

- + 7% increase in family households;
- +0.4 increase in single households;
- + 31% increase in people aged 25 – 34;
- + 17.4% increase in people aged over 65; and
- + 25% increase in people born overseas.

During the recent economic boom the number of younger people (25-29 years) moving into the City significantly increased, which has kept the proportion of population aged over 65 relatively stable in comparison. The significant increase in house prices may have resulted in an increase in family households (and a decrease in single households), as it is expected many of these younger people stayed in the family home for financial reasons.

These latest changes are against the long term trend of the last 50 years. This either reflects a significant change in demographics or that the economic boom has been an anomaly in the long term trend.

Over the last 10 years there has been a trend for the construction of less single houses and more multiple dwellings and grouped dwellings. Table 7 and Table 8 indicate that the City of Stirling has an oversupply of areas zoned R30 and R40 (typically grouped and multiple dwellings) and is at risk of not having enough areas coded R20 to cater for family households.

In 2016, a detailed Community Profile Analysis was undertaken over the whole of the City of Stirling. The analysis was undertaken at an Australian Bureau of Statistics Statistical Area 2 (SA2) based on the 2001, 2006, and 2011 census. There are 16 SA2 areas covering the City of Stirling, refer Figure 12. The Community Profile Analysis considered the demographic profile changes, and the potential impacts on community facilities.

Table 7:   Percentage of Family Households; R20 areas and Single Houses (Source: City of Stirling)

	% of Households	% of R20 areas in the City of Stirling	% of Single Houses in the City of Stirling
Family Households	65%	42%	59.3%

Table 8: Percentage of Single Households; R30 and R40 areas and Other Dwellings (Source: Department of Planning, Lands and Heritage)

	% of Households	% of R30 and R40 areas in the City of Stirling	% of Semi Detached, Townhouses and Apartments in the City of Stirling
Single Households	30%	48%	40.5%
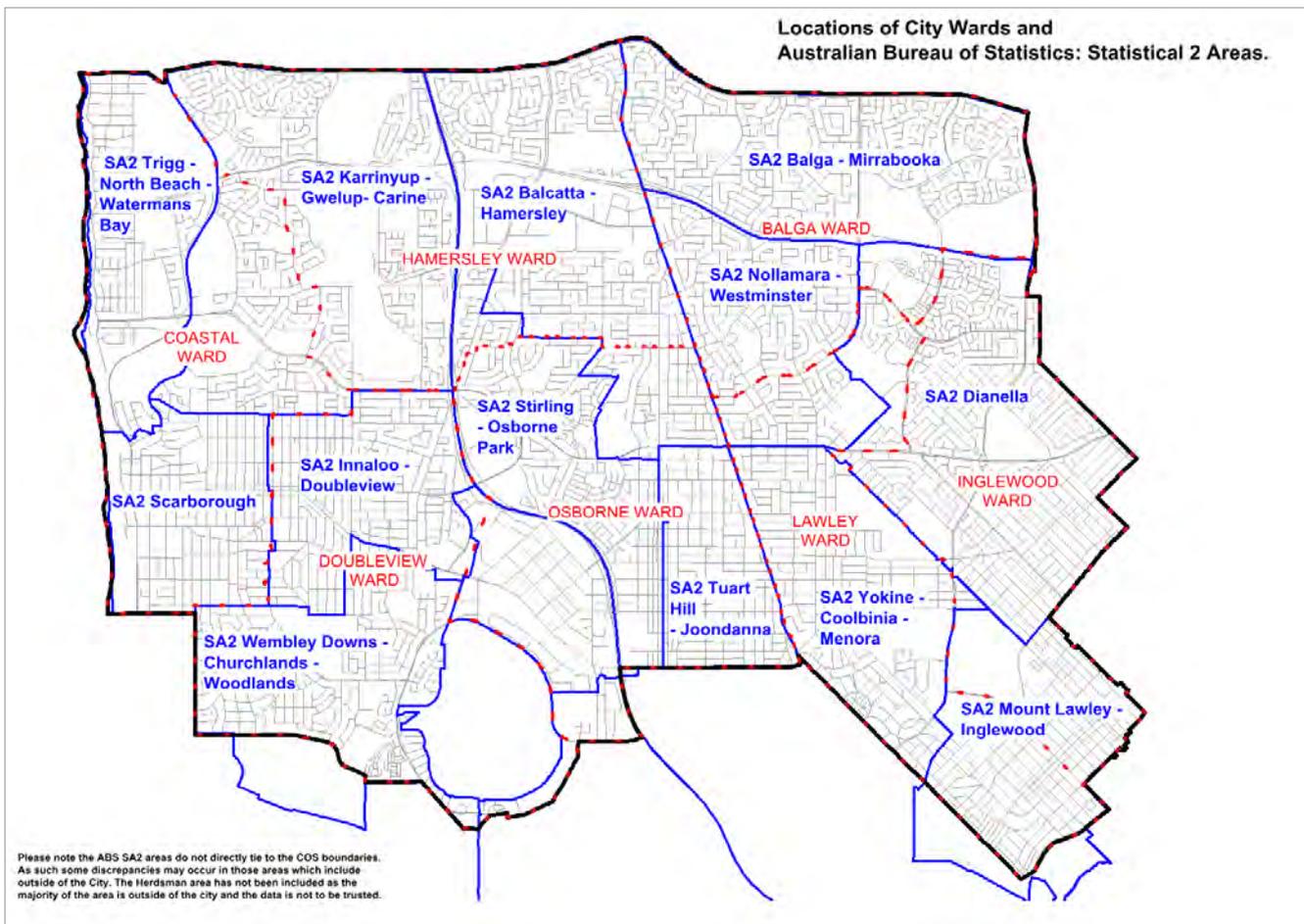
Figure 12: Locations of Wards and SA2 Areas (Source: Australian Bureau of Statistics)

Summary Of Key Findings

- Between 1991 and 2011, rapid population growth occurred over most parts of the Perth Metropolitan Region. During this period the City of Stirling's population grew at a rate demonstrated in Figure 13. According to WA Tomorrow (February 2012) forecasts, current population growth in the City is approximately 1.2 percent per annum. Whilst this growth rate is predicted to slow the population will continue to increase over the next 15 years. It is predicted that the City's population will reach 278,230 people by 2026.

- The City of Stirling has experienced significant population growth between the 2001 and 2016 census period, including 4.1% between 2001 and 2006, 11% from 2006 to 2011, and 7% from 2011 to 2016.

- Stirling recorded significant growth in the 0-9 and 20-44 age groups between 2006 and 2016.

- Family households generally dominate the household composition across all SA2 areas in 2011. Family composition in the City of Stirling is dominated by couples with children and without children consistently over the period 2001-2016. Families without children have risen slightly over this period.

- There is strong multi-cultural diversity within the City of Stirling which includes people born in over 35 countries other than Australia.

- The percentage of Stirling households with weekly incomes below $1,499 per week, were similar in the City of Stirling relative to the Perth average.

- A higher proportion of primary and secondary school children in Stirling attend private schools as compared to Greater Perth. The City of Stirling has a higher proportion of university, tertiary or other educational institutional students than Greater Perth.

- Stirling has a higher proportion of households which do not have internet connection when compared to Greater Perth.

- In 2016 in Stirling around 4% of the population require assistance with core activities. In Greater Perth in 2016 and in WA as whole in 2016, around 3.8% of the population fall into this category. The implications for the provision of facilities in the City of Stirling is that a relatively high proportion of the community, compared to Greater Perth, may require specialist equipment and access arrangements.

- In 2016 a similar proportion of the Stirling labour force were in full time employment, part time employment or were unemployed as the Greater Perth area. Whilst many residents have a stable and constant working routine, many may be involved in long distance commuting, shift work and FIFO. Long distance commuting may impact on health and opportunities for active commuting via cycling or walking could be facilitated.

Population Trend - Persons
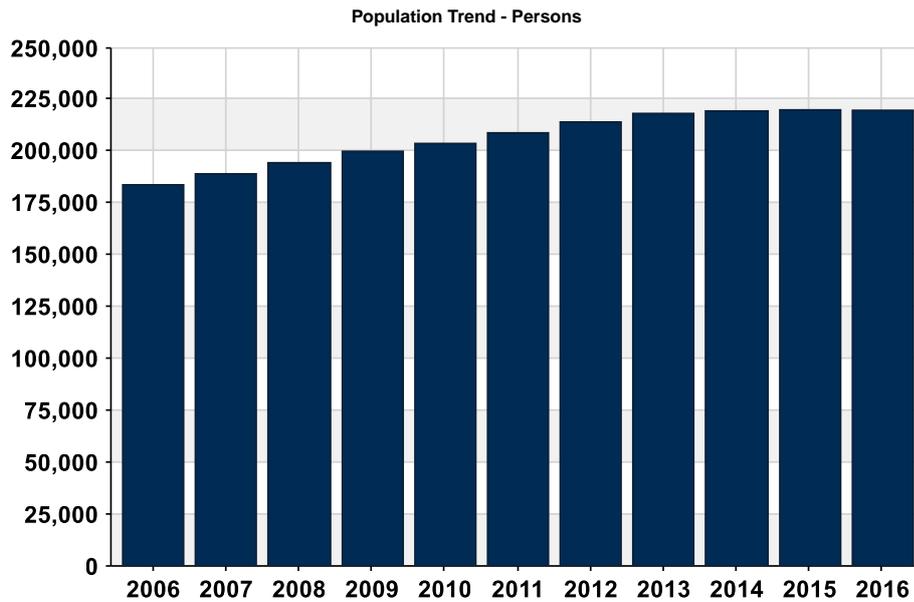
Figure 13: City of Stirling Population Growth, 2001-2015 (Source: REMPLAN)

Stirling (C) (2016)
Greater Perth (GCCSA) (2016)
Western Australia (State) (2016)
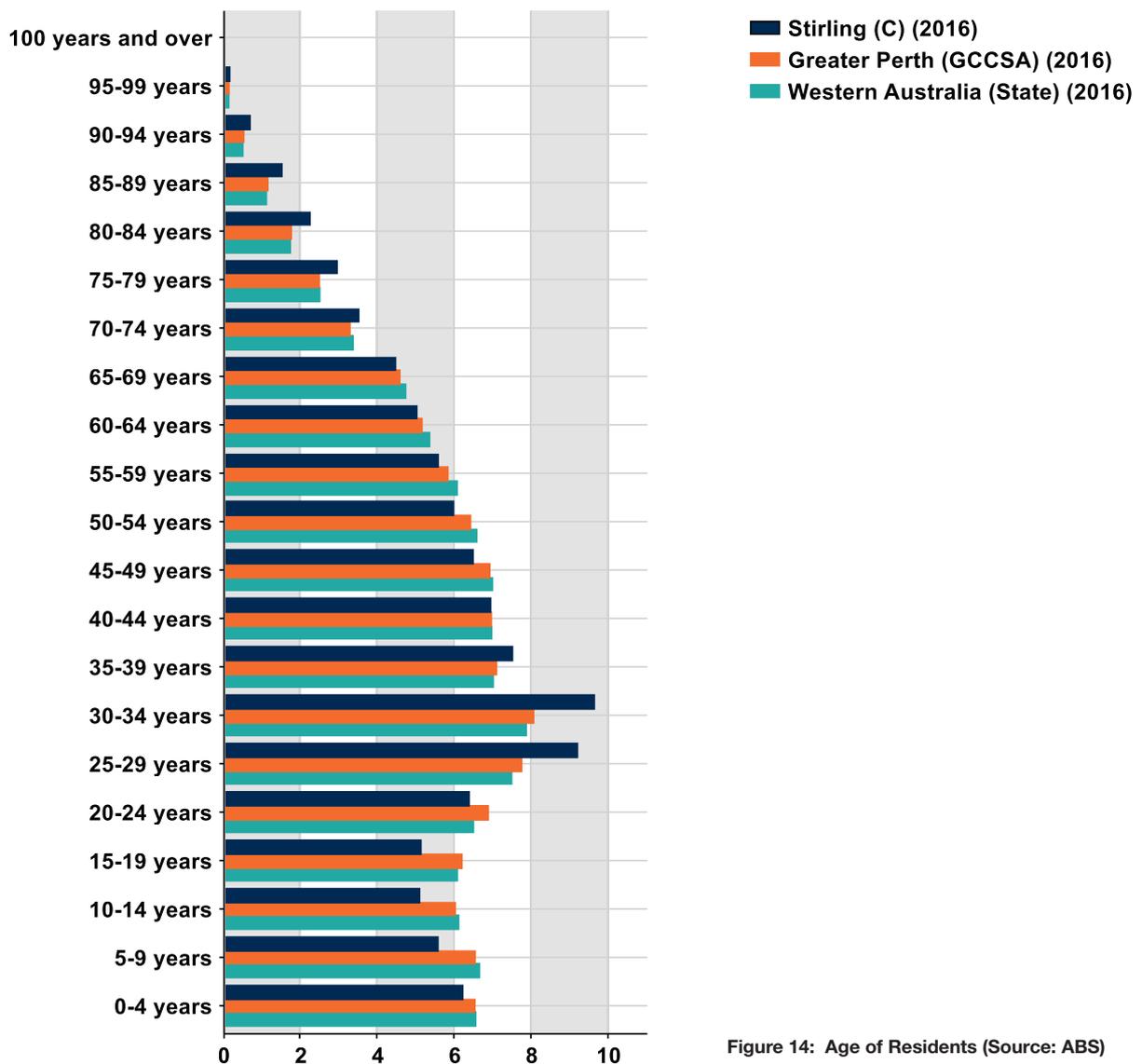
Figure 14: Age of Residents (Source: ABS)

Age Profile

When compared to the Perth, Western Australia and Australian statistical divisions, the age structure of Stirling as of the 2016 Census differs as depicted in Figure 14. The greatest disparities between Stirling and Greater Perth are:

- Lower percentage of the population under 19 years of age;

- Higher percentage of the population aged between 20 and 39. Particularly those within the 25-29 age bracket who represent 19% of the population of Stirling relative to less than 16% of the population in the greater Perth area;

- Lower percentage of the population between the ages of 40-64; and

- Higher percentage of the population aged above 65 years of age.

As the population continues to age, the percentage of residents over 65 years is forecast to increase by approximately 26 percent by the year 2031.

The age group forecasted to have the largest proportional increase (relative to its current population size) by 2021 is 70-74 year olds, who are forecast to increase by over 45 percent. This will have clear implications for the design and location of housing catering to this group.

Catering to the ageing population provides different housing issues with the Doubleview-Innaloo Area forecast to have the highest number of residents aged over 60 years. Current subdivision and housing design in the Doubleview-Innaloo area caters to young couple households and larger families. Appropriately located density increases, coupled with appropriate urban design guidelines could create areas which could cater to the ageing population.

Occupation Profile

As demonstrated in Figure 15, there have been some changes in the types of occupation of residents between 2006 and 2011. The greatest notable differences would be the marked increase in mining jobs; growth in construction; and professional, scientific and technical services.

Industry (Persons)

Legend:
- Stirling (C) (2016)
- Stirling (C) (2011)
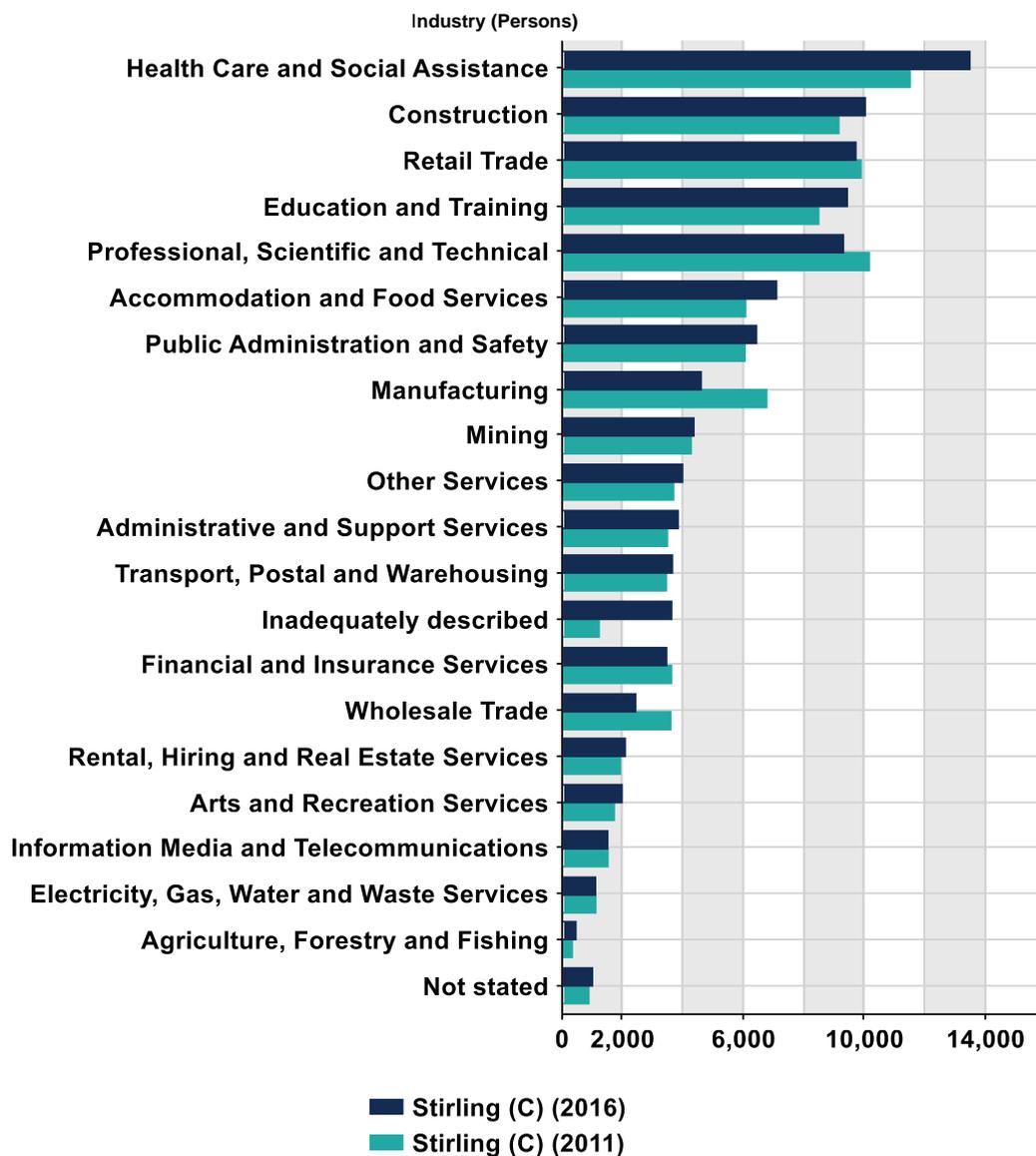
Figure 15: Occupation of Residents 2006-2011 (Source: REMPLAN)

Income Profile

As the below Table 9 indicates, median incomes in the City of Stirling are relatively consistent with Perth and Western Australian median incomes and higher than the Australian median income.

Figure 16 shows household income brackets as a percentage population of City of Stirling residents compared to the Greater Perth Region. The percentage of households with weekly incomes below $1,499 were similar in the City of Stirling to Greater Perth, while the City has a smaller percentage of households with weekly incomes greater than $1,500 (with the exception of weekly incomes above $3,500).

Housing Types

The City's suburbs have developed over a long period of time, and consequently have varied characteristics. These changes can be observed in the design of buildings and subdivisions. Pre-war houses are found in Mount Lawley and Inglewood, while post-war housing exists in much of the rest of the City. Most recent housing is in the northern suburbs of Carine, Balga and Mirrabooka. The newest subdivisions of Princeton and Roselea have contemporary forms of housing. The road layout also changes from the pre-war and early post-war grid pattern to the advent of the cul-de-sac street layout.

Table 9: Median Incomes, City of Stirling (Source: ABS)

	Stirling	Perth	Western Australia	Australia
Personal Income	$689	$699	$662	$577
Family Income	$1,783	$1,781	$1,722	$1,481
Household Income	$1,353	$1,459	$1,415	$1,234

Stirling (C) (2016)
Greater Perth (GCCSA) (2016)
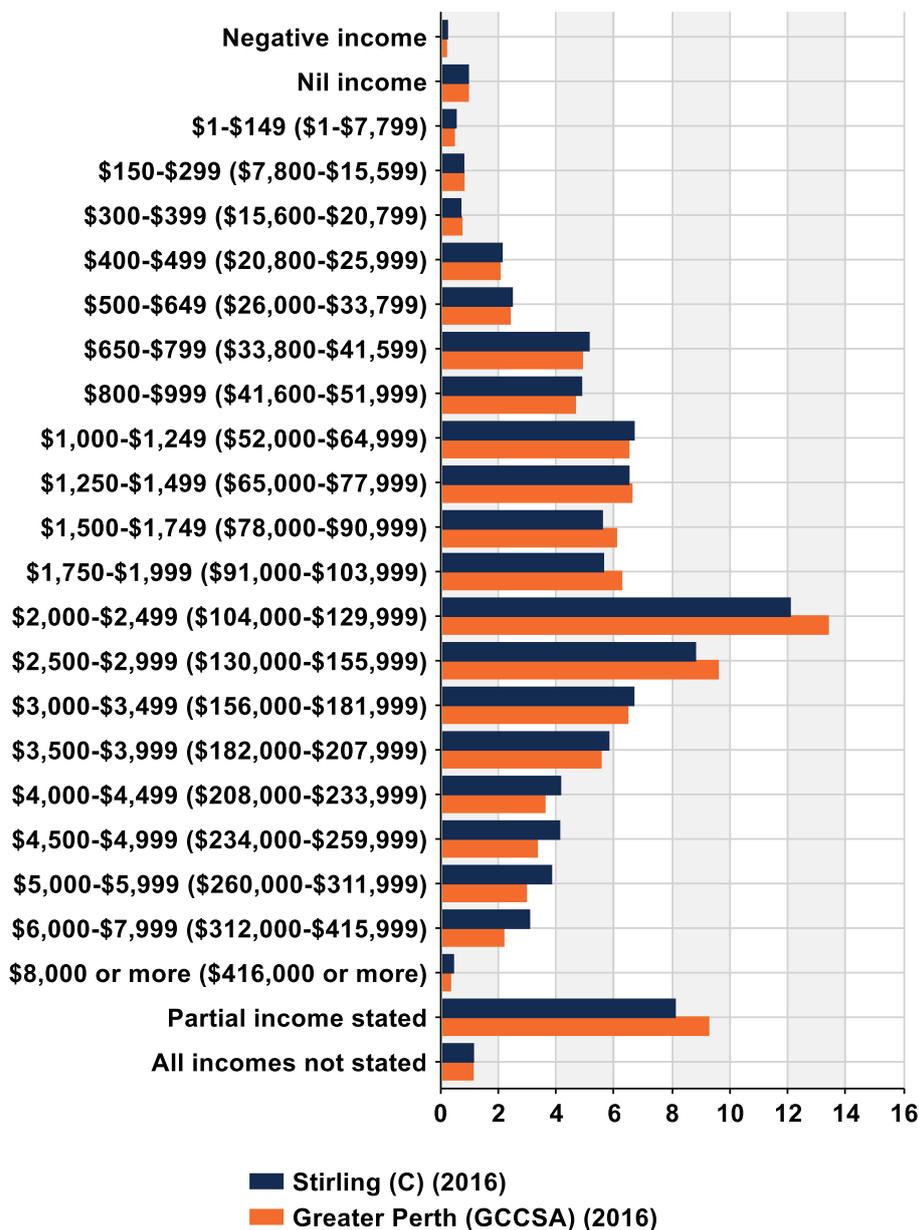
Figure 16: Household income brackets within the City of Stirling (Source: ABS)

Dwelling structure
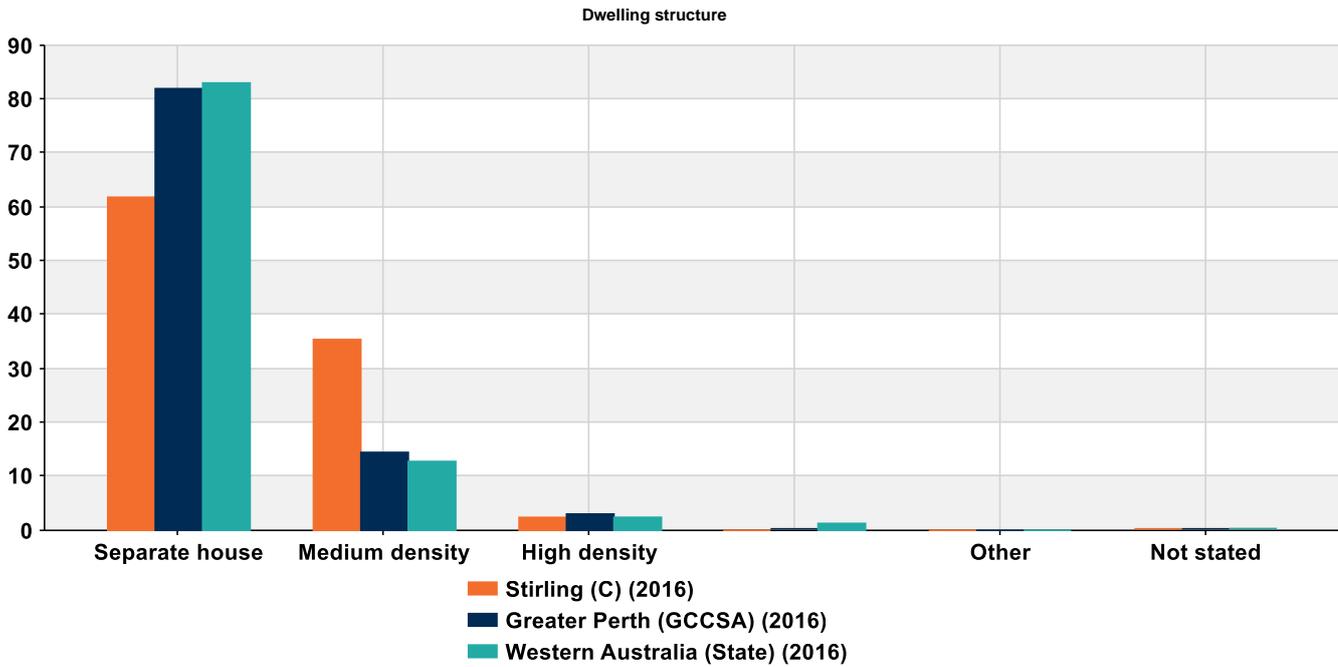
Figure 17: Household Incomes (Source: ABS)

At the date of the 2016 Census, there were 96,536 private dwellings within the City of Stirling, of which 81,426 were occupied. As Figure 17 indicates 63 percent of these dwellings were separate/detached houses, a significantly lower portion of overall housing stock in relation to the Greater Perth and Western Australian statistical areas. As of the Census date, 36 percent of all houses were semi-detached, row or terrace houses, town houses medium density and contribute to a greater portion of the Perth housing stock when compared to other statistical areas.

Household Trends

Stirling's population and household structure continues to change, with a growing proportion of elderly and a larger number of small households (refer Figure 18). The reduction in household size may have largely tapered off, as there has been a sharp decline in the recent past, taking Stirling well below the Perth Metropolitan average.

In 2016, there were 81,417 households in the City of Stirling. 66 percent of these households were occupied by families of various configurations and 34 percent non-families.

The City has a significantly greater portion of lone person households (29 percent) than other statistical divisions in which lone person households on average make up less than 25 percent of overall households. The City also has a considerably lower percentage of couples with children households (29 percent) than other household configurations.

Household Composition
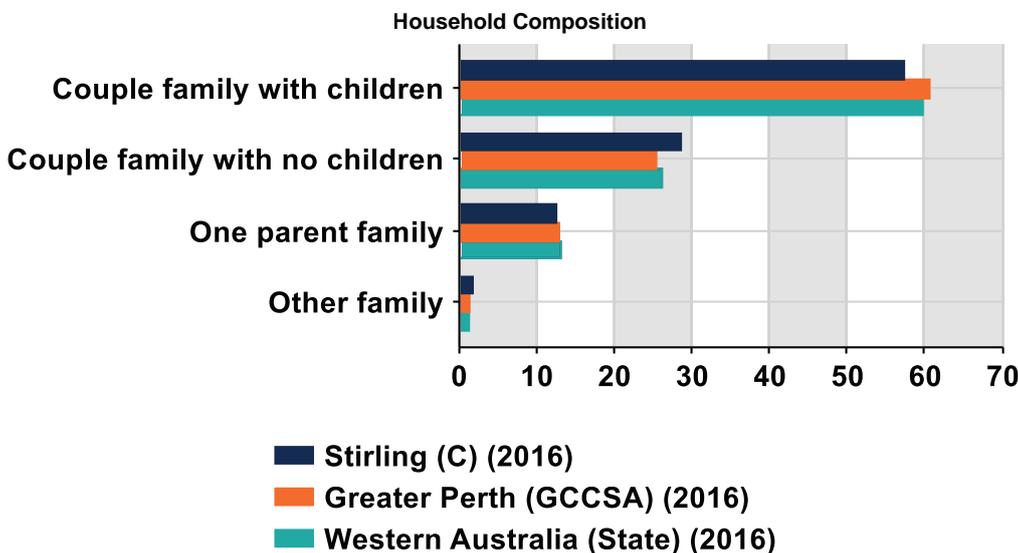
Figure 18: Household Composition (Source: ABS)

The high number of lone person households in the City is predicted to increase as is the percentage of couples without dependents.

Stirling's average household size in 2016 was 2.4 persons per dwelling. In most instances the City's older suburbs have lower household sizes, particularly in areas that have experienced infill redevelopment such as Glendalough. In newer suburbs, larger household sizes are found and generally families represent a greater portion of the population. It is predicted that average household sizes will continue to decrease. This will mostly be as a result of a predicted growth in lone person households.

Density Trends

Current housing types across the City are dominated by single detached dwellings in 'Residential R20' and 'Residential R30' zoned areas. Many homeowners have subdivided or built duplex developments on larger lots. This has enabled housing supply to keep pace with demand. However, given future population forecasts it is unlikely the current housing types will suitably provide for future population growth. Density increases in appropriate locations are needed to accommodate the growing population. This work has commenced mainly through

structure planning for the Stirling City Centre, Herdsman Glendalough Area, Mirrabooka Town Centre, and along Scarborough Beach Road.

Cultural Housing Requirements

A further consideration is providing housing diversity that is suitable for a migrant population from areas where extended families live together (refer Figure 19). This population is more likely to have different housing needs, with larger houses and sufficient land more appropriate to cater for their larger family requirements. Parts of some suburbs such as Mirrabooka, which have a high rate of immigrants may not benefit from an increase in density.

Affordable Housing

Changing demographics and changes in the demand for housing supply are not reflected in the supply of housing stock within the City. The outcome is a decline in affordability, as shown in trends in median house prices, refer Figure 20. The lack of housing diversity has resulted in a lack of choice in housing stock, with many of the City's residents settling for dwellings which are not the most appropriate for their household size or budgets.

Birthplace

Stirling (C) (2016)
Greater Perth (GCCSA) (2016)
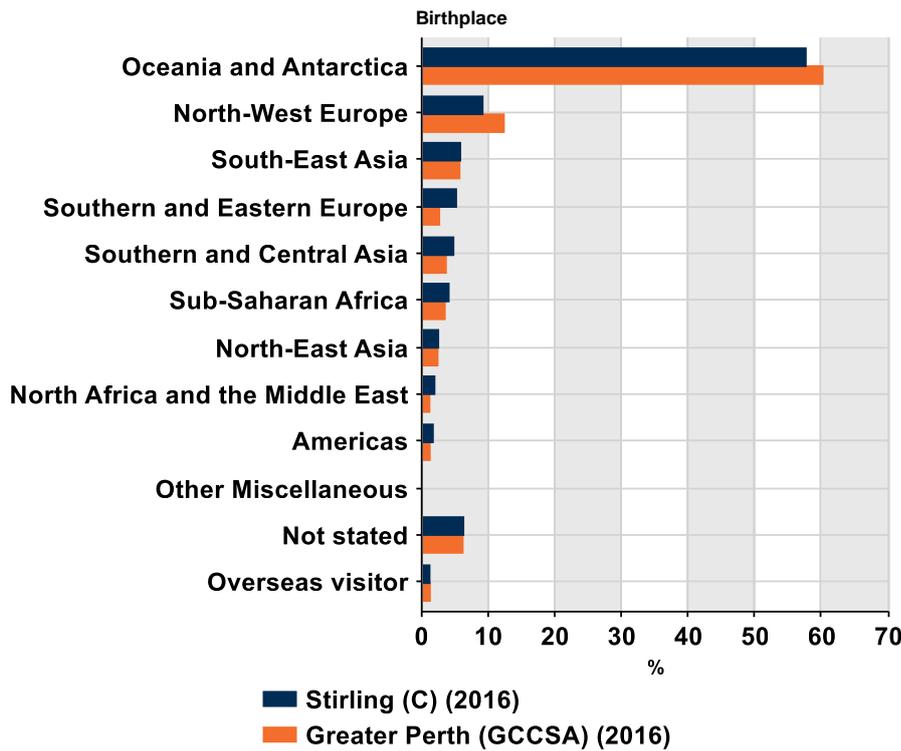
Figure 19: Country of Origin (Source: ABS)

REIWA
REAL ESTATE INSTITUTE
OF WESTERN AUSTRALIA

Perth House Prices 1974-2016
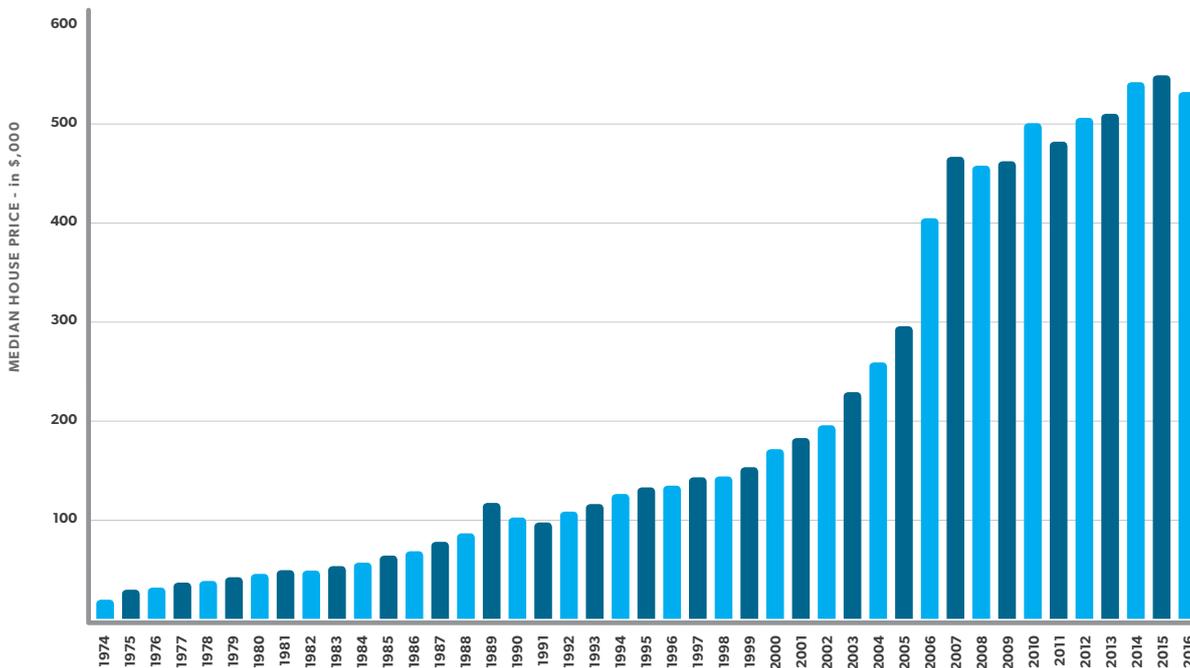
Figure 20: Median House Values, Perth (Source: Real Estate Industry of Western Australia)

Many of the City's older residents may wish to "downsize" their household size as they no longer require the same size they did when they were younger. As the supply of smaller dwellings is lacking in many of the City's neighbourhoods some elderly residents are unable to find suitable housing within their existing neighbourhoods. Many may be unable to continue residing in the area with which they are familiar. The majority of dwellings currently provided within the City do not satisfy design criteria which seek to ensure that the elderly can age in place or universal design principles, which enable frail and/or handicapped individuals to stay/use their homes with fewer impediments in their day to day activities.

Aged/Dependent Persons

There is a relatively even distribution of aged persons accommodation dispersed throughout the City. The exception is Menora, which has a higher concentration of aged persons accommodation than other suburbs. Located on the west side of Alexander Drive, a number of retirement village and nursing home operators have, over time, developed the area into what is now predominantly an 'Aged Persons Development Precinct'.

Retirement villages and nursing homes, particularly in Menora, are mostly operated by not-for-profit organisations. In some cases, the parcels of land have been gifted to the organisations to promote and supplement the mission of these organisations. These organisations specialise in providing retirement village unit accommodation, and high and low care nursing and dementia care.

A preliminary comparison between existing care facilities and independent living units, indicates that this particular area has a total of 697 independent living units and 436 nursing home beds, which comprises approximately a 70/30 mix between the uses.

It is recommended that the City encourages design guidelines for aged persons residential development particularly in 'Private Institution' zones, which would ensure the accommodation is adequately fitted with the infrastructure required to allow current residents to remain in their independent living units for a much longer period of time with residential care.

A higher concentration of nursing homes in more strategic locations, as part of a Perth Metropolitan and Federal Strategy, operated by those specialising in providing such a service should be pursued. It is acknowledged that the City should be mindful of and enable the provision of nursing home facilities through its local planning scheme.

Existing Capacity

The City generally has a high potential for infill development utilising the existing density zoning. Table 10 highlights the potential dwelling yields possible under existing zoning.

When then compared to the projected population growth as set out by the State government's WA Tomorrow forecasts the City can easily accommodate the expected population growth (Table 11 and Table 12).

Currently, most growth is occurring in an ad hoc manner across the City, generally within backyards or the redevelopment of larger lots into small strata complexes. Unintended consequences have begun to be experienced through 'business as usual' approaches to infill housing. Houses are remaining larger whilst lot sizes are shrinking, reducing the amount of open space and opportunities for green space. With greater infill development occurring in the suburbs, streets are increasingly under pressure to provide street trees, informal space, and overflow parking.

Table 10: Potential Dwelling Capacity and Resulting Residential Capacity by SA2 (Source: City of Stirling)

SA2 Regions	Average (Group / Multiple Dwelling Capacity)	Average Person per Dwelling	Average Persons
Balcatta – Hamersley	3,603	2.3	8,286
Balga – Mirrabooka	11,446	2.8	32,048
Dianella	3,300	2.5	8,250
Innaloo – Doubleview	5,682	2.3	13,069
Karrinyup – Gwelup – Carine	3,162	2.7	8,537
Mount Lawley – Inglewood	5,615	2.2	12,353
Nollamara – Westminster	15,244	2.3	35,062
Scarborough	3,852	2.1	8,089
Stirling – Osborne Park	2,088	2.4	5,011
Trigg – North Beach – Watermans Bay	1,604	2.4	3,850
Tuart Hill – Joondanna	5,794	2.0	11,588
Wembley Downs – Churchlands – Woodlands	2,178	2.6	5,663
Yokine – Coolbinia – Menora	6,032	2.2	13,270
TOTAL	68,971	2.4	165,530

Table 11: WA Tomorrow Population Projections by SA2 area (Source: Department of Planning, Lands and Heritage)

SA2 Regions	Existing Persons	Extra Persons (WA Tomorrow)			Total Population (WA Tomorrow)			Tracking Population (WA Tomorrow)		
		2016	2021	2026	2016	2021	2026	2016	2021	2026
Balcatta – Hamersley	14,973	1,050	1,920	2,730	16,023	16,893	17,703	7,236	6,366	5,556
Balga – Mirrabooka	18,044	2,640	4,650	6,190	20,684	22,694	24,234	29,408	27,398	25,858
Dianella	23,112	2,130	3,800	5,210	25,242	26,912	28,322	6,120	4,450	3,040
Innaloo – Doubleview	15,218	2,870	5,960	10,140	18,088	21,178	25,358	10,199	7,109	2,929
Karrinyup – Gwelup – Carine	18,927	1,630	3,060	4,500	20,557	21,987	23,427	6,907	5,477	4,037
Mount Lawley – Inglewood	16,207	1,180	2,140	3,020	17,387	18,347	19,227	11,173	10,213	9,333
Nollamara – Westminster	15,060	3,920	8,700	12,240	18,980	23,760	27,300	31,142	26,362	22,822
Scarborough	14,271	2,210	4,390	7,220	16,481	18,661	21,491	5,879	3,699	869
Stirling – Osborne Park	13,204	2,590	3,480	4,460	15,794	16,684	17,664	2,421	1,531	551
Trigg – North Beach – Watermans Bay	6,926	790	1,160	1,450	7,716	8,086	8,376	3,060	2,690	2,400
Tuart Hill – Joondanna	11,269	1,520	2,620	3,910	12,789	13,889	15,179	10,068	8,968	7,678
Wembley Downs – Churchlands – Woodlands	12,599	1,360	2,670	3,870	13,959	15,269	14,469	4,303	2,993	1,793
Yokine – Coolbinia – Menora	14,824	1,950	3,720	5,200	16,774	18,544	20,024	11,320	9,550	8,070
TOTAL	194,634	25,841	48,271	70,141	220,474	242,904	264,774	139,689	117,259	95,389

Table 12: Existing Dwelling Capacity Compared To Dwellings Required Under WA Tomorrow (Source: City Of Stirling)

SA2 Regions	Existing Group and Multiple Dwelling Capacity	Total Dwellings Needed under WA Tomorrow			Dwelling Capacity minus WA Tomorrow Dwelling Totals		
		2016	2021	2026	2016	2021	2026
Balcatta – Hamersley	3,603	457	835	1,187	3,146	2,768	2,416
Balga – Mirrabooka	11,446	943	1,661	2,211	10,503	9,785	9,235
Dianella	3,300	852	1,520	2,084	2,448	1,780	1,216
Innaloo – Doubleview	5,682	1,248	2,591	4,409	4,434	3,091	1,273
Karrinyup – Gwelup – Carine	3,162	604	1,133	1,667	2,558	2,029	1,495
Mount Lawley – Inglewood	5,615	536	973	1,373	5,078	4,642	4,242
Nollamara – Westminister	15,244	1,704	3,783	5,322	13,540	11,462	9,923
Scarborough	3,852	1,052	2,090	3,438	2,800	1,762	414
Stirling – Osborne Park	2,088	1,079	1,450	1,858	1,009	638	230
Trigg – North Beach – Watermans Bay	1,604	329	483	604	1,275	1,121	1,000
Tuart Hill – Joondanna	5,794	760	1,310	1,955	5,034	4,484	3,839
Wembley Downs – Churchlands – Woodlands	2,178	523	1,027	1,488	1,655	1,151	690
Yokine – Coolbinia – Menora	6,032	886	1,691	2,364	5,145	4,341	3,668
TOTAL	68,971	10,974	20,547	29,959	57,997	48,424	39,012

5.2.2 Future Trends

Future population trends are difficult to predict due to the number of external factors, such as economic and political (e.g. commodity prices and immigration policies), but certain growth can be predicted if assumptions about future levels of fertility, mortality, internal migration and overseas migration are used based on historical data.

The Australian Bureau of Statistics produces three sets of population forecasts; high (A), medium (B) and low (C). Series B largely reflects current trends in fertility, life expectancy at birth and immigration. Series A and series C are based on high and low assumptions for each of these variables.

Under series B, Perth is projected to experience the highest percentage growth (187%) of Australia's capital cities, increasing from 1.9 million people (mid 2012) to 5.5 million in 2061. The population of Perth is projected to overtake that of Brisbane in around 15 year's time, when they both reach 3 million people in 2028. By 2061 it is expected that 85% of Western Australians will be living in Perth (78% in mid-2012).

The median age of the population of Western Australia is projected to increase from 36.0 years (mid 2012) to between 40.1 years and 43.5 years in 2061. Births will continue to exceed the number of deaths during the projection period, resulting in a natural increase. This natural increase will slowly rise before starting to decline towards 2061. This decline is expected to be addressed through inward migration.
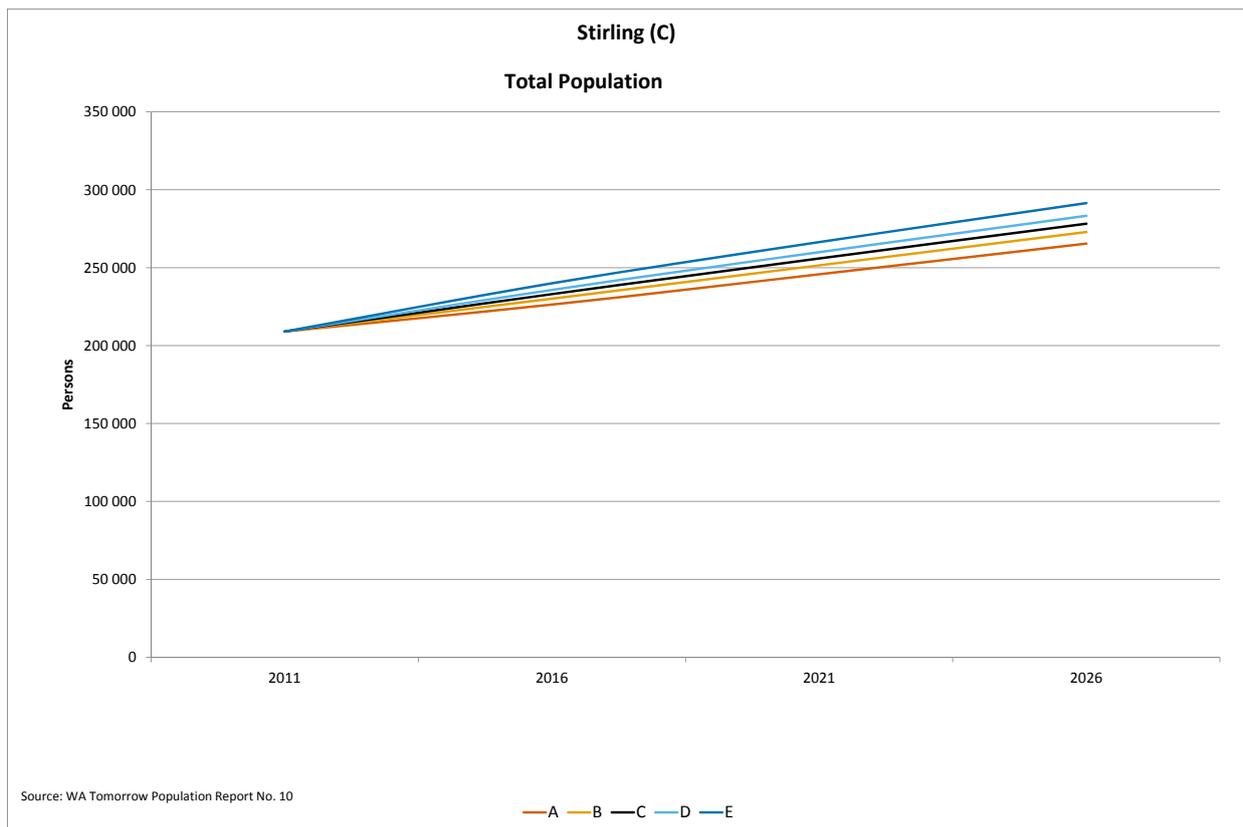
Figure 21: City of Stirling Projected Population Growth, 2011-2026 (Source: WA Tomorrow 2015)

WA Tomorrow

WA Tomorrow is a set of forecasts based on population trends since the 1980s. The forecasts represent the best estimate of future population size if trends in fertility, mortality and migration continue. The forecasts displayed in Figure 21 have been prepared using 10,000 slightly different simulations. The simulations emulate the variability that is shown in past data. The simulations have been sorted by the size of population. They have been broken into five bands, each with 2,000 simulations. Band C, being the median forecast, will be the base for projections in this document.

It is projected that the population by the year 2026 will increase by approximately 69,000 residents (WA Tomorrow 2015 Band C projections). Figure 21 indicates the projected population growth of the City according to WA Tomorrow (2015).

The City's suburbs have developed steadily over time although many areas are yet to be built to capacity due to a number of restricting factors (both physical and financial). A gradual increase in population is predicted within the City however some areas will experience greater growth than others. The projected rate of growth for the City's Australian Bureau of Statistics SA2 areas is displayed in Figure 22. This rate is the projected population increase for each of the City's suburbs from 2006 to 2031.

The projected population change shows a significant increase in two areas. The Nollamara - Westminster population is forecast to increase by almost 45 percent by 2026, while the Innaloo – Doubleview population is forecast to increase with over 10,000 additional people by 2026. The majority of these areas are currently zoned 'Residential R40', which has allowed significant redevelopment of the area to occur, with major increases in the number of duplex, triplex and multiple dwellings in the area.
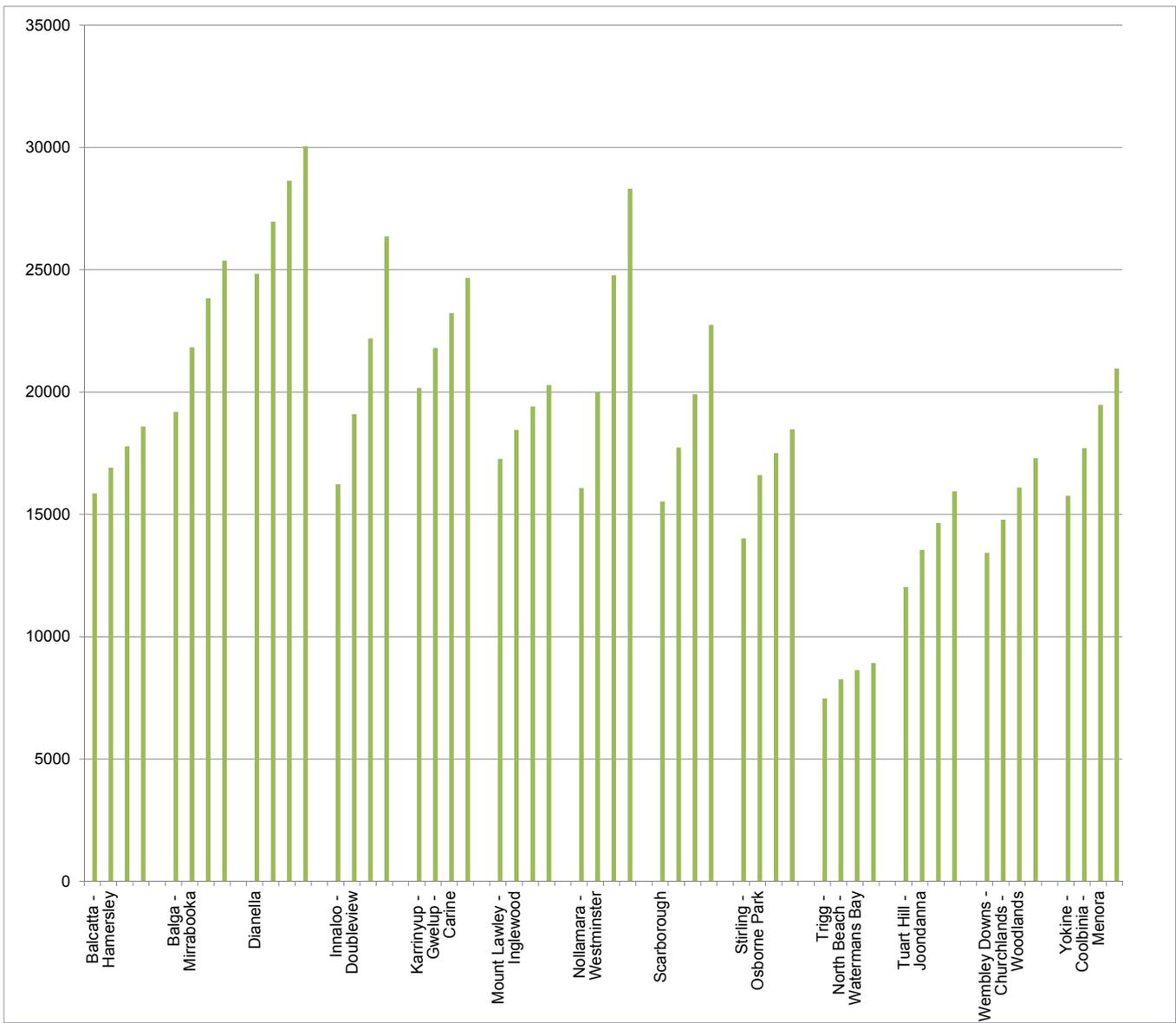
Figure 22: City of Stirling Projected Population Growth by SA2 Area, 2011-2016-2021-2026 (Source; WA Tomorrow)

5.3 Local Context And Future Possibilities

5.3.1 Perth And Peel @3.5 Million

Perth and Peel @3.5million identifies the 'connected city' model as the preferred medium-density future growth scenario for the Metropolitan Perth and Peel Region. A connected city pattern of urban growth in relation to housing is characterised by:

- Promoting a better balance between greenfield and infill development;

- Planning for an adequate supply of housing and land in response to population growth and changing community needs;

- Facilitating increased housing diversity, adaptability, affordability and choice; and

5.3.2 Central Sub-Regional Planning Framework

Perth's Central sub-regional population is projected to grow to nearly 1.2 million people by 2050. The City of Stirling is identified for providing a minimum 60,330 additional dwellings as its local government contribution to the infill housing targets for the Central sub-region. This anticipated growth in dwellings is expected to come from a range of development opportunities. Short term housing supply opportunities are indicated by recent building approval trends and the available stock of vacant residential-zoned lots. Future medium and higher-density housing will be focused near urban corridors, Activity Centres and rail station residential opportunity areas (refer Figure 2).

Well-located areas offering high amenity and access to services will provide new housing supply. This will be supplemented by small-scale infill or 'incremental' development across the Central sub-region.

The current detailed State government population projections (WA Tomorrow) only project out to 2026. The City has therefore undertaken modelling to ascertain where the additional dwelling demand to meet the State government's 2050 additional dwelling target is likely occur

- Planning and developing key public transport corridors, urban corridors and transit oriented developments to accommodate increased housing needs and encourage reduced vehicle use.

To achieve a connected city pattern of growth, Perth and Peel @3.5million seeks a 50% improvement on current infill residential development trends of 30% and 35%; and, has set a target of 47% (or 380,000 dwellings Perth Metro wide) as infill development. Perth and Peel @3.5million also seeks a 50% increase in the current average residential density of 10 dwellings per gross urban zoned hectare; and, has set a target of 15 dwellings per gross urban zoned hectare of land in new development areas.

utilising Directions 2031 and Beyond principles. This has included not only the incidental growth within the suburbs, but also the projected yields for the City's Activity Centres and Corridor projects as currently approved, shown in Table 13.

The modelling shows that most areas can meet the expected demand from existing capacity, apart from the areas of Innaloo – Doubleview and Scarborough. These areas are however subject to extensive planning projects in the form of Stirling City Centre and the Scarborough Beach Road West Activity Corridor, which will address these shortfalls.

It Is also anticipated that the City's "Better Suburbs" place based planning project will not only address the imbalance between the 25% suburban infill to 75% in centres and corridors of new dwellings, but will also increase dwelling capacity through encouraging increased diversity. It is also expected that the "Better Suburbs" will eventually be rolled across the entire City in future stages.

Table 13: The Expected Population and Dwelling Growth up to 2051, by SA2 (City of Stirling)

SA2 Region	Year	% growth	Total new persons	New dwellings needed	Dwellings as infill (25% of total)	Dwellings in centres and corridors (75% of total)	Total existing average dwelling capacity remaining
Balcatta – Hamersley	2031	2%	3102	1349	337	1011	2254
	2036	1%	3291	1431	358	1073	2172
	2041	1%	3483	1514	379	1136	2089
	2046	1%	3676	1598	400	1199	2005
	2051	1%	3872	1683	421	1263	1920
Balga – Mirrabooka	2031	4%	7205	2573	643	1930	11793
Projects in area: Part of Better Suburbs	2036	3%	7997	2856	714	2142	11510
	2041	3%	8813	3147	787	2361	11219
	2046	3%	9653	3447	862	2586	10919
	2051	3%	10518	3756	939	2817	10610
Dianella	2031	2%	5811	2324	581	1743	2609
Projects in area: Part of Better Suburbs	2036	1%	6118	2447	612	1835	2486
	2041	1%	6427	2571	643	1928	2362
	2046	1%	6740	2696	674	2022	2237
	2051	1%	7056	2822	706	2117	2111
Innaloo – Doubleview	2031	16%	14359	6243	1561	4682	2399
Projects in area: Scarborough Beach Road Corridor; and Stirling City Centre	2036	14%	18642	8105	2026	6079	537
	2041	12%	22826	9924	2481	7443	-1282
	2046	7%	25560	11113	2778	8335	-2471
	2051	6%	28068	12203	3051	9152	-3561
Karrinyup – Gwelup – Carine	2031	2%	4993	1849	462	1387	1841
	2036	1%	5245	1943	486	1457	1747
	2041	1%	5499	2037	509	1528	1653
	2046	1%	5756	2132	533	1599	1558
	2051	1%	6015	2228	557	1671	1462
Mount Lawley – Inglewood	2031	5%	4035	1834	458	1375	7755
Projects in area: Beaufort Street Corridor	2036	4%	4887	2221	555	1666	7368
	2041	4%	5773	2624	656	1968	6965
	2046	3%	6464	2938	735	2204	6651
	2051	2%	6939	3154	789	2366	6435
Nollamara – Westminster	2031	10%	15072	6553	1638	4915	9291
Projects in area: Part of Better Suburbs	2036	8%	17564	7637	1909	5727	8207
	2041	6%	19583	8514	2129	6386	7330
	2046	4%	21009	9134	2284	6851	6710
	2051	4%	22493	9780	2445	7335	6064

SA2 Region	Year	% growth	Total new persons	New dwellings needed	Dwellings as infill (25% of total)	Dwellings in centres and corridors (75% of total)	Total existing average dwelling capacity remaining
Scarborough	2031	10%	9495	4521	1130	3391	1756
Projects in area: Scarborough Beach Road	2036	10%	11998	5713	1428	4285	564
Corridor; and Metropolitan Redevelopment Authority	2041	8%	14200	6762	1690	5071	-485
	2046	6%	15983	7611	1903	5708	-1334
	2051	4%	17244	8211	2053	6159	-1934
Stirling – Osborne Park Inc Industrial Area)	2031	14%	7047	2936	734	2202	15385
Projects in area: Stirling City Centre	2036	14%	9997	4165	1041	3124	14156
	2041	16%	13839	5766	1442	4325	12555
	2046	14%	17740	7391	1848	5544	10930
	2051	14%	22186	9244	2311	6933	9077
Trigg – North Beach – Watermans Bay	2031	2%	1628	679	170	509	1984
	2036	1%	1719	716	179	537	1946
	2041	1%	1811	755	189	566	1907
	2046	1%	1904	793	198	595	1869
	2051	1%	1998	832	208	624	1830
Tuart Hill – Joondanna	2031	5%	4707	2354	588	1765	3979
Projects in area: Wanneroo corridor	2036	5%	5544	2772	693	2079	3560
	2041	3%	6071	3036	759	2277	3296
	2046	2%	6433	3217	804	2412	3115
	2051	1%	6618	3309	827	2482	3023
Wembley Downs – Churchlands – Woodlands	2031	1%	4043	1555	389	1166	1677
	2036	1%	4218	1622	406	1217	1610
	2041	1%	4394	1690	423	1268	1542
	2046	1%	4572	1759	440	1319	1473
	2051	1%	4752	1828	457	1371	1404
Yokine – Coolbinia – Menora	2031	2%	5619	2554	639	1916	5326
	2036	2%	6047	2749	687	2061	5131
	2041	2%	6483	2947	737	2210	4933
	2046	2%	6928	3149	787	2362	4731
	2051	2%	7382	3355	839	2516	4525
Total SA2 for City of Stirling	2031		87117	37325	9331	27994	
	2036		103265	44377	11094	33283	
	2041		119202	51287	12822	38465	
	2046		132419	56980	14245	42735	
	2051		145139	62407	15602	46805	

5.3.3 City Of Stirling Local Housing Strategy

The City has a Local Housing Strategy, which details a number of key issues associated with housing and density within the City. The Local Planning Strategy will incorporate the recommendations of the Local Housing Strategy, and add a spatial element along with an implementation element. The key issues highlighted by the Local Housing Strategy can be summarised as:

Focus Area 1: Housing Provision and Needs

- There is a significant increase in the provision of single and two bedroom dwellings.

- A greater proportion of appropriately located dwellings incorporate universal design principles.

Focus Area 2: Community Housing Provision and Housing Affordability

- Housing affordable to tenants and owner-occupiers is developed in the municipality.

- A constructive partnership is fostered between the City and community housing providers.

Focus Area 3: Sustainability of the Built Form

- Sustainable design features are incorporated in new and existing housing.

- Building materials are recycled for use in new buildings.

- Existing residential areas are retrofitted to reduce auto-dependency.

- Development and building designed are to conserve water and energy.

Focus Area 4: Employment and Transport

- The availability of locally based employment matching the skills of the resident workforce increases.

- Integration of housing and employment is achieved in the City's mixed-use developments.

- A modal shift towards walking, cycling and public transport occurs amongst the City's resident workforce, by improving the accessibility of employment areas.

Focus Area 5: Adaptation to Climate Change and Energy Supply Vulnerability

- Housing and the built environment are adapted for projected changes to climate.

- A robust urban form and economic structure is developed which helps protect residents and businesses from the effects of major energy and water price increases and supply disruptions.

Focus Area 6: Design Qualities of Infill Housing

- Medium and high-density areas assume an aesthetically pleasing form.

- High quality parks and public spaces offset the reduction of private open space.

- The character of heritage precincts and individual heritage buildings are preserved.

Focus Area 7: Directions 2031 Implementation

- Higher density residential dwellings are integrated with shopping centres and commercial precincts.

- Population densities increase within the pedsheds of Activity Centres and Corridors.

- Commercial centres offer a greater range of services and employment and are integrated with open spaces and streets.

5.3.4 AREAS FOR GROWTH

Activity Centres

The City acknowledges the importance of increasing residential density to provide for population growth. When planning for the location of additional dwellings, the City will contribute to the goal of Perth and Peel @3.5million by providing for more housing in and around Activity Centres and Corridors. The management of this growth needs to ensure that existing residential amenity values are not adversely affected by infill development. Many of the City's localities are valued because of their built form, gardens and spaces. By allowing ad-hoc infill development, there is potential for the characteristics valued by the community to be lost. The gardens, trees and spaces of suburban areas have important environmental benefits that need protecting.

The City of Stirling has 79 Activity Centres ranging in size from the Stirling City Centre, (designated as a Strategic Metropolitan Centre) to one of the 50 Local Centres many of which only comprise of one shop. The great diversity of Centres within the City of Stirling provides significant opportunities to accommodate the City's growth. A list of the various Activity Centres is shown in Table 14.

This Local Planning Strategy provides for targeted increases in residential densities in and around Activity Centres and Corridors, and seeks to maintain the character of most of the City's suburban areas. Activity Centres defined under State Government's planning framework, particularly SPP 4.2 Activity Centres for Perth and Peel through detailed Activity Centre structure plans, will need to identify how residential housing will be incorporated. Table 15 states the dwelling targets for each level of Activity Centre.

Table 14: City Of Stirling Activity Centres Hierarchy (Source: City Of Stirling)

Strategic Metropolitan Centre	
1	Stirling City Centre

Secondary Centres			
1	Karrinyup Town Centre	2	Mirrabooka Town Centre

District Centres					
DC1	Dianella Plaza	DC4	Inglewood	DC7	Northlands
DC2	Dog Swamp	DC5	Main Street	DC8	Scarborough
DC3	Glendalough Station	DC6	Mount Lawley	DC9	Stirling Central

Neighbourhood Centres					
NC1	Adair Pde	NC8	Gwelup	NC15	Stirling Village
NC2	Coode St	NC9	Lord St	NC16	Tuart Hill
NC3	Doubleview	NC10	Mirrabooka Village	NC17	Walter Rd West
NC4	Fieldgate Sq	NC11	Morris Place	NC18	Balga Plaza
NC5	Flynn Street	NC12	Nollamara	NC19	Woodlands Village
NC6	Glendalough	NC13	North Beach Plaza		
NC7	Grindleford Road	NC14	North Beach Drive		

Local Centres							
LC1	Arkana Road	LC13	Central Avenue	LC25	Herdsman Hotel	LC37	Powell Street
LC2	Balcatta Fresh	LC14	Coode Street	LC26	Hutton Street	LC38	Ravenswood Drive
LC3	Balcatta Road	LC15	Covent Gardens	LC27	Jones Street	LC39	Roberts Street
LC4	Bayley Street	LC16	Doric Street	LC28	Karrinyup Road	LC40	Royal Street
LC5	Bennion Street	LC17	Duffy Road	LC29	Kitchener Street	LC41	Sackville Terrace
LC6	Beryl Street	LC18	Elsie Street	LC30	Lawley Street	LC42	St Brigids Terrace
LC7	Big Rock	LC19	Erindale Road	LC31	Learoyd Street	LC43	St Peters Place
LC8	Blythe Avenue	LC20	Flinders Street	LC32	Lynn Street	LC44	Sylvia Street
LC9	Brighton Street	LC21	Flora Terrace	LC33	McDonald Street	LC45	The Downs
LC10	Calais Road	LC22	Green Avenue	LC34	Michael Street	LC46	The Strand
LC11	Canara Road	LC23	Harrison Street	LC35	Muriel Avenue	LC47	West Coast Drive
LC12	Carine	LC24	Hector Street	LC36	Pimlott Street	LC48	Yokine

Table 15: City of Stirling Activity Centres Dwelling Targets (Source: City of Stirling)

Typical Features	Strategic Metropolitan Centres		Secondary Centres		District Centres		Neighbour-hood Centres		Local Centres
Future indicative service population (trade) area	150,000-300,000 persons		Up to 150,000 persons		20,000-50,000 persons		2,000-15,000 persons		2,000 persons and less
Walkable Catchment for residential density targets	800m		400m		400m		200m		Residential density increases are not encouraged
Residential density target per gross hectare	Min	Desirable	Min	Desirable	Min	Desirable	Min	Desirable	As Existing
	30	45	25	35	20	30	15	25	N/A

Activity Corridors

The Central Sub-regional Planning Framework recognises that key high-frequency public transport corridors can provide improved connections between Activity Centres and access to high quality public transport from adjacent suburbs (refer Figure 23). These "Activity Corridors" are not high-speed through traffic routes, nor are they intended to accommodate ribbon development of commercial activities beyond Activity Centre precincts. This would diminish the viability of centres and potentially create access and traffic conflicts along regional roads.

Suitable activity corridors do however provide opportunities for new medium rise higher-density housing in existing urban areas.

The Local Planning Strategy generally supports increased density along Activity Corridors. Such development can not only capitalise on access to and maximise use of public transport along the corridors, but also contribute to the viability of Activity Centres. This new housing supply also reduces development pressure on suburban areas.

Each activity corridor has its own distinctive character and development potential. Appropriate planning and development controls in each case will need to be determined as a key element of further detailed planning. More detailed planning of new residential opportunities along urban corridors will require clear principles derived from analysis of their functional role as part of the City's transport network. This will need to be undertaken before residential densites are increased.

Local planning for medium rise higher-density housing along urban corridors will also need to consider heritage and other factors, and demonstrate how such development can be integrated with lower-density suburban areas.

Activity Corridors provide a vital connection between Activity Centres generally along public key transport routes within the City. Activity corridors have a key role to play in the growth of the City and will:

- Be a focus for population and employment growth;

- Provide increased and diversified employment;

- Provide enhanced public transport and other alternative transport infrastructure;

- Create or build on an existing identity;

- Advance economic and social development and exchange; and

- Incorporate Centre plans or Local Development plans for Centres where appropriate.

The City of Stirling has 36 Activity Corridors (Table 17) which have been divided into three classes (Table 16). These Corridors, along with Activity Centres, will accommodate an additional 50,000 residents over the next ten years. Higher densities within and adjacent to corridors will transition to lower densities next to existing residential suburbs. Outside of the Activity Corridors the character of the City's low density suburbs will be maintained, and will continue to provide a diversity of housing for families and other members of the community.
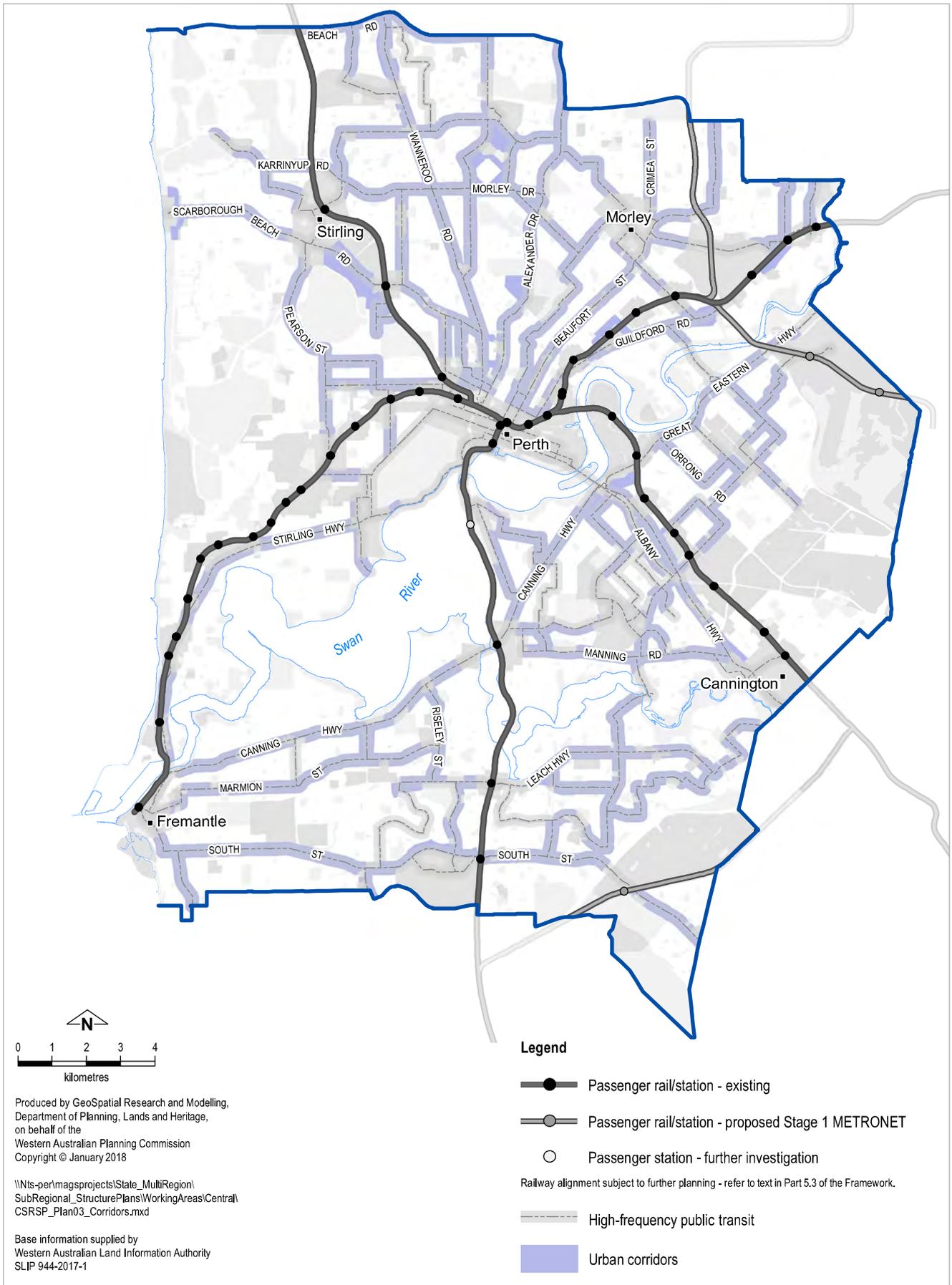
Figure 23: Urban Corridors as per the Central Sub-regional Planning Framework (Source: Department of Planning)

Legend

—●— Passenger rail/station - existing

—◐— Passenger rail/station - proposed Stage 1 METRONET

○ Passenger station - further investigation

Railway alignment subject to further planning - refer to text in Part 5.3 of the Framework.

- - - - High-frequency public transit

▨ Urban corridors

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Western Australian Land Information Authority
SLIP 944-2017-1

Table 16: Activity Corridor Characteristics and Residential Density Target, by Type (Source: City of Stirling)

Typical features	Class 1 Corridor		Class 2 Corridor		Class 3 Corridor	
Public transport level	Regional routes		Major Local routes		Local routes	
Vehicles per day	above 30,000 vehicles		between 15,000 and 30,000 vehicles		less than 15,000 vehicles.	
Residential density target per gross hectare	Min	Desirable	Min	Desirable	Min	Desirable
	25	35	20	30	15	25

Table 17: Activity Corridors, by Type (Source: City of Stirling)

Class 1 Corridor	Class 2 Corridor	Class 3 Corridor
1. Alexander Drive	1. Balcatta Road – Erindale Road, to Wanneroo Road	1. Amelia, Odin Road – Boya Way
2. Karrinyup Road	2. Beach Road – Wanneroo Road, to Duffy Road	2. Arkana Road and Princess Road
3. Wanneroo Road	3. Beaufort Street	3 Boyare Avenue and Honeywell Boulevard
4. West Coast Highway – Kay Street to Contacio Cove	4. Ellen Stirling Boulevard & Cedric Street – Odin Street to Karrinyup Road	4. Camberwell Road & Balga Avenue – Wanneroo Road to Beach Road
5. Morley Drive	5. Grand Promenade & Dianella Drive	5. Cape Street, Blythe Avenue and Woodrow Avenue
	6. Erindale Road	6. Cedric Street, Amelia Street & Ravenswood Drive, north of Karrinyup Road
	7. Pearson Avenue & Selby Street	7. Central Avenue
	8. Harborne Street	8. Empire Avenue
	9. Scarborough Beach Road	9. Huntriss Road
	10. Main Street	10. North Beach Road and Duffy Road – Reid Highway
	11. Nollamara Avenue & Mirrabooka Avenue, from Flinders Street	11. Northwood Drive
	12. Walcott Street & Green Street	12. Odin Road – Sackville Terrace, to Scarborough Beach Road
	13. Walters Road West, from Homer Street	13. Royal Street, to Flinders Street
	14. Yirrigan Drive	14. Sackville Terrace, Barnes Street – Duke Street to Odin Road
	15. Wiluna Street & Flinders Street, to Nollamara Avenue	15. Weaponess Road, Duke Street and Jeanes Road
		16. West Coast Drive, Karrinyup Road – Marmion Avenue

Station precincts

The Central Sub-regional Planning Framework identifies that areas around train stations and other major public transport infrastructure as having the potential to accommodate increased development. Parts of two potential station precincts within the City of Stirling have been identified under the Central Sub-regional Planning Framework, Mount Lawley and Warwick.

Mount Lawley train station has an identified 400 metre walkable catchment for urban consolidation under the Central Sub-regional Planning Framework. The area identified within Mount Lawley is however within a Special Control Area - Heritage Protection Area and has a residential density of R12.5 where buildings built prior to 1950 are not permitted to be demolished. As a result there is no potential for increased density within the Mount Lawley Station catchment. It should be noted the station was moved in the 1970's from its original location on Lord Street where increased residential density could have been accommodated.

Warwick train station is the another station area identified for urban consolidation under the Central Sub-regional Planning Framework, however no indicative walkable catchment has been included. The train station is about 200m north of the City's boundary and the majority of the walkable catchment is contained within the City of Joondalup. A small portion of the catchment is within the City of Stirling and will be mainly accommodated along the Beach Road Activity Corridor.

Small-Scale Incremental Development

The Central Sub-region will accommodate small-scale incremental development in all local government areas and will result from:

- Minor redevelopment that will occur from the uptake of development potential contained in existing and future local planning schemes; and

- Significant redevelopment projects that are yet to be conceived or identified.

As it currently stands the majority of the City of Stirling's residential growth is occurring in this small-scale incremental development fashion. The aim is for the majority of all new infill residential development to occur within the preferred urban consolidation precincts of Activity Centres, Activity Corridors and station precincts, consistent with the Central Sub-regional Planning Framework. Where small-scale incremental development occurs outside the preferred urban consolidation precincts, the strategy aims to ensure high quality urban design outcomes will be achieved, consistent with the established character of the locality.

5.3.5 Better Suburbs Place Based Planning Program

As the City's suburbs are large and varied, in order to analyse and plan for each unique area, the City undertook a Local Area Planning project from 2006 to 2012. The City was divided up into 12 local areas for separate analysis as shown in **Figure 24**. This planning has now been superseded by numerous State Government strategies on the future growth of Perth, including Direction 2031 and Beyond and Perth and Peel @3.5million. As such, the majority of recommendations from the Local Area Planning program were not supported by the State Government direction and are thus no longer relevant.

The City is now undertaking the "Better Suburbs" program that is a place based planning approach that will deliver plans to encourage a range of housing types, improved open spaces and more tree coverage. It will incorporate the principles of the State Government Strategies such as Perth and Peel @ 3.5 Million. It will also identify residential areas to be retained for family housing and opportunities for growth around centres and along activity corridors. The Better Suburbs program will be undertaken in four quadrants, as shown in **Figure 25.**
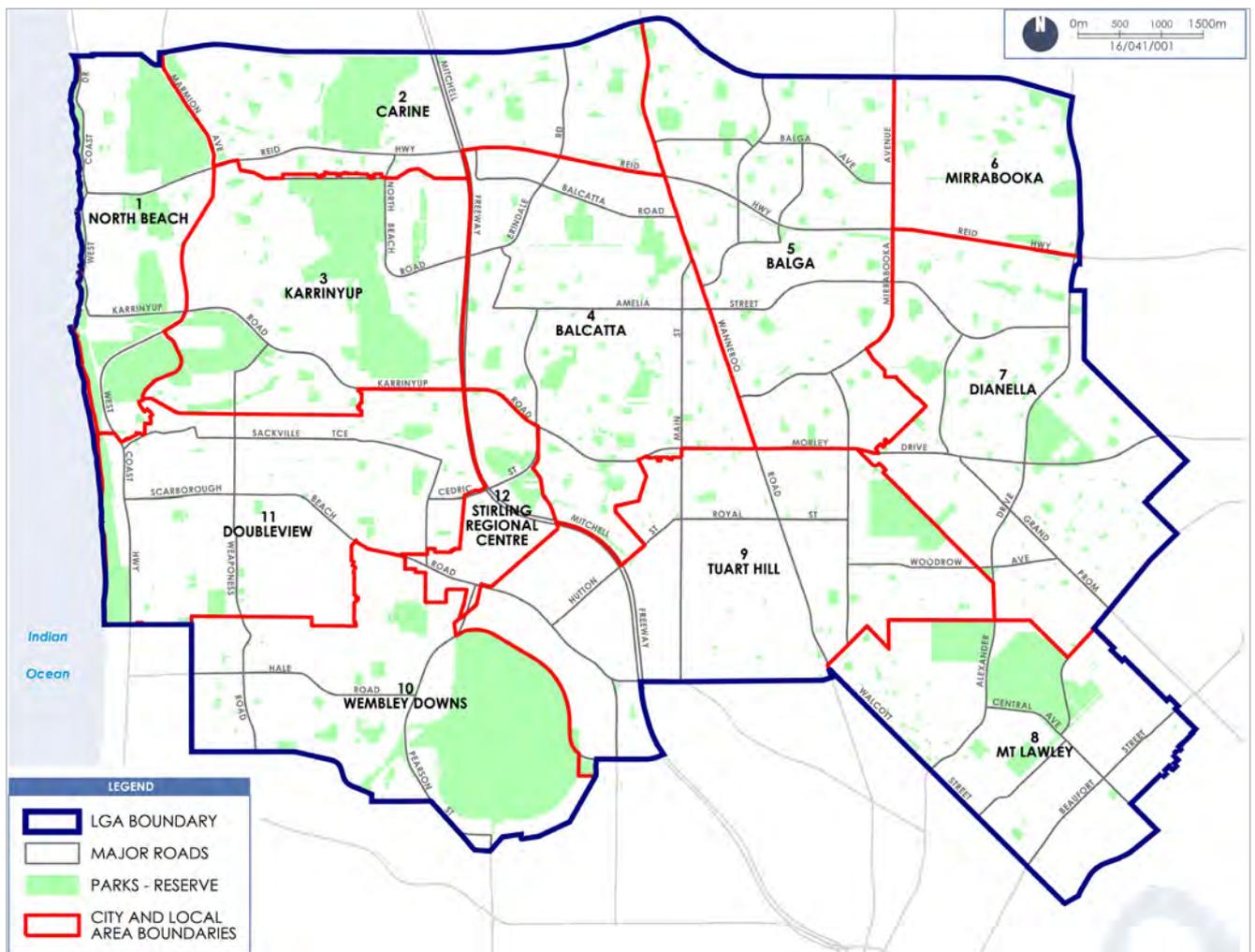

Figure 24: Local Areas of the City of Stirling (Source: City of Stirling)
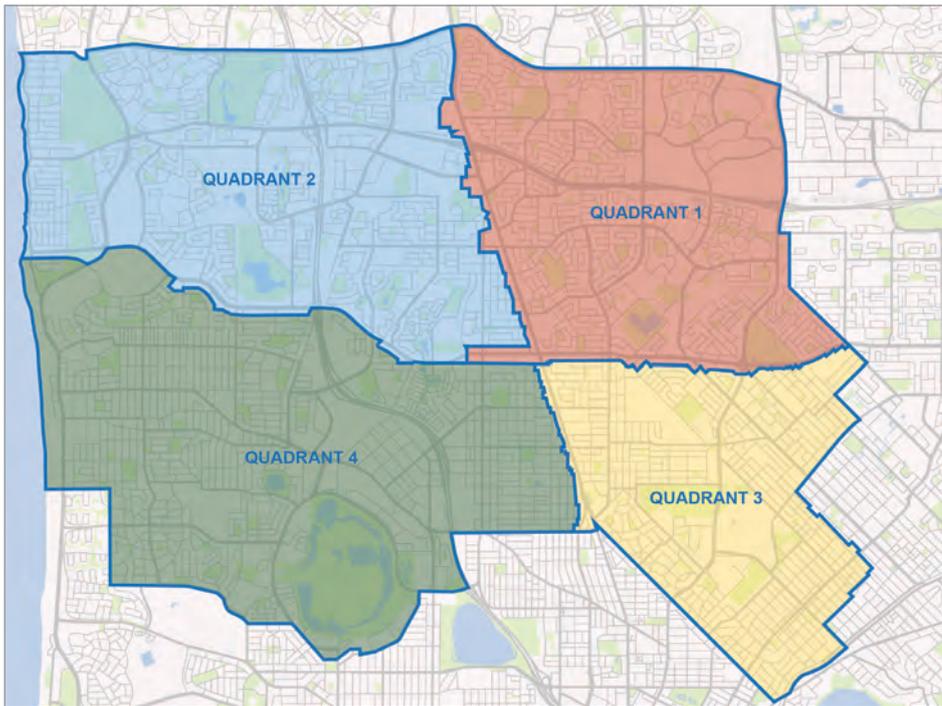
Figure 25: Better Suburbs Quadrants for the City of Stirling (Source: City of Stirling)

5.4   Summary Of Key Issues For Population And Housing

Whilst there has been an acknowledgement in the role of new grouped dwelling developments occurring as a result of demolishing single houses on large lots. This has delivered additional housing supply, but in a form of development that does not adequately address the projected demand for new housing that will be required.

Historical trends of development within the City have resulted in the segregation of uses. Whilst there are some areas of traditional main streets serviced by high amenity walkable streetscapes, the majority of the City has suffered due to the rise in dominance of cars, with the segregation of residential suburbs from commercial precincts and employment areas.

Opportunities for infill development still exist within the City and are providing the bulk of the City's current high level of growth. Increasingly, opportunities for consolidation and enhancement of the City's structure, character and amenities will provide the future focus for the City's planning activities.

As the State Government addresses the challenge of delivering sufficient housing for a future population of 3.5 million within the Perth and Peel regions, the historical methods of delivering housing will have to change. General trends indicate that parts of the population are ageing, and there is a greater demand for a variety of housing typologies.

The planning framework at a State level sets a minimum allocation target of 60,330 dwellings for the City of Stirling. The City has undertaken its own scenario modelling, and considers that the State's housing targets can be accommodated.

Whilst the City has the land capability to deliver on housing targets, it is important to avoid ad hoc infill development within suburban areas to mitigate impacts of infill on the amenity of the existing residential suburban areas.

The City seeks to provide true mixed use Activity Centres and Activity Corridors which will be supported by higher density housing, employment, recreation and entertainment, that will deliver the daily needs for the whole community. An offset to increasing density in strategic areas, is less development pressure on low density suburbs and areas of open space.

The City seeks to meet the State Government's housing targets for the City of Stirling with 75% of infill in and around the City's Activity Centres and Corridors and the remaining 25% of infill in the City's medium density areas.

However, this requires a significant change from the current situation where most of the dwelling growth is occurring in the back gardens of the medium density areas. Many of the City's localities lack diverse and affordable housing. Often, diverse housing options are not being provided due to incentives being too restrictive and as such not appealing to the private developers.

The local government is consciously targeting infill towards Activity Centres and Activity Corridors, which are demonstrated on the Strategy Plan. The Stirling City Centre, including the Herdsman Glendalough Area and Scarborough Beach Road, is to be the focus of significant redevelopment.

The population growth forecasts potentially do not necessarily take account of the City of Stirling's major projects such as Herdsman-Glendalough Structure Plan, Scarborough Beach Road West and the Better Suburbs program. It is possible that the ultimate population of the local government area as a whole will remain consistent with forecasts by the WAPC. However, the distribution of growth may vary and some localities may accommodate more intensive growth than is currently assumed in the State Government's WA Tomorrow predictions.

Key Issue 2.1
Residential growth is happening in back-gardens and not in Activity Centres or along Activity Corridors.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Focus residential growth around Activity Centres and Corridors.	Continue to work with the Department of Planning / WAPC to ensure most growth occurs in Activity Centres and Corridors and not in back gardens.	Ongoing	CoS (City Planning)
	Regularly monitor and report on dwelling growth and location in the City.	Ongoing	CoS (City Planning)
	Support higher density residential development in Activity Centres and along identified Corridors as part of detailed planning or place based planning studies.	Ongoing	CoS (City Planning)
	Investigate detailed and Local Scheme planning provisions to require a mandatory residential component in Activity Centres and Corridors.	Ongoing	CoS (City Planning)
Protect areas coded 'R20' and below for larger households and green-space.	In areas coded 'R20' and below only allow Local Planning Scheme zoning changes to areas around Activity Centres and along Corridors as part of detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program.	Short - Medium	CoS (City Planning)

Key Issue 2.2
Housing demand is shifting away from single detached dwellings due to an ageing population and a decrease in average household size. This is not supported by the existing housing stock within the City.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure land is suitably zoned to provide a range of residential accommodation.	Provide for multiple dwellings only in Activity Centres and identified Corridors as part of detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program.	Ongoing	CoS (City Planning)
	Support medium and high density residential near Corridors, and low density residential away from Corridors, as part of detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program.	Ongoing	CoS (City Planning)
	Support the Department of Housing's provision of affordable dwellings in appropriate locations, including investigating the possible rezoning of significant sized land parcels part of place based planning studies.	Ongoing	CoS (City Planning)
Provide for smaller, affordable and adaptable dwellings near Activity Centres and Corridors.	Provide appropriate zonings to promote developments that include diverse, adaptable and affordable housing near Activity Centres and along identified Corridors as part of place based planning studies.	Ongoing	CoS (City Planning)

6. Economy and Employment

6.1   Introduction

Economic development plays an integral role in the development of sustainable communities. The skills and composition of the local and regional labour force, its transport connections, infrastructure and other assets all contribute to an areas economic success.

Within the City, there are around 65,500 registered businesses across a diverse range of industries. Small to medium businesses are a major component of our business community. The City of Stirling's Gross Regional Product totalled $12.4 billion in 2016. This equates to 5.2% of Western Australia's Gross State Product and represented $63,701 gross product per capita.

Table 19 highlights the total population, the size of the workforce, total jobs and the level of employment self-sufficiency within the City of Stirling from 2006 to 2016.

Over the next 35 years an additional 60,000 jobs will need to be created to assist the City in meeting its employment target outlined in Perth & Peel @3.5 million.

From a land use perspective the City is well placed to provide sufficiently zoned land to enable the private sector to provide the necessary jobs through major redevelopment projects. These include Stirling City Centre, Herdsman Glendalough Area, Scarborough Beach and the Mirrabooka Town Centre.

However land use zoning alone will not create these jobs and therefore it is important for the City to proactively encourage and facilitate the private and government sectors to locate jobs in the City of Stirling. This can be achieved through the development and implementation of a detailed economic development plan.

Economic development plays an integral role in the development of sustainable communities. The skills and composition of the local and regional labour force, its transport connections, infrastructure and other assets all contribute to an area's economic success.

Table 19: City of Stirling Total Population compared to Total Jobs, 2006-2016 (Source City of Stirling)

City of Stirling	2006	2011	2016
Total Population	176,872	195,702	210,208
Total Employed Persons	89,906	103,345	111,552
% of population in the Workforce	51%	53%	53%
Total Jobs	60,382	67,685	75,381
Self Sufficiency (%)	67.2%	65.5%	67.6%

6.2   Background

6.2.1   Current Trends

Western Australia

The State Government's 2016-17 Fiscal Budget provided the following economic outlook highlights:

- Following a decade of very strong growth averaging 5.3% per annum, the Western Australian economy is experiencing a period of below trend growth as the mining and manufacturing sectors experience a slow down.

- The economic transition in Western Australia from substantial investment in resources projects to the production and exports phase, is having a more significant impact on the domestic economy than previously expected. The State Final Demand forecast is to contract by a further 3.75% in 2016-17.

- The Western Australian economy (as measured by Gross State Product) is expected to grow by 1.25% in 2016-17. A further decline in business investment and lower dwelling investment is expected. This follows estimated growth of 1% in 2015-16.

- Softer domestic economic conditions are flowing through to the labour market, with employment and wages growth expected to remain low in 2016-17.

- Economic growth is expected to gradually recover to reach 3% by 2019-20, underpinned by a pick-up in consumer spending and an eventual return to modest growth in business investment, as well as the continued expansion of LNG exports over the forecast period.

(Source: Government of Western Australia 2016, Budget Paper No. 3 Economic and Fiscal Outlook).

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Gross Regional Product totalled $12.4 billion in 2016. This equates to 5.2% of Western Australia's Gross State Product and represented $63,701 gross product per capita.

The unemployment rate was 6.1% within the City of Stirling in February 2017, which had risen from 4.8% in 2010. The unemployment rate varies considerably across the City (refer Figure 26) with the areas of Nollamara-Westminster and Balga-Mirrabooka being significantly higher than the other areas of the City.

There is currently a Labour Force totalling 110,691 persons within the City of Stirling. Table 20 shows this breakdown as per each area within the City. Total jobs within the City of Stirling was 67,685 in December 2016.

The City of Stirling has a variety of employment centres, providing a workforce which spans numerous industries. The retail industry is the biggest employer within the City of Stirling and centres such as Stirling City Centre, Karrinyup Shopping Centre and Mirrabooka are playing a major role in the provision of employment. However the major concentration of employment is still in the Osborne Park Industrial Area. Another large employment area is the Balcatta Industrial Area. Table 21 shows the major employment areas within the City, however more up to date information has yet to become available.

The construction industry is the biggest provider of jobs (12,242 postions) with the retail industry (10,891) and health sector 10,335) being the two other highest employers (Figure 27).
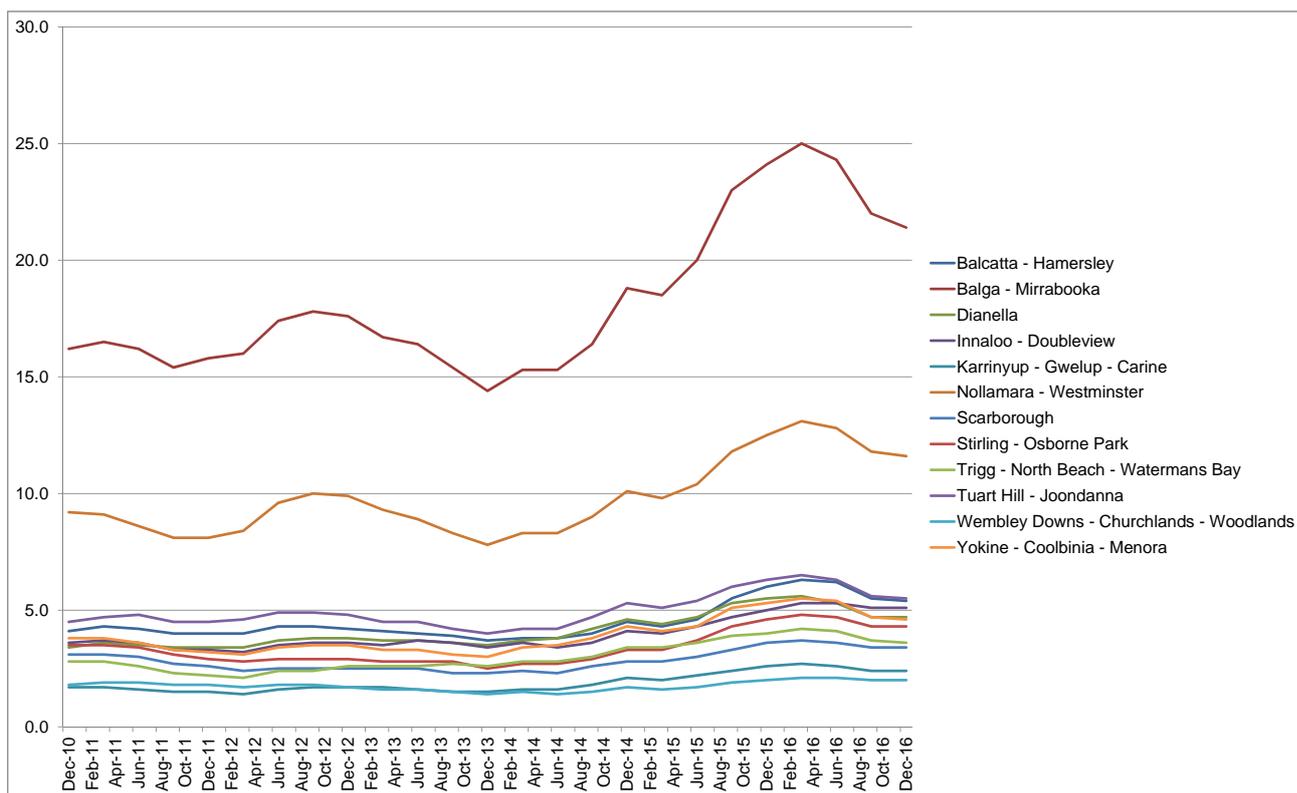
Figure 26: Figure 30: City of Stirling employment rates by SA2 areas. Source: Department of Employment

Table 20: City of Stirling Labour Force (Source: REMPLAN)

City of Stirling	Number in labour force
Balcatta - Hamersley	7,725
Balga - Mirrabooka	8,995
Dianella	12,314
Innaloo - Doubleview	9,371
Karrinyup - Gwelup - Carine	10,227
Nollamara - Westminster	10,260
Mount Lawley - Inglewood	9462
Scarborough	11,682
Stirling - Osborne Park	7,609
Trigg - North Beach - Watermans Bay	3,915
Tuart Hill - Joondanna	8,387
Wembley Downs - Churchlands - Woodlands	6,865
Yokine - Coolbinia - Menora	8,194
Total of SA2 areas with the City of Stirling	110,691

Table 21 Jobs in Major Employment Areas, 1996-2008 (Source: Department of Planning – Land Use Surveys)

Total Jobs	1993	1997	2002	2008
Stirling City Centre	1,351	3,807	4,363	5,553
Mirrabooka Town Centre	1,958	2,105	2,368	2,431
Karrinyup Town Centre	1,665	1,074	1,483	1,847
Osborne Park Industrial Area	14,400	14,598	15,496	18,205
Balcatta Industrial Area	5,791	7,388	6,805	8,516
Edith Cowan University	Not Available	Not Available	Not Available	719

The existing Activity Centres are the major supplier of retail within the City, and are therefore a major supplier of employment. These Activity Centres have seen little growth in terms of floorspace over the previous decade, however significant expansion proposals are now approved for Innaloo (Stirling City Centre) and Karrinyup. Whilst the total numbers of jobs in this employment sector is the highest in the City, the overall growth in jobs has been limited. The employment growth in aged persons care and education/ training has been reflected through the increased demand for and delivery of private institutions throughout the City.

Balcatta and Osborne Park are the two primary employment centres for the manufacturing industry, with over 5,000 workers employed in this industry. Although the workforce concentration in Osborne Park is higher than in Balcatta, both these industrial areas are facing challenges of their own in the evolution of the provision of goods and services.

While they remain the City's second highest industry employment centres, they also accommodate high numbers of Construction and Wholesale Trade employees.

Average income earned by residents of the City of Stirling is higher than the average for Western Australia over the lower paid brackets of $1500 and below. Figure 28 indicates the average weekly incomes in December 2017.

Employment self sufficiency of the residents within the City of Stirling, 26.6% work within the City, totalling 23,100 workers. 63.8% of residents travel outside the local government area to their place of employment. 19.9% of residents or 17,278 workers travel to Perth for work.

Workforce Breakdown (Jobs) - Work in City of Stirling (Dec 2017)

Industry	Jobs
Construction	~12,300
Retail Trade	~10,900
Health Care & Social Assistance	~10,400
Education & Training	~8,100
Professional, Scientific & Technical Services	~5,700
Accommodation & Food Services	~4,700
Public Administration & Safety	~4,400
Manufacturing	~4,100
Other Services	~3,600
Administrative & Support Services	~3,400
Wholesale Trade	~2,600
Information Media & Telecommunications	~1,900
Financial & Insurance Services	~1,700
Transport, Postal & Warehousing	~1,600
Rental, Hiring & Real Estate Services	~1,500
Arts & Recreation Services	~1,300
Electricity, Gas, Water & Waste Services	~1,100
Mining	~800
Agriculture, Forestry & Fishing	~500

Figure 27: Major Employment Industries, within the City of Stirling (Source: REMPLAN)

Workforce Income per week (%)

- Negative/Nil income
- $1-$149
- $300-$399
- $400-$499
- $500-$649
- $650-$799
- $800-$999
- $1,000-$1,249
- $1,250-$1,499
- $1,500-$1,749
- $1,750-$1,999
- $2,000-$2,999
- $3,000 or more
- Not stated/Not applicable

■ Work in Stirling (C) (Dec 2017)
■ Work in Western Australia (State) (Dec 2017)
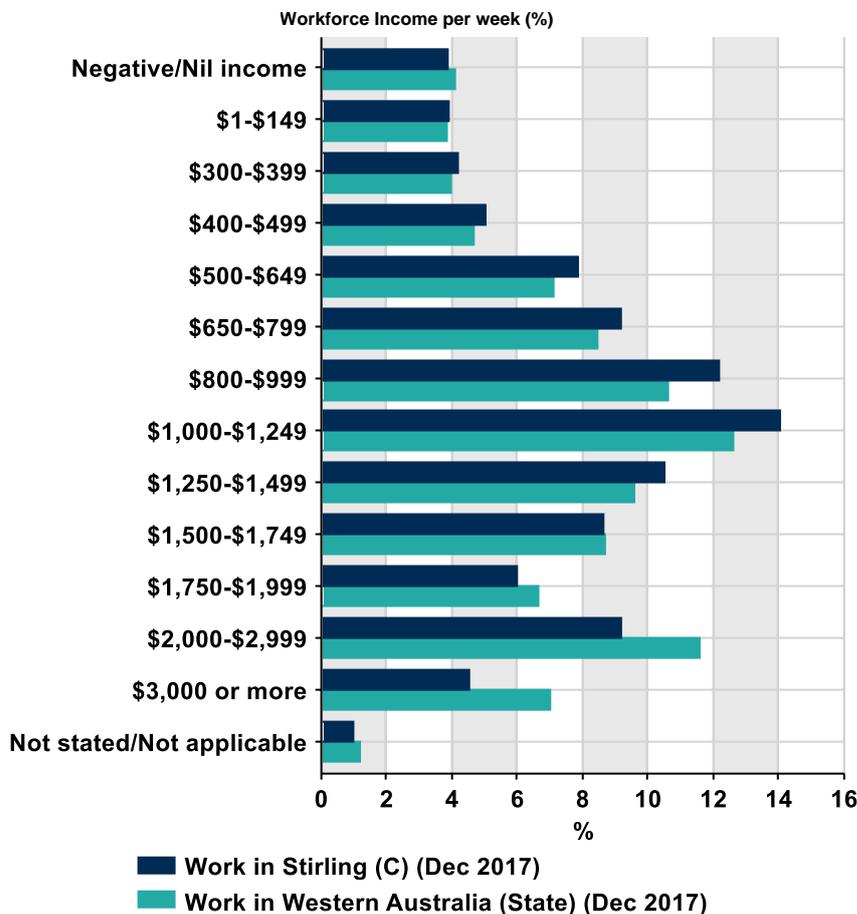
Figure 28: Average Weekly Incomes, City of Stirling (Source: REMPLAN)

6.2.2 Future Trends

Western Australia

Against the backdrop of an expected decrease in mining investment, employment growth in Western Australia is expected to slow from the rates recorded over the past five years. Employment is projected to grow by less than the national average with increases of 94,900 (or 6.9%) in Western Australia to November 2020.

The pattern of projected employment growth is consistent with changes in the labour market favouring service industries. It is also consistent with the effects of the contraction of mining related activity despite low interest rates and the depreciation in the Australian Dollar.

The 2016 regional employment projections from the Department of Employment to November 2020 for the Perth

North West Statistical Area which includes the majority of the City of Stirling (apart from the suburbs of Glendalough, Mount Lawley and Inglewood) forecasts that the total number of employed persons will increase to 339,100 persons (Figure 29).

The biggest growth employment area will be within Health Care, followed by the Construction Industry and then the retail sector. Manufacturing, wholesale trading and transport/warehousing will have limited growth, with an expected declining in mining employment. The continuing challenge facing the City of Stirling is to retain and strengthen the economic position of the City in a period of expected slow growth.

Perth - North West - Total (All Industries)

— ABS Labour Force Survey - Department of Employment Trend ---- Department of Employment Projection to November 2020

Figure 29: Employment Projections North West Corridor Perth by Sector (Source: Department of Employment)

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Jobs within the manufacturing sector will continue to decline within the City, however there should be a significant increase in retail, tourism and service jobs as the major retail centres continue to expand and diversify. The Scarborough Redevelopment Area will continue to grow, and the Stirling City Centre and Herdsman Glendalough Area will see likely growth in the various service industries.

Given the significant increase in population over the next 35 years the number of jobs provided within the City of

Stirling will have to increase at an even faster rate than the population rate.

For the City of Stirling to retain its current Employment Self Sufficiency Rate the City would have to ensure that there is a sufficient amount of suitably zoned land to enable the increase in retail, tourism and service jobs within the City. Table 22 highlights the amount of jobs that would have to be created in the City's major employment areas.

Table 22: City of Stirling Projected Major Employment Area Job Growth (Source: City of Stirling)

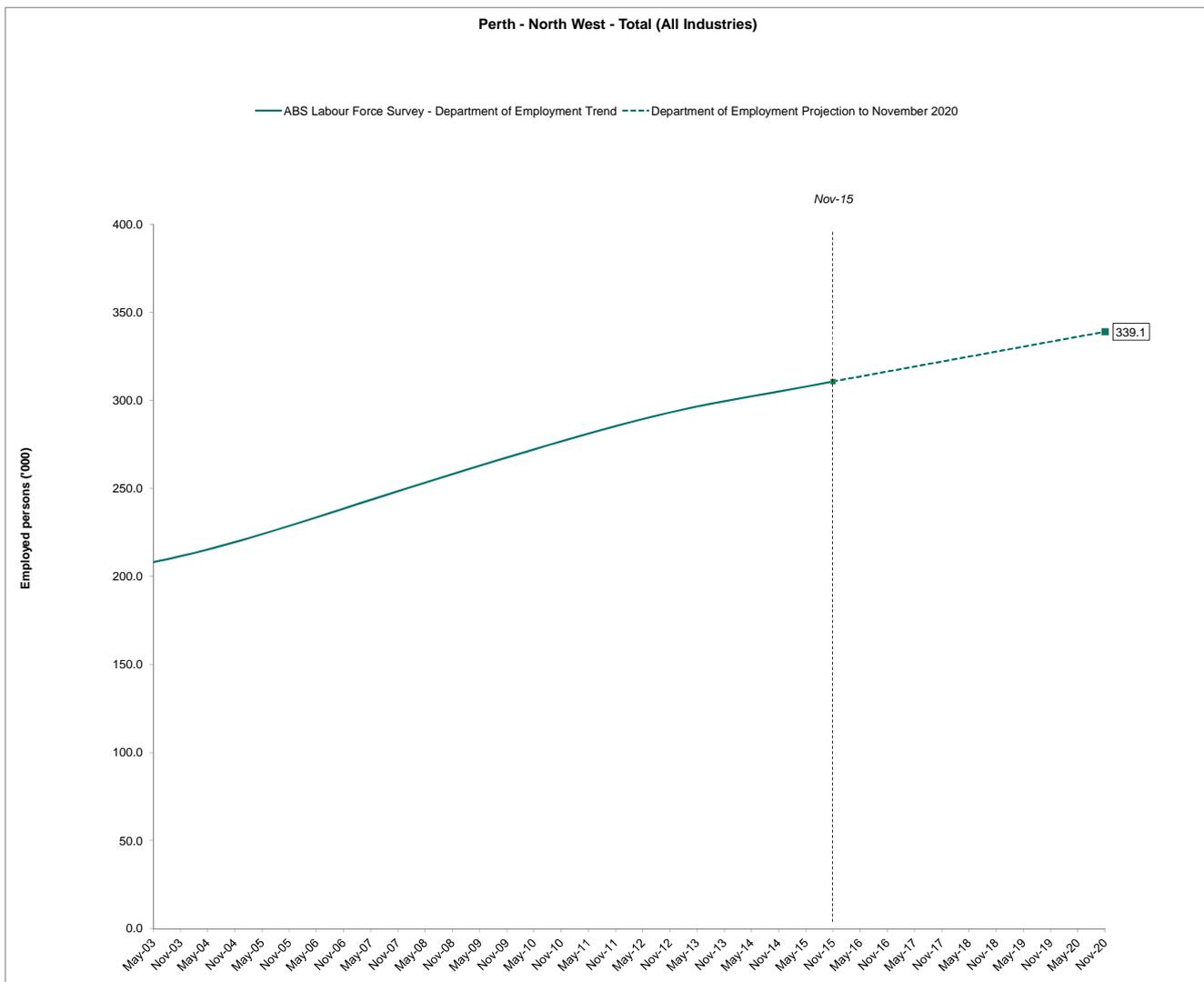| Total Jobs	2008	2031	2050
Stirling City Centre	5,553	20,000	30,000
Herdsman Glendalough Area	N/A	15,000	20,000
Mirrabooka Town Centre	2,431	6000	9,000
Karrinyup Town Centre	1,847	4300	5,000
Osborne Park Industrial Area	18,205	13,000	18,000
Balcatta Industrial Area	8,516	12,000	15,000

6.3   Local Context And Future Possibilities

6.3.1   Perth And Peel @3.5 Million

The State Government's Perth and Peel @3.5million and the Central Sub-regional Planning Framework identifies the Activity Centres and Activity Corridors within the City (refer Figure 3 and Figure 4 in section 2.5 Strategic Planning Framework of this strategy). SPP 4.2 provides a hierarchy of metropolitan centres. The purpose of these Activity Centres is to provide a range of housing, services, facilities and activities necessary to support the communities. This reduces the need to travel outside the local area.

Perth and Peel @3.5million has identified that maintaining a strong and regionally dispersed network of industrial centres is critical to the continued economic growth and prosperity of the Perth Metropolitan Region. Regional industrial centres are primarily focused on providing industrial products and services to the Metropolitan Region. They cater for a broad range of manufacturing, fabrication, processing, warehousing and bulk goods handling activities.

Within the City of Stirling the major employment areas and centres include:

- Stirling City Centre;
- Karrinyup Town Centre;
- Mirrabooka Town Centre;
- Osborne Park Industrial Area;
- Balcatta Industrial Area; and
- Edith Cowan University.

The Central Sub-Regional Planning Framework has an additional 285,840 jobs in the central sub region by 2050. While no specific City of Stirling target has been set, the Central Sub-regional Planning Framework does include anticipated job numbers for both Activity and Industrial centres within the City (Tables 23 and 24).

6.3.2 Perth And Peel Economic And Employment Lands Strategy

The Economic and Employment Lands Strategy: Non-Heavy Industrial: Perth Metropolitan and Peel Regions (EELS) identifies the importance of the industrial areas of Balcatta and Osborne Park within the City of Stirling. Notably, Dianella is not identified. These industrial areas, like other areas within the Central sub-region, are under pressure from higher-end commercial uses.

Industrial activities and associated uses are being forced to relocate towards outer metropolitan industrial areas. This is as land becomes more valuable and sought after for residential, commercial, retail and office uses within the inner areas of the metropolitan area. Issues raised from an industrial land perspective in the Central sub-region include:

- The erosion of industrial land within inner metropolitan sites at the expense of higher order uses.

- Encroachment of residential and commercial land uses in and around industrial areas because of the perceived higher land values of commercial and residential land uses.

- The need to protect existing key strategically located industrial facilities i.e. concrete batching plants.

- The industrial areas of Osborne Park and Balcatta are also zoned 'Industrial' under the MRS. Notably, a portion of Osborne Park is the subject of MRS Amendment 1291/41 which proposes to rezone some of the industrial area to the 'Urban' and 'Central City Area' zones.

The Industrial Land Needs Study undertaken by the Department of Planning to inform the EELS, identifies significant changes in the land use pattern in Osborne Park over the previous 20 years. Between 1993 and 2001, the proportion of manufacturing/processing/fabrication land use fell from 31.4% to 18.3% with a corresponding rise in retail, office and storage floor space. The Industrial Land Needs Study notes that this is an established and continuing pattern of adaptation and change in industrial estates close to the Perth CBD and strategic regional centres, created by pressure on land supply and rising land values. However, despite the changes in land use, the value of the area as a place of employment has remained constant if not strengthened with the diversity of uses. In 2001, the total employment in Osborne Park was approximately 15,500 and rose to over 18,000 by 2008. The EELS recognises Osborne Park and particularly the Herdsman Business Park and Scarborough Beach Road corridor as a quasi-commercial centre.

The EELS places importance on the creation of employment and has identified the need to support transition in employment uses particularly in the central sub region where residential infill and population growth is occurring. In 2008, the Central sub-region had employment self-sufficiency of 124%, and in order to meet the targets outlined in Perth and Peel @3.5million, this target must be maintained in spite of a growing local resident population. The EELS states that this will require the creation of an additional 147,000 jobs by 2031 in order to maintain the employment self-sufficiency percentage. In order to achieve this target it is important that the City of Stirling's employment self-sufficiency does not reduce as the City of Stirling has some of the largest employment areas outside of the Perth Central Business District.

6.3.3 City Of Stirling Industrial Areas In Transition Management Strategy

In September 2004, the City prepared the Industrial Areas in Transition Management Strategy. This had the overall goal to provide for both traditional and emerging economic activities while avoiding land use conflicts.

The Industrial Areas in Transition Management Strategy aims to respond to development trends that are changing the nature of the City's industrial areas in Osborne Park, Balcatta and Dianella. The issues arising from those trends are complex and interact with a range of policies at State and local level. Contemporary technological and economic trends are having a significant effect on the City's industrial areas. Traditional distinctions between sectors have become blurred, with secondary and tertiary/quaternary functions often administered from a single site. The tendency for large companies to diversify 'vertically' (acquiring interests in all stages of production and distribution – materials to shop-shelf) and 'horizontally' (expanding the range of goods and services they control), as well the movement of much manufacturing offshore, has led to a gradual decline in the proportion of traditional industry, in favour of a greater mix of land uses.

The increasing presence of commercial and retail uses side by side with industry, raises problems for establishing suitable buffers around general and noxious industries, and for the management of traffic and parking. These intensive uses tend to increase the cost of land, potentially compromising the viability of traditional industries, which still provide significant employment.

To address the complexity of issues, six aims were set:

Aim 1: Protect the place of traditional manufacturing/ processing and service industries in the district;

Aim 2: Provide for emerging business that are seen as suitable to be located in industrial/mixed business areas, including limited large-scale customer-oriented uses (such as showrooms);

Aim 3: Protect the hierarchy of commercial centres;

Aim 4: Manage the industrial-residential interface in Dianella and Osborne Park East;

Aim 5: Identify development directions for specific areas within Osborne Park; and

Aim 6: Address parking and traffic management issues resulting from changes in development direction.
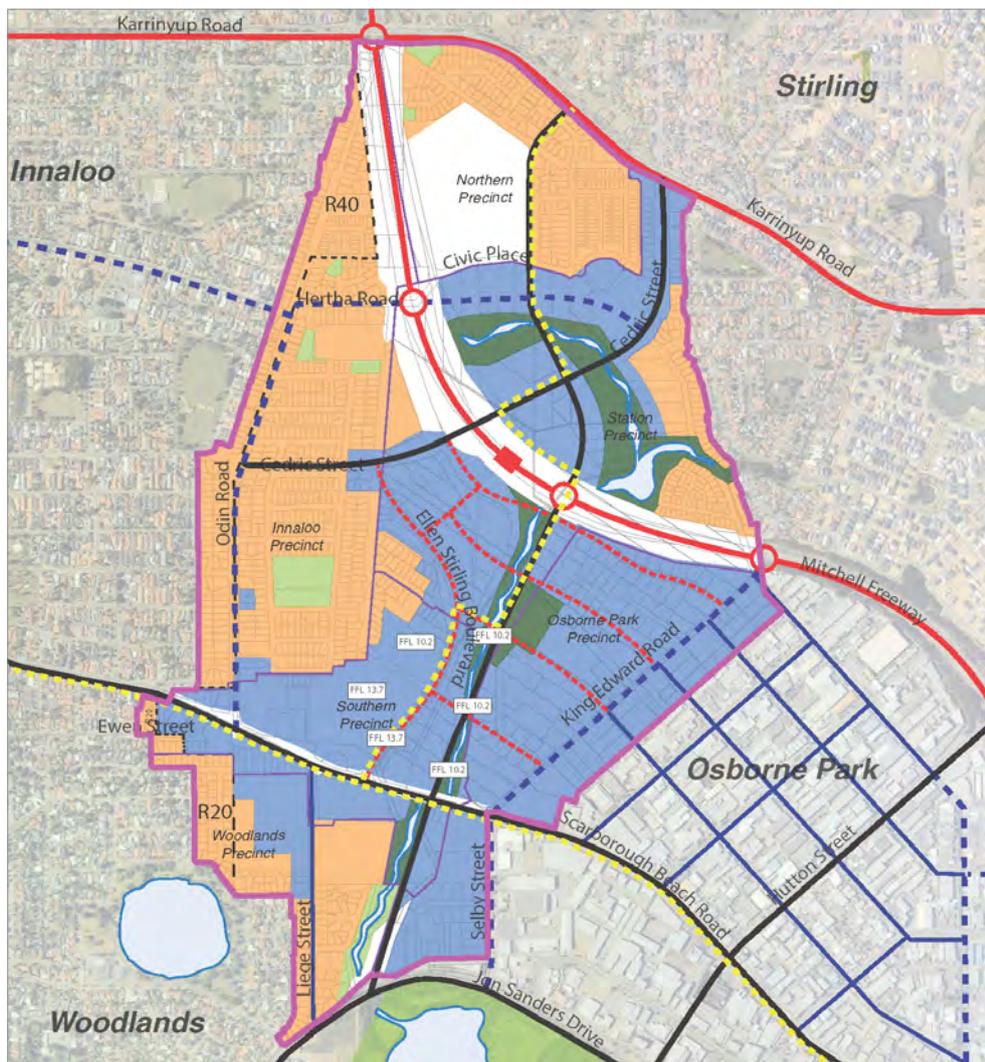
Figure 30: Stirling City Centre Activity Centre Plan (Source: City of Stirling 2014)

Table 23: Total Projected Jobs – Stirling City Centre, 2008-2050 (Source: City of Stirling)

Total Jobs	2008	2031	2050
Stirling City Centre	5,553	20,000	30,000

Activity Centres

Stirling City Centre

Stirling City Centre is designated as a Strategic Metropolitan Centre. As it develops the Stirling City Centre will diversify its economic base and mature into a major employment centre for the Central Sub-region.

The Stirling City Centre is expected to supply a minimum of 30,000 jobs by 2050. Currently there are approximately 6000 jobs in Stirling City Centre, **Table 23**. The Stirling City Centre Activity Centre Plan (refer **Figure 30**) proposes a spatial plan that will facilitate excellent accessibility and high amenity in an intensive, mixed-use Activity Centre. As a result, the area will become a highly desirable location for businesses and their employees.

The intent of the Structure Plan is to encourage and support existing business located within the area, as well as encouraging and creating new opportunities. However for these benefits to be realised, there needs to be investment

in infrastructure to support intensive land use. The City continues to work with State Government to bring about the development of the required infrastructure such as sewer and a light rail system along Scarborough Beach Road.

Economic development within the Stirling City Centre will be a key driver of employment growth. Employment will expand in two areas:

- Increases in retail and consumer services employment generated by growth in the Stirling City Centre catchment; and

- Increases in strategic employment generated by growth in existing and future industry (such as the existing information/media/communication and construction businesses already located in the area).

Figure 31: Perspective of proposed high-density mixed-use development throughout Herdsman Glendalough Area

Table 24: Total Projected Jobs – Herdsman Glendalough Area, 2008-2050 (Source: City of Stirling)

Total Jobs	2008	2031	2050
Herdsman Glendalough Area	N/A	15,000	20,000

Herdsman Glendalough Area

The Herdsman Glendalough Area is a large area of employment land characterised by showrooms and large office buildings. It forms part of the Osborne Park industrial area, however it contains almost no industrial functions. Over time, businesses have recognised Herdsman's accessibility and close location to Perth, and have located within the area between Herdsman Lake and Scarborough Beach Road.

Rezoning and structure planning has taken place within the Herdsman Glendalough Area. The Herdsman Glendalough Area Structure Plan facilitates the growth of the Herdsman Glendalough Area as a high-density, mixed-use employment centre. The Structure Plan will guide the assessment of land use and development of all private and public land within the Herdsman Glendalough Area. Mandatory residential development will be in specified areas surrounding future rapid public transport stations along Scarborough Beach Road, and around the Glendalough railway station.

Overall, the Structure Plan has been analysed and the following estimates are predicted:

- 3,575 dwellings and 6,275 residents;

- 183,954m² commercial floor space, 16,815m² retail floor space, 11,653m² industrial floor space for 8,309 workers; and

- 11,822m² public open space.

By 2031, the redevelopment of the Herdsman Glendalough Area is anticipated to deliver substantial employment opportunities, including approximately 8,000 retail and office related jobs.

The existing road network is sought to be improved with proposed new roads identified within the Structure Plan. These are necessary in the context of the intended land uses. Improving the road network will increase permeability of the Area. Rapid transit along Scarborough Beach Road will also benefit from improved network permeability with improved walkability around transit stops

Table 23:   Total Projected Jobs – Mirrabooka Town Centre, 2008-2050 (Source: City of Stirling)

Total Jobs	2008	2031	2050
Mirrabooka Town Centre	2,431	6,000	9,000

Table 24: Total Projected Jobs – Karrinyup Town Centre, 2008-2050 (Source: Mirrabooka Structure Plan)

Total Jobs	2008	2031	2050
Karrinyup Town Centre	2,431	4,300	5,000

Mirrabooka Town Centre

Mirrabooka Town centre is expected to change from predominantly a retail centre to a centre that will provide a wide variety of employment opportunities, including retail, medical, service and recreation employment. **Table 23** highlights the anticipated growth in jobs in the Mirrabooka Town Centre.

Karrinyup Town Centre

Karrinyup Town Centre is expected to have some employment growth over the next 35 years with additional employment in the retail sector. There is expected to be minor growth in other areas **(Table 24)**.

6.3.4 Activity Corridors

Activity Corridors will provide a connection between Activity Centres and operate not just as roads for the movement of vehicles but as corridors for major infrastructure, locations for increased and diversified employment and places for people to live. Activity Corridors have a key role to play in the growth of the City and will:

- Be a focus for population and employment growth;

- Provide increased and diversified employment;

- Provide enhanced public transport and other alternative transport infrastructure;

- Create or build on an existing identity;

- Advance economic and social development and exchange; and

- Incorporate Centre Plans or Local Development plans for centres where appropriate.

The potential Activity Corridors within the City of Stirling are identified in Appendix 1. Each corridor has its own unique character and subsequent mix of land uses along them. Some corridors are suited predominantly to residential uses with minor commercial or mixed-use development dotted along their length, whilst others are suited to mostly commercial and office developments.

To adequately service the proposed intensification/higher density housing development along corridors and avoid impacting on the financial viability of the various Activity Centres, a balanced transport/land use approach will be required. This level and types of development along Activity Corridors will be determined as part of the City's place based planning approach (i.e. Scarborough Beach Road Activity Corridor Strategy, Better Suburbs project etc).

There are several existing major strategic activity corridors within the City of Stirling that are subject to investigation/ planning including:

- **Scarborough Beach Road** has historically functioned as a key link between Scarborough Beach and the Perth CBD, with various land use. The commercial success and appeal is heavily dependent on private vehicles for access and visual exposure; however, recent planning (through the Scarborough Beach Road Activity Corridor Framework) is aiming to deliver rapid transit within this corridor;

- **Wanneroo Road** has a similar composition to Scarborough Beach Road as it is a regionally significant transport corridor, but also functions as a strategic freight route for the northern half of the Perth metropolitan region. Its redevelopment is being investigated through the current Better Suburbs program.

- **Beaufort Street** is a major strategic link towards the Perth CBD, and offers a good urban environment (especially towards the junction of Walcott Street, and some sections through Inglewood). This has tended to evolve historically but will be progressed though the current Beaufort Street Activity Corridor framework.

- **Morley Drive** connects Mitchell Freeway, Karrinyup Road and the western part of the City to the east, in particular the identified Morley Strategic Metropolitan Centre. Morley Drive is predominately fronted by residential and smaller home based style businesses, and is currently being investigated through the City's Better Suburbs project.

6.3.5 Industrial Areas

Osborne Park

Osborne Park Industrial Area at approximately 330ha, is the largest of the City's industrial zones and is recognised as a regional industrial area. Traditionally a general industry area, Osborne Park now contains a wide range of land uses, from general and noxious industry to commercial and retail, and its character varies considerably across its area. Osborne Park is currently the most intensively developed industrial area within the metropolitan area, with Scarborough Beach road being Australia's largest bulky goods area.

Osborne Park will go through significant change over the coming 35 years and the core industrial zoned area will reduce down to approximately 135 hectares from 330 hectares. Approximately 180 hectares of the existing industrial area will be rezoned for mixed use and commercial uses and included within the Herdsman Glendalough Area and Stirling City Centre. An additional 15 hectares will be rezoned to mixed business to provide legal certainty to a large amount of non-conforming showroom uses on key roads within the Osborne Park Area. The remaining core industrial area will continue to intensify and it is an important area to be maintained within the Central Sub Region for service industrial uses associated with the community's everyday needs like car servicing, storage, warehousing, local manufacturing etc. Industrial uses associated with logistics, large scale manufacturing will continue to move out of the area to other industrial areas that are better located close to major logistical hubs. Table 25 highlights the total number of jobs that were contained in Osborne Park in 2008 and shows how the number of jobs will decline as the geographical area of the industrial area will reduce from 330 hectares to 135 hectares. However the additional jobs in the area will be contained through the newly created Herdsman Glendalough area.

Table 25: Total Projected Jobs – Osborne Park Industrial Area, 2008-2050 (Source: Department of Employment)

Total Jobs	2008	2031	2050
Osborne Park Industrial Area	18,205	13,000	18,000

Balcatta

Balcatta Industrial Area was historically approximately 175 hectares in size, however it has now been reduced down to a core industrial area of 115 hectares. The 60 hectares of previous industrial land was rezoned in 2008 to ensure that a large number of non-conforming showroom uses were provided an appropriate zoning that enabled their continued use and growth.

It is anticipated that land around the corner of Wanneroo Road and Reid Highway will change in zoning to allow the development of a larger Activity Centre around a future train station on Reid Highway. Balcatta Industrial Area will continue to change in the future in a similar nature to Osborne Park Industrial Area, refer **Table 26**. It is anticipated that the remaining core industrial area will continue to intensify and is an important area to be maintained within the Central Sub-region for service industrial uses associated with the community's everyday needs like car servicing, storage, warehousing, local manufacturing etc. Industrial uses associated with logistics, large scale manufacturing will continue to move out of the area to other industrial areas that are better located close to major logistical hubs.

Table 26: Total Projected Jobs – Balcatta Industrial Area, 2008-2050 (Source: Department of Employment)

Total Jobs	2008	2031	2050
Balcatta Industrial Area	8,516	12,000	15,000

Dianella Industrial Area

The Dianella Industrial Area is proposed to be rezoned to allow for residential and mixed use development. As such its industrial function will cease to exist over time and employment opportunities will be created through service and retail employment sectors, refer Table 27.

Table 27: Total Projected Jobs –Dianella Industrial Area, 2008-2050 (Source: Department of Employment)

Total Jobs	2008	2031	2050
Edith Cowan University	200	200	300

Table 28: Total Projected Jobs – Edith Cowan University, 2008-2050 (Source: Department of Employment)

Total Jobs	2008	2031	2050
Edith Cowan University	1,000	2,000	3,000

6.3.7   Specialised Centres

Edith Cowan University

Edith Cowan University is the City's only specialised centre located on Alexander Drive in Mount Lawley. This centre currently employs approximately 1,000 people and has about 5,000 students and houses approximately 500 students living on-site. Over time it will continue to grow and the number of students on-site will grow also. There is an opportunity to create a retail main street within the campus that provides local retail needs to the students as well as the surrounding residents, refer Table 28.

6.4   Summary Of Key Issues Of Economy And Employment

The City has experienced a decline in the number of jobs in proportion to the number of residents. This has dropped from an employment self-sufficiency of 76% to approximately 67%. The level of employment self-sufficiency needs to be raised back to 76% to ensure that the City can contribute to maintaining the target of 139.7% self-sufficiency in the Central Sub-region by 2050.

The City will continue to work on Activity Centre and Activity Corridor plans to ensure that the employment areas are adaptable to the changing needs of employment in today's society and remain flexible.

In addition the City will have to ensure that other existing employment areas such as industrial areas are not rezoned for other non-employment purposes, other than those already contemplated.

To encourage and support existing business and to create new opportunities, the City will continue to workwith State and Federal Governments to bring about the development of a light rail system along Scarborough Beach Road.

The City's plans have the capacity to accommodate the necessary levels of employment required over the next 35 years. However it will not be a simple exercise of zoning land to provide for employment opportunities it will require more direct action through an Economic Development Strategy to encourage business investment and facilitate new jobs to the City of Stirling.

Key Issue 3.1
No formal identification of employment areas and types of employment in those areas.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Identify employment areas and the types of employment within those areas.	Ensure a hierarchy of employment areas and types of employment are identified through the City's *Economic and Tourism Development Strategy.*	Medium	CoS (City Planning)
	Ensure employment areas and types of employment are identified through the City's Activity Centre and Corridor Plans.	Ongoing	CoS (City Planning)
Develop the Stirling City Centre/ Herdsman Glendalough Area as a future primary employment hub within the City of Stirling.	Adopt and implement the Stirling City Centre and Herdsman-Glendalough Structure Plans.	Medium	CoS (City Planning)

Key Issue 3.2
Our Activity Centres and Corridors do not have a diverse range of employment.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Encourage integrated economic development based on the City's *Economic and Tourism Development Strategy*.	Ensure land-use and Local Planning Scheme zoning support the City's *Economic and Tourism Development Strategy*.	Medium	CoS (City Planning)
	Advocate and attract a diversity of employment opportunities within Activity Centres and Corridors.	Long	CoS (City Planning)
Ensure investment in infrastructure is prioritised towards supporting Activity Centres and Corridors.	Align infrastructure investment decisions to support development in Activity Centres and along Corridors.	Ongoing	CoS (Engineering Design and Operations)
Ensure Local Planning Scheme provisions and planning policies allow for a diverse land uses that support a range of employment in the City's Activity Centres and Corridors.	Focus the City's employment growth from Herdsman to Scarborough along Scarborough Beach Road.	Ongoing	CoS (City Planning)
	Develop Activity Centre and Corridor Plans, and place based planning studies.	Ongoing	CoS (City Planning)

Key Issue 3.3
The City's industrial areas are being diluted with other non-industrial uses.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Protect the industrial land supply (Balcatta, Osborne Park) from non-industrial uses where appropriate.	Do not rezone any industrial land except in accordance with an adopted structure plan, and the City's *Industrial Land In Transition Strategy*.	Ongoing	CoS (City Planning)
Enable existing bulky good uses to remain in appropriate locations.	Implement the City's *Industrial Land In Transition Strategy*.	Short	CoS (City Planning)

7. Retail and Commercial

7.1   Introduction

The City of Stirling has seventy nine (79) centres, including:

- 1 x Strategic Metropolitan Centre;
- 2 x Secondary Centres;
- 9 x District centres;
- 19 x Neighbourhood Centres; and
- 48 x Local Centres.

These centres have been built at varying times including centres:

- Built on "main streets" along tram lines prior to the 1950's;
- Built partially on 'main street" principles with on-street parking in the 1950's and 1960's; and
- Built in the middle of car parks from the 1960's until the 2000's.

The majority of the City's centres have been built in the period from the 1960's to the 2000's. This strategy encourages these centres to transition over time to centres with a "main street" - that is a strip of shops facing a street with footpaths and awnings providing high amenity for pedestrians. This aligns with the City's land use and transport strategy, that requires greater walking, cycling and public transport use.

The City of Stirling has seen significant population growth over the last decade, however the City's retail and commercial centres have not seen any major retail growth during this period. There has been significant growth approved in the City's two Secondary centres – Stirling and Karrinyup, but these have not yet been constructed. The City's Retail Modelling and Centres Strategy has identified retail floor space growth potential without impacting detrimentally on existing Activity Centres.

The City's Retail Modelling and Centres Strategy has outlined three options to accommodate this growth in retail floor space. The preferred option is "Re-Localising Retail" which allows constrained growth at the City's largest centres, but ensures sufficient growth potential remains for the City's smaller centres, including District, Neighbourhood and Local Centres. Particular growth emphasis is provided for those smaller centres that are located in the areas identified for population growth, including ones that are located:

- Along public transport corridors;
- At or near existing or future transit stops; and
- Areas with high population growth.

This growth will include provision of:

- Main streets within centres;
- Mixed use development including residential on top of shops; and
- Diversity of non-residential uses to encourage greater employment opportunities.

This ensures that there is alignment between the City's transport strategy and the land use strategy. To achieve this outcome the City will be required to assist the City's smaller centres to achieve this outcome. Without assistance a 'business as usual' outcome is likely to occur which according to international trends shows that the largest centres will thrive at the expense of smaller centres.

This is demonstrated in the USA and east coast of Australia where the largest centres have grown to become lifestyle centres. developed by large multinational companies with significant resources. The smaller centres, including strip shopping areas and smaller box shopping centres that cannot re-invest in their centres, see a gradual decline with centres closing down.

The City of Stirling is already facing this situation with large expansions of the City's two largest centres, Karrinyup and Innaloo approved and some of the City's Local Centres facing high vacancy rates, poor urban design and potential closure.

7.2   Background

7.2.1   Current Trends

The existing commercial network in the City is diverse in form and function. The older part of the City in the south, developed along the main arterial roads such as Beaufort Street, Wanneroo Road and Main Street. They are representative of a grid-based street network that was developed at a time when reliance on cars was far less prevalent. Subsequently much of this commercial development is dense, walkable, and offers a greater diversity of built form and land uses. The commercial precincts in the southern suburbs also offer a greater integration with the public domain, and the built form provides satisfactory opportunities for new entrants into retailing. As these are the older retail centres in the City, some of the building stock is aged and as such many are in need of renewal/redevelopment.

The northern part of the City, particularly north of Karrinyup Road/Morley Drive, has been developed more recently. As such the shopping hierarchy tends to favour private vehicle transport. In terms of performance, these centres can be divided into two groups – the large (Strategic Metropolitan,

Secondary and District) centres and small (neighbourhood and local) centres.

The City of Stirling contains one Strategic Metropolitan Centre (Stirling) and two secondary centres (Karrinyup and Mirrabooka). These higher-order centres are attracting significant private sector investment that will contribute to an improved performance. These larger centres serve the higher-order retail and business needs of local residents and visitors. There is however a significant risk that the anticipated growth in these centres could put increased pressure on the viability of the smaller District, Neighbourhood and Local Centres.

A total of 9 district centres and 19 Neighbourhood Centres are located in the City. These centres offer a local retail convenience and, compared to the larger centres, have experienced limited investment in recent years. A range of local centres are also provided throughout the City of Stirling, together with two major bulky goods precincts located in the employment areas of Osborne Park and Balcatta.

Most of the larger retail/commercial centres (District and above) feature a convenient grouping of shops under one roof with ample on-site free parking. However these centres can be:

- Poorly integrated with public transportation and have poor pedestrian/cyclist access;

- Separated from other key elements within their precinct (the entire precinct is often considered the retail centre);

- Not conducive to a liveable, walkable mix of uses which would attract residents and many non-retail businesses;

- Lack quality public spaces; and

- Surrounded by expanses of car parking.

The smaller shopping centres are intended to provide local convenience shopping and are varied in success. Many of the larger and more recent neighbourhood centres outperform the older and smaller local centres, particularly in relation to financial viability and patronage.

The analysis on which the following recommendations are made is derived from data collected from:

- The Department of Planning's 2010 Land Use and Employment Survey;

- The (former) Department of Planning and Infrastructure's data from small-area population projections (2000);

- The 2008 Commercial and Industrial Surveys; and

- City of Stirling individual site surveys.

The population projections were checked against the most recent Australian Bureau of Statistics 'Estimated Residential Populations' for Stirling and the study area, and the difference found to be within acceptable limits (1.5% difference overall).

The following provides an overall average percentage for the selected Planning Land Use Category (PLUC). This indicates that:

- The Strategic Metropolitan Centre is heavily represented by the Shop/Retail, Other Retail, and Office PLUCs.

- Secondary Centres are heavily dominated with Shop/Retail, with over 50% of floor space within this PLUC.

- Offices are the most highly represented within the Local Centres and Strategic Metropolitan Centre. However, the ratio of office floor space across all the Centre categories is broadly consistent.

- Entertainment increasingly becomes more representative in the smaller centres. This is likely related to less total floor space, hence restaurants/cafés and the like with larger tenancy spaces would become more representative.

- The 2010 survey indicates little or no Residential within the Strategic Metropolitan Centre and Secondary Centres.

State Planning Policy 4.2 outlines a minimum mix of land uses as a proportion of the centre's total floor space for Strategic Metropolitan Centres, Secondary and District Centres. Based on the 2010 Survey:

- Innaloo and Karrinyup have Shop-Retail floor space between 50,000m^2 – 100,000m^2, thus a 40% mix of land uses performance target applies; or a 50% mix of land uses performance target becomes applicable where the Shop-Retail floor space goes above 100,000m^2.

- Mirrabooka Secondary Centre had Shop-Retail floor space of 40,000m^2. The Town Centre is anticipated to have 88,000m^2 Shop-Retail floor space out of a total of 196,220m^2, which is a ratio consistent with SPP 4.2.

Of the nine District Centres, six centres had Shop-Retail floor space over 10,000m^2 (2010). State Planning Policy 4.2 applies a 20% Mix of land uses performance target for these centres.

7.2.2 Stirling Strategic Metropolitan Centre

The City of Stirling has one Strategic Metropolitan Centre. **Table 29** highlights the current floor space for Stirling City Centre.

The Stirling City Centre Strategic Metropolitan Centre is approximately 6.5km north-west of the Perth Central Business District. The Stirling City Centre (**Figure 32 and 33**) covers a diverse range of land uses and is fragmented by the Mitchell Freeway and other major regional roads.

The main retail centre was originally constructed in 1967 has since undergone numerous expansions over the years. The centre is car based and has developed since the 1960's with a number of large boxes separated by large car parks. There is poor pedestrian and cycling connectivity. It is a hub for public transport, however due to the poor pedestrian environment access to the Stirling Train Station is limited.

On 28 July 2015, the Metro North-West Joint Development Assessment Panel (JDAP) resolved to approve a development approval that was the most substantial expansion to date. A further amendment to the development application was supported by JDAP on the 30 January 2018

The area contained within the approved retail centre located just north of Scarborough Beach Road at the Innaloo Shopping Complex includes expansion over 100,000m² Net Lettable Area (NLA). The development approval also includes:

- A new town square adjacent to Oswald Street with restaurants and other hospitality and commercial uses on the ground floor;

- Entertainment, recreation and cinema precinct on the upper level/s;

- Car parking bays for 3,916 vehicles; and

- Major external road works with new pedestrian and cycling facilities within the locality and surrounding area.

The retail centre site is located in close proximity to a number of regional roads, with Scarborough Beach Road directly abutting the site to the south and the Mitchell Freeway being located approximately 800m to the north east. The site is located in close proximity to Stirling train station which is approximately 800m to the north east, with bus routes running immediately past the centre to and from the train station.

In addition to retail uses the Stirling City Centre also includes:

- Stirling bus and rail interchange;

- Osborne Park Hospital;

- Stirling civic precinct; and

- Portion of the Osborne Park industrial area.

The area outlined as Southern Precinct in **Figure 33** identifies the Innaloo Shopping Centre as the retail core of the Stirling Strategic Metropolitan Centre.

Table 29: Floor Spaces for Land Use Categories for Stirling City Centre (Source: City of Stirling 2010)

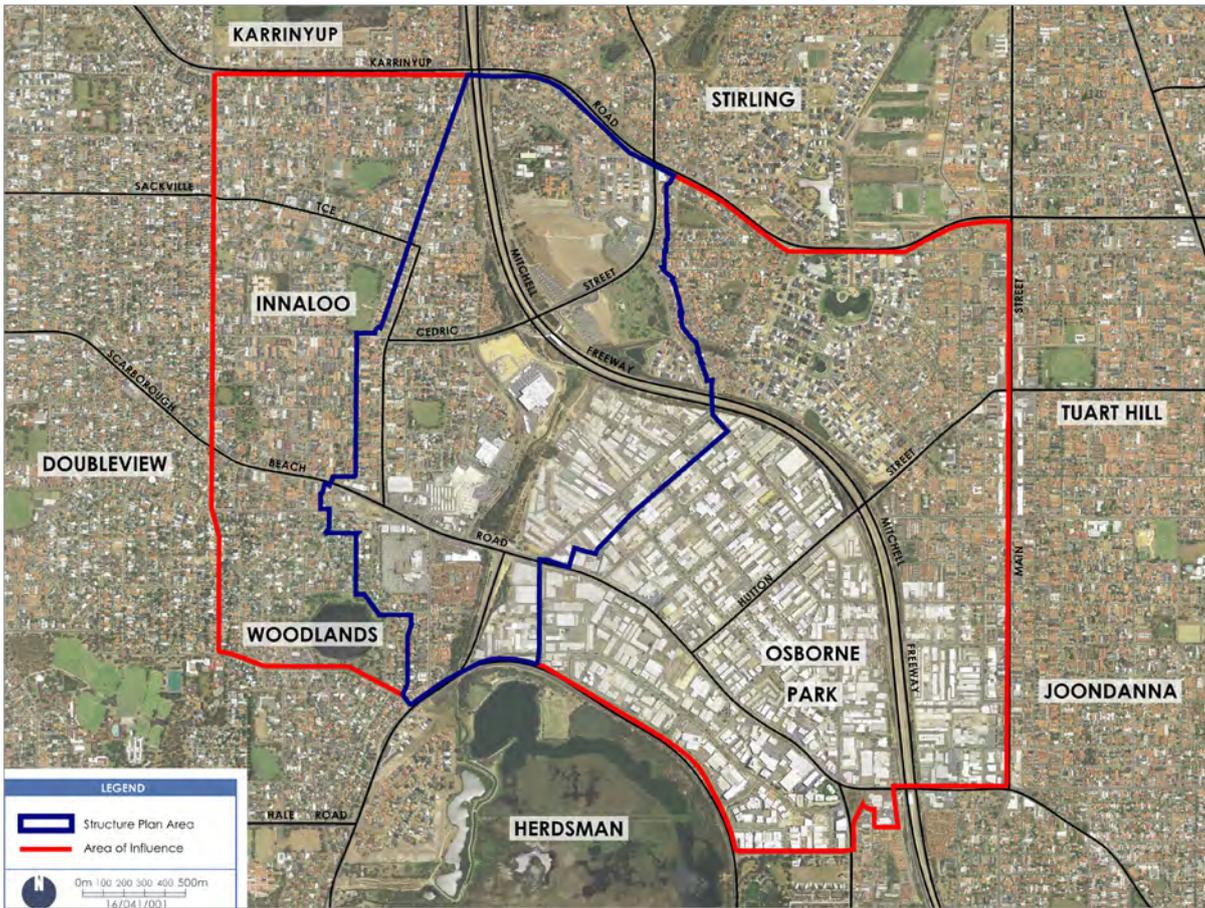| Centre Name	No.	Floor space M² NLA	% of Floor space by Land Use Category Nov 2010				
			Shop Retail	Other Retail	Office	Health / Welfare	Entertainment
Stirling City Centre Stirling, Innaloo, Woodlands & Osborne Park	SMC	271,556	21%	17%	16%	1%	4%

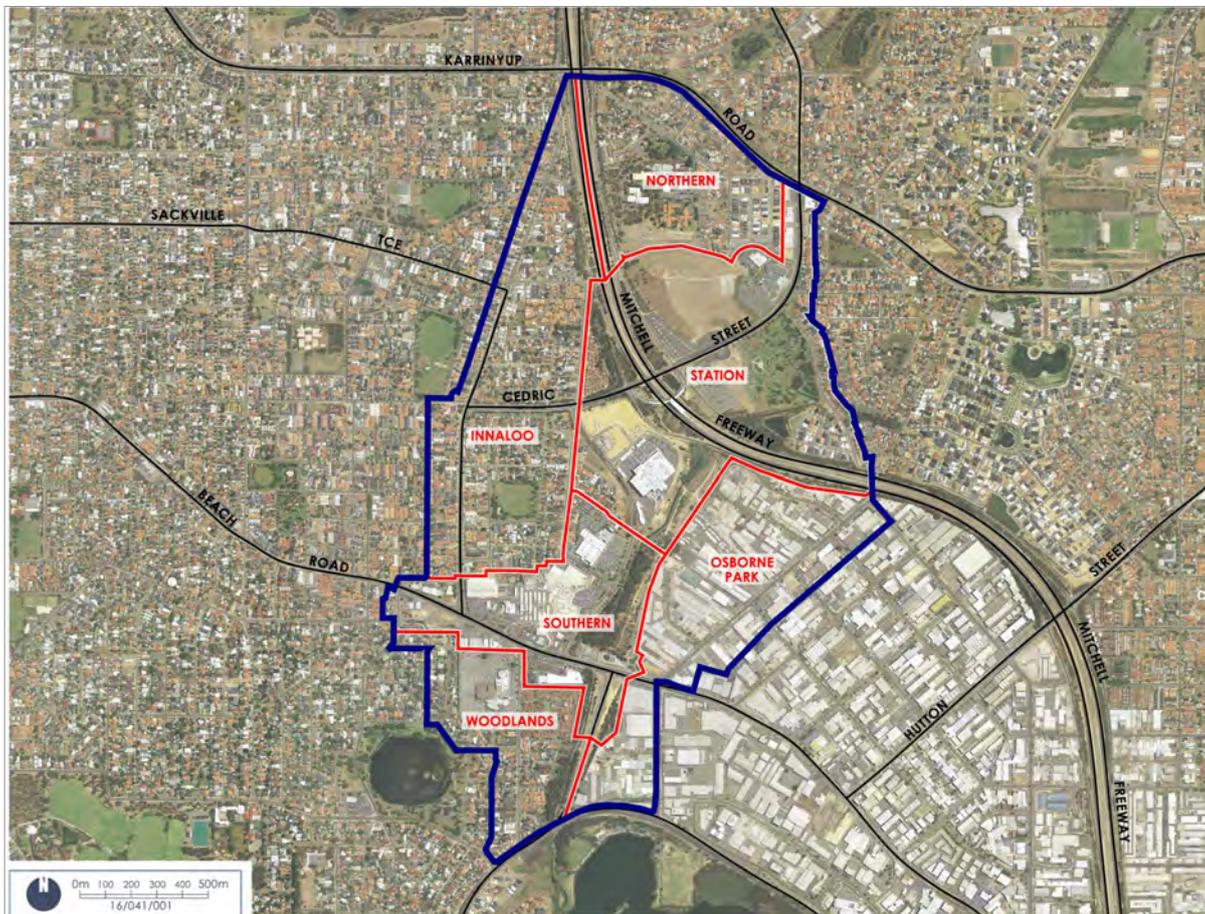**Figure 32: Aerial Photograph of Stirling City Centre (Aerial Date: 2017)**

Figure 33: Precincts of the Stirling City Centre (Aerial Date: 2017)

7.2.3 Secondary Centres

The City of Stirling has two Secondary Centres. **Table 30** highlights a breakdown of the floor space in the centres.

Mirrabooka Secondary Centre

Mirrabooka Secondary Centre is located 10km north of Perth Central Business District and bounded to the north by Reid Highway (**Figure 34**). Its retail component is dominated by the 'big box' Mirrabooka Square Shopping Centre. The Centre is also comprised of a showroom retail area, a mixed office/commercial area, a service commercial area, a light/service industrial area, recreational areas (including Herb Graham Recreation Centre), and various residential areas. The Centre offers a number of community facilities and public spaces including the Mirrabooka Library, a civic square, and a major bus interchange.

The Mirrabooka Secondary Centre was developed in the 1970's and due to its age, a number of urban design issues constrained the growth of the centre. These included:

- A lack of cohesion due to poor integration of buildings and land uses; and

- Lack of permeability for pedestrians and cyclists.

These issues may be responsible for the Centres inability to attract residents within the locality to visit the centre, and historic slow commercial growth in the Centre. The vehicle network (including public transport) around and through the Centre has further hindered the growth of the Mirrabooka Secondary Centre.

The City of Stirling is undertaking a multi-million dollar revitalisation program for the Mirrabooka Town Centre as part of an overall Improvement Strategy. The aim of the Mirrabooka Regional Centre Improvement Strategy is to revitalise the Centre by creating an attractive, popular and successful focus for the region's shopping, social and service needs.

The redevelopment of Mirrabooka Town Centre has been guided by a detailed planning framework including the Mirrabooka Town Centre Structure Plan. The Mirrabooka Town Centre Structure Plan aim is to create a centre with a diverse range of uses, which is attractive, safe and is a focus for the region's shopping, social housing and service needs. To achieve this aim the following objectives have been identified:

- To provide a sound, coordinated strategy for the integrated development of public and private land to facilitate the creation of a safe, successful, vibrant centre, which provides a range of needs for a regional community;

- To provide sound economic reasoning to substantiate and inform the future developments in relation to land use zoning and allocation of costs;

- To provide guidance on planning provisions for desired outcomes for private land within the centre;

- To provide guidance on the implementation of the Mirrabooka Regional Centre Improvement Strategy; and

- To provide for integration of built form and land uses with public transport infrastructure.

According to the State Government's Land Use and Employment Survey data, the most dominant land use within the Mirrabooka Secondary Centre are Shop/Retail, which accounts for 39,129m^2 (35%) of Mirrabooka Centre's gross floor area. The next most dominant use is Office/Business uses with 21,769m^2 (19%), Utilities/Communications 13,180m^2 (12%) and Health/Welfare/Community Services 11,170m^2 (10%). The overall vacant retail floor area at the time of survey was 11,586m^2 (10%).

Figure 35 shows the overall change in major land uses within the Mirrabooka Square Shopping Centre over the 20 years prior to 2010. It indicates there has been a steady increase in Office/Business uses over this period whilst Shop/Retail uses accounted for lesser percentage of floor space than they did 20 years prior. It should also be noted that the overall survey area increased by 38 974m^2 (35%) between 1990 and 2010.

Table 30: Floor Spaces for Land Use Categories for Major Centres (City of Stirling 2010)

Centre Name	No.	Floor space M² NLA	% of Floor space by Land Use Category Nov 2010				
			Shop/Retail	Other Retail	Office	Health/ Welfare	Entertainment
Karrinyup	SC 1	59,045	86%	0.1%	7%	1%	4%
Mirrabooka	SC 2	112,643	35%	2%	19%	10%	7%

Figure 34: Aerial Photograph of Mirrabooka Secondary Centre (Aerial Date: 2017)
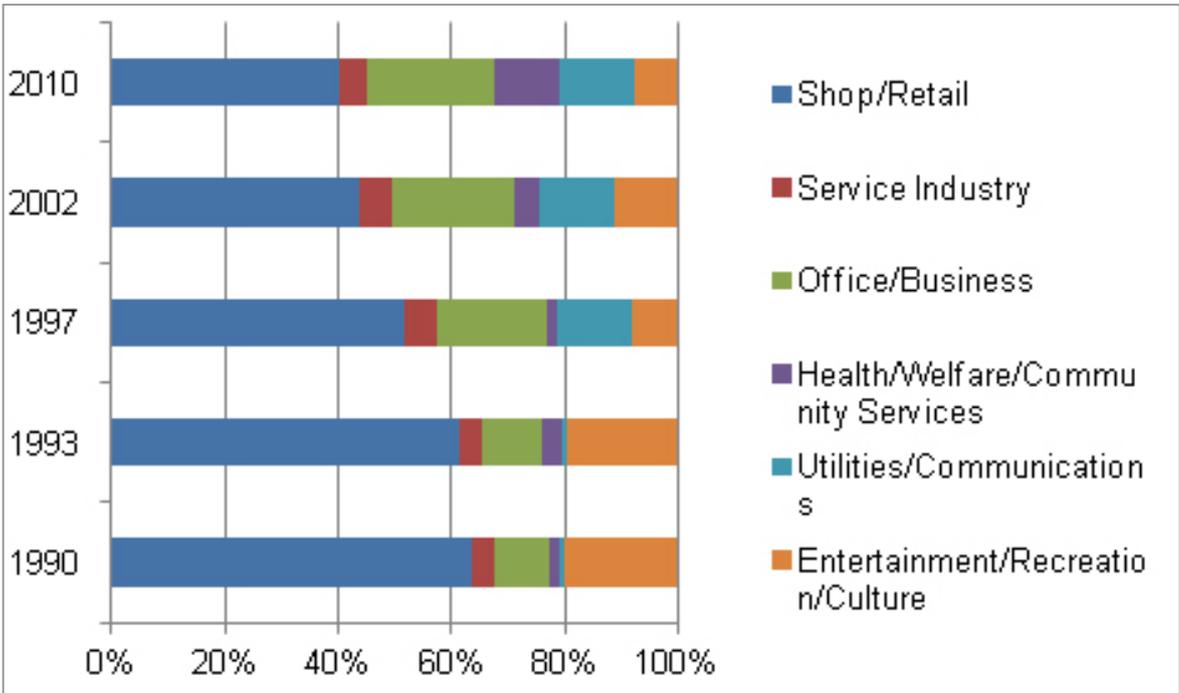
Figure 35: Changes in Land Use Mirrabooka Secondary Centre

Karrinyup Secondary Centre

Karrinyup Secondary Centre (**Figure 36**) is located 2.5km from the ocean and 12km from Perth Central Business District. Karrinyup Shopping Centre dominates the Karrinyup Secondary Centre, which also comprises a library, community centre and a small number of offices specialising in professional services.

The shopping centre is surrounded by car parking, resulting in poor urban design outcomes, including a lack of interface with surrounding streets, notably Karrinyup Road. There are a number of key issues affecting the Centre including:

- A lack of defined centre boundary;
- A lack of public transport;
- A dominance of large-scale retail developments; and
- Limited mix of uses.

As indicated in the Department of Planning, Land Use and Employment Survey Data Shop/Retail Use was the most dominant and accounted for 51,035m^2 (86%) of the total floor space of the Centre (59,045m^2). There is a limited diversity of uses, the Office/Business Use was 4,184m^2 (7%) and the Entertainment/Recreation/Culture Use occupied 2,382m^2 (4%) of floor area.

A development application for a major expansion of Karrinyup Shopping Centre was submitted to the City on 5 March 2015. On 14 August 2015, the Metro North-West Joint Development Assessment Panel (JDAP) resolved to approve the development. The development application proposed to create a mixed use centre with an overall amount of floor space of 123,000m^2, of which approximately 93,000m^2 is expected to be Shop/Retail Use.

Figure 36:   Aerial Photograph of Karrinyup Secondary Centre (Aerial Date: 2017)

7.2.4 District Centres

The City of Stirling currently has nine (9) District Centres that vary from centres established in the 1890's to newer centres built in the 1980's. The earlier centres are built on a "main street" model and the newer centres are based on a box style in the middle of a car park. **Table 31** highlights the variety of land use by centre.

Table 31: Existing 2010 Floor Spaces for Land Use Categories for District Centres (Source: City of Stirling 2010)

Centre Name	No.	Floor space M² NLA	Floor space m² by Selected Planning Land Use Category (PLUC) Nov 2010				
			Shop / Retail	Other Retail	Office	Health / Welfare	Entertainment
Dianella Dianella	DC 1	21,533	71%	11%	4%	2%	6%
Dog Swamp Yokine	DC 2	11,091	81%	2%	8%	3%	2%
Glendalough Station	DC 3	N/A	N/A	N/A	N/A	N/A	N/A
Inglewood Inglewood	DC 4	37,512	42%	7%	17%	4%	15%
Main Street Osborne Park	DC 5	32,992	20%	2%	45%	7%	9%
Mount Lawley Mount Lawley	DC 6	42,699	45%	5%	20%	3%	10%
Northlands Balcatta & Westminster	DC 7	18,855	60%	0.5%	14%	0%	4%
Scarborough Scarborough	DC 8	86,529	14%	1%	4%	0.3%	12%
Stirling Central Balcatta & Westminster	DC 9	20,784	65%	0.1%	14%	20%	0%

Dianella District Centre

Dianella District Centre is broadly bounded by Alexander Drive, Grand Promenade, Waverley Street and Kerry Street. There are a number of vacancies within the Centre and its surrounding precinct (**Figure 37**). The Centre is primarily a shopping centre at 15,359m² (71%) of shop/retail floor space with the next highest floor space category being Other Retail (11%).

The area also includes a church and a primary school at the eastern end of the Centre, with the precinct also containing a City of Stirling library and community centre. A recent development approval has been granted by the Joint Development Assessment Panel for 163 Multiple Dwellings in the South East vicinity of the precinct.

Figure 37: Aerial Photograph of Dianella District Centre (Aerial Date: July 2017)

Dog Swamp District Centre

The Dog Swamp District Centre in Yokine is predominantly retail based and encompasses two retail shopping centres (Dog Swamp Shopping Centre and Flinders Square), (**Figure 38**).

The individual shopping centres within the Dog Swamp District Centre do not integrate well with one another, and connection between them is predominantly dominated by motor vehicle access. The centre has poor surrounding and internal pedestrian and cycling connectivity, and has limited access internally to public transport.

A development application was approved by the Joint Development Assessment Panel in November 2016 for the western shopping centre (Dog Swamp) to increase its gross leasable area by 1,450m², which will be predominantly retail uses with some limited recreation.

The approval also includes the addition of a second level fronting Wanneroo Road. The proposal does not include any improvements in connectivity between the two retail centres in the precinct.

The 2010 Land Use and Employment Survey data indicates an overwhelming dominance of the retail-shopping component, with shop/retail floor space at 9,514m² (86%) of floor space within the District Centre. The next most prevalent Land Use Category was Office/Business Uses, encompassing 4% (419m²) of floor area. The Centre has only 1% vacant floor area.

Figure 38: Aerial Photograph of Dog Swamp District Centre (Aerial Date: 2017)

Glendalough Station District Centre

The Glendalough Station District Centre will be a new district centre that is positioned around the Glendalough Train Station.(Figure 39). This centre will be established as part of the City's Herdsman Glendalough urban regeneration project that seeks to transform the existing industrial land around the Glendalough Station. The area will see a significant transformation from predominantly motor vehicle sales yards to high rise mixed use development with active retail uses on the ground floor.

The centre will extend along Scarborough Beach Road, which will be upgraded to include:

- Light rail connecting from Glendalough Train Station to Scarborough Beach and Stirling Train Station;

- On-street parking to activate the ground floor retail;

- Underground Power; and

- New landscaping.

Figure 39: Aerial Photograph of Glendalough Station District Centre (Aerial Date: 2017)

Inglewood District Centre

The Inglewood District Centre is located 4.5km north east of the Perth Central Business District. (**Figure 40**). The centre consists of a mix of commercial floor spaces and a range of local retail as well as key civic and community functions along a 1.75km strip. The Centre is located along Beaufort Street and is serviced by a direct frequent bus service into the Perth CBD.

The area has suffered from a fragmented planning approach over time, with various non-residential uses locating in older residential properties resulting in a continuous commercial style strip. The building stock orientating towards Beaufort Street consists of a number of heritage commercial buildings, with the majority located in the housing areas behind. The lots are serviced in most cases by historical rear laneways/rights of ways.

Shop/Retail is the most dominant land use occupying 35% (9,678m^2) of the Centre's floor space. Entertainment/ Recreation/Culture land uses represent 20% of the Centre's floor space and office/Business represents 19% of the overall floor space.

The City of Stirling has recently finalised the Beaufort Street Activity Corridor project which seeks to:

• Consolidate the mixed use areas into defined precincts to ensure viability of the retail precincts;

• Ensure new buildings are built in one of the existing pre-1960 architectural styles;

• Enable an increase in multiple dwellings along the corridor; and

• Preserve road widening for future light rail stops.

Figure 40: Aerial Photograph of Inglewood District Centre (Aerial Date: July 2017)

Main Street District Centre

The Main Street District Centre located in Osborne Park (**Figure 41**) is an important commercial hub for local residents. Historically it played a significant role as a commercial centre in the local area as it facilitated a tram terminus which sought to serve agricultural communities within the area. The Centre consists of a range of commercial premises including local service industries, cafes, restaurants, a hotel, a community centre and a library. 'The Plaza' section of the Centre, located between Federal and Cape Streets, predominantly caters for commercial offices whose operations include financial and medical services.

The City has improved the pubic domain and walk-ability of the Main Street District Centre, however pedestrian connectivity across Main Street itself is still considered poor, partially due to the road reservation being excessively wide at up to 60 metres at some points.

According to the Department of Planning 2010 Land Use and Employment Survey Office/Business uses occupy 14,920m^2 (45%) of the District Centre's floor area, including banks, real estate agents and business services. Shop/Retail land uses occupy 6,755 m^2 (20%) of the overall Floor Area with the largest overall retail floor space being a supermarket at 631m^2 of floor space.

The Centre has an increasing number of restaurants and cafes indicating its move towards an entertainment strip. In addition to a retail/shopping precinct, as 3,099m^2 (9%) of the Centres floor space in occupied by this land use.

Figure 41: Aerial Photo of Main Street District Centre (Aerial Date: 2017)

Mount Lawley District Centre

The Mount Lawley District Centre is a traditional 'main street' centre (**Figure 42**) dating from the 1890's when trams were introduced. The focal point is the intersection of Beaufort Street and Walcott Street. The Centre is partly contained within the City of Stirling and the City of Vincent areas, with the local government boundary being along Walcott Street.

The uses located within the City of Stirling portion of the Mount Lawley District Centre include cafés, restaurants and shops. The majority of offices within the centre are located within the City of Stirling portion. The area contains many heritage buildings, and includes several civic and cultural uses.

The data in the 2010 Land Use and Employment Survey has been collected over the whole District Centre across the two Local Government areas. The major land uses within the Mount Lawley District Centre are Shop/Retail (16,561m^2 or 45%), Office/Business (7,485m^2 or 20%) and Entertainment/Recreation/Culture (3,664m^2 or 10%). There is approximately 11% vacant floor space (403m^2) within the Centre. There are 12 houses and no vacant land.

The City of Stirling has recently finalised the Beaufort Street Activity Corridor project which seeks to:

- Consolidate the mixed use areas into defined precincts to ensure viability of the retail precincts;

- Ensure new buildings are built in one of the existing pre-1960 architectural styles;

- Enable an increase in multiple dwellings along the corridor; and

- Preserve road widening for future light rail stops.

Figure 42: Aerial Photograph of Mount Lawley District Centre (Aerial Date: 2017)

Northlands District Centre

The Northlands District Centre (**Figure 43**) consists of two unrelated halves divided by Wanneroo Road.

The Centre's location on the corner of Amelia Street and Wanneroo Road provides significant exposure to passing trade with each part being accessible by private motor vehicle from most directions. The Centre's western portion is a 'big box' centre, and the eastern portion is dominated by showrooms. The centre has poor pedestrian and cycling connectivity. There are good public transport services to the centre, however due to the poor design of the centre, accessibility to this is limited.

The Shop/Retail Use is the most dominant use within the Centre according to the 2010 Land Use and Employment Survey, occupying approximately 60% of the floor space in the Centre (9,761m^2).
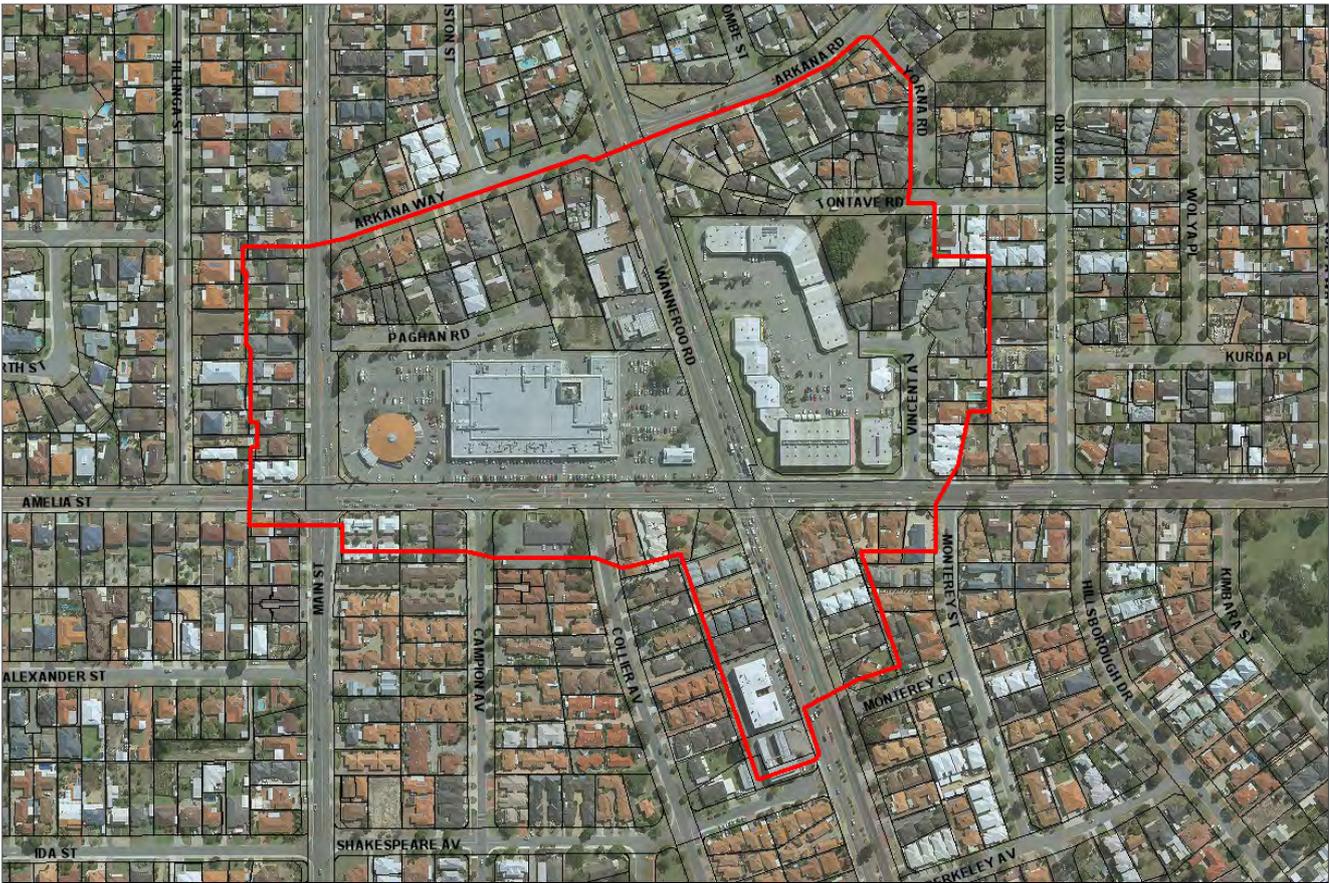
Figure 43: Aerial Photograph of Northlands District Centre (Aerial Date: 2017)

Scarborough District Centre

The Scarborough District Centre (**Figure 44**) comprises an area of 100ha of land, including 1.6km along the Scarborough beachfront, and part of Scarborough Beach Road up to Hinderwell Street. The Metropolitan Redevelopment Authority has authority over the declared Scarborough Redevelopment Area.

The Scarborough Redevelopment Area was gazetted in July 2013 and the planning framework was gazetted in October 2016. Key components of the planning framework included the enabling of taller buildings and greater density across all areas of the Scarborough Redevelopment Area. The Master Plan for Scarborough also included the creation of four new destinations to support visitor attraction and destination development, namely:

• Scarborough Square – the natural heart of the redevelopment, anchored by existing and new food, beverage and retail outlets and programmed to support ongoing daily and seasonal activity.

• Sunset Hill – featuring a modern, multi-generational park, anchored by retail and an iconic green hill that connects the uses to the beachfront.

• Scarborough Clock Tower – a friendly and engaging welcome to the beachfront; a visual and physical gateway to Scarborough and connections with key activity hubs

• The Beach Hub – featuring a redeveloped Surf Lifesaving facility, a flagship bar /restaurant and all season play facilities

This centre has started to be transformed with new development, a new swimming pool, surf club facilities and public domain works underway.

The Centre is divided by West Coast Highway which is a major barrier between the western and eastern parts of the centre, with current Pedestrian and cycling connectivity between the eastern and western areas being poor.

Short stay accommodation land uses are the dominant land use in the Scarborough District Centre accounting for 46,622m^2 (62%) of floor area. It should be noted that the majority of this residential floor area relates to commercial-residential particularly due to several establishments including Rendezvous Observation City, lodges, hotels and holiday and serviced apartments. In addition the Centre also includes 45 private dwellings. Excluding the residential/accommodation component, shop/retail uses comprise 35% of 9508m^2 of the Centre's gross floor space whilst Entertainment uses comprise 33% or 9165m^2 of gross floor space. The designation of a District Centre relates more to the tourism and entertainment components, than to the Centre's retail component.
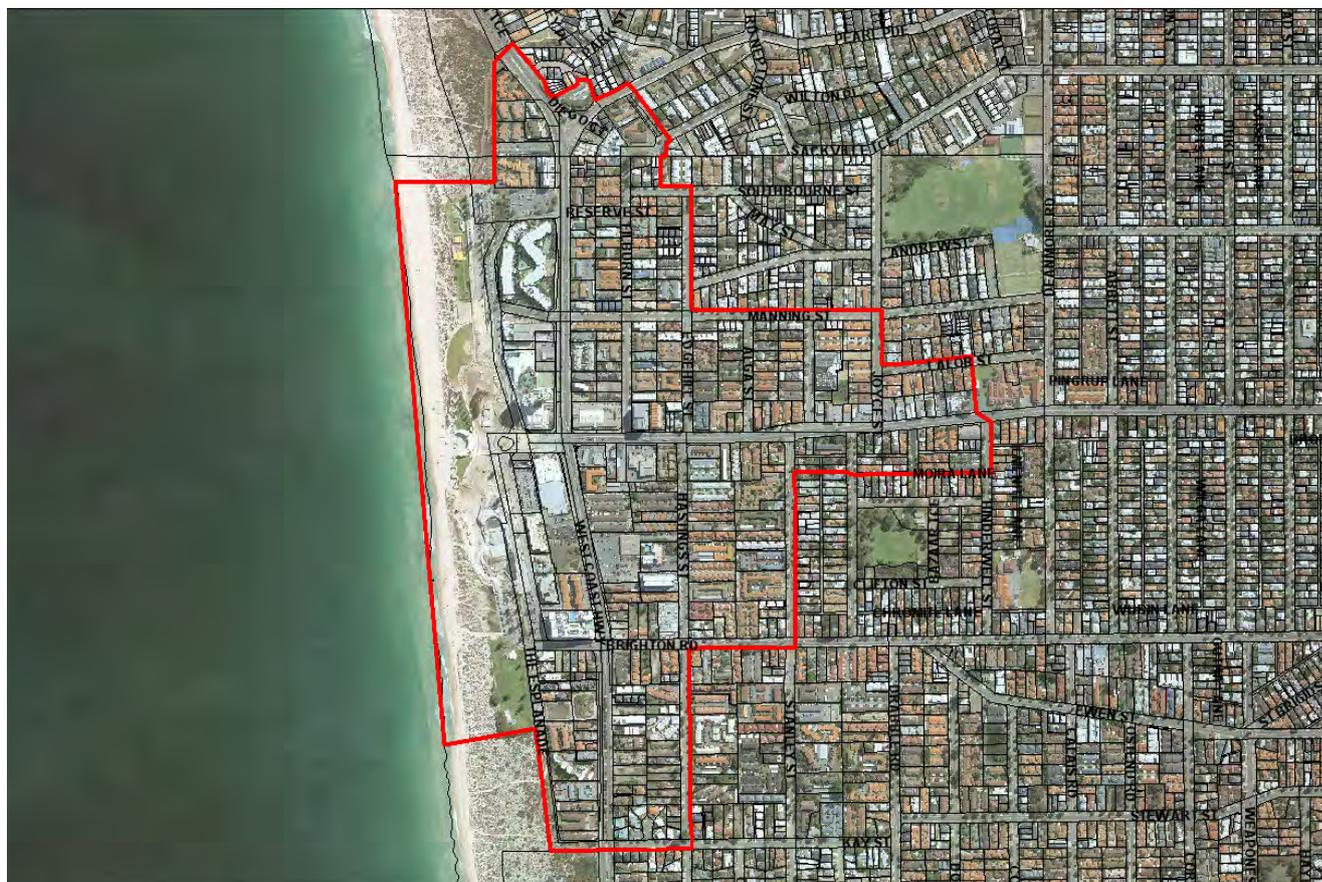
Figure 44: Aerial Photograph of Scarborough District Centre (Aerial Date: 2017)

Stirling Central District Centre

The Stirling Central District Centre is located approximately one kilometre north of the Northlands Centre on Wanneroo Road. The most dominant land use is Shop/Retail, which occupies 89% (14,242m²) of the overall District Centre's floor area. There was a considerably lower representation of Office/Business uses (12% or 1,905m²) with medical suites occupying the majority of this space.

Figure 45 indicates the Centre's location in relation to adjoining residential land uses and abutting roads. Although access to the Centre is predominately car based, egress and ingress can be complicated due to:

- Poor visibility of the Centre's entrance at Wanneroo Road;

- Median strips; and

- The Balcatta Road/Victoria Road signalised intersection.

The Centre will be in the vicinity of a new proposed heavy rail line along Reid Highway. The heavy rail line will be investigated and delivered through the State Governments Metronet project.

Figure 45: Aerial Photograph of Stirling Central District Centre (Aerial Date: 2017)

7.2.5 Neighbourhood Centres

The City of Stirling has nineteen (19) Neighbourhood Centres that vary from centres established in the early 1900's to newer centres built in the 1980's (**Figure 46**). The earlier centres are built on a "main street" model with more diversity and the newer centres are based on a big box in the middle of a car park. **Table 32** highlights the variety of land use by centre.

Table 32: Floor Spaces for Land Use Categories for Neighbourhood Centres (Source: City of Stirling 2010)

Centre Name	No.	Floor space M² NLA	Floorspace m² by Selected Planning Land Use Category (PLUC) Nov 2010				
			Shop / Retail	Other Retail	Office	Health / Welfare	Entertainment
Adair Pde Menora & Coolbinia	NC 1	5,040	40%	0%	21%	1%	14%
Coode St Cnr Walter Rd West, Dianella	NC 2	6,134	44%	1%	1%	16%	31%
Doubleview SBR, Doubleview	NC 3	6,388	58%	10%	23%	2%	4%
Fieldgate Square Culloton Crs, Balga	NC 4	3,731	24%	0%	4%	0%	62%
Flynn Street Churchlands	NC 5	2,693	19%	2%	13%	0%	8%
Glendalough Jon Sanders Drv, Glendalough	NC 6	1,917	72%	1%	0%	23%	0%
Grindleford Road, Cnr Karrinyup Rd, Balcatta	NC 7	2,250	0%	31%	47%	22%	0%
Gwelup Nth Beach Rd, Gwelup	NC 8	6,454	74%	1%	2%	1%	0%
Lord St Cnr Railway Pde, Mount Lawley	NC 9	10,120	12%	2%	46%	9%	0%
Mirrabooka Village Honeywell Blv, Mirrabooka	NC 10	2,411	85%	0%	0%	15%	0%
Morris Place Innaloo	NC 11	8,067	35%	0%	4%	1%	45%
Nollamara Nollamara Ave, Nollamara	NC 12	5,084	77%	2%	15%	0%	0%
North Beach Plaza North Beach Rd, North Beach	NC 13	4,203	57%	0%	4%	0%	26%
North Beach Drive Wanneroo Rd, Tuart Hill	NC 14	3,935	39%	0%	30%	0%	18%
Tuart Hill Wanneroo Rd, Tuart Hill & Yokine	NC 15	7,717	36%	2%	20%	1%	11%
Stirling Village Sanderling St, Stirling	NC 16	1727	68%	0%	12%	0%	0%
Walter Road West Cnr Grand Prom, Dianella	NC 17	7,976	39%	15%	22%	4%	3%
Balga Plaza Princess Rd, Balga	NC 18	4,540	63%	6%	15%	0%	13%
Woodlands Village Rosewood Ave, Woodlands	NC 19	2,409	80%	0%	20%	0%	0%
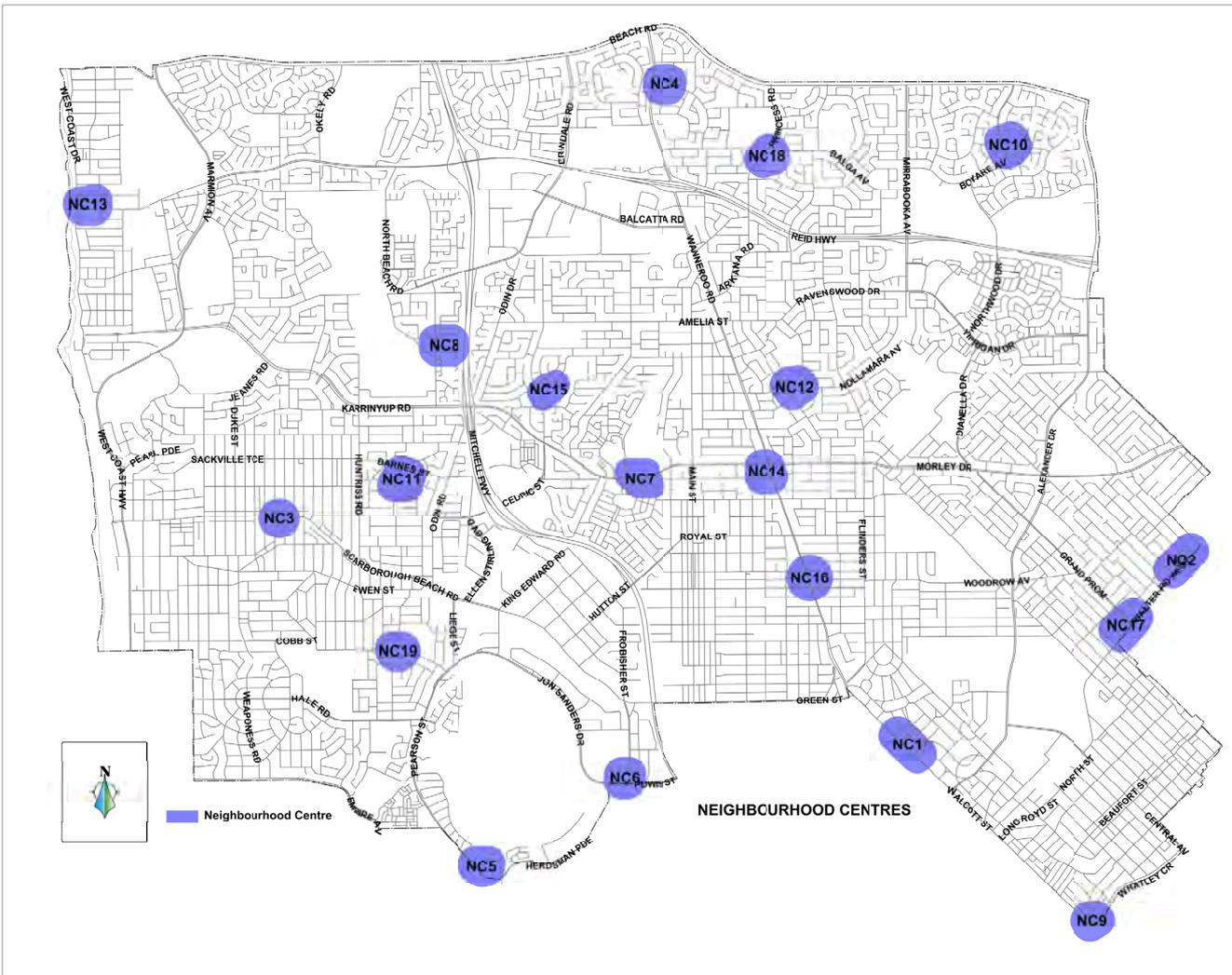
Figure 46: Location of Neighbourhood centres in the City of Stirling.

7.2.6 Local Centres

The City of Stirling has forty eight (48) Local Centres that vary from centres with one shop to centres with a number of small shops serving the local community (**Figure 47**). **Table 33** highlights the variety of land use by centre.

Table 33: Floor Spaces for Land Use Categories for Local Centres (City of Stirling 2010)

Centre Name	No	Floor space M² NLA	% Floorspace by Selected Planning Land Use Category (PLUC) Nov 2010				
			Shop / Retail	Other Retail	Office	Health / Welfare	Enter-tainment
Arkana Rd Westminster	LC 1	300	75%	0%	25%	0%	0%
Balcatta Fresh Karrinyup Rd, Stirling	LC 2	350	100%	0%	0%	0%	0%
Balcatta Rd, Cnr Delawney St, Balcatta	LC 3	1,000	15%	40%	45%	0%	0%
Bayley St Cnr Homer St, Dianella	LC 4	613	74%	0%	26%	0%	0%
Bennion St Trigg	LC 5	250	100%	0%	0%	0%	0%
Beryl St Balcatta	LC 6	620	100%	0%	0%	0%	0%
Big Rock Wanneroo Road, Balcatta	LC 7	3,410	0%	63%	5%	0%	2%
Blythe Avenue Yokine	LC 8	240	100%	0%	0%	0%	0%
Brighton Rd Cnr Westview St, Scarborough	LC 9	1005	49%	0%	5%	0%	13%
Calais Road Cnr Brighton Rd, Scarborough	LC 10	1,710	77%	10%	4%	0%	8%
Canara Rd Westminster	LC 11	1,992	51%	0%	0%	14%	35%
Carine Almadine Dr, Carine	LC 12	793	38%	0%	62%	0%	0%
Central Ave Cnr Clifton Cres, Inglewood	LC 13	50	100%	0%	0%	0%	0%
Coode St Cnr Third Ave, Mount Lawley	LC 14	150	100%	0%	0%	0%	0%
Covent Grds Cnr Odin Rd, Stirling	LC 15	300	100%	0%	0%	0%	0%
Doric St Scarborough	LC 16	1,112	83%	10%	7%	0%	0%
Duffy Rd Cnr Beach Road, Carine	LC 17	365	45%	55%	0%	0%	0%
Elsie St Watermans Bay	LC 18	300	100%	0%	0%	0%	0%
Erindale Rd Balcatta	LC 19	1,600	10%	50%	0%	0%	0%
Flinders Street Cnr Swan St, Yokine	LC 20	2,462	41%	15%	17%	0%	8%
Flora Terrace North Beach	LC 21	3,986	30%	0%	12%	10%	34%
Green Ave Cnr Wanneroo Rd, Balcatta	LC 22	1,150	0%	0%	0%	0%	58%
Harrison St Cnr Jason Rd, Balcatta	LC 23	940	37%	0%	0%	0%	0%
Hector St Cnr Flinders St, Yokine	LC 24	700	71%	7%	0%	0%	0%
Herdsman Hotel Herdsman Pde, Wembley	LC 25	1650	22%	0%	0%	0%	78%
Hutton St Cnr Howe St, Osborne Park	LC 26	2,500	50%	20%	30%	0%	0%
Jones St Cnr Appleby St, Balcatta	LC 27	1,129	64%	0%	36%	0%	0%
Karrinyup Rd Cnr North Beach Rd, Gwelup	LC 28	430	21%	58%	0%	0%	0%
Kitchener St Trigg	LC 29	160	100%	0%	0%	0%	0%
Lawley St Cnr Stoneham St, Tuart Hill	LC 30	245	100%	0%	0%	0%	0%
Learoyd St Cnr Walcott St, Mount Lawley	LC 31	200	100%	0%	0%	0%	0%
Lynn St Cnr Marmion Ave, Trigg	LC 32	745	66%	0%	33%	0%	0%
McDonald St Cnr Main Street, Osborne Park	LC 33	2602	46%	6%	4%	0%	0%

Centre Name	No	Floor space M² NLA	% Floorspace by Selected Planning Land Use Category (PLUC) Nov 2010				
			Shop / Retail	Other Retail	Office	Health / Welfare	Enter-tainment
Michael St Cnr Knight Ave, Yokine	LC 34	840	10%	0%	0%	11%	0%
Muriel Ave Cnr King George St, Innaloo	LC 35	1764	12%	8%	42%	0%	0%
Pimlott St Cnr The Strand, Dianella	LC 36	672	84%	0%	0%	0%	0%
Powell St Cnr French St, Joondanna	LC 37	800	100%	0%	0%	0%	0%
Ravenswood Dr Cnr Wanneroo Rd, Nollamara	LC 38	500	0%	0%	100%	0%	0%
Roberts St Cnr Wanneroo Rd & Roberts St, Yokine	LC 39	3414	11%	14%	46%	12%	0%
Royal St Cnr Wattle Street, Tuart Hill	LC 40	300	100%	0%	0%	0%	0%
Sackville Tce Cnr Hancock St, Doubleview	LC 41	620	100%	0%	0%	0%	0%
St Brigids Tce Cnr SBR, Doubleview	LC 42	1459	35%	0%	10%	38%	0%
St Peters Pl Cnr Sexton Rd, Inglewood	LC 43	520	42%	0%	0%	0%	0%
Sylvia St Cnr Wanneroo Rd, Balcatta	LC 44	100	100%	0%	0%	0%	0%
The Downs Bournemouth Crs, Wembley Downs	LC 45	2,158	64%	1%	0%	0%	23%
The Strand Cnr Surrey St, Dianella	LC 46	620	81%	0%	0%	0%	19%
West Coast Drive Cnr Saunders St, North Beach	LC 47	400	80%	0%	20%	0%	0%
Yokine Cnr Royal St, Yokine	LC 48	3,500	0%	0%	0%	100%	0%

Figure 47: Location of Local centres in the City of Stirling

7.2.7 Future Trends

United States of America Retail Trends

The United States of America (USA) retail sector is undergoing significant change with a consolidation of major shopping malls in more affluent and tourism areas. These malls are undergoing transformation to become lifestyle malls offering a wide variety of retail, entertainment, residential uses including introducing a street based retail component.

This trend has been coupled with closure of hundreds of department stores across the USA which has severely impacted lower grade malls normally where disposable incomes are lower. As a result lower grade malls have lost their major anchors (Department Stores) and have been on a downward decline for over a decade. Many of these lower grade malls face closure. **Figure 48** illustrates the extent of USA shopping centres that are under the threat of closure.

At the other end of the scale, traditional "main streets" and town centres, which have been in decline for decades, are showing a rebound in fortunes where local efforts to reinvigorate these centres have occurred. This requires local leaders, business owners, and community residents to come together to identify their assets, strategically situate themselves in their regional economy, and develop a shared vision and identity. Communities make this vision a reality by creating quality public spaces, prioritising local entrepreneurship, emphasising production, and supporting housing. New residential dwellings in the centres have increased pedestrian traffic to support these "main streets".

Australian Trends

Australian Cities have generally followed the trends of the USA. This has been more evident on the east coast of Australia where the development of large shopping centres over 100,000m² has been a trend for the last few decades. These shopping centres in suburban areas have become lifestyle centres that seek to provide a wide variety of uses including retailing, hotels, entertainment and leisure.

However Australia has yet to see the closure of a large number of lower grade shopping centres as the economy has remained robust and the influence of internet trading has occurred slower than compared to the US.

The revitalisation of traditional "main streets" is well established throughout the east coast of Australia and has been underway for the last decade or so.

Changes in shopping behaviour, coupled with the rise of e-commerce, means that retailers have started to rethink and refine the purpose of their physical spaces. Traditional stores could be downsized, existing floor space turned into showrooms or fulfilment centres for local web orders, or stores could become more of an experiential space for customers.

Market globalisation continues to increase competition from overseas retailers (both online and bricks and mortar stores) who are looking to Australia as an opportunity to capture market share. Australia's department store sales have also been consistently declining for many years in response to the rise of e-commerce and standalone specialty stores.

MALLS ACROSS AMERICA ARE AT RISK OF CLOSING

Number of malls

334 malls that qualify as C & D rated are at high risk of closing

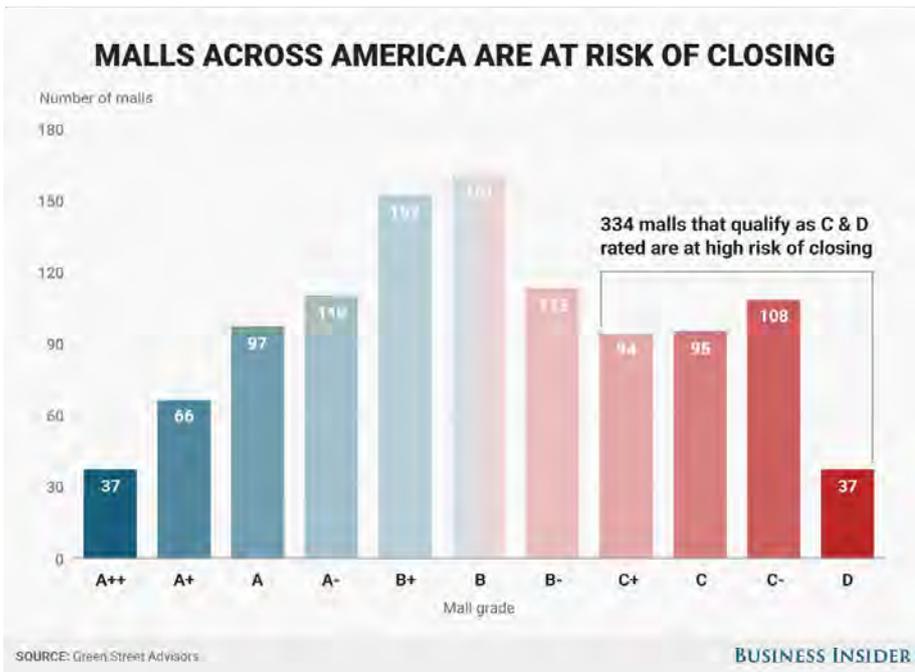Mall grade

SOURCE: Green Street Advisors

BUSINESS INSIDER

Figure 48: Malls at Risk of Closure in the USA - Business insider

Retail and entertainment are beginning to come together, in a hope to make the in-store shopping experience more enjoyable and entertaining to customers. This aims to encourage shoppers to step away from online browsing at home and into the shops instead. This see's retailers incorporate lifestyle elements into their stores, such as boutique coffee shops or virtual reality experiences.

There is also increased pressure for bricks and mortar retailers to extend trading hours to meet consumer demand. This along with the impact of overall economic conditions - including debt levels, credit card use, unemployment levels and housing values - all having an effect on consumers desire and comfort to spend.

Perth Trends

In metropolitan Perth the future trends show that the major shopping centres located in the Strategic and Regional Centres are significantly increasing their floor space. This is coupled with new entertainment and lifestyle precincts, together with new housing opportunities. These malls are generally owned by the major multinational and national companies that have sufficient capital to fund these expansions. These trends are reflecting the USA trends that have occurred over the last two decades as well as in the Eastern States of Australia.

The lower grade of shopping centres in Perth are likely to face the same challenges that have occurred in the USA. Some department stores in Australia are seeing income decline, so it is likely that some of the Perth's shopping centres may lose these major anchors over the coming years. Smaller malls with one or two anchors will likely face a slow decline if these trends continue, along with the general threat to retail from online shopping.

Traditional "main streets" are undergoing transformation in Perth with many "main streets" in the inner suburban areas having undergone a renewal. Local authorities have engaged place managers to help the local communities to re-invigorate these centres, which are mainly located in more affluent areas where disposable incomes are greater.

In the middle and outer suburban areas there have been no major changes to centres and many have been on a decline for long periods of time. This decline is likely to continue without intervention from the Local Authorities, shop owners and the local community. Many of these centres are strata titled without centre managers and have no branding or marketing and there is little collaboration amongst owners.

City of Stirling Trends

The same trends that Perth is facing is likely to occur in the City of Stirling unless intervention is undertaken.

All of the City's major centres have approval to significantly increase in size with new lifestyle offerings including main streets, cinemas and public spaces. With the substantial increase in the size of the City's two major shopping centres the City's District Centres will come under increasing pressure. To survive these District Centres will have to introduce new features including housing, "main streets", entertainment uses and public spaces in order to keep their market share.

The City's Neighbourhood and Local Centres will similarly come under increasing pressure to survive without intervention. As discussed above many of these centres have a multitude of management issues, including:

• Not managed by a central management structure;

• No branding or marketing;

• Poor maintenance of the centre; and

• Owned by a number of different owners.

In addition they have many structural issues, including:

• Centres built in the middle of a car park;

• Poor urban design outcomes resulting in increased crime;

• No public spaces;

• No housing; and

• Few spaces for alfresco dining.

For these centres to survive and flourish they will need to address all of the above issues.

7.3   Local Context And Future Possibilities

7.3.1   State Planning Policy

The West Australian Planning Commissions Activity Centres for Perth and Peel Planning Policy (SPP 4.2) outlines the hierarchy of Activity Centres and specifies the broad planning requirements. The term 'Activity Centres' is used to identify centres with a more intensive mix of uses, higher levels of activity, and good transport integration.

The following Activity Centres are identified within the hierarchy in SPP 4.2:

Strategic Metropolitan Centre – Strategic metropolitan centres are the main regional Activity Centres, and provide the full range of economic and community services necessary for the communities in their catchments.

Secondary Centres – These centres share similar characteristics with strategic metropolitan centres but generally serve smaller catchments, are less diverse and have fewer employment opportunities. They perform an important economic role and provide essential services to their catchment.

District Centres – The primary focus of these centres is to service the daily and weekly needs of local residents.

Neighbourhood Centres – These centres service a smaller catchment than district centres and provide for daily and weekly household shopping needs, community facilities and a small range of convenience services.

Local Centres – These are expected to be located within convenient walking and cycling distance of most homes, and are intended to provide shopping facilities to serve the daily needs of the local community. SPP 4.2 applies to Activity Centres classified as 'Neighbourhood' and above and does not technically apply to Local Centres.

SPP 4.2 outlines Activity Centre functions, typical characteristics, and performance targets. The characteristics describe the level of connectivity, accessibility and typical mix of land uses. The hierarchy of centres defines indicative service population areas; walkable catchments and residential density.

The City of Stirling has used State Planning Policy 4.2 as the basis for its requirements for the future development of Activity Centres. This includes setting indicative land-use mix and residential density targets for all levels of Activity Centres.

7.3.2   City of Stirling Retail Modelling and Centres Strategy

The City's Retail Modelling and Centres Strategy has identified retail floor space growth potential without impacting existing centres, and based on the growth of retail spending within the City.

The City's Retail Modelling and Centres Strategy has outlined three options to accommodate this growth in retail spend, and thus demand for retail floor space:

Option 1 - 'Constant Market Share' where all centres maintain their current retail market share.

Option 2 – 'Re-localising Retailing' which allows constrained growth at the City's largest centres but ensures sufficient growth potential remains for the City's smaller centres.

Option 3 – 'Retail Growth' is based on the larger centres growing and smaller centres declining market share over time.

The preferred option is "Re-Localising Retail" which involves providing for constrained growth at the City's largest centres and allowing additional growth in the City's smaller centres, including District Neighbourhood and Local Centres. Particular growth emphasis is provided for those smaller centres that are located in the areas identified for population growth, including ones that are located:

• Along public transport corridors;

• At or near transit stops; and

• Areas with high population growth.

This 're-localise retailing' strategy aligns with many of the City's other major strategic objectives, including:

• Concentrate population and employment growth on the City's corridors and around it's centres;

• Limit the distance required to travel for employment and shopping to reduce the impact on the City's constrained road network; and

• Provide local convenience shopping that can be accessed by walking and cycling.

To achieve this strategy the City needs to intervene in the development of the City's smaller centres by:

• Providing sufficient zoned land for these centres to grow;

• Facilitate urban renewal projects at selected centres where there is growth potential; and

• Undertake place making activities and support the establishment of trader / community groups, who will become responsible for the marketing of centres.

The alternative scenario is unlimited growth of the City's large centres, which would likely see the following impacts:

• Reduction in the number of smaller centres;

• Reduction in floor space of smaller centres; and

• Increased car trips on the City's roads leading to greater congestion around and on key access routes to these centres.

Table 34: Forecast Retail Spending By City Of Stirling Residents, 2016 To 2031 (Source: Essential Economics)

Retail Category	2016	2021	2026	2031	Average Change, 2016-31
Low Scenario					
Food, Liquor and Groceries	$1,268m	$1,415m	$1,562m	$1,723m	2.1%
Food Catering	$453m	$514m	$579m	$652m	2.5%
Non-Food	$1,682m	$2,015m	$2,396m	$2,849m	3.6%
Total Retail	$3,403m	$3,945m	$4,537m	$5,224m	2.9%
High Scenario					
Food, Liquor and Groceries	$1,268m	$1,431m	$1,588m	$1,763m	2.2%
Food Catering	$453m	$520m	$589m	$667m	2.6%
Non-Food	$1,682m	$2,037m	$2,437m	$2,916m	3.7%
Total Retail	$3,403m	$3,988m	$4,614m	$5,346m	3.1%

Source: MarketInfo; Essential Economics
Note: Figures are rounded and in constant 2016 dollars

7.3.3 Future Growth Possibilities at Stirling Strategic Metropolitan Centre

Stirling City Centre will transform over the next decade to a well-connected centre based around the Stirling Train Station and numerus high frequency bus routes. It is also the City's largest and most diverse centre with an additional 22,000 residents expected to the centre. **Table 35** highlights the anticipated retail floor space growth level by 2031. A retail sustainability assessment has been undertaken for this centre in accordance with SPP 4.2 to allow sustainable growth of the centre.

7.3.4 Future Growth Possibilities at Existing Secondary Centres

The City has two Secondary centres, Karrinyup and Mirrabooka. These centres will form the second tier of centres in the City of Stirling. Both Mirrabooka and Karrinyup will see significant growth over the next decade.

- Karrinyup will have a significant increase in its retail floor space under the proposed development application, however it will need to provide other employment opportunities besides retail to reach its diversity target of 40%. In addition the centre will require developing its street based activities to create a walkable catchment around the centre, as the future growth could be constrained by the capacity of the transport network. Investment in improved public transport may be required to facilitate this growth.

- Mirrabooka will grow considerably with the planning framework being completed and a proposed new heavy rail station. This growth will focus on street based development to create pedestrian friendly environments to support public transport use. There will be increased land-use diversification with the City investing significantly in a new main street.

Table 36 highlights the anticipated retail floor space growth level by 2031.

Table 35: Anticipated Future Floor Spaces for Strategic Metropolitan Centres (Source: City of Stirling 2010)

Centre Name	No	2010 Total Floor Space	% of other non-residential uses to retail uses to	2010 Shop Floor Space	2016 Shop Floor Space	2031 Projected Required Shop Floor Space
Stirling City Centre Stirling, Innaloo, Woodlands & Osborne Park	SMC	271,556m²	78%	57,843m²	119,500m²	159,500m²

Table 36: Anticipated Future Floor Spaces for Secondary Centres (Source: City of Stirling 2010)

Centre Name	No	2010 Total Floor Space	% of other non-residential uses to retail uses to	2010 Shop Floor Space	2016 Shop Floor Space	2031 Projected Required Shop Floor Space
Karrinyup	SC 1	59,045m²	13.5%	51,035m²	53,590m²	78,590m²*
Mirrabooka	SC 2	112,643m	65%	39,129m²	47,200m²	57,200m²

*   A development approval was approved by the JDAP in 2015 which will increase the Shop-Retail floorspace to approximately 93,000 m² over several stages.

7.3.5   Future Growth Possibilities at Existing District Centres

All of the City's existing District Centres are anticipated to grow over the next decade or so (Table 37). Growth is likely to occur at:

- Scarborough – investment in the foreshore and new planning framework;

- Stirling Central – new heavy rail station and new planning framework;

- Main Street – new planning framework and increase in catchment population; and

- Glendalough Station – new centre identified under the Herdsman-Glendalough Structure plan.

A new District Centre at the Glendalough train station is proposed as part of the Herdsman–Glendalough planning framework. Whilst this planning framework is still being developed, this future centre will need to comply with the New Centres and Changes in the Retail Hierarchy (Section 7.3.8).

Table 37: Anticipated Future Floor Spaces for District Centres (Source: City of Stirling 2010)

Centre Name	No	2010 Total Floor Space	% of other non-residential uses to retail uses to	2010 Shop Floor Space	2031 Projected Shop Floor Space
Dianella Dianella	DC 1	21,533	29%	15,359	18,359
Dog Swamp Yokine	DC 2	11,091	14%	9,514	13,514
Glendalough Station Glendalough Train Station	DC 3	N/A	N/A	N/A	10,000
Inglewood Inglewood	DC 4	37,512	74%	9,678	13,678
Main Street Osborne Park	DC 5	32,992	80%	6,755	12,755
Mount Lawley Mount Lawley	DC 6	42,699	61%	16,561	18,561
Northlands Balcatta & Westminster	DC 7	18,855	48%	9,761	13,761
Scarborough Scarborough	DC 8	86,529	87%	9,508	18,508
Stirling Central Balcatta & Westminster	DC 9	20,784	34%	13,588	21,588

7.3.6 Future Growth Possibilities at Existing Neighbourhood Centres

Most of the City's existing Neighbourhood Centres are anticipated to grow over the next decade, by a total of 25,000m² of retail floor space (**Table 38**). Significant growth is likely to occur at:

- Doubleview - will likely grow with a new planning framework and light rail, it could possibility become a new District Centre;

- Nollamara - will likely grow with a new planning framework and rezoning more land for mixed use, it could possibility become a new District Centre; and

- Westminster Plaza - likely grow with the redevelopment of the park and a new planning framework.

Table 38: Anticipated Future Floor Spaces for Neighbourhood Centres (Source: City of Stirling 2010)

Centre Name	No	Total Floor space M² NLA	% of other non-res uses to retail uses	2010 Shop Floorspace	2031 Projected Shop Floorspace
Adair Pde Menora & Coolbinia	NC 1	5,040	60%	2,004	2,504
Coode St Cnr Walter Rd West, Dianella	NC 2	6,134	56%	2,712	3,712
Doubleview SBR, Doubleview	NC 3	6,388	41%	3,732	7,732
Fieldgate Square Culloton Crs, Balga	NC 4	3,731	76%	901	1,901
Flynn Street Churchlands	NC 5	2,693	12%	2,363	3,363
Glendalough Jon Sanders Drv, Glendalough	NC 6	1,917	27%	1,387	1,887
Grindleford Road	NC 7	2,250	100%	0	6,000
Gwelup Nth Beach Rd, Gwelup	NC 8	6,454	26%	4,772	5,772
Lord St Cnr Railway Pde, Mount Lawley	NC 9	10,120	88%	1,260	1260
Mirrabooka Village Honeywell Blv, Mirrabooka	NC 10	2,411	14%	2,061	4,061
Morris Place Innaloo	NC 11	8,067	65%	2,804	3,304
Nollamara Nollamara Ave, Nollamara	NC 12	5,084	23%	3,912	6,412
North Beach Plaza North Beach Rd, North Beach	NC 13	4,203	42%	2,411	4,411
North Beach Drive Cnr Wanneroo Rd, Tuart Hill	NC 14	3,935	29%	2,145	4,645
Tuart Hill Wanneroo Rd, Tuart Hill & Yokine	NC 15	7,717	63%	2,805	4,805
Stirling Village Sanderling St, Stirling	NC 16	1,727	32%	1,168	1,618
Walter Road West Cnr Grand Prom, Dianella	NC 17	7,976	61%	3,114	4,114
Westminster Plaza Princess Rd, Balga	NC 18	4,540	36%	2,870	5,870
Woodlands Village Rosewood Ave, Woodlands		2,409	19%	1,939	2,939

7.3.7 Future Growth Possibilities at Existing Local Centres

Some of the City's existing Local Centres are anticipated to grow over the next decade or so by a total of 10,000m² of retail floor space Table 39.

Significant growth is likely to occur at the following centres, which will necessitate a move up in the level of the centre hierarchy subject to meeting the requirements as outlined in section 7.3.8.

- Flinders Street will likely see continued growth with a new planning framework along a high frequency public transport route;

- Flora Terrace will likely see continued growth taking advantage of its coastal location and popularity for food and beverage tenancies;

- Hamilton Street will likely grow with the redevelopment of the East Roselea area and location along a high frequency public transport route;

- McDonald Street will likely grow with a new planning framework and location along a high frequency public transport route and;

- The Downs will likely grow with available zoned land and desirable location.

Table 39: Anticipated Future Floor Spaces for Local Centres (Source: City of Stirling 2010)

Centre Name	No.	Total Floor space M² NLA	% of other non-residential uses to retail uses to	2010 Shop Floor Space	2031 Projected Shop Floor Space
Arkana Rd Westminster	LC 1	300	0%	300	300
Balcatta Fresh Karrinyup Rd, Stirling	LC 2	350	0%	350	350
Balcatta Rd, Cnr Delawney St, Balcatta	LC 3	1,000	100%	1,000	1,000
Bayley St Cnr Homer St, Dianella	LC 4	833	26%	613	613
Bennion St Trigg	LC 5	250	0%	250	250
Beryl St Cnr Main St, Balcatta	LC 6	620	0%	620	620
Big Rock Wanneroo Road, Balcatta	LC 7	3,410	0%	0	500
Blythe Avenue Yokine	LC 8	240	0%	240	240
Brighton St Cnr Westview St, Scarborough	LC 9	1005	51%	490	740
Calais Road Cnr Brighton Rd, Scarborough	LC 10	1,710	23%	1,325	1,325
Canara Rd Westminster	LC 11	1,992	49%	1,012	1,012
Carine Almadine Dr, Carine	LC 12	793	62%	298	798
Central Ave Cnr Clifton Cres, Inglewood	LC 13	50	0%	50	50
Coode St Cnr Third Ave, Mount Lawley	LC 14	150	0%	150	150
Covent Grds Cnr Odin Rd, Stirling	LC 15	300	0%	300	300
Doric St Scarborough	LC 16	1,112	17%	927	927
Duffy Rd Cnr Beach Road, Carine	LC 17	365	100%	0	500
Elsie St Watermans Bay	LC 18	300	0%	300	300
Erindale Rd Balcatta	LC 19	1,600	80%	320	320
Flinders Street Cnr Swan St, Yokine	LC 20	2,462	59%	1,016	1,516

Centre Name	No.	Total Floor space M² NLA	% of other non-residential uses to retail uses to	2010 Shop Floor Space	2031 Projected Shop Floor Space
Flora Terrace North Beach	LC 21	3,986	70%	1,197	1,697
Green Ave Cnr Wanneroo Rd, Balcatta	LC 22	1,150	100%	0	500
Harrison St Cnr Jason Rd, Balcatta	LC 23	940	63%	350	350
Hector St Cnr Flinders St, Yokine	LC 24	700	29%	500	500
Herdsman Hotel Herdsman Pde, Wembley	LC 25	1650	78%	364	364
Hutton St Cnr Howe St, Osborne Park	LC 26	2,500	72%	700	700
Jones St Cnr Appleby St, Balcatta	LC 27	1,129	36%	727	727
Karrinyup Rd Cnr Nth Beach Rd, Gwelup	LC 28	430	50%	215	715
Kitchener St Trigg	LC 29	160	0%	160	160
Lawley St Cnr Stoneham St, Tuart Hill	LC 30	245	0%	245	245
Learoyd St Cnr Walcott St, Mount Lawley	LC 31	200	0%	200	200
Lynn St Cnr Marmion Ave, Trigg	LC 32	745	32%	500	500
McDonald St Cnr Main Street, Osborne Park	LC 33	2,602	54%	1,185	1,685
Michael St Cnr Knight Ave, Yokine	LC 34	840	90%	80	580
Muriel Ave Cnr King George St, Innaloo	LC 35	1764	88%	208	708
Pimlott St Cnr The Strand, Dianella	LC 36	672	16%	564	564
Powell St Cnr French St, Joondanna	LC 37	800	0%	800	800
Ravenswood Dr Cnr Wanneroo Rd, Nollamara	LC 38	500	100%	500	500
Roberts St Cnr Wanneroo Rd & Roberts St, Yokine	LC 39	3414	86%	390	890
Royal St Cnr Wattle Street, Tuart Hill	LC 40	300	0%	300	300
Sackville Tce Cnr Hancock St, Doubleview	LC 41	620	0%	620	620
St Brigids Tce Cnr SBR, Doubleview	LC 42	1459	65%	510	1010
St Peters Pl Cnr Sexton Rd, Inglewood	LC 43	520	58%	220	220
Sylvia St Cnr Wanneroo Rd, Balcatta	LC 44	100	0%	100	600
The Downs Bournemouth Crs, Wembley Downs	LC 45	2,158	36%	1,381	1,881
The Strand Cnr Surrey St, Dianella	LC 46	620	19%	500	500
West Coast Drive Cnr Saunders St, North Beach	LC 47	400	20%	320	820
Yokine Cnr Wanneroo Rd & Roberts St, Yokine	LC 48	3414	86%	390	890

7.3.8 New Centres and Changes in the Retail Hierarchy

The growth and evolution of Activity Centres within the City will be encouraged where there is a proven demand and it will not impact on the viability of other Activity Centres. As such either Activity Centre Plans (for District, Secondary and Strategic level centres) or Local Development plans (for Local and Neighbourhood level centres), addressing the criteria below will be required prior to any significant development occurring at an Activity Centre.

Criteria for Growth at Existing Centres

For growth at any of the City's existing centres within the existing hierarchy the following criteria outlined in **Table 40** shall be met:

- Criteria 4 – Retail Types;
- Criteria 5 – Retail Floor Space;
- Criteria 7 – Future Population;
- Criteria 9 – % of retail uses to other non-residential uses;
- Criteria 10 – Residential Density; and
- Criteria 11 – Urban Form - Extensions to existing centres, require new main streets to be created.

Criteria for Change of Centre Hierarchy

For change in any centres hierarchy position (e.g. Local to Neighbourhood) the following criteria outlined in Table 43 shall be met:

- Criteria 1 – Main Role, to be addressed in a retail sustainability and impact assessment;
- Criteria 2 – Public Transport, including possible contributions to improve infrastructure and services required;
- Criteria 3 – Road Network, including possible contributions to improved road network required;
- Criteria 4 – Retail Types, to be addressed in a retail sustainability and impact assessment;
- Criteria 5 – Retail Floor Space, to be addressed in a retail sustainability and impact assessment;
- Criteria 7 – Future Population, to be addressed in a retail sustainability and impact assessment;
- Criteria 9 – % of retail uses to other non-residential uses;
- Criteria 10 – Residential Density, including required mixed use development with residential; and
- Criteria 11 – Urban Form - Extensions to Existing Centres, including requiring new main streets to be created/addressed

Criteria for New Centres

To create a new centre within the City of Stirling the following criteria outlined in Table 12 shall be met:

- Criteria 1 – Main Role, to be addressed in a retail sustainability and impact assessment;
- Criteria 2 – Public Transport, including possible contributions to improve infrastructure and services required;
- Criteria 3 – Road Network, including possible contributions to improved road network required;
- Criteria 4 – Retail Types, to be addressed in a retail sustainability and impact assessment;
- Criteria 5 – Retail Floor Space, to be addressed in a retail sustainability and impact assessment;
- Criteria 6 – Office Uses will be types to be included and amount required
- Criteria 7 – Future Population, to be addressed in a retail sustainability and impact assessment;
- Criteria 9 – % of retail uses to other non-residential uses, including required a mix of uses;
- Criteria 10 – Residential Density, including required mixed use development with residential; and
- Criteria 12 – Urban Form of New Centres, including required new main streets to be created.

Table 40: Criteria For Extensions To Existing Centres And Creation Of New Centres (Source: City of Stirling)

Criteria	Strategic Metropolitan Centre	Secondary Centres	District Centres	Neighbourhood Centres	Local Centres
Main Role	• Main regional Activity Centres; • Multipurpose centres that provide a diversity of uses; • Provide full range of economic and community services.	• Serve smaller catchments; • Offer a more limited range of services, facilities and employment opportunities.	• Servicing the daily and weekly needs of residents; • Smaller scale catchment; • Local community focus; • Provide services, facilities and job opportunities.	• Servicing daily and weekly household shopping needs; • community facilities; • Small range of other convenience services.	• Walkable access to services and facilities for communities; • Provide for the day to day needs of the local community.
Public Transport	• Heavy Rail Station; and • Focal point for High frequency bus networks	• Heavy Rail Station; or • Focal point for High frequency bus networks	• Focal point for High frequency bus networks	• Stopping / transfer point for bus network.	• Stopping / transfer point for bus network.
Road network	• Direct Primary and district distributor (A) road connections.	• Direct Primary and district distributor (A) road connections.	• Direct district distributor (A) road connections.	• Located on a district distributor (B) road.	• Located on a district distributor (B) road.
Retail Types	• Department store/s • Discount department stores • Supermarkets • Full range of speciality shops.	• Department store/s • Discount department store/s • Supermarkets • Speciality shops.	• Discount • department stores • Large Supermarkets >2000m² • Convenience goods • Small scale comparison shopping • Personal services • Some specialty shops	• A small supermarket <2000m² • Personal services • Convenience shops	• Convenience shops • Delicatessen
Retail floor space	• Over 80,000m²	• 25,000m² - 80,000m²	• 6,000m² - 25,000m²	• 1500m² and up to 6000m²; or • Over 750m² of retail with min 1500² of Entertainment / Office / Health uses.	• Up to 1500m²
Office Uses	• Major offices • State Government Agencies	• Major offices • Professional and service businesses	• District level office development • Local professional services	• Local professional services	• Small home offices
Future Population (trade) area	• 150,000–300,000 persons	• Up to 150,000 persons	• 20,000–50,000 persons	• 2000–15,000 persons • (about 1 km radius)	• 2000 and less
Walkable Catchment (Density Increases)	• Over 1km	• 800m	• 200m	• 100m	• Residential density increases are not encouraged

Criteria	Strategic Metropolitan Centre	Secondary Centres	District Centres	Neighbourhood Centres	Local Centres
% of retail uses to other non-residential uses	• 50% • Mandatory non-residential uses in accordance with LPS3	• 25,000 -50,000m² 30% of other uses; • 50,000 – 80,000m² 40% of other uses. • Mandatory non-residential uses in accordance with LPS3	• 30% • Mandatory non-residential component required for development over 2000m² of shop floor space.	• 20% • Mandatory non-residential component required for development over 1000m² of shop floor space.	• N/A
Residential density target (per gross hectare)	• Mandatory residential component in accordance with LPS3	• Mandatory residential component in accordance with LPS3	• Mandatory residential component in accordance with residential target for non – residential development over 1000m² of existing centres • Mandatory residential component for new centres	• Mandatory residential component in accordance with residential target for non – residential development over 750m² of existing centres • Mandatory residential component for new centres	• Mandatory residential component in accordance with residential target for non – residential development over 500m² of existing centres • Mandatory residential component for new centres
Min Max	30 45	25 35	25 35	20 30	N/A
Urban form - extensions to existing centres	• Require double sided "main street" frontages to all mixed use streets within the centre, prior to approval of additional non "main street" retail uses.	• Require double sided "main street" frontages to all mixed use streets within the centre, prior to approval of additional non "main street" retail uses.	• Require at least one doubled sided "main street" frontage to existing box shopping centres for development over 750m² • Continue main street frontages where centres are already built to the street edge.	• Require at least one double sided "main street" frontage to existing box shopping centres for development over 500m² • Continue main street frontages where centres are already built to the street edge.	• Require at least one single sided or double sided "main street" frontage for development over 250m²
Urban form of new centres	• N/A	• N/A	• All new centres have to create a two sided main street.	• All new centres have to create a two sided main street.	• All new centres have to create a two sided main street.

7.3.9 Showrooms

The City of Stirling has two major showroom areas located in:

- Osborne Park Industrial Area; and
- Balcatta Industrial Area.

In total, these two precincts include approximately 123,650m^2 of commercial floorspace, comprising the following:

- 113,850m^2 of showroom floor space, and
- 9,800m^2 of shop floor space, a large proportion of which is serving the convenience needs of nearby workers.

These two areas have developed organically over a number of decades from buildings with manufacturing businesses with incidental showrooms (displaying goods manufactured on-site) to buildings with 100% of space utilised for showrooms.

This change has generally occurred without planning approval through the removal of internal walls and repurposing of floor space for showrooms. Faced with this change in land use which occurred over a number of decades, the City decided in 2004 to rezone those parts of the industrial areas that are predominantly showrooms. This decision was based on the Industrial Areas in Transition Strategy (2004).

The City rezoned major corridors within the Balcatta Industrial Area in 2007 from "Industrial" to "Mixed Business" in line with the Industrial Areas in Transition Strategy (2004).

The City, however did not implement the rezoning of properties along major roads in the Osborne Park Industrial area as there were unresolved issues relating to the Scarborough Beach Road corridor.

Subsequently the City together with the State Government completed the Scarborough Beach Road Activity Corridor Study that recommends this corridor become a mixed use corridor with transit lanes. This study and the associated draft Herdsman Glendalough Structure Plan will allow for the continued operation of existing showrooms on Scarborough Beach Road, and the growth of showrooms outside of the transit stop locations.

However the draft Herdsman Glendalough Structure Plan does not deal with other major corridors within the Osborne Park Industrial Area that are still dominated by Showrooms that are a not permitted use, including:

- Eastern side of King Edward Road;
- Hector Street;
- Hutton Street; and
- Frobisher Street.

Therefore the City will progress the remaining outstanding recommendations of the Industrial Areas in Transition Strategy (2004), to rezone properties along the roads outlined above from "Industrial" to "Mixed Business".

In addition to showroom retailing in Osborne Park and Balcatta, potential exists for showrooms at the Atlas Brickworks site in Mirrabooka. The site will have exposure to Alexander Drive and will adjoin an existing mixed business/industrial area in Malaga.

7.4 Summary Of Key Issues Of Retail And Commercial

The City's Activity Centres need to be transformed over time from car dominated environments to places that are attractive and easy for people to walk around, cycle and catch public transport. The great diversity of Centres within the City of Stirling provides significant opportunities to accommodate the City's growth, while providing a range of housing types, employment, business, recreation, public spaces and prioritise alternative transport over the private motor vehicle.

The local planning strategy focuses on planning for and encouraging appropriate investment that supports the redevelopment of well-designed centres. This is to be focussed around a main street, with fine-grained urban form and streets that are people-friendly. The main street design approach ensures that buildings front streets, public plazas and/or parks and not car parking. It is also shown that main streets have a higher level of employment diversity compared to a big box shopping centre.

Some areas of the City of Stirling are poorly served by walkable convenience shopping. In these locations, where there will be little impact on the economic viability of other centres, new local centres and the rezoning of other existing commercial zonings will be supported. This will provide improved sense of place within the suburbs and encourage lower vehicle usage.

To support the viability of existing local and neighbourhood centres that are facing increased level of competition, it will be necessary to allow these centres to expand their retail floor space, as well as provide additional zoned land, public amenities and facilitate place making activities.

The City is struggling to achieve consolidation within its Activity Centres and Corridors due to blanket medium density residential zonings within the suburbs, and the sporadic rezoning of commercial style development out of Activity Centres and corridors. To ensure consolidation within Activity Centres and along Corridors is achieved, the City will only support commercial and mixed use style rezoning's either as identified within Activity Centre / Corridor plans or as part of a wider place based planning program (e.g. Better Suburbs).

The growth of large format retail has increased within the City, leading to the loss of industrial land and a lack of consolidation within Activity Centres. This has increased car usage and reduced the manufacturing and servicing employment opportunities within the City. As such the City will not support the rezoning of any further industrial land outside of adopted Activity Centre and Corridor plans, or the City's Industrial Land In Transition Strategy.

Key Issue 4.1
Many of the City's residents do not have non-car access to convenience shopping.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Identify existing centres and their walkable catchments within the City, and allow for the growth of existing Activity Centres and potential new Activity Centres in areas that are under-represented.	Allow for rezoning of land to Local Centre in areas where the acceptable criteria can be met.	Ongoing	CoS (City Planning)
	Allow existing Activity Centres to grow and move up the Centres hierarchy where the acceptable criteria can be met.	Ongoing	CoS (City Planning)
	Develop Activity Centre Plans for regional and district centres, along with Local Development Plans for neighbourhood centres through place based planning.	Ongoing	CoS (City Planning)

Key Issue 4.2
Lack of diversity of non-residential uses within Activity Centres and Corridors.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure the City has an up-to-date database of economic land uses within Activity Centres and Corridors.	Monitor, record and investigate State Government floor space and land use data as it becomes available.	Ongoing	CoS (City Planning)
Ensure the future viability of Activity Centres by supporting a variety of non-residential uses within them, and by restricting spot commercial rezonings which do not adjoin Activity Centres.	Only support Local Planning Scheme amendments for commercial, medical and business uses within or adjoining existing Activity Centres or as part of detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program.	Ongoing	CoS (City Planning)

Key Issue 4.3
Big Activity Centres are growing at the expense of smaller Activity Centres.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Encourage development in local and neighbourhood centres.	Allow for Local and Neighbourhood Centres to increase floor space to encourage redevelopment.	Ongoing	CoS (City Planning)
	Undertake place based planning to plan for growth in Local and Neighbourhood Centres and co-ordinate the City's investment in infrastructure.	Short	CoS (City Planning and Infrastructure Directorate)
Ensure the State planning hierarchy of centres is maintained.	Review the Local Planning Scheme to support the Activity Centres hierarchy.	Medium	CoS (City Planning)
	Review the City's commercial zonings to differentiate between the City's Activity Centres hierarchy.	Long	CoS (City Planning)

Key Issue 4.4
Large format retail outside of centres is growing at the expense of development within identified centres.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Do not support new large format retail in industrial areas and only formalise existing large format uses.	Do not rezone any further industrial land outside of adopted structure plans, except in accordance with the City's *Industrial Land In Transition Strategy*.	Ongoing	CoS (City Planning)
	Implement the City's *Industrial Land In Transition Strategy*.	Short	CoS (City Planning)

8. Tourism And Visitors

8.1 Introduction

The City of Stirling is located close to the Perth CBD and is ideally placed to take advantage of the proximity between the CBD and the coast. Current tourist facilities particularly accommodation, are focussed around Scarborough Beach, taking advantage of the natural beauty of the area. There are also other popular beaches, parks, Activity Centres and Corridors that are enjoyed year round.

The City currently lacks a diversity of tourist attractions to meet the future tourism trends. These trends include entertainment, shopping and other urban activities to service the emerging tourism markets in China, Singapore, Malaysia and other Asian countries. However the City is strategically positioned to take advantage of these tourism trends by growing and diversifying the City's major Activity Centres and Corridors.

Continued redevelopment of the City's coastal attractions as well as Activity Centres and Corridors will ultimately deliver a range of tourism attractions ranging from a world class beach precinct in Scarborough to the premier Activity Centre at Stirling City Centre to a vibrant Activity Corridor on Beaufort Street. These tourist precincts need to be linked to the CBD by high quality and high frequency public transport such as light rail to be more accessible to tourists without cars in Australia.

8.2 Background

8.2.1 Current Trends

The City of Stirling compares well with the State's other local authorities in terms of visitors for tourism purposes – ranked 3rd (3%) for interstate visitors and 4th (5%) for international visitors. Table 41 outlines the purpose of visits.

Table 42 highlights that the majority of visitors to the City are from within WA however, international visitors stay the most number of visitor nights and the longest length of stay. The

predominant reasoning for tourists visiting the City of Stirling is for visiting friends and relatives. Friends and relatives provide most accommodation for their visitors, with three times as many visitors using this means of accommodation rather than a hotel, resort, motel or motor inn.

The summer months are when the City of Stirling's visitor numbers peak, similarly to the rest of the Perth Metropolitan Region's tourist season. This is due to the warmer climate and ideal beach conditions particularly with the beaches being the City's main tourist attractor. The majority of events, both of the City of Stirling or other providers, are focussed around the beach and are held over the summer months.

Scarborough Beach and surrounds is the most popular location for tourists to visit. The average occupancy rates for short stay accommodation and hotels range from 63.9% in the low season and 88.9% in the peak season (Tourism WA data). Previously due to the insufficient supply of accommodation for the business tourism market in the Central Business District, the demand shifted to the Scarborough area. This previously reduced the supply of accommodation for leisure tourists in the area. This presents less of an issue since the recent decline in the demand for business tourism accommodation. The decline is due to the fall in demand from the mining sector Scarborough could be better placed to serve tourists coming to Western Australia.

Major events can attract large numbers of visitors to the City and recent State Government commitments to fund tourism and events, are an opportunity for the City to grow the tourism sector in the City.

With a broad selection of accommodation, access to conference facilities and plans for further hotel and conference venues, Scarborough is well placed to service the business and conference tourism market. This is likely to grow in the future as new accommodation is constructed, including proposed and new hotel developments within Scarborough.

Table 41: Purpose of Visit, City of Stirling (Source: Tourism WA)

Estimated overnight visitation to Stirling by purpose, Year Ending December 2014/15/16 (3 year average)					
Estimated Domestic Visitors		Percentage (%)	Estimated International Visitors		Percentage (%)
Visiting friends and relatives	92,300	54%	Visiting friends and relatives	27,600	57%
Holiday	39,000	23%	Holiday	14,300	29%
Other	41,700	24%	Business	2,900	6%
			Other	5,200	11%

Table 42: Overall Average Annual Visitors, City of Stirling (Source: Tourism WA)

Estimated overnight visitation to Stirling, Year Ending December 2014/15/16 (3 year average)				
Estimated Visitors		Percentage (%)	Estimated Visitor Nights	Percentage (%)
Intrastate	111,000	50%	Intrastate	255,700	10%
Interstate	61,300	28%	Interstate	399,000	16%
International	48,700	22%	International	1,908,100	74%
Total	**221,000**	**100%**	Total	2,562,800	100%
Average Length of Stay (Estimated Nights)				Percentage (%)
Intrastate				2.3	-
Interstate				6.5	-
International				39.2	-
Total				**11.6**	-

8.2.2 Future Trends

There are a range of tourism offerings within the City of Stirling including:

- Beaches, parks and reserves;
- Bars, cafés and restaurants;
- The Scarborough beach precinct, including new beachside swimming pool;
- Live entertainment at the only beach amphitheatre in WA, and Astor Theatre in Mount Lawley;
- Walking and cycling tracks including Scarborough to Watermans Bay, Lake Gwelup and Carine Open Space;
- Three major shopping centres: Westfield Innaloo, Karrinyup Shopping Centre and Mirrabooka Square;
- Four golf courses; and
- Mt Flora Museum explaining the history and culture of the area.

Business tourism is a growing area, and the City is working with the Rendezvous Hotel and Perth Convention Bureau to attract more business events and conferences to Scarborough and the wider City.

Education is a growing sector that brings new people into the area. Edith Cowan University has recently completed student accommodation close to its Performing Arts Academy in Mount Lawley. Overseas students also generate visitors, as family and friends tend to visit Western Australia while they are studying locally.

The City of Stirling has a range of both environmental and commercial attractions such as unique coastal areas, preserved wetlands/bushland and commercial and historical centres such as Beaufort Street in Mount Lawley. Aboriginal cultural tourism is also an opportunity to showcase our local Indigenous culture.

8.3 Local Context And Future Possibilities

8.3.1 Existing Activity Centres And Corridors

Scarborough

The redevelopment of Scarborough will see the area transform to become Perth's premier beachside tourism precinct with a variety of accommodation options as well as multiple tourist facilities.

Scarborough Beach precinct is now subject to the Metropolitan Redevelopment Authority's Scarborough Redevelopment Scheme and Master Plan (**Figure 49**). This outlines a new vision for Scarborough and includes a range of foreshore improvements to create a contemporary, family-friendly, all-seasons destination. The Metropolitan Redevelopment Authority will also facilitate private investment and development of key sites. The City is a redevelopment partner, with financial contributions towards the redevelopment.

Most of the accommodation options in the City are located adjacent to Scarborough Beach and the surrounding area. This precinct has several large hotel establishments fronting the Esplanade and West Coast Highway. The most prominent of these being the Rendezvous Grand Hotel with other motels, serviced apartments and bed and breakfasts scattered within the Scarborough and Trigg localities.

The connection of Scarborough Beach to Stirling City Centre and Glendalough Station with light rail is critical to enable the continued growth of Scarborough as a tourist destination.

Stirling City Centre

Stirling City Centre (incorporating the Osborne Park and the Herdsman Glendalough Area) is Perth's largest employment area outside of the CBD and Australia's largest bulky goods showroom area. Currently Stirling City Centre is car dominated and not pedestrian friendly which is currently not conducive to creating a tourist precinct.

However the City has developed a planning framework and a vision that will see the area transform over time to become Perth's premier Activity Centre outside of the Perth CBD. This redevelopment will include creating a main street based centre that is pedestrian friendly, including new links to Stirling train station and a new town square.

The vision of Stirling City Centre is now underway, including construction of a new hotel and apartments plus the redevelopment of the Innaloo shopping centre into Perth's premier shopping centre. The redeveloped shopping centre together with other major retail attractions (such as Ikea), will be within walking distance of the Stirling train station and new hotel will help create a tourism shopping precinct.

New serviced apartments style accommodation is being constructed in the Stirling City Centre which is in close proximity to the major business precincts of Herdsman and Innaloo.

Over time the Centre will be connected to Scarborough Beach and the CBD through the introduction of light rail which will make the centre a tourist attraction and provide tourism accommodation.
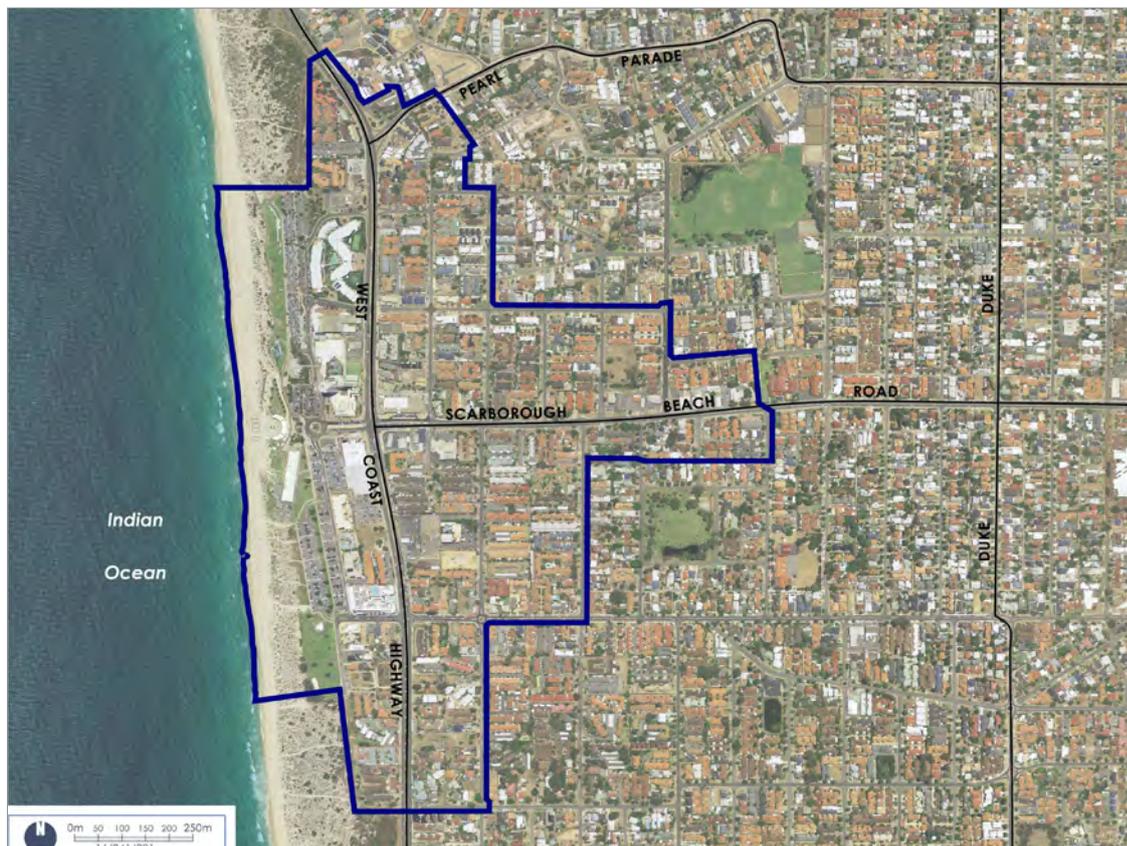

Figure 49: Scarborough Redevelopment Area (Source: City of Stirling)

Beaufort Street

Beaufort Street within the suburbs of Mount Lawley and Inglewood is recognised as one of Perth's most vibrant corridors containing a variety of cafes, restaurants, bars and independent retailers. The corridor is over 6km in length of which approximately half is contained within the City of Stirling. Currently the most vibrant section is predominantly outside of the City's boundaries. The City's section is characterised by an ad-hoc mix of residential and commercial development.

The City has recently developed a strategy and vision for the City's section of Beaufort Street. This will transform the area into a series of vibrant mixed use hubs centred around high frequency public transport and light rail stations, linking the CBD to the Morley City Centre.

The transformation has started with the development of new mixed use developments and new tourist events reactivating sections of the corridor. The future introduction of light rail would elevate this corridor to Perth's premier tourist activity corridor.

8.3.2 Existing Natural Attractions

Herdsman Lake

Herdsman Regional Park is located within the Herdsman locality and protects an important chain of wetlands and surrounding bushland. Herdsman Regional Park provides a number of excellent picnicking and bird watching locations. The park attracts visitors seeking recreational and leisure pursuits and provides the opportunity to facilitate ecotourism within the City. Many of these attractions are difficult to access without a car, however the City's Cycling Strategy and Stirling City Centre project will connect these natural locations to the wider cycling, pedestrian and public transport networks.

Bay Of Beaches Area (Coastal Zone From Trigg To Watermans Bay)

The foreshore region of the Bay of Beaches Area is a highly valued asset for residents and tourists alike. It is a key recreational area that offers a variety of opportunities such as walking, boating, surfing, fishing, windsurfing, snorkelling, swimming and cycling. The region is renowned for its coastal vistas and white sandy beaches, with the opportunity to watch the sun setting over the Indian Ocean. The marine waters provide great opportunities for aquatic recreation due to pristine reefs and a variety of aquatic organisms. Sustaining the region as a key tourist destination and a valued asset for locals is a priority for the local government.

The Bay of Beaches foreshore is extensively developed, with West Coast Drive running adjacent to the foreshore within 10 to 20 metres from the shoreline. The area will continue to develop over time to enable increases in cycling and walking opportunities along the coast linking the key beachside tourist precincts.

8.3.3 Future Tourism Possibilities

Activity Centres

The City of Stirling has a number of large Activity Centres (other than the Stirling City Centre) that are currently large shopping centres in car parks, however plans and visions have been developed for Mirrabooka and Karrinyup that will see these centres transform into mixed use, main-street styled centres. It is expected that tourist accommodation will be provided in these centres overtime to help meet the demand for shopping and urban related tourist activities.

The City's other District centres and Neighbourhood centres will also over time transform into more vibrant mixed use pedestrian friendly main street based centres. Centres that are located on major corridors, close to the CBD and the coast will over time include tourist accommodation that can provide more affordable accommodation outside of the major centres.

Further student accommodation within the City would promote additional visitation. The City's transport strategy is to connect the City of Stirling to the CBD with light rail along major corridors, including Scarborough Beach Road, Wanneroo Road and Beaufort Street. The delivery of light rail will provide significant tourist opportunities as the fixed nature of light rail is more conducive to encourage the use of these services by tourists.

8.4   Summary Of Key Issues Of Tourism And Visitors

The City currently lacks a diversity of tourist attractions and infrastructure to meet the future tourism trends. The City's tourism attractions are currently focused around natural attractions such as Scarborough Beach, however in the future the City needs to provide additional infrastructure at its natural attractions as well as develop other tourism attractions based around Activity Centres and Corridors.

Connectivity between tourism attractions is poor and needs to be improved. This is of particular importance where tourists do not have access to a car, and currently navigation of the public trainsport system is both confusing and time consuming to visitors.

Key Issue 5.1 The City has limited tourist infrastructure to support its tourism assets (e.g. beach, centres and heritage areas).			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify and provide for short term visitor accommodation within identified tourism areas.	Review the Local Planning Scheme to ensure short-stay accommodation is permitted in appropriate locations.	Short	CoS (City Planning)
Ensure land uses (e.g. entertainment) support tourism within the City.	Review the Local Planning Scheme to ensure that zoning within identified tourist areas support land uses which will contribute to the tourism economy.	Short	CoS (City Planning)
Link Scarborough Beach and the City's other tourism attractors to the Perth CBD via high quality public transport.	Work with Federal, State Government, private sector and other Local Governments to advance proposed light rail networks to the coast.	Ongoing	CoS (City Planning)

9. Public Open Space, Recreation and Community Facilities

9.1   Introduction

The City of Stirling contains 1,192 hectares of open space for sport, recreation and natural uses (including Regional reserves). Of this, 71% is used for sport and recreational spaces and 29% consists of nature spaces.

With a rapidly growing population a minimum additional 60,330 dwellings expected to be required over the next 35 years, the amount of public open space per person and per dwelling will diminish significantly while the area of open space by suburb will remain the same. This provides the City with challenges on how to provide sufficient open space for the City's growing population by improving the functionality of existing open space, seeking new open space, and requiring more quality private open space within residential lots.

The City has 15 community centres and 7 leisure centres, with numerous other facilities such as sporting clubrooms and scout and guide halls. A large percentage of these facilities were constructed over the last 50 years at a time when the City was predominantly characterised by single dwellings on a large lot. However over the next 35 years the majority of new dwellings will be either apartments built around Activity Centres or along Corridors or group dwellings in the City's large areas of R30 and R40 residential zoned land. This will have a significant impact on the type of recreation facilities the City will need to provide, and to ensure that they are located close to the growth areas.

The City has a Public Open Space Strategy, which outlines the City's public open space vision, values and objectives. It recognises the role that public open space provides to the community in relation to social, environmental and economic factors. It outlines the principle role of public open space is to facilitate recreation, leisure and sporting pursuits for recreational purposes including organised sport, active pursuits, exercise, children's play and social activities.

The Public Open Space Strategy outlines key local, state, national and regional planning considerations, identifies trends and considerations, and most importantly outlines the City's Public Open Space Provision model. It includes an adopted Public Open Space hierarchy that identifies classifications of Public Open Space. This includes: their role, catchment area, timing of use and amenity provision standards which guide the development of facilities and amenity on Public Open Space. The Public Open Space provision standards provide a valuable strategic assessment framework to ensure that the City progresses towards the delivery of its vision for public open space.

The City's Public Open Space Strategy has been utilised to assist in the formation of key State Public Open Space planning documents including the State's Classification framework for public open space, Public Parkland Planning

and Design Guide WA and the Heart Foundation's Healthy Active By Design Public Open Space Case Studies section.

For the purposes of this document the City has included public open space in accordance with the City's classification framework where open space is defined as land that facilitates recreation, leisure and sporting pursuits. It does not include those spaces which have restricted use such as natural conservation areas, drainage or have restricted access such as golf courses and schools etc.

9.2   Background

9.2.1   Current Trends

Residential Public Open Space

Public Open Space is critical to creating liveable neighbourhoods with high amenity. The amount of residential public open space and the type of open space provided are critical factors in ensuring that the City's suburbs have high levels of amenity.

Traditionally, the supply of residential public open space is calculated as a percentage of the total residential area. Liveable Neighbourhoods requires a minimum of 10% provision of the gross residential area (regardless of residential density coding) as public open space. This has continued the benchmark established under the Plan for the Metropolitan Region Perth and Fremantle, 1955. This included the Stephenson-Hepburn recommended ratio of 3.36 hectares per 1,000 population (excluding school playing fields).

This has been considered sufficient for the adequate provision of residential public open space within the Perth Metropolitan Region over the last 50 years. However this calculation does not take into consideration increases in density over time. Whilst over the past 10 years the City's population has increased by approximately 50,000 persons, the physical area designated as residential has by comparison only slightly increased.

As an example the high growth areas of Nollamara and Westminster was originally planned along the Stephenson-Hepburn recommended public open space ratio. Since this time the allowable density within these two suburbs has increased threefold. This has resulted in the average property of 728sqm being able to accommodate three dwellings instead of the original one dwelling, without increasing the total residential area. This significant change obviously impacts on the demand, quality and adequate provision of public open space in the area.

Table 43: Existing Public Open Space per Locality and per Person (Source: City of Stirling)

Locality	POS Area as agreed (ha)	Public Open Space (Percentage of Residential Area)	Area per Existing Population (m²)	Area per Existing Dwelling (m²)
Balcatta	52.96	21%	53m²	113m²
Hamersley	22.42	15%	45m²	108m²
SA2 total & average	75.37	18%	50m²	112m²
Balga	61.52	23%	57m²	135m²
Mirrabooka	31.90	19%	40m²	122m²
SA2 total & average	93.41	21%	50m²	130m²
Dianella	111.34	19%	49m²	113m²
SA2 total & average	111.34	19%	49m²	113m²
Innaloo	19.87	13%	26m²	51m²
Doubleview	5.99	3%	3m²	8m²
SA2 total & average	25.86	8%	9m²	23m²
Karrinyup	88.46	38%	104m²	262m²
Gwelup	90.02	87%	229m²	605m²
Carine	115.27	66%	178m²	470m²
SA2 total & average	293.75	63%	155m²	401m²
Mount Lawley	23.14	15%	22m²	46m²
Inglewood	18.57	17%	34m²	71m²
SA2 total & average	41.71	16%	26m²	55m²
Nollamara	23.27	11%	24m²	49m²
Westminster	10.60	8%	20m²	43m²
SA2 total & average	33.87	9%	22m²	47m²
Scarborough	67.61	24%	47m²	87m²
SA2 total & average	67.61	24%	47m²	87m²
Stirling	69.63	39%	76m²	195m²
Osborne Park	1.26	2%	3m²	6m²
SA2 total & average	70.89	20%	54m²	122m²
Trigg	113.68	165%	427m²	1052m²
North Beach	70.78	84%	229m²	461m²
Watermans Bay	63.30	167%	541m²	1089m²
SA2 total & average	247.75	139%	358m²	775m²
Tuart Hill	10.77	8%	16m²	29m²
Joondanna	2.81	3%	6m²	7m²
SA2 total & average	13.58	5%	12m²	18m²
Wembley Downs	10.97	7%	19m²	46m²
Churchlands	8.46	13%	31m²	74m²
Woodlands	20.34	19%	51m²	118m²
SA2 total & average	39.77	13%	32m²	76m²
Yokine	63.48	26%	60m²	115m²
Coolbinia	5.34	11%	35m²	93m²
Menora	8.63	17%	32m²	76m²
SA2 total & average	77.45	18%	52m²	107m²

The City is therefore currently investigating different approaches in terms of residential public open space provision per person and per dwelling. **Table 43** compares the availability of residential public open space within the suburbs of the City of Stirling. The Table displays open space as:

- Per percentage of residential area (zoned land);
- Per sqm of POS per person; and
- Per sqm of POS per dwelling.

This data shows that the majority of suburbs in the City are over the recommended 10% allocation of residential public open space with only the suburbs of Doubleview, Westminster, Osborne Park, Tuart Hill, Joondanna and Wembley Downs not meeting the recommended 10% provision. Currently it has been identified that there are areas within the City which have an over provision of public open space and other areas where there is an under provision of public open space. Furthermore, projected population growth also needs to be considered in the planning and delivery of public open space. A different approach to calculating public open space will be considered as part of the City's Public Open Space Strategy review to more adequately reflect the changes, impacts and trends influencing the planning and delivery of Public Open

Space. This alternative calculation could either address Public Open Space area per person or Public Open Space area per dwelling. These alternative methods would allow the City to focus on areas of growth, and address issues of public open space shortfall or quality issues before they become significant issues. This however does not take into account any required residential public open space for the future projected population growth. Therefore either the POS area per person or per dwelling would be a more accurate assessment. This would allow the City to focus on areas of growth, and address issues of residential public open space shortfall or quality issues before they become significant issues.

Table 44 identifies the breakdown of open space within the City by category. Of the total area of all open space in the City, 59% are classified as either regional or district open space. These spaces, although having recreational value generally focus on sporting spaces. Community classified open space made up just 10% with local open spaces consisting of 41% of open spaces.

The majority of open space has been developed for sporting spaces over the last 50 years reflecting the fact that most people traditionally had sufficient private open space on their larger residential lots with single residential dwellings to undertake most needs except for organised sports.

Table 44: Percentage of Open Space by Type (Source: City of Stirling)

Rank	Type of Open Space	%
1	Regional Open Space	30%
2	District Open Space	29%
3	Community Open Space	10%
4	Local Open Space	41%

Table 45: Demographic Characteristics (Source: ABS)

Characteristics	Localities with Highest Percentages		Localities with Lowest Percentages	
Children (0-14 years)	Mirrabooka (26.9%), Gwelup (23.2%)	Balga (21.7%)	Glendalough (2.2%) Osborne Park (3.3%) Churchlands (3.5%)	Wembley Downs (3.5%) Herdsman (3.5%)
15 – 24 year olds	Churchlands (23.5%) Wembley Downs (23.5%)	Herdsman (23.5%) Glendalough (23.3%)	Gwelup (8.9%) Karrinyup (11.6%)	Inglewood (12.7%)
Seniors	Menora (26.5%) Coolbinia (26.5%)	Innaloo (19.3%)	Mirrabooka (6.3%) Churchlands (6.3%)	Wembley Downs (6.3%)
Couples without children	Gwelup (33.8%) Hamersley (33.7%)	Wembley Downs (32%)	Mirrabooka (18.3%) Osborne Park (18.4%)	Glendalough (19%)
Lone person household	Glendalough (53.6%) Osborne Park (55.3%)	Tuart Hill (48.2%)	Mirrabooka (17.5%) Gwelup (16.4%)	Stirling (16.3%)
Medium & high density housing	Glendalough (90.5%) Osborne Park (84.4%) Churchlands (74.8%)	Wembley Downs (74.8%) Herdsman (74.8%)	Gwelup (8.6%) Hamersley (9.2%)	Carine (9.6%)
Do not own a motor vehicle	Glendalough (21.1%) Osborne Park (15.6%)	Menora (14.1%) Coolbinia (14.1%)	Wembley Downs (3.35%) Hamersley (3%)	Carine (1.6%)

The demographic makeup of an area impacts on the demands and requirements of public open space within that community. The City of Stirling comprises of 31 suburbs and the demographic characteristics are not uniformly distributed. **Table 45** highlights 'Locational Variations' across the suburbs and indicates some key differentiations between demographic characteristics (according to 2006 ABS census).

Urban Public Open Spaces

With the significant increase in multi-level mixed use buildings in the City of Stirling a different form of public open space to that traditionally provided is required. This type of open space is referred to as urban public open space It includes such spaces as town squares and plazas.

The City has recently constructed town squares / urban public spaces in both the Mirrabooka Town Centre and the Scarborough Beach area. Approval has been granted for new town squares in both the Karrinyup and Innaloo shopping centre redevelopments which will be privately operated but publicly accessible.

Recreation and Community Facilities

A range of government agencies and non-government organisations provide and manage community facilities in the local government area. The State Government provides facilities such as law enforcement, emergency services and educational facilities, while one of the City's core roles is in delivering and fostering sustainable community based sporting and recreational services and facilities.

The following is a summary of the major community facilities that the City of Stirling provides:

- 15 community centres (including community and recreation centres). Some of these centres include podiatry services, children's health centres and day care centres);

- 7 leisure centres, including Terry Tyzack Aquatic Facility, Leisure Park Balga, and Scarborough Beach Pool (anticipated early 2017 opening);

- 5 Libraries – Osborne Park, Mirrabooka, Dianella, Scarborough and Karrinyup;

- 81 Clubrooms and/or change room facilities including both leased and licenced. These facilities cater for a range of sports including tennis, lawn bowls, surf life saving, football, cricket, soccer, hockey, athletics, lacrosse, rugby, baseball, teeball, BMX, scouts and guides and inclusive sports facilities such as the riding for the disabled facility.

- Adult Day Centres – these facilities are for older, frail residents as well as disabled and linguistically diverse residents. Services provided include stimulating activities and respite for permanent carers, as well as transport to and from the centres;

- Stirling Women's Centre – provides refuge for women subjected to domestic and family violence;

- Joe Camilleri Centre – The centre provides a service for people aged 18-65 with intellectual disabilities that reside within the City of Stirling boundaries.

- Mount Flora Regional Museum – This facility provides an historical look at the rich and diverse past of the City of Stirling;

- The Henderson Environmental Centre – This facility is a unique building design based on sustainability principles; and

- Hamersley Public Golf Course.

Other Community Facilities

There are many other community facilities that ensure that neighbourhoods are liveable and provide a good level of amenity. This includes the provision of schools, hospitals, fire stations and police stations and the like. The City of Stirling currently contains the following other community facilities:

- Police Stations – Scarborough and Mirrabooka;

- Fire Station – Osborne Park;

- Public Hospitals – Osborne Park;

- Public Primary Schools – 36

- Public High Schools – Churchlands, Carine, Balcatta, Mount Lawley, Dianella, and Balga;

- Colleges – Tuart College

- Universities – Edith Cowan University, Mount Lawley

9.2.2   Future Trends

The City of Stirling undertook a community profile analysis in 2016 to investigate the future needs of both public open space and recreation along with community facilities out to 2026 (WA tomorrow population projections). This community profile will help provide input into planning for future public open space and sport and recreation facilities for the whole of the City.

Residential Public Open Space

Over the next 35 years the City of Stirling will have to accommodate a minimum additional 60,330 dwellings with 75% of these dwellings to be accommodated along activity corridors and in Activity Centres. With this increase in dwellings (and people) the City's supply of residential public open space will come under increasing pressure.

As stated previously residential public open space has traditionally been measured as a percentage of the total residential land area. This has been set at a 10% public open space requirement in Western Australia for many years. This measure has worked well for the last 50 years as Perth has predominantly been characterised by single houses on large lots.

However over the next 50 years the City of Stirling will go through significant change with new apartments being built along the City's activity corridors and within Activity Centres. This will dramatically change the amount of private open space available to each person living in an apartment which is a considerable change where people have traditionally lived in single houses on blocks ranging between 500m² and 800m².

It is therefore considered that different measures are used to determine what a suitable amount of residential public open space is. The City suggests that there are potentially two other standard measures that can be used. These are the amount of public open space per person or the amount of open space per dwelling. Research conducted within Western Australia and internationally has arrived at different benchmarks for what is seen as an appropriate level of

residential public open space, particularly for people living in high density areas.

A definitive benchmark for the City of Stirling will be determined through sport and recreation and public open space planning. A preliminary assessment of the different benchmarks indicates that an initial City of Stirling benchmark of 40m² per person (4ha per 1000 people) would be a suitable amount of public open space until such time as detailed research is undertaken.

Table 46 highlights which areas of the City will come under the most pressure for residential public open space based on public open space per person by 2026 and 2050. The areas highlighted in green are where the initial 40m² benchmark is not achieved.

Increased demand on public open space in the future is inevitable based on forecasting and future population growth predictions. When modelled in this way, only two areas would meet the City of Stirling's minimum interim target of 40 m² of Public Open Space per person by 2050. The City will need to ensure that future planning and place based approaches integrates public open space needs as part of its wider objectives.

Table 46: Current and Projected Area of Open Space Per Person (Source: City of Stirling)

Locality	Area per Existing Population (m²)	Area per 2026 WA Tomorrow population (m²)	Area per 2051 Perth and Peel @ 3.5 million population (m²)
SA2	50m²	41m²	38m²
Balcatta			
Hamersley			
SA2	50m²	37m²	31m²
Balga			
Mirrabooka			
SA2	49m²	37m²	35m²
Dianella			
SA2	17m²	10m²	6m²
Innaloo			
Doubleview			
SA2	155m²	119m²	112m²
Karrinyup			
Gwelup			
Carine			
SA2	26m²	21m²	17m²
Mount Lawley			
Inglewood			
SA2 total & average	22m²	12m²	9m²
Nollamara			
Westminster			
SA2	47m²	30m²	21m²
Scarborough			
SA2	54m²	38m²	20m²
Stirling			
Osborne Park			
SA2	358m²	278m²	262m²
Trigg			
North Beach			
Watermans Bay			
SA2	12m²	9m²	7m²
Tuart Hill			
Joondanna			
SA2	32m²	23m²	22m²
Wembley Downs			
Churchlands			
Woodlands			
SA2	52m²	37m²	33m²
Yokine			
Coolbinia			
Menora			

Urban Public Open Spaces

Urban Public Open Spaces will become increasingly important in the future and it is likely that urban public open spaces will be required in all of the City's District and Neighbourhood centres and some of the larger Local Centres. It is anticipated that many of these urban public open spaces will be provided by the private sector as part of centre redevelopments. The City understands the importance of Urban Public Open Space and will be incorporating its provision into its detailed Activity Centre and Corridor planning, and within its various place based planning projects.

Recreation and Community Facilities

With the increase in dwellings and population growth within the City, it will need to ensure that the provision of sport, recreational and leisure facilities are efficiently delivered and meet the community needs. The City will benefit from the development of a strategy for sport, recreation and community facilities which integrates shared principles and predicted population and urban development growth locations to ensure a collaborative sustainable approach is taken to meeting future needs..

The increasing trends for recreational choice and the move towards more individual-based pursuits will mean that the existing infrastructure may require modification to address current demands, future trends and provide flexible spaces.

The City of Stirling has undertaken a community profile which has projected the amount of community and recreation facilities required in each local area. Table 47 is a summary of projected major facilities that may be required within the City of Stirling by 2026. with the expected increase in population.

Other Community Facilities

With an increase in the population of the City by approximately 145,000 people to a projected population of 370,800 people by 2050, there will be the need to ensure that there is adequate provision and distribution of community facilities within the City of Stirling.

The City has undertaken community needs assessments for the project areas of Stirling City Centre, Herdsman Glendalough and Mirrabooka Town Centre. For these project areas it was shown that there is a need for additional primary and high schools as well as police stations.

Community needs assessments will need to be undertaken to determine the future requirements for community facilities at 2050 predicted levels. In addition each relevant State Government agency will be responsible for undertaking their own needs assessment to determine the provision of future services. The City of Stirling will need to work closely with these State Government agencies to ensure that the community remain serviced with a suitable level of facilities.

Table 47: Current and Projected Major Community and Recreation Facilities (Source: City of Stirling Community Needs Assessment).

Locality	District Community Centres	District Recreation Centre	Aquatic Centre
Current Number of Facilities 2017	15	6	3
Number of Facilities projected by 2026	13	11	3

9.3   Local Context And Future Possibilities

9.3.1   Public Open Space Strategy

The City adopted a Public Open Space Strategy in December 2008. It provides a framework to guide the provision and development of all public open space within the City of Stirling for the next 15–20 years. The Public Open Space Strategy provides a basis for improving the service, delivery and quality of parks at identified major and minor reserves.

The Strategy Vision is to:

'Create a network of resource efficient quality public open space across the City that will satisfy current and future recreational needs in an equitable and sustainable manner.'

Identifying the appropriate facilities required for different types of public open space is a major element of this strategy). The facilities standards have been tailored to the identified role of the public open space as different types and amounts of facilities are required based on the size, function and amount of use of the space. This allows flexibility in responding to the unique nature and role of each public open space.

There is a need for people within the City to have access to a variety of different public open spaces, as no single space can meet all the sporting and recreational needs of a community. A hierarchy of public open spaces has been developed to support the City identify and deliver public open space in an equitable manner. This hierarchy is based principally on functionality, size, location and distribution. Starting with local open spaces being in close proximity so that they meet the daily/weekly needs of a neighbourhood, going up to larger spaces that can collectively meet a wider variety of needs and functions and that are shared among appropriate numbers of people, housing or areas.

To achieve this hierarchy, the City has identified different classifications of public open space: local, community, district and regional. These four classifications are intended to cater for different community catchments and recognise the relationship between the functionality of a space and its required infrastructure to serve a certain amount of people and/or functions. Other public open spaces in addition to the four listed above includes natural conservation areas and drainage which fit into the classification framework under ''special purpose'

9.3.2 Public Open Space Planning

A strategy for sport and recreation planning along with other key strategic planning documents such as population forecasting profiles will support the City's Public Open Space Strategy. Together this suite of documents will provide an ongoing mechanism which assists the City to identify priorities in relation to the provision of sport and recreation facilities and public open space to ensure we address future community needs.

The City will also need to consider strategies that will have to address the following issues:

• Cash-in-lieu and/or development contribution provisions to fund future acquisitions;

• Location of new public open spaces, possibly at the following locations:

  – East Roselea;

  – Stirling City Centre;

  – Atlas Landfill Site;

• Provisions to provide public open space on top of buildings; and

• Improved provisions for private open space and communal open space.

Table 48: Open Space Requirements (Source: City of Stirling)

Classification	Purpose (insert)	Size	Catchment	Location
Local		0.2 – 2 hectares	Serving approximate 400m walkable catchment	Local open spaces should be located on a pedestrian network and should preferably be located near or on intersections on local roads or through roads.
Community		0.5 – 5 hectares	Serving approximate 800m walkable catchment	Should be centrally located within the catchment and easily accessible to pedestrians and cyclists and public transport commuters. Street frontage is required on at least one local distributor or on or near intersections.
District		5 – 20 hectares	Serving approximate 1,500-2,500m radii	Location of these open spaces is usually determined by resource availability. District open spaces should be accessible to the entire population of the City of Stirling. Preferably schools are located in conjunction with district open space enabling joint use and maintenance of public open space such as playing fields.
Regional		30–80+ hectares	Serves all City residents. Principle catchment area is approximately 2.5km radius.	Location of these public open spaces is usually determined by resource availability and opportunities to utilise and/or protect the public open space. Street frontage is required for the majority of the perimeter of the space on distributor roads, with connectivity to the bus and/or train routes and cycle ways.
Special Purpose - Natural conservation		Variable	No specific catchment, need dispersal across City for accessibility.	Dependent on natural resource availability and opportunity to create or improve new or existing habitats. Natural conservation areas may either be an individual site or form a component of other public open spaces that fall under other classifications.

9.3.3 Recreation and Community Facilities

The City is required to undertake recreation and community facilities planning to ensure adequate provision of such facilities over the next 35 years. As part of facility planning and delivery the City will need to consider the following matters:

- Significant population growth, particularly along corridors and in centres;

- Change in demographics

- Future demands and trends;

- Sustainable facility provision such as provision standards;

- Significant changes in built form from single houses to apartments, resulting in changing needs;

- Facility priorities, funding availability and economic and social impacts; and

- Technological and climate change.

9.3.4 Other Community Facilities

The City of Stirling is required to undertake broad community needs assessments for large scale projects. These community needs assessments look at the provision of all facilities regardless of the provider. To date the City of Stirling has completed or started broad community needs assessments for the following areas:

- Stirling City Centre;

- Mirrabooka Town Centre;

- Herdsman Glendalough Area

Stirling City Centre

The Stirling City Centre Community Needs Assessment identified that the following facilities and services will need to be provided to deal with the expected 25,000 residents and 30,000 jobs within the Stirling City Centre:

- New Library;

- Museum;

- Regional Cultural Facility;

- District Community Centre;

- Police Station;

- Primary School;

- Possible High School;

- 2 new District Open Spaces;

- New Local Open Spaces;

- 6 new Urban Plazas; and

- Redeveloped Public Hospital

Mirrabooka Town Centre

The Mirrabooka Town Centre Community Needs Assessment identified that the following facilities and services will need to be provided:

- New Community Public Open Space; and

- 2 new Urban Plazas.

Herdsman Glendalough Area

The Herdsman Glendalough Area Community Needs Assessment identified that the following facilities and services will need to be provided:

- Possible Multi-Purpose Community Centre; and

- New Public Open Space;

- Upgrade of Regional Open Space; and

- New Urban Plazas combined with new development.

9.4 Summary Of Key Issues Of Public Open Space, Recreation And Community Facilities

9.4.1 Open Space Provisions

Over the next 35 years the City of Stirling will have to accommodate a minimum additional 60,330 dwellings (145,000 people), with 75% of these dwellings to be accommodated along activity corridors and in Activity Centres. With the increase in dwellings and people the City's supply of residential public open space will come under increasing pressure.

Public open space has traditionally been measured as a percentage of the total residential land area. This has been set at a 10% public open space requirement in Western Australia for many years. However over the next 35 years the City of Stirling will go through significant change with new apartments being built in Activity Centres and along Corridors.

This will dramatically change the amount of private open space available to each person. The pressure on residential public open space with the increases in dwellings and population numbers will be significant across the City.

The City of Stirling has set an interim benchmark of 40m² per person of residential public open space which will be further explored through sport and recreation and public open space planning initiatives. When each area is modelled for residential public open space using the initial 40m² per person benchmark only two areas in the City would meet this requirement in 2050, all other areas would have varying shortfalls of public open space.

The City will further explore this issue and develop appropriate strategies to identify how the City will meet the sport and recreational and public open space requirements of the projected population by 2050.

9.4.2 Changing Recreation and Community Facility Requirements

A large percentage of recreation and community facilities were constructed over the last 50 years at a time when the City was predominantly characterised by single dwellings on a large lot.

As a result of people having large lots where they could undertake numerous activities in their back yards most of the City's recreational facilities were geared for team sports and facilities for aged persons.

Over the next 35 years the City of Stirling will have to accommodate a minimum additional 60,330 dwellings (145,000 people), with 75% of these dwellings to be accommodated in Activity Centres and along Corridors.

With this increase in dwellings and people the City's recreation and community facilities will need to expand and increase to meet the demand of the growth areas in Activity Centres and along Corridors.

Key Issue 6.1
The City's investment in recreation and community facilities does not always support the urban growth in centres and corridors.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure the location and type of recreational and community facilities support the development of Activity Centres and Corridors.	Endeavour to locate community and recreational infrastructure within Activity Centres and along corridors to support their development.	Ongoing	CoS (City Planning, Engineering Operations, Community Services and Recreation)

Key Issue 6.2
There is a lack of Public Open Space in some areas.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure that public open space is sufficient and adaptable, in order to meet the various needs of the community.	Review, adopt and continue to implementation of the City's Public Open Space Strategy.	Ongoing	CoS (Recreation)
	Adopt a Local Planning Policy and undertake a Local Planning Scheme amendment for improved cash in lieu for Public Open Space in Local Planning Scheme.	Short - Medium	CoS (City Planning)

Key Issue 6.3
The changing demographics and usage is resulting in different demands for recreational and community facilities.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Provide high quality community facilitates which meet the changing recreational and community needs of the City's residents.	Undertake community needs assessments and detailed plans as part of Activity Centres and Corridor Plans, and place based planning studies.	Ongoing	CoS (City Planning)
	Develop a Strategy and subsequent delivery plan that addresses the sustainable provision of recreational and community facilities to meet community needs.	Ongoing	CoS (City Planning)

10. Urban Design and Heritage

10.1 Introduction

The City of Stirling plays an important role in creating better urban environments, including urban places and the network of roads and public space that link places together. This is achieved through the local planning framework, the local government's own works programmes, and its maintenance of the public domain and assets.

The range of styles and characters of urban areas in the City of Stirling is varied due to the size of the City. In terms of residential streetscapes, the older south eastern suburbs, such as Mount Lawley, Menora, and Inglewood are typically low-density single detached dwellings, mostly built between 1900's and the 1950's. As such, the built form has been recognised as historic and worthy of maintaining, and as such these areas are protected under character development guidelines. The coastal suburbs in the west were originally modest weatherboard holiday homes which have been replaced by larger two storey, modern homes designed to maximise views to the ocean. The newer northern suburbs such as Balga, Westminster, and Nollamara have been subjected to infill development which now dominates their streetscapes.

10.2 Background

10.2.1 Current Trends

Urban Design

Urban design is the practice of making high-quality connections between places and buildings for the enjoyable and safe activity of people. While creating places for people, urban design must respect and enhance the natural environment and use resources efficiently.

Urban design has evolved in the City from being the design of buildings in a spatial context, to encompassing the public realm and public space. Urban design is an integration of elements such as design, creativity, regulation and technology to form spaces that respond to the broad socio-cultural and political context. Awareness of good urban design is increasing through urban renewal projects taken on by the City, which embrace sustainability, community, environment and economy.

The built environment can impact on good design and the creation of people-friendly spaces and places. Physical activity is becoming a nationally significant issue, with many of the population now being overweight or obese (and the health problems associated with being overweight or obese). There is growing evidence that the quality of a designed place or space can impact on rates of physical activity, and the links to mental fatigue and stress.

Industry best practise shows that there are some key ingredients to good design (CABE 2002) :

- Partnerships within the local government as well as with external stakeholders;

- Building the local government's internal resources and design skills;

- Use of funding mechanisms, incentives, and other available tools to drive good design;

- Commitment to quality design and materials in private and public projects.

Activity Centres and Corridors

Within some of the City's older commercial precincts, built form and land uses are traditionally orientated around one 'main street'. These traditional Activity Corridors developed in an integrated manner with the historical tram network of Perth. Many of these traditional Activity Corridors have remained and now are undergoing a resurgence, examples include Inglewood, Mount Lawley and Main Street.

As private motor vehicle ownership rose in the early to mid 20th century, the design of retail and commercial precincts adapted to meet the needs of the changing consumers. The shift in commercial development was from main street precincts to 'big box' structures surrounded by car parks. Developers at the time assumed that these places were desirable shopping destinations due to their convenience and the ease of accessibility. Many of these centres are now under-performing due to changes in consumer behaviour, changes in demographics and a lack of consideration for urban design and social issues.

These under-performing commercial centres now present opportunities for redevelopment. Significant redevelopment plans have been announced for Karrinyup, Innaloo (in the Stirling City Centre) and Mirrabooka. Such redevelopment will seek to maximise diversity of land uses; encourage centres to be designed for walking, cycling and public transport; and encourage development more around a legible street network and quality of public spaces. The land intensification through higher densities could justify improvement and enhancement of public transport services along Activity Corridors. The renewal of these Activity Centres should provide an opportunity to improve the public spaces.

Residential Built Form

The State Government Planning Policy 3.1 - Residential Design Codes (R-Codes) apply across the residential areas and are integrated within the City's Local Planning Scheme. The R-Codes provide general site requirements for single houses, grouped dwellings and multiple dwellings. It provides design principles and deemed-to-comply requirements for elements such as streetscape, site planning and design, and building design.

The continual modification to the R-codes standards over the past 20 years has significantly diminished the original intent of the R-codes particularly density. Now an R40 density that allows multiple dwellings actually equates to a density of 75 dwellings per hectare rather than 40 dwellings per hectare originally permitted. In addition the R-codes have reduced front, rear and side setbacks, as well as the amount and quality of open space required. All of this has resulted in a significant reduction in the amenity of neighbourhoods and dwellings, particularly in the R-40 coded areas of the City. This has led to significant tree loss, increase in hard surfaces and a loss of landscaping.

With a strategic push towards urban consolidation, and greater rates of infill development, the City has a preference for introducing form-based code guidance as part of its place based approach.

Within some of the older suburbs the local government has recognised the importance of maintaining a traditional streetscape. As such, the built forms in the suburbs of Mount Lawley, Menora and Inglewood are regulated by development guidelines. These guidelines aim to protect the character and appealing streetscapes and includes a standard of design for housing that specifically relates to the context of these suburbs.

Heritage

The City recognises that its built heritage is a valuable asset that contributes towards the City's social, environmental and economic prosperity. The City's post-settlement built heritage is diverse, reflecting the varied settlement patterns and history across its area. Its heritage is worthy of acknowledging and protecting or enhancing for the appreciation, benefit and enjoyment of future generations.

Several surveys of heritage have been taken over the past 25 years, including:

- The development of the City's District Planning Scheme (1985);
- Compilation of the Municipal Inventory (1997); and
- The Heritage Areas Study (1999).

The Heritage Areas Study was initiated due to the strong indications of heritage areas through the notable "clustering" of Municipal Inventory properties. Amongst others, the study identified three areas of exceptional significance: Mount Lawley, Menora and Inglewood.

The City has heritage protection included within the Local Planning Scheme for the suburbs of Mount Lawley, Inglewood and Menora. These controls ensure that existing buildings built prior to 1960 are preserved and conserved. In addition these controls ensure that new buildings or extensions to existing buildings are built in an appropriate pre 1960' architectural style, that is reflective of the character and heritage of the area.

10.2.2 Future Trends

Urban Design

The City of Stirling has large areas across the City of traditional low-intensity development. The City's location, historic settlement pattern and origins have all contributed to the current condition and activity mix. It is facing increasing pressure on its urban form and capacity for effective change.

The City's place based planning approach through the Better Suburbs project offers a chance to achieve intensification in the right areas – Activity Centres and Corridors – whilst generating improved performance outcomes from the retention of upgraded low-density areas.

Attempting to retro-fit increased density development in areas not well serviced by public transport is unlikely to be a viable proposition. Instead the quality of these areas needs to be enhanced, while introducing greater sustainability.

The City integrates urban design principles into a number of its major projects, such as the Beaufort Street Activity Corridor, Herdsman Glendalough Area, Scarborough Beach Road, Mirrabooka and Stirling City Centre. Other projects have included place making projects which have culminated in the preparation of Place Activation Plans for Main Street and Scarborough Beach Road.

Activity Centres and Corridors

The Strategy focuses on encouraging appropriate investment that would support the (re)development of well-designed centres, with fine-grained urban form and streets that are people-friendly. The built environment within these Activity Centres and Corridors will be an example of high quality spaces and places. Intensification of commercial, offices and other related urban land uses within the various Activity Centres and along Corridors is required to:

- Increase workforce numbers and local self-sufficiency of employment;
- Generate greater pedestrian activity;
- Provide flexibility through robust design;
- Encourage land uses which generate 24 hour activity;
- Create a focus for the community and place-making; and
- Increase potential usage of public transport.

To provide a diverse network of Activity Centres whilst preserving the amenity of residential areas, growth will be facilitated in and directly around Activity Centres (including neighbourhood centres). Planning for these centres will provide a range of land uses. By encouraging development in and adjacent to these centres, the City can meet land use demands, control development and preserve residential neighbourhoods. The principles for creating a transit-oriented development in Activity Centres and Corridors include the following:

- Analyse and design the improvement of the Activity Centres and Corridors to be tied to the improvement of the wider residential area;
- Improve and support increased public transport use through improving the attractiveness of the precinct, the intensity of uses, dwelling densities and diversity of housing types;

- Provision of Infrastructure – particularly at the transit stops/stations, including possible private development of integrated commercial/retail uses with transit facilities;

- Upgrading the function and amenity of streets to serve as the primary pedestrian and cyclist environments;

- Ensure a highly connected and legible movement network to facilitate the most efficient and direct movement; and

- Encourage an active frontage to all streets to maximise passive surveillance and safer streets.

Residential Built Form

There is a significant issue in the low-medium development within several residential (R40) areas of the City of Stirling. Grouped-dwellings and poorly designed apartment buildings are becoming common and an alternative solution needs to be found to improve streetscape character, tree retention, internal amenity, and general liveability. Through the City's place based planning approach, the City aims to facilitate better outcomes for the community. This will work across the City and support built form codes that apply various developed character types to identified areas, each of which respond to a range of important local factors.

These will include revised standards for setbacks, height, open space, tree retention, and additional density in appropriate locations, to ensure an improved built form outcome. There is significant opportunity to improve built form outcomes, and correctly handled, medium-density development can create great places for residents and the wider community.

The State Government has recently released the Draft Apartment Design Codes for multiple dwellings and the City is supportive of this State wide approach with the flexibility for Local government to adapt these to local circumstances. It is understood that the State Government is also likely to prepare low – medium density design codes aiming to address the issues raised with group and single dwelling. The City will continue to work and collaborate with the Department of Planning on the development of these codes.

Heritage

The City recognises that its heritage is a valuable asset, which is important to its social, environmental and economic prosperity. Accordingly the City is pro-actively seeking to identify, protect and promote its heritage.

The City has developed a Heritage Management Strategy to provide clarity on its commitment to heritage management. This includes ensuring that the management of its heritage assets occurs in a coordinated and effective manner, and capitalising on the many benefits that its heritage affords. The Heritage Management Strategy has been prepared to provide guidance on the City's approach to heritage management. The Strategy provides a clear and concise commitment and approach to the management of heritage assets.

An Action Plan has been included as part of the Heritage Management Strategy and identifies specific actions (Initiatives) under each of the four themes of the Strategy. These being:

Understanding – the City will seek to identify, assess and document its heritage in line with the principles and practices of the Burra Charter.

Protecting – the City will safeguard its heritage for current and future generations by maintaining and reviewing its Heritage Protection Areas, Heritage List and associated policies.

Sustaining – the City will continue to build partnerships and capability amongst the broad range of stakeholders involved in its heritage in order to share knowledge and expertise and provide incentives and resources to help sustain its heritage outcomes.

Celebrating – the City will celebrate and promote its heritage through its biennial heritage awards and other events in order to promote local distinctness and those places/stories/events which help shape the on-going evolution of the City.

The future implementation of the Heritage Management Strategy will assist the City to manage its heritage for future generations. It will have a strong focus on collaboration and developing partnerships to strengthen efforts and maximise resources amongst a broad range of stakeholders.

10.3 Local Context And Future Possibilities

10.3.1 Urban Design

Activity Centres and Corridors

The City considers high quality urban design of Activity Centres and Activity Corridors to be crucial to ensuring successful infill development is achieved. The physical layout of an Activity Centre can influence how people travel to and through a centre. Activity Centres and Corridors that are less designed around private vehicles, with emphasis on walking, cycling and public transport, will encourage people to be more physically active. The design of the Activity Centre and Activity Corridors, as well as planning for a mix of land uses, support a shift to healthier and more sustainable transport options.

To achieve this outcome all of the City's Activity Centres and Corridors will need to adopt the 'main street' design principles to ensure that buildings interact with streets, public plazas and/or parks. The core of the centre should be greater than one storey in height, and public space should be appropriately detailed to a pedestrian scale. Main street designed centres will generally consist of a two sided main street with a road reserve generally being 20m in width with on-street parking. The main streets should also generally be on roads that have sufficient passing traffic to ensure the viability of the centre.

Form based codes will guide the development of the City's Activity Centres and Corridors to ensure that active uses are located on the ground floor of the main streets with mixed use above. Parking should be sleeved from view of the street.

In the residential precincts of Activity Centres residential development should be setback from the street to allow sufficient space for trees, landscaping and ensure sufficient separation from the street and habitable rooms. This may include semi basement car parks to allow a vertical separation between residential uses and the street.

Transit Oriented Development

The Local Planning Strategy aims to align with Perth and Peel @3.5million and contribute towards a connected city, by optimising land use and transport links between centres. The integration of land use and transport planning within Activity Centres and along Corridors will support a range of activities and land uses. Transit Oriented Development will facilitate a more compact, mixed use urban form that is supported by reliable and frequent public transport.

The trend towards Transit Oriented Development provides for an urban structure of walkable neighbourhoods to form centres of compatible mixed uses. This will reduce car dependence and increase access to employment, retail and community opportunities/facilities. Higher residential densities and mixed use developments within walkable catchments of transit facilities have the potential to reduce car dependence. A well connected network and hierarchy of these Activity Centres provide a more equitable distribution of jobs and amenity throughout the local government area.

The 'business as usual' approach to development is not sustainable. The City of Stirling is embarking on several Transit Oriented Development projects and through these projects, identifying solutions to the public transport issue. The Stirling City Centre and the Herdsman Glendalough

Area are aiming to deliver an unprecedented level of commercial and residential development, to be supported by public transport. Scarborough Beach Road has been identified as a major Activity Corridor.

The envisaged redevelopment of the Stirling City Centre and Herdsman Glendalough Area will only be feasible if it is supported by a highly efficient public transport system. With adjacent freeway and arterial roads reaching saturation, and with limited scope to increase their capacity, the focus of the future transport strategy is on increasing the capacity of the passenger rail system and creating a more efficient feeder public transport service.

A rapid transit system along Scarborough Beach Road will provide the essential movement capacity for an expanding workforce and resident population. It will also act as a catalyst for land use change and built form. It will attract patronage by residents, employees and visitors alike. A clear commitment to the timely delivery of a high quality public transport service will provide certainty for developers, attract significant employment generators and provide a convenient alternative to private motor vehicle use.

Residential Areas

The decline in private open space (through generally smaller lot sizes), amenity and tree coverage will be addressed through aplace based planning approach. These new set of residential standards with form based outcomes ensure that increased tree coverage, more private open space, less hard surfaces and greater amenity for residents.

The City is supportive of the intent of the State Government's Design WA initiative that allows a local government to undertake precinct planning to allocate appropriate form based codes. This will give residents the certainty of what type of development that will occur in a locality. In addition the development of a single and grouped dwelling design code is also critical to ensure the decline of amenity in the City's suburbs.

Urban Tree Coverage

The urban tree canopy across the City of Stirling is declining at a substantial rate. Approximately 75 trees are removed each week in the City, mostly from residential land. If the business as usual approach continues only approximately 6% of residential land will be shaded by trees.

The City of Stirling is in the process of developing an urban forest strategy to address this and identify other actions the City may take to protect the City's trees and tree canopy cover. The City has recently adopted tree planting provisions into its Planning Scheme that requires one tree to be planted (or retained) per 500m² of private land, when development is proposed.

Design Review Process

Design review is the process of evaluating the design quality of a development proposal. Several Local Governments within Western Australia (Cambridge, Subiaco, Victoria Park) already use a various mix of design review panels. The panel provides impartial expert advice to applicants and local governments on design issues in relation to new

developments and proposals. They consist of a panel of appropriately-trained built environment experts, who offer objective and constructive design advice.

Good design should be indivisible from good planning. The current performance-based design principles contained within the R-Codes identify the objectives to be met without prescribing how to achieve them. They allow flexibility for developers and designers to provide innovative solutions to design challenges. Design review is an essential component of this approach, as qualitative assessment is required to determine whether the required outcomes have been achieved.

Research from the UK, Europe and the US demonstrates that investment in good design generates significant economic and social value. Engaging in design review improves the design quality of projects and could speed up the planning process. This should lead to the quicker delivery of high-quality buildings, and provide places with a wide range of benefits to occupants, neighbours and the broader community.

Urban Spaces

Urban space are central to the public realm which expresses culture, community, equity and good governance. It includes spaces and places that are used by the community, such as town squares and public open space, and the links between these spaces. The quality of an urban/open space depends on the function it serves and how well it serves that function. The function of a place can be determined by its appearance, ability to accommodate different activities, and the experiences within the place/space.

Urban spaces can be considered in a design sense from the layout/dimensions of the space, what defines its layout (buildings, roads, vegetation, other edges), and the interaction between the space and the activities surrounding it. This also depends on how public (or private) the space is designed to be. Therefore, the design of the space can deal with sunlight, ventilation, privacy/overlooking, its sense of place, its liveliness and how open or enclosed it is.

Ultimately, the contribution of public spaces to civic life is dependent on the quality of the spaces. A good quality space should in turn be attractive, relaxing, accessible, safe and open to a range of community/social activities.

It is envisaged that each of the City's Activity Centres and Corridors contain urban spaces for people to meet and congregate. They may also include spaces for low cost markets that enable residents to buy and sell goods.

Public Art

Public art is usually located in the public realm and enhances the built environment. Public artworks are incorporated in the City's many parks, foreshore areas, recreation centres, streets, landscapes, libraries and civic centres. These include sculptures, mosaic features, street furniture and wall murals etc.

The City is committed to enhancing the built environment especially within regeneration projects where there is opportunity to commission public art. It will also encourage public art to be provided as part of future major developments whether public or private. To enable this, the City in August 2018 adopted Local Planning Policy 6.12 - Public Art on Private Land.

Crime Prevention through Environmental Design

Crime Prevention Through Environmental Design (CPTED) principles and designing out crime strategies, such as those detailed in the WAPC's Designing Out Crime Planning Guidelines (2006), are intended to provide a best-practice solution and can be incorporated into both public and private developments.

Positive features include having more passers-by on streets, more visible neighbours on the streets, good visual relations and more visual continuity along roads and between spaces.

In order to address crime, including the fear of crime as well as antisocial behaviour, closed circuit television (CCTV) surveillance should be utilised within identified and certain high risk areas. The City will actively incorporate CPTED principles into its planning framework and development approvals.

Water Sensitive Urban Design

Water Sensitive Urban Design integrates water management into urban planning and design. This involves integrating stormwater in the landscape that maximises the visual and recreational amenity of the public realm.

The stormwater drainage system can be utilised for its aesthetic qualities within parklands and walking paths, making use of natural topography. Integrating stormwater into the built environment minimises drainage infrastructure cost, whilst enhancing natural features that improves the visual quality within the area.

10.3.2 Heritage

The Heritage Management Strategy 2016-2020 has been adopted as part of the City's commitment to built heritage management. The vision set by the Heritage Management Strategy is:

To improve awareness and foster a greater appreciation of the City's rich and diverse heritage and to collaborate with the community to safeguard, sensitively adapt and celebrate our heritage for the benefit of present and future generations.

The Heritage Management Strategy provides a framework to guide the City to comprehensively identify, protect, manage and promote its heritage. It allows the Council to:

- Identify positive heritage measures already employed by the City;

- Identify and prioritise work to be done in the future;

- Appropriately manage and monitor the heritage assets; and

- Report on and celebrate achievements.

The objectives of the Heritage Management Strategy are as follows:

- Continue to ensure the City's planning policies facilitate the sound conservation, successful adaptation and harmonious development of the area's heritage places in a fair and consistent manner;

- Provide encouragement, practical advice and support for the range of stakeholders involved in the care and conservation of the City's heritage;

- To raise public awareness, appreciation and understanding of the City's heritage through education and promotion; and

- To promote research, analysis and an understanding of the City's heritage to ensure a sound knowledge base and to assist stakeholders make informed decisions.

In order to achieve the heritage vision and delivery of heritage management, the Heritage Management Strategy incorporates an Action Plan, with high, medium and low-priorities and ongoing actions.

Heritage Protection Areas

The exceptional character of Mount Lawley and portions of Menora had previously been identified by the National Trust, prompting the City to adopt Design Guidelines for a Special Design Control Area in 1991. Following a Heritage Areas Study the three Heritage Protection Areas of Mount Lawley, Menora and Inglewood were formally identified in the mid 1990's and afforded further development control through incorporation into the District Planning Scheme No. 2 in 2000. Furthermore, Character Retention Guidelines were endorsed to ensure renovations and new developments were in keeping with the character of the areas. These Character Retention Guidelines were further reviewed in 2004-2006 with greater controls being incorporated to limit the demolition of traditional buildings within the areas. The City's current Local Planning Scheme No. 3 identifies all three Heritage Protection Areas as one Special Control Area – Heritage Protection Area, applicable to both residential and non-residential zoned land. An audit of development within the Heritage Protection Areas and subsequent review of the Character Retention Guidelines was complete in 2012.

Local Government Heritage Inventory and Heritage List

The City's Local Government Heritage Inventory was adopted in June 1997 following an extensive survey. The adopted Inventory includes approximately 485 properties. A Heritage List was introduced into the District Planning Scheme No. 2 in 2006. These provisions remained unchanged with the gazettal of the current Local Planning Scheme No. 3. Eighteen properties are included on the City's Heritage List. Both the Local Government Heritage Inventory and Heritage List are subject to review, with the intention to create a more robust list, with clear and concise management practices for building protection and preservation.

State Heritage Listings

Seven properties within the City are entered on the State Register of Heritage Places. The City has previously received grant funding to facilitate their Conservation Plans and Management Agreements.

Incentive and Promotion Programmes

The City recognises the importance of incentive and promotion programmes to ensure the ongoing protection and appreciation of its local heritage. The City currently runs, or participates in, the following programmes:

- Participant in the Property Institute of Australia Heritage Values Study;

- City of Stirling Heritage Awards, held biennially;

- City of Stirling Heritage Site Marker program;

- City of Stirling Heritage Grants fund

- City of Stirling Rates Concession for Heritage listed Properties program;

- Heritage Trails (Scarborough, Trigg, and Mount Lawley – Inglewood); and

- Heritage Walks and Talks.

10.4 Summary Of Key Issues Of Urban Design And Heritage

The City can assist in directing development opportunities towards higher quality urban design outcomes. An emphasis on redevelopment within Activity Centres and Corridors can help redirect housing pressure from lower-density residential areas. Within lower-density areas, there is an added opportunity to facilitate tree planting and maintaining areas of private green space.

The design of Activity Centres and Corridors needs to follow best-practice methods to ensure that high quality spaces and places are created. Plans prepared for Activity Centres and Corridors will aim to ensure high quality urban design principles are adopted. Activity Centres and Corridors would emphasise walking, cycling and public transport, generally adopting Main Street principles. Active street frontages, sleaving of car parking areas, and activation of the public domain will contribute to an environment that will encourage pedestrian activity. In addition, a mix of land uses will help activate these Activity Centres and Corridors whilst contributing towards a shift towards public transport from the private car.

The public domain needs to be safe and easily accessible for everyone. It needs to include the appropriate infrastructure to support walking, cycling and public transport. The look and feel of the public domain can determine whether people feel safe and enjoy the space. As streets regain an emphasis for pedestrian, cycling and public transport, the City's place based planning approach should provide policy guidance and design requirements for typical road cross-sections, ensuring footpaths, street trees, street furniture and on-street parking are accommodated and well designed.

In order to enhance the built environment, express our cultural identity, and involve our community, the City of Stirling is committed to ensuring public art is installed in various public areas. These artworks could include sculptures, mosaics, street furniture, and wall murals. The City will seek to implement Local Planning Policy 6.12 - Public Art on Private Land to guide the provision of public artworks associated with major developments.

The Designing Out Crime Planning Guidelines can assist in developing best-practice solutions that can be incorporated in public and private sector developments. Ultimately, the intensification of urban areas will ensure more people are on streets, which can contribute towards lower incidences of opportunistic crimes. Visible neighbours on the streets and surrounding open areas, more visual continuity along roads are all useful for improving safety and security.

The built environment within the City demonstrates many high quality examples of the traditional settlements that emerged throughout the district. Mount Lawley, Inglewood and Menora would be regarded as containing many exceptional examples. The City will ensure that future development of these areas will not detrimentally impact on their heritage character. The City is committed to implementation of the Heritage Management Strategy to ensure it manages its heritage for future generations, and will systematically review the City's heritage protection to ensure that it remains robust.

Key Issue 7.1
Current redevelopment and residential infill is resulting in a loss of trees, reduction in private open space, and poor design.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure development results in improved design that accommodates green spaces and trees.	Undertake detailed planning (such as an Activity Centre plan) or the "Better Suburbs" program to improve the design of development occurring in the City's suburbs, Activity Centres and Corridors. Focus on greening private spaces, providing more tree cover (both private and public spaces) and improving the quality of places and streets.	Ongoing	CoS (City Planning)
	Establish a professional design review process to ensure a high standard of development and ensure the City's Planning Framework results in quality design.	Long	CoS (City Planning)

Key Issue 7.2
The City's centres and corridors are poorly designed and lack a mixture of uses.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Support street block sizes that promote the use of public transport, cycling and walking.	Ensure Activity Centre and Corridor plans, along with place based planning projects such as the "Better Suburbs" program. Promote smaller street block sizes and incorporation of 'main street's' to improve walking, cycling and public transport use.	Medium	CoS (City Planning)
Ensure buildings address and activate the street.	Require suitably located non residential development to have an active frontage to the street through Activity Centre and Corridor plans or place based planning projects such as the "Better Suburbs" program.	Ongoing	CoS (City Planning)
	Include provisions within the City's Planning Framework to avoid non-residential car parking fronting and dominating the street.	Medium	CoS (City Planning)
Increase public spaces in centres.	Require new, or upgraded public spaces to be provided as part of Activity Centre and Corridor Plans or place based planning projects such as the "Better Suburbs" program.	Ongoing	CoS (City Planning)
Ensure a mixture of uses.	Ensure that a mixture of residential, non-retail, community and recreational uses are mandatory requirements in the planning framework of Activity Centres and Corridors or place based planning projects such as the "Better Suburbs" program.	Ongoing	CoS (City Planning)

Key Issue 7.3
The quality of the public realm in some locations of the City is poor.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure the City's streetscapes are green, shady and tidy.	Develop and adopt a street design framework to ensure footpaths, street trees, street furniture and embayed (indented) parking is provided.	Short	CoS (City Planning)
	Identify priority locations for streetscape upgrades.	Medium	CoS (City Planning)
Require public art and/ or street furniture as part of higher density development.	Develop and implement a Public Art Policy.	Medium	CoS (City Planning)

Key Issue 7.4
Development does not always address crime prevention.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure developments within the City address crime prevention.	Incorporate 'Crime Prevention Through Urban Design' principles into existing planning policies, Activity Centre and Corridor plans and place based planning projects such as the "Better Suburbs" program.	Ongoing	CoS (City Planning)

Key Issue 7.5
The City's heritage protection measures are often challenged.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Protect the built heritage within the City.	Implement the City's *Heritage Management Strategy*.	On going	CoS (City Planning and Community Development)
	Review residential coding of the Heritage Protection Area to remove any conflict with heritage protection objectives.	Medium	CoS (City Planning)
	Maintain and monitor the City's existing heritage protection system to ensure that it is robust.	Ongoing	CoS (City Planning)

11. Traffic and Transport

11.1 Introduction

The development of the City of Stirling has been influenced by a number of transport trends over the last 100 years. From 1900 to 1950 the development of the City was mainly based around trains, trams and trolley buses with higher levels of walking and cycling. The built form in this era matched the transport modes with housing located close to these transport corridors with no garaging and many small street based centres that were friendly for people.

The next 60 years of development has been around the motor car. During this period the City's road network has been developed with new freeways and arterial roads. Cycling and walking facilities have reduced significantly and land uses have been developed entirely around motor car transport. This has included new subdivision away from public transport services, larger homes with double garages and centres with 'box' style shopping malls surrounded by large areas of car parking.

In the next 50 years to achieve sustainable outcomes the City needs to transform its land use and transport system to be focussed around mass transit along corridors and within centres and increase cycling and walking participation by 2050. The City of Stirling needs to accommodate a minimum additional 60,330 dwellings and 75% of this growth is required to be around Activity Centres and along Activity Corridors. The City's vision is to facilitate the delivery of new heavy rail, light rail and bus rapid transit lines along key corridors that will link the City's centres. The City's built form will have to change, to incorporate more multi-level apartments with less parking located in and along Activity Centres and Corridors, with street based parking and multi-level parking screened behind buildings.

In order to achieve this transformation the City will need to manage the amount of car parking, to ensure that it matches the road capacity and support alternative transport infrastructure. This will deliver a sustainable transport system that enables the community to efficiently and effectively move around the network.

By not achieving these objectives, expensive road widening, land resumptions and grade separations of the major road network will be required. These solutions will only deliver low volume capacity increase due to traffic lanes for cars only delivering the lowest capacity per lane compared to public transport.

Widening and grade separating of the major road network will lead to urban blighting and dislocation of neighbourhoods due to the increased size, noise and pollution of these major roads. This is likely to result in reduced walking, cycling and public transport use due to a reduction in amenity.

The preferred alternative is to proactively plan, fund and deliver the alternative transport infrastructure up front, with reductions in car parking and rezoning's and new built form to promote growth along the City's corridors and around centres. This will ensure that the City will create high amenity urban boulevards and Activity Centres with low emissions transport solutions providing long term people moving capacity.

Background

11.1.1 Current Trends

Movement throughout the City is largely by private motor vehicles, and since the 1950's (the time period over which most of the City was developed), the focus in planning for transport has largely been to build roads and provide for this private car use. This has subsequently increased car dependency, with currently 70% of trips made to work in the City being made by motor vehicle. In contrast, there are low proportions of people who walk and cycle as outlined by **Figure 50**.

Notwithstanding the high levels of car dependence by City residents, there has been consistent patronage on the two train lines within the City over the previous five years (**Figure 51**).

The general trend of bus patronage within the wider Perth metropolitan area has grown considerably since 2003-04 (**Figure 52**), which will be generally reflective of bus usage within the City of Stirling. This suggests a growing demand for alternative transport modes. However with the economic slowdown within Perth due to the mining downturn, short-term dips in user numbers may occur, whilst the employment market adjusts from previously being Perth CBD centric.

Alternative transport modes, such as public transport, cycling and walking have historically been given lower priority to private car use within the Perth metro area. As a result, throughout the City of Stirling there are gaps in the public transport network.

Increased traffic congestion coupled with increasing running costs, parking management and the growing awareness of the environmental impacts of private motor vehicles has resulted in alternative transport modes becoming a higher priority on the transport agenda.
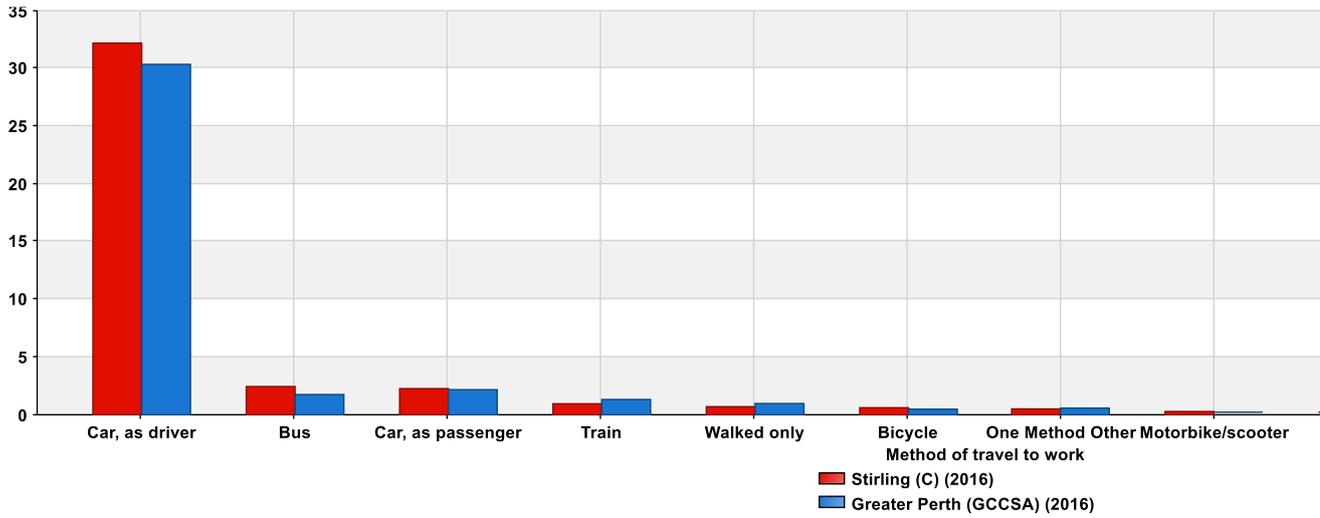
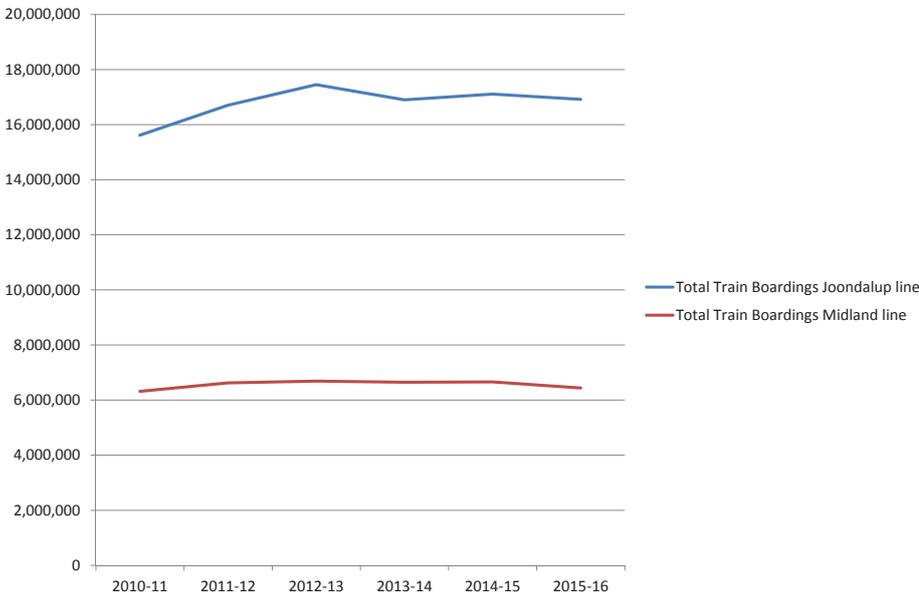**Figure 50: Mode of Travel to Work, Working in Stirling (Source: REMPLAN 2016)**

Figure 51: Total train boarding numbers on train lines into and through the City of Stirling (Source: Perth Transit Authority).
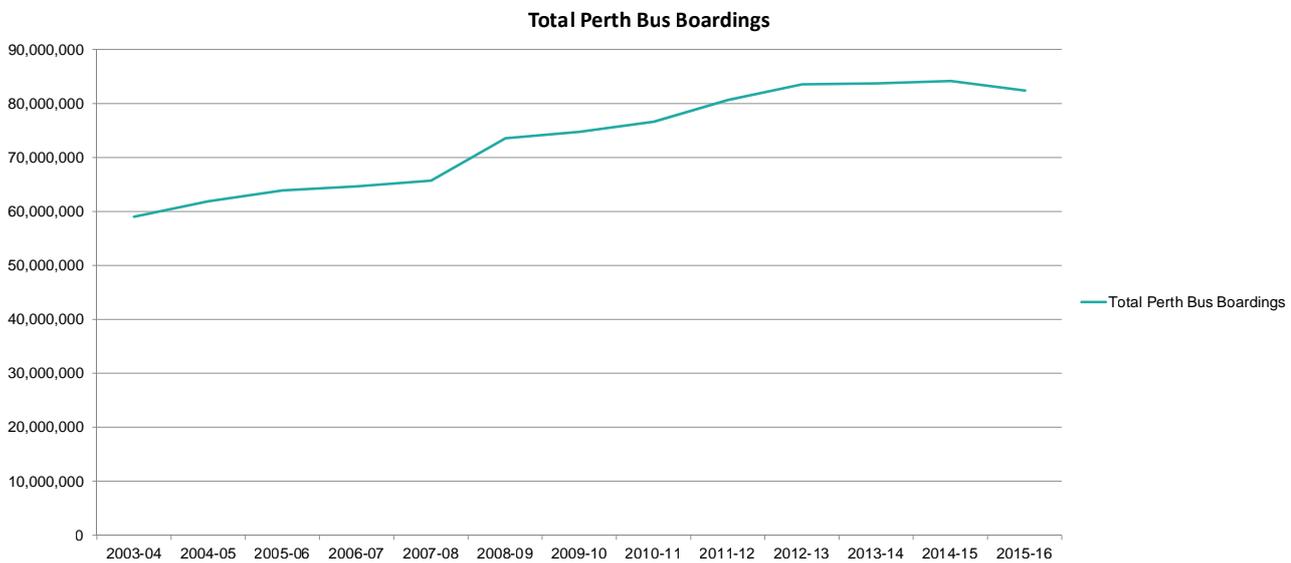

Figure 52: Total bus boarding numbers for the Perth Metropolitan area (Source: Perth Transit Authority)

11.1.2 Future Trends

For the City of Stirling to accommodate a minimum additional 60,330 dwellings, the City's existing transport system will have to be expanded significantly.

Continued high use of the motor car is not sustainable without significant and costly upgraded to the City's road network. Without expensive land resumptions, this widening of roads and grade separation of key intersections, to increase the capacity of the road network car use will not be able to grow.

The alternative is for the City to transform its land use and transport system to be focussed around mass transit along Activity Corridors and within Activity Centres and increase cycling and walking infrastructure. This approach will be cheaper, require less land and provide significantly greater people moving capacity than the equivalent road upgrades. Heavy rail can move significantly more people per hour compared to cars within the same land area. Light Rail can move approximately 15,000 people per hour and can be provided within existing urban environments. It can also be used as a tool for urban regeneration and increase residential density.

The City will need to work with State Government to plan and assist in the facilitation of new heavy rail, light rail and bus rapid transit lines along key Activity Corridors that will link the City's Activity Centres. In addition walking and cycling infrastructure needs to be increased. The development and uptake of electric and driverless cars will also need to be monitored, to ensure sufficient infrastructure is provided.

Perth and Peel@3.5million – The Transport Network

The Perth and Peel@3.5million - The Transport Network was adopted by the State Government in March 2018. It has implications as well as opportunities for improved transport planning, that will directly benefit the residents, businesses, employees and visitors that travel to and within the local government area.

While population growth brings enormous opportunities, it also increases demand on the State's transportation network. As Western Australia grows to a population of 3.5 million, it will require fundamental changes to the city's transport network to adequately service the areas of growth. It is clear that the State Government will need to plan for a robust transport network that will drive urban growth around transportation infrastructure and enable high levels of accessibility for work, education and other activities. One of the Government's key priorities to achieve moving people efficiently, while integrating with land use opportunities, is METRONET. METRONET will ensure land use and transport outcomes combined to link diverse urban centres together and provide opportunities for greater density and infill development throughout Perth.

The Perth and Peel@3.5 million – The Transport Network document was developed and integrates with the State Governments strategic planning framework of Perth and Peel@3.5million, particular the detailed sub-regional planning frameworks, of which the City Of Stirling is located within the Central planning framework. The Transport Network document however does not directly relate to the Perth and Peel @3.5million growth plan with many inconsistencies, particularly between the timeline and locations of where new transportation infrastructure is proposed and where residential density is required to meet the growth targets set by the Perth and Peel@3.5million.

City of Stirling Integrated Transport Strategy

The City of Stirling adopted the Integrated Transport Strategy in November 2009 to provide a strategic approach to transport planning in the City. This sought to enhance social, economic and environmental outcomes throughout the City. The Integrated Transport Strategy was prepared with 5 key objectives:

- To encourage more sustainable transport of people and goods;

- To enable efficient movement of people and goods;

- To improve accessibility for pedestrians, cyclists and public transport users to a variety of destinations;

- To equitably provide for transport needs throughout the community; and

- To encourage public transport modes over private transport modes.

The Integrated Transport Strategy highlights the new public transport infrastructure required to meet a growing City and deal with road capacity issues, including:

- New heavy rail along Reid Highway connecting the Joondalup line to the Midland Line;

- New light rail along Wanneroo Road, Beaufort Street and Scarborough Beach Road; and

- New high frequency bus routes connecting East West across the City of Stirling.

11.2 Local Context And Future Possibilities

Mode Share Targets

The current travel patterns in the City heavily favour the motor car, however over the next 50 years the mode share of the alternative forms of transport will have to grow significantly, to ensure that access and movement through the City remains efficient. This includes a large increase in public transport, cycling and walking mode share. This change is required to ensure that the capacity of the road network is not exceeded which would require expensive and sensitive land resumptions. These would not deliver the required urban design outcome or the required long term capacity. Increases in public transport mode share, walking and cycling are the cheapest forms of transport to construct per person, compared to car ownership. Alternative transport options can support the development of higher density, site appropriate locations, reduce travel times and support economic development. The current journey to work mode share and mode share target for 2031 is outlined in **Table 49** below.

Table 49: Journey to work Mode Shares (Source: City of Stirling)

Mode / Share	2011 – Target %	2031 – Target %
Car (Driver)	75	48
Car (Passenger)	7	17
Public Transport	13	20
Walking	3	10
Cycling	2	5

11.2.1 Public Transport Network

The mode share of public transport has to increase significantly to ensure that the increasing population can move around the City efficiently and effectively. In order to achieve this, numerous initiatives will have to be realised. However the overriding issue will be the reallocation of funding from Local, State and Federal Governments towards the delivery of public transport over more roads. This requires a transformational shift in thinking, funding models and legislation for it to occur. The City will be investigating the possibility of value capture from potential development uplift through improved transport and land integration.

The current percentage of public transport trips for journeys work is 13%. The City's target is to achieve 20% public transport trips for journeys to work.

Current Heavy Rail

The primary railway transport corridor traversing through the local government area is the Northern Suburbs (Joondalup) railway line. Train stations are at Glendalough and Stirling, whilst the Warwick Station is located on the City's northern boundary with the City of Joondalup (refer **Figure 53**). The Midland line is also partially within the local government area, with one station at Mount Lawley.

The patronage of rail services in the City has consistently increased since the introduction of the Joondalup line, and are now at capacity during peak times.

The existing train stations on the Joondalup line do not integrate well with the surrounding land use. The City is nearing completion of Activity Centre plans for both the Stirling Station and the Glendalough Station that will facilitate the areas around the stations to transform into high density mixed use centres.

Development around Warwick station will likely see in the future, an increase in residential density and the introduction of mixed use development, along Beach Road linking back to the Warwick Activity Centre as part of a future place based planning approach.

The Mount Lawley Station was relocated in the early 1970's to its current location, moving it away from its mixed use centre located on Lord Street. The City's Transport Strategy encourages this station to move back to its original location to ensure that it is better integrated with the high frequency transit on Lord Street.

Future Heavy Rail

In the next 50 years it is anticipated that an additional heavy rail line will be required that will provide fast access in an East West direction along Reid Highway. This new line will connect the Joondalup line to the Midland line and enable connections through to the airport. Stations should be planned for at Hamersley (Erindale Road), Balcatta (Wanneroo Road), Mirrabooka (Mirrabooka Avenue) and Dianella (Alexander Drive) (refer **Figure 54**).

Light Rail

The provision of a permanent public transport service with a high degree of visibility and permanence, such as light rail, attracts businesses which generates employment and reduces the need for expensive private car parking for developments.

Light Rail is considered to be a fast and efficient public transport service that assists in the regeneration of key corridors. It has been seen internationally to provide up to a 20 to 30% increase in public transport use above that of buses due to its permanence, smoothness of ride and reliability. It is quiet and clean, which means higher density development (particularly residential) can be supported along its route. It can move 50% more people than an equivalent bus lane and if delivered without road widening, can be an affordable mode of public transport.
In addition land value capture models can be utilised to partially fund light rail in conjunction with increases in development potential, as a result of its permanence and improvement in the amenity of the street.

The City's Transport Strategy (2009) highlighted three major light rail corridors for the City of Stirling, including Wanneroo Road, Beaufort Street and Scarborough Beach Road.

"Perth and Peel@3.5million - The Transport Network document highlights 4 major public transport high priority corridors (Figure 113), including:

- Wanneroo Road;

- Morley Drive Karrinyup Road;

- Beaufort Street; and

- Scarborough Beach Road.

The City of Stirling has already completed activity corridor plans for both Scarborough Beach Road and Beaufort Street that are capable of accommodating light rail.

The City is also investigating a value capture model to partially fund light rail along Scarborough Beach Road.

The City is currently completing corridor plans for parts of Wanneroo Road and Morley Drive to accommodate light rail. The link along Karrinyup Road/Morley Drive is important as there is no continuous public transport service linking Karrinyup Shopping Centre, Stirling City Centre and Morley City Centre via Karrinyup Road/Morley Drive. This corridor is highlighted as one of the City's key future activity corridors and as such a continuous public transport service linking these three centres together is vital.
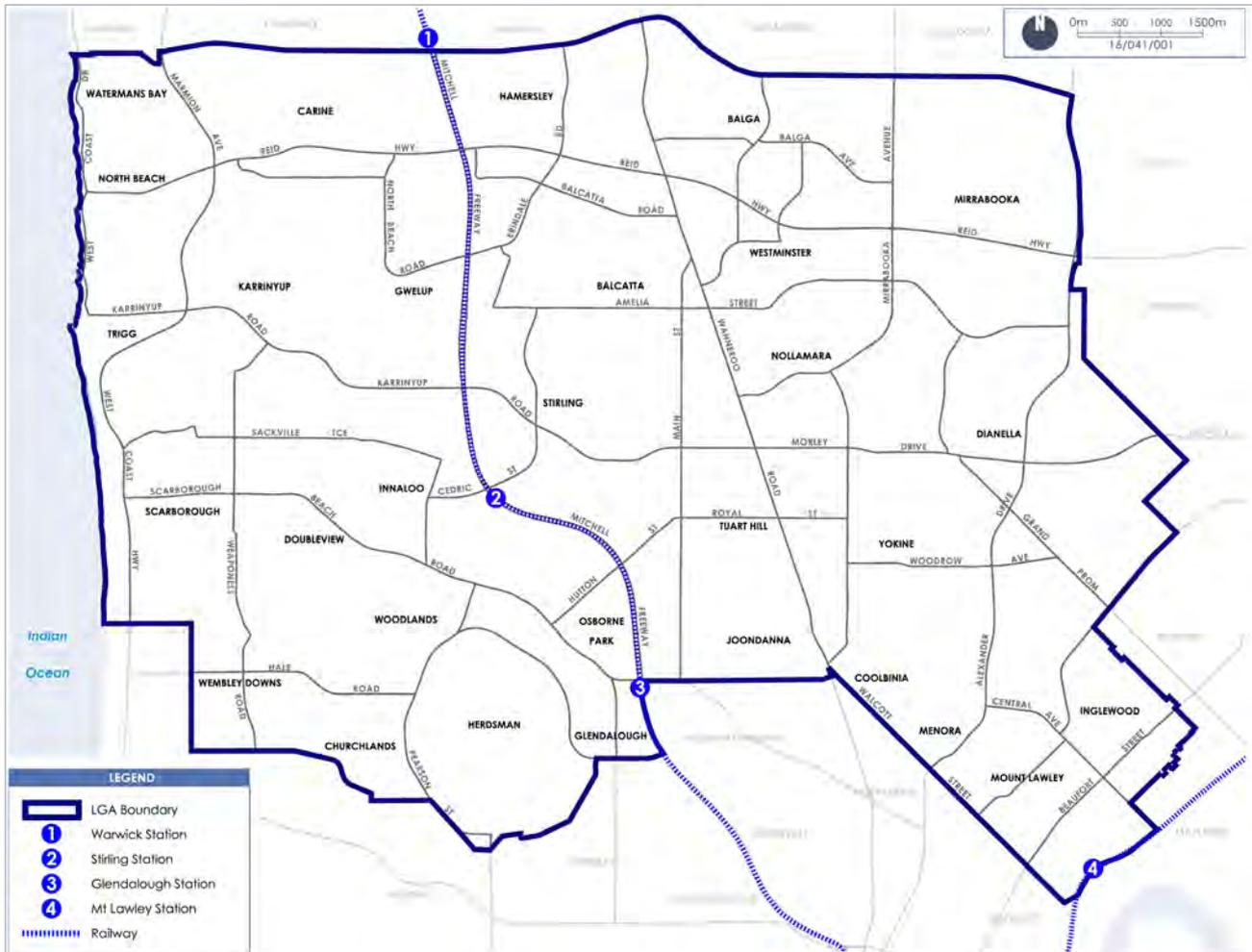

Figure 53: Existing rail services and stations within the City of Stirling (Source: City of Stirling)

The Integrated Mass Transit Network @ 3.5 Million and Beyond

Legend:
- Existing Public Transport Rail Network and Forrestfield-Airport Link (under construction)
- Public Transport Rail Network @ 3.5 Million
- Public Transport Rail Network Beyond 3.5 Million
- Bus Rapid Transit or Light Rail @ 3.5 Million
- Bus Rapid Transit or Light Rail Beyond 3.5 Million
- Light Rail @ 3.5 Million
- Subway Area Beyond 3.5 Million
- Strategic Metropolitan Activity Centre
- Specialised Centre
- Connecting Station or Terminus

Further work to be undertaken to assess additional rail lines in this area.
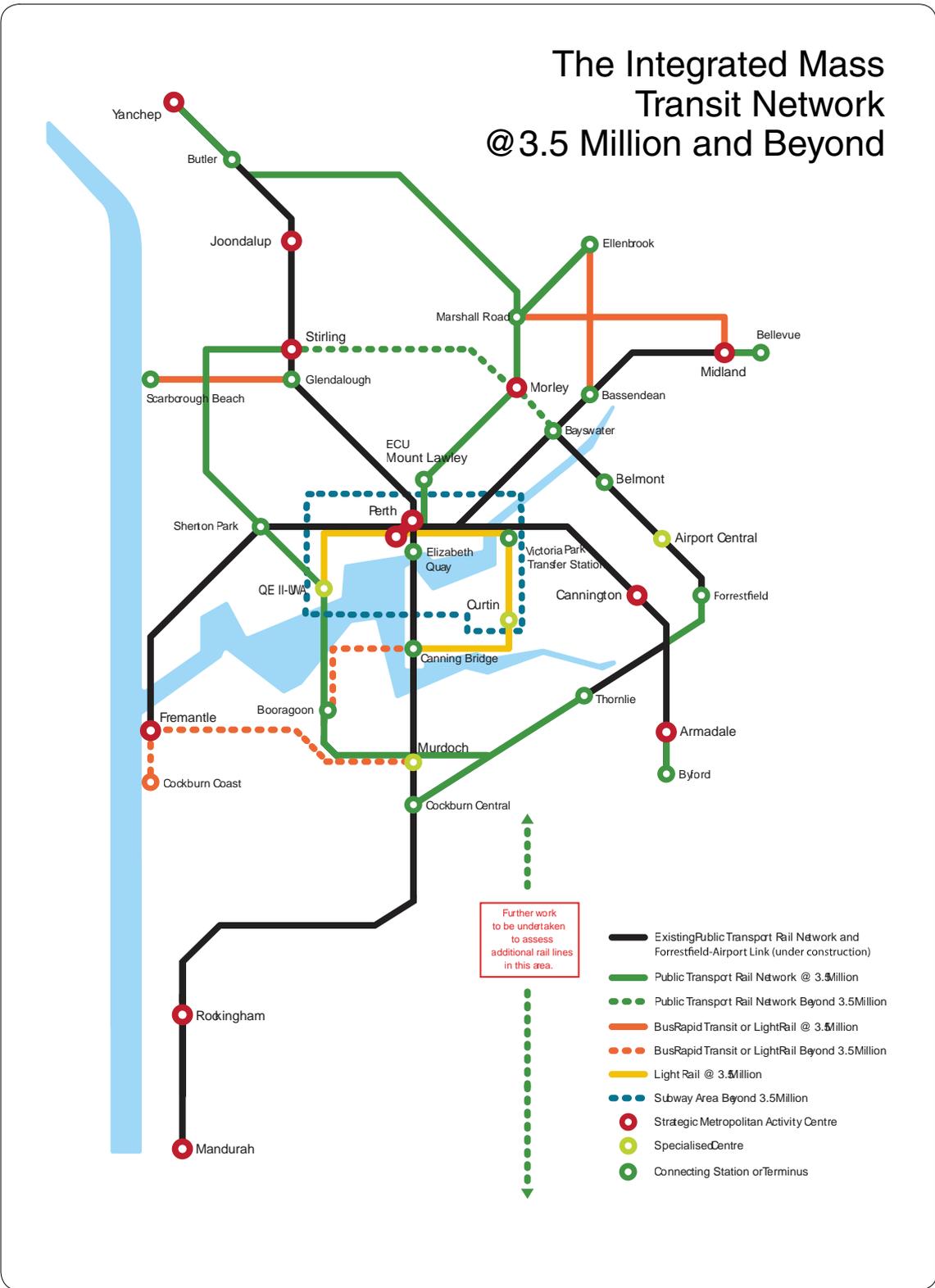
Figure 54: Central sub-region 2050 Public Transport Network (Source: Department of Transport)

Buses

A reasonably extensive bus network operates across the City by the Public Transport Authority (**refer Figure 55**). In general, these buses tend to be CBD-destined, or feed travellers into the bus or bus/rail interchanges. The City is generally well served by the bus system with only small pockets considered to have inadequate coverage.

Issues pertaining to buses as a means of public transport include:

• Little priority given to buses on the road network;

• The frequency of services over non peak periods;

• Bus services not extending into the evenings or over weekends; and

• Indirect bus routes.

The Circle Route operates through the City of Stirling and runs in a circuit through Perth's middle suburbs including Morley, Stirling, Floreat, Claremont, Mosman Park, Fremantle, O'Connor, Bull Creek, Willetton, Wilson, Bentley, Carlisle, Belmont, and Bayswater. Within the City of Stirling, the route runs between Morley (along Morley Drive and Karrinyup Road) and Edith Cowan University via Stirling Station. The service operates seven days a week.

This Circle Route offers opportunities to address the land uses surrounding stops on this and perhaps other high frequency routes through the City, particularly if light rail as a mode of public transport is not set to materialise for some time.

A bus service that travels through Glendalough has been operating since September 2008 and addresses significant service shortfalls through Herdsman Business Park and Osborne Park, and offers a direct connection with Glendalough train station. It is planned that this service will be expanded to provide a link from Glendalough Station to Stirling Station via Herdsman Business Park and Ellen Stirling Boulevard at the time of redevelopment of the Innaloo Shopping centre.

New East West links linking Stirling City Centre to Mirrabooka have recently been provided as well as a trial bus service linking Glendalough Station to Maylands Station via Edith Cowan University (Mount Lawley).

Additional high frequency links are still required linking Mount Lawley to Stirling City Centre. The City is also progressively jointly funding with the PTA the installation of bus shelters at the highest usage stops within the City of Stirling.
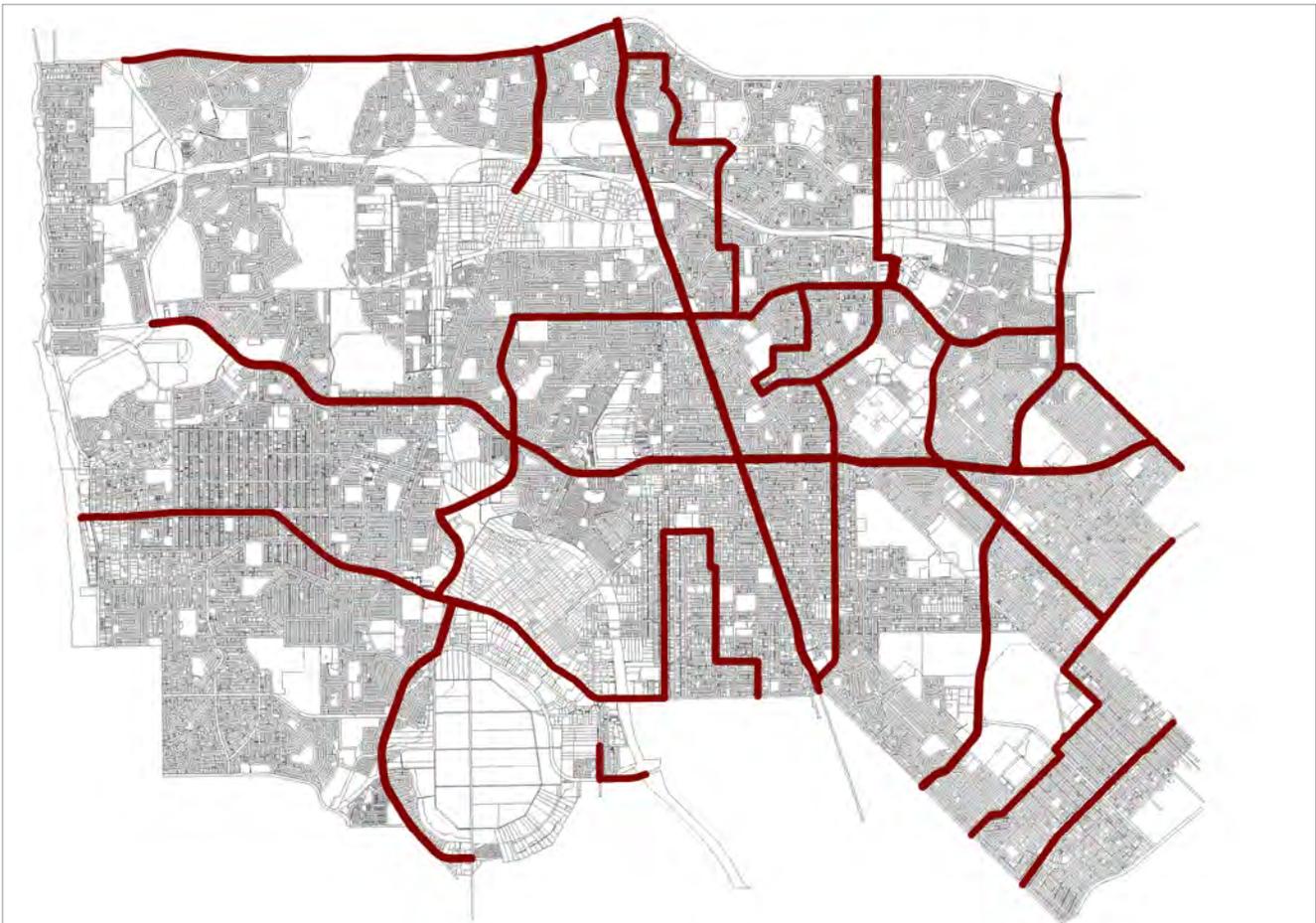

Figure 55: Existing High Frequency Bus Routes (Source: Perth Transit Authority)

Cycling

Within the Perth Metropolitan Region (including the City of Stirling) there are very few dedicated bike paths, consequently cyclists have to share space with either pedestrians or motorists. Cycling is the most sustainable mode of transport available. It is low cost, is comparable in travel time to cars for short trips, and it contributes to improved health and fitness of users.

Surveys of the City's residents have shown that low level of cycling has persisted due to inadequate safe cycling infrastructure.

The current percentage of cycling trips for journeys work is only 1.69%. The City's target is to achieve 5% cycling trips for journeys to work.

Analysis of journey to work data (Richardson and Weaver 2013) showed that modest increases in cycling within the Perth Metropolitan can be achieved where safe off-street facilities have been constructed. **Figure 56** identifies the Perth Bicycle Network (2003), largely comprising of the Regional Recreational Path, Perth Bicycle Network and the Principal Share Path. It is important to ensure that at a local government level, key locations are served by a legible and complete path network.

The use of bicycles as a mode of transport to work has been increasing over time. As a mode of transport to work bicycles have increased from 0.97% in 2001, to 1.07% in 2006, to 1.69% in 2011 (ABS 2001, 2006, 2011). The City's mode share of 1.69% is above Greater Perth rate of 1.36% and the Western Australian rate of 1.35%. Notwithstanding, the figure represents a minor proportion of commuters and does not meet the City's target share for cycling by 2031 which is 5%.

The current cycling network does not adequately serve many parts of the City, including the Stirling City Centre, Mirrabooka Town Centre, Herdsman Glendalough Area or the industrial areas of Osborne Park or Balcatta. As major employment nodes, these areas have the potential for a significant volume of cycle commuting to occur. However, poor access for cyclists and the lack of end-of-trip facilities are major barriers for this modal shift.

"The Peel@3.5million" Peel@3.5million – The Transport Network document aims to fill in gaps in the off-road cycle network, to increase the metropolitan network from 172km to 850km.

The City of Stirling's Integrated Cycling Strategy (2015) is intended to fundamentally change the way in which cycling is approached and implemented in the future rather than progressing cycling on the 'business as usual' model.

Figure 56: Perth Bicycle Network, City of Stirling (Source: City of Stirling 2015)

This is to be achieved through assessing risks and determining treatment plans and alternate strategies. A separate 'Bike Route Development Plan' (BRDP) is being developed which identifies Primary and Secondary routes which will form the basis of the City's investment in cycling for the next 10-years. Potential for cycling, as an alternative to the car, is recognised with the main objective of the plan being to provide facilities for 'everyday people, wearing everyday clothes and going to everyday places'. It is believed that the most dramatic benefits can be achieved within 3km of major transport interchanges and Activity Centres, providing adequate end-of-trip facilities as an integral part of any routes.

Figure 57 highlights the existing main links contained within the City and illustrates the new primary and secondary links that are critical to improving cycling within the City of Stirling. The Strategy also include a number of recommendations including: reduction in speeds, improvement in signage, changes in legislation, all of which is required to improve cycling levels.

Walking

Walking is an important part of destination-oriented trips such as commuting and often forms part of multi-modal trips. The current percentage of walking trips for journeys work is only 3%. The City's target is to achieve 10% walking trips for journeys to work. To achieve this outcome the City needs to:

- Improve the urban amenity of key Activity Centres and Corridors, including provision of trees for shade, awnings for shelter and active retail frontages for safety and surveillance;

- Provide at least one footpath on every street, currently 220km of streets have no footpaths; and

- Provide additional trees on residential streets to improve the levels of shade.

The City has a partial footpath network which generally follows the existing road system, but transects some reserves and includes pedestrian access ways (PAWs). However, more than 220km of streets in the City are without any footpath, inhibiting the start of journeys by pedestrians. The city has allocated sufficient funding to achieve a footpath on at least one side of every street by 2031, excluding cul-de-sacs. The City is on target to achieve this goal.
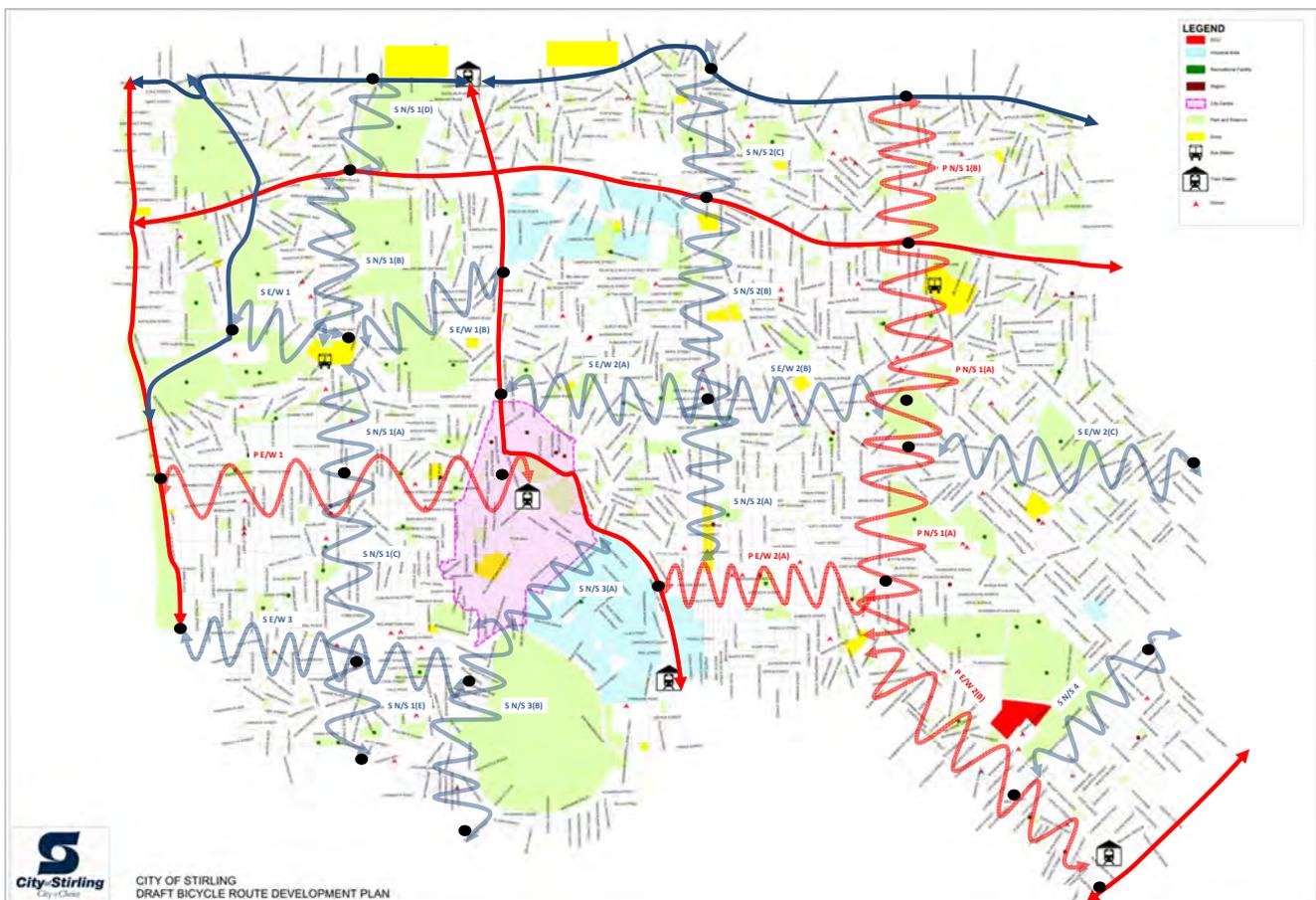

Figure 57: Future Links, City of Stirling (Source: City of Stirling 2015)

Car Usage And Ownership

The car is the predominant means of transport for City residents, with low occupancy car use, especially during peak travel periods. This contributes to inefficient use of transport infrastructure, resulting in traffic congestion.

The current percentage of car driver trips for journeys work is 75%. The City's target is to reduce this dramatically to 48%. This is to ensure that the additional population growth will not result in significant traffic congestion exceeding the capacity of the City's road network. In order to achieve this result the provision of alternative transport infrastructure is critical.

The number of cars owned by the City's residents is generally consistent with other parts of Perth, with a lower proportion of households having three or more cars across the City than there is across other parts of Perth (Figure 58).

A historical focus of planning for cars has in turn facilitated our community's dependence on private vehicle use. As a result, our urban environment tends to be dominated by car-based development. The rise of private vehicle use as the dominant mode has also resulted in creating congestion on roads and inefficient movement patterns. Extensive vehicle use contributes towards environmental problems such as lower air quality, emissions contributing to climate change, noise, stress, unhealthy lifestyle patterns, and increased risks to the safety and wellbeing of residents.

The trends show that the usage of private vehicles is declining as a total of all trips. Car passenger kilometres per capita have been declining in all Australian capital cities since 2004 (Richardson & Elaurant 2013).

The reasons for the decline, include:

• Fuel prices, which although they fluctuate, can impact on the household budget, particularly with economic factors and the flow-on impacts on job security and levels of disposable income;

• Increasing performance and/or attractiveness of other travel modes (public transport reliability, performance and frequency; improvements to walking and cycling routes and infrastructure investment);

• Increasing recognition of swapping the car for other modes for short trips;

• Changes in land use with denser development occurring in inner areas and near public transport stations;

• The levels of "saturation" on the road network and the disincentives to car use;

• Changes in travel behaviour of young adults which have been linked to changes in lifestyle, incomes, and housing preferences; and

• Cost of car parking for CBD workers.

It is anticipated that the rising economic and environmental costs of car dependence will result in residents adopting a more sustainable approach to transport, making a shift towards alternative transport modes. A shift towards public transport will rely on the adequate provision and promotion of these alternative transport modes as well as the delivery of the built form that matches alternative transport.
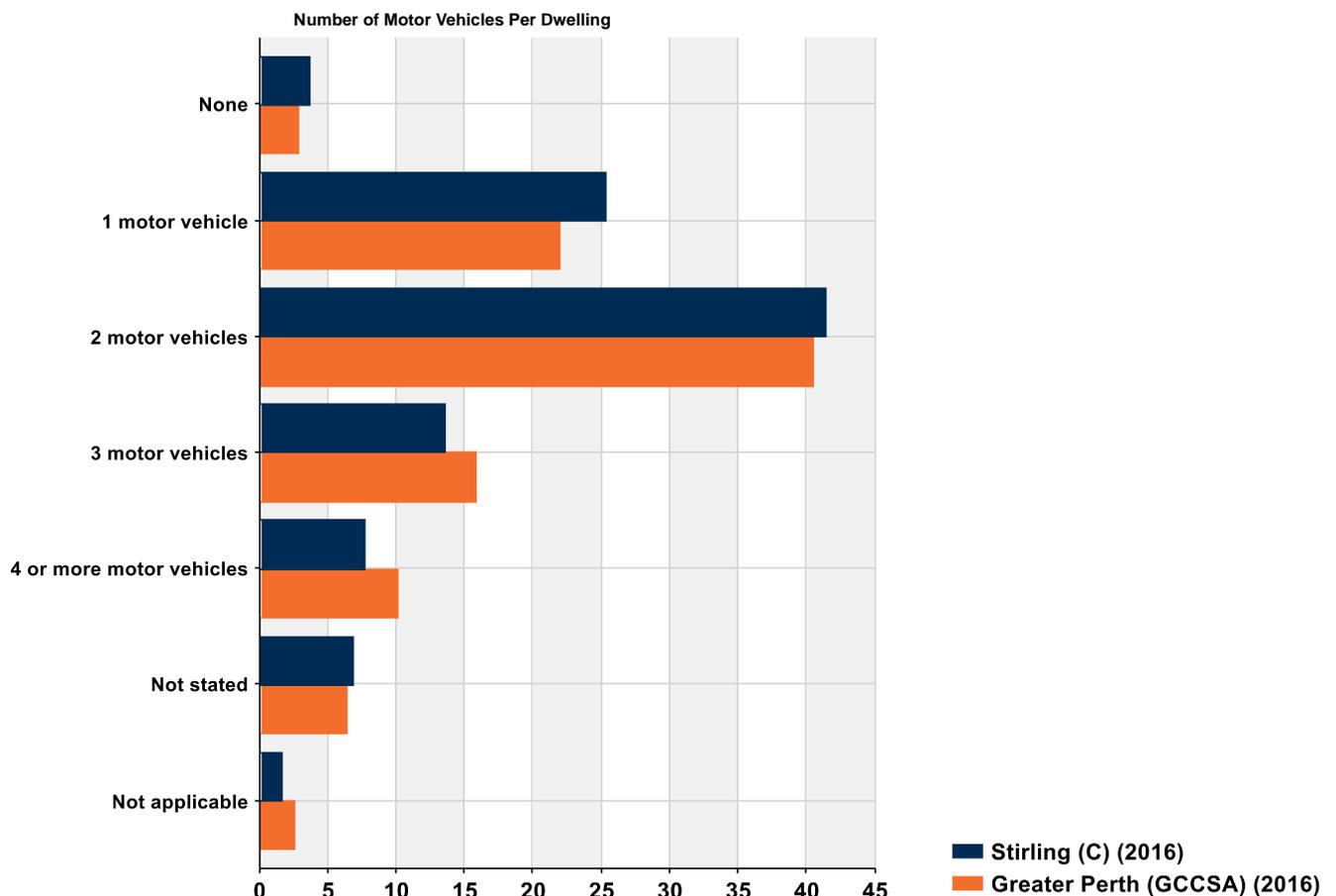
Number of Motor Vehicles Per Dwelling

Figure 58: Household Car Ownership (Source: ABS 2011)

11.2.3 Public Roads

The City's current road network is fully developed, except in small localised areas such as around Stirling City Centre and Herdsman Glendalough where there is a lack of road connections to allow for the full redevelopment of the areas. It is anticipated that the road network will change significantly over the next 50 years where road space will be reallocated to alternative transport modes that provide more capacity than the car.

The City's road network is made up of a number of classifications as shown in Perth and Peel @3.5million The Transport Network, **Figure 59**.

The City's Primary Distributors network is currently developed to its ultimate capacity and will see changes in the coming years. This will be through the addition of dedicated transit lanes (light rail and bus), cycling lanes and improvement to pedestrian amenity on both Wanneroo Road and Morley Drive as developed by Main Roads Western Australia.

Some of the City's District Distributor A roads will see significant change with the requirement to introduce peak hour bus lanes, on-street parking and cycling lanes and a reduction in speeds through centres.

The City's District Distributor B, Local Distributor and Local Roads network will see a significant transformation in the next 50 years with a reduction in the width of the carriageway to reduce speeds and to make these streets more people and cycling friendly.

Private Rights Of Way

Rights of Way (ROWs) are a legacy of developments in the Perth region in the early part of the 20th century prior to the advent of onsite sewage disposal systems. They are a common feature among many of the older suburbs in the City, such as Scarborough and Doubleview. The majority of ROWs are five metres or less in width. There are examples of ROWs tending to be unsealed and in many cases, overgrown with vegetation.

ROWs form only a minor part (approximately 60km) of the City's road network. Over the years, the City has taken over control of and upgraded a significant number of ROWs for use as public streets in recognition of the strategic benefits they offer to the wider community. The City has previously implemented development policies to ensure the progressive upgrade of ROWs in connection with redevelopments of adjoining land. However, the City's lack of jurisdiction over ROWs that remain in private ownership has so far impeded a consistent and coordinated response.

The City adopted the Rights of Way Management Strategy in November 2009. This provided a coordinated and cohesive plan for the future management of ROWs in its district, and to clarify its role in respect to these ROWs.

The local government has adopted a system for categorising ROWs:

- Category 1 – High Strategic Value – Traffic Management and Commercial

- Category 2 – Significant Strategic Value – Potential to Reduce Negative Impacts of Infill Development

- Category 3 – Medium Strategic Value – Heritage/ Streetscape Benefits

- Category 4 – Low Strategic Value – Minimal Strategic Benefits

- Category 5 – Special Constraints

11.2.4 Metropolitan Freight

Perth and Peel @3.5million highlights the principal freight routes within Metropolitan Perth (**Figure 60**). Within the City of Stirling these principle routes include the following existing roads:

- Mitchell Freeway;

- Reid Highway; West Coast Highway; and

- Wanneroo Road north of Reid Highway.

The City of Stirling's freight network is based on the Perth and Peel@3.5million – The Transport Network, Central sub-region 2050 Freight Network (**Figure 61**).
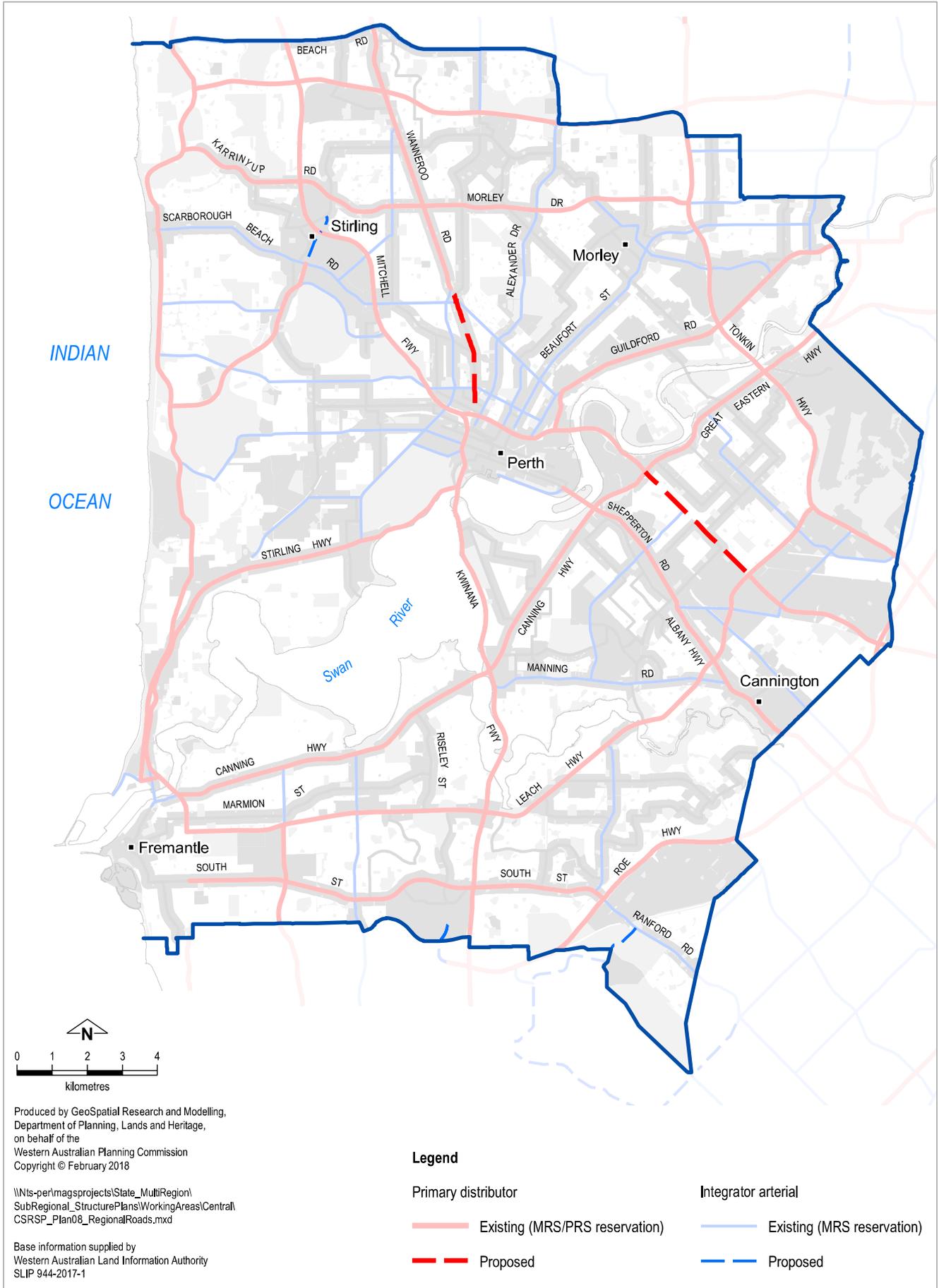
Figure 59: Road Network as per the Central Sub-regional Planning Framework (Source: Department of Planning)

INDIAN

OCEAN

Swan River

BEACH RD

KARRINYUP RD

SCARBOROUGH BEACH RD

WANNEROO RD

MORLEY DR

ALEXANDER DR

MITCHELL FWY

BEAUFORT ST

GUILDFORD RD

TONKIN HWY

GREAT EASTERN HWY

Stirling

Morley

Perth

SHEPPERTON RD

ALBANY HWY

Cannington

STIRLING HWY

KWINANA FWY

CANNING HWY

MANNING RD

RISELEY ST

LEACH HWY

CANNING HWY

MARMION ST

Fremantle

SOUTH ST

SOUTH ST

ROE HWY

RANFORD RD

N

0   1   2   3   4
kilometres

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on behalf of the
Western Australian Planning Commission
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Base information supplied by
Western Australian Land Information Authority
SLIP 944-2017-1

Legend

Primary distributor

⎯⎯⎯ Existing (MRS/PRS reservation)

▬ ▬ Proposed

Integrator arterial

⎯⎯⎯ Existing (MRS reservation)

▬ ▬ Proposed

LEGEND

freight class

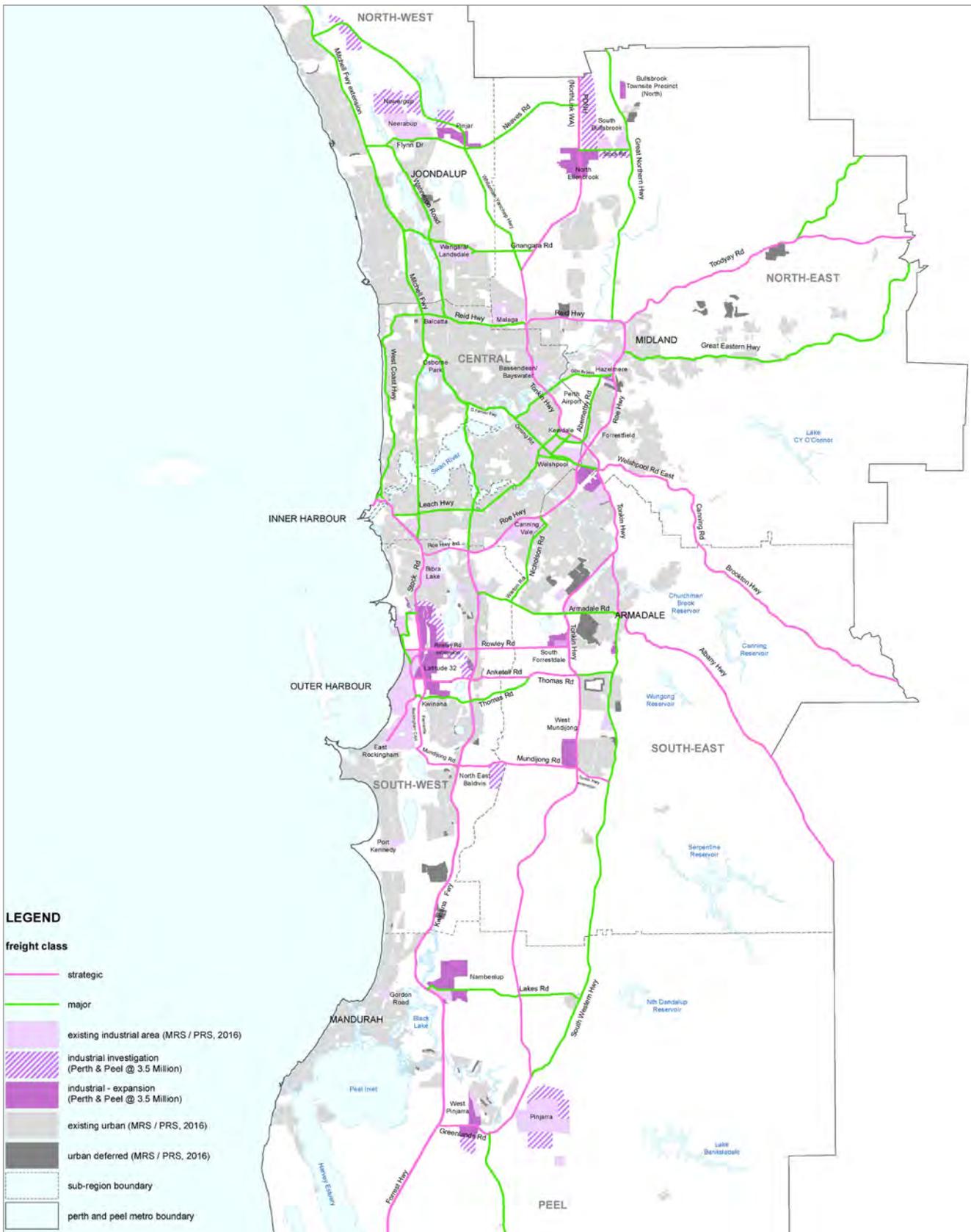|	
——	strategic
——	major
(light purple)	existing industrial area (MRS / PRS, 2016)
(hatched purple)	industrial investigation (Perth & Peel @ 3.5 Million)
(dark purple)	industrial - expansion (Perth & Peel @ 3.5 Million)
(grey)	existing urban (MRS / PRS, 2016)
(dark grey)	urban deferred (MRS / PRS, 2016)
(dashed)	sub-region boundary
(solid)	perth and peel metro boundary

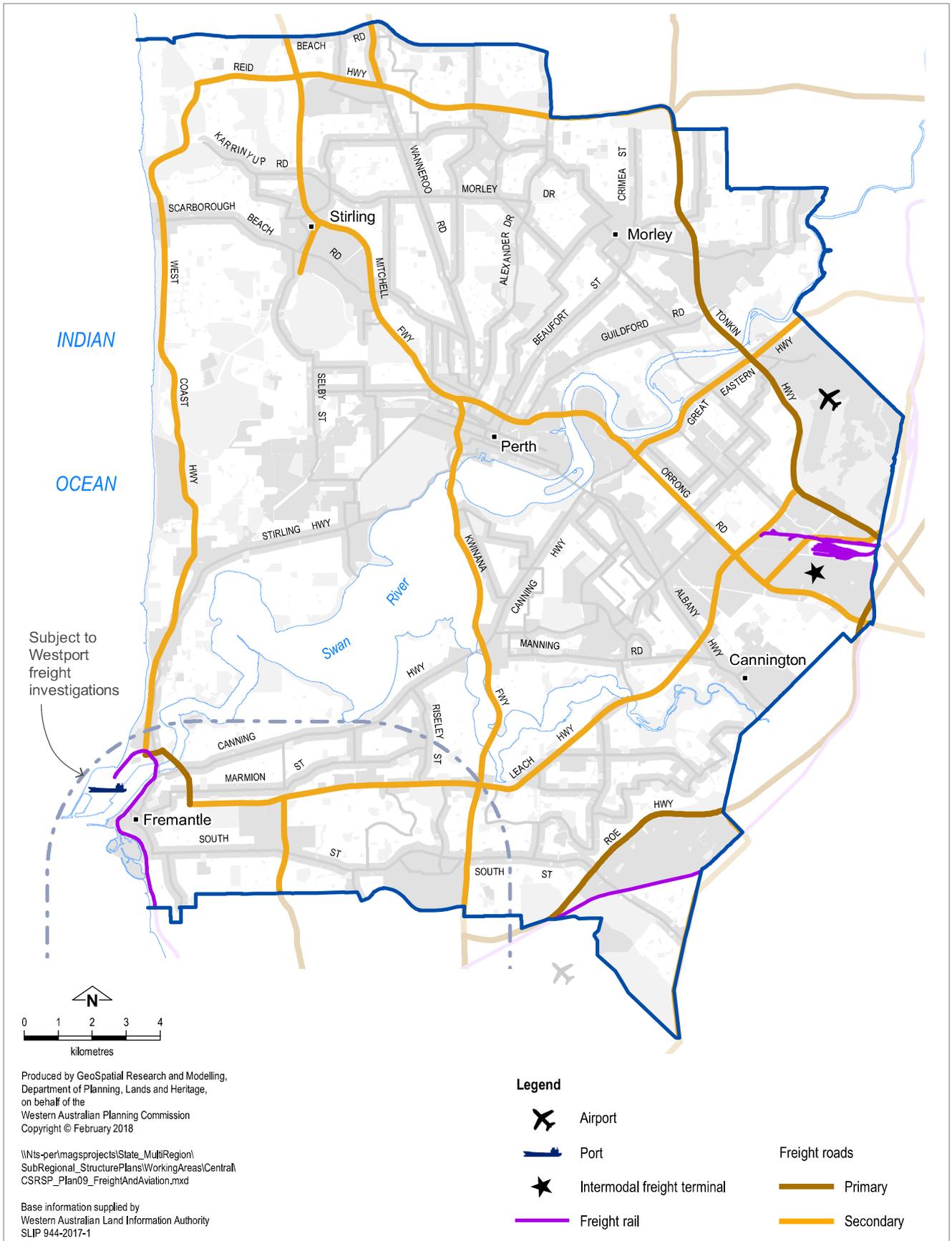Figure 60: Principal Freight Network (Source: Department of Transport)

Figure 61: Central sub-region 2050 Freight Network (Source: Department of Transport).

11.2.5 Parking

With the expected increase in population and increase in trips the City needs to encourage a shift to a large number of these trips to alternative transport. This will ensure that the capacity of the road network is not exceeded. With the densification of residential developments on local roads, residents may have to accept that it will not be possible to have dedicated parking on verges or roads in front of their property.

To ensure that this strategy is realised the management of parking is critical as the level of car parking directly relates to the level of car trips. The City has already adopted two car parking policies for the Stirling City Centre and the Mirrabooka Town Centre that are based on these principles. These link the amount of car parking to the surrounding road capacity.

These policies have adopted a per hectare maximum parking ratio, based on the road capacity of each centre for non-residential uses. They also contain a minimum amount of short stay public parking, to ensure the efficient use of car parking in centres. They also limit the amount of exclusive dedicated long term car parking. This ensures that the least amount of car parking is provided at the lowest cost to developers whilst still providing sufficient car parking and ensures that commercial uses remain viable.

Reciprocal parking is an important element of sustainable parking management. The current cash-in-lieu provisions may need to be reviewed and adjusted so that financial contributions can be made to sustainable traffic alternatives.

The City has an adopted parking strategy that embodies these principles and is progressively implementing the strategy. It includes introducing paid parking in certain commercial areas where parking is at a premium. It also includes introducing permit parking around key Activity Centres, where overspill parking is impacting negatively on residential areas.

Summary Of Key Issues Of Traffic And Transport

The development and implementation of an integrated transport and land use plan is critical to ensure that the City develops in a sustainable way. The movement network needs to focus on low cost and mass transit systems to cope with the expected increase in population and not cause significant traffic congestion on the existing road network.

The linkage between the amount of car parking, the road capacity and the funding of alternative transport modes is critical to deliver a sustainable transport system, that enables the community to efficiently and effectively move around the network. Without linking these three critical issues together, it will not be possible to change the current transport system. Costly road widening, land resumptions and grade separations of the road network will be required that will only deliver temporary remedy to traffic congestion. This will lead to the long term blighting of large areas of the City with large polluting, noisy road corridors and low levels of liveability.

The alternative is to proactively plan, fund and deliver the alternative transport infrastructure up front with reductions in car parking and rezonings to promote growth along the City's corridors and around centres. This will ensure that the City will create high amenity urban boulevards and centres with no emissions transport solutions providing long term people moving capacity.

The City needs to work collaboratively with both State and Federal Governments to ensure that these plans are realised, funded and delivered. This will require the investigation of alternative funding and delivery models involving the private sector and value capture.

While this strategy provides a model for sustainable transport outcomes in the future, in the short to medium term, the City will continue to rely on the Traffic Management Warrants Policy to identify appropriate Local Area Traffic Management (LATM) solutions to address traffic safety issues on City's Local Roads and Local Distributor Roads.

Key Issue 8.1
Managing car parking is increasingly challenging as the City intensifies.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Limit car parking in industrial areas, Activity Centres and Corridors to match the road capacity.	Implement parking provisions that limit car parking to match road capacity in industrial areas, Activity Centres and Corridors.	Medium	CoS (City Planning)
Ensure the City's parking management and statutory provisions keep pace with the City's growth.	Review and monitor the City's parking management and statutory planning parking provisions regularly.	Long	CoS (City Planning)
	Develop and adopt a public parking plan to address public parking provision and management.	Medium	CoS (City Planning)

Key Issue 8.2
The lack of permanent public transport infrastructure leads to uncertainty for development (e.g. light rail).

Response	Actions	Delivery Timeframe	Lead Delivery Department
Advocate and plan for more permanent public transport infrastructure.	Work with Federal and State Governments, the private sector and other local governments to advance proposed light/heavy rail networks and other rapid public transport routes.	Ongoing	CoS (City Planning)
	Ensure all Activity Centre and Corridor Plans incorporate improved public transport options (including possible light rail where appropriate).	Ongoing	CoS (City Planning)

Key Issue 8.3
There are poor public transport links between centres and employment areas in the City.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Advocate for new, better services and more frequent public transport options.	Work with the Public Transport Authority and the Department of Transport to provide better public transport options.	Ongoing	CoS (City Planning)

Key Issue 8.4
Many of the City's roads are at capacity and have poor walking and cycling infrastructure.

Response	Actions	Delivery Timeframe	Lead Delivery Department
On affected corridors, plan to accommodate high capacity public transport.	Identify and secure appropriate road reservations to accommodate high frequency public transport, as part of Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)
Provide alternatives to the use of private motor vehicles such as more walking and cycling infrastructure.	Develop and implement a transport network plan to increase walking and cycling.	Short	CoS (Engineering Design)
	Investigate improving cycling and pedestrian infrastructure as part of the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)
	Ensure the planning framework is robust to ensure developers provide footpaths and cycling infrastructure including end-of-trip facilities as part of their developments.	Ongoing	CoS (City Planning)

Key Issue 8.5
The City has a large number of rights-of-way that are under-utilised.

Response	Actions	Delivery Timeframe	Lead Delivery Department
Ensure that rights-of-way within the City are upgraded and that development fronts the right-of-way.	Ensure the City's *Rights-of-Way Strategy* is implemented.	Ongoing	CoS (Engineering Design and Approvals)

12. Infrastructure and Utilities

12.1 Introduction

The City of Stirling generally is adequately served in terms of infrastructure and utilities for the current levels of development. However there are still areas in the City that have not connected to reticulated sewerage as well as large areas with above ground power.

To accommodate an additional 145,000 people over the next 35 years, particularly along corridors and around centres, the level of services in these areas will have to increase significantly. In particular Stirling City Centre and Herdsman Glendalough areas will require new reticulated sewerage infrastructure as well as new services and several new roads required.

12.2 Background

12.2.1 Current Trends

Stormwater Drainage

The City of Stirling's stormwater drainage network consists of 720 km of piping, approximately 29,000 manholes and collector pits, and 180 drainage sumps and other drainage outlets. The current drainage network consists of existing road pit and pipe network within the existing roads however these are only sized to handle the road runoff. It is expected that additional roof runoff is dealt with through onsite soak wells. The storm water system has predominantly been built prior to water sensitive design principles being used, and as such will require transformation over time.
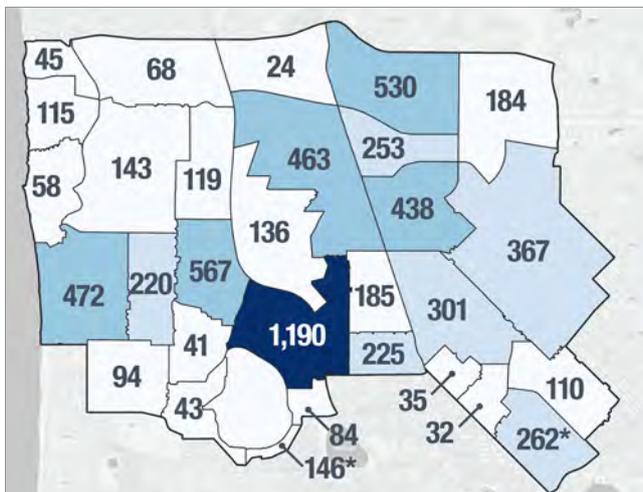
Wastewater

Wastewater infrastructure in the City of Stirling is serviced by gravity style wastewater drainage infrastructure. A mixture of pipes at 'on grade' services all areas to local pump stations throughout the City of Stirling. The gravity systems carry wastewater flow to wastewater treatment plants common to the Perth metropolitan area. Waste water treatment plants are located at Subiaco, North Whitfords and Mundaring.

The Water Corporation's infill sewerage program is well progressed with all the major existing residential areas, capable of being serviced with only a small portion of the Osborne Park Industrial area remaining unsewered. However there are a significant number of existing residential lots within the City that have not yet connected to mains sewer as shown in **Figure 62**.

Water

The City of Stirling is generally well serviced by water infrastructure with a high level of existing infrastructure. A mixture of pipes which service off of main arterial lines provide portable water to local areas and subsequent lots.

Power

The City has an extensive network of power infrastructure covering the majority of the City. Within Stirling City Centre there are large areas of undeveloped land which will require future power infrastructure. Large areas of the City do not have underground power services. The City is actively seeking to remove overhead powerlines with cooperation with Western Power. The State Underground Power Program (SUPP) provides a subsidy by the State Government through the Office of Energy and Western Power, to offset the cost of underground power.

The City of Stirling operates under a 'user pays' principle for funding under ground power, and its contribution is fully recovered from the owners of properties that benefit from the underground power works. The State Underground Power Program (SUPP) commenced in 1996 and was administered in five rounds of approximately three years duration.

Figure 62: Number of residential lots not connected to sewer (Source: City of Stirling)

The City of Stirling made submissions for all rounds of the program and was awarded projects in the following rounds:

- Round 1: Woodlands and part of Doubleview.

- Round 2: The Scarborough Beach precinct and Mount Lawley precinct.

- Round 3, Churchlands and Wembley Downs.

- Round 4: The Balcatta project was awarded, however support from public consultation in the affected area was low and the City could not proceed for inclusion in the scheme.

- Round 5: Coolbinia was completed in January 2015.

Gas

ATCO Gas is the main service provider regulating the production, storage and distribution of domestic gas in the City of Stirling area. The current network is sufficient to supply current development.

Telecommunications

The City of Stirling is well serviced by telecommunications infrastructure. Mobile network coverage in the area is well serviced with 4G covering the entire City of Stirling under the Telstra network; other network providers may vary. There are currently approximately 17,000 dwellings served by the National Broadband Network (NBN).

12.2.2 Future Trends

Stormwater Drainage

The majority of the City's drainage network has been constructed prior to the advent of water sensitive design principles and as such most of the City's drainage network is built to traditional methods. In order for the City to adapt to a drying climate the City's drainage network will need to be modified over time to meet water sensitive design principles that:

- Protect and improving the water quality of water draining from urban environments into rivers, groundwater and wetlands;

- Restoring the urban water balance by maximising the reuse of storm water, recycled water and grey water;

- Integrate storm water treatment into the landscape so that it offers multiple beneficial uses such as water quality treatment, wildlife habitat, recreation and open public space;

- Reduce peak flows and runoff from the urban environment simultaneously providing for infiltration and groundwater recharge; and

- Integrate water into the landscape to enhance urban design as well as social, visual, cultural and ecological values.

To achieve these outcomes the City is required to prepare district water management strategies, local water management strategies and urban water management plans for major urban renewal projects.

So far the City has completed Water Management Strategies for:

- Stirling City Centre;

- Herdsman Glendalough Area; and

- Mirrabooka Town Centre.

Over time the City will need to modify the existing drainage system in accordance with water sensitive design principles. This normally involves making the traditional drainage system a "leaky system" where stormwater is encouraged to water plants and trees and infill groundwater at its source rather than transport it over long distances.

The Water Corp is also embarking on a transformation of their regional drainage network, transforming these utilitarian drains into living streams.

The City has also embarked on a program to draw plans and record all pipe and manhole information. This ambitious project will allow data analysis to be done by computer in order to determine areas in need of future upgrading works.

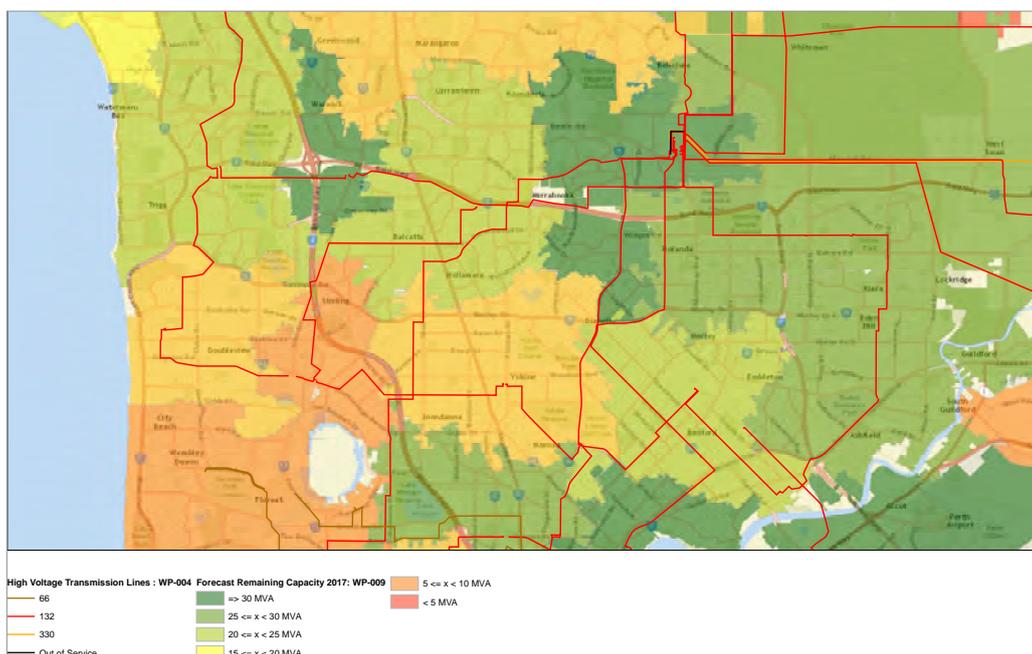**Figure 63: Forecasted Remaining Capacity, City of Stirling (Source: Western Power Network Capacity Mapping Tool)**

High Voltage Transmission Lines : WP-004
- 66
- 132
- 330
- Out of Service

Forecast Remaining Capacity 2017: WP-009
- => 30 MVA
- 25 <= x < 30 MVA
- 20 <= x < 25 MVA
- 15 <= x < 20 MVA
- 5 <= x < 10 MVA
- < 5 MVA

Wastewater

As the City develops and intensifies the number of unsewered blocks and land parcels will decrease. As each unsewered lot is subdivided, it will be required to connect to mains sewer. This will incur a headworks charge, which will be utilised to fund any required upgrades.

Water

In general terms, development sites that are already serviced or are located within an established system of water reticulation can be serviced. In some rare cases, high density redevelopments may, at the building stage, trigger the need for a piece of reticulation to be up-sized or duplicated to meet the increased demand. In the case of multiple dwellings and mixed use town centre developments, the need for a developer/builder to upgrade some reticulation is more often driven by fire flow requirements. This usually does not form part of the Water Corporation's high-level water headworks planning.

Power

Western Power's Networking Capacity Mapping Tool has been assessed to forecast the remaining power in the City of Stirling's system, **Figure 63** shows the remaining capacity for 2031.

The areas highlighted in orange are areas where there may be some issues with future power supply; however each area will need to be investigated for the required power infrastructure. This is expected to be undertaken as part of the City's place based planning approach.

In December 2015 the Public Utilities Office released guideline details for local governments to participate in Round Six of the State Underground Power program. A significant difference to the previous rounds is that local governments are required to nominate the proportion of project funding they are willing to pay. Under the new proposals, although the minimum contribution from local governments remains 50%, this now carries a zero score while project proposals offering a greater contribution share will receive a higher score in the selection process and be more competitive.

The City put forward Expressions of Interest for three projects in Round Six for consideration. These projects were:

- Menora;
- Trigg; and
- North Beach.

Menora and Trigg were successful in progressing to the next stage, however North Beach was unsuccessful.

On 1 February 2017, the City received notification from the Minister for Energy that the SUPP Steering Committee had approved both Menora and Trigg to progress to the 'Detailed Proposal Stage'. Subject to detailed design and contract, it is likely that Menora will commence in early 2019, with Trigg to follow in 2020.

Gas

Gas Infrastructure within the City is generally of a high level, however in some areas there is likely to be shortage of capacity over the next 15 years. These upgrades can be undertaken through normal works undertaken ATCO Gas.

Telecommunications

Advancement in fibre optic technology is currently outpacing service demand for data. For the foreseeable future it is not likely that demand for data will exceed the current technological limitation of optical fibre. The NBN is currently being implemented across the nation.

There are already underground fibre optic/telecommunications facility/facilities within several areas of the City (17,000 dwellings), with the aim to eventually cover the whole of the City of Stirling by 2020.

Table 50: Electrical Demand (Source: Western Power)

Land Use	Peak Electrical Demand (VA/m²)	Total Peak Demand (MVA)
Residential	13	12.8
Office	51	23.1
Retail	67	25
Entertainment and Community	43	2.5
Peak Demand on Grid		63.4

12.3 Local Context And Future Possibilities

12.3.1 Stirling City Centre

The City has produced a utilities strategy for the Stirling City Centre (SCC). The information below is an extract from that report which predicts an ultimate population of 25,000 residents and up to 30,000 jobs.

Stormwater Drainage

The majority of Stirling City Centre (SCC) drains into the Water Corporation owned 5m wide open channel/reinforced concrete pipe main drain part, of which is proposed to be converted to an urban stream as part of the SCC development. All new road reserves will require a pit and pipe system to keep stormwater off the road pavement during medium frequency events.

Waste Water

Stirling City Centre spans the catchments of several Water Corporation wastewater pump stations, which are ultimately serviced by two wastewater treatment plants. Flows from the southern portion of the area (generally the area south of Scarborough Beach Road) are pumped to the Perth Main Sewer, which gravitates waste water to the Subiaco waste water treatment plant. The remaining areas are pumped into the Hamersley Main Sewer, which gravitates waste water to the Beenyup waste water treatment plant.

The Stirling City Centre development will have a significant impact on long term flows. Flows associated with pump stations that are within the catchment of the Beenyup waste water treatment plant are significantly greater than those assumed in current long term wastewater conveyance planning.

The Water Corporation has presented two options that may be implemented to upgrade the waste water headworks to accommodate for the projected development yield. Both options have been projected to have similar cost implications for the project. The preferred option involves a combination of upgrading certain gravity lines, pump stations and re-routing flows in the region of the Twyford Place Pump Station, the Sheldrake Street Pump Station and the Civic Place Pump Station.

This increased flow means that the Main Sewer itself will require upgrading in the future (approximately 2035). This will involve the construction of at least 5km of new sewer mains to augment the capacity of the existing sewers. Whilst the Stirling City Centre development is not the sole source of the increased flow to the Hamersley Main Sewer, it is a major contributor and a proportion of total costs have been assumed and included in the cost estimates for this project.

Water

The Stirling City Centre spans three water supply zones, these being:

- West Yokine – Hamersley in the north;
- Bold Park in the west; and
- Mount Hawthorn in the east.

An extensive water distribution main system surrounds the boundary of the proposed development. The reticulation networks currently source water from various mains, and no single main dominates the servicing to the current site. The 150mm reticulation mains are primarily found in the south east industrial portion of the site, which sources water from the main in Scarborough Beach Road.

The development will increase the water demand on the system by approximately 2.9 GL per annum. The Water Corporation are planning to construct a new 600mm diameter steel main pipe line from the existing pipeline located at the junction of Karrinyup Road and Cedric Street. This pipe is to extend south down Cedric Street. It is then to continue south, under the Mitchell Freeway, ending on the east side of Flax Way. A 400mm diameter and 300mm diameter steel branch is to extend off the proposed 600mm pipe.

The adoption of "waterwise" measures at Stirling City Centre would reduce the quantity of water required significantly as shown in **Table 51** below.

Table 51: Water Demand, Stirling City Centre (Source: Stirling City Centre Activity Centre Plan)

Totals (ML/year)	Conventional Demand	Waterwise Demand
Total Drinking Water	1,500	1,014
Total Non Drinking Water	1,432	943
Total Water	2,932	1,957

Power

The existing Western Power substation at Osborne Park is part of the Northern Terminal Load Area. The substation is served by three 132kV overhead transmission lines.

The current load supplied by the substation is 65 MVA. According to Western Power's Network Capacity Mapping Tool, currently the residual capacity of the substation is approximately 10 MVA. High voltage distribution feeders emanating from the substation currently service surrounding buildings.

The medium to long term plan is to relocate the existing substation prior to its upgrade or expansion. There are a number of options that have been explored including:

- Relocating to the southern side of Scarborough Beach Road;
- Relocate on existing site allowing sleeving of development on Scarborough Beach Road; or
- Relocating within a new building on the existing site.

The development of the Stirling City Centre will add significant additional demand to the local power grid. Peak loads from conventional development are depicted in **Table 52**:

The annual electricity demand arising from this approach (Business as Usual) would be approximately 300 GW/h per annum.

Currently the electricity demand in the area has flattened due to lower economic growth as well as a significant increase in solar power. As a result it is forecast that there is no requirement to upgrade the substation within the 5-10 year time period.

Gas

A comprehensive medium, and medium/low pressure system currently services the site, with service pressure between 15 and 70kPa. The major pipes are located along Karrinyup Road, Odin Road, Hertha Road, Ellen Stirling Boulevard, Oswald Street, Scarborough Beach Road, King Edward Road, and Cedric Street.

The closest high pressure gas main is located west on Northstead Street, approximately 2.5km away from the western boundary of the site. Additional high pressure gas mains are located in Balcatta Road and Dumfries Road; both located approximately 3.5km north and south of the site respectively.

Based on information provided to ATCO Gas about the proposed yield, they have estimated that the gas demand for business as usual development will be 381,000 GJ per annum, which would likely require the existing infrastructure to be upgraded.

Telecommunications

Telstra and Optus 3G & 4G wireless coverage currently exists throughout the precinct with typical speeds being between 1.1Mbps and 20Mbps. However, optical fibre has significant speed and capacity advantages over both mobile and copper services. Therefore the complete roll-out of the NBN within the Precinct over the next three years (by 2020) will significantly benefit the precinct's businesses and residents if they opt for fibre connections.

Services currently are being provided via satellite within the precinct (e.g. Foxtel) will remain. Over the next three years it is expected that Foxtel will migrate to the NBN infrastructure. These services will then be provided by NBN Co.

Table 52: Electrical Demand (Source: Western Power)

Land Use	Peak Electrical Demand (VA/m²)	Total Peak Demand (MVA)
Residential	13	12.8
Office	51	23.1
Retail	67	25
Entertainment and Community	43	2.5
Peak Demand on Grid		63.4

12.3.2 Mirrabooka Town Centre

The City of Stirling has undertaken several Utilities Infrastructure Plans for the Mirrabooka Town Centre. It is anticipated that Mirrabooka will accommodate 3,399 residents and 5,642 employees by 2031.

Stormwater Drainage

Projections show that impermeable area could reach 73%. Currently, each property is responsible for its own stormwater drainage, and this is primarily achieved by soak wells.

A large drain consisting of two DN1800 pipes the majority of stormwater collected in the study area under Reid Highway and into a basin in the open space reserve to the north of the Reid Highway reserve. This basin is on Crown land. Another smaller basin is located south of the site on the corner of Yirrigan Drive and Dianella Drive.

It is anticipated that the main drain is large enough to cope with the future stormwater requirements; however detailed modelling has not yet been undertaken.

Waste Water

The Mirrabooka Town Centre is currently fully serviced by reticulated sewerage services. With the expected population and employment growth Water Corporation believes that the sewerage system can be upgraded through normal

headworks charges over time, to ensure that the centre can be serviced.

Water

The Mirrabooka Town Centre is currently fully serviced by reticulated water. With the expected population and employment growth Water Corporation believes that the water system can be upgraded through normal headworks charges over time, to ensure that the centre can be serviced.

Power

Significant infrastructure upgrades will be required to cater for the growth projected. An extra transformer is likely to be required to supply the additional power. However, the location of high voltage lines in close proximity to the area potentially makes this possible to fund upgrades through headworks charges.

Gas

The existing gas infrastructure is sufficient to cater for the future development.

Telecommunications

The impact of any growth on telecommunication infrastructure will be addressed by the roll out of the National Broadband Network, which is expected by 2020.

12.3.3 Karrinyup Town Centre

Karrinyup Town Centre is expected to undergo a major transformation over the coming years with a total of up to 100,000m² of retail and approximately 150 new dwellings.

Stormwater Drainage

All stormwater cannot be contained on-site, given the scale of the proposed development, as such water sensitive design principles and storage of storm events will be required on site.

Waste Water

The proposed expansion of the centre can be accommodated by the existing reticulated sewerage system.

Water

Critical pipelines are located within the Centre Core of the Karrinyup Shopping Centre being Karrinyup Road, Burroughs Road, Davenport Street and Francis Avenue. It is anticipated that there is capacity within the surrounding service network.

Power

The Centre is connected to Low and High Voltage Overhead Power Lines. The surrounding area is also serviced by Low and High Voltage Overhead Power Lines. High Voltage Overhead Transmission Lines run parallel with Jeanes Road and Karrinyup Road, along the boundary of Millington Reserve. Further investigation is required to ascertain if any upgrades would be required.

Gas

ACTO Gas Perth Metropolitan Region Gas Distribution Network mapping indicates the Centre is connected to medium and medium low pressure gas connections.

A Medium Pressure gas connection is located within the Karrinyup Road Reserve, whilst the surrounding residential area is serviced by Medium Low Pressure gas connections. It is expected any redevelopment at the subject site could be connected to gas via an extension of the existing network.

Telecommunications

Preliminary information indicates the Centre is connected to fibre optic telecommunication cables along Karrinyup Road, Francis Avenue, Miles Street and Gwellup Street. Optus cables are connected directly to the Karrinyup Shopping Centre via an extension off Karrinyup Road through the centre of the subject site. Nextgen network cables are located along Karrinyup Road and Jeanes Road.

12.3.4 Herdsman Glendalough Area

The Herdsman Glendalough area will transform from a predominantly commercial area in to a mixed use precinct. The City of Stirling has prepared indicative yields based on the 2021 and 2031 scenarios for the Herdsman Glendalough Area, Table 53 and Table 54.

Stormwater Drainage

All stormwater drainage will have to be dealt with in accordance with the Herdsman Glendalough Local Water Management Strategy. The strategy encourages water sensitive urban design, the greening of district drains, the containment of stormwater onsite where possible and the recharge of ground water to ensure that acid sulphate soils in the area do not become acidic.

Waste Water

The critical elements to the wastewater system are the Hasler Road and Harborne Street Pump Stations. It is anticipated that the Water Corporation will ultimately be able to provide sufficient pump station capacity to service the full extent of the Herdsman Glendalough Structure Plan.

There are also numerous private pump stations and sewer lines that are located in the north western part of the redevelopment area. Through redevelopment these private sewer pump stations and sewer lines will be replaced over time.

Water

The Water Corporation planning has previously not considered substantial growth occuring in the Herdsman Glendalough Area. The Water Corporation will be responsible for ensuring that sufficient capacity exists within the water distribution system. It is envisaged that water reticulation upgrades will be required, and will need to be provided as part of the redevelopment through headworks charges.

Power

Western Power has advised that there is sufficient capacity in the existing network to meet future demand. With the substantial uptake of solar systems and the reduction in energy use through efficiency gains any future growth in power demand can be met through headworks charges.

Gas

The existing ATCO Gas network covers the entire Herdsman Glendalough study area, and is fed by a high pressure gas supply on Morley Drive from the north. Gas is considered a non-essential service, and ATCO Gas usually keeps up with areas being developed within the Perth metropolitan area, including centres marked for redevelopment. The area appears to be well reticulated with gas services, although this will need to be confirmed when preparing a detailed redevelopment strategy and associated staging.

Table 53: Herdsman Glendalough Land Use Yield 2021 (Source City of Stirling)

Land Use	Floor Space (m²)	Yield (Premises)	Employment Generation
Bulky Goods	-	-	-
Office	98,470	26	4,923
Retail	9,140	30	305
Industrial	8,784	4	110
Residential	-	1,259	-
Other	6,727	20	157
Total	123,121	1,339	5,495

Table 54: Herdsman Glendalough Land Use Yield 2031 (Source City of Stirling)

Land Use	Floor Space (m²)	Yield (Premises)	Employment Generation
Bulky Goods	-	-	-
Office	192,499	51	6,602
Retail	16,265	51	542
Industrial	13,176	7	165
Residential	-	3,072	-
Other	11,698	37	37
Total	233,638	3,217	7,346

Telecommunications

The study area is extensively serviced by Telstra and other providers in the area including NextGen, and Optus. There is a main corridor for communications services along Scarborough Beach Road that links the study area separated by Mitchell Freeway, but most of the existing services focus on distribution/reticulation. There is also another link that crosses Mitchell Freeway towards the north and in line with Roberts Street.

The NBN rollout plan however indicates that the construction for a fibre network is underway for the Stirling City Centre area. If the existing communications pattern is any indication, the entire study area should be serviced with fibre optic by 2020.

12.3.5 District And Neighbourhood Centre Utility Study

The Utility Study for District and Neighbourhood Centres (Utility Study) was commissioned to assist the City in delivering growth within the District and Neighbourhood Activity Centres and major Activity Corridors in the City.

It provides a framework for the required upgrade of the existing infrastructure, in order to accommodate growth in designated areas.

This study identified 32 Neighbourhood/Local Centres, 5 District Centres and 3 Activity Corridors as future growth areas outside of the main Secondary and Strategic Metropolitan Activity Centres.

Table 55 identifies which Activity Centres and Corridors require upgrades for wastewater, gas and power. No information was available for potable water from Water Corporation as they lack the resources to undertake the analysis of future demand.

From the analysis it appears the future services required for most of the District/Neighbourhood/Local Centres and Activity Corridors should be able to be met through normal upgrades funded by headworks charges.

It is recommended that working groups between the City of Stirling and the various utility providers be set up, in order to help plan and coordinate precinct development and staging.
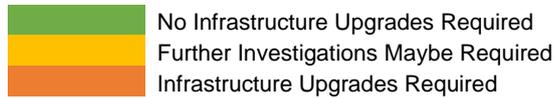
12.3.6 Utility And Infrastructure Provision – General Residential

With the move towards consolidation and increasing residential development in Activity Centres and Corridors, it reduces the need to increase density within the suburbs. This will ensure that the capacity of utilities within the suburbs is able to meet the future low demand. However if residential density were to be increased in the suburbs, then additional analysis of the capacity of utilities in these areas would be required.

12.3.7 Underground Power

A more equitable approach to underground power needs to be developed with the State Government to enable the rollout of underground power to all of the City's suburbs over time. This may need to include the calculation of the cost of replacing above ground poles and wires when assessing the cost that consumers will have to pay, and also allow longer payback times for lower socio economic areas to reduce the cost burden.

The ultimate aim of the City is to have all suburbs with below ground power. On current timeframes the City won't have all suburbs with below ground power until 2050. This long lead time will impact the City's ability to increase tree coverage in street verges to meet the City's target of 18% tree coverage. Strategies to speed up the undergrounding of power programmes should be explored with the State Government.

- 🟩 No Infrastructure Upgrades Required
- 🟨 Further Investigations Maybe Required
- 🟧 Infrastructure Upgrades Required

Development Area	Infrastructure Service Matrix Name	Wastewater	Gas	Power
NC 1	Flora Terrace	Green	Green	Green
NC 2	North Beach Plaza	Green	Green	Green
NC 3	Lynn Street	Green	Green	Green
NC 4	Carine	Green	Green	Green
NC 5	Gwelup Plaza	Green	Green	Green
NC 6	Sackville Terrace	Green	Orange	Green
NC 7	Scarborough Beach Road Doubleview	Green	Green	Green
NC 8	Brighton Road	Green	Green	Green
NC 9	Doric Street	Green	Orange	Green
NC 10	The Downs	Yellow	Orange	Green
NC 11	Woodlands Village	Green	Orange	Green
NC 12	Morris Place	Green	Orange	Green
NC 13	Flynn Street	Green	Green	Green
NC 14	Stirling Village	Green	Green	Green
NC 15	Jones Street	Green	Orange	Green
NC 16	Hamilton Street/Karrinyup Rd Balcatta	Green	Orange	Green
NC 17	Glendalough	Green	Green	Green
NC 18	Fieldgate Square	Green	Green	Green
NC 19	Westminster Plaza	Yellow	Green	Green
NC 20	Westminster Centre	Yellow	Green	Green
NC 21	Nollamara	Yellow	Green	Green
NC 22	Flinders Street	Orange	Orange	Green
NC 23	Tuart Hill	Orange	Orange	Green
NC 24	Blythe Avenue	Green	Green	Green
NC 25	Mirrabooka Village	Green	Orange	Green
NC 26	Pimlott Street	Yellow	Orange	Green
NC 27	Adair Parade	Green	Green	Green
NC 28	Walter Road	Green	Green	Green
NC 29	Coode St/Walter Rd	Green	Green	Green
NC 30	North Beach Road	Orange	Green	Green
NC 31	Lord Street	Yellow	Green	Green
NC 32	Bayley Street	Green	Green	Green
DC 1	Dianella Plaza	Green	Green	Green
DC 2	Dog Swamp	Yellow	Green	Green
DC 3	Northlands	Yellow	Green	Green
DC 4	Stirling Central	Yellow	Green	Green
DC 5	Main Street	Orange	Green	Green
C 1	Scarborough Beach Road West	Yellow	Orange	Green
C 2	Beaufort Street	Yellow	Orange	Green
C 3	Wanneroo Road	Green	Orange	Green

Area Infrastructure Serve Matrix

Table 55: Future Utility Requirements for Neighbourhood and District Centres and Corridors (Source: City of Stirling Utility Study)

12.4 Summary Of Key Issues Of Infrastructure And Utilities

The City of Stirling is constrained in terms of what funding capacity it has in relation to the provision of utilities and infrastructure. There is a lack of understanding of the capacity of utility providers and servicing agencies. Some gaps remain in terms of what capability of some growth areas of the City has. To deliver a consolidated approach consistent with the State and the City's growth strategy, closer working relationships with utility and infrastructure providers will need be the formed.

It is desirable for overhead transmission lines to be undergrounded, in order to progress street scaping which will enhance the character and amenity of neighbourhoods. These can achieved through the provision of added landscaping, street furniture, and street trees (including increased existing tree canopy coverage).

The City of Stirling may bid for suburbs/areas to be funded through the State Underground Power Program. This could be funded through Developer Contribution Plans which identify and part fund the costs of undergrounding of transmission lines.

Key Issue 9.1 There is no funding model and governance for the provision of utilities in some centres leading to uncertainty.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Develop funding and governance models to assist in the delivery of improved utilities.	Identify centres with limited utility capacity and work with utility providers and State Government on funding and governance arrangements to improve capacity.	Ongoing	CoS (City Planning)

Key Issue 9.2 There is a lack of understanding of the infrastructure capacity needs within the growth areas of the City.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Identify any areas within the City where services are lacking.	Undertake utility assessments as part of the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (City Planning)

Key Issue 9.3 The majority of streets in the City have above-ground power.			
Response	**Actions**	**Delivery Timeframe**	**Lead Delivery Department**
Recognise that undergrounding power can assist in urban design outcomes.	Ensure underground power is considered in the City's Activity Centre and Corridor Plans and place based planning studies.	Ongoing	CoS (Engineering Operations)
Progress with undergrounding powerlines within the City.	Support and submit underground power grant proposals where necessary, including investigating associated funding models.	Ongoing	CoS (Engineering Design)

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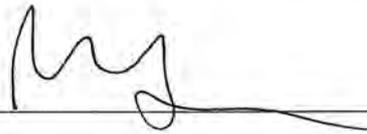Signed for and on behalf of the Western Australian Planning Commission

Certified for advertising under WAPC correspondence dated 17/11/2017

_____

an officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date   17 November 2017
_____

ADOPTED

The City of Stirling herby adopts the Local Planning Strategy, at the meeting of the Council held on the ___18___ day of September 2018
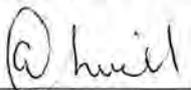
_____
Mayor

_____
Chief Executive Officer

ENDORSEMENT

Endorsed by the Western Australian Planning Commission on

_____
an officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date   25 October 2019
_____

City of Stirling
City of Choice

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