CITY OF COCKBURN

Local Planning Strategy

GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

Endorsed by the Western Australian Planning Commission

28 OCTOBER 2024

Disclaimer

This is a copy of the Local Planning Strategy at the date of endorsement produced from an electronic version of the Strategy held by the Department of Planning Lands & Heritage. Whilst all care has been taken to accurately portray the current Strategy provisions, no responsibility shall be taken for any omissions or errors in this documentation.

Consultation with the respective Local Government Authority should be made to view a current legal version of the Strategy.

Please advise the Department of Planning Lands & Heritage of any errors or omissions in this document.

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City of Cockburn

Local Planning Strategy – Part 1

cockburn.wa.gov.au

Adopted by WAPC at 13 February 2024 Statutory Planning Committee Meeting (subject to modifications)

Contents

Acknowledgement of Country

The Mayor, Councillors and staff of the City of Cockburn acknowledge the Whadjuk Nyungar people of Beeliar boodja as the traditional custodians of this land. We pay our respect to the Elders, past, present and emerging.

Document structure

The full Strategy comprises two parts, as follows:

PART 1 **Planning Strategy**	**Planning Directions and Actions**
PART 2 **Planning Context Background, Profile and Analysis**	**Section 1: Planning Context** **Section 2: Background and analysis**

How to read the Strategy

Local Planning Strategy Overview

What is the Local Planning Strategy?

The Local Planning Strategy is a high-level, long-term strategy that guides the growth and change of the City over the next 15 years. It seeks to influence public and private investment so that it enhances the wellbeing of people and the environment.

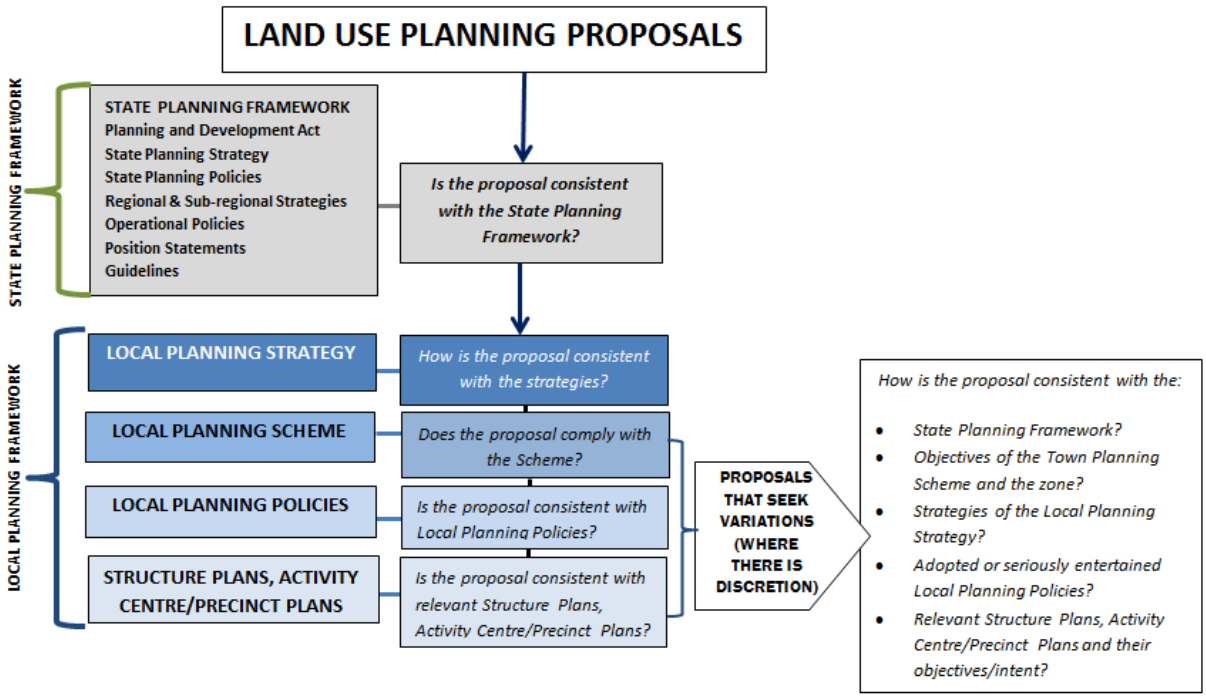
The Local Planning Strategy will set the framework to enhance the liveability of the City, including health, social connectedness, employment, prosperity, safety, and harmony with the environment.

The Local Planning Strategy sets the direction for an updated and improved local planning framework by identifying strategies to address what is important to the community, and to deal with new challenges faced by the City.

The Local Planning Strategy will also drive a more robust and transparent framework for decision making and the exercise of direction. A key part of this framework is the Local Planning Scheme which will be guided by the Local Planning Strategy, including zones and development standards. Together the Local Planning Strategy and Scheme will guide local planning policies, Precinct Structure Plans and Structure Plans to create a logical and interconnected local planning framework that makes the intent behind every decision clear.

Importantly, the Local Planning Strategy also has a high-level role in guiding decision-making, as shown in figure 1, with the expectation that all land use planning is consistent with the identified strategies.

Figure 1: How land use planning decisions are made and the role of the Local Planning Strategy



How does it fit within the wider framework?

The Local Planning Strategy is cognisant of the City of Cockburn Strategic Community Plan, and it must reflect the State Planning Strategy and framework.

Strategic Community Plan Alignment

The Strategic Community Plan sets out the City's vision as follows:

Our Vision

Cockburn. The best place to be.

The City's Strategic Community Plan outlines how we want our future to look and how we will get there. It covers what our priorities are and what actions we will take. The Plan informs everything the City does.

The Plan has five broad strategic themes which reflect the priorities of the community, and shape the City's development as follows:

Local Economy	A sustainable and diverse local economy that attracts increased investment and provides local employment.
Environmental Responsibility	A leader in environmental management that enhances and sustainably manages our local natural areas and resources.
Community, Lifestyle & Security	A vibrant, healthy, safe, inclusive and connected community.
City Growth and Moving Around	A growing City that is easy to move around and provides great places to live.
Listening and Leading	A community focused, sustainable, accountable and progressive organisation.

While these may be refined over time as the Strategic Community Plan is reviewed, they are considered to represent the aspirations and key priority areas for the community into the foreseeable future and this Strategy is cognisant of these priorities.

State Planning Strategy

The following principles are derived from the State Planning Strategy 2050 (2014).

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

Governance: To build community confidence in development processes and practices

Planning should take account of and give effect to, these principles and related policies to ensure integrated decision-making throughout government.

The Local Planning Strategy incorporates these principles into the key objectives of the themes.

The Strategy

Local Planning Strategy Vision

To make Cockburn the best place to be, the following vision is set for the Local Planning Strategy:

To create a sustainable, healthy, connected and prosperous Cockburn community.

This vision is derived from the outcomes of the Strategic Community Plan and the principles of the State Planning Strategy.

The Local Planning Strategy is structured around the following key themes:

- ENVIRONMENT
- URBAN GROWTH AND HOUSING
- ECONOMY AND EMPLOYMENT
- INFRASTRUCTURE
- GOVERNANCE

A key objective is identified for each theme, with a clear description of what a sustainable, healthy, connected and prosperous Cockburn community looks like. This provides the context for an identified set of planning directions and actions for each theme that will enable the Local Planning Strategy vision to be achieved.

The planning directions and actions address the comprehensive analysis set out in Part Two and draw on what has been identified as important to the community through the Strategic Community Plan, also seeking a balanced approach that acknowledges Cockburn's diversity of stakeholders.

Strategy Plan

The Strategy Plan is a spatial representation of key elements of the Strategy.

Planning Directions and Actions

The Local Planning Strategy sets out the following for each theme:

PLANNING DIRECTIONS

These guide and underpin all future land use planning and decision making, with the expectation that all land use planning proposals respond to these. They also inform a set of identified actions.

ACTIONS

These set out specific ways the City will achieve the planning directions; the timeframe; and who will be involved.

EVALUATION MEASURES

These provide a way to measure progress.

The Local Planning Strategy also identifies 10 Planning Areas (identified on the map) that require particular consideration and analysis, and Planning Directions and Actions are identified for each of these areas.

Achieving the vision

How do we make Cockburn the best place to be; and what does a sustainable, healthy, connected and prosperous Cockburn community look like?

ENVIRONMENT

Objective: Our City will protect and enhance environmental values and the diverse natural landscape, promote sustainability, and respond to a changing climate.

The community have told us they want to see more trees and better protection of the environment. In response, the City will become greener as we grow. Environmental and landscape values across the City will be enhanced, including the City's ecological corridors and biodiversity values.

There will be increased tree canopy cover across the City to reduce the heat island effect, encourage walking, improve the health and well-being of residents, and contribute to a green leafy local character sought by the community.

The City will become more environmentally sustainable and adapt effectively to a changing climate, including changes to coastal processes.

URBAN GROWTH AND HOUSING

Objective: Our neighbourhoods will have a distinctive local character that is valued by the community; high levels of amenity; and housing that responds to the needs of residents to optimise their health and wellbeing.

The City's unique and distinctive intended future character will be identified through the local planning framework so that it can be enhanced. Cultural heritage, including Indigenous and cultural heritage will be respected and celebrated to strengthen the City's identity.

As the City matures, we will respond to changing community expectations for centres which will become community focal points - safer and more connected, with a focus on being designed for people not cars.

There will be an emphasis on design quality in the built environment, and all change and development will respond to the local context and contribute positively to an identified local character that people are proud of.

There will be a focus on facilitating housing that meets identified needs, so all residents have appropriate housing options to give them the best quality of life. New homes will be well-designed, have high levels of amenity, and be more sustainable to enhance the health and wellbeing of residents.

A network of green spaces with recreational and environmental value will be a feature of the City. This network, and all parks and public spaces will be designed to meet the recreational needs of the community while protecting environmental values, to promote healthy, active lifestyles and connection with nature.

ECONOMY AND EMPLOYMENT

Objective: Our economy will mature and evolve to capitalise on emerging industries, attract investment and create broader local employment opportunities so that we prosper.

The City will create high quality, high amenity, attractive, and sustainable centres and industrial areas.

Employment areas will be protected to support the economy. This will also maximise the creation of local jobs to provide residents with more opportunities to work close to home and benefit from reduced work travel times and costs. Infrastructure and transport connections to these areas will be safe and efficient and include public transport where possible.

The City's tourism aspirations, opportunities and potential will be explored, including where investment is feasible and appropriate.

The City will proactively consider economic development opportunities by preparing an Economic Development Framework.

INFRASTRUCTURE

Objective: Our City will be connected and easy to move around safely for all users, with high amenity pedestrian and cycling connections making it easier to make sustainable travel choices.

All people and goods will be able to move to, from and within the City safely and efficiently. Critically, there will be a transition to sustainable transport mode choices, with the City advocating for an improved public transport network.

The focus will be connecting people and encouraging active transport with better pedestrian and cycling connections for the benefit of the environment and to promote healthy, active lifestyles. This means safe, shaded, walkable streets and pedestrian connections that are designed to prioritise pedestrians and cyclists, and to connect people to centres, public transport, employment, and local services and facilities.

GOVERNANCE

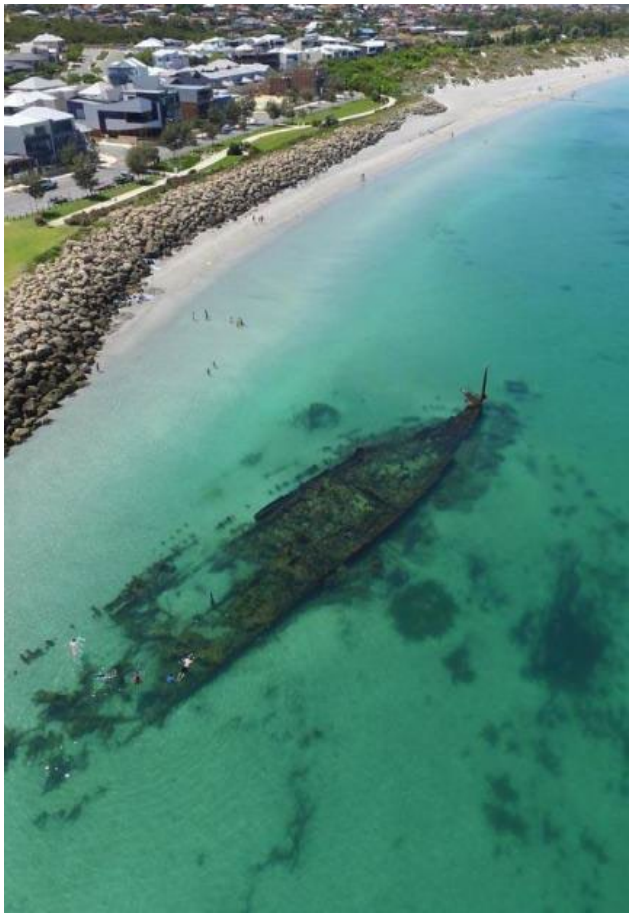
Objective: Our City will be able to adapt and respond to change to efficiently manage the challenges of growth and respond to community needs while working towards our vision.

The City will respond and adapt to changes efficiently and effectively as they arise, within a robust and transparent framework. This framework will clearly set out how discretion is used to make decisions.

The community will be well-informed, empowered and engaged, and the way we make decisions will be clear.

The local planning framework will be capable of balancing differing stakeholder needs while working towards the City's vision.

The City will take on advocacy roles to drive improvements and infrastructure delivery for the community and to enhance the health and well-being of residents.



Strategic context

The Strategic context provides an overview of the key issues for the City, and provides the context for the Strategies and Action Plan. Further detail is included in the comprehensive analysis found in Part Two of the Strategy.

POPULATION AND HOUSING

Strong continued population growth is forecast for the City of Cockburn. The population estimate for 2020 is 120,417, and is forecast to grow to 151,176 by 2031. In 2016 there were 43,076 dwellings in the City, and this is forecast to grow from 43,076 in 2016 to 59,954 in 2031, and 67,847 by 2041.

Until 2031 this growth will be strongly focused on greenfield areas, but beyond that when those areas are fully developed, the growth of additional dwellings will be primarily within the City's infill areas (Spearwood, Hamilton Hill and Coolbellup), North Coogee and Cockburn Central.

Housing diversity across the City has improved as a result of the infill occurring through the Revitalisation Strategy areas (Hamilton Hill, Spearwood – South and Coolbellup), and higher densities at Cockburn Central and North Coogee. This has provided a greater range of housing options for the community.

Across the City detached housing is still the predominate housing type, reflective of the suburban nature of much of the Cockburn locality. There is also a strong supply of dwellings with four or more bedrooms and there is an important role for this type of housing given that families with children are forecast to remain a strong component of households in Cockburn.

Given that the City has a strong supply of larger, single dwellings, the key focus is ensuring the right housing options are available as a choice for other household types, particularly smaller households, given the projected increase in these households across the whole of the City.

Many of the infill dwellings that have been built are still larger dwellings. A future focus will therefore be measures to encourage smaller dwelling types within infill areas. This will also encourage provision of more affordable dwellings, and will assist in meeting the housing needs of an ageing population.

The overall population of the City of Cockburn is ageing, a trend which is seen across Australia. Of particular note the number of residents over the age of 70 will more than double from 7,189 in 2014, to 14,869 in 2031.

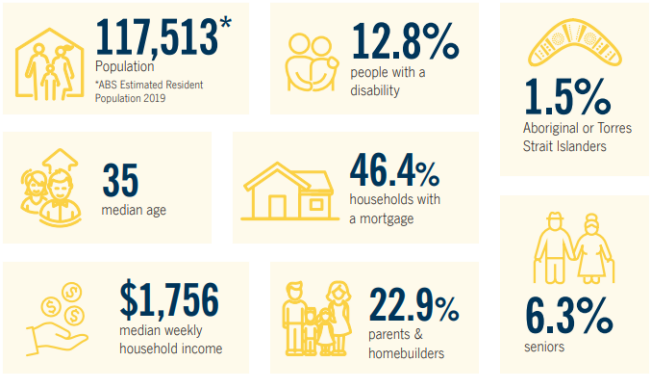
The ageing population has significant implications for housing, including the need for aged care facilities, smaller dwellings for smaller households, and accessible/adaptable housing to allow people to remain in their own homes.

With the exception of purpose built aged and dependent care accommodation, very few dwellings have been built to incorporate universal design features. Inaccessible housing leads to social disadvantage and has negative effects for social integration and participation. To address this issue the City will continue to provide incentive for accessible homes, and to promote their benefits.

Perth and Peel @ 3.5 million provides the framework for infill development, and sets a target for Cockburn of 14,680 dwellings by 2050. The Local Planning Strategy identifies a pathway to achieving this target by 2050, specifically setting out what will be delivered over the next 15 years, and what will be considered beyond that timeframe. A summary of the City's projected infill against the Perth and Peel targets is set out in Appendix A. This demonstrates that the City is tracking towards the ultimate target, whilst ensuring protection of neighbourhood character and amenity.

The City will continue to identify ways to protect the valued green, leafy neighbourhood character and to ensure that new development has a positive impact on the local community, resulting in high-quality, well-designed and sustainable homes.

The City will also focus on supporting and improving liveability outcomes in established suburbs, including through the preparation of Local Area Plans to identify ways to improve liveability and vitality in our suburbs.



NATURAL ENVIRONMENT

Cockburn features some of Perth's most unique natural areas including the Beeliar Regional Park which encompasses Bibra Lake, Manning Park, and Thomsons Lake which is a wetland of international significance, and Jandakot Regional Park.

Protection of the City's natural environment has become a priority for the community, with many of these areas also important for their recreational value, and their contribution to our unique local character.

We are facing a range of new challenges as the world's climate changes. More days of extreme heat, higher intensity rainfall, extreme storms, reduced levels of overall rainfall, rising sea-levels and risks of future droughts are all predicted. Cities that plan and act early will better withstand the impacts of climate change and maintain a platform for future health and prosperity.

The heat island effect is predicted to increase which will negatively impact the environment and the health and wellbeing of residents. A concerted effort is required to increase tree canopy cover across the City to combat this, requiring a wide range of mechanisms.

Measures to improve tree canopy in infill areas should continue to benefit the environment; improve climate change resilience; improve residential amenity, and the pedestrian environment.

Protecting and enhancing ecological corridors and wetland will be a critical way to enhance biodiversity values. There is an opportunity to promote residential linkages in both established and new residential areas, given that vegetated gardens and verges with local species attract native fauna, help maintain genetic diversity and provide ecological stepping stones.

Roads and other transportation corridors represent a prime opportunity to increase urban canopy, whilst also improving pedestrian and cyclist amenity.

Ecological connectivity also requires consideration of the role of rural land. Measures to protect and enhance connectivity through rural areas, including targeted incentives to increase vegetation cover on private lands within ecological linkages may help to encourage vegetation restoration and should be investigated.

Sections of the City's coast are exposed, and vulnerable to coastal processes. Over time, the coast will become increasingly vulnerable to the impacts of sea level rise, storm surges and changes in sediment regimes. How we respond to those changes will be important to ensure we can continue to enjoy our coastal areas, while ensuring future generations are not burdened with excessive costs resulting from actions and decisions that we make today.

TRANSPORT

A connected City makes it easy for people of all ages and abilities to move around, providing accessible pathways to accessible places.

Projections indicate that by 2031 the volume of traffic using the City's road network is likely to exceed the capacity on many major arterial roads during peak hours. While new roads and road upgrades may be appropriate in some locations, this alone will not solve the problem. This means it will become difficult to move around the City which will negatively impact residents and affect businesses and economic opportunities.

There will need to be a transition to more sustainable transport modes like cycling, walking and public transport. This will create a more equitable, liveable, resilient and futureproof transport network that supports and prioritises the health and well-being of residents, and the environmental values of the City.

This mode shift will require the City to work with the community and government agencies, and the following are identified key elements:

Fremantle to Cockburn Rapid Transit **-** This rapid transit corridor, identified in *Perth and Peel @ 3.5 Million* is critical to improving the City's public transport network. The preferred mode and route are to be determined, with light rail, bus rapid transit and trackless trams considered viable options, noting that any new mode should be able to integrate with other secondary transit systems.

Improving pedestrian and cycling network connectivity and infrastructure **-** Initiatives to extend the network, close gaps and improve the quality of connections will be critical. A priority is providing walking/cycling access to activity centres, key employment nodes, transport hubs, community facilities and schools, responding to a broad array of ages and ability. Development will need to respond and connect to the pedestrian and cycling network.

A safe and efficient road network **-** A robust and carefully considered road network is critical to provide access to opportunities for residents as well as supporting the diversity of commercial and industrial land uses. Regional connectivity needs to be balanced with local needs, as well as the protection of residential amenity, and social, heritage, landscape and environmental values.

Key elements of this road network are:

Beeliar Drive is the preferred main east-west distributor, likely to require upgrades, particularly between Stock Road and Cockburn Road.

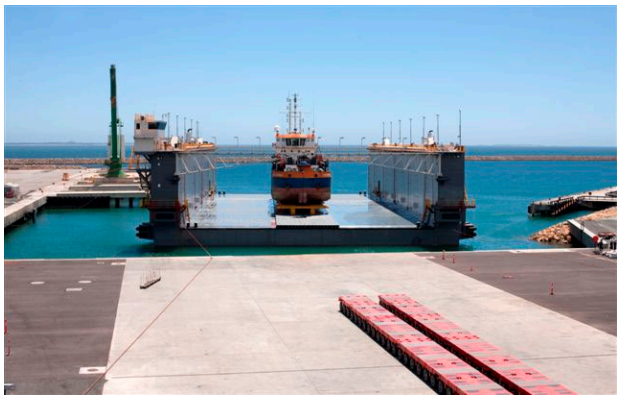
Russell Road and *Rowley Road* provide important east-west connectivity and access to existing and future industry and employment. They require enhancements to improve safety and active transport amenity, whilst minimising impacts on the surrounding environment and land uses. *Perth and Peel @ 3.5 Million* identifies Rowley Road as a future Primary Distributor and State Road, as part of the Fremantle to Rockingham Controlled Access Highway and acknowledging its connectivity to Latitude 32.

Farrington Road will remain an important east-west link with upgrades within the existing road reserve.

Planning and designing a freight network suitable for future needs will help to enable economic growth and commercial activity and contribute to a safer road network with the separation of heavy vehicles and regular traffic. The future of the Restricted Access Vehicle (RAV) network needs to consider future land use and needs in the freight industry in terms of vehicle sizes.

Jandakot Airport has strategic importance as an aviation base for emergency services and is one of the busiest airfields and largest pilot training bases in Australia, operating 24 hours per day, seven days per week.

The City will continue to find a balance between the operational needs of the Jandakot Airport with the amenity expectations of sensitive land uses and physical environmental constraints.



INFRASTRUCTURE

It is critical that infrastructure keeps pace with growth to support the needs of the community, and to ensure Cockburn is a resilient and liveable place. This includes upgrades in our older suburbs to ensure they remain great places to live.

New infrastructure and upgrades will need to respond to a changing climate to improve climate change resilience. The City will continue to implement best practice water sensitive urban design for stormwater management through new and upgraded drainage infrastructure. Forecasting future service delivery needs and the capacity of the drainage assets to meet short, medium, and long-term needs will be important.

While traditional hard infrastructure continues to be important in new areas, technology will play a new

role. Telecommunications is more central to our lives at home and work than it has ever been. As almost all of us rely on these services, access to networks that keep us connected is becoming essential. Telecommunications support the entire economy; enable innovation and impact on our liveability and productivity.

Significant investment is occurring in the telecommunications sector, responding to growth in demand for data-driven services and new uses for telecommunications. Telecommunications networks are constantly evolving, and of all infrastructure sectors, telecommunications is today the least recognisable sector from a generation before. Change is set to continue which includes investment in a new generation of mobile networks.

In this context, planning for the physical infrastructure particularly within established urban areas will be a challenge. This is further exacerbated by the fact that telecommunications infrastructure in Australia is privately owned; and that the under telecommunications legislation much of the infrastructure is exempt from local government approvals.

This City will continue to explore ways to better plan for telecommunication infrastructure and other technology to minimise their visual intrusion and impact on neighbourhood character.

The City will investigate the use of smart technologies where they are identified as being able to improve sustainability, liveability and deliver improved outcomes for the community.

ECONOMY, RETAIL AND EMPLOYMENT

A successful local economy is a key driver of the wellbeing of a community. Given Cockburn's location within the South-west metropolitan growth corridor, planning over the last 25 years has largely been growth orientated with large tracts of greenfield sites developed for residential development and the infrastructure required to support this growth.

Active planning of key developments has also seen the delivery of new jobs and services including the industrial precincts of Bibra Lake (including Cockburn Commercial Park and Phoenix Business Park), the Australian Marine Complex (AMC) and Jandakot City. Along with the AMC, the Western Trade Coast (WTC) incorporates the Kwinana Industrial Area, Latitude 32 and Rockingham Industry Zone creating a hub for fabrication and manufacturing that supplies goods for the resources and agricultural sectors.

While forecasts indicate a strong future for Cockburn, growth attributable to greenfield development is expected to slow towards 2031 as the City transitions towards growth mainly from urban infill. This will see a change in focus for the City, moving away from its major land and infrastructure delivery role, to having to provide a greater focus on supporting Cockburn's key strategic industries, local businesses and centres which have arisen as a result of these developments.

This will include identifying an approach to support the region's key strategic sectors and to enable more Cockburn residents to work closer to home rather than commuting to distant employment centres.

A strategic assessment has been undertaken as to whether the City has sufficient employment land, and whether it is appropriately distributed to meet the City's needs into the future. This has determined that the City has sufficient land to track towards the identified *Perth and Peel @ 3.5million* self-sufficiency targets.

In this regard, the City's industrial areas are important local employment generators, and ensuring that they are robust and resilient will be critical to grow local jobs and support the local economy. This will require identification of priority employment areas to be protected.

The City has a network of activity centres that are largely distributed and located to meet the needs of the community, with analysis identifying only a few minor potential changes to be further explored through the Local Commercial and Activity Centre Strategy. These centres are at varying stages of their maturity, with many needing to evolve over time to meet the needs of the community and function more as community focal points. This will require a framework to ensure the viability of centres to meet the needs of the community.

The success, health and wellbeing of a community is often underpinned by economic activity. Historically, harnessing economic activity has not been actively considered in a holistic coordinated manner, with benefits often being achieved incidentally.

The City now seeks to proactively consider economic development opportunities by preparing an Economic Development Framework. This framework will embed economic considerations/objectives in all of the City's activities and decision making, including land use and infrastructure planning. The aim of the framework is to ensure that all of the City's decisions and planning are evidence-based and proven to maximise economic benefits, assist with reducing inequalities in service distribution and raise overall quality of life outcomes.

RECREATION AND OPEN SPACE

One of the key measures to the liveability of the City of Cockburn is the level of access that our community enjoys to recreation and open space areas. This 'network' of green spaces must provide for a full range of recreational needs, including organised and formal sports grounds, passive recreational opportunities, and smaller local parks. The trend of smaller lot sizes and less private open space means that the role of open space is more important than it has ever been.

Planning has an important role to play both in the physical provision of recreation and open space areas, as well as functionality and accessibility. This takes in to account the infrastructure that supports accessing and recreating within parks, and how our neighbourhoods can be ordered around green spaces as the natural green hearts of the community.

The City's open space network is largely established, and enhancements and embellishments to the parks have adapted to community needs, including nature play, dog parks, and more recreational opportunities such as skatepark and pump tracks. Ongoing consideration will also need to be given to other emerging interests.

In new areas parks should balance natural areas, such as bushland and wetlands with opportunities for active recreation, particularly place spaces for children.

Recognising continuing infill development, working from home, and the evolution of our suburbs, there is an opportunity to identify some parks in central locations, such as close to activity centres, to take on a public space or urban park role. A place-based approach and engagement with the community will shape what these could be.

Well-planned trails perform a number of highly beneficial roles in the broader community, providing opportunities for low-key unstructured passive recreation for local residents and visitors. They also provide physical exercise opportunities; foster general well-being; are a valuable tourism attraction; and can help educate and instil a conservation ethic amongst users.

COMMUNITY INFRASTRUCTURE

Community infrastructure is essential for the physical and mental health, social wellbeing, and economic prosperity of communities. It plays an important role in bringing people together and supporting social networks, which help build strong and resilient communities.

Community infrastructure has a much broader role than simply providing locations for service delivery and destinations for social activities and programs, contributing to the built environment and influencing the specific identities and character of the community. The City will seek to ensure it responds to community need and context through structure plans and development approvals. The City will continue to take a strategic approach to community infrastructure planning, and will advocate for an evidence-based approach that provides for equitable

distribution and provision of community infrastructure that is also financially sustainable.

CUTURAL HERITAGE

The City of Cockburn has a rich and diverse history that is reflected in the built, natural, and cultural environment. As the area experiences growth and change, the community's interest in heritage and the history of the area strengthens. The challenge is to ensure this change is managed in a way that does not erode the City's unique character, but rather enhances it.

Cockburn's traditional owners are the Whadjuk People, part of the Beeliar group. Their area extended south from the Swan and Canning Rivers. Today, Aboriginal people maintain strong links with the area and so far sixteen Aboriginal campsites have been found in Cockburn, most of them located on the fringes of Bibra Lake (Walliabup) and North Lake (Coolbellup). Into the future we will seek to better understand these connections and intangible values.

Much of the City's historic heritage is still visible in remnant buildings, ruins, and landscape elements. This includes a number of turn of the century weatherboard houses, and limestone dwellings constructed in the 1920's, excavated from local quarries.

Remnants of the war effort are still visible throughout the City – this includes the former explosives reserve at Woodman Point, the gun emplacements in Hamilton Hill, and the WWII Army Camp site in Bibra Lake that was only re-discovered in 2014.

The City has a strong industrial heritage that is visible in landmarks such as the former South Fremantle Power Station and Lime Kilns that are included on the State Register of Heritage Places.

The City will continue to appropriately protect heritage places and trees with cultural heritage value through the Local Government Inventory/Local Heritage Survey, heritage list and significant tree list.

The retention and adaptive re-use of heritage buildings; and the appropriate interpretation of heritage places and sites, such as through public art and street naming, will be an important way to reflect the history and heritage of Cockburn, and to maintain its unique character.

Many of the City's most iconic heritage sites are owned or managed by the State Government, and the City will advocate for improved management and adaptive reuse measures for these places, while also improving recording of intangible heritage elements, and management of our own heritage places for current and future generations to enjoy.

TOURISM

The City of Cockburn is fortunate to have a broad array of attractions and high quality facilities for local visitors and tourists.

Tourism is also an important component of the Western Australian economy. It creates employment opportunities and supports additional recreation options for residents. Amenities and facilities including accommodation, dining/entertainment facilities as well as recreation infrastructure are vital to supporting the visitor economy.

The natural elements of the City are a key attractor, and provide opportunities for unique nature based experiences and education. This includes the central chain of wetlands, the associated regional parklands and nature reserves, the beach and foreshore environment of Cockburn Sound.

Coogee Beach foreshore reserve is a popular coastal destination with high recreational, commercial and environmental value. Major activities include water, sports and social activities including community events. This node is supported by other important features including the Holiday Park, Coogee Beach Integrated Community Facility and associated businesses, the Coogee Beach Café and Coogee Common within the Old Coogee Hotel.

Uniquely along the City's coast there is the attraction of numerous cultural heritage elements, including some relatively unknown parts of Western Australia's

history, such as the Woodman Point explosives reserve and quarantine station. The coast also offers a variety of recreational experiences, including the Coogee dive trail, associated with the Omeo wreck.

Added to this is the emerging experience on offer at Cockburn Regional Centre, which includes the Cockburn ARC aquatic and recreation centre.

Cultural heritage across the City will be an important, and there is an opportunity to connect places to share the stories of people, cultural diversity, history, industries and the natural environment.

The Aboriginal Cultural and Visitors Centre at Bibra Lake will be a place of recognition and learning about Nyungar culture, language, music, art and dance.

The landmark South Fremantle Power Station has the potential to be a major attractor. The City will continue to advocate for a staged adaptive reuse plan that unlocks opportunities for the site. Importantly the City's vision for the South Fremantle Power Station is one that protects what is most valued about the site, and maximises the community benefit.

There is the potential to grow our visitor economy to provide local job opportunities. These aspirations and opportunities have not been comprehensively explored across the City as a whole. A Tourism Strategy will explore the City's aspirations and a shared vision with the community and look at the opportunities and potential which will also be part of the Economic Development Framework.

There is a key opportunity to build on the success of the City's festivals, events and cultural programs by supporting and promoting the City as a great place for events for the benefit of the community and local economy. This will include consideration of land use planning matters such as parking, appropriate use of reserves, management of food trucks, and impacts on environmental values and residential amenity.

RURAL AREAS

The City of Cockburn has a proud history of market gardening and rural land use, and over time some of these areas have been replaced by urban development. This has occurred across the Perth metropolitan area, with rural uses relocating further out to larger landholdings away from sensitive uses to achieve greater economies of scale. This transition has seen changes in farming practices, and much larger scale rural businesses and agriculture.

Much of the City's 'rural' zone is within the Kwinana Air Quality buffer, and has been identified within *Perth and Peel @ 3.5million* to remain rural primarily for this reason. While characterised by smaller landholdings and constrained by water availability, this area still has potential to provide for a range of viable agricultural uses, including protected cropping, and other rural uses. With an understanding of these constraints, these opportunities can be fostered. Rural areas also contain valuable areas of bushland with high environmental value.

The area's rural character will be identified and protected to allow it to function as somewhere that can harmoniously accommodate small scale viable agricultural uses, hobby farm pursuits, and rural lifestyle purposes which have attracted many people to the area.

It will be important to provide an appropriate range of uses to provide some flexibility for landowners to use their land for rural pursuits, whilst protecting rural amenity, character and environmental values. In identifying this range of uses the limited agricultural potential will be acknowledged as a unique circumstance for the area that requires some flexibility in providing for appropriate use of the land.

The City will look at ways to foster the local character and identity of the 'rural' and 'rural living' zones.

RURAL WATER PROTECTION ZONE

The 'Rural Water Protection' zone accounts for a significant portion of the City of Cockburn land east of the Kwinana Freeway, encompassing the semi-rural landholdings of the suburbs of Banjup, Jandakot and Treeby.

The Rural Water Protection zone exists to protect groundwater quality and quantity, through ensuring land use and development protects the ecological integrity of important wetlands (which are hydraulically connected to groundwater), and also to maintain and increase natural vegetation cover. Tight control and limitation of land use and development is a clear imperative for the Rural Water Protection zone.

The Jandakot Groundwater Mound contributes a significant volume of high-quality water to Perth's integrated water supply scheme. Rural Water Protection zones are within the assigned Priority 2 Public Drinking Water Source Areas where low level rural land uses are considered appropriate (generally with conditions) and the risk to the water resource is minimised. Further guidance can be found at State Planning Policy 2.3 – Jandakot Groundwater Protection, Draft State Planning Policy 2.9 – Planning for Water, and Water Quality Protection Note 25: Land use compatibility tables for public drinking water source areas (DWER, 2021).

The Jandakot area, like many former rural areas of Perth, has experienced considerable change over the past two decades. It is understandable that for residents within the area there is a desire for some certainty regarding how any future change could affect their land and rural lifestyles.

The hydrology of the groundwater mound is complex, and further studies are required to better understand this.

The Jandakot Groundwater Mound supports remnant Banksia woodlands, and is hydraulically connected to important wetlands. Therefore changes to groundwater levels has the potential to have a catastrophic and irreversible impact on these areas, and must be thoroughly investigated and understood prior to any land use changes occurring.

The City will advocate for the State Government to undertake this study to provide greater certainty for landowners and to inform future planning of the area.

Perth and Peel @ 3.5million has recommended a portion of the 'Water Protection' zone be designated for Urban Expansion, known as the 'Jandakot/Treeby Urban Expansion Area'. The City will continue to advocate for the timely investigation of this area by the WAPC.

This area is adjacent to Jandakot Airport which has strategic importance as an aviation base for emergency services, also making a significant economic contribution as a strategic employment area. It is one of the busiest airfields and significant pilot training bases in Australia, operating 24 hours per day, seven days per week. Its operation is to be protected as far as practicable.

In addition to environmental matters related to the groundwater mound, much of the area has high conservation values, including:

- Conservation Category Wetlands
- Declared rare flora
- Threatened ecological communities
- Bush Forever sites
- Extensive remnant vegetation and identified ecological corridors, including regional linkages.

The area is also subject to other constraints which require careful consideration, including designation as a bushfire prone area; and various land use buffers including dog kennel noise.

PLANNING DIRECTIONS & ACTIONS

1.0 ENVIRONMENT

Our City will protect and enhance environmental values and the diverse natural landscape, and respond to a changing climate.

PLANNING DIRECTIONS ▪ ***Guiding and underpinning all future land use planning and decision making; and*** ▪ ***Informing a set of identified actions.***	EVALUATION ***How will we know we're on track?***
1. *Protect and enhance important biodiversity areas and corridors, including requiring development to respond to and enhance identified ecological corridors.*	▪ *Formalisation of ecological corridors within the local planning framework.*
2. *Protect and enhance areas of ecological value, while supporting opportunities to enjoy our natural areas.*	▪ *Level of vegetation protection within identified ecological corridors.*
3. *Maximise all opportunities to increase and retain tree canopy cover to reduce the heat island effect, provide urban habitat, enhance amenity, protect local character, and improve the health and well-being of residents, including:* • *Tree canopy within the public realm that is maintained, protected and increased over time.* • *More trees and gardens within existing and proposed urban and rural environments, including private properties.* • *Commercial and industrial developments to contribute to tree canopy cover.*	▪ *Establish baseline data as per the Urban Forest Plan, including:* ▪ *Measure tree canopy cover and undertake regular monitoring with progress reported each year via the State of Sustainability report.*
4. *Protect and enhance important cultural landscapes and places of Aboriginal significance.*	▪ *The number of places with Aboriginal heritage significance enhanced or interpreted.*
5. *Development is responsive to the local landscape and local distinctiveness.*	▪ *Meet the pollutant load reduction targets of the City's Drainage Management Strategy.*
6. *Improve the City's climate change resilience.*	▪ *Measures to protect environmental values of the rural land.*
7. *Ensure development, infrastructure and the location of coastal facilities responds appropriately to coastal processes.*	▪ *Meets the requirements of the City's Coastal Adaptation Plan and Coastal Hazard Risk Management Adaptation Plan.*
8. *Development and built form that is environmentally sustainable and responsive to the prevailing climate in Perth.*	
9. *Improve the City's water resilience and security.*	
10. *Enhance water quality, the health of wetlands and groundwater resources.*	
11. *Maintain the 'Rural' zone as an important transitional area between environmental assets and other land uses.*	

	ACTIONS	Priority	City Role	Scale/ scope
1.0	***Protect and enhance important biodiversity areas and corridors, including requiring development to respond to and enhance identified ecological corridors.***			
1.1 	Develop mechanisms to guide tree and vegetation retention/protection, including ecological corridors while facilitating future development.	0-5yrs	Lead	Low
1.2 	Develop measures for ecological corridors, outlining revegetation, restoration and landscaping standards expected of developers, and requirements for other landscape elements to strengthen connections, such as wider verges and median strips to accommodate street trees and low understorey.	0-5yrs	Lead	Low
1.3 	Identify measures, including possible incentives, to improve vegetation retention in the City's rural zones, particularly in areas that form part of an identified ecological corridor.	Medium	Lead	Low
1.4 	Explore measures to encourage retention of mature trees and consider incentives for landowners to retain these trees.	Medium	Lead	Low
1.5 	Advocate for the consideration of fauna underpasses or overpasses wherever regional level transport corridors cross the path of ecological corridors.	Ongoing	Lead	Med
1.6 	Seek to support development that is site responsive and avoids or minimises detrimental impacts on native vegetation, in accordance with State Planning Policy 2.0 'Environment and Natural Resources' and the State's 'Native Vegetation Policy 2022'.	Ongoing	Lead	Med
2.0	***Protect and enhance areas of high ecological value, while supporting opportunities to enjoy our natural areas.***			
2.1 	Identify measures to encourage developers to retain natural vegetation within new areas of public open space and development sites where possible, particularly areas that will be developed for passive recreation.	0-5yrs	Lead	Low
2.2 	In collaboration with relevant State agencies, ensure habitat of threatened fauna is not impacted by future development proposals.	Ongoing	Partner	Med
2.3 	Consider the benefits of 'building exclusion' zones for larger landholdings commonly in rural zoned areas to minimise the impact of development on vegetation.	Medium	Lead	Low
3.0	***Maximise all opportunities to increase and retain tree canopy cover to reduce the heat island effect, provide urban habitat, enhance amenity, protect local character, and improve the health and well-being of residents, including:*** • ***Tree canopy within the public realm that is maintained, protected and increased over time.*** • ***More trees and gardens within existing and proposed urban and rural environments, including private properties.*** • ***Commercial and industrial developments to contribute to tree canopy cover.***			

3.1	Identify improved measures to protect existing street trees.	0-5yrs	Lead	Low
3.2	Identify requirements for structure plans to be designed to maximise tree canopy within road reserves and public open space, including retention of existing trees, addition of new trees, and providing sufficient information to demonstrate how this will be achieved.	0-5yrs	Lead	Low
3.3	Introduce a requirement for all structure plans to include a 'Statement of Design Intent' which clearly sets out the design rationale for streetscape character, including street tree distribution to be achieved to provide flexibility at the subdivision and development stage whilst ensuring streetscape character and tree canopy objectives are achieved.	0-5yrs	Lead	Low
3.4	Introduce more robust requirements for tree planting in proposed car parking and hardstanding areas to provide shade, enhance local character, and contribute to the City's tree canopy.	0-5yrs	Lead	Low
3.5	The narrowing of roads, including laneways to be designed inclusive of street trees to contribute to the urban forest and contribute positively to a green, leafy local character with sufficient details provided at the structure plan stage (or earliest stage) demonstrating how this will be achieved, including location of services and bin pads.	0-5yrs	Lead	Low
4.0	***Protect and enhance important cultural landscapes and places of Aboriginal significance.***			
4.1	Continue to investigate and sensitively interpret sites of Aboriginal significance and their connections throughout the City. Where Aboriginal cultural heritage values are identified, seek to minimise or avoid harm.	Ongoing	Partner	Med
5.0	***Development is responsive to the local landscape and local distinctiveness.***			
5.1	Liaise with service providers early in identification of urban areas to identify requirements for services and level changes to minimise impact on the natural landscape.	Ongoing	Lead/ Partner	Low
5.2	New structure plans to demonstrate a response to natural landform, environmental features and surrounding development.	Ongoing	Lead	Low
6.0	***Improve the City's climate change resilience.***			
6.1	Continue to implement fire management plans for natural areas to manage the fire risk, and ensure they are updated to deal with changes to the fire seasons.	Ongoing	Partner	Med
6.2	Ensure that decisions about the location, construction and maintenance of infrastructure considers the risk to this infrastructure from climate change, including adapting existing infrastructure, particularly assets that deliver critical services to the community.	Ongoing	Partner	Med
7.0	***Ensure development, infrastructure and the location of coastal facilities responds appropriately to coastal processes.***			
7.1	Insert a Special Control Area (SCA) and necessary development controls for vulnerable coastal areas into the Local Planning Scheme, in accordance with State Planning Policy 2.6 'State Coastal Planning Policy', the Coastal Hazard Risk Management and Adaptation Planning (CHRMAP) Guidelines and the City's Coastal Adaptation Plan (as amended).	0-5yrs	Lead	Low

7.2	Consider the outcomes of the Coastal Hazard Risk Management Adaptation Plan process currently under preparation by the City to inform a potential local planning scheme amendment.	0-5yrs	Lead	Low
7.3	Implement the Coastal Hazard Risk Mitigation and Action Plan (CHRMAP) and limit development encroachment in areas of risk.	Ongoing	Partner	High
7.4	Ensure coastal foreshore planning guides beach access locations, infrastructure level, coastal defence, financial sustainability and mitigates environmental impact.	Ongoing	Lead	Low
7.5	In collaboration with adjoining Local Governments, ensure coastal and remnant vegetation links remain intact and provide appropriate protection.	Ongoing	Partner	Med
7.6	Ensure that all development responds to sea level considerations on the coast and is consistent with State Planning Policy 2.6 State Coastal Planning Policy (or equivalent), Coastal Planning Policy Guidelines, and the outcomes of the City's Coastal Vulnerability Assessments through the preparation of a local planning policy.	Ongoing	Lead	Low
8.0	***Development and built form that is environmentally sustainable and responsive to the prevailing climate in Perth.***			
8.1	Investigate ways to promote sustainable building practices and site design, including: • Use of recycled/construction waste materials for infrastructure development projects. • Embracing new technology to aid sustainable developments.	5-10yrs	Lead	Low
9.0	***Improve the City's water resilience and security.***			
9.1	Embed water resource recovery, groundwater replenishment and the use of water sensitive urban design across the City's public spaces.	Ongoing	Lead	Med
10	***Enhance water quality, the health of wetlands and groundwater resources.***			
10.1	In collaboration with relevant State agencies and landowners, manage stormwater and investigate ground water recharge and water sensitive urban design techniques in the interest of receiving water bodies.	Ongoing	Partner	Med
10.2	Require proposals for new public open spaces (to be ceded by developers) to also embed water resource recovery, groundwater replenishment and the use of water sensitive urban design.	Ongoing	Lead	Low
10.3	Require the integration of stormwater in the landscape by incorporating multi-use corridors that maximise the visual and recreational amenity of developments.	Ongoing	Lead	Low
10.4	Advocate for the State Government to undertake a comprehensive groundwater and hydrological technical study and assessment of the Jandakot Groundwater Protection Area to better understand the hydro-geological processes.	0-5yrs	Lead	Low
11	***Maintain rural areas as an important transitional area between environmental assets and other land uses.***			
11.1	Identify measures to protect bushland within the rural zones, particularly within ecological corridors.	Ongoing	Lead	Low

11.2 	Ensure any significant changes to the rural zones include the protection of ecological corridors and important areas of bushland upfront.	High	Lead	Low

2.0 URBAN GROWTH AND HOUSING

Our City will have a distinctive local character that is valued by the community; high levels of amenity; and housing that responds to the needs of residents.

PLANNING DIRECTIONS ▪ ***Guiding and underpinning all future land use planning and decision making; and*** ▪ ***Informing a set of identified actions.***	EVALUATION ***How will we know we're on track?***
1. *Maintain current residential densities to deliver infill, and focus on measures to improve the quality of infill development and ensure development respects neighbourhood character.* 2. *Maintain the existing extent of 'Rural' zoned areas as an interface between sensitive environmental areas and 'Industrial' land uses, and support a rural lifestyle character and amenity for these areas.* 3. *Rationalise the 'Rural Living' zone from Town Planning Scheme No. 3 to 'Rural', with high levels of residential amenity and a rural lifestyle character.* 4. *Enhance the liveability and vitality of the City's established suburbs.* 5. *Create new residential areas that are informed by good levels of liveability, including walkable streets that are designed with people in mind, and that connect to necessary infrastructure.* 6. *Strengthen and enhance local character and community pride by identifying the intended future character, and requiring development to contribute positively to that character.* 7. *Focus development intensity in alignment with the State Planning Framework and in areas that are well-connected to infrastructure and best meet the needs of Cockburn's community, whilst protecting and enhancing the City's natural setting and environmental values, including ecological corridors.* 8. *High quality and well-designed housing that responds to the needs of residents to ensure appropriate housing options for all households.* 9. *Activity centres that contribute positively to neighbourhood character and amenity, and are:* • *Well-designed, safe, legible, accessible, walkable and meet the needs and aspirations of residents.* • *Resilient and able to adapt over time to meet the needs of the community.* 10. *Financially sustainable community infrastructure that recognises the shift and evolution of communities; equitably meets the needs of residents; and enhances their health and well-being.*	▪ *Review of local planning policies to identify intended future character.* ▪ *Adoption of Local Area Plans for established suburbs.* ▪ *Introduction of heritage incentives for owners of heritage places.* ▪ *Interpretation elements for heritage places within public areas.*

11. *A diverse network of public open space that is designed to meet the needs of the community; maximise their health and wellbeing; and contribute positively to identified future character.*

12. *Larger, more connected and useable areas of public open space in new areas by ensuring new areas of public open space can be consolidated with adjacent landholdings wherever possible.*

13. *Appropriately protect places of cultural heritage significance to help strengthen local character and identity.*

14. *Maximise opportunities to discover, recognise and reflect the City's historic and Aboriginal cultural heritage to strengthen local character and identity.*

15. *Infrastructure that keeps pace with growth to support Cockburn as a resilient and liveable place to work and live.*

	ACTION	Priority	City role	Scope
1.0	***Maintain current residential densities to deliver infill, and focus on measures to improve the quality of infill development and ensure development respects neighbourhood character.***			
1.1	Identify intended future character for the distinct residential living types within local planning policies – Garden character areas; new garden character areas, urban character areas and rural living.	0-5yrs	Lead	Low
1.2	Identify intended future character of commercial and industrial areas to ensure they contribute positively to the City's character and the intended economic rationale of the precinct.	0-5yrs	Lead	Low
1.3	Identify ways to support and strengthen the unique character, identity and amenity of rural, rural living and rural water protection areas, including placemaking opportunities.	5-10yrs	Lead	Low
2.0	***Maintain the existing extent of 'Rural' zoned areas as an interface between sensitive environmental areas and 'Industrial' land uses, and support a rural lifestyle character and amenity for these areas.***			
2.1	Identify an appropriate range of land uses in the City's rural zones to provide for rural pursuits while protecting rural lifestyle amenity and character, and environmental values of the area.	0-5yrs	Lead	Low
3.0	***Rationalise the 'Rural Living' zone from Town Planning Scheme No. 3 to 'Rural', with high levels of residential amenity and a rural lifestyle character.***			
3.1	Define the future intended character and identify an appropriate range of land uses in the City's 'Rural Living' zone to protect that character and the rural lifestyle amenity.	0-5yrs	Lead	Low
4.0	***Enhance the liveability and vitality of the City's established suburbs.***			
4.1	Prepare Local Area Plans for the City's established areas to articulate a clear vision and identify ways to improve liveability and vitality in the suburbs; with identification of an appropriate scope, and a staging and priority plan for their preparation as a first step.	0-5 years	Lead	Med

5.0	***Create new residential areas that are informed by good levels of liveability, including walkable streets that are designed with people in mind, and that connect to necessary infrastructure.***			
5.1	Introduce a requirement for structure plans to be subject to design review where appropriate to ensure high-quality design outcomes; and the requirement for 'Statements of Design Intent' for structure plans, setting out the design intent, including streetscape character and built form outcomes to ensure structure plans are robust enough to provide flexibility at the subdivision and development stage whilst still achieving the design intent and liveability objectives.	0-5yrs	Lead	Low
5.2	Identify measures to ensure that lot sizes and residential codings appropriately correlate to ensure built form outcomes, including setbacks and site coverage, are appropriate to lot sizes and intended future character, to prevent higher codings being used to provide for dwellings with greater site coverage which can compromise streetscape character.	0-5yrs	Lead	Low
6.0	***Focus development intensity in alignment with the State Planning Framework and in areas that are well-connected to infrastructure and best meet the needs of Cockburn's community, whilst protecting and enhancing the City's natural setting and environmental values, including ecological corridors.***			
6.1	Require structure plans to identify measures to respond to ecological corridors and to identify and retain areas of natural vegetation within new areas of public open space whenever possible.	Ongoing	Lead	Low
6.2	Require structure plans to provide strong justification for the residential densities of new areas which are to be guided by the level of accessibility to public transport and activity centres.	Ongoing	Lead	Low
6.3	Ensure any Metropolitan Region Scheme (MRS) proposals that substantially alter subdivision or development potential identify upfront how environmental values will be protected.	Ongoing	Lead	Med
7.0	***High quality and well-designed housing that responds to the needs of residents to ensure appropriate housing options for all households.***			
7.1	Continue to implement the 'Better Neighbourhoods, Better Homes' initiatives to promote improved housing design to provide improved amenity, better meet the needs of occupants and improve their quality of life.	Ongoing	Lead	Low
7.2	Continue to identify ways to promote and increase the number of accessible homes across the City.	0-5yrs	Lead	Low
7.3	Continuation of the 'My Best Home' project to identify and target specific housing diversity needs across the City, and to identify appropriate locations.	0-5yrs	Lead	Low
8.0	***Activity centres that contribute positively to neighbourhood character and amenity, and are:*** • ***Well-designed, safe, legible, accessible, walkable and meet the needs and aspirations of residents.*** • ***Resilient and able to adapt over time to meet the needs of the community.***			
8.1	Develop a framework within the Local Commercial and Activity Centres Strategy for exercising discretion for commercial uses and proposals for centres, including what is expected of proponents in demonstrating they address the criteria; and identifying triggers for the requirements.	0-5yrs	Lead	Med

8.2	Identify opportunities to collaborate with landowners and business owners of activity centres to improve amenity and functionality, as part of the preparation of Local Area Plans.	0-5yrs	Partner	High
8.3	Facilitate outcomes for activity centres to include elements that strengthen their role as a community hub, such as dedicated spaces with seating and other amenities, and the potential to facilitate a café.	0-5yrs	Partner	Med
9.0	***Financially sustainable community infrastructure that recognises the shift and evolution of communities; equitably meets the needs of residents; and enhances their health and well-being.***			
9.1	Ensure that the design of community facilities responds to both demographic needs as well as reflecting and responding to the attributes of its setting and context.	Ongoing	Lead	Low
10	***A diverse network of public open space that is designed to meet the needs of the community; maximise their health and wellbeing; and contribute positively to identified future character.***			
10.1	Ensure that public open space that integrates natural areas and bushland provides adequately for the recreational needs of the community, including active recreation and the provision of sufficient level grassed play spaces for children.	Ongoing	Lead	Low
10.2	Ensure that drainage areas classified as 'restricted-use' public open space demonstrate that the area is attractive; useable in a way that meets the needs of the community; able to be reasonably maintained; and that unrestricted areas are level and useable.	Ongoing	Lead	Low
10.3	Identify existing public spaces in central locations, including within or near activity centres, that are appropriate to transition to urban parks/spaces with community engagement to shape these, with the purpose being to: • Provide a diversity of public spaces; • Improve liveability in our suburbs; and • Support people working from home in our suburbs.	0-5yrs	Lead	Med
10.4	Integrate 'whole of life' costs into open space planning, landscape development and infrastructure selection.	Ongoing	Lead	Low
10.5	Support the City of Kwinana's continued investigation into the feasibility and need for Regional Open Space (active playing fields).	Ongoing	Partner	Med
11	***Larger, more connected and useable areas of public open space in new areas by ensuring new areas of public open space can be consolidated with adjacent landholdings wherever possible.***			
11.1	Require new structure plans and structure plan amendments to locate proposed public open space where it can be consolidated with an existing or future area of public open space to achieve larger and more useable areas of public open space.	Ongoing	Lead	Low
12	***Appropriately protect places of cultural heritage significance to help strengthen local character and identity.***			
12.1	Advocate for improved management of State Government owned and/or managed heritage listed places to ensure protection of heritage values, including the Lime Kilns, Pensioner Guard Cottages, and former Explosives Reserve structures throughout Woodman Point Regional Park.	0-5yrs	Advocate	Low
12.2	Advocate for investigation of an alternative adaptive reuse approach for the South Fremantle Power Station, including a staging strategy that provides a more feasible pathway for reuse while protecting what is most valued by the community.	0-5yrs	Advocate	Low

12.3	Investigate financial and non-financial incentives for owners of places on the City's Heritage List to assist in the protection and adaptive reuse of heritage places.	0-5yrs	Lead	Low
12.4	Prepare and adopt management plans for the City's heritage assets that provide a clear vision for the place to ensure incremental and inappropriate change does not erode the conservation heritage values of the place.	Medium	Lead	Med
12.5	Ensure appropriate strategies and management of heritage assets that are predicted to be affected by coastal erosion and inundation.	Medium	Lead/ partner Advocate	Low
12.6	Ensure heritage precincts (i.e. areas with a number of elements of significant fabric) have a clear vision identified through a Management Plan (or similar) to ensure a robust framework for considering proposals.	Medium	Lead	Med
13	***Opportunities are maximised to discover, recognise and reflect the City's historic and Aboriginal cultural heritage to strengthen local character and identity.***			
13.1	Work in partnership with the Aboriginal community to respect, acknowledge and celebrate culture and heritage in Cockburn, and enhance cultural ties to the land.	Ongoing	Partner	Med
13.2	Identify measures for the City's Percent for Art Policy to encourage artwork to reflect cultural heritage significance.	0-5yrs	Lead	Low
13.3	Encourage historic and Aboriginal cultural heritage interpretation in public spaces where appropriate.	Ongoing	Partner	Med
13.4	Advocate for Main Roads to recognise the Aboriginal cultural significance of the Hamilton Hill Swamp Precinct, and the women's 'high ceremonial grounds' on the south side of Rockingham Road which hold intangible values and should not be interfered with.	0-5 yrs	Lead	Low
14	***Infrastructure that keeps pace with growth to support Cockburn as a resilient and liveable place to work and live.***			
14.1	Promote and lobby for the transportation benefits of the Fremantle to Cockburn High Priority Transit Corridor.	Ongoing	Lead	Low
14.2	Encourage collaboration with service providers at early planning stages to reduce and mitigate against land use planning conflicts and promote functionality.	Ongoing	Partner	Low
14.3	Investigate the capacity of utilities infrastructure and servicing in relation to the City's population forecasts and potential growth scenarios.	0-5yrs	Partner	Low
14.4	Ensure the early planning of new school sites through the preparation of structure plans (district, local and precinct) and subdivisions where residential development is proposed.	Ongoing	Partner	Med

3.0 ECONOMY AND EMPLOYMENT

Our economy will mature and evolve to capitalise on emerging industries, attract investment and create broader local employment opportunities so that we prosper.

PLANNING DIRECTIONS ▪ ***Guiding and underpinning all future land use planning and decision making; and*** ▪ ***Informing a set of identified actions.***	EVALUATION ***How will we know we're on track?***
1. *Promote employment self-sufficiency for Cockburn's residents and encourage new development and employment opportunities within proximity to centres and in areas accessible to where people live.* 2. *Protect and support the growth of the City's key employment areas.* 3. *Maintain the existing extent of 'Industrial' zoned land and protect priority industrial land for industrial land uses to maximise the local economic and employment opportunities in suitable locations.* 4. *Future-proof the City's industrial areas by ensuring developments are designed with a level of robustness and flexibility to accommodate future uses, including consideration of subdivision, parking and access arrangements.* 5. *Protect the integrity of the Australian Marine Complex for strategic industry whilst providing flexibility for a limited range of alternative and complementary uses where they are appropriately located and demonstrate adaptability to accommodate uses in line with the objectives of the zone.* 6. *Create high quality, attractive and accessible industrial areas that attract investment and provide amenity for employees and visitors.* 7. *Investigate the potential reclassification of Cockburn to a strategic metropolitan centre in accordance with the relevant requirements of SPP 4.2 Activity Centres for Perth and Peel.* 8. *Create and support a robust network of activity centres that meet the needs of the community, support population growth, enhance liveability and provide local employment opportunities.* 9. *Explore the City's tourism opportunities and aspirations through the development of a Tourism Strategy, and respond to this through the local planning framework.* 10. *Facilitate and provide support for an appropriate range of rural land uses in the 'Rural' zone, while protecting rural lifestyle amenity.* 11. *Create a high quality and liveable urban environment that supports a thriving City that attracts more people to live, work, and invest.*	▪ *Employment self-sufficiency targets.* ▪ *Lots identified within priority industrial area.* ▪ *Retail/commercial floorspace requirements as informed by the Local Commercial and Activity Centres Strategy.*

	ACTIONS	Priority	City role	Scope
1.0	***Promote employment self-sufficiency for Cockburn's residents, and encourage new development and employment opportunities within proximity to centres and in areas accessible to where people live.***			
1.1 	Promote land use options to facilitate strong and coordinated employment hubs by identifying and clearly articulating the vision and economic rationale for precincts.	0-5yrs	Lead	Low
1.2 	Ensure the local planning framework and local planning scheme identify and support an appropriate range and scale of home-based business opportunities whilst protecting residential amenity and character.	0-5yrs	Lead	Low
1.3 	Investigate the land use planning and supporting infrastructure needs to support the emerging number of start-up businesses in Cockburn.	0-5yrs	Lead	Low
2.0	***Protect and support the growth of key employment areas.***			
2.1 	Prioritise the planning and advocate for infrastructure that underpins population and economic growth aspirations.	Ongoing	Partner	Low
2.2 	Advocate for the protection of the supporting infrastructure needs for Rowley Road (as the primary east west access to Latitude 32) and the delivery of the Fremantle-Rockingham Controlled Access Highway.	Ongoing	Lead	Low
3.0	***Maintain the existing extent of 'Industrial' zoned land and protect priority industrial land for industrial land uses to maximise the local economic and employment opportunities in suitable locations.***			
3.1 	Identify priority industrial land where industrial uses should be prioritised, and non-industrial uses restricted or controlled.	0-5yrs	Lead	Med
3.2 	Provide opportunities for non-industrial land uses where appropriate, including to support industrial areas where they will not jeopardise current or future industrial uses, and create a framework for considering non-industrial land uses within industrial areas.	0-5yrs	Lead	Low
4.0	***Future-proof the City's industrial areas by ensuring developments are designed with a level of robustness and flexibility to accommodate future uses, including consideration of subdivision, parking and access arrangements.***			
4.1 	Identify appropriate parking and access guidance for industrial developments to ensure that safe and functional vehicle movements can be facilitated over time.	0-5yrs	Lead	Low
4.2 	Investigate the appropriateness of measures or a framework for cash-in-lieu for parking in industrial areas.	0-5yrs	Lead	Low

4.3	Create a framework for considering subdivision/strata of industrial land to ensure that fragmentation of land and/or strata titling of buildings does not compromise the ability of industrial areas to adapt over time.	0-5yrs	Lead	Low
4.4	Advocate for the State Government to undertake integrated transport planning and infrastructure improvements for the Australian Marine Complex.	0-5yrs	Partner	High
5.0	***Protect the integrity of the Australian Marine Complex for strategic industry whilst providing flexibility for a limited range of alternative and complementary uses where they are appropriately located and demonstrate adaptability to accommodate uses in line with the objectives of the zone.***			
5.1	Identify measures such as location and design criteria to facilitate complementary land uses within the Australian Marine Complex while protecting the robustness of the precinct.	0-5yrs	Lead	Low
6.0	***Create high quality, attractive and accessible industrial areas that attract investment and provide amenity for employees and visitors.***			
6.1	Review the local planning framework to identify the intended future character of industrial areas and measures to achieve this.	0-5yrs	Lead	Low
6.2	Review the local planning framework to strengthen requirements for vehicle access and parking to ensure they do not negatively impact on the safety or appearance of streetscapes.	0-5yrs	Lead	Low
6.3	Identify measures to enhance the streetscapes within industrial areas to improve their appearance and make them more walkable.	0-5yrs	Lead	Low
6.4	Explore opportunities for public open space within or accessible from industrial areas to improve the amenity in these areas.	0-5yrs	Lead	Med
7.0	***Investigate the potential reclassification of Cockburn to a strategic metropolitan centre in accordance with the relevant requirements of SPP 4.2 Activity Centres for Perth and Peel.***			
7.1	Undertake an analysis of the frame area of the Cockburn Central Activity Centre to determine its future role.	5-10yrs	Lead	Med
7.2	Investigate with the Department of Education the future educational needs of the Core of the Cockburn Central Activity Centre; particularly as they relate to Primary Education.	5-10yrs	Lead	Med
8.0	***Create and support a robust network of activity centres that meet the needs of the community, enhance liveability and provide local employment opportunities.***			
8.1	Support the hierarchy of our centres by creating a framework through the local planning scheme and precinct planning setting out how we will guide decision-making to protect the network of centres and support their viability for the benefit of the community, and to provide local employment opportunities.	0-5yrs	Lead	Low
9.0	***Explore the City's tourism opportunities and aspirations through the development of a Tourism Strategy, and respond to this through the local planning framework.***			
9.1	Comprehensively consider the potential of the City's recreational coastal area to contribute to tourism, including opportunities to better connect cultural heritage and to support recreational pursuits.	0-5yrs	Lead	Low

9.2	Comprehensively consider land use planning issues and opportunities as part of the Tourism Strategy, including opportunities to promote and respond to: • Environmental values; • Landscape character; • Residential amenity; • Cultural heritage; • Accessibility; • Traffic and transport; • Infrastructure needs; and • Contribution to economic development and local jobs.	0-5yrs	Lead	Med
10	***Provide support for an appropriate range of rural land uses in the 'Rural' zone.***			
10.1	Facilitate and promote innovative agricultural uses such as 'protected farming' that are viable and suited to the land capability and lot sizes of the City's 'Rural' zone.	0-5yrs	Lead	Low
11	***Create a high quality and liveable urban environment that supports a thriving City that attracts more people to live, work, and invest.***			
11.1	Continue to implement measures that improve the City's liveability, including measures to strengthen identified local character, provision of high quality public open space and community facilities, and high levels of accessibility.	Ongoing	Lead	Low
11.2	Provide an improved framework for considering proposed events in the City that is more streamlined but still ensures they do not negatively impact on the amenity of residents and the natural environment.	0-5yrs	Lead	Med

4.0 INFRASTRUCTURE

Our City will be well-connected and easy to move around safely for all users, with high amenity pedestrian and cycling connections making it easier to make sustainable travel choices.

PLANNING DIRECTIONS ▪ ***Guiding and underpinning all future land use planning and decision making; and*** ▪ ***Informing a set of identified actions.***	EVALUATION ***How will we know we're on track?***
1. *Transition to sustainable transport mode choices, and improve the efficiency of the City's movement network through integrated transport planning.* 2. *Promote and lobby for the transportation benefits of the Fremantle to Cockburn Central High Priority Transit Corridor.* 3. *Prioritise co-location of services, facilities, housing and jobs to reduce trip distances, travel times and reliance on private motor vehicles.* 4. *Strong pedestrian and cycling connections throughout our community to facilitate and encourage active transport modes.* 5. *Prioritisation of active transport over cars in and around centres and other important local destinations, with provision of high-amenity and safe walking and cycling routes.* 6. *Safe and efficient road networks that are also designed as an important part of neighbourhood environments, achieving the highest quality streetscape outcomes by considering all design and infrastructure elements, including servicing, waste collection and parking.* 7. *Employment areas that have accessible transport connections.* 8. *A freight network that is suitable for future needs to support economic growth and commercial activity, as well as contributing to a safer road network.* 9. *A balanced approach to regional road and local needs, providing for freight while considering the impact on landowners and the environment.* 10. *Access to high quality telecommunications and internet coverage for all businesses and residents of Cockburn.*	▪ *Public transport to industrial areas/key employment areas in the City.* ▪ *Pedestrian and cycling quality audits and perception surveys.*

	ACTIONS	Priority	Role	Scale
1.0	***Transition to sustainable transport mode choices, and improve the efficiency of the City's movement network through integrated transport planning.***			
1.1	Work with State Government to develop an integrated movement plan, incorporating a 'whole of journey' approach, with improvements to the efficiency of the public transport network a key aim.	0-5yrs	Lead	High
1.2	Investigate how the emergence of new technologies can be harnessed to positively improve the City's movement network and the urban environment.	5-10yrs	Partner	High
1.3	Identify and prioritise the areas of the City where greater levels of physical connectivity are needed due to major transport infrastructure barriers, and investigate how this might be achieved.	Ongoing	Lead	Med
2.0	***Promote and lobby for the transportation benefits of the Fremantle to Cockburn Central High Priority Transit Corridor.***			
2.1	Continue to advocate for the provision of a rapid public transit route both within the South West group of local governments and in particular for the Cockburn Coast to Cockburn Central connection.	Ongoing	Lead	Low
3.0	***Prioritise co-location of services, facilities, housing and jobs to reduce trip distances, travel times and reliance on private motor vehicles.***			
3.1	Consider appropriate locations for specific housing identified as part of the 'My Best Home' project to prioritise areas with high levels of accessibility, depending on the identified need.	5-10yrs	Lead	Low
3.2	Continue to support density and transit-oriented development outcomes in station surrounds.	Ongoing	Lead	Low
4.0	***Strong pedestrian and cycling connections throughout our community to facilitate and encourage active transport modes.***			
4.1	Undertake quality audits, perception surveys and metrics relating to walking time and ease and safety, to better understand the performance of the existing pedestrian networks across the City's neighbourhoods.	0-5yrs	Lead	Med
4.2	Require development to include legible, safe, convenient, and high-quality pedestrian and cycling connections to the surrounding area.	Ongoing	Lead	Med
5.0	***Prioritisation of active transport over cars in and around centres and other important local destinations, with provision of high-amenity and safe walking and cycling routes.***			
5.1	Identify criteria for accessibility, pedestrian and cycling connectivity within the framework for centres and commercial uses that will set out how we will exercise discretion for centres and commercial uses.	0-5yrs	Lead	Low
5.2	Build upon the work done in the Local Commercial and Activity Centres Strategy and undertake streetscape audits within each of the City's activity centres to identify and recommend areas for improvement as part of Local Area Plans.	5-10yrs	Lead	Low

6.0	***Safe and efficient road networks that are also designed as an important part of neighbourhood environments, achieving the highest quality streetscape outcomes by considering all design and infrastructure elements, including servicing, waste collection and parking.***			
6.1 	Minimise the use of laneways to ensure the creation of a road network that is safe and permeable, and maximises its contribution to the public realm and identified neighbourhood character, including maximising opportunities to include footpaths and trees.	Ongoing	Lead	Low
6.2 	Provide further design guidance for roads in new areas within the local planning framework to ensure high quality, high amenity streetscape outcomes are achieved, with maximum opportunities for street trees; visitor parking opportunities; and safe and convenient waste management arrangements.	0-5yrs	Lead	Low
7.0	***Employment areas that have accessible transport connections.***			
7.1 	Lobby for and encourage the provision of an efficient and convenient public transport network, including advocating for more high frequency buses to service infill areas.	Ongoing	Lead	Med
7.2 	Lobby the Department of Transport to adopt an improved methodology to determine the provision of public transport.	Ongoing	Lead	Med
8.0	***A freight network that is suitable for future needs to support economic growth and commercial activity, as well as contributing to a safer road network.***			
8.1 	Support and consider the planning of HV/freight links (including high wide load corridors).	Ongoing	Partner	Low
8.2 	Ensure the future of the City of Cockburn's Restricted Access Vehicle (RAV) network considers both future land use, as well as trends and needs in the freight industry in terms of vehicle sizes, by engaging with the local freight industry and industry bodies.	Ongoing	Partner	Low
9.0	***A balanced approach to regional road and local needs, providing for freight while considering the impact on landowners and the environment.***			
9.1 	Engage and work with State Government agencies in the best interests of the community to ensure consideration is given to the impact of freight network projects on landowners, businesses and the environment.	Ongoing	Lead	Low
9.2 	Ensure that the planning and delivery of transport infrastructure considers natural assets and green infrastructure as a priority and opportunity in the early stages of concept planning in order to ensure these considerations are at the forefront of the project development.	Ongoing	Lead	Low
10.0	***Ensure access to high quality telecommunications and internet coverage for all businesses and residents of Cockburn.***			
10.1 	Lobby for better telecommunications, internet coverage and forward planning for Cockburn, including strategically positioned infrastructure.	Ongoing	Lead	Low

5.0 GOVERNANCE

Our City will be able to adapt and respond to change to efficiently manage the challenges of growth and respond to community needs while working towards our vision.

PLANNING DIRECTIONS

- ***Guiding and underpinning all future land use planning and decision making; and***
- ***Informing a set of identified actions.***

1. *Transparency and clarity in the local planning framework.*
2. *An evidence-based approach to land use planning and decision-making that responds to the local planning framework and considers community benefit.*
3. *Appropriate flexibility in the planning framework to respond to changes over time while ensuring the intent of this Strategy and the community's needs are considered.*
4. *High levels of amenity across the City through appropriate interfaces between land uses, and mitigation of land use conflict.*
5. *Robust and resilient employment areas that can more readily respond to change and evolve over time as needed, whilst maintaining their intent.*
6. *Planning that allows for a response to different growth scenarios.*
7. *Ensure appropriate and comprehensive district structure planning is undertaken (if required) to accompany any significant MRS zoning proposals.*
8. *Use of smart technologies where they are identified as being able to improve sustainability, liveability and deliver improved outcomes for the community.*
9. *Planning for coastal zone land that balances competing needs and aspirations in a way that takes into account the values of the coastal zone, which include scenic, aesthetic and ecological qualities; recreational opportunities; and social, indigenous, cultural and economic importance.*

EVALUATION

How will we know we're on track?

- *Rationalisation of structure plans and local development plans into the Scheme.*
- *Public reporting on development application processes.*

	ACTIONS	Priority	City role	Scale
1.0	***Transparency and clarity in the local planning framework.***			
1.1	Consolidate and simplify land use and planning controls as part of the creation of a new Scheme.	0-5yrs	Lead	Low
1.2	Improve public reporting on development application processes, including the volume and value of development applications, and processing times.	0-5yrs	Lead	Low
1.3	As structure plans are finalised, rationalise these areas back into standard zones to minimise layers of planning.	Ongoing	Lead	Low
1.4	As areas subject to local development plans are developed, consider whether these are suitable to be removed and standard scheme provisions can apply.	Ongoing	Lead	Low
1.5	As development contribution plans are finalised, remove these progressively from the Scheme.	Ongoing	Lead	Low
1.6	In preparing a new Scheme consider including a range of uses for the groundwater protection area in the Scheme that is consistent with the State Planning Framework, to provide clarity around the range of permissible uses.	0-5yrs	Lead	Low
2.0	***An evidence-based approach to land use planning and decision-making that responds to the local planning framework and considers community benefit.***			
2.1	Create a transparent local planning framework that provides clarity around how and why planning decisions are made, including when and why we will use discretion and depart from policy using an evidence-based approach.	0-5yrs	Lead	Low
2.2	Prepare a Community Benefit Framework to provide the City with a tool to assess the social outcomes and community benefits of proposals.	0-5yrs	Lead	Low
2.3	Explore new ways to share and leverage off data for improved land use planning decision making.	Ongoing	Lead	Low
3.0	***Appropriate flexibility in the planning framework to respond to changes over time while ensuring the intent of this Strategy and the community's needs are considered.***			
3.1	Review the exempted development provisions to consider whether there is potential to add further exemptions in certain zones.	0-5yrs	Lead	Low
3.2	Ensure governance and planning frameworks maintain flexibility in available coastal adaptation options, so that the right decisions can be made at the right time.	Ongoing	Partner	Med
3.3	Introduce a requirement for structure plans to be subject to design review where appropriate to ensure high-quality design outcomes, and implement the requirement for 'Statements of Design Intent' for all structure plans providing a flexible but robust framework to ensure the objectives and intent of the structure plan are achieved.	0-5yrs	Lead	Low
4.0	***High levels of amenity across the City through appropriate interfaces between land uses, and mitigation of land use conflict.***			

4.1	Mitigate land use conflict through appropriate planning controls to protect neighbourhood amenity and identified local character.	0-5yrs	Lead	Low
4.2	Respond to the requirement for buffers or impact areas to be provided by providing a clear framework for appropriate uses.	Ongoing	Lead	Low
4.3	Balance the operational needs of the Jandakot Airport with the amenity expectations of sensitive land uses and physical environmental constraints.	Ongoing	Lead	Med
4.4	In preparing the new Scheme, review the land use permissibility across all zones to ensure that preferred land uses are aligned with the strategic intent of the relevant zone.	0-5yrs	Lead	Low
4.5	Identify an appropriate range of land uses in the City's TPS3 'rural' and 'rural living' zones (to be zoned 'rural') to provide for rural pursuits while protecting rural lifestyle amenity and character.	0-5yrs	Lead	Low
4.6	Advocate for the Western Australian Planning Commission to remove the 'Industrial Investigation Areas' for Wattleup and Lake Coogee from *Perth and Peel @ 3.5million*.	0-5yrs	Lead	Low
4.7	Undertake an appropriate response to the City wide high-level Strategic Bushfire Assessment by preparing an action and implementation plan.	0-5yrs	Lead	Med
5.0	***Robust and resilient employment areas that can more readily respond to change and evolve over time as needed whilst maintaining their intent.***			
5.1	Preparation of a local planning policy that provides guidance around what is considered robust and adaptable commercial and industrial development.	0-5yrs	Lead	Low
5.2	Develop a framework within the Local Commercial and Activity Centres Strategy for exercising discretion for commercial uses and proposals for centres, including what is expected of proponents in demonstrating they address the criteria; and identifying triggers for the requirements.	0-5yrs	Lead	Low
6.0	***Planning that allows for a response to different growth scenarios.***			
6.1	Work with government agencies and service providers to undertake a full utilities and servicing study to confirm the capacity of infrastructure to cater to the growth needs of Cockburn.	Ongoing	Lead	Med
6.2	Continue to seek forward planning information from telecommunications providers to provide better opportunities to include these in earlier stages of planning.	Ongoing	Lead	Low
7.0	***Ensure appropriate and comprehensive district structure planning is undertaken (if required) to accompany any significant MRS zoning proposals.***			
7.1	Ensure any proposed changes to the Roe Highway primary regional road reservation address the issues identified in Part Two of this Strategy.	Ongoing	Lead	Med
7.2	Advocate for the State Government to undertake the investigations for the 'Planning Investigation Area' identified in *Perth and Peel @ 3.5 million*.	Ongoing	Lead	Med

8.0	***Use of smart technologies where they are identified as being able to improve sustainability, liveability and deliver improved outcomes for the community.***			
8.1 	Give ongoing consideration to opportunities to leverage technology solutions to improve liveability, support economic development, reduce costs and be more sustainable.	Ongoing	Partner	Med
9.0	***Planning for coastal zone land that balances competing needs and aspirations in a way that takes into account the values of the coastal zone, which include scenic, aesthetic and ecological qualities; recreational opportunities; and social, indigenous, cultural and economic importance.***			
9.1 	Identification of a coastal node hierarchy through a coastal planning strategy and/or foreshore management plan(s) to ensure that coastal nodes are appropriately developed to provide connectivity, access, amenity and recreational opportunities.	0-5yrs	Lead	Med

Planning Areas – Planning Directions and Actions

In planning for the future of Cockburn there are some specific unknowns and potential scenarios which require particular analysis and consideration. These areas have been identified as 'Planning Areas', spatially defined on the Strategy Map, and this section outlines in greater detail planning directions and actions for each planning area (for extent of planning areas, see the Local Planning Strategy Map). The following 'Planning Areas' have been identified:

Planning Area A: Future Roe 8/9 Primary Regional Road Reserve

Planning Area A is defined by the boundary of the 'Primary Regional Roads' reservation under the MRS west of North Lake Road. Planning for the repurposing of the Roe Highway Primary Regional Roads reservation is a key issue which requires resolution given the State Government's position that this will no longer be part of the freight network.

In early 2017, sections of the Roe Highway Primary Regional Road reservation, east of the Kwinana Freeway to the west of Stock Road, were cleared of vegetation in preparation for the construction of the Roe Highway extension to Stock Road. Clearing work stopped in March 2017 when the Labor State Government was elected, and the project ceased. The cleared area has been fenced with conservation fencing to limit damage to the site, and a program of works to formalise pedestrian access and rehabilitate the disturbed land has commenced.

34 hectares of MRS 'Primary Regional Roads' reserve through the wetlands, between Bibra Drive and Progress Drive, has now been reserved 'Parks and Recreation', to become part of an A-class reserve, making it very unlikely to be reconsidered in the future for a freight connection.

The Department of Planning, Lands and Heritage initiated Metropolitan Region Scheme (MRS) Amendment 1404/41- Roe 8 (Remainder) and Roe 9 – Removal of Primary Regional Road Reservation in March 2023. The amendment was considered by the Western Australian Planning Commission in January 2024 and in anticipation of finalisation, the City of Cockburn has initiated a local planning scheme amendment. Dependent on timing, the Strategy is required to reflect the final MRS Amendment or the advertised amendment if finalisations has not occurred. The table below sets out key principles for this area:

Planning Area A: Future Roe 8/9 Primary Regional Road Reserve			
	Key Principles	***Rationale***	***Timeframe***
1.0	Any future planning for the area should: • Minimise the impact on environmental values • Investigate opportunities for POS and a recreational corridor • Investigate the potential consolidation of commercial land around the existing transit hub on Carrington Street • Respect Indigenous and historic heritage • Achieve a compatible interface to existing residential development.	The area has high environmental values and significant trees, which are also highly valued by the community.	Ongoing

Planning Area B: Jandakot/Treeby Urban Expansion Area

Perth and Peel @3.5million identified a 'Planning Investigation Area' over an area of approximately 625ha in Jandakot/Treeby, located adjacent to the Jandakot Airport. The area is zoned 'Rural – Water Protection' under the MRS and 'Resource' under TPS3. It contains landholdings used primarily for rural lifestyle purposes, guided by SPP 2.3 'Jandakot Groundwater Protection' and Draft SPP 2.9 'Planning for Water'.

Detailed studies and investigations have been undertaken by the WAPC, resulting in this area being identified for Urban Expansion in the *Perth and Peel @3.5million* planning frameworks.

More detailed planning will need to have regard to the following key considerations:

- Impacts, risks and management of Jandakot groundwater resources (existing Priority 2 Source Protection Area).
- Protection of significant environmental values.
- ANEF considerations associated with Jandakot Airport.

Planning Area B: Jandakot/Treeby Planning Investigation Area				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Protection of groundwater resource, including impact on wetlands.	1. Advocate for a comprehensive study demonstrating protection of the groundwater resource; in addition to the groundwater impacts on the wetland systems and other environmental values.	Any land use changes have the potential to negatively impact environmental values.	Ongoing
2.0	Protection of environmental and conservation values.	1. Identification of remnant bushland, ecological corridors and areas of conservation value (including Carnaby Cockatoo habitat) to be protected, and measures to protect them, prior to any land use or MRS zoning change.	Any land use changes have the potential to negatively impact environmental values.	Ongoing

3.0	Appropriate protection of the operational needs and viability of the Jandakot Airport.	1. Ensure land use planning is cognisant of the operational needs of the airport to ensure its viability.	Protection of operational needs critical given the airport provides access for essential service organisations such as Royal Flying Doctor Service, DEC/DFES Bushfire Water Bombers, RAC Rescue Helicopter and the WA Police Air Wing.	Ongoing
4.0	Ensure new sensitive land uses are not negatively impacted by Jandakot Airport operations.	1. Consideration of the impact on the amenity of existing and future potential sensitive land uses.	Airport operations, particularly noise can impact negatively on residential amenity.	Ongoing
5.0	Management of bushfire risk whilst protecting environmental values.	1. Ensure bushfire management is comprehensively considered as part of any MRS amendment and district structure planning process. 2. Adaptation of existing road network and culs-de-sac to provide safe and adequate access.	Area is Bushfire Prone with high environmental values.	Ongoing
6.0	Coordinated development/district structure planning approach.	1. A district structure plan is to include the entire PIA and set out: • Staging and identification of logical cells for coordinated planning. • Structure plan implementation requirements. • Infrastructure needs and requirements, including community infrastructure. • Network of public open space to meet the recreational needs of the community. • Appropriately sized and located centre to meet the needs of the community, based on a Needs Assessment. • Traffic impact assessment. • Bushfire management, including the provision of a new road connection. • Community benefit.	It will be critical to ensure development is not ad hoc.	0-5 years

Planning Area C: Jandakot Industrial Investigation Area

Perth and Peel @3.5million identified an 'Industrial Investigation Area' over 40 ha in Jandakot, south of the Jandakot Airport.

The area is zoned 'Rural – Water Protection' under the MRS but was used as a sandpit and largely cleared of vegetation in the 1990s, with the exception of the northern area of approximately 13ha which is now Bush Forever (site 388).

The cleared area has been the subject of an additional use under the local planning schemes, allowing for masonry production and a range of commercial uses with a low risk of polluting the Jandakot Groundwater Mound. In 2018, the zoning for this area was updated, including an extensive range of requirements to address groundwater protection, environmental issues, interfaces, buffers, and road upgrades. It is considered that the requirements for the area set out in TPS3 are appropriate to continue into the new Scheme.

Planning Area C: Jandakot Industrial Investigation Area				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Investigate the appropriateness of providing a range of commercial and industrial uses on lots of a minimum of 2ha that do not have a negative impact on the groundwater mound, environmental values, and surrounding character and amenity, or that impact on the activity centre hierarchy.	1. Inclusion of a range of specifically tailored uses and conditions set in the local planning scheme through an 'Additional Use' or other appropriate mechanism, as shown in TPS3.	To take advantage of the site's location near the Jandakot Specialised Activity Centre and respond to the historical land uses and planning framework.	0-5 years
		2. Ensure the local planning scheme provides an appropriate framework to manage any potential negative impacts of commercial uses.	To ensure land uses do not negatively impact the groundwater mound, environmental values, and surrounding character and amenity.	0-5 years
2.0	Protection of groundwater resource.	1. Local planning scheme and framework that appropriately controls the range of uses, including specific requirements and conditions for uses including (but not limited to) storage of materials.	To ensure land uses do not negatively impact the groundwater mound.	0-5 years

		2. Advocate for a comprehensive study demonstrating protection of the groundwater resource; in addition to the groundwater impacts on the wetland systems and other environmental values.	Any land use changes have the potential to negatively impact environmental values.	0-5 years
3.0	An interface that respects the character of the surrounding area.	1. Requirement for an appropriate vegetated buffer to the eastern interface of the Planning Area in the local planning scheme and framework.	To screen the land uses from the surrounding area to minimise their visual impact.	0-5 years
		2. Land use planning controls that ensure built form and access does not detract from the character of the surrounding area.	To protect the intended character of the surrounding area.	0-5 years
4.0	An appropriate interface with Bush Forever site 388.	1. Inclusion of appropriate interface requirements in the local planning scheme and framework.	To protect the environmental values of Bush Forever site 388.	0-5 years
5.0	Appropriate protection of the operational needs and viability of the Jandakot Airport.	1. Ensure land use planning is cognisant of the operational needs of the airport to ensure its viability.	Protection of operational needs critical given the airport provides access for essential service organisations such as Royal Flying Doctor Service, DEC/DFES Bushfire Water Bombers, RAC Rescue Helicopter and the WA Police Air Wing.	Ongoing

Planning Area D: Glen Iris Golf Course site

The Glen Iris Golf Course in Jandakot has ceased operation as a golf course, and it is likely there will be proposed zoning and or land use changes for the site which will require consideration.

The land is both identified for 'Urban' purposes in the South Metropolitan Sub-Regional Planning Framework, and zoned 'Urban' under the Metropolitan Region Scheme (MRS).

Given its location within an established residential area, the former golf course land presents significant challenges for redevelopment, particularly with respect to site limitations (e.g. levels, drainage, vegetation retention), and community values and expectations. The configuration of the site and interface with existing residential development require careful consideration in the event of a proposed land use or zoning change.

Planning Area D: Glen Iris Golf Course Site				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Land use and development that achieves an appropriate interface with existing residential land uses.	1. Consider any proposed land use or zoning changes against the State and local planning framework, including consideration of the following (among other things): ▪ An appropriate interface to surrounding landholdings. ▪ Impact on environmental values. ▪ Facilitating good connectivity for pedestrians and cyclists. ▪ Consideration of bushfire risk. ▪ Traffic.	The configuration of the site and interface with existing residential development require careful consideration in the event of a proposed land use or zoning change.	Ongoing

Planning Area E: Lake Coogee 'Urban Deferred' area / Industrial Investigation

The Woodman Point wastewater treatment plant (WWTP) is located on the western side of Lake Coogee. It was established in in 1966 and treats wastewater for a population of about 680,000 living south of the river in the Perth metropolitan area. Originally the plant had a nominal 1000m buffer, and in 1992 the Environmental Protection Authority (EPA) reduced this to 750m based on Water Corporation modelling. In 1997, the Metropolitan Region Scheme (MRS) was amended from 'Rural' to 'Urban Deferred' within this 750m area. In 1999 the City of Cockburn Local Planning Strategy identified this area as being within an 'odour/pollution buffer'.

This 'urban deferred' area is highly fragmented with 26 privately owned lots ranging in size from 845m^2 to 2 ha, primarily used for rural lifestyle purposes.

Perth and Peel @ 3.5million identified this as an 'Industrial Investigation Area'. The City has investigated the appropriateness of this area for industrial or mixed business uses and has identified the following key issues:

- An appropriate movement network and access considerations.
- No identified need for additional industrial or mixed business zoned land in this location.
- Suitable separation from existing residential development to the east.

In accordance with Perth and Peel @3.5million and the WWTP's operational requirements, the City will continue to investigate the appropriateness of this area for non-sensitive land uses. The City will also continue to advocate for the investigation of sensitive land uses in this area. It will work with relevant government stakeholders and consider the relevant planning requirements associated with the WWTP's operation in its investigations.

Planning Area E: Lake Coogee 'urban deferred' area				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Investigate which land uses are appropriate for the area, subject to appropriate consideration of odour impacts from the Woodman Point Wastewater Treatment Plant and other relevant planning considerations.	1. City to investigate the appropriateness of this area for non-sensitive land uses in accordance with the Perth and Peel @3.5million frameworks land use designation arrangements and the WWTP's operational requirements.	The City will continue to investigate the future use of this land for non-sensitive land uses in accordance with the Perth and Peel @3.5million land use designation arrangements. Based on preliminary investigations of this area for industrial or mixed business uses and early findings, the City will also continue to advocate for the investigation of this area for residential development. It will do so, working with key government stakeholders and addressing	0-5yrs

		2. City to advocate for the removal of 'Munster Industrial Investigation Area' *from Perth and Peel @ 3.5 million* when next reviewed.	the relevant planning requirements to enable the WWTP's continued operations to service the growing population in the catchment area.	0-5yrs

Planning Area F: Rural Living Precinct

The area to the north of Cockburn Cement (bounded by East Churchilll Avenue, Fanstone Avenue, Stock Road and the railway reserve) contains 108 properties and is mostly located within the Environmental Protection (Kwinana) (Atmospheric Wastes) Policy ("Kwinana EPP"). For this reason, it has been identified in *Perth and Peel @ 3.5million* to remain rural.

Development in this area commenced in the 1950s as an extension of the northern market gardening areas, and there was further fragmentation in the 1990s and 2000s. Today the area is characterised by lots of approximately 4,000m^2, typically used for rural lifestyle purposes, with a small number of landholdings being used for small-scale agricultural uses such as vineyards and olive groves.

Given the size and narrowness of the lots, a broader range of commercial uses would not be appropriate. Quasi-industrial uses have the potential to negatively impact on residential amenity, with limited opportunities to mitigate the impacts. The road network is not designed to accommodate heavy vehicles that could be generated by such uses. Therefore, it is considered appropriate that this area continue to function as a rural residential lifestyle precinct.

The WAPC have discontinued the use of 'Special Residential' and 'Rural Residential' zones, therefore it is proposed that the area be zoned 'Rural'. Given the size of the lots, there may be the need to use 'Additional Uses' or 'Restricted Uses' to ensure that the range of uses for the area is appropriate, cognisant of the size of the lots. In this regard, the range of uses permissible under the TPS3 'Rural Living' zone is generally considered appropriate to protect this rural residential lifestyle.

There is a triangular area in the north-west that is outside of the current Kwinana EPP Buffer, but still within the MRS 'Rural' zone. The rezoning of this area to 'Urban' is not supported given the irregular shape and small size which would not allow for the orderly structure planning of the area to provide access for new lots and achieve an appropriate interface with the adjacent area.

Planning Area F: Rural Living Precinct				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Maintain the spatial extent of the 'Rural Living' zone from TPS3, with a zoning of 'Rural' (potentially with 'Additional Uses' or 'Restricted Uses'), providing for high levels of rural lifestyle character and amenity.	1. Identification of a range of permissible uses generally aligned to those under the TPS3 'Rural Living' zone. 2. City to advocate for an appropriate interface to the south that respects the rural lifestyle amenity of the precinct.	Area mostly located within EPP buffer and not suitable for further subdivision. Given existing pattern of development. TPS3 range of uses generally appropriate to protect rural residential lifestyle. In response to the anticipated redevelopment of the Cockburn Cement site to the south.	0-5yrs
2.0	A clear, identifiable rural lifestyle character for the area.	1. Undertake community consultation to identify desired intended future character, to strengthen and enhance local character and community pride.	To identify a character that aligns with the expectations of the community.	0-5yrs

		2. Identify appropriate mechanisms within local planning framework, such as a local planning policy, to protect intended future character.	To ensure identified future character is clearly articulated and can be implemented.	0-5yrs
		3. Define setbacks within the Scheme (eg. Residential R5 setbacks).	To provide greater level of clarity in the planning framework and protect streetscape character. Given the small size of the lots and existing setbacks, Residential R5 setbacks are appropriate.	0-5yrs

Planning Area G: Wattleup Industrial Investigation Area

Perth and Peel @ 3.5million identifies an 'Industrial Investigation Area' to the east of Latitude 32, approximately 40ha in area, and containing 14 rural landholdings zoned 'Rural' under the MRS.

The rural interface between the Latitude 32 industrial area and the central wetlands system has been a longstanding feature of the strategic planning undertaken by the State Government to protect the sensitive wetlands and Latitude 32 operations. This area functions as a transition between Latitude 32 and the residential land uses to the east of the area. Landowners in the area are strongly supportive of the rural zoning.

This area is heavily vegetated and contains a 'Conservation Category Wetland' (CCW) and the environmental qualities would stand to be adversely impacted by the introduction of industrial uses. The area also contains a listed Aboriginal Heritage site (No. 4357 – Wattleup Road Swamp).

Retention of the rural zoning is supported in the short-term, with further engagement with key stakeholders and investigations required to determine an appropriate land use outcome for this area.

The Strategy does, however, recognise that Planning Area G may be a transitional land use area, and depending on the outcomes of the investigation this may include a transition between the industrial land uses to the south and the wetland system to the north. Decision makers should ensure all aspects affecting this area are suitably considered.

Planning Area G: Wattleup Industrial Investigation Area				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Investigate appropriate land uses for the area.	1. Undertake detailed investigation into the most appropriate land uses for the area through further engagement and investigations with key stakeholders.	Preliminary investigations indicate that industrial uses may not be appropriate due to the environmental issues, Aboriginal heritage, and interface with residential development to the east. Further engagement and investigations with key stakeholders is required to determine an appropriate land use outcome for Area G. There may be merit in considering land uses of a transitional arrangement noting the interface between industrial land uses to the south and the wetland system to the north	0-5yrs
		2. If the rural zoning is still appropriate, City to advocate for the removal of the 'Industrial Investigation Area' *from Perth and Peel @ 3.5 million* when it is updated, and to have it identified as a 'rural' area.		0-5yrs

Planning Area H: Cockburn Central Activity Centre

Cockburn Central is a transit-oriented activity centre located approximately 23km from the Perth central area. It is the City's only Secondary Centre, anchored by Cockburn Gateways Shopping City, and supported by the mixed-use development of the town centre.

Council's vision is for Cockburn Central to be positioned as a Strategic Metropolitan Centre and the most influential Activity Centre in the South West Metropolitan Sub-Region by 2031. On the basis of the projected population, 280,000 residents by 2021 and 390,000 by 2036, Cockburn Central has the potential to be elevated to a strategic metropolitan centre. In line with this, an opportunity exists for clusters of office and commercial space to attract high quality strategic employment given the quality urban environment that is planned, allowing for the continual evolution of the Centre

Cockburn Central West will deliver complementary uses to the town centre including high density residential development (with targets identified), offices, education and government offices, integrated with regional recreational aspirations. Cockburn Central East will be focused towards a diverse range of commercial services and/or light industrial rather than retail, providing for high-quality strategic employment.

Within the Cockburn Central activity centre the Gateways Retail Precinct provides the focus for retail uses and has a significant impact on the public realm. Future objectives for the centre recognise the benefits in building a greater relationship to Beeliar Drive, as evidenced by the main street and night-time orientated activity node. The Gateways Retail Precinct is an important gateway site, and a key focus is how it can better connect with its surroundings and contributes to a vibrant activity centre core. In 2021, Perron Group, the owner of Cockburn Gateway, obtained development approval from the WAPC for Cockburn Quarter – a $1 billion project that aims to deliver mixed-use development in four stages across the 20 years that will contribute to the centre's evolution.

The Activity Centre is subject to four standard structure plans with three of these structure plans also having associated design guidelines that have been adopted as local planning policies.

Planning Area H: Cockburn Central Activity Centre				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Investigate the opportunity for Cockburn Central Activity Centre to be reclassified to a strategic metropolitan centre based on the function of the centre.	1. Investigate the opportunity for Cockburn Central Activity Centre to be reclassified to a strategic metropolitan centre based on the function of the centre.	To realise the City's ambition for Cockburn Central to be the most influential Activity Centre in the South West Metropolitan Sub-Region by 2031; and to meet the needs of the community in this catchment.	0-5yrs
		2. Investigate with the Department of Education the future educational needs of the Core area; particularly as they relate to Primary Education.	To ensure adequate the educational needs of the future community are met.	5-10yrs

2.0	A transparent and robust planning framework that ensures the objectives of the centre are achieved.	1. Review of structure plans, zonings, Scheme provisions and design guidelines to ensure clarity and consistency and implement rationalisations where appropriate.	To ensure objectives are achieved, and to provide certainty for landowners and businesses.	0-5yrs

Planning Area I: Phoenix/Spearwood District Centre

The Spearwood Activity Centre (also referred to as the 'Phoenix Centre') is a district centre, and the City's second largest centre with 28,000sqm of retail floor space, and a range of other associated commercial uses.

There has been a considerable amount of strategic planning work completed for the Phoenix District Centre, including the Phoenix Revitalisation Strategy (2009) and Activity Centre Structure Plan (2022).

In line with the recommendations of the Phoenix Revitalisation Strategy, there has been an increase to residential densities within the 800m catchment around the centre (between R30 and R100), rezoning of a new 'Mixed Use' area, and numerous improvements to the public realm. This has provided for infill development and a diversity of dwelling types within the catchment.

With an understanding of the constraints of the centre, the Activity Centre Structure Plan seeks to improve the pedestrian environment and connectivity throughout the centre and improve the interface with the public realm.

The City will continue to implement public realm improvements to transform it into a pedestrian-friendly town centre boulevard and support its transition to a hub for the community. The City will also continue to work with landowners and businesses to promote the regeneration of the centre.

Planning Area I: Phoenix/Spearwood District Centre				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	A vibrant, pedestrian-friendly mixed-use centre that is a hub for the community.	1. Continued implementation of public realm improvements. 2. Continued implementation of the Phoenix Activity Centre Structure Plan.	To achieve the vision for the centre identified in the Phoenix Activity Centre Structure Plan.	Ongoing
2.0	A robust planning framework.	1. Review the Phoenix Activity Centre Structure Plan to update and consolidate into a Precinct Structure Plan.	To ensure the planning framework is up to date, enabling effective implementation to meet the identified objectives for the centre.	0-5yrs

Planning Area J: Cockburn Coast District Centre

Perth and Peel @3.5 million and SPP 4.2 'Activity Centres for Perth and Peel' identified an emerging district centre for Cockburn Coast. This centre will be important to meet the needs of the catchment but will also help achieve the vision set out in the Cockburn Coast District Structure Plans and (local) structure plans to create a vibrant, high density mixed use urban environment. The centre will be critical to achieve the residential densities and employment targets that have been identified for Cockburn Coast.

The district structure planning identifies the South Fremantle Power Station as the primary and ultimate employment hub for Cockburn Coast, and it will be an important commercial, recreation and prime visitor destination and a critical focal point for this emerging district centre. Built form around the South Fremantle Power Station Precinct will be the most intense and urban node in Cockburn Coast, incorporating contemporary buildings, shared streets, public plazas and a revamped Power Station building. It is expected that there is a strong element of public access and community use as a key part of any adaptive reuse proposal for the South Fremantle Power Station building and site.

The Cockburn Coast District Structure Plan recommended the creation of a high frequency transit system focussed on Cockburn Road and Hampton Road, connecting the Fremantle CBD and train station with the Cockburn Coast area. This is considered to be an important element of the plan to create a vibrant and accessible urban environment and will be needed to support a successful district centre in this location.

Relocation of the Fremantle Port Operations to Kwinana will reduce requirements for heavy freight into Fremantle, making it an opportune time to investigate the potential alignment of a transit link and opportunities for alternative uses for the freight rail line through Cockburn Coast.

Planning Area J: Cockburn Coast District Centre				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	The Cockburn Coast District Centre as a vibrant, landmark destination that is connected, integrated, diverse and accessible.	1. Preparation of a Structure Plan for the South Fremantle Power Station Precinct as shown in the District Structure Plan Part 2.	To achieve the vision for Cockburn Coast set out in the district structure plans. To ensure an interconnected precinct is achieved.	Ongoing
		2. The City will continue to support ongoing investigation and studies into the feasibility of the high priority transit corridor alignment.	To ensure the vision for a connected precinct can be achieved and support the transition to sustainable transport modes.	0-5yrs

		3. Advocate for the investigation of alternative uses for the freight rail corridor.	Relocation of the Fremantle Port Operations will reduce heavy freight requirements, making it an opportune time to investigate the potential alignment of a transit link and opportunities for alternative uses for the freight rail line through Cockburn Coast.	Ongoing
2.0	The South Fremantle Power Station as a landmark and focal point for the district centre.	1. Establishment of a State Government / City of Cockburn joint steering group to: • Facilitate and coordinate community and stakeholder engagement and determine overarching planning principles; and • Review opportunities, in conjunction with the State's preferred proponent(s), to activate the former South Fremantle Power Station building to achieve community, tourism and industry benefits.	To achieve the vision for Cockburn Coast set out in the district structure plans.	0-5yrs

Planning Area K: Bibra Lake Recreational Area

The Bibra Lake Recreational Area has a rich history of Aboriginal and historic cultural heritage, and a long history of public use and community activity. Today the area is an important conservation area, and a recreational hub of regional significance. It attracts a large and growing number of visitors and contains a variety of private commercial and public recreation features and infrastructure in a largely natural setting.

The extent of Planning Area K corresponds to the Planning Area defined in the Bibra Lake Management Plan.

Bibra Lake Reserve Areas

The area east of Progress Drive and north of Gwilliam Drive comprises reserves or freehold land vested or managed by the City of Cockburn that serve a conservation and/or recreation function, including Bibra Lake Reserve and Yaakan Park. These areas are zoned 'Parks and Recreation' under the MRS and are located within Bush Forever site 244.

The foreshore and surrounds of the lake are highly accessible and, in contrast with other lakes in the southern suburbs of Perth, contain a range of well-developed recreation facilities and community-based organisations. It is also a place of connection to the natural environment, offering an opportunity to experience natural bushland within a wider suburban setting.

The Bibra Lake Reserve includes seasonal views across the water, open lawned parklands, playgrounds, BBQs, toilet facilities, a skatepark, the Bibra Lake Boardwalk and Bird Hide and walk/cycle paths.

The reserve hosts a number of community and educational facilities including the Cockburn Wetlands Education Centre, WA Wildlife Rehabilitation Centre and the 1st Bibra Lake Scout Group hall. These collectively perform a range of valuable community services, including education and awareness raising, volunteer involvement, training, revegetation, fauna rehabilitation and applied research.

The Aboriginal Cultural and Visitors Centre is proposed to be located near the corner of Gwilliam Drive and Progress Drive. It will be a place of recognition and learning about Nyungar culture, language, music, art and dance, and a unique attraction in metropolitan Perth.

Bibra Lake is part of Beeliar Regional Park and subject to management strategies and policies contained in the Beeliar Regional Park Management Plan and the Bibra Lake Management Plan which sets out management zones, including 'conservation' and 'recreation' areas. It identifies that some scope exists to further develop and enhance recreation facilities and uses of the reserve, though such expansion needs to occur without degrading environmental, cultural and heritage values.

Private Recreation Zone Precinct

On the western side of Progress Drive, south of Gwilliam Drive is a 23.5ha area zoned 'Private Recreation' under the MRS that comprises 8 lots in private ownership, including Perth's only/major theme park, Adventure World.

Seven of these lots are zoned 'Special Use No. 7' which allow for a limited range of uses including education, private recreation, restaurant, health studio, club premises and fast-food outlet. The eighth lot is zoned 'Special Use No. 8' (Adventure World) for 'Amusement Park'.

'Private recreation' is defined in the MRS as: 'Areas of significance to the regions recreation resource which are or are proposed to be managed by the private sector.'

The vision for this precinct is to accommodate appropriate uses that respect and complement the recreational, conservation and cultural values of Bibra Lake and support and enhance the visitor experience to the precinct. This precinct is visually important as a key entry point to the Planning Area and should contribute positively to its character. Review of the 'Special Use' zones should include identifying an appropriate range of uses to deliver this vision. It is also critical that any uses introduced do not limit the current or potential future operation of the regionally significant land uses located within this and the broader precinct.

Parks and Recreation (west of Progress Drive) Precinct

South of this area is land zoned 'Parks and Recreation' which includes a mix of privately owned lots and City managed reserves. Boorn and Djidi Djidi Reserves have conservation value and provide important habitat linkages, whilst the Mary Ann Tapper Reserve has historic heritage value. There are also 3 privately owned landholdings - Lot 21 and 24 owned by Adventure World, and Lot 26 Progress Drive (Cockburn Ice Arena).

In this area, commercial and recreational uses must be consistent with the 'Parks and Recreation' reservation and the relevant management plans, and must not negatively impact the conservation, cultural or historic heritage values of the area. The City will investigate the rezoning of these lots to 'Private Recreation' under the MRS to align with the northern area. A 'Special Use' zone could then be applied under the local planning scheme, with an appropriate range of land uses.

Planning Area K: Bibra Lake Recreational Area				
	Planning Direction	***Action***	***Rationale***	***Timeframe***
1.0	Protect, enhance and promote the natural and cultural values of Bibra Lake wetland and associated reserves whilst: • Enabling sustainable community use of the lake and associated reserves through provision of a range of conservation, recreation, cultural and environmental education opportunities. • Accommodating appropriate uses within the 'Private Recreation' MRS zone that enhance the visitor experience to the Planning Area.	1. Development within the reserve areas is to be guided by the Bibra Lake Management Plan (or equivalent). 2. Implement the Bibra Lake Management Plan (or equivalent) and other relevant adopted plans for the area.	The area has high conservation and cultural values that must be protected.	Ongoing
2.0	Ensure that the 'Private Recreation' MRS zoned lots provide a range of high-quality tourism, educational, and private recreation uses, and limited	1. Investigate the expansion of the MRS 'Private Recreation' zone to include the privately owned lots that are currently reserved 'Parks and Recreation'.	The vision for the precinct is to accommodate appropriate land uses that respect and complement the recreational, conservation and cultural	1-5 years

	range of commercial uses that: • Support and enhance the visitor experience to the precinct. • Contribute positively to the unique identity and character of the precinct as a conservation and recreation area with high landscape, amenity and cultural values.	2. Review LPS3 to identify appropriate uses within a 'Special Use' zone(s) to support the Planning Area.	values of Bibra Lake and support and enhance the visitor experience to the precinct. Introduced uses should not limit the current or potential future operation of existing regionally significant land uses in this and the broader precinct.	1-5 years
		3. Consider local and regional traffic impacts for proposals.		1-5 years
3.0	Development within the MRS 'Private Recreation' zone that does not detract from the natural environment and bushland setting of the Planning Area, reflecting a more natural setting than would be typically seen in commercial areas, including: • Development siting, bulk, scale and heights compatible with the bushland character of the Planning Area. • Development in a landscaped setting, particularly when viewed from public areas. • Fencing and signage that does not detract from the natural setting. • Preservation of existing trees and vegetation to the greatest extent possible.	1. Identify conditions in the 'Special Use' zone to ensure development contributes positively to the character of the Planning Area.	To ensure the conservation, cultural and landscape values of the precinct are protected, and to foster a unique identify and character for the precinct.	1-5 years
		2. Require landscape visual impact assessment for land use or development proposals that propose vegetation removal that will alter landscape character.		1-5 years
4.0	Manage bushfire risk whilst protecting environmental and cultural values.	1. Ensure bushfire management is comprehensively considered as part of any proposals for development, and that there is not an unacceptable environmental, cultural or visual landscape impact.	Area is Bushfire Prone with high environmental and landscape values.	Ongoing

STRATEGY MAP

City of Cockburn
wetlands to waves

GNA
Mar 2024

0 1km
Scale

Local government boundary

Planning Areas

Planning area

A Planning area reference

Urban growth and settlement

Activity centre - Secondary

Activity centre - District

Existing urban footprint

Urban deferred

Future special residential

Existing rural

Existing rural - water protection

Structure planning areas for future rationalisation

Economy and employment

Existing industrial

Activity centre - Specialised

Hope Valley Wattleup Redevelopment Area

Environment and recreation

Regional parks and recreation

Private recreation

Waterways

Perth and Peel @ 3.5 million

Urban expansion

Industrial investigation

Possible transitional land use area

Infrastructure

Primary regional roads

Other regional roads

Public purposes

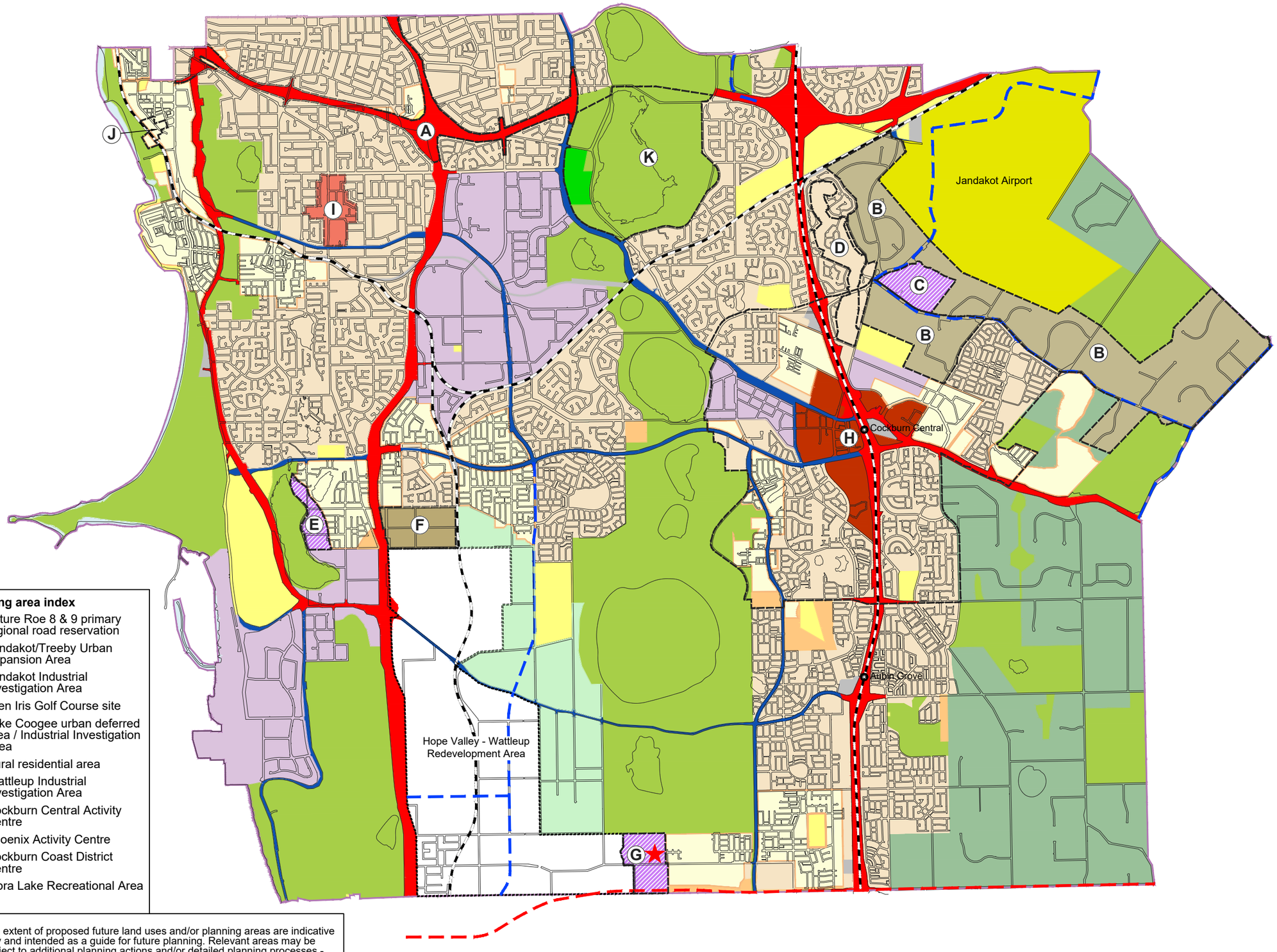
Railways

Railway line

Railway station

Proposed primary distributor roads

Proposed integrator arterial roads



Planning area index

A	Future Roe 8 & 9 primary regional road reservation
B	Jandakot/Treeby Urban Expansion Area
C	Jandakot Industrial Investigation Area
D	Glen Iris Golf Course site
E	Lake Coogee urban deferred area / Industrial Investigation Area
F	Rural residential area
G	Wattleup Industrial Investigation Area
H	Cockburn Central Activity Centre
I	Phoenix Activity Centre
J	Cockburn Coast District Centre
K	Bibra Lake Recreational Area

Notes:

1. The extent of proposed future land uses and/or planning areas are indicative only and intended as a guide for future planning. Relevant areas may be subject to additional planning actions and/or detailed planning processes - such as structure plans (precinct or standard) and local development plans in determining appropriate development controls such as building heights, densities and built form provisions.
2. Resolution of the Industrial Investigation areas may inform amendment to the Strategy and possible MRS and/or LPS zoning changes.

Local Planning Strategy Map

Implementation

The actions that have been set out support the implementation of the identified strategies. These actions are grouped by land use planning theme, and detail clear pathways to implementation and are spatially identified in the Strategy map, where applicable.

Categorisation tools

The actions have been categorised to provide clarity around the type of action, their priority, timing, the role the City plays in implementing the action, and the scale of the action/project. Categorising the actions in this way will provide a clearer line of sight in terms of the implementation and monitoring of the project, ultimately informing business planning and service delivery.

Type of action

	**Requires specific action**
	**Guides decision-making**
	**Advocacy action**

Priority

Timeframes for the implementation of actions have been determined based on the following criteria:

0-5 years	This means there is an opportunity or need to commence work on a project, or initiate immediately to: • Address an identified risk or issue that could worsen if not resolved. • Act upon a unique or emerging opportunity that is time critical. • Collaborate with relevant stakeholders. • Align with other projects or initiatives underway or near commencement. • Leverage market demand. • Satisfy legislative requirements.
5-10 years	This means the action should be taken, however, there is no trigger or opportunity for immediate action, or its commencement might be contingent upon other actions.
10-15 years	This means the action should be taken in the future after further investigation, as resources become available, as demand increases – or once a trigger point is reached.
Ongoing	This means that the action item requires continual investment and undertaking. This includes items that: • Form a part of the everyday or expected business operations of the City. • Extend beyond the life of the Strategy but contribute to the objectives.

City role

Depending on the nature and scope of an action, the City may play various roles in the implementation.

Lead	This means the City is the primary responsible authority for implementing the action. This may involve working with or without stakeholders.
Advocate	This means the City will aim to influence or support stakeholders and lead agencies to develop solutions for implementing an action or direction of the Strategy.
Partner	This means the City will join with a stakeholder or agency to deliver a Strategy action. This would include the formalisation of the partnership, either financially or through a shared agreement.

Scale

The scale of an action has been provided, based on the anticipated size or scope of the project, and resources and stakeholders required to implement the action. Scale has been undertaken from the perspective of the City and may differ for partners/stakeholders.

High	This is an action that may include one or more of the following: • Significant infrastructure items that have a regional role • A 'whole of organisation' response • Agreement of several stakeholders and agencies to implement • Significant time required to implement • Risks (financial or otherwise) that require further interrogation and feasibility studies.
Medium	This is an action that will affect several stakeholders and business units within the City.
Low	This is an action that is within the scope of the City's Corporate Business Plan, does not result in the need for additional resources, or impact the project planning of a business unit.

Monitoring and review

While the Local Planning Strategy provides a strategic planning direction for the next 15 years, it is inevitable that over that period community views will change. In addition to this, there will be external changes, including changes to the State Planning Framework. While this Strategy seeks to be robust enough to manage certain changes, it is recognised that to effectively respond to these changes it is important that the Strategy is continuously reviewed.

The City will adopt a procedure for monitoring any shortcomings in the Local Planning Strategy and the associated strategies and actions.

Any identified issues that arise between review dates should be documented and retained by the City for consideration once the review process is undertaken.

A review of the Local Planning Strategy should be undertaken every 5 years.

The City intends to align the review of the Strategy with the next review of the City's Strategic Community Plan.

Revisions to the Local Planning Strategy will be presented to the Western Australian Planning Commission for endorsement.

APPENDICES

APPENDIX A - Summary Perth and Peel infill targets

PROJECTED INFILL (15 yr plan)	No. of dwellings
Revitalisation Strategy infill	6466
Established residential infill	2996
TOTAL	**9,462**
PERTH AND PEEL TARGET 2031	*8,600*
FUTURE INFILL POTENTIAL (>15yrs)	**No. of dwellings**
Cockburn Central/Success residential adjacent areas	1500
Other residential infill	3200
High Priority Transit infill	8656
TOTAL >15 yrs	13,356
TOTAL TO 2030	9,462
TOTAL TO 2050	24,128
PERTH AND PEEL TARGET 2050	*14,680*

Additional Dwelling Capacity Estimate to 2050

	Dwelling estimate range	
	Lower scenario	**Higher scenario**
Revitalisation Strategy infill areas		
Phoenix/Spearwood	1271	8834[1]
Hamilton Hill	3450	-
Coolbellup	1745	-
Brownfield areas		
Cockburn Central North (Muriel Court)[3]	2512	4891[1]
Cockburn Coast[4]	6000	Possible higher dwelling yields.
Established suburban residential areas		
Bibra Lake/South Lake	155	3152[1]
North Lake	22	-
Coogee	105	149[1]
Spearwood/Lake Coogee	77	-
Yangebup	91	-
Leeming	34	-
Success	2028	3528[2]
Greenfield Areas[5]		
Atwell	3,346	Higher dwelling yield unlikely given areas are newly structure planned.
Aubin Grove	2,477	
Beeliar	3,636	
Hammond Park	4,201	
Treeby / Banjup North	3,149	Higher dwelling yield possible in event of MRS changes.
Banjup South	538	
Jandakot	1,113	
Lake Coogee	2,320	Higher dwelling yield possible if Lake Coogee urban deferred area becomes available for residential development.
TOTAL ESTIMATED DWELLING RANGE	**38,270**	**52,753**

Notes:

1. *Future additional infill potential from east-west transit link.*
2. *Possible future infill within proximity to Cockburn Central (>15 years) as housing stock ages.*
3. *Muriel Court Structure Plan requires 75% dwelling density to be achieved.*
4. *Cockburn Coast Structure Plan requires 85% dwelling density to be achieved.*
5. *Dwelling figures based on approved structure plans and theoretical dwelling capacity for the areas yet to be structure planned based on the areas' proximity to public transport and activity centres. These figures will be refined over the next five years as the City continues to progress structure planning and precinct structure planning.*

City of Cockburn

Local Planning Strategy – Part 2

cockburn.wa.gov.au

Adopted by WAPC at 13 February 2024 Statutory Planning Committee Meeting (subject to modifications)

Contents

Acknowledgement of Country

The Mayor, Councillors and staff of the City of Cockburn acknowledge the Whadjuk Nyungar people of Beeliar boodja as the traditional custodians of this land. We pay our respect to the Elders, past, present and emerging.

Document structure

The full Strategy comprises two parts, as follows:

PART 1 **Planning Strategy**	**Planning Directions and Actions**
PART 2 **Planning Context Background, Profile and Analysis**	**Section 1: Planning Context** **Section 2: Background and analysis**

What is the Local Planning Strategy?

The Local Planning Strategy is a high-level, long-term strategy that guides the growth and change of the City over 15 years.

It sets the direction for an updated and improved local planning framework by identifying strategies to address what is important to the community, and to deal with new challenges faced by the City.

The Local Planning Strategy will set the framework to enhance the liveability of the City and every aspect of life including the community's health, social connectedness, employment, prosperity, safety, and harmony with the environment.

The Local Planning Strategy will also drive a more robust and transparent framework for decision making and exercise of direction. A key part of this framework is the Local Planning Scheme which will be guided by the Local Planning Strategy, including zones and development standards. Together the Local Planning Strategy and Scheme will guide local planning policies, precinct structure plans and structure plans to create a logical and interconnected local planning framework that makes the intent behind every decision clear.

Importantly the Local Planning Strategy itself also has a high level role in guiding decision-making, with the expectation that all land use planning is consistent with the identified strategies.

Introduction

The City of Cockburn is a 'middle ring' metropolitan local government located on the coast south of the Port of Fremantle. It is a 10 minute drive from the Fremantle city centre and approximately 30 minutes from Perth city centre, via the regional road system. The City adjoins the Cities of Fremantle, Melville, Canning, Armadale and Kwinana.

The district of the City of Cockburn is 149 km^2 (excluding Rottnest and Carnac Island). It comprises 22 suburbs in three wards and is one of the larger local governments in the Metropolitan Area.

A new planning context

For the past 20 years the City of Cockburn's local planning framework has been focussed on coordinating development and achieving orderly and proper planning, with a focus on greenfield residential development and population driven growth, including infrastructure and services to support this growth.

The City's 1999 Local Planning Strategy and Town Planning Scheme No. 3 (TPS3) have guided substantial growth and helped manage a wide range of complex issues like land use buffers and environmental constraints.

TPS3 has been regularly updated and was amended to reflect the *Planning and Development (Local Planning Schemes) Regulations 2015* 'Deemed Provisions for local planning schemes', and a consolidation was approved in 2015. However a new scheme and strategy are now required to deal with a new set of challenges facing the City, and to address what is now important to the community.

The City's 1999 Local Planning Strategy had a focus on identifying urban expansion, development control, and managing land use conflict in a period of time when the City was experiencing rapid residential growth.

While greenfield development will continue in Treeby, Hammond Park and Wattleup, the City is now entering a new phase in its evolution with forecasts indicating that from 2036 onwards the last phase of greenfield development will be fully developed. The majority of the City's residential growth will then be within Coogee, North Coogee, Cockburn Central, and infill within Hamilton Hill, Spearwood and Coolbellup.

As greenfield development tapers, the focus becomes how to protect and enhance what is valued by the community - how to be greener while growing; and how to make Cockburn safer and more liveable for all residents.

Projections indicate that by 2031 the volume of traffic using the City's roads is likely to exceed the capacity on many major arterial roads during peak hours. To support this growth there will need to be a transition to more sustainable transport modes like cycling, walking and public transport.

This will create a more equitable, liveable, resilient and futureproof transport network that supports and prioritises the health and well-being of residents, and the environmental values of the City.

As the built environment evolves, it is appropriate that the planning system adapts to the increasing complexity of planning proposals by requiring a greater emphasis on design quality. Good design outcomes improve the urban environment, benefit local communities and leave a positive legacy for future generations.

Design WA is a State Government initiative that commenced in 2019, bringing a new approach to the planning system and beneficial change to the built environment to ensure good design is at the centre of all

development. A key feature of this new direction is a more performance-based approach to decision-making, moving away from 'deemed-to-comply' provisions.

State Planning Policy 7.0 'Design of the Built Environment' provides the overarching framework for the elevation of design matters, setting out objectives, measures, principles and processes which apply to the design and assessment of built environment proposals through the planning system.

A key aim is the creation of a built environment that reflects the distinctive characteristics of a local area, enhances streetscapes and neighbourhoods and that contributes to the development of vibrant and liveable communities.

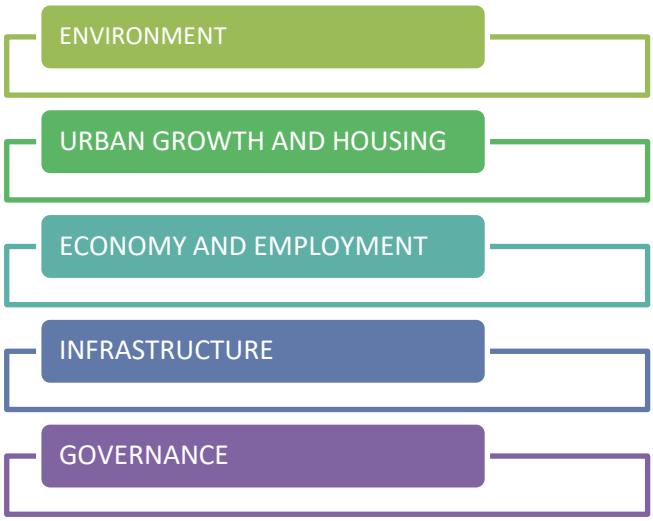
As the City of Cockburn continues to experience growth and change, the challenge is to ensure this change is managed in a way that does not erode the City's unique character.

The focus will be on creating a robust local planning framework that balances certainty and flexibility to deal with new challenges.

The vision for the Local Planning Strategy has been derived from the Strategic Community Plan and State Planning Strategy, as follows:

To create a sustainable, healthy, connected and prosperous Cockburn community.

To achieve this, Part One of the Local Planning Strategy is structured around the following key themes, each with an identified key objective:



Part Two of the Strategy provides a comprehensive overview and analysis of the key issues faced by the City, and this has informed the preparation of a set of planning directions and actions for each theme within Part One that will enable the Local Planning Strategy vision to be achieved.

Section 1: PLANNING CONTEXT

The Strategy considers the interrelationship of a number of planning factors relevant to the City of Cockburn and provides the rationale for the zones and development standards set out in the Local Planning Scheme. Together, the Strategy and the Scheme guide the content of Local Planning Policies, Activity Centre and Structure Plans. Prior to establishing the local planning framework, the Strategy identifies alignment with relevant local and state level planning documents.

1.1 Local planning context

1.1.1 City of Cockburn Strategic Community Plan

The Strategic Community Plan is an aspirational document that was developed following extensive community consultation. Engagement of the community helps define both what levels of service the community wants and what they are willing to pay for. Both of these elements are extremely important when defining asset management and the resulting costs.

The Plan has five broad strategic themes which will shape the City's development over the next ten years and beyond.

Local Economy	A sustainable and diverse local economy that attracts increased investment and provides local employment.
Environmental Responsibility	A leader in environmental management that enhances and sustainably manages our local natural areas and resources.
Community, Lifestyle & Security	A vibrant, healthy, safe, inclusive and connected community.
City Growth and Moving Around	A growing City that is easy to move around and provides great places to live.
Listening and Leading	A community focused, sustainable, accountable and progressive organisation.

The strategies that come out of this document inform every activity that the City undertakes.

The Plan is prepared in accordance with the *Local Government Act 1995*, the Department of Local Government Integrated Planning Framework, the City of Cockburn *Community Engagement Framework* and other relevant City of Cockburn guidance documents. It is reviewed every two years.

Progress against the objectives is reported in the City's Annual Report.

The Strategic Community Plan is supported by the Corporate Business Plan, Long Term Financial Plan and Workforce Plan as well as many other strategies and action plans which provide detailed activities to enable the City to meet the strategic objectives in the Strategic Community Plan.

1.1.2 Local planning policies

The City has a number of local planning policies adopted under the Scheme to assist it with dealing with subdivision and development proposals within the district and provide consistent advice to the public. They can be broadly categorised as:

- Residential
- Rural
- Industrial & Commercial
- Design Guidelines
- Miscellaneous

It is intended that the existing local planning policies will be reviewed in accordance with the Deemed Provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015*, so that they relate to the operation of the proposed new Local Planning Scheme No. 13. This Strategy recommends preparation of a number of local planning policies to guide decision-making and the exercise of discretion to achieve the strategies set in Part One.

1.1.3 An improved approach to the local planning framework

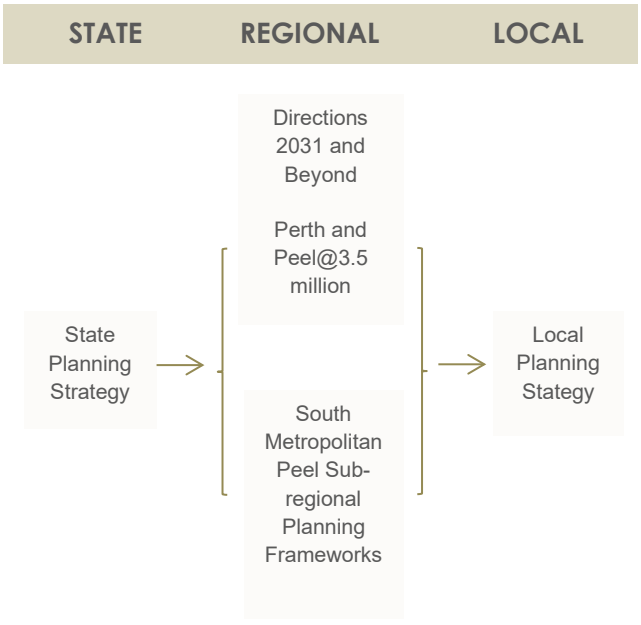
In recent times, there has been a renewed focus on the importance of a Local Planning Strategy in establishing a transparent and clear framework for decision making at all stages of the planning process. The aim of the Strategy is to ensure alignment with broader strategic planning documents, so that the objectives of the City are framed within a holistic and robust statutory framework. In doing so, the City's objectives become achievable actions, with clear connection to endorsed strategic plans and policies. The Strategy aims to achieve the following:

1. An open and transparent planning system with clear direction on discretionary decision making;
2. High level, well-researched recommendations and a process to evaluate City driven projects over time; and
3. Alignment with the State Planning Frameworks, or where variation is proposed, evidence-based alternatives.

1.2 State Planning Context

The Strategy is aligned with the Western Australian Planning Commission's (WAPC) Sub-regional Planning Framework for the South Metropolitan and Peel Area.

Table 1 *Implementation of the Perth and Peel Framework* depicts the statutory context of the Strategy, framed by the implementation recommendations of *Perth and Peel @3.5million* and the relevant State Planning Policies. In undertaking a gap analysis, the Strategy addresses specific areas for further investigation, or where achievable in the short term, clear actions wherever possible. Table 1 provides a overview of the key issues to be addressed as part of the formulation of the new local planning framework.



Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
Consolidated urban form - Directions 2031 - Liveable Neighbourhoods - SPP 3.0 Urban Growth and Settlement - SPP 3.1 Residential Design Codes - SPP 7.0 Design of the Built Environment - SPP 4.2. Activity Centres for Perth and Peel	To create sustainable communities that are attractive places to live and work. The consolidation of urban areas will provide for more efficient use of urban land and infrastructure with improved access to public transport, sport and recreation, community and commercial facilities, while minimising impacts on significant environmental attributes.	Current Local Planning Strategy does not contain a residential urban infill target or strategy. Revitalisation Strategies need to be considered by the Strategy. Central Sub-regional planning framework (the Frameworks) designates corridors of urban infill (priority areas). The South Sub-regional planning framework is flexible to local governments in the South, via designation within the LPS. Framework required to drive improved infill outcomes that contribute positively to local character. Housing stock mismatch needs to be addressed to ensure future housing needs of the community are met. Need to support transition of centres to function as community hubs and to meet the needs of the community. Need to improve accessibility to centres.	- Strategic locations for urban infill were identified through the recodings undertaken as part of the Hamilton Hill, Phoenix and Coolbellup Revitalisation Strategies. - Assessment undertaken to determine projected infill based on existing zonings, determining that the City is tracking to meeting the Perth and Peel infill targets by 2050, with the Strategy demonstrating progress over 15 years. - Assessment undertaken of other residential areas to determine whether appropriate for infill – determined to be appropriate for modest infill under current coding but not appropriate for higher codings. - Investigation of an urban infill corridor along the East-West Transit link. - Population and household needs assessment undertaken, determining the need for more accessible and smaller dwellings. Measures and incentives identified accordingly. - Measures to protect the hierarchy of centres and to improve urban design outcomes identified, with review of Local Commercial and Activity Centres Strategy (LCACS) to identify a framework. - Elevate the importance of design in considering planning proposals to ensure positive contribution to character. - Intended future character identified for residential areas.

Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
Investigation Areas - SPP 2.3 Jandakot Groundwater Protection - SPP 2.4 Basic Raw Materials - SPP4.1 State Industrial Buffer - SPP 5.3 Land Use Planning in the Vicinity of Jandakot Airport		Current Frameworks provides the Lake Coogee (Munster) Urban Deferred Precinct as a non-residential area and future industrial area. Investigation of 'Industrial Investigation Areas' (Wattleup and Lake Coogee) was required to be undertaken.	- Investigation undertaken into the appropriateness of 'industrial' or 'mixed business' uses in the 'Industrial Investigation Areas'. - Provides strategic evidence to vary the identification of the Lake Coogee 'Urban Deferred' Precinct from Industrial Investigation to future urban. - Provides strategic evidence for the Wattleup 'Industrial Investigation Area' to remain rural. - Identifies 'Planning Investigation Area' within the local framework and acknowledges further studies to be undertaken by State Government agencies. - Provides readiness provisions in the event of zoning changes at the State level through key scenario planning. - Acknowledges considerations for the 'Rural - Water Protection' zone and the

Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
			possible implications for the local planning scheme. - Recommends robust local framework in considering residential development within close proximity to Jandakot Airport.
Economy & Employment - SPP2.5 Rural Planning - SPP4.2 Activity Centres for Perth and Peel - SPP5.3 Land Use Planning in Vicinity of Jandakot Airport	To promote employment opportunities and increase the number of people who live and work within the sub-region, with a focus on attracting strategic economic and employment land uses within the strategic metropolitan centres and key industrial centres, while maximising use of existing and proposed infrastructure.	Perth and Peel advocates for investigation into Employment Self-sufficiency and meeting targets by 2050. There is a need to understand the adequacy of employment land and whether there is sufficient appropriately zoned land Need to support transition of centres to function as community hubs. Current Local Planning Strategy identifies Rural land which, at the time, was a mixture of market gardening, limestone quarries and rural living. An investigation pursuant to SPP 2.5 was needed to inform whether the area should be identified as Priority Agricultural Land.	- Provides recommendations for some flexibility of land uses (whilst protecting rural amenity and character) in Rural zoned areas as evidenced by studies into the suitability of the area to provide for agricultural purposes. - Does not identify any further rural residential zoned land, as per Perth and Peel. - Identifies key areas of economic and employment generating land. Identifies strategic industrial locations, to be reflected in the Local Planning Scheme. - Economic Development Strategy / LCACS Review to identify a framework to support viability of centres; and measures to protect employment land. - Promotion of local planning framework to guide discretionary decision making and elevate the importance of supporting economic evidence-based research. - Analyses and confirms general robustness of existing centres hierarchy (subject to minor changes) and recommends elevation of Cockburn Central Activity Centre to 'Strategic Metropolitan Centre'.

Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
Community & Social Infrastructure - SPP 3.5 Historic Heritage Conservation - SPP 3.6 Development Contributions for Infrastructure	To provide a wide range of community and social infrastructure to enhance the health and wellbeing of the community and meet the community's needs including health, education and sport and recreation, while promoting infrastructure colocation and optimising the use of existing facilities and infrastructure.	Clarification required regarding public open space cash-in-lieu requirements in infill scenarios. Identified shortfall of public open space for Hamilton Hill requires addressing. Further guidance required for public open space in structure plan areas to address identified reduction in useable public open space and grassed play areas due to restricted use drainage and other design issues. The *Heritage Act 2018* has been updated with revisions that are not yet articulated within the local planning framework. Need for financially sustainable community infrastructure that recognises the shift and evolution of communities; equitably meets the needs of residents; and enhances their health and well-being.	- Recommends update to heritage conservation provisions in the Scheme in line with new *Heritage Act 2018*. - Identifies shortfall of public open space within the Hamilton Hill Revitalisation Area and recommends provisions for cash-in-lieu. - Clarifies public open space cash-in-lieu requirements in infill scenarios. - Identifies measures to require larger areas of public open space by consolidating areas with adjacent landholdings, and to ensure they are designed to achieve highly functional and useable play areas. - Identifies that the City will continue to take a strategic approach to community infrastructure planning, and will advocate for an evidence-based approach that provides for equitable distribution and provision of community infrastructure that is also financially sustainable. - Elevates the importance of engagement and advocacy within decision-making by referencing Governance actions. - Advocates for the extension of an east-west rail link connecting to Fremantle to support liveability objectives.
Movement & Access - SPP 5.4 Road and Rail Noise - SPP 5.3 Land Use Planning in the Vicinity of Jandakot Airport	To provide an efficient and effective regional movement network for people and freight that is integrated with land uses, links key economic and employment opportunities and connects the sub-region to the greater Perth and Peel regions as well as the south-west of the State and the Wheatbelt.	The Jandakot Airport operations are vital to contributing economic and employment opportunities for Cockburn. To ensure these operations are not compromised, land use planning within the vicinity of the airport require careful consideration. The local planning framework must be robust	- The Strategy acknowledges the importance of the Jandakot Airport. In considering the health impacts to future Cockburn residents. - Identifies measures for the road network to prioritise pedestrians and bike riders; and advocates for improved public

Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
		enough to ensure adequate noise control measures are applied to the construction of habitable buildings. Consistency with State and local level required to protect the airport operations and residential amenity. Perth and Peel identifies an aspirational rail linkage as part of a future stage of Metronet; the extension of an east-west rail link. Identified lack of provision of public transport to industrial areas.	transport to industrial areas to support the mode shift. - Advocates for the extension of an east-west rail link connecting to Fremantle and identifies how the local planning framework should respond to this.
Service Infrastructure - SPP 3.6 Development Contributions for Infrastructure - SPP5.2 Telecommunications Infrastructure	To ensure the timely, efficient and cost-effective delivery of electricity, water, wastewater and other service infrastructure that is aligned with the staging of development and encourage the shared use of infrastructure corridors by the various service providers.	Potential for 'Planning Investigation Areas' to trigger re-zoning proposals and effect the need for additional contributions from developers and the City to provide infrastructure. Strong community support for additional telecommunications facilities within developing urban areas, but lack of knowledge into the planning process and what the City can reasonably control or influence.	- Identifies existing residential areas for suitable infill, in order to reduce impacts on infrastructure requirement. - Advocates for a district structure planning approach to coordinate development in areas where there are any proposed major changes to the Metropolitan Region Scheme (MRS), including Developer Contribution Areas (DCAs). - Promotes the continuation of existing development contribution plans as an orderly method for equitable and transparent infrastructure delivery and funding. - Investigate revisions to local planning policy for telecommunications, advocate for improved relationships with service providers via governance objectives.

Section 1 - Table 1: Implementation of Perth and Peel Framework

South Metropolitan Peel Sub-regional Planning Frameworks
The framework provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

Guidance	State Strategic Objective	Gap	Action/Local Planning Strategy Input
Environment & Landscape - SPP2.6 State Coastal Planning - SPP2.8 Bushland Policy for Perth - SPP 3.1 Residential Design Codes - SPP3.4 Natural Hazards and Disasters - SPP3.7 Planning in Bushfire Prone Areas - Draft Green Growth Plan - SPP2.0 Environment and Natural Resources - Draft SPP2.9 Planning for Water.	To preserve and enhance the environmental and landscape values of the sub-region for future generations to enjoy.	Heat island effect will negatively impact resident health and wellbeing, and requires addressing. Climate change impacts require consideration in land use planning. Loss of vegetation in rural areas identified as an issue, with current provisions lacking to protect these areas. Highlights the importance of concentrating new urban areas in predominantly cleared pastureland rather than impacting on areas with regionally significant conservation values. Encourages future reservation/protection of further land and waterways with environmental and/or biodiversity values of particular importance. Need to better protect landscape character given the impact of the development practice of bulk earthworks for subdivisions.	- Identifies ecological corridors, wetlands and areas of high environmental value for protection within the local planning framework, including for rural areas. Nominates planning mechanisms to retain values where appropriate. - Identifies requirements for structure plans to include further information regarding vegetation retention and tree canopy outcomes. - Identifies mechanisms to increase the urban forest and improve tree canopy. - Environmental values should be considered upfront, including bushland to be retained. It is also recommended that a structure plan be prepared (where appropriate) to further identify appropriate mechanisms to protect environmental values. - Scheme requirements for each grouped dwelling to provide a 'Garden Area' capable of supporting a tree. - Modifications to Local Planning Policy 1.2 'Residential Design Guidelines' also minimise additional crossovers and maximise opportunities for street trees. - Identifies requirements for coastal hazards, including preparation of a local planning policy. - Strategic bushfire assessment has been undertaken as part of the Strategy to guide land use planning proposals and appropriate management. - Climate change resilience measures identified.

Section 2: BACKGROUND & ANALYSIS

This section identifies and discusses the key issues, opportunities and constraints which the City of Cockburn will face into the future, with a focus on the next 15 years.

At the end of each sub-section there is a summary of the key issues which inform the Planning Directions and Actions set out in Part One.

2. Environment, physical features and natural resource management

Cockburn features some of Perth's most valuable natural areas including the Beeliar Regional Park (Bibra Lake, Manning Park and Thomsons Lake Nature Reserve which is a wetland of international significance); and the Jandakot Regional Park which consists of a series of reserves of varying size.

The coastline, adjoining Cockburn Sound and the limestone ridge which runs parallel to the coast are important and distinctive features of the district for ecological, recreational and the economic value people place on coastal living.

North of Woodman Point the coast is characterised by groynes, a marina development and sandy beaches accessible to the public.

South of Woodman Point low limestone cliffs, and shipbuilding facilities tend to limit public access to the sea.

A second ridge separates these wetlands from the primary chain of lakes which bisect the district into its western and eastern sectors. It is one of the most significant set of wetlands in the metropolitan region and is associated with extensive areas of pristine woodlands and important fauna and avi-fauna habitats.

East of the central wetland chain is a flat, low lying sandy plain of Banksia Woodlands which overlays the Jandakot groundwater mound. Recent mapping completed by the Department of Biodiversity, Conservation and Attractions (DBCA) lists over 90 per cent of Treeby, Jandakot and Banjup as containing a Threatened Ecological Community (TEC) of Banksia Woodland of the Swan Coastal Plains, and/or their associated buffers. This TEC is listed as endangered under the federal *Environment Protection and Biodiversity Conservation Act 1999.*

Sustainability and protection of the City's natural environment has become a priority for the community. To improve sustainability there is a clear need to protect land, air and water, vital resources that support the City's diverse range of flora, fauna and ecosystems, from unacceptable levels of loss or degradation.

The City is also facing a range of new challenges as the world's climate changes. More days of extreme heat, higher intensity rainfall, extreme storms, reduced levels of overall rainfall, rising sea-levels and an increased risk of future droughts are all predicted. Cities that plan and act early will better withstand the impacts of climate change and maintain a platform for future health and prosperity.

Within the land use planning system consideration of the following environmental values are of key importance:

- The retention of regionally and locally significant bushland, including Bush Forever; and protection and improvements to ecological connectivity to conserve biodiversity.
- Protection of Threatened Ecological Communities.
- Protection of water quality including quality of coastal waters (fisheries) and groundwater (nutrient leaching and acid sulphate soils).
- Planning for climate change, including falling annual rainfall and rising annual mean temperatures and severity of storm events.
- Protection of wetlands, important for their environmental, recreational and landscape values.
- The management of a modified coastline high in ecological, social and economic value threatened by predictions of sea level rise and erosion.
- Protection of natural areas for their recreational value, and their contribution to the City's identity and character.

- The management of bushfire risks, in particular the interface with built up areas.
- The nuisance and public health issue of significant midge and mosquito habitat within proximity to homes.

This requires careful assessment to resolve conflicts between land use and protection of natural resources, giving consideration to potential impacts on the environment, community lifestyle preferences, and economic values. This requires an understanding of the competing pressures of development and environmental protection, together with the economics of sustainable land use and management practices, advances in technology, and the priorities of the community.

Land use planning decisions will often seek to minimise trade-offs in order to achieve the best outcome for the community, the environment and the economy. These are important issues to inform any land use changes.

The implementation of planning decisions can have an impact on the environment and other natural resources. State Planning Policy No. 2.0 'Environment and Natural Resources Policy' (2003) (SPP 2.0) sets out that planning strategies, schemes and decision-making should, among other things:

- *Avoid development that may result in unacceptable environmental damage.*
- *Actively seek opportunities for improved environmental outcomes including support for development which provides for environmental restoration or enhancement.*
- *Protect significant natural, indigenous and cultural features, including sites and features significant as habitats and for their floral, cultural, built, archaeological, ethnographic, geological, geomorphological, visual or wilderness values.*
- *Take into account the potential for economic, environmental and social (including cultural) effects on natural resources.*
- *Take account of the potential for on-site and off-site impacts of land use on the environment, natural resources and natural systems.*
- *Support conservation, protection and management of native remnant vegetation where possible, to enhance soil and land quality, water quality, biodiversity, fauna habitat, landscape, amenity values and ecosystem function.*

State Planning Policy 2.8 'Bushland Policy for the Perth Metropolitan Region' (SPP 2.8) 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.

There are a number of key environmental issues that the land use planning system can respond to which are discussed in the following sub-sections.

2.1 Ecological connectivity

Ecological connectivity is vital to the long-term viability of native flora and fauna. It is an important and often unrecognised tool available for conserving biodiversity. Ecological corridors provide connections between habitat areas allowing the interconnection of the pool of genes of the plants and animals living in those areas.

Habitat loss and fragmentation is recognised as a key threat to biodiversity conservation in urban and peri-urban areas[1,2].

It is predicted that the current loss of species due to habitat loss and fragmentation will be further

[1] Forman, R.T.T and Gordon, M. (1996) Landscape Ecology, John Wiley & Sons.

[2] How, R. & Dell, J. (2000) Ground vertebrate fauna of Perth's vegetation remnants: impact of 170 years of urbanisation. Pacific Conservation Biology 6: 198-217

exacerbated with predicted changes in temperatures and rainfall due to climate change[3].

Improvement of ecosystem resilience and connectivity, expansion of the network of protected areas, and protection of natural areas are priority management approaches to counter degradation caused by climate change[4].

Continuous and interrupted patches of native vegetation can also act as stepping stones that will help to maintain genetic diversity across the City[5].

It is important to note that parks, street trees and gardens also provide habitat links between more ecologically diverse reserves.

State Planning Policy No. 2.0 'Environment and Natural Resources Policy' 2003 (SPP 2.0) requires planning strategies, schemes and decision-making to support conservation, protection and management of native remnant vegetation where possible, to enhance soil and land quality, water quality, biodiversity, fauna habitat, landscape, amenity values and ecosystem function.

2.1.1 Towards a Green Network

The South West Group engaged the Western Australian Local Government Association's (WALGA) Local Biodiversity Program to undertake an analysis of the remnant vegetation within the Cities of Cockburn, Fremantle, Kwinana, Melville and Rockingham and the Town of East Fremantle to guide the development and implementation of the Regional NRM Strategy (2013).

The objective of this analysis and accompanying mapping was to:

- Quantify the extent of remnant vegetation in the region and identify conservation priorities, opportunities and constraints.
- Apply an analysis of connectivity, fragmentation and reach to the remnant vegetation and combine this with the ecological values of the region's remnant vegetation to provide a measure of the conservation value of each vegetation parcel.
- Model the likely impact of changes to the remnant vegetation connectivity quality under a range of future development scenarios.
- Identify priority areas, Areas for Priority Conservation Actions (APCAs), for regional scale conservation activities, with an emphasis on sites that will achieve collaboration of two or more member Councils and other key State Government land management agencies.
- Identify potential regional and local scale 'green corridors' to enhance connectivity between existing conservation areas and other remnant vegetation and parklands to improve the ecological functions of these natural areas.

'Towards a Green Network' identified recommendations, and at a local level the key recommendations to inform the land use planning system are as follows:

Focus on priority areas

- Establish East-West ecological linkages as a short term priority, particularly given the extent of current land use constraints and likelihood of limited opportunities under future development scenarios.
- Strengthen and build greater resilience into the existing North-South ecological linkages as a high to medium term priority.

Improve land use provisions to protect and retain natural areas and increase vegetation within ecological linkages

- Retain and maintain unprotected vegetation located in APCAs to maintain its biodiversity values.
- When identifying new areas to be retained through land use change, apply the guiding principles developed through the Perth

[3] CSIRO (2014) Biodiversity – science and solutions for Australia. Edited by Steve Morton, Andy Sheppard and Mark Lonsdale. CSIRO Publishing, Australia.
[4] As above.
[5] Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) South West Regional Ecological Linkages Technical Report, Western Australian Local Government Association and Department of Environment and Conservation, Perth.

Biodiversity Project[6] for regional or local ecological linkages.
- Protect priority natural areas within APCAs and connecting corridors requiring enhanced protection.
- Encourage retention of mature trees and consider introducing tree protection policies and incentives for landowners to retain these trees.
- Investigate fauna underpasses or overpasses wherever regional level transport corridors cross the path of important ecological linkages.
- Engage expert advice to assess the impacts of landscape permeability to local fauna when considering land use changes affecting ecological linkages.
- Incorporate wide verges and median strips to accommodate street trees and some low understorey in strategic locations where currently little native vegetation remains and there is limited ability to restore vegetation on reserved lands.

Improve management of natural areas within ecological linkages

- Engage expert advice when designing habitat restoration projects to ensure that any specialist fauna needs are considered.
- Investigate use of small public spaces within linkages, not considered effective in accommodating fauna movement, to be used as orchards of local species and a sustainable source of plant material for future restoration and landscaping projects.
- Establish the use of local species in public landscaping as a preference for all land managers and land developers in the study area.
- Develop guidelines for landscaping practices and species lists which provide fauna habitat on public and private lands.

2.1.2 Rural land and linkages

'Towards a Green Network' includes examples that compare variations of scenarios for vegetation retention within rural zoned lands.

The study notes the role of the City's rural zones in ecological corridors and it documents that in the long-term further loss of biodiversity can be expected on rural lands. To increase the likelihood of retention, greater provisions in the local planning framework need to be introduced, seeking to limit further fragmentation with alternative rural subdivision design and land management practices that reduce vegetation loss.

The objectives of SPP 2.3 Jandakot Groundwater Protection Policy (SPP 2.3) include maintenance and increase in vegetation cover over the policy area to facilitate the key objective of long-term protection and maintenance of groundwater for public supply and maintenance of associated ecosystems while facilitating compatible land uses. However in these areas subdivisions on lots up to 2 hectares are listed as compatible land uses in the SPP 2.3. While vegetation retention might be a development condition, experience shows that in the long-term vegetation becomes fragmented due to activities such as fencing, access and fire risk management.

'Towards a Green Network' modelling demonstrated incremental loss recorded on these lands despite the provisions of the SPP 2.3, suggesting that the City of Cockburn Town Planning Scheme No. 3 (TPS3) 'Resource' zone provisions are insufficient to ensure long-term retention and protection of vegetation on these lands.

Therefore, to maintain connectivity where rural subdivisions are permitted (on larger lots) fragmentation should be minimised and include requirements for long-term management of native vegetation and wetlands to maintain their viability. Some lots within the TPS3 'Resource'

[6] Del Marco, A., Taylor, R., Clarke, K., Savage, K., Cullity, J. and Miles, C. (2004) Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region. Western Australian Local Government Association and Perth Biodiversity Project, Perth.

zone have building envelopes, but many do not. The City will investigate inclusion of 'building exclusion' areas across this area to reduce clearing.

Targeted incentives to increase vegetation cover on private lands within ecological linkages may help to encourage vegetation restoration. The types of incentives that could be considered include free advice on bushland and wetland management for conservation; fauna sensitive fencing; threat reduction; access to subsidised local plants; and facilitation of networking and information exchange among land holders. Promotion of the DBCA (Parks and Wildlife service) Land for Wildlife Program might also increase appreciation of native vegetation retention as fauna habitat.

2.1.3 Residential linkages

Residential areas in the urban environment offer some ecological linkage potential. Vegetated gardens and verges with local species attract native fauna, help maintain genetic diversity and provide ecological stepping stones across the City, particularly for birds and insects.

Gardens and verges are particularly valuable where they are close to remnant native vegetation, such as conservation reserves, road reserves, and easements. The City has a number of initiatives to encourage local residents to plant local species in gardens and verges, including grants and subsidies, information, and policies. Such initiatives will be critical to maximise the opportunity for residential linkages, with the added benefit of reducing the urban heat island effect.

New residential areas should identify these opportunities at the structure plan or subdivision stage and identify potential for verges and appropriate landscaping on private properties to contribute to ecological connectivity.

2.1.4 Other linkages

Trees and landscaping in centres and car parking areas also have the potential to contribute to ecological linkages in the same way that residential verges can. These opportunities will be identified through structure plans, subdivisions and development proposals. *(see also 2.3.4 Commercial and industrial land)*

2.1.5 Major roads

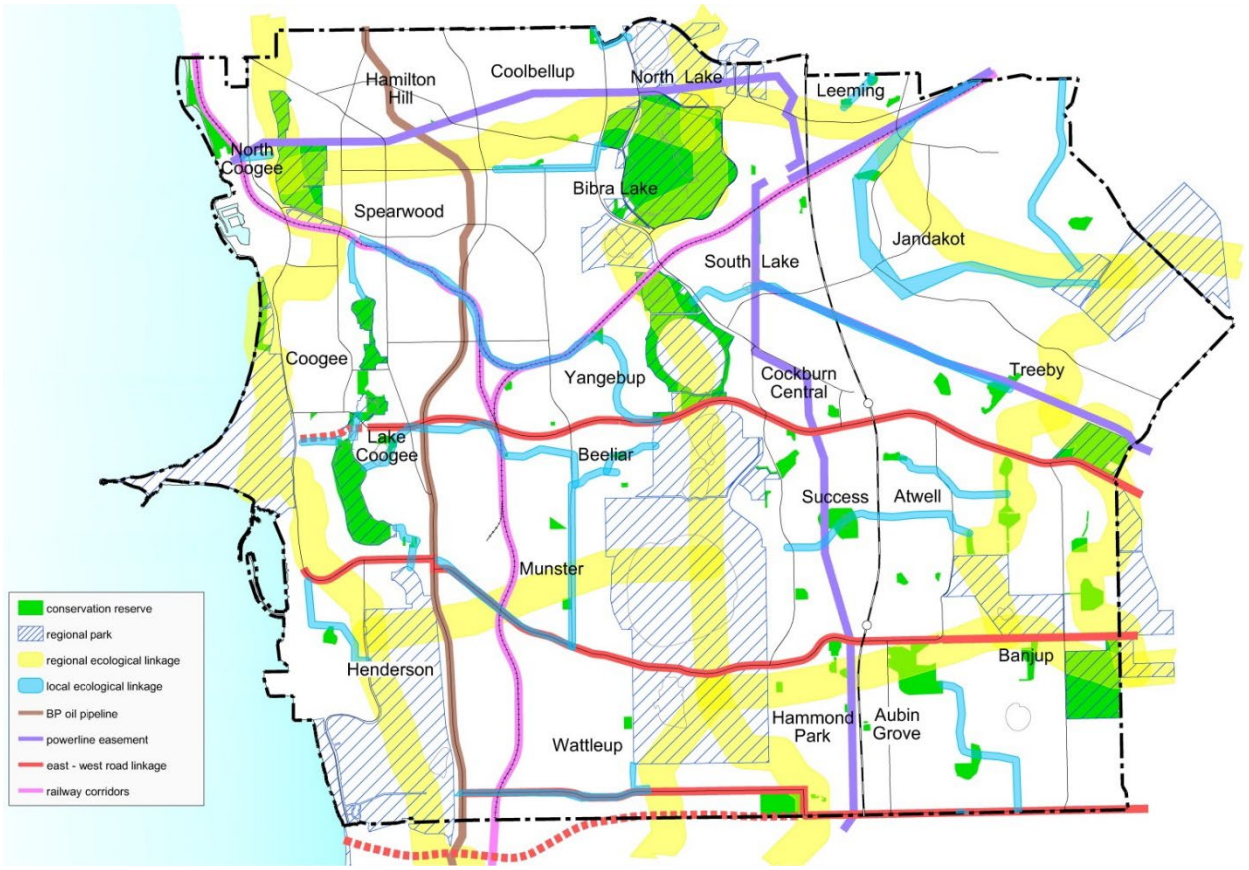
Retention of existing trees and additional trees and landscaping within road reserves is a key opportunity, and the planning and delivery of transport infrastructure needs to consider this as a priority. Projects need to consider this in the early stages. This includes measures such as vegetation and landscaping enhancement of roads that cross through the ecological corridors, utilising the ecological corridors for active transport routes. The Integrated Transport Strategy (ITS) outlines this as a key action.

2.1.6 Ecological connectivity map and implementation

The key ecological connectivity opportunities discussed above and identified through Towards a Green Network, and the City's Natural Area Management Strategy are depicted on Map 1 'City of Cockburn Ecological Corridors'.

This reflects existing and proposed corridors that are considered important opportunities to secure the long-term viability of native flora and fauna and to conserve biodiversity values. Protecting and enhancing these corridors will also contribute to the urban forest, improve resilience to climate change and contribute to the valued natural and landscape character of the City. Protection and enhancement of these corridors will require a wide range of mechanisms as discussed.

Figure 1. Native verge plantings, Beeliar



MAP 1 – CITY OF COCKBURN ECOLOGICAL CORRIDORS

ECOLOGICAL CONNECTIVITY ISSUES AND ANALYSIS

There is an opportunity to enhance ecological corridors to protect biodiversity values and ensure long term protection of vegetation.

Linkages in established and new areas should be promoted to attract native fauna, help maintain genetic diversity and provide ecological stepping stones.

There are opportunities to incorporate wide verges and median strips to accommodate street trees and some low understorey in strategic locations with little native vegetation.

Planning for transport infrastructure through ecological corridors should utilise this for active transport routes and include consideration of vegetation and landscaping enhancement.

Small public spaces/reserves within linkages, not considered effective in accommodating fauna movement, could be investigated for use as orchards of local species and a sustainable source of plant material for future restoration and landscaping projects.

Structure plans and development proposals should respond to City of Cockburn Ecological Corridors (Map 1), and any other more localised ecological linkages, and identify measures to protect and enhance these linkages, including the role of verges.

Ecological connectivity requires consideration of the role of rural land - measures to protect and/or enhance connectivity through rural areas, including targeted incentives to increase vegetation cover on private lands within ecological linkages, should be considered.

Current provisions for the rural zones, including 'Resource' zone (TPS3) are likely to be insufficient to protect biodiversity values, which will continue to be lost in these areas, and therefore measures to address this should be examined, including 'building exclusion areas'.

2.2 Wetlands

Cockburn is fortunate to have some of Western Australia's best inland lakes which form two unique chains of wetlands running from North to South through the heart of the City. Thomsons Lake is listed as a wetland of international significance, being a Ramsar wetland. Protecting the environmental, social and cultural values of these wetlands is a high priority for the community.

Figure 2. Bibra Lake

Wetland protection has become a high priority when it comes to planning outcomes, with Conservation Category Wetlands (CCW) (as mapped in the Geomorphic Wetlands Swan Coastal Plain dataset), and generally a 50m buffer protected from development. However, these buffer areas are typically transition zones between wetland dependent vegetation and dry land vegetation, but rarely do they contain purely dryland vegetation. Many species utilise both the wetland and the dryland vegetation and migrate between both to breed. When there has been no dryland vegetation protected around the wetland many animals have nowhere to go and are often killed or injured attempting to migrate.

This has been seen at Bibra Lake, where the turtles emerge from the water and head towards areas that ordinarily would have been dryland vegetation to lay their eggs. However, they instead encounter grassed or denuded areas where they become easy prey for foxes and ravens. They also must cross busy roads to reach nesting areas and many are killed by cars. In these circumstances the areas where they typically nest offer little protection from predators and their eggs are eaten by foxes, ravens and other animals. If they do survive the trip to the nesting site they (and any baby turtles that hatch 10 months later) must then make the dangerous return journey.

The lack of protection of upland areas around wetlands will potentially result in local extinction of turtle populations at certain wetlands over time as the females are being killed and eggs lost so the populations are not being renewed, and requires careful consideration.

Wetlands also have strong cultural, social landscape and recreational values, and planning for these areas should take a balanced approach that considers how to provide the community with an opportunity to enjoy these features whilst their conservation values are still protected. Fire management is also a key concern. Where sensitive land uses are nearby wetlands and their buffers, wetland management plans must be designed with an understanding of the long term fire management risk, particularly from revegetation.

Planning controls exist to prevent the discharge of stormwater directly into wetlands, and guidelines for Water Sensitive Urban Design (WSUD) have been developed by the Department of Water and Environmental Regulation (DWER) which have been developed to enhance water quality and help to protect wetlands, which should be incorporated into structure planning. Draft State Planning Policy 2.9 ‘Planning for Water’ also encourages the protection, management and conservation of water resources including wetlands and waterways, (see also 2.6 *Water Management*).

2.3 Urban Forest

During the past decade the City of Cockburn has experienced loss of urban forest, primarily as a result of vegetation clearing due to urban development.

Continued growth, coupled with the emerging challenges of climate change, is putting considerable pressure on the City's urban forest.

Loss of vegetation and trees is a key community concern in Cockburn, evidenced in the consultation for the *Strategic Community Plan* and strategic planning projects, including the Revitalisation Strategies for Spearwood, Hamilton Hill and Coolbellup.

Trees and vegetation play an important role in making Cockburn an attractive place to live, work, visit and invest in, and are an important part of the City's valued local character.

A thriving urban forest provides many social, economic and environmental benefits including:

- Increasing amenity and property values (up to $17,000 per house adjacent to a street tree)[7];
- Reducing household energy costs (up to 8 per cent)[8];
- Enhancing biodiversity and providing ecological corridors; and
- Lowering maximum summer temperatures in urban areas, with trees acting as natural air-conditioners by transpiring water vapour into the surrounding air[9].

To secure the above benefits the City must balance urban development with a comprehensive urban forest program that maintains and protects the existing tree canopy while expanding it in the future.

The South West area of WA will experience a changing climate. Annual rainfall totals will continue to decrease; whilst frequency and intensity of storms, heat waves and bushfires will increase[10].

As the density of urban development increases, the maximum summer temperatures in our suburbs will increase[11].

This increase in temperatures is exacerbated where hard paved surfaces prevail and there is little vegetation to cool the area through shade and evapotranspiration. To demonstrate, local measurements of bitumen surface temperatures on a 42°C day in full sun was 65.8°C, compared to 38.5°C under tree canopy[12].

The increase in air temperature is known as the urban heat island effect and can have adverse effects on the health of young children and the elderly [13].

One of the primary means of reducing the impacts of the urban heat island effect and therefore increasing liveability in an area is to increase the tree canopy cover to provide shade, reduce surface temperatures, and mitigate heat stress. By helping to reduce maximum summer temperatures trees can reduce energy costs by cooling buildings up to 8°C from shade and evapotranspiration[14].

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2.3.1 Current Strategies and Policies

City of Cockburn Urban Forest Plan

The City of Cockburn *Urban Forest Plan* sets out a vision for the future management and expansion of Cockburn's urban forest. The plan provides a snapshot of the current state of the City's urban forest and maps a pathway to increasing canopy cover whilst protecting against future vulnerabilities.

This plan identifies strategic objectives and targets, accompanied by a set of actions which map a clear pathway to achieving the City's aspirations for a thriving urban forest.

Continued implementation of the actions set out in the *Urban Forest Plan* will be critical to increase canopy cover for the benefit of the environment, the health and well-being of residents, and the character of the local area.

A *Street Tree Master Plan* has been developed for the City which includes the following strategies:

- Selection of the appropriate species for the specific site;
- Undertake an initial street design to locate trees at correct distances from infrastructure or provide alternative design infrastructure to suit the tree; and
- Undertake plantings in accordance with the Street Tree Master Plan tree palette for identified zones to achieve appropriate species mix and spatial definition.

Street trees will be a very important element of the urban forest, and are also critical to improving liveability of our neighbourhoods and creating a valued leafy streetscape character.

Therefore, continued implementation of a *Street Tree Master Plan* (or similar) will be imperative to deliver the best opportunities to increase the number, quality and ongoing viability of street trees streets throughout the City. This will include structure plans being designed consistent with the *Street Tree Master Plan*.

Local Laws and Other Policies

Local laws play an important role for street trees, and the City's approval for modifications to the street verge by the adjacent property owners (including the removal of street trees) is required by one of the City's local laws.

PSEW22 'Streetscape Bonds' provides a framework to protect and finance the repair of damage to the road reserve by developers of private lots, primarily in the commercial precincts. The policy enables street trees to be protected during construction in order to mitigate potential damage and avoid replacement.

The *Urban Forest Plan* identifies that amendments to this policy and an increase in resources are required in order to increase the protection of street trees during development of adjacent private and commercial lots. This is considered critical to protect existing street trees and ensure the urban forest can be preserved and enhanced.

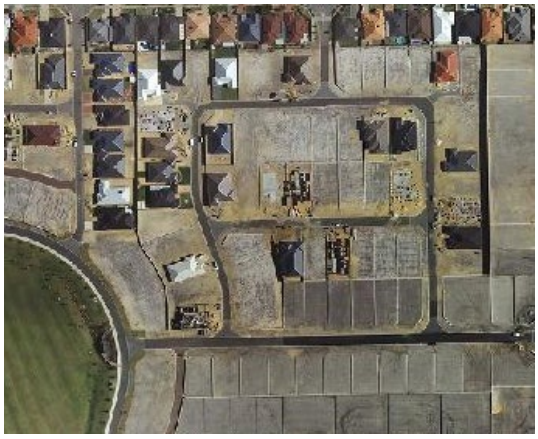
2.3.2 Vegetation loss in greenfield areas

Much of the loss of urban forest in the City can be attributed to the development of urban greenfield areas.

Establishment of new residential areas in more recent years has had a much greater impact on vegetation and the landscape than it did in the past. One of the key reasons for this is that in the last few decades there has been a significant change in land development practices in Western Australia. Most notably, thirty years ago when land was developed there was substantially less land clearing and earthworks than there is today. It has become standard practice that subdivisional areas are bulk earthworked and that each lot created is cleared, levelled and retained.

Figure 3 demonstrates this, comparing subdivision in Yangebup in 1981 with Hammond Park in 2009.

Figure 3. Residential development in 1981 (Yangebup) demonstrating retention of some trees through the process, compared to bulk earthworks in Hammond Park in 2009.



This has seen a greater impact on the natural landscape, and wholescale loss of vegetation in greenfield developments to a much greater extent than there was when the City's first residential areas were established.

In addition to this, the lots being created are much smaller than they were in the past. Coupled with a trend of larger dwellings this typically does not leave sufficient space for garden areas to viably support tress or to establish vegetation that would contribute to the urban forest. Furthermore, narrower lots and double width crossovers as a standard have also increased hardstanding in the verge and reduced the opportunity for street trees.

Smaller, rear-loaded lots and are also creating more road area, contributing to the urban heat island effect, particularly given that often rear laneways have no street trees. By considering the location of bin pads, and keeping services out of laneways there is an opportunity to include staggered street trees to reduce temperatures in those areas and enhance the amenity and appearance of laneways.

Figure 4. Staggered trees in a rear laneway, Treeby, demonstrating how keeping services out of the laneway provides these opportunities

There are also changing lifestyles and landowner preferences that have influenced landscaping on residential properties. This includes:

- Desire for low-maintenance and/or water wise gardens;
- Concern regarding mature trees within close proximity to dwellings whether for safety reasons or to minimise leaf litter, cleaning of gutters etc;
- Higher rates of car ownership which results in demand for more on-site parking/hardstanding which removes opportunities for gardens (exacerbated by smaller lots and smaller front setback areas), also putting pressure on the verge for parking rather than landscaping. Paving of the verge area increases demands upon the street drainage system not anticipated at subdivision stage; removes on-street parking opportunities and reduces opportunities for street trees; and
- Reduced opportunity for establishing street trees exacerbates the heat island effect, makes streets less walkable, increasing residents' dependence on air conditioning and car use for local trips.

Community and landowner education plays a role in ensuring awareness of the benefits of

trees and landscaping on private property and verges.

Remnant bushland and mature trees

Much of the remnant bushland in the Perth metropolitan area is fragmented due to land development and clearing.

Smaller patches of bushland are typically more susceptible to disturbance and weed cover due to 'edge-effects', and are likely to have lower floristic community diversity and poorer vegetation condition. This is one of the reasons that historically isolated remnant bushland, particularly where degraded, has often been dismissed as having little environmental value, and therefore not worthy of retention.

However, given the extent of vegetation loss that has occurred, the heat island effect, and increasing community concern regarding loss of bushland and trees, it is considered warranted to have a more sensitive approach to this matter.

Stands of bushland within close proximity to an ecological corridor have the benefit of also acting as 'stepping stones', particularly for birds and insects.

Additionally, even isolated stands of bushland that do not form part of an ecological corridor and may not be large enough to support ecological diversity still have environmental values, and contribute to the urban forest. These areas of bushland, regardless of their size, still play a role in reducing the heat island effect, and contributing to the storing of carbon to mitigate the effects of climate change.

They also potentially have the following important values for the community:

- Benefits to mental and physical health and wellbeing at all ages from access to nature, including passive recreational opportunities.
- Contribution to visual amenity and valued local character and identity, providing a sense of place by reflecting the unique natural landscape of the area.
- Cultural significance, including Indigenous cultural significance.
- Educational value to the community, including formal and informal opportunities.

Therefore, even degraded or remnant bushland should be considered for retention and enhanced where possible, particularly to combat temperatures in new residential areas, where smaller lots leave less area for tree canopy than was provided in the City's established residential areas.

In retaining areas of bushland in public open space, the key is to ensure that the recreational needs of the current and future community are also met. That means not just providing for passive recreation. (see also *7.0 Recreation and Open Space*)

Figure 5. Vivente Estate, Hammond Park – Retention of natural vegetation, mature trees, and opportunities for various passive and active recreational pursuits for different ages, creates a natural setting that enhances local character

Retaining mature trees where possible is also considered important for many of the same reasons, including their contribution to the urban forest. There is significant value in mature trees – this may be cultural, aesthetic or landmark value, and they can be reminders of the previous

landscape and history of the area. A mature native tree offers many benefits around ecological function that may take decades to replace. For example, a mature Jarrah can provide habitat to more than 270 different species, including insects, whereas a similar sized eastern states species only offers a fraction of that habitat value.

With careful consideration at the early design phase trees can become landmarks and points of difference in a new development, providing valuable opportunities to contribute to a unique local character and sense of place which is frequently lacking in new residential areas.

These opportunities include retaining trees in:

- Public open space;
- Widened pedestrian accessways;
- Widened road verges; and/or
- Widened median strips.

However in order to ensure their safe and viable retention into the future it is critical that these are designed to:

- Provide sufficient deep soil zone/s, and evidence that the tree can be safety retained based on the standard Structural Root Zone and Tree Protection Zone guidelines;
- Consider the impact of fill and earthworking;
- Account for sightlines and Austroad standards where relevant;
- Consider the extent of the canopy to ensure that it does not pose a risk or negatively impact on the amenity of adjacent residential land or buildings (for example through substantial loss of sunlight) and create an unreasonable leaf litter maintenance burden.

Metropolitan Region Scheme (MRS) and Local Planning Scheme (LPS) Amendments

It is critical that key areas of native vegetation for retention are identified upfront within any MRS or LPS amendment that provides for more intensive subdivision or development of land. A district structure plan should be accompanied by any such change, which identifies these areas and measures/mechanisms for retention (see Part 1 ‘Planning Area A’). In accordance with State Planning Policy 2.0, any development that may result in unacceptable environmental damage should be avoided.

Figure 6. Mature Tuart Tree retained in wide pedestrian accessway - Hilory Street, Coolbellup

Figure 7. Retained tree, Botany Parade, Hammond Park

Role of Structure Plans

Historically, at the structure planning stage there has often been only basic information provided regarding tree retention and future landscaping. For example, the structure plan may include a concept plan identifying existing trees to be retained, and indicative street tree locations which may appear to be satisfactory based on the preliminary subdivision and lot layout.

However, often at the structure planning stage the exact subdivision layout, necessary

earthworks, and the lot sizes and dimensions are not known. Therefore, sometimes it is not possible to deliver what was identified in the structure plan, resulting in poor outcomes for new residential areas, and outcomes that do not meet community expectations in terms of the quality and character of the streetscapes being created.

Often this is because of the reality of competing uses for residential verges that may only emerge at the subdivision stage, and an aggregation of the following:

- Narrow lots and double crossovers
- Rubbish collection
- On-street parking
- Location of services
- Requirements for sightlines

Figure 8. Residential streetscape in Hammond Park where hardscaping dominates due to insufficient space for street trees and numerous breaks in the median for access to crossovers

This is a particular problem where the lot size and configuration differ significantly from the structure plan to the subdivision.

To provide an example, a structure plan may identify a large Residential R80 site (with the assumption this is a future apartment site), and it may depict an uninterrupted row of street trees, creating a particular tree lined street character, providing substantial tree canopy cover, and creating a shaded pedestrian connection. However, the subdivision application may alternatively propose a row of narrow green title lots (still consistent with the R80 coding) which make it impossible to achieve the street trees and tree canopy cover that was anticipated under the structure plan, both in the public and private realm. This will result in a substantially different streetscape character and amenity from what was intended. A tree-lined pedestrian-friendly street instead becomes a street with very few trees and a footpath that is interrupted with multiple crossovers, reducing the safety, quality and comfort of the pedestrian and cycling environment.

With regards to retention of existing trees or bushland sometimes earthworks and resulting ground levels mean that fill impacts on the viability of retaining trees.

These structure plan implementation issues need to be addressed to ensure the creation of highly liveable neighbourhoods.

At the core of the issue are the following:

1. **Insufficient information and detail provided at the structure planning stage** - either lack of any information regarding location and extent of tree or bushland retention and future street tree planting, or lack of information demonstrating feasibility for retention through the construction phase and into the future.

2. **Design intent of the structure plan not being clearly articulated** - meaning there is no framework to consider different potential outcomes at the subdivision and/or development stage to ensure that the objectives and intent of the structure plan is achieved. This is particularly important given that much of the land to be developed is highly constrained.

Addressing these issues is pertinent to improving structure plan implementation, including delivery of tree canopy outcomes. With the following setting out generally how this can be improved:

1. The City providing greater clarity regarding the level of information required at the structure planning stage, including information and concept plans depicting, but not limited to:
    - Indicative lot layout and housing typology
    - Location of services
    - Street tree location
    - On-street parking locations
    - Bin pad locations

2. Existing vegetation proposed to be removed and/or retained and how it will be protected during the works/construction period, and feasibly and safety retained into the future.

3. The requirement for all structure plans to include a 'Statement of Design Intent' which clearly sets out the character of streets, street tree distribution etc. This will provide the flexibility for subdivision and development outcomes to respond to market considerations and other changes over the 10 year period that they are valid, whilst also ensuring the original intent and objectives are achieved.

2.3.3 Residential Infill Areas

Loss of vegetation and trees is a key community concern regarding infill development in the Perth metropolitan area. This concern relates to the environmental impacts, the increasing urban heat island effect, and the negative impact on valued green leafy neighbourhood character.

The loss of trees and established vegetation is typically a result of:

- Siteworks undertaken to create level dwelling sites and driveways resulting in the removal of vegetation from the site upfront.
- Substantially greater site coverage to accommodate additional dwelling yields; and smaller front and side setbacks subsequently resulting in limited opportunities for re-landscaping.
- Additional and/or widened crossovers in some cases removing existing street trees, and limiting future street tree opportunities.
- Driveways and parking resulting in substantial hardstanding areas and limiting landscaping opportunities on development sites.

Figure 9 provides an example of the impact of infill development on a property in Spearwood.

Figure 9. Infill development (Spearwood) demonstrating reduced landscaping and increased hardstanding with redevelopment (top photo)

Figure 10. Example of replacement single dwellings in Perth Metropolitan area demonstrating greater site coverage and loss of landscaping without infill or higher residential codings

However, it is important to note that the loss of trees and vegetation within existing residential areas is not exclusively a problem created by infill development. Loss of tree cover (and landscaping generally) is also seen frequently where there is replacement of single dwellings in residential areas where the coding is unchanged (or where landowners choose not to development at a higher coding but instead replace the existing single dwelling). Figure 10 provides an example of this. This issue is due to the larger size of replacement dwellings, smaller setbacks and greater site coverage and wider crossovers resulting in the removal of trees. It is also driven by the same changing lifestyles and landowner preferences for water wise/low

maintenance garden types/styles as seen in greenfield areas.

In conjunction with the suite of Design WA measures to introduce deep soil zones, the City's local planning framework will seek to restrict additional crossovers, minimise hardstand in the verge and maximise opportunities for street trees.

The purpose of this will be to minimise the loss of tree canopy within infill areas, and such initiatives and opportunities should continue to ensure established residential areas where infill is occurring still have good urban tree canopy cover.

2.3.4 Commercial and industrial land

The Local Planning Framework includes various requirements for landscaping on private properties within TPS3 and various local planning policies.

For commercial and industrial developments, TPS3 requires proposals to include shade trees and grass and shrub planting in the design of these developments. TPS3 implies that landscaped areas will be subject to shade over at least 50 per cent of their area as the trees mature.

Conversely, car parks are only required to be shaded by shade trees to 11.9 per cent of the car park area. It does not specify where the trees should be planted on the lot (over the parking bays) or how they should be arranged within the car park.

The provisions allow a 50 per cent reduction in the amount of the lot that should be given over to planting (from 10 per cent down to 5 per cent) if the adjacent verge is planted. This clause is of little value as the verges are routinely planted to improve the marketability of the lot meaning there is little reason for developers to provide the 10 per cent on-site planting, and they are typically constrained by services.

The absence of design performance targets in TPS3 and a general lack of appreciation of its importance in the design of streets and car parks for the City's health and wellbeing are leading to poor outcomes.

This could be improved through increased rates of street tree planting, and this could include identification of performance indicators for car park designs to ensure they provide adequate shade canopy.

2.3.5 Community education

There is an important role for ongoing community, landowner and business owner education regarding the importance of street trees, including the health, amenity, local character and environmental benefits. This will assist with landowner acceptance of street trees, and will encourage more trees and landscaping on private property.

Urban Forest Key Issues and Analysis

The heat island effect will negatively impact the environment and health and wellbeing of residents. A primary means of reducing this impact is to increase tree canopy cover to provide shade, reduce surface temperatures, and mitigate heat stress.

This will require a range of mechanisms, including more information at the structure planning stage, and robust requirements for developers to add to the tree canopy with street trees.

Retention of mature trees, where possible, can provide habitat; and contribute to sense of place. Opportunities to retain mature trees in new residential areas through structure plans and subdivisions should be explored; with sufficient information demonstrating feasibility and safety.

Patches of bushland/mature stands of vegetation can have numerous benefits to the community and environment and therefore should not automatically be dismissed as not worthy of retention during the structure planning stage.

Measures to improve tree canopy in infill areas, including requirements for grouped dwellings to provide garden areas should continue to improve climate change resilience of existing suburbs; and to improve residential amenity and the pedestrian environment.

There is an opportunity to improve tree canopy outcomes, increase shade and enhance visual amenity with more robust requirements for trees within car parking/hardstand areas, particularly for commercial and industrial developments.

Local laws and other Council policies should be reviewed to identify opportunities to better protect street trees, including during construction/development works.

2.4 Climate change

Climate change refers to a shift in global climates caused by an increase in greenhouse gases. Human activities are increasing greenhouse gas levels in the atmosphere, which is leading to a shift in global temperatures and weather patterns. Specifically, in the South West of Australia, climate change is predicted to lead to increased temperatures, reduced rainfall, increased periods of drought, rising sea levels and more extreme weather events.

These changes may negatively impact on human health, increase the intensity of bushfires, and result in the loss of flora and fauna species.

To address these impacts, the City will implement the City's *Climate Change Strategy* and *Climate Resilience Roadmap*. This outlines a resilience roadmap with aspirational targets for 2030. This Strategy outlines measures to respond to relevant land use planning matters, particularly:

- Contribution to the urban forest and biodiversity
- Coastal adaptation
- Fire management
- Sustainable development

Climate change has the potential to impact on infrastructure, and the City will ensure that decisions about the location, construction and maintenance of infrastructure considers the risk to this infrastructure from climate change, including adapting existing infrastructure, particularly assets that deliver critical services to the community (see also *13.7 Climate Change and Infrastructure*).

The City will continue to implement fire management plans for natural areas to manage the fire risk, ensuring they are updated to deal with changes to the fire seasons. New proposals within bushfire prone areas will need to address that risk appropriately, and this Strategy includes a high level assessment of bushfire risk to inform future planning in bushfire prone areas (see *14.4 Bushfire.*)

It will also be important to build the resilience of natural areas to allow them to adapt to climate change.

Importantly, there is a need to increase the efficiency with which energy is used, with the primary objective to reduce greenhouse gas emissions by increasing energy efficiency, decreasing reliance on non-renewable fuels, and increasing usage of renewable energy sources, amongst other things.

Guided by the *National Greenhouse Strategy* (1998), the draft *State Sustainability Strategy* (2002), and the *State Greenhouse Strategy* currently being developed, planning can contribute to reducing the use of energy by the community through the design of urban settlements, reducing car dependency, encouraging the retention of vegetation and promoting revegetation in land use and development proposals.

The City will promote development and built form that is environmentally sustainable and responsive to the prevailing climate in Perth; and investigate ways to promote sustainable building practices and site design, including use of recycled/construction waste materials for infrastructure development projects.

To reduce greenhouse gas emissions, the City will promote a transport mode shift to active transport modes. This involves the creation of walkable neighbourhoods, higher densities in areas accessible to high quality public transport, and high levels of accessibility to local employment, activity centres and community facilities.

This Strategy also includes measures to support the retention of existing vegetation and revegetation in subdivision and development proposals; and to increase the urban forest to help manage the impacts of climate change.

Climate Change Key Issues and Analysis

Climate change is expected to impact Local Government, communities and the environment, including increased heat waves and storm surges, a drier climate, increased frequency and intensity of bush fires and the possible loss of flora and fauna species.

The City will implement the City of Cockburn Climate Change Strategy, which includes matters relevant to land use planning such as increasing the urban forest, conserving biodiversity, and coastal adaptation. This Strategy responds to these matters, and outlines land use planning measures to improve climate change resilience.

The City will need to consider the impact of climate change on infrastructure and natural areas.

The City will promote development and built form that is environmentally sustainable to reduce greenhouse gas emissions.

A transport mode shift to active transport will help to reduce greenhouse gas emissions.

2.5 Coastal Planning

The City's coast is important to the community for its recreational, social, cultural, environmental and landscape values. Planning for coastal zone land must balance competing needs and aspirations in a way that takes into account the values of the coastal zone, which include scenic, aesthetic and ecological qualities; recreational opportunities; and social, indigenous, cultural and economic importance.

Sections of the City's coast are exposed, and vulnerable to coastal processes, including erosion and inundation. Over time, the coast will become increasingly susceptible to the impacts of sea level rise, storm surges and changes in sediment regimes.

The *Cockburn Coastal Adaptation Plan* has been prepared to adapt to the changing coast, and provides recommended timeframes and trigger points for decision-making and planning.

The plan is intended to be the first iteration of an evolving, long-term planning and decision-making process for the City of Cockburn, the community and key stakeholders to adapt development and infrastructure to coastal processes, including risks of coastal erosion and inundation.

It is critical to acknowledge that irrespective of the lead for preparing adaptation plans, there are a number of stakeholders and decision makers involved in adaptation planning. Successful adaptation planning over time requires cooperation from all levels of government, and the community, together with asset owners and managers. Funding will be a key issue for the implementation of adaptation planning.

The adaptation plan has been prepared based on a number of principles that underpin the adaptation planning process:

- Principle 1: Adaptation planning in the current planning horizon does not impede the ability of future generations to respond to increasing risk beyond current planning horizons.
- Principle 2: Adaptation requires a decision-making framework that enables the right decision to be made at the right time, in line with the values and circumstances of the time.
- Principle 3: Adaptation planning reflects the public's interest in the social, environmental and economic value of the coast.
- Principle 4: Alternative adaptation measures should consider the full range of land uses and values.
- Principle 5: The full life-cycle benefits, costs and impacts of coastal protection works should be evaluated in considering adaptation options.

These principles are the basis of a flexible adaptation pathway which refers to the preparation of governance and planning frameworks to maintain flexibility in available adaptation options, so that the right decisions can be made at the right time.

As the risk to coastal assets increases from tolerable to intolerable over time, decisions will need to be made about how to adapt to that risk. These points in time, when decisions are required, are trigger points for adaptation planning. Adaptation planning is cyclical. The flexible adaptation pathway combines decision-making on specific adaptation options (avoid, retreat, accommodate, interim protection) at the time of trigger points with an ongoing strategic planning process that plans for, and therefore maintains, the same range of adaptation options for future decisions in the longer term. In this way, by choosing to accommodate or protect in the short-term future communities are not bound to the long-term cost of that decision beyond the design life of the infrastructure or asset.

The adaptation plan includes two planning horizons for decision-making:

- **Immediate (15-year)** planning horizon: test values and act on any immediate trigger points.
- **Long-term (100-year)** planning horizon: monitor, set up planning and governance frameworks.

The flexible adaptation pathway is about enabling the community and decision makers to be ready for these triggers when they occur in the immediate or long-term planning horizon and beyond.

The area within Cockburn where decisions are required in the immediate planning horizon is North Coogee (CY O'Connor Reserve).

2.5.1 Local planning framework

The Cockburn Coastal Adaptation Plan outlines strategic adaptation measures, with a recommendation to introduce a Special Control Area (SCA) to manage future land use change and development within the vulnerable coastal areas in accordance with State Planning Policy 2.6 State Coastal Planning (SPP 2.6).

Introducing a SCA over vulnerable coastal areas requires it to be spatially defined on the Local Planning Scheme map. The SCA will provide the head of power for subsequent planning horizons and decisions for land within the SCA.

It is recommended that the local planning scheme include provisions to inform the SCA.

The following should also be noted:

- For reserved land, foreshore management plans will respond to the Coastal Adaptation Plan (as amended), including protection, planned retreat and decommissioning of assets. The Coogee Beach Foreshore Management Plan demonstrates this with the inclusion of a trigger point framework.

2.5.2 State Planning Policy 2.6 State Coastal Planning

Local and regional planning strategies, structure plans, schemes, subdivisions, development applications, coastal planning strategies and foreshore management plans, as well as other planning decisions and instruments relating to the coast should comply with the policy measures of SPP 2.6.

SPP 2.6 states that all subdivision and development approvals of land identified as subject to coastal hazard risk within the planning timeframe (100 years), should include a condition requiring a notification to be placed on the certificate of title.

Clause 5.5 of SPP 2.6 states that where a coastal hazard risk is identified it should be disclosed to those likely to be affected. On consideration of approval for subdivision and/or development, current and/or future lot owners should be made aware of the coastal hazard risk by providing the following notification on the certificate on title (or as updated in the SPP):

Vulnerable Coastal Area –This lot is located in an area likely to be subject to coastal erosion and/or inundation over the next 100 years.

SPP 2.6 and the associated guidelines identify a coastal node hierarchy (Regional, district and local).

This has not been undertaken formally for the City and identifying the type of nodes will assist in guiding planning, community expectations and funding opportunities for the types of facilities and infrastructure to be provided. It is therefore recommended that the City's coastal node hierarchy be identified through a coastal management strategy and/or foreshore management plans.

2.5.3 Port Coogee coastal hazards

The Coastal Adaptation Plan identifies that portions of Port Coogee will potentially be subject to inundation by 2110.

TPS3 included a 'Development Area' for Port Coogee which required a structure plan, and that structure plan considered the information available at the time related to coastal processes.

This modelling has changed over time, and there was a review between the development of Port Coogee and Cockburn Coast, with Cockburn Coast later including relevant provisions in the Scheme.

The Port Coogee development is protected by seawalls and breakwaters, and breakwater overtopping or ocean inundation is a possible risk in the long term.

The current finished floor levels (FFL) requirements are 2.5m, and the modelling indicates that by 2110 this may be insufficient to withstand inundation. While this 100 year planning horizon may be deemed to be greater than the lifespan of dwellings, it is considered appropriate to alert prospective purchasers in this area of the potential hazard, particularly given that there are undeveloped lots. A local planning policy can set out these requirements.

2.5.4 Awareness and education

To ensure existing and/or future property owners are aware of areas subject to coastal hazard risk, it is recommended that the City increase awareness of coastal hazard risk by implementing the following key measures:

- Ensure that areas subject to coastal hazard risk can be viewed using the City's mapping online tool.
- Coastal Hazard Risk Maps can be downloaded from the City's website.
- Coastal Hazards Risk Alerts will be included on any Land Purchase Inquiry made in relation to lots identified as being subject to coastal hazard risk.
- Notifications on Certificate of Titles where appropriate.

There is also a need to ensure that the public are informed regarding the possible changes to the amenity, function and appearance of the coast in some areas over time.

2.5.5 Foreshore Reserves

Much of Cockburn's coast is reserved 'Parks and Recreation' under the Metropolitan Region Scheme, with a variety of assets and embellishments within these areas. The Coastal Adaptation Plan has outlined areas for planned retreat, and triggers for this to occur.

Planning for infrastructure close to the coast must consider the Coastal Adaptation Plan. This includes avoiding the placement of future infrastructure within the physical processes setback and adjacent long-term foreshore reserve, and avoiding placing linear servicing infrastructure (including roads) that run parallel to the coast, therefore potentially becoming a threatened asset in longer-term planning horizons. The City will plan for the relocation of important social infrastructure and anticipate the need to relocate and fund the establishment of new facilities.

The Coogee Beach Foreshore Management Plan has comprehensively considered the projected changes to the coast in this area, and sets out trigger point framework for decisions to be made.

Coastal Planning Key Issues and Analysis

Over time, the coast will become increasingly vulnerable to the impacts of sea level rise, storm surges and changes in sediment regimes, and consideration must be given to these impacts.

Coastal Hazard Adaptation Planning will be a key tool in responding to coastal hazards over time.

Education and awareness for landowners and the community will be important, and the City will implement notifications on Certificate of Titles alerting landowners to the increasing risk over time to provide them with the option to consider whether inundation resilient measures are appropriate for them.

There is also a need to ensure that the public are informed regarding the possible changes to the amenity, function and appearance of the coast in some areas over time.

A local planning policy will provide guidance around requirements for developments within coastal hazard areas, with sufficient flexibility to respond to mapping as it may be updated over time.

Planning for new infrastructure should be cognisant of coastal hazards to minimise the financial burden of relocating the assets in the future.

To assist with future planning, the City's coastal node hierarchy should be identified through a coastal management strategy and/or foreshore management plans.

2.6 Water Management

The careful management of water resources, both in terms of quantity and quality, is essential to support natural ecosystems as well as future growth and development. This includes water catchments, waterways, wetlands, and the marine environment.

Conservation of water resources, efficient water use practices and improving the quality of water in wetlands is important to protect and enhance the amenity of the City for current and future generations.

Water sensitive urban design (WSUD) principles are the most effective way to manage water within an urban context and to achieve a more efficient and effective use of water and better outcomes for the environment and urban form.

Perth's (including Cockburn) integrated water supply scheme is a mixture of groundwater, surface water, desalinated water and groundwater replenishment.

Desalinated water for scheme water is managed by the Water Corporation.

Within the City of Cockburn, the Department of Water and Environmental Regulation (DWER) manages groundwater resources used by the City and private irrigation systems through the provisions of the *Rights In Water and Irrigation Act 1914* and the *Rights in Water and Irrigation Regulations 2000.*

New legislation may change how groundwater-dependent ecosystems are managed in the Cockburn plan area.

Wetlands are managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and used:

- by its residents for amenity,
- for the conservation of biodiversity and
- by the City and the State's storm water disposal system for infiltration into the superficial aquifer (DWER).

2.6.1 Deep aquifer water

A safe and reliable water supply is essential to the health and wellbeing of residents. Water resilience is about having a reliable water supply that can adapt and respond to change. The deep aquifers are sources of groundwater for Perth's integrated water supply scheme,

As part of the Perth metropolitan water supply area, the City of Cockburn is serviced with potable water supply by the Water Corporation who has the strategic planning responsibility for Perth's water needs. Water Corporation have developed plans to ensure the needs of their customers across the state continue to be met over the next 10 years, and the plan for Perth is designed to make Western Australia more climate resilient. This includes transferring their groundwater abstraction to the deeper aquifers to protect the groundwater environment and secure groundwater supplies.

2.6.2 Jandakot Groundwater Protection Area

The Jandakot groundwater system provides water for public open space, horticulture, industry and gardens, and contributes to Perth's integrated water supply scheme.

The system comprises three main aquifers:

- the shallow unconfined superficial aquifer (water table) known as the Jandakot Mound
- the deep, partially-confined Leederville aquifer
- the deep, mostly-confined Yarragadee aquifer.

Groundwater levels across the Jandakot Mound have generally declined over the last 30 years, but at a slower rate than seen across the Gnangara Mound. This is due to a combination of factors including:

- the Jandakot Mound receives more rainfall than the Gnangara Mound

- abstraction pressure on the Jandakot Mound is less than on the Gnangara Mound
- large parts of the Jandakot Mound are now urbanised, which has increased recharge[15].

Most of the Jandakot Mound is separated from the deeper Leederville aquifer by a confining layer of Kardinya Shale that extends under all the criteria sites, except Lake Forrestdale. These relatively impermeable shales limit the potential for inter-aquifer impacts of abstraction across most of the Mound. The disconnection created by the shales means abstraction from the superficial aquifer has a greater impact on wetlands on the Jandakot Mound than abstraction from the deep aquifers.

Ministerial conditions and commitments were established in 1992 to manage the development of groundwater abstraction for public water supply and the expected growth in private licensed use. These have been revised several times to remove sites at which the environmental values identified for protection have been lost due to causes other than abstraction. These causes include the drying climate, land clearing and disturbance related to changing land use.

DWER manages abstraction from the Jandakot groundwater system to meet water level criteria and to minimise environmental impacts.
The Jandakot Mound area supports remnant wetlands and Banksia Woodlands which depend on the shallow groundwater resource. In turn, the wetlands and vegetation support a range of fauna which is highly valued by the community.

2.6.3 Extent of Groundwater Protection Area

State Planning Policy 2.3 Jandakot Groundwater Protection (SPP 2.3) and Draft State Planning Policy 2.9 – Planning for Water aim to protect the Jandakot Groundwater Protection area from development and land uses that may have a detrimental impact on the water resource.

Draft State Planning Policy 2.9 aims to protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/ or environmental values.

Urbanisation has been a particular pressure in recent years with areas of the groundwater protection area reduced in their priority as extraction sources. This has seen the development of the recent suburb of Treeby emerge in what was previously part of the locality of Banjup.

In relation to Treeby, DWER approved a *District Water Management Strategy* for the site having regard to its strategic planning context, and was satisfied that it provided sufficient water resource management information to demonstrate that the site could support urban land uses.

The Western Australian Planning Commission (WAPC) noted at the time of considering the MRS Amendment that should development proceed, pre and post monitoring of the groundwater resource was to occur, as the amendment was considered a test case.

As part of this process of considering the appropriateness for urban development, considerable weight was given to the location of the area being highly accessible to Cockburn Central.

Since the MRS rezoning of the Treeby area, Perth and Peel @3.5million identified a ‘Planning Investigation Area’ in Jandakot within the groundwater mound. A number of MRS rezoning requests have been received by the WAPC across the City. In August 2023, this ‘Planning Investigation Area’ was recommended for Urban Expansion.

A district structure planning approach is recommended for this area, to ensure issues are dealt with comprehensively, particularly environmental issues.

[15] Department of Water (2015) ‘Environmental management of groundwater from the Jandakot Mound – triennial compliance report (February 2015)’

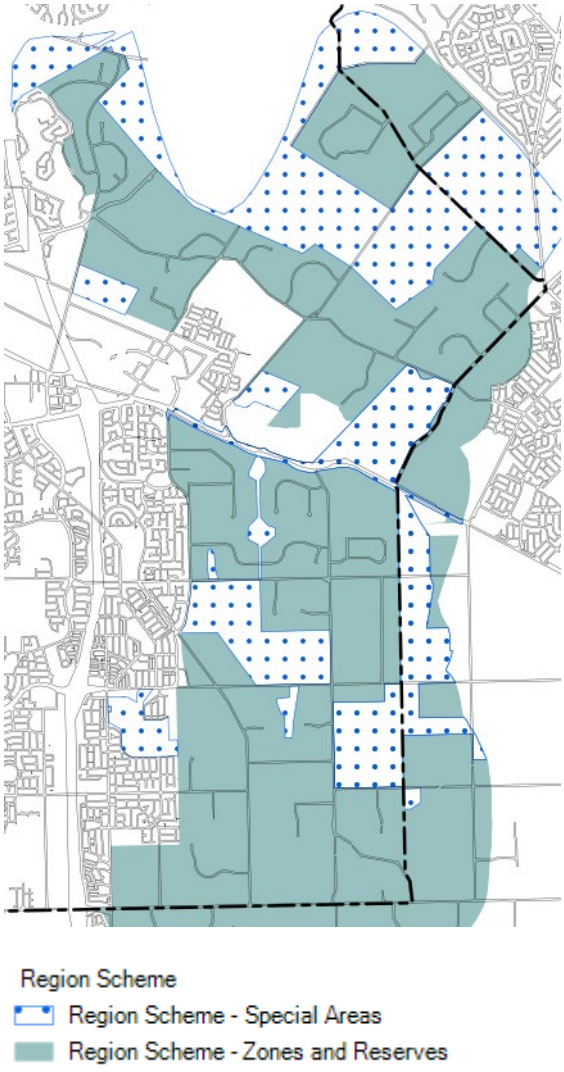


Figure 11. MRS Water Protection zone and Water Protection Special Area

2.6.4 Superficial Aquifer

The superficial aquifer is used by the City and private irrigation systems administered by DWER.

The use of groundwater, other than for domestic purposes, is managed through the provisions of *Rights in Water and Irrigation Act 1914* and the *Rights in Water and Irrigation Regulations 2000.*

The City of Cockburn has a licence to extract groundwater for the irrigation of open spaces, sporting ovals and streetscapes. The licence primarily sets the amount of water that can be taken from the ground at each location and other management conditions.

The City of Cockburn has developed a Water Efficiency Action Plan (WEAP) and has set water management targets to help reduce water consumption and improve water quality in Cockburn. Key goals include improving efficiency in corporate groundwater use by reducing consumption to 6,750 kL per hectare by 2020.

These measures align with the Water Corporation's strategic planning and the City of Cockburn has been endorsed as a 'Waterwise Council' by DWER and the Water Corporation. Continuing these efforts will be important to secure the City's water resilience in a drying climate.

2.6.5 Wetlands/Surface water bodies

Cockburn is fortunate to have some of Western Australia's best inland lakes which form two unique chains of wetlands running from north to south through the heart of the City. Protecting the environmental, social and cultural values of these wetlands is a high priority for the community.

Historically in Perth, wetlands were filled to facilitate development, or development was allowed to occur very close to wetlands. In the latter case stormwater and effluent was generally discharged directly into wetlands and as a result many wetlands suffered from water quality issues associated with excess nutrients, hydrocarbon and heavy metal contamination.

Today, wetlands are valued to a greater degree and planning controls exist to prevent the discharge of stormwater directly into wetlands. Guidelines for Water Sensitive Urban Design (WSUD) have been developed by DWER to enhance water quality and help to protect wetlands. These form a key consideration in the structure planning and subdivision processes.

Major concerns regarding water management of wetlands includes:

- The treatment of water before entering the wetlands from stormwater runoff from the City's roads;
- The maintenance of seasonal water levels to suit the ecology;
- The community's expectations, and the control of human disease vectors that prolonged exposure of wet silt and mud banks can generate. (see also *14.6 Midge and mosquitos*)

2.6.6 Cockburn Water Allocation Plan

The Cockburn groundwater area was proclaimed on 29 July 1988 under the provisions of the *Rights in Water and Irrigation Act 1914* to regulate how groundwater is taken and to protect the long-term availability of groundwater. Abstracting and using groundwater requires a licence in the plan area.

The Cockburn groundwater area extends along the Swan Coastal Plain from Kwinana Beach northward to South Beach, covering an area of 157 km² across the City of Cockburn, City of Kwinana and City of Rockingham.

The draft 2018 *Cockburn Water Allocation Plan* details DWER's approach to regulating and managing the take of groundwater in this area. It updates the way in which DWER will regulate and manage the abstraction of groundwater through allocation limits, licensing, monitoring and evaluation. This is particularly important given the challenge of adapting to climate change. This plan:

- accounts for the declining rainfall trend in the South West of Western Australia and the effect this will continue to have on local water availability and water quality;
- confirms allocation limits set under the previous plan cannot be sustained under the drying climate to 2030;
- identifies groundwater resources are now fully or over-allocated and sets out new allocation limits.

Almost half of the plan area is covered by industrial land uses. This includes the Australian Marine Complex (AMC) and the Latitude 32 industry zone.

The City's 'Rural' zone to the east of Latitude 32 is included within this area, including small-scale irrigated market gardens and turf production.

The remaining land is covered by urban areas, interspersed with natural bushland and wetlands. Groundwater is used to irrigate public open space, sporting grounds, and suburban domestic gardens.

Most of the natural bushland and wetlands are collectively managed as the Beeliar Regional Park. This area contains high value groundwater-dependent wetlands and lakes, including Thomsons Lake.

Given that groundwater resources are either fully or over-allocated, there would be no further licences, and water will need to come from alternative options such as trading of existing water licenses, scheme water, recycling or managed aquifer recharge. DWER advise that the recouping of long-term unused water entitlements is currently being undertaken and will continue to do so throughout the life of the plan (5 > years) to rebalance the system. Should water continue to return to the resource to the point which allows for water to be made available, new licences may be reallocated in the future.

There are a number of factors which may affect future water licensing and in turn appropriate land uses in this area. This includes the proposed *Metropolitan Region Scheme (Beeliar Wetlands) Bill 2018* which may change how groundwater-dependent ecosystems are managed in the Cockburn plan area.

Water Management Issues and Analysis

Integration of water management with urban development and the natural environment can provide better water sensitive outcomes.

Continued protection of wetlands will be important through the structure planning process, with consideration given to the role of upland areas within wetland buffers.

Planning for more water efficient public open spaces will be critical to the City's water resilience.

Within the Cockburn groundwater area, groundwater resources are either fully or over-allocated, and there would be no further licences and water will need to come from alternative options.

The Metropolitan Region Scheme (Beeliar Wetlands) Bill 2018 may change groundwater-dependent ecosystems in the Cockburn plan area are managed.

To deal with this matter comprehensively, it is now recommended that the City advocate for the State Government to undertake a comprehensive groundwater and hydrological technical study and assessment of the Jandakot Groundwater Protection Area to better understand the hydro-geological processes.

3. Population and Housing

3.1 Background

The City's first residential areas were established by the 1970s in Hamilton Hill, Coolbellup, and Spearwood (predominately north of the railway line), and the north western pocket of Coogee referred to as 'Old Coogee'. This residential development was typically small-medium sized dwellings on lots between 600-1000m^2.

In the 1980s, residential development in Spearwood expanded to the north and south, and residential subdivisions began in parts of Bibra Lake and Yangebup.

The 1990s saw residential development commence in Atwell; extend into the southern area of Coogee, and there was further growth in Bibra Lake, South Lake and Yangebup. Lots during this time were generally 600-800m^2.

In the late 1990s and early 2000s, Beeliar was developed, characterised by smaller lots of approximately 600m^2.

Through the 2000s, suburbs like Hammond Park, Aubin Grove and Success were developed. There was residential expansion in the suburbs of Munster (now Lake Coogee), Yangebup, Coogee and Spearwood. Lots developed through this time period were generally between 300-600m^2 with large homes and small gardens.

From 2006 onwards, the development of planned high rise apartments in South Beach, Port Coogee and the transit-orientated development at Cockburn Central activity centre commenced, adding diversity to the City's housing stock.

From 2010 to 2020 there was new residential development in Cockburn Central and Treeby, with residential expansion continuing in Hammond Park, Aubin Grove, Success, and Munster/Lake Coogee. During this time the Watsonia factory in Spearwood was closed and the surrounding 70 ha of land within the former odour buffer removed, with the area subsequently rezoned for residential development. In this area lots were generally between 200-400m^2 with greater site coverage and smaller setbacks than seen previously. During this time, three primary schools in Coolbellup were closed and redeveloped for residential development with a diversity of codings.

From 2010 onwards, increases to residential codings through the revitalisation strategies resulted in subdivision of existing residential lots (infill development) throughout Spearwood, Hamilton Hill and Coolbellup. Typically this infill development resulted in grouped dwellings but there are also some smaller scale apartments in the higher coded areas.

The next 15 years to 2035 is projected to see predominately low density greenfield residential development continue in Treeby, Hammond Park, Beeliar, and Lake Coogee, through structure planning, while infill development continues.

From 2030 onwards, greenfield residential development is projected to slow as these areas are fully developed. Residential development thereafter will be focused in infill areas, and the higher density development in North Coogee, including Cockburn Coast and Port Coogee, and Cockburn Central.

3.2 Population forecast

The City of Cockburn population estimate for 2020 is 120,417, and is forecast to grow to 151,176 by 2031.

The distribution of the population by locality is contained in Table 1. This shows how population change is affecting different parts of Cockburn in different ways. Some small areas are rapidly growing (such as Success or Cockburn Central) whilst others are stable, or even declining in population (such as Leeming).

3.2.1 Age Structure

The overall population of the City of Cockburn is ageing, a trend which is seen across Australia. In 2014, 27.4 per cent of the population of the City of Cockburn were over 50 years, and by 2031 this will have risen to 29.5 per cent. Of particular note, the number of residents over the age of 70 will more than double from 7,189 in 2014, to 14,869 in 2031.

The ageing population has significant implications for housing, including the need for aged care facilities, smaller dwellings, and adaptable housing to allow people to remain in their own homes. It is important to note that the care needs of older Australians vary, and it is therefore important that housing and care options are flexible.

Between 2016 and 2031, the age structure forecasts for the City of Cockburn indicate a 37 per cent increase in population under working age, a 63.4 per cent increase in the population of retirement age, and a 35.6 per cent increase in the population of working age.

In 2016, the dominant age structure for persons in the City of Cockburn was ages 30 to 34, which accounted for 8.6 per cent of the total persons.

The largest increase in persons between 2016 and 2031 is forecast to be in ages 35 to 39, which is expected to increase by 3,044 and account for 7.8 per cent of the total persons.

From 2041 onwards, the ageing population will be even greater, and the City will need to plan for this in terms of services, accessibility and appropriate housing.

3.2.2 Household Types

In 2016, the dominant household type in the City of Cockburn was ‘Couple families with dependents’, which accounted for 36.5 per cent of all households.

The largest increase between 2016 and 2031 is forecast to be in ‘Couple families with dependents’, which will increase by 5,131 households and account for 35 per cent of all households.

This trend is projected to continue, and by 2041 one person households are projected to increase across the City by 22.3 per cent. While this increase will be greater in the older established suburbs of Coolbellup, Spearwood and Hamilton Hill, suburbs such as Lake Coogee, South Lake, Bibra Lake and Success are also projected to have significant increases.

Across the whole of the City, by 2031 there is projected to be a significant increase in one person households, even in those suburbs that are currently characterised by larger household types, such as families with children. This is strongly attributed to an ageing population. Careful consideration will be required to ensure that infrastructure and facilities within these areas that may have been planned to respond to the needs of families with children, can adapt to meet the needs of a changing population.

In 2016, the average household size was approximately 2.72 people, whereas in 1996, the average household size was 2.87 people, reflective of a decreasing trend in household sizes in Cockburn. This is projected to continue, and by 2031, the average household size is expected to be 2.67. The median age in Cockburn is 35 (2016), compared to 31 in 1996, reflective of an ageing population.

3.2.3 People with disabilities

In the City of Cockburn approximately 18 per cent of the population live with disabilities.

The largest age group of people with disabilities are between 25-64 years of age (7,818) persons, and there are 3,335 persons over 65 years of age with a disability. The number of people needing daily assistance increases significantly over the ages of 75, with 42 per cent of residents requiring daily assistance. With an ageing population, the number of people with disabilities is projected to continue to increase.

Many individuals with disabilities rely on the disability support pension, others find it challenging to get and keep rewarding and well-

paid jobs. Statistically family and carers work less hours than others or do not work at all.

People with disabilities are more susceptible to financial hardship because they can face extra costs relating to housing (including modifications to existing houses and lack of options in the housing market), transport, equipment and additional and ongoing health care costs. Under these circumstances there are reduced opportunities to make investments and build wealth.

One in four Australians with a disability live below the poverty line, using the internationally accepted poverty line of less than 50 per cent of median equivalised disposable income[16]. This rate is twice as high as the general population. Modifications to housing by people with a disability can be expensive and place pressure on limited financial resources. Moving house to find a better house design suited to their specific needs is often not a viable option due to the high 'sunk costs' in the current accommodation. People with disabilities are more likely to be renting than owning their home and are often unable to obtain or afford homes in the areas that are close to work, transport, family, friends and activities.

Location of housing is very important, and access to transport is a major factor in determining where people with a disability would like to live[17].

Entry into the private rental market poses challenges in securing appropriate accommodation and then in trying to gain permission to carry out modifications. People with disabilities have been found to have longer wait periods for public housing to suit their needs. They are also vulnerable to homelessness because they may have lower incomes and are more likely to be unemployed and have limited housing options[18].

Therefore for people with disabilities, affordable, accessible housing that is well-located to public transport and services is important to reducing rates of poverty and increasing opportunities for economic and social inclusion.

3.2.4 Homelessness

Homelessness is not just a housing problem. It is a complex issue with diverse social, economic and personal factors that relate to homelessness and the risk of becoming homeless[19].

Homelessness does not just include people who are sleeping rough; it also refers to people staying in temporary, unstable or substandard accommodation. Across Australia, homelessness increased between 2011 and 2016 by 13.7 per cent. Of note, there are increasing numbers of children, families and older people experiencing homelessness.

In the South West Perth metropolitan area (encompassing the Cities of Rockingham, Kwinana, Melville, Cockburn and Fremantle) there are estimated to be a total of 1,035 homeless people, and a further 637 people living in overcrowded dwellings, improvised dwellings and in marginal housing such as caravan parks[20].

Of the homeless people in Western Australia, 28 per cent are homeless because of financial difficulties, housing stress, and/or unemployment. A further 19 per cent are homeless due to accommodation issues, housing crisis, inadequate or inappropriate dwellings.

While homelessness may not be thought of as a significant issue for the City of Cockburn, declining housing affordability and increasing living costs are trends that could increase homelessness for vulnerable individuals and households; particularly the number of people

[16] 9 ACOSS (2020) Poverty in Australia
[17] AHUR (2007) The housing careers of persons with a disability and family members with care responsibilities for persons with a disability National Research Venture 2: 21stcentury housing careers and Australia's housing future, authored by Michael Kroehn, Keith Hutson, Debbie Faulkner and Andrew Beer for the Australian Housing
[18] University of Adelaide (2001) Addressing homelessness amongst persons with a disability: Identifying and enacting best practice
[19] 2Commonwealth of Australia (2008) The Road Home: A National Approach to Reducing Homelessness
[20] ABS (2016) Census of Population and Housing: Estimating Homelessness

living in marginal or inappropriate housing, which can be a hidden problem.

Addressing the shortage of affordable housing, and facilitating the development of housing that is well-located to services and considers the cost of living is an identified way that the land use planning system can tackle the structural drivers of homelessness and reduce the risk of homelessness.

Table 1. Overview - Forecast population, households and dwellings

City of Cockburn	Forecast year					
Summary	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**
Population	108,770	123,203	137,709	151,176	161,479	169,689
Change in population (5yrs)		14,433	14,507	13,467	10,303	8,210
Households	40,393	45,850	51,442	56,752	61,010	64,605
Average household size	3	3	3	3	3	3
Population in non-private dwellings	1,104	1,204	1,503	1,652	1,801	1,801
Dwellings	43,076	49,081	54,699	59,954	64,229	67,848
Dwelling occupancy rate	94	93	94	95	95	95

Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019

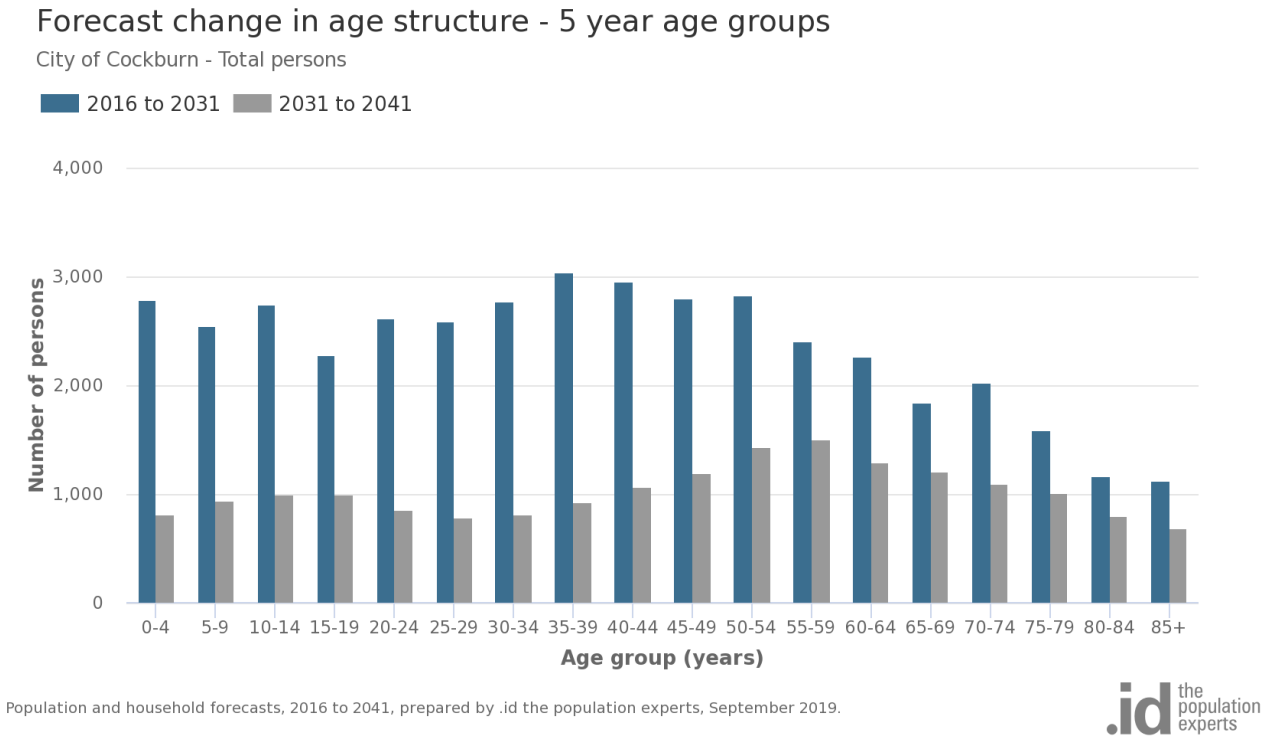
Table 2. Population summary

City of Cockburn	Forecast year						Change between 2016 and 2041	
Area	**2016**	**2021**	**2026**	**2031**	**2036**	**2041**	**Total change**	**Avg. annual % change**
City of Cockburn	108,770	123,203	137,709	151,176	161,479	169,689	+60,919	+1.79
Atwell	9,403	9,590	9,458	9,407	9,400	9,440	+37	+0.02
Aubin Grove - Banjup (South)	7,729	8,465	8,467	8,390	8,317	8,284	+555	+0.28
Beeliar	7,840	9,092	9,776	9,699	9,591	9,546	+1,706	+0.79
Bibra Lake (East)	3,946	3,985	4,110	4,184	4,242	4,292	+346	+0.34
Bibra Lake (West)	2,149	2,174	2,243	2,335	2,411	2,470	+321	+0.56
Coogee - North Coogee	7,253	9,707	12,576	15,558	18,439	21,268	+14,015	+4.40
Coolbellup	5,468	6,193	7,039	7,809	8,593	9,273	+3,805	+2.14
Hamilton Hill	10,856	11,776	13,197	14,664	16,231	17,779	+6,923	+1.99
Hammond Park - Wattleup - Henderson	5,524	7,394	9,071	10,702	11,875	12,464	+6,940	+3.31
Jandakot	2,766	2,824	2,973	3,181	3,363	3,491	+725	+0.94
Leeming	2,207	2,101	2,097	2,143	2,183	2,238	+31	+0.06
Munster/Lake Coogee	4,578	5,398	5,755	5,960	6,098	6,282	+1,704	+1.27
North Lake	1,345	1,301	1,300	1,329	1,361	1,393	+48	+0.14
Rottnest Island	354	349	349	349	350	349	-5	-0.06
South Lake - Cockburn Central	7,431	8,014	9,857	11,398	12,679	13,826	+6,395	+2.51
Spearwood	10,584	11,698	12,304	12,828	13,310	13,849	+3,265	+1.08
Success	10,552	11,860	13,236	14,209	14,482	14,364	+3,812	+1.24
Treeby	1,003	3,272	5,849	8,979	10,605	11,182	+10,179	+10.13
Yangebup	7,782	8,007	8,050	8,052	7,949	7,899	+117	+0.06

Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019

Table 3. Forecast age structure - 5 year age groups

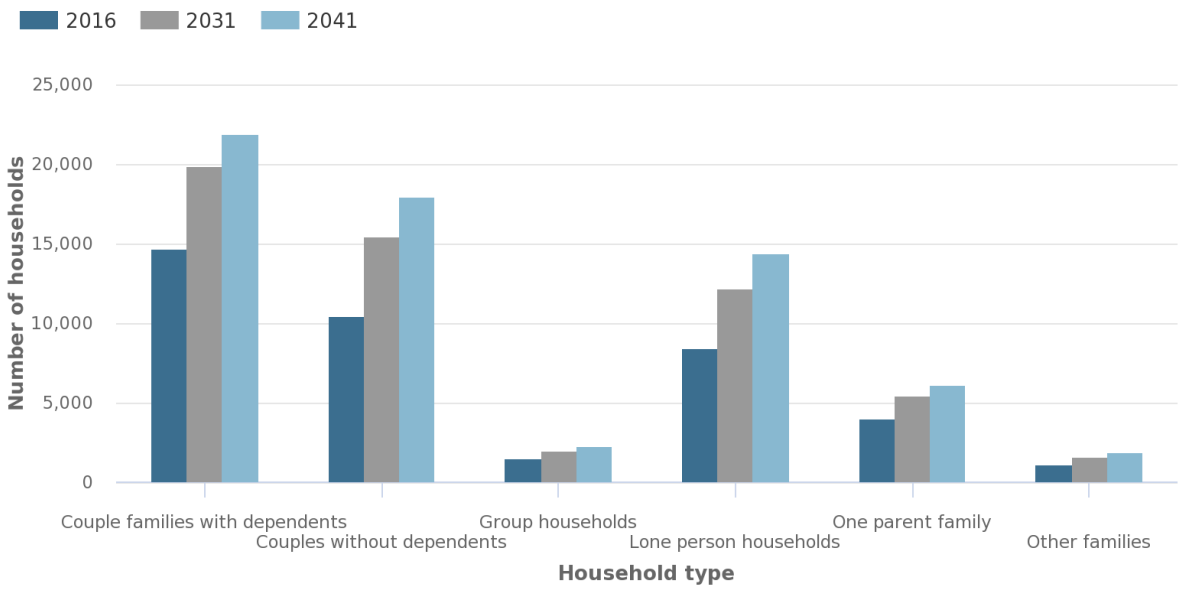
City of Cockburn - Total persons	2016		2031		2041		Change between 2016 and 2041
Age group (years)	Number	%	Number	%	Number	%	Number
0 to 4	8,081	7.4	10,866	7.2	11,676	6.9	+3,595
5 to 9	7,429	6.8	9,974	6.6	10,917	6.4	+3,488
10 to 14	6,263	5.8	9,004	6.0	10,004	5.9	+3,741
15 to 19	6,600	6.1	8,883	5.9	9,886	5.8	+3,286
20 to 24	7,343	6.8	9,963	6.6	10,829	6.4	+3,486
25 to 29	8,764	8.1	11,361	7.5	12,153	7.2	+3,389
30 to 34	9,387	8.6	12,157	8.0	12,977	7.6	+3,590
35 to 39	8,707	8.0	11,751	7.8	12,686	7.5	+3,979
40 to 44	8,159	7.5	11,117	7.4	12,190	7.2	+4,031
45 to 49	7,724	7.1	10,524	7.0	11,726	6.9	+4,002
50 to 54	6,863	6.3	9,688	6.4	11,120	6.6	+4,256
55 to 59	6,089	5.6	8,497	5.6	10,004	5.9	+3,914
60 to 64	5,095	4.7	7,360	4.9	8,662	5.1	+3,567
65 to 69	4,226	3.9	6,074	4.0	7,288	4.3	+3,062
70 to 74	2,885	2.7	4,912	3.2	6,010	3.5	+3,125
75 to 79	2,202	2.0	3,795	2.5	4,811	2.8	+2,609
80 to 84	1,552	1.4	2,721	1.8	3,530	2.1	+1,978
85 and over	1,397	1.3	2,528	1.7	3,217	1.9	+1,820
Total persons	108,770	100.0	151,176	100.0	169,689	100.0	+60,919
Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019							



Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019.

Forecast household types

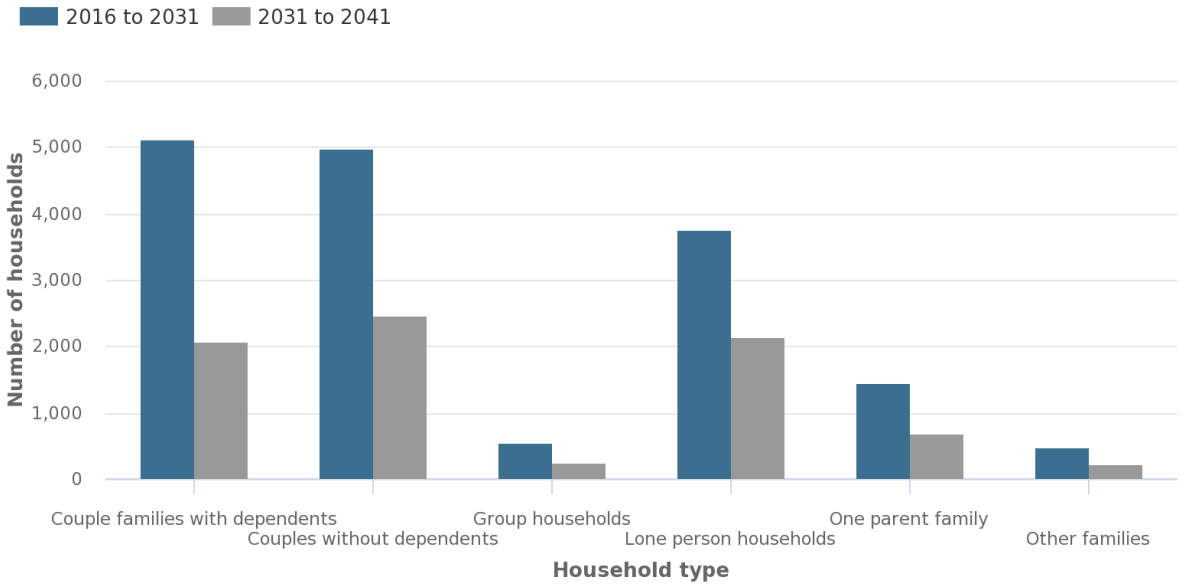
City of Cockburn



Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019.

Forecast change in household types, 2016 to 2041

City of Cockburn



Population and household forecasts, 2016 to 2041, prepared by .id the population experts, September 2019.

3.3 Housing type needs analysis

In 2016, there were 33,855 separate houses, 6,441 medium density dwellings, and 2,114 high density dwellings (forecast id 2019).

In 2016, 15 per cent of the City of Cockburn's dwellings were classified as medium density dwellings, and the five areas with the highest percentages were:

- North Coogee (36%)
- Hamilton Hill (27%)
- Spearwood (26%)
- Hammond Park (25%)

In 2016, 4.9 per cent of the City of Cockburn's dwellings were classified as high density housing. The five areas with the highest percentages were:

- Cockburn Central (77%)
- North Coogee (32%)
- Success (10%)
- Coolbellup (9.5%)
- Hamilton Hill (4%)

City wide, the existing house type is predominantly separate housing, reflective of the suburban nature of much of the Cockburn locality. There is also a strong supply of dwellings with four or more bedrooms, across the City as shown in Figure 15.

This will likely continue as a predominant dwelling type and there is an important role for this type of housing given that families with dependents are forecast to remain a strong component of households in Cockburn.

However, the City has a strong supply of larger, single dwellings, and the housing market is likely to continue to provide for this housing type.

The key issue is ensuring the right housing options are available as a choice for other household types, particularly smaller households, given the projected increase across the whole of the City.

Over the last decade, the City of Cockburn has facilitated residential infill through a number of revitalisation strategies in the older suburbs of Spearwood (2009), Hamilton Hill (2012) and Coolbellup (2014). Infill in these areas is projected to deliver an additional 6,466 dwellings to 2035.

Further modest infill is likely to occur in established suburbs such as Coogee, Bibra Lake, North Lake and Yangebup.

A key aspiration of the recodings was to provide greater housing diversity, however many of the infill dwellings that have been built across these areas are 3 bedroom dwellings. Between 2011 and 2016 within Hamilton Hill and Spearwood, infill development has seen the addition of some newer smaller dwellings, but also the loss of some older smaller dwellings that have been replaced with larger dwellings.

This means that despite being classified as ‘medium density development’, infill residential development may not be offering a diversity of housing types in terms of dwelling size. This also means the new dwellings are likely to be less affordable both to rent and purchase.

Figure 16 shows the distribution of dwellings with two bedrooms or less, with these focused in Cockburn Central, Port Coogee and within the revitalisation strategy areas.

A future focus will therefore be measures to encourage smaller dwelling types within infill areas. This will also encourage provision of more affordable dwellings, and will assist in meeting the housing needs of an ageing population. This will also need to be considered in structure plan areas where higher codings have often not necessarily resulted in a diversity of smaller housing types.

3.3.1 High density residential development

The City has planned a number of higher density areas which have commenced development in the last decade. These are Cockburn Central (including the Muriel Court Structure Plan area), portions of Port Coogee and Cockburn Coast.

The delivery of higher density housing types has been negatively impacted by land supply, market conditions and situational factors including the types of dwelling options available to households within middle ring suburbs.

Cockburn Central is the City's highest order activity centre and currently has an approximate 20-year land supply of mixed-use residential development. Despite the planning framework in place, the market has been slow to respond since the downturn in the market in 2015. This alongside community acceptance and demand of high-density development within Perth's middle ring further impacts on strategic infill aspirations for Cockburn Central.

The local planning framework includes measures to achieve minimum densities and in some cases restrict single or grouped dwellings to ensure that the higher density aspirations of these areas are achieved. In some cases, the slower than anticipated delivery of higher density dwellings has created pressure to relax these requirements, particularly to allow terrace-style single or grouped dwellings.

In some circumstances, these proposals still achieve the minimum densities, however careful consideration must be given as to whether this flexibility is appropriate, as often these dwelling forms do not achieve the desired affordability and/or housing diversity objectives.

It is considered imperative that the City continue to require that minimum densities are achieved; including other mechanisms to drive smaller dwelling types and to meet density targets within these identified higher density areas. This will ensure provision of housing to meet projected household types, and to maximise dwellings in areas of high accessibility.

3.3.2 Accessible Housing

Traditionally most homes have not been designed or built in a way that can easily accommodate the changing needs of households over their lifetime.

Accessible housing is designed to be:

- easy to enter
- easy to navigate in and around
- capable of easy and cost-effective adaptation
- responsive to the changing needs of home occupants.

Designing homes that are adaptable for future needs, based on inclusive design principles, makes them resilient for the future, particularly in the context of an ageing population.

Inaccessible housing leads to social disadvantage and has negative effects for social integration and participation. Modifications to dwellings to improve accessibility, such as installation of ramps, are often expensive and unsatisfactory. These costs place increased financial pressure, and moving house to find a better house design suited to their specific needs is often not a viable option due to the high 'sunk costs' in the current accommodation[21].

Accessible homes also benefit many households. For families with young children it can be easier to manoeuvre prams and removes trip hazards for toddlers. People who sustain a temporary injury benefit from accessible homes due to the easy to operate door handles and the step free pathway to all key areas of the home.

Older people who are looking to move or renovate their existing homes will benefit from accessible homes. As their physical abilities change with age they will appreciate the simple changes to design that make their lives easier and safer. Engagement with residents over 50 years of age as part of the 'My Best Home' (2018)[22] project found 77 per cent of participants valued an accessible toilet and bathroom as the most important interior feature of a home.

In the City of Cockburn, with the exception of purpose built aged and dependent care

[21] Tully, Beer (2009) The housing careers of people with a disability and carers of people with a disability AHURI Southern Research Centre

[22] City of Cockburn 'My Best Home' (2018) https://www.cockburn.wa.gov.au/Building-Planning-and-Roads/Town-Planning-and-Development/My-Best-Home

accommodation, very few dwellings have been built to incorporate universal design features.

In the City of Cockburn, 18 per cent of the population have a disability, and with an ageing population it is considered important to increase the accessible/adaptable housing stock to provide more housing options, and flexibility for in-house care.

The Residential Design Codes (R-Codes) sets out the requirements for aged and dependent dwellings, and offers a density bonus for such dwellings. The R-Codes allows a reduction in the site area for aged and dependent dwellings to be considered, but requires a Section 70A Notification that requires at least one occupant to be a disabled or physically dependent person or aged person.

It is considered that this requirement for a memorial to be placed on the title is a significant disincentive for developers to build aged and dependent dwellings, as it potentially reduces the value of the dwelling. Even people who are aged and/or dependent may be reluctant to build or purchase such dwellings because they are aware that the restriction on occupancy may be a problem for resale or future rental potential.

To make this incentive more attractive, the City has introduced a provision in the 'Aged and Dependent Dwellings' local planning policy that allows for consideration to be given to waiving the requirement for a Section 70A Notification' in the following circumstances:

- Where the aged and dependent dwelling(s) do not exceed a maximum plot ratio of 100m^2 (single houses and grouped dwellings) and 80m^2 (for multiple dwellings); and
- the aged and dependent dwelling(s) are built to the 'deemed-to-comply' building standards set out in the R-Codes for aged and dependent' dwellings; and
- other applicable requirements of the local planning policy are met.

The City will continue to promote this incentive, and increase awareness of the benefits arising from accessible homes for both the residential building and property industry and for existing home owners and new home buyers.

The City will seek to identify other measures to increase accessible dwellings within the City to meet this need. This will include examining the housing needs of people with disabilities as part of the City's 'My Best Home' project which previously looked at housing for seniors.

Figure 12. Livable Housing Design (Accessible home)- Outdoor Living Area

3.3.3 Ageing in Place

The *City of Cockburn Age Friendly Strategy* (2016-2021) identified that many older residents within the City had spent most of their lives in the area and wished to continue to live in Cockburn. The concept of ageing-in-place i.e. the capacity to continue to live in the place where people had raised a family and/or worked for a period of time was very important to many people. It was further recognised that relocating people to new regions who had a failing memory or early dementia often exacerbated the condition.

The 'My Best Home' project aims to build on the City's revitalisation strategies by undertaking a further level of research to understand and promote the housing needs of people aged over 50. This is particularly important within the City's oldest, most established, suburbs which will continue to see a significant increase of older households in the future.

The 'My Best Home' project was a collaboration with Australian Urban Design Research Centre (University of Western Australia) and included engagement with residents over 50 as an important part of the research and design

process involving seniors in a co-design process to promote 'rightsizing' and 'ageing in place'. This engagement confirmed that a significant proportion of residents would like to stay within their suburb as they age.

The City has implemented the key recommendations of the first phase of this project and designed a DIY Toolkit for residents to consider housing options to age in place in their suburb (Figure 13).

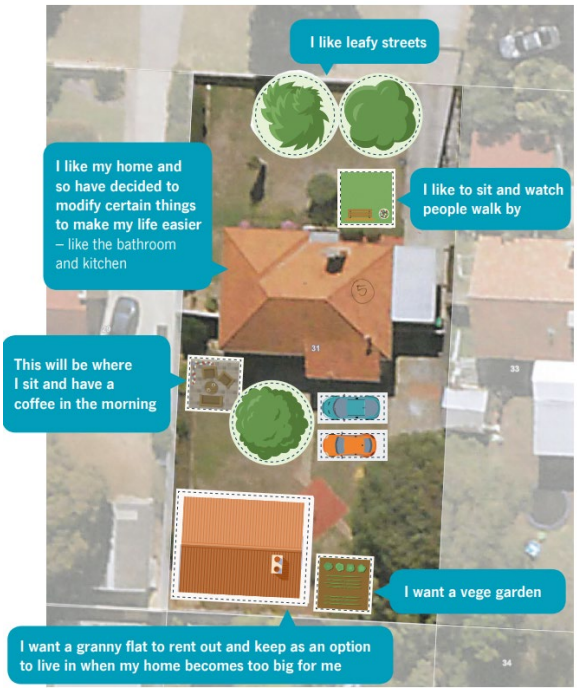


Figure 13. Example from 'My Best Home' toolkit

3.3.4 Residential aged care facilities

The ageing population, particularly the increase in people over 70 years of age, will see an increased demand for aged care facilities for those whose care needs can no longer be met within their own homes.

There are two types of residential aged care within an accommodation setting - 'low level' or 'high level'. Low-level residential care provides a supported environment for residents who are still able to move about but need extra help with everyday tasks like cleaning, laundry and meals.

High-level residential care includes assistance for most day-to-day living activities, as well as care from either registered nurses, or from carers under their supervision, 24 hours a day.

Short stays (respite care) in a residential aged care facility (either low or high) may be a step along the way to permanent care. Respite care offers temporary or casual residential care to support both older people and their carers.

There are currently eleven aged care facilities in the City of Cockburn, with two others being planned in Beeliar and Coolbellup, with a total of approximately 1,799 beds (Table 4). These beds have not been divided into low and high care beds as there is some flexibility in how services allocate beds according to the need and funding at the time.

It has been identified that supply from the private sector is declining due to rising costs associated with construction, difficulties in securing suitable parcels of land, and funding constraints[23]. This is likely to result in an increased shortage of aged care beds in appropriate places, lower quality of service and greater pressure on Government to provide more of these services through hospitals and other care systems, at far greater cost.

However, within the City of Cockburn there have been a number of new aged care facilities across the City built since 2013, including within North Coogee and Treeby which has improved the spatial distribution of aged care facilities and increased the number of beds by approximately 1,232.

A key mechanism used by the Australian Government in planning residential aged care service provision is the 'planning target' for levels of provision relative to population. The current planning ratio is 113 places per 1,000 people aged 70 years and over.

By 2031, the City is projected to have 13,956 people over the age of 70, which will require 1,577 beds. The City has 1,979 projected beds

[23] Department of Housing (2009) More than a Roof and Four Walls Social Housing Taskforce final report

and is therefore in a position to meet this projected demand, although this ratio may be revised and increased by the Australian Government, and therefore requires ongoing monitoring.

TABLE 4: CITY OF COCKBURN AGED CARE ACCOMMODATION (2020)

Aged care facility	Approx no. of beds
Amberley Aged Care, Spearwood	114
Villa Dalmacia Aged Care Facility, Spearwood	70
Bethanie Illawong, Hamilton Hill	39
Carrington Aged Care Facility, Hamilton Hill	103
Hale Hostel (Amana Living - Hale Hostel), Coolbellup	40
Brightwater - South Lake Care Facility, South Lake	30
Frank Prendergast House, Success	73
Regents Garden Aubin Grove, Aubin Grove	98
Regis Port Coogee, North Coogee	171
Aegis Shoreline, North Coogee	237
Parklands Aged Care, Treeby	120
Infin8, Beeliar (proposed)	144
TOTAL	1,979

The demand for low and high care facilities, in addition to respite care, will continue to increase across the Perth metropolitan area. In particular, there will be a demand for affordable aged care.

Traditionally such facilities have been located on sites of 6-8 ha, however it is becoming increasingly difficult to find such sites, and a more flexible approach will be required. To ensure a good supply of aged care accommodation into the future, the City will investigate the feasibility of aged care accommodation as part of any master plan/structure plan for the Council's Spearwood administration site.

The Western Australian Planning Commission (WAPC) are proposing new definitions for residential aged care accommodation ('Residential aged care facility' and 'Retirement village') that will be incorporated into the new Scheme (Draft Position Statement: Residential aged care October 2019). This will also inform land use permissibility.

The City's promotion of accessible and smaller dwellings are also strategies that are intended to prevent early entry into aged care and out-of-home accommodation.

3.3.5 Dwelling design

The homes people live in have an impact on their health, wellbeing, economic prosperity and community connectedness. It is fundamental that housing meets the needs of occupants and is safe and functional to give people the best quality of life.

Good housing design means efficient, well thought out internal arrangements. This includes rooms that are sized appropriately for their function and that have some level of flexibility and adaptability for their use over the lifetime of the home. Sufficient and well planned internal and external storage is necessary.

The internal environment should enhance the health and wellbeing of the occupants with particular attention to daylight and sunlight access and good ventilation.

Energy efficient construction minimises running costs, improves affordability and minimises carbon emissions.

The City's 'Better Neighbourhoods, Better Homes' project included updates to the local planning policy for residential development seeking improved dwelling design outcomes, structured under the design principles of SPP 7.0 'Design of the Built Environment'.

The City will continue to promote sustainable well-designed housing that meets the needs of occupants. This includes continuation of the City's 'My Best Home' project which aims to identify ways to ensure the City's housing meets the needs of the community, and the community are well-informed to make the best housing choices for them.

Table 5: City of Cockburn Forecast Dwellings and Development

City of Cockburn	2016		2041		Change between 2016 and 2041	
Area	**Number**	**%**	**Number**	**%**	**Number**	**%**
City of Cockburn	43,075	100.0	67,847	100.0	+24,772	+57.5
Atwell	3,097	7.2	3,268	4.8	+171	+5.5
Aubin Grove - Banjup (South)	2,525	5.9	2,838	4.2	+313	+12.4
Beeliar	2,852	6.6	3,717	5.5	+865	+30.3
Bibra Lake (East)	1,707	4.0	1,823	2.7	+116	+6.8
Bibra Lake (West)	775	1.8	927	1.4	+152	+19.6
Coogee - North Coogee	3,080	7.2	9,044	13.3	+5,964	+193.6
Coolbellup	2,606	6.1	4,351	6.4	+1,745	+67.0
Hamilton Hill	5,081	11.8	8,114	12.0	+3,033	+59.7
Hammond Park - Wattleup - Henderson	2,000	4.6	4,556	6.7	+2,556	+127.8
Jandakot	949	2.2	1,213	1.8	+264	+27.8
Leeming	750	1.7	796	1.2	+46	+6.1
Munster/Lake Coogee	1,739	4.0	2,478	3.7	+739	+42.5
North Lake	483	1.1	533	0.8	+50	+10.3
Rottnest Island	339	0.8	339	0.5	0	0
South Lake - Cockburn Central	3,215	7.5	5,766	8.5	+2,551	+79.3
Spearwood	4,607	10.7	5,878	8.7	+1,271	+27.6
Success	3,882	9.0	5,453	8.0	+1,571	+40.5
Treeby	436	1.0	3,561	5.2	+3,125	+717.0
Yangebup	2,953	6.9	3,193	4.7	+240	+8.1

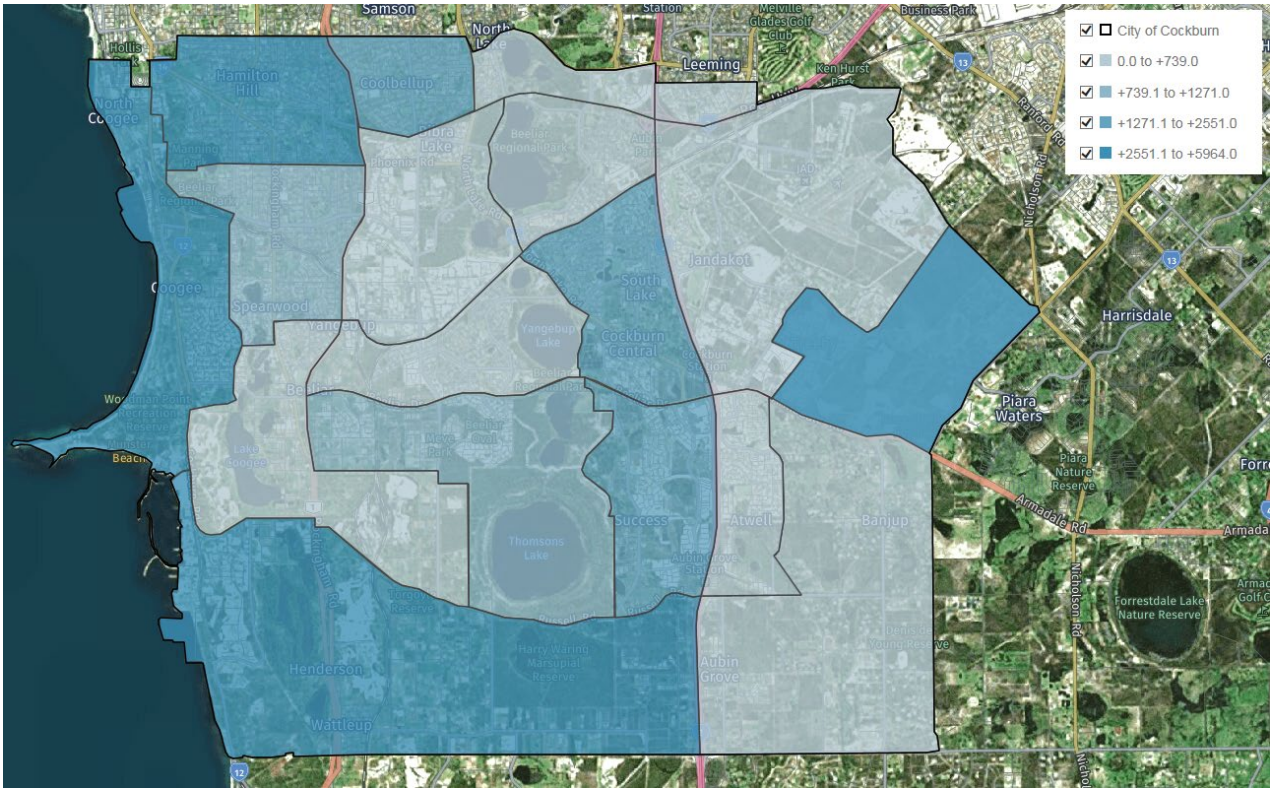


Figure 14. Projected dwelling change (number from 2016-2041)

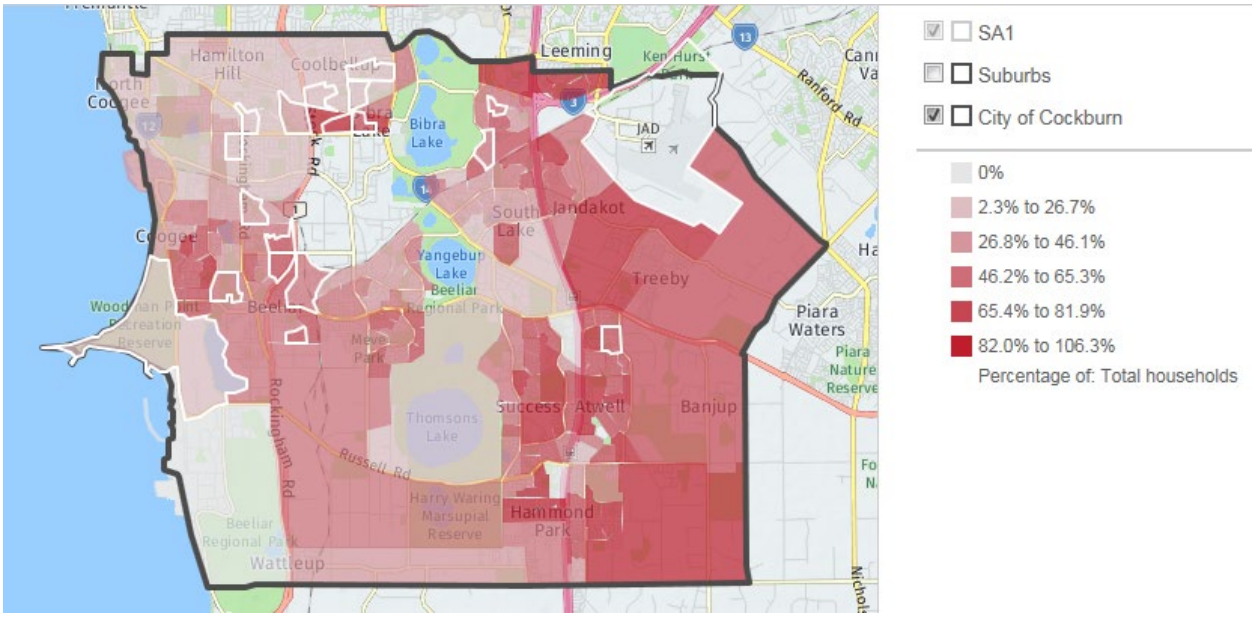


Figure 15. 4 bedrooms or more (2016) Forecast id.

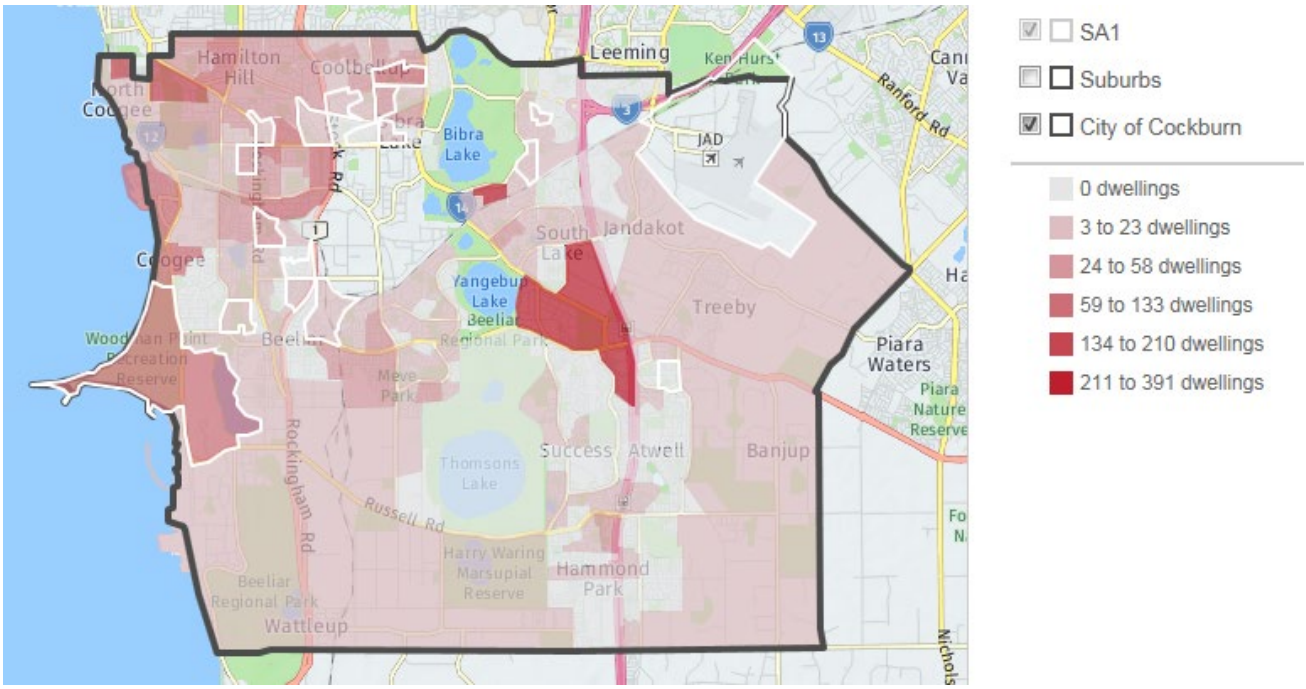


Figure 16. 2 Bedrooms or less (2016) Forecast id.

3.3.6 Housing Affordability

The City of Cockburn, like much of Western Australia, is facing a significant challenge in housing affordability. The cost of land and housing grew dramatically in Western Australia between the December quarters of 2003 and 2007, and the median price for housing in Perth doubled.

This had a major impact on housing affordability in Western Australia, the effects of which are still being felt today. Housing is on average the most significant cost for all households. The cost of housing is the single largest driver of financial hardship for low income households in Western Australia.

Households in poverty are spending, on average, 72.3 per cent of their income to cover their housing costs[24]. As a result, these households have significantly lower expenditure on education, health and recreation, lowering their quality of life.

There has been a growing focus on the requirement for action and cooperation across all levels of government to address housing affordability issues, particularly evidenced by the Council of Australian Governments (COAG) National Affordable Housing Agreement (NAHA) (2009) which aims to ensure that all Australians have access to affordable, safe and sustainable housing.

Without affordable housing individuals and families are more likely to suffer increased levels of financial and personal stress. Secure accommodation is foundational to so many facets of life, including education, employment and health. Households struggling to pay housing costs are faced with a series of issues including unmanageable levels of debt, working and travelling long hours to cover housing costs, living in overcrowded or substandard housing and sacrificing essentials such as heating, food, medication and education. Coping strategies, such as frequent moving, can contribute to a lack of social cohesion, and impact the whole community[25].

A lack of affordable housing can negatively impact on the local economy by making it difficult for businesses to attract and retain employees. Local Government has an important role to play in facilitating affordable and diverse housing, and is well placed to identify local need and identify specific responses to housing issues within the community. The City of Cockburn recognises the importance of affordable and diverse housing to respond to changing needs and expectations.

City of Cockburn initiatives

The City recognises that access to secure, appropriate and affordable housing is a fundamental requirement and an essential component of an inclusive and sustainable city. The City has been proactive in identifying the importance of diverse and affordable housing in a number of strategic plans, and has worked to address the issue through a range of initiatives, including the following:

- Preparation of revitalisation strategies to encourage a variety of dwelling types, and promote walkable neighbourhoods.
- Introduction of affordable housing incentives for the Cockburn Coast (North Coogee) area.
- Online ‘Affordable Housing’ Toolkit.
- Ensuring lot and dwelling diversity through the structure planning process.
- Sustainable and Affordable Living brochures, including ‘Building a Sustainable Home’; and ‘Sustainable Renters Guide’.
- Leasing of Council land to the MS Society for the purposes of a Respite Facility.
- Leasing of a reserve to the MS Society for a Care Facility.

The City has been exploring ways to incentivise the provision of other key housing types, such as accessible, aged and dependent and single bedroom housing. This includes the introduction of a new housing type ‘Special Purpose – Small dwellings’ which provides for the single bedroom

[24] Western Australian Council of Social Services Inc (2019) Cost of Living Report 2019

[25] AHURI (2007) Housing Affordability, a 21st Century Problem

density bonus under the R-Codes but allows the dwelling to include a second bedroom whilst still restricting the size of the dwelling to 70m^2.

While these incentives have only been offered recently, indications are from developers and builders that the incentive is attractive; however there is a need to promote them more widely to increase the uptake.

3.4 Dwelling yield analysis

The number of dwellings in the City of Cockburn is forecast to grow from 43,076 in 2016 to 59,954 in 2031, and 67,847 by 2041. Until 2031 this growth will be strongly focused on greenfield areas, where there is land already zoned for residential development. While some this land is constrained, the majority of these constraints can be typically dealt with through the structure planning process, and this is expected to occur within the next 10 years.

Beyond 2031, when those areas are fully developed, the growth of additional dwellings will be primarily within the City's infill areas (Spearwood, Hamilton Hill and Coolbellup), North Coogee and Cockburn Central.

Table 1 demonstrates that the City will have sufficient dwellings for the projected population and projected number of households to 2041, with population forecasts taken from Forecast Id and REMPLAN, demonstrating comparable forecasts to those identified in WA Tomorrow to 2031.

By 2031, the City of Cockburn's population is forecast to be 151,176, with an average household size of three people, generating demand for 50,392 dwellings. The projected 59,954 dwellings provided through existing urban zoned land will therefore suffice to meet this population growth.

3.4.1 Urban Infill

Infill development is defined as housing development that occurs in existing urban areas, in contrast to greenfield sites which are previously undeveloped.

In the Perth metropolitan area infill development will continue to contribute significantly to housing diversity and provide opportunities for more affordable living within vibrant, connected and rejuvenated neighbourhoods.

Importantly, providing new housing in existing urban areas can be a more efficient and sustainable use of existing infrastructure and services.

For households, infill housing can provide the following benefits:

- More affordable options for homebuyers.
- Proximity to public transport nodes and amenities, facilitating access to employment opportunities and services.
- Options to downsize in their existing suburb or nearby, maintaining community connection.
- Greater housing choice, supporting ageing in place.
- More housing within suburbs of higher demand.

In addition to contributing to meeting dwelling targets and providing more housing options, infill development in the right locations can have a number of benefits, including:

- Renewing an area by bringing in new residents and businesses, and developing new or upgrading existing infrastructure.
- Ensuring more efficient use of infrastructure and add value to existing and planned service and social infrastructure to achieve a more sustainable urban environment.
- Supporting the viability of activity centres.

However, across the Perth metropolitan area infill has in some cases had the following negative impacts on existing residential areas:

- Loss of landscaping and tree cover that have typically been valued by the community, and are important to the character of many established Perth suburban areas.
- Built-form outcomes that are incompatible with existing suburban residential development and character.
- Dwellings with poor levels of amenity for occupants due to lack of useable and functional outdoor areas and lack of landscaping.
- Dwellings that do not meet the needs of occupants due to poor internal layouts, undersized rooms, and lack of flexibility to accommodate future requirements or the needs of different occupants/households.
- In some cases, negative impacts from increased parking on-site (visitor and resident), and increased on-street parking (including verges).
- Negative impacts on streetscape and amenity.
- Infill development that often does not contribute to housing diversity to meet the projected housing needs of the community, comprising three bedroom, two bathrooms homes, rather than the smaller and/or more affordable housing types often sought through infill development (and that new dwellings often replace).

There have been many lessons learnt from existing infill, and it is clear that it is often the cumulative impacts of these issues that result in infill development that negatively impacts on the existing valued residential character.

Infill in the form of redevelopment of larger sites presents greater opportunities to integrate with the surrounding area; manage appropriate interfaces (streetscape and adjoining properties); include landscaping; rationalise access points and crossovers and design for increases in traffic and parking that may be generated. On larger sites density transitions can also be accommodated to provide an appropriate interface with adjacent lower density residential development. Larger sites also provide for a more coordinated outcome, including the potential to include a specific diversity of housing types. Examples of this in the Cockburn context include the redevelopment of the Coolbellup primary school sites, and the redevelopment of Hamilton Senior High School, Hamilton Hill.

Conversely, infill that represents re-subdivision of existing residential lots presents a greater set of challenges, particularly:

- Uncertainty regarding likely uptake and timing for development/subdivision to occur as it is dependent on individual landowners aspirations.
- Limited design and siting options for development, constrained by existing lot size, dimension and orientation and often a retained dwelling.
- Limited options for vehicle access, impacting the verge and opportunities for street trees.
- The visual impact of vehicular access (such as battleaxe legs) and parking being a significant proportion of smaller sites, also reducing landscaping opportunities.
- Inability to achieve a density transition on individual sites given their smaller size.
- Lack of control over housing diversity outcomes.
- Constraint of the existing road reserve being fixed with limited options for retrofitting, and difficulty managing parking outcomes particularly in circumstances where there is limited on-street parking available.

To manage these constraints and to ensure that infill development in the form of re-subdivision/development of residential lots has a positive impact on the community; careful consideration is required to be given to the matters outlined in Table 6.

Table 6: Key principles for good urban infill	
Infill in the right locations	**HIGH LEVELS OF ACCESSIBILITY** *Areas with high levels of accessibility to public transport and services, with accessibility to high frequency public transport and/or higher order activity centres a priority to ensure genuine options for a shift to active transport modes, increasing the likelihood of reducing the need for car ownership and vehicle trips.*
	SUITABLE ROAD NETWORK *Permeable, walkable road networks with high levels of accessibility and walkability potential.*
	Appropriate existing roads and road network to safely accommodate potential increases of traffic and provide maximum on-street parking opportunities to support higher densities.
Infill that responds to local context	**COMPATIBLE WITH NEIGHBOURHOOD CHARACTER** *Development that can be accommodated in a way that does not detract from future intended character and has a positive impact on neighbourhoods.*
	DOES NOT NEGATIVELY IMPACT AMENITY *Development that does not negatively impact on the amenity of neighbouring properties.*
Appropriate built form outcomes	**DWELLINGS WITH HIGH LEVELS OF AMENITY** *Dwellings with high levels of amenity and comfort for dwelling occupants, including functional and convenient internal layouts and outdoor living.*
	DWELLINGS THAT CONTRIBUTE TO HOUSING DIVERSITY *Dwellings that contribute to genuine housing diversity, which typically means smaller dwellings in the Perth metropolitan context given the predominance of larger single dwellings.*

3.4.2 City of Cockburn Infill Plan

Perth and Peel @3.5million sets out infill targets, and for Cockburn the target is 8,600 dwellings by 2031, and 14,680 dwellings by 2050.

This Strategy is a 15 year plan that identifies infill over that time, with a pathway for ultimately achieving the City's infill targets by 2050.

Background

The City first began to experience residential infill after the gazettal of Town Planning Scheme No. 3 (TPS3) in 2002 which provided for residential upcodings from R17.5 to R20 throughout existing residential areas.

This allowed for modest infill on larger lots primarily within the older established areas of Hamilton Hill and Coolbellup. This accelerated following the completion of the backlog sewer program. However at that time the opportunity for infill development was limited in the other suburbs of the district due to the small original sizes of the lots.

This infill development typically included retention of an existing dwelling and an additional dwelling to the rear. Given the required R20 setbacks and minimum site area this still allowed for garden areas and green leafy streetscapes and often this type of infill was compatible with existing neighbourhood character for this reason.

Revitalisation Strategies and infill

The State Government's *Directions 2031* (2010) recognised the benefits of a more consolidated city while working from historic patterns of urban growth. In 2009, the City of Cockburn responded to the then draft Directions 2031; the need to provide a wider range of housing options; and the need to revitalise older suburban areas, through the preparation of the *Phoenix Revitalisation Strategy*, focused on the Phoenix District Centre (Spearwood).

This Strategy identified increases to residential densities with a radiating coding plan that focussed higher codings around the Phoenix District Centre (R60 and R80), R40 within a

400m catchment, and R30 generally within the 800m catchment. It also identified improvements to the public realm and infrastructure required to support this growth.

In 2012, the City adopted the *Hamilton Hill Revitalisation Strategy*, and subsequently the Coolbellup Revitalisation Strategy.

These revitalisation strategies have been instrumental in providing infill opportunities and the works required to facilitate improvements in the urban environment to improve liveability and support higher densities. They have been successful in accommodating residential infill, and these areas are projected to have continued growth beyond the City's greenfield areas.

3.4.3 15 year infill plan

A key component of the City's 15 year infill plan comprises the City's revitalisation strategy areas. These are the City's oldest residential areas where the larger lots, older housing stock, permeable road networks and high levels of accessibility made them ideal for infill to occur.

The table below shows the projected additional dwellings throughout the revitalisation strategy areas based on the existing residential codings, which is predicted to be approximately 6,466 additional dwellings in total across those areas.

REVITALISATION STRATEGY INFILL	No. of dwellings
Spearwood	1271
Hamilton Hill	3450
Coolbellup	**1745**
	6466

These areas will continue to deliver infill development, however the local planning strategy is required to consider whether there are other areas that are suitable for infill development in the short to medium term.

Identifying appropriate areas for infill

Outlined below are the critical considerations in determining appropriate areas for infill.

Areas with high levels of accessibility

Perth and Peel @ 3.5million identifies urban consolidation principles (set out in Table 6) that guide infill development, with the following relevant for determining what are appropriate locations:

Urban corridors: *The focus is for higher-density residential development; where appropriate, located along transit corridors and promoted as attractive places to live by optimising their proximity to public transport while ensuring minimal impact on the surrounding urban fabric and the operational efficiency of the regional transport network.*

Station precincts: *Where appropriate, focus development in and around station precincts (train stations or major bus interchanges as set out under the METRONET initiative) and promote these precincts as attractive places to live and work by optimising their proximity to public transport while ensuring minimal impact on the operational efficiency of the regional transport network.*

Public transport: *Ensure that most transit corridors are supported by quality higher-density residential land uses and identify where new or improved public transport services will be needed to meet long-term growth, especially current and future train station precincts.*

Activity centres: *Support urban and economic development of the activity centres network as places that attract people to live and work by optimising land use and transport linkages between centres; protecting identified employment land from residential encroachment, where appropriate; and avoiding contiguous linear or ribbon development of commercial activities beyond activity centres.*

Perth and Peel @3.5million advocates the following approach to minimise the impact on existing suburbs and to retain their character and amenity:

- *identifying the most appropriate areas where urban consolidation could occur (such as*

activity centres, public transport corridors, station precincts);
- *ensuring these areas have access to existing and future public transport routes; and*
- *protecting the green network – parks, rivers, beaches, wetlands, and potential linkages between these areas.*

Suitable road network

Where infill development occurs within existing suburban residential areas the road network and road reserves are existing, and there are limited opportunities for modifications. Therefore very careful consideration must be given to whether the road network can support infill development appropriately. This includes:

- Level of permeability
- Suitability for on-street parking
- Number of vehicle movements
- Design of the roads for pedestrians
- Regional road network connectivity

While many residential streets have the capacity to cope with increased traffic movements, increased densities in an infill situation can create increased demand for on-street parking.

Consideration of on-street parking is important because visitor bay requirements under the R-Codes assume there is some level of available on-street parking. It is also important to note that infill development itself also reduces on-street parking because even if additional crossovers are minimised, infill development potentially reduces on-street parking through increases to crossover widths (from single to double), and additional crossovers to the secondary streets of corner lots.

Generally, the majority of the City's residential streets are wide enough to accommodate on-street parking, however two key features reduce suitability and opportunities for on-street parking within residential streets being:

1. Roads that are curvilinear and/or undulating as they reduce visibility and lines of sight along some sections.
2. Culs-de-sac which provide reduced opportunities for on-street parking, with parking in culs-de-sac heads obstructing waste vehicles.

Where the road network does not provide adequate opportunities for on-street parking this can result in the following key negative impacts on neighbourhoods:

- Illegal parking impacting crossovers and safe access and egress, footpaths and pedestrian environment.
- Verges being used for parking and reducing opportunities for landscaping and street trees which impact streetscapes and reduce pedestrian comfort.
- Unsafe vehicle and waste vehicle movements.

These impacts have the potential to undermine liveability objectives for neighbourhoods particularly measures to encourage pedestrians and cycling.

Residential areas in the Perth metropolitan area established prior to the 1970s typically had a grid or modified grid road network. This type of road network is highly legible and permeable for vehicles and pedestrians, providing good catchments to centres, services and public transport.

The road reserves were often generous, with large verges and wider roads that allowed for on-street parking and street trees.

However, from the 1980s onwards many residential areas were designed with a curvilinear road layout, responding to concerns regarding the impact of traffic on residential streets, maximising the creation of quiet culs-de-sac. The objective was to create quiet, safe suburban areas by minimising through traffic and ‘rat-runs’.

However, this road network pattern also significantly reduced permeability and legibility, including for pedestrians, which discouraged walking and cycling. This type of road layout meant limited direct routes to destinations. In many cases pedestrian accessways were included to connect culs-de-sac heads to

improve pedestrian movement. These pedestrian accessways had little surveillance, abutted by side fences, and often adjacent dwellings experienced crime which led to many of these being closed, further restricting pedestrian movement.

This type of road network is generally unsuitable for infill development because:

- They are less walkable meaning people living there will be more likely to own and use a car.
- Visitors will likely be arriving by car given poorer public transport accessibility.
- Reduced on-street parking opportunities.
- The reduced permeability means there are fewer properties within walkable catchments to centres due to the road layout, limiting the potential to increase densities within the catchment.

Appropriate lots and housing stock

Within the foreseeable future it is anticipated that infill development will typically be feasible and occur in areas where there is an ageing housing stock (that is nearing replacement); and/or where lots are large enough to retain an existing dwelling and add additional dwelling(s).

In areas where the housing stock is relatively new it is not considered appropriate to increase residential codings in anticipation of redevelopment in a time period greater than 15 years, which is beyond the timeframe and scope of this Strategy.

Premature upcodings have the potential to create a protracted interim period where the applicable residential coding and planning framework does not match the housing stock and the development that is occurring. Specifically it can have the following negative impacts:

- Potential for increased codings to be used only on vacant sites creating inconsistent and out of character development.
- Makes intended future character ambiguous if there is a current character that is likely to remain for the medium to long term, but the higher residential coding suggests a different future character.
- Residential codings will not match the built form resulting in requirements being applied (such as setbacks) to lower density development that are intended to apply to higher density built form.
- Creates uncertainty for landowners and residents, with possible reduction of investment in maintenance of dwellings and properties in anticipation of dwelling demolition and redevelopment in the future over a protracted interim period, negatively impacting on neighbourhood character and identity.
- Given the length of the interim period of time there is the potential for changes to the State planning framework that alter the R-Codes and other requirements which has the potential to result in unintended outcomes or the zoning becoming inappropriate.
- Level of infrastructure is unknown and could change over time, altering what is considered an appropriate coding.
- Potentially has a negative impact on housing affordability.

For this reason, ideally housing stock should be nearing its end of life and replacement, meaning that infill development could occur within the short to medium term.

In terms of lot sizes, consideration must be given to lot sizes in an area when considering appropriateness for infill development. Larger lots provide the best opportunities for infill development to occur, often providing for retention of an existing dwelling which in many locations can provide the most feasible infill outcome.

Smaller lots are more constrained and typically less appropriate for infill. Infill on smaller lots becomes less feasible as it can be difficult to retain an existing dwelling, and two storey development may be required to fit more than one dwelling on the site.

Narrower frontages of smaller lots mean that crossovers have a greater negative impact on the streetscape, reducing street trees and on-

street parking opportunities. For this reason, residential lots smaller than 600m^2 in individual ownership will typically not be appropriate for infill development implemented through a standard residential coding change without a local development plan or provisions to guide development.

It is also important to consider how infill development can be accommodated in a manner that is compatible with existing development, which will be dependent on existing streetscape character; housing stock; lot sizes and an appropriate coding and design guidance.

Connecting to the Perth and Peel Central Framework areas

The Perth and Peel Central Framework identifies the specific location of future urban corridors. Local governments in the outer Sub-regions need to consider the logical continuation of urban corridors into their local government area when preparing local planning strategies and schemes. Consideration is therefore required to be given to logical connection and interface. The Central Frameworks include higher densities along the high frequency transit corridors of North Lake Road and Hampton Road, although these do not continue into the City of Cockburn. Notwithstanding, the local planning framework has considered and responded to these high frequency transit corridors.

The bus routes along North Lake Road enter Coolbellup at Winterfold Road and Waverley Road, and do not continue any further south. These bus routes were considered through the *Coolbellup Revitalisation Strategy*, and these areas were upcoded in 2015 to R40 and R30 to facilitate appropriate infill.

The Hampton Road bus routes connect to Rockingham Road, and the *Hamilton Hill Revitalisation Strategy* considered this, resulting in residential upcodings along Rockingham Road typically between R40 and R60.

Assessment of established suburbs

Based on the analysis in the previous section, Appendix A examines the City's established residential areas (that have not been upcoded to provide for infill development) to determine their appropriateness for higher residential codings to facilitate infill development.

This assessment identifies that the following established suburbs are not suitable for infill development within the next 15 years:

- South Lake
- Bibra Lake
- North Lake
- Coogee
- Spearwood (south) /Lake Coogee
- Yangebup

These areas do not meet the infill criteria set out in *Perth and Peel @3.5million* and the City's criteria, as they are not serviced by high-frequency public transportation nor located within a walkable catchment to a transit corridor, higher-order activity centre or employment node.

Most of these areas are also characterised by a curvilinear road layout that is currently unsuitable for infill development due to its restricted level of accessibility and permeability and limited on-street parking availability (see Table 7).

The future Fremantle to Cockburn Central High Priority Transit Corridor identified in Perth and Peel may traverse some of these suburbs and provide a future opportunity for residential development along a high frequency transit link, providing a key infill opportunity in the longer term as part of a later Strategy.

Residential development within proximity to the Aubin Grove Train Station has been structure planned, subdivided and developed within the past 10 years and therefore does not have any potential for infill within the next 15 years.

Existing low-density infill potential

Within some of the established suburbs that do not currently meet the infill criteria set out in *Perth and Peel @3.5million*, there are larger lots

that provide for a modest level of infill under the current predominately R20 codings. Dispersed through the suburbs of Bibra Lake, South Lake, North Lake, Coogee, Lake Coogee, Yangebup, Spearwood (south) and Leeming there are many corner lots that are 700m^2 or larger and therefore have subdivision potential under the Western Australian Planning Commission (WAPC) DC Policy 2.2 'Residential subdivision'. There are also larger lots throughout these areas that have existing subdivision potential.

These suburbs were predominately established in the 1980s, with some of the housing stock expected to be potentially replaced within the 15 year time period of this Strategy.

Ultimately the market will drive development and redevelopment of lots throughout those areas, making it difficult to estimate likely uptake in order to determine infill potential.

For example, areas like 'Old Coogee' (north-western area of Coogee) have larger lots and older housing stock that may be replaced at a higher rate; whereas other parts of Coogee were established later, with more substantial dwellings on smaller lots that are likely to be redeveloped in the near future.

Across these suburbs, the number of lots with existing subdivision potential has been calculated, and an average 75 per cent take-up rate for redevelopment over 15 years has been assumed for the purposes of estimating likely infill. Given the average age of the housing stock, this is considered to be a reasonable estimate.

ESTABLISHED RESIDENTIAL AREA INFILL			
	Lots > 900m^2	Corner lots >700m^2	No. Lots (75% take up rate)
Muriel Court	NA	NA	2512
Bibra Lake/South Lake	80	331	155
North Lake	22	36	22
Coogee	136	144	105
Spearwood/Lake Coogee	55	148	77
Yangebup	57	184	91
Leeming	44	48	34
			2996

These modest infill opportunities will provide for additional dwellings throughout these areas, resulting in a projected additional 2,996 dwellings.

Given the modest level of infill anticipated, and the lower residential codings this is anticipated to occur in a way that will not detract from valued neighbourhood character due to the larger minimum lot sizes and setbacks that will be applicable under an R20 coding. The City will identify measures to promote this potential.

3.4.4 Perth and Peel infill targets

Perth and Peel @3.5 million sets the following infill targets for the City of Cockburn:

- **2031** - 8,600 dwellings
- **2050** - 14,680 dwellings

Projections indicate that infill within the Revitalisation Strategy areas (Hamilton Hill, Spearwood North and Coolbellup), and within established residential areas will deliver 9,462 infill dwellings over the next 15 years, exceeding the Perth and Peel target of 8,600 for 2031.

The City's projected infill through this Strategy is summarised on the following table.

PROJECTED INFILL (15 yr plan)	No. of dwellings
Revitalisation Strategy infill	6466
Established residential infill	2996
TOTAL	**9,462**
PERTH AND PEEL TARGET 2031	***8,600***

Table 8 demonstrates how the City's infill plan aligns with the urban consolidation principles set out in *Perth and Peel @3.5million* while responding to the local context.

3.4.5 Future infill - 2050 Perth and Peel infill targets

Future infill opportunities will be explored in detail as part of a future Local Planning Strategy (15+ years), and these are outlined below, demonstrating that the City is tracking appropriately towards the 2050 infill targets.

Residential areas

Existing residential areas within close proximity to Cockburn Central Activity Centre (Success/Cockburn Central) meet locational criteria for infill however the housing stock is not suitable for re-development within the next 15 years and will be subject to consideration at a future date. This is estimated to provide the opportunity for approximately 1,500 infill dwellings.

The review of the Local Planning Strategy at that time will provide the opportunity to identify additional residential areas that are appropriate for infill based on the level of accessibility and infrastructure at that time. Across the City this could provide for approximately 3,200 dwellings with a modest upcoding.

High Priority Transit Corridor

Perth and Peel @3.5million identifies a Fremantle to Cockburn Central High Priority Transit Corridor. The City sees this as critical to improving the City's public transport network.

Importantly, this public transport link will provide the City with opportunities for residential infill that meets the *Perth and Peel @3.5million* criteria and delivers highly accessible housing options for the community.

Currently the preferred mode and route are to be determined; with light rail, bus rapid transit and trackless trams considered viable options. A very preliminary estimate of residential opportunities along an alignment suggests that approximately 8,600 additional dwellings could be possible (see Table 7).

The City's projected infill through this Strategy, and potential opportunities for the next Strategy are summarised below:

FUTURE INFILL POTENTIAL (>15yrs)	No. of dwellings
Cockburn Central/Success residential adjacent areas	1500
Other residential infill	3200
High Priority Transit infill	8656
TOTAL >15 yrs	13,356
TOTAL TO 2030	9,462
TOTAL TO 2050	24,128
PERTH AND PEEL TARGET 2031	*14,680*

3.5 Dwelling capacity

The City uses REMPLAN Forecast for dwelling projections. REMPLAN identifies the local drivers of demographic and housing change to model future scenarios over a 20-year period.

REMPLAN's projections take into consideration trends for births, deaths and migration. Forecasts are conditioned against factors such as the City's revitalisation strategies, structure plans (including potential future structure plans), major development applications, economic influences and supply constraints.

This forecasting uses a 'ground truthing' approach starting with the base data for small areas from secondary sources such as the Australian Bureau of Statistics (ABS) and then applying local data and analysis provided by the City.

These dwelling figures are derived from existing approved structure plans and estimates of theoretical dwelling capacity for the areas that are yet to be structure planned, with estimates regarding the appropriate residential densities based on the areas' proximity to public transport and activity centres. These figures will be refined over the next five years as the City continues to progress structure planning and precinct structure planning.

REMPLAN's forecasts represent a lower scenario dwelling estimate based on the current planning framework. These figures have been

used a base low scenario, and analysis has been undertaken for higher scenario dwelling estimates (see Table 7), which factor in the following:

- Possible future infrastructure to facilitate further residential infill, including the east-west high frequency transit link providing for infill precincts in the suburbs of Spearwood, Bibra Lake, Coogee, and Cockburn Central North.

- Possible future infill within proximity to Cockburn Central (>15 years) as housing stock ages.

Table 7. Additional Dwelling Capacity Estimate to 2050

	Dwelling estimate range	
	Lower scenario	**Higher scenario**
Revitalisation Strategy infill areas		
Phoenix/Spearwood	1271	8834[1]
Hamilton Hill	3450	-
Coolbellup	1745	-
Brownfield areas		
Cockburn Central North (Muriel Court)[3]	2512	4891[1]
Cockburn Coast[4]	6000	Possible higher dwelling yields.
Established suburban residential areas		
Bibra Lake/South Lake	155	3152[1]
North Lake	22	-
Coogee	105	149[1]
Spearwood/Lake Coogee	77	-
Yangebup	91	-
Leeming	34	-
Success	2028	3528[2]
Greenfield Areas[5]		
Atwell	3,346	Higher dwelling yield unlikely given areas are newly structure planned.
Aubin Grove	2,477	
Beeliar	3,636	
Hammond Park	4,201	
Treeby / Banjup North	3,149	Higher dwelling yield possible in event of MRS changes.
Banjup South	538	
Jandakot	1,113	
Lake Coogee	2,320	Higher dwelling yield possible if Lake Coogee urban deferred area becomes available for residential development.
TOTAL ESTIMATED DWELLING RANGE	**38,270**	**52,753**

Notes:

1. *Future additional infill potential from east-west transit link.*
2. *Possible future infill within proximity to Cockburn Central (>15 years) as housing stock ages.*
3. *Muriel Court Structure Plan requires 75% dwelling density to be achieved.*
4. *Cockburn Coast Structure Plan requires 85% dwelling density to be achieved.*
5. *Dwelling figures based on approved structure plans and theoretical dwelling capacity for the areas yet to be structure planned based on the areas' proximity to public transport and activity centres. These figures will be refined over the next five years as the City continues to progress structure planning and precinct structure planning.*

TABLE 8: URBAN CONSOLIDATION PRINCIPLES WITHIN A CITY OF COCKBURN CONTEXT

	Principle	Local Context
1. Housing	*Provide well-designed higher-density housing that considers local context, siting, form, amenity and the natural environment, with diverse dwelling types to meet the needs of the changing demographics.*	The range of residential codings within the revitalisation strategy areas of Hamilton Hill, Coolbellup and Spearwood (north) will provide for infill over the next 15 years, with additional measures proposed to encourage housing diversity. The LPS has identified that other suburbs have a restricted movement network, minimal activity centre/ high transit opportunities and a curvilinear road layout which compromises the development of well-designed high density housing and potentially negatively affects community amenity. For this reason, the established suburbs of South Lake, Bibra Lake, North Lake, Coogee, Spearwood (south) and Yangebup have been not been identified for Urban Infill Investigation as part of this LPS.
2. Character and heritage	*Ensure the attractive character and heritage values within suburbs are retained and minimised*	There are no identified Heritage Areas within the City of Cockburn, however valued neighbourhood character has been identified in the local planning framework.
3. Activity centres	*Support urban and economic development of the activity centres network as places that attract people to live and work by optimising land use and transport linkages between centres; protecting identified employment land from residential encroachment, where appropriate, and avoiding contiguous linear or ribbon development of commercial activities beyond activity centres.*	All Activity Centres as identified as District Level or Secondary Centre contain existing higher density zoned land in close proximity, or alternatively are identified for higher density within the overarching structure plan. Existing residential areas within proximity to Cockburn Central may be suitable for infill development as part of a future LPS when the housing stock is ready for redevelopment.
4. Urban corridors	*The focus for higher-density residential development. Where appropriate, located along transit corridors and promoted as attractive places to live by optimising their proximity to public transport while ensuring minimal impact on the surrounding urban fabric and the operational efficiency of the regional transport network.*	Identification of a primary urban infill corridor along the High Priority Transit Corridor which will provide for the majority of urban infill targets to 2050. The City will advocate for this project; however if following recommended studies, it is identified as not feasible, the City will investigate other future opportunities.
5. Station precincts	*Where appropriate, focus development in and around station precincts (train stations or major bus interchanges as set out under the METRONET initiative) and promote these precincts as attractive places to live and work by optimising their proximity to public transport while ensuring minimal impact on the operational efficiency of the regional transport network.*	The LPS recognises the construction of METRONET project *Thornlie-Cockburn Link*, which will traverse along the existing Railway Reserve alignment adjacent Jandakot Airport prior to linking to the existing Cockburn Central Train Station to the south. Existing Residential zoned land in Atwell, within close proximity to the train station, currently contains new housing stock and therefore is an area for potential urban infill investigation as part of a future LPS.
6. Industrial centres	*Promote the current and proposed supply and/or development of industrial centres as key employment nodes and prevent incompatible residential encroachment on these areas.*	Identification of the Strategic Industrial area of the Australian Marine Complex and update of the planning framework to accordingly support this centre as a primary employment generator and nationally recognised specialised centre.
7. Public transport	*Ensure that most transit corridors are supported by quality higher-density residential land uses and identify where new or improved public transport services will be needed to meet long-term growth,*	Urban infill opportunities are identified along the future High Priority Transit Corridor and will provide for approximately 8,656 number of dwellings, likely to be investigated and delivered as part of a future LPS.

TABLE 8: URBAN CONSOLIDATION PRINCIPLES WITHIN A CITY OF COCKBURN CONTEXT		
	especially current and future train station precincts.	
8. Infrastructure	*Ensure more efficient use of and add value to existing and planned infrastructure to achieve a more sustainable urban environment. Protect existing and proposed infrastructure from incompatible urban encroachment to promote a system where land use developments and infrastructure are mutually compatible.*	All urban infill is identified within existing residential zoned land in order to utilise existing infrastructure including water, sewer, movement networks and power.
9. Green network	*Preserve, enhance and consolidate the green network of parks, rivers, recreation areas, facilities for active open space, conservation and biodiversity areas, and areas with a high level of tree canopy coverage, considered important for the health and wellbeing of the community.*	No further infill. The City's wetland corridor traverses centrally to local government boundaries and is bounded by Residential zoned land. Opportunities for urban infill have been avoided in these areas in order to avoid conflicts with development and bushfire mitigation measures / potential clearing. The Local Planning Strategy identified local ecological corridors that development is required to respond to.
10. Protection	*Avoid, protect and mitigate environmental attributes and promote development that contributes to maintaining air quality and minimises risks of inundation from sea-level rise, flooding or storm surge events and that minimises the risks of bushfire damage.*	No further infill. The City's coastal location presents no opportunities for urban infill, however development of greenfield/brownfield land is planned for within North Coogee structure planning area and is addressed in the relevant structure plans and the Coastal Hazard Adaptation Plan.

3.6 High density residential development

The City has planned a number of higher density areas which have commenced development in the last decade. These are:

- Cockburn Central Activity Centre
- Muriel Court Structure Plan area
- Port Coogee and
- Cockburn Coast.

The aspiration for these areas is to create vibrant, high-density mixed-use environments with an urban character and high levels of accessibility. These areas have been planned to include a greater diversity of dwelling types, particularly apartments.

The vision for these areas is set out in the relevant structure plans, local planning policies (Design Guidelines) and in some cases Scheme provisions.

As discussed previously, the market for apartments has been slower than anticipated in the Perth metropolitan area. Cockburn Central is the City's highest order activity centre which currently has an approximate 20-year land supply of mixed-use residential development.

With regard to commercial land uses where there is intended to be a component of mixed-use developments in Cockburn Central, these are competing with a variety of other activity centres which are more centralised and locationally superior in the context of the Perth central area. Colliers in 2016 identified that in reality, for at least the next 10-20 years the Perth central area and other activity centres between Perth and Cockburn Central, will be the major pull for travel, with most of this being one-way into the city, whether that be for employment, retail or entertainment needs. Cockburn Central is far more likely to be the starting point of a journey, rather than the end destination.[26]

Within these areas the local planning framework includes measures to achieve minimum densities and, in some cases, restrict single or grouped dwellings to ensure that the higher density aspirations of these areas are achieved. In some cases, the slower than anticipated delivery of higher density dwellings has created pressure to relax these requirements, particularly to allow terrace-style single or grouped dwellings.

Often these proposals achieve the minimum densities, however careful consideration must be given to allowing this flexibility, as often these dwelling forms do not achieve the affordability and/or housing diversity objectives that are being sought.

Further to this, often the structure plan and design intent has been based on a higher density and an urban built form, including the relationship between buildings and the street environment.

Changes to dwelling types and fragmentation of land through subdivision can change streetscape character outcomes and undermine the design philosophy and intended future character of an area.

It is therefore considered imperative that the City continue to provide for the minimum densities and other mechanisms to drive smaller dwelling types and to meet density targets within these identified higher density areas. This will ensure provision of housing to meet projected household types, and to maximise dwellings in areas of high accessibility.

It will also be critical to clearly articulate design intent within structure plans to ensure this is taken into consideration when there are proposals that vary built form and dwelling outcomes. This will be particularly important for mixed use areas where active ground floor uses are sought.

Structure plans should also include specific guidance regarding subdivision of land within

[26] Colliers. 2017. Cockburn Central East Local Structure Plan Market Feasibility Assessment

these areas, as fragmentation of land within these areas can undermine the ability to deliver higher density dwelling outcomes and an 'urban' character.

Figure 17. Ocean Edge Apartments, Port Coogee

3.6.1 Market changes/impacts

As discussed, market changes can impact the delivery of housing, particularly higher density housing outcomes. In Cockburn Coast, Cockburn Central and Port Coogee this can lead to pressure to change original design intent, potentially diluting the long-term vision for those areas. The challenge will be managing these pressures appropriately. Critical considerations will include demonstration of the following:

- 'Urban character', streetscape and design intent still being achieved both in the private and public realm.
- No degradation of the road network in terms of its ability to provide a high-quality pedestrian environment and maximum street tree opportunities, whilst accommodating services, waste vehicle movements and adequate parking arrangements.
- Minimum densities are still achieved to ensure dwelling targets and population intensity objectives are met.
- Dwelling diversity and affordability outcomes are not compromised.
- Existing and proposed centres are not compromised.
- Developer Contribution Plans and arrangements are not impacted.

3.7 Improving liveability in established suburbs

In some cases, infrastructure in the City's older residential areas is ageing and may no longer meet current community expectations in terms of function or appearance. To achieve the City's key objectives to improve liveability there will be key opportunities to continue public realm improvements in these areas, particularly to improve safety, walkability, the appearance of the streetscape, public spaces and activity centres.

The City's adopted Revitalisation Strategies included a wide range of improvements to the public realm, including streetscape improvements, street tree planting, traffic improvements, pedestrian linkages and open space upgrades that were identified through a comprehensive process of engagement with the community.

In the Phoenix, Hamilton Hill and Coolbellup Revitalisation Strategies many of these recommendations have been implemented. The *Lakes Revitalisation Strategy* was adopted by Council, and while the identified zoning changes were refused by the Minister for Planning, the recommendations within the Strategy are still considered to be important to improve liveability in those suburbs. Likewise, the City undertook visioning forums with the Yangebup community which identified opportunities for improvements to the area.

While at this stage no further residential coding changes are being proposed, actions to enhance the City's suburbs are considered to be critical to enhancing the health and well-being of residents.

In this regard it is recommended that Local Area Plans be prepared for the City's older established residential areas.

These plans would examine areas comprehensively and identify tailored recommendations for each area with a focus on the following as a priority:

1. Identifying community aspirations
2. Strengthening what makes neighbourhoods unique and fostering a distinctive identity
3. Supporting more sustainable and active transport options
4. Improving accessibility and connections
5. Improving safety and security
6. Enhancing a green, leafy streetscape character
7. Supporting Activity Centres to become hubs for the community
8. Identifying public open space and public realm needs for the existing and future community.

Upgrades undertaken by the City at the Simms Road neighbourhood centre in Hamilton Hill provide an example of public realm improvements that enhance local character, improve safety and pedestrian movement and support a local centre (see Figure 18).

For the existing revitalisation strategy areas this process will involve reviewing the recommendations, determining what has been implemented, and updating and consolidating these documents.

Figure 18. Enhancements at Simms Road Neighbourhood Centre, Hamilton Hill

Population and Housing Issues and Analysis

There is sufficient existing urban zoned land to provide the required dwellings to meet the projected population growth.

The City is on target to achieve the Perth and Peel @3.5million infill dwelling targets to 2031 and 2050, with this Strategy setting out what will be delivered over the next 15 years, and what will be considered beyond that timeframe.

Projections indicate that infill within the Revitalisation Strategy areas (Hamilton Hill, Spearwood North and Coolbellup), and within established residential areas will deliver 9,966 infill dwellings over the next 15 years).

The City's current housing stock does not match the projected smaller households, and a greater number of smaller dwellings will be required.

The City will continue to promote incentives for smaller dwellings and accessible dwellings, including through the 'My Best Home' project; and undertake community education.

Given the ageing population, demand for aged care facilities will continue and the City will continue to track the ratio of beds provided to ensure they can meet the community's needs.

Liveability in existing neighbourhoods will be enhanced through the preparation of Local Area Plans.

4. Economy and Employment

A successful local economy is a key driver of the wellbeing of a community. Given Cockburn's location within the south-west growth corridor, planning over the last 25 years has largely been growth orientated, with large tracts of greenfield sites developed for residential development and the infrastructure required to support this growth.

Active planning of key developments has also seen the delivery of new jobs and services including the industrial precincts of Bibra Lake (including Cockburn Commercial Park and Phoenix Business Park), the Australian Marine Complex (AMC) and Jandakot City.

The coastline continues to attract and support the needs of a strong shipbuilding and marine resource (oil and gas) industry and business cluster at the AMC, and provides a unique location for Cockburn's key strategic sectors of which contribute to an estimated total gross regional product (GRP) of $9.1 billion (Economy Id, June 2019).

Along with the AMC, the Western Trade Coast (WTC) incorporates the Kwinana Industrial Area, Latitude 32 and Rockingham Industry Zone, creating a hub for fabrication and manufacturing that supplies goods for the resources and agricultural sectors and contributes 33 per cent of all value added in WA's manufacturing sector. WTC generates more than $14.7 billion in direct sales and accounts for 2 per cent of WA's Gross State Product (Economy Id, 2019). These areas will provide key future employment opportunities, and connectivity to the Perth Metropolitan road and rail network will be critical.

While forecasts indicate a strong future for Cockburn, growth attributable to greenfield development is expected to slow from 2032 as the City transitions towards growth mainly attributable from urban infill. This is likely to see a change in focus for the City, moving away from its major land and infrastructure delivery role, to having to provide a greater focus on supporting Cockburn's key strategic industries, centres and local businesses which have arisen as a result of these developments.

This will include identifying an approach to support the region's key strategic sectors and centres to enable more Cockburn residents to work closer to home rather than commuting to distant employment centres. Providing greater connectivity to these areas will also be important, particularly promoting active transport modes as a means of commuting.

Between 2013 and 2018, 75 per cent of new businesses in the City of Cockburn were on residential zoned land, which the land use planning framework needs to respond to. Working from home and home businesses are a trend that is likely to continue strongly into the future, and the City should plan to support these opportunities.

4.1 Economic Development Framework

The success, health and wellbeing of a community is often underpinned by economic activity. Historically, harnessing economic activity has not been actively considered in a holistic coordinated manner, with benefits often being achieved incidentally.

The City now seeks to proactively consider economic development opportunities by preparing an Economic Development Framework.

This framework will embed economic considerations/objectives in all of the City's functions and decision making, including land use and infrastructure planning. The aim of the framework is to ensure that all of the City's decisions and planning are evidence-based and proven to maximise economic benefits, assist with reducing inequalities in service distribution, and raise overall quality of life outcomes.

4.2 Employment

Since the previous local planning strategy, the City has seen growth in a number of employment sectors. In 2017-18 the largest percentage of jobs in Cockburn were in the construction industry at 17.7 per cent, followed by 14.7 per cent in the manufacturing industry. This is considerably higher than the Western Australian average of 10.4 per cent for construction and 5.7 per cent for manufacturing.

In this regard, the City's industrial areas are clearly key employment areas, and therefore it is critical to protect and support these areas into the future. In doing this, it will be important to create a robust but flexible land use planning framework that also provides for adaptation and change over time.

The City will promote land use options to facilitate strong and coordinated employment hubs by identifying and clearly articulating the vision and economic rationale for precincts.

The City will also investigate the land use planning and supporting infrastructure needs to support the emerging number of start-up businesses in Cockburn.

4.2.1 Employment Lands Assessment

A strategic assessment has been undertaken as to whether the City has sufficient employment land, and whether it is appropriately distributed to meet the City's needs into the future.

Projected employment and self-sufficiency

The employment lands analysis focuses on the role of Cockburn's economy in the South Metropolitan Peel Sub-region, particularly regarding the provision of both employment and employment land.

Employment self-sufficiency is the ratio (expressed as a percentage) of the total labour force (local residents who are employed or seeking employment) of a defined area relative to the total number of jobs available in that area. A percentage above 100 indicates a region has more jobs locally than resident workers. Employment self-sufficiency reduces the need for long and costly commutes, and increases the economic sustainability of individual sub-regions.

For the South Metropolitan Peel sub-region Perth, and Peel sets out a target of 79 per cent self-sufficiency. As of 2016, the South Metropolitan Sub-region had a residential population of approximately 621,000, a labour force of 304,600, and approximately 160,000 jobs within the Sub-Region, reflecting an employment self-sufficiency (ESS) of 52.4 per cent (see Table 10).

The estimated number of jobs and employment lands in Cockburn is based upon Cockburn's role in supporting the Sub-region target ESS of 79 per cent. The population projection for the Sub-region suggests that by 2036, approximately 388,000 jobs would be required if the ESS target of 79 per cent is to be met (Table 10). It is likely that Cockburn will contribute at a minimum the same proportion that it does currently (26.11 per cent) of jobs to the Sub-region, which would mean that approximately 101,500 jobs would be required within the City of Cockburn by 2036 (see Table 10).

To identify the proportion of Cockburn's projected employment that would be distributed to strategic employment/industrial lands, the projected number of jobs in Cockburn are broken down into traded and local economy based jobs:

- Traded economy jobs refer to those that are in traded industries/clusters that involve the creation and movement of goods and services to other markets. In Cockburn's context, this refers to the extent it services markets outside of Perth and Peel (regional, interstate and international trade); and
- Local economy jobs refer to jobs in industry activities that support the Sub-region's local population and economic activity. These jobs are usually driven by population catchment requirements for goods and services (i.e.

retail, medical services or construction services).

The Sub-region's economy is made up of approximately 30 per cent traded economy jobs and 70 per cent local economy jobs. This suggests that out of the 388,000 jobs projected within the Sub-region by 2036 ,approximately 116,500 would be traded economy based jobs.

Consistent with the Sub-region, Cockburn's economy is characterised by 29 per cent of its jobs in the traded economy and 71 per cent being driven by its local economy jobs. Based on the 101,500 required jobs within Cockburn by 2036 (see Table 10), approximately 29,500 of these would be in traded industries. Therefore, Cockburn contributes approximately 25.5 percent of the Sub region's traded economy jobs, reflecting Cockburn's significance to the Sub-region's traded economy.

Modelling suggests that the ESS target is realistic for the south-West Sub-region, including the City of Cockburn due to:

- The presence of significant strategic industrial infrastructure in the area;
- Significant future public and private investment in employment generating projects; and
- Capacity for centres to support more employment given projected population growth.

Strategic employment centres are forecast to contain more of the future jobs in the City. This is due in part to land availability at these locations, but primarily as a result of the significant industrial infrastructure and major export supply chains that flow through the City of Cockburn. Cockburn Central East will provide a key component of this strategic employment. Cockburn Central East is ideally located to deliver this employment, being a key component of the Cockburn Central Activity Centre, which is a high-density transit-oriented development. This will also support the evolution of this centre.

Implied floorspace based on employment projections

To reflect the amount of employment lands required to support 29,500 traded jobs, it is assumed that 5 per cent of the traded workforce work from home, suggesting approximately 28,000 jobs would require employment land.

The floorspace requirements have been calculated by assigning the Australian and New Zealand Industry Classification (ANZSIC) industry classification to the Planning Land Use Code (PLUC) which enables assigning of industries to a land use code and therefore, estimation of the proportion of floorspace that is attributed to traded employment. The breakdown of employment by PLUC is summarised in Table 9.

Based on the projected number of jobs and assumed floorspace requirements outlined in Table 9, the City of Cockburn would require approximately 4.7 ha net lettable area (NLA) of additional employment land including:

- 3.145 ha NLA of this would be required for local economy jobs; and
- 1.558 ha NLA would be required for traded economy jobs.

PLUC	% of Jobs	Assumed m2 NLA per Job
PRI	3.85%	7
MAN	17.63%	50
STO	11.09%	158
SER	21.32%	20
SHP	10.94%	26
RET	0.49%	430
OFF	9.06%	72
HEL	14.11%	9
ENT	5.72%	22
RES	1.46%	90
UTE	4.32%	61

Table 9 – Summary of Cockburn Employment by PLUC ***(source: DPLH Land Use Employment Survey)***

This translates to a gross overall site area of 8.515 ha for employment. Approximately 5.7 ha of this would be required for local economy jobs and 2.82 ha NLA would be required for traded economy jobs.

The City has this land available and zoned appropriately. Of particular note, land within Latitude 32 is ideally suited to accommodating additional traded economy jobs, and other industrial areas have capacity to provide for additional local economy jobs, including Cockburn Central East.

It will therefore be important for this land to be protected for employment land to ensure that the City tracks towards meeting the self-sufficiency targets. The local planning framework should also provide further support and guidance to drive the best outcomes and economic benefits from these areas.

Table 10. Cockburn Employment Projection

	2016	2021	2026	2031	2036	2041
South Metropolitan Peel Sub-**Regional Population**	620,851	707,210	804,977	898,056	1,001,898	1,117,746
South Metropolitan Peel Sub-**Regional Labour Force % of Population**	49.07%	49.07%	49.07%	49.07%	49.07%	49.07%
South Metropolitan Peel Sub-**Regional Population Labour Force**	304,624	346,997	394,967	440,637	491,587	548,429
South Metropolitan Peel Sub-**Regional Population Total Jobs**	159,628	274,127	312,024	348,103	388,354	433,259
South Metropolitan Peel Sub-**Regional Population Employment Self Sufficiency**	52.40%	79.00%	79.00%	79.00%	79.00%	79.00%
Cockburn Employment as a % of South Metropolitan Peel Sub-regional Jobs	26.11%	26.11%	26.11%	26.11%	26.11%	26.11%
Cockburn Jobs	**41,684**	**71,583**	**81,479**	**90,901**	**101,412**	**113,138**
Cockburn Local Economy Jobs	**29,555**	**50,754**	**57,770**	**64,450**	**71,903**	**80,217**
Cockburn Traded Economy Jobs	**12,129**	**20,830**	**23,709**	**26,451**	**29,509**	**32,921**

Source: ABS census 2016, WA tomorrow 2018, Forecast.id 2020, Economy.id 2020

4.3 Strategic Employment Areas

The following are identified strategic employment centres with the City of Cockburn:

- Australian Marine Complex (AMC)
- Cockburn Central East
- Latitude 32
- Jandakot Airport
- Bibra Lake Industrial Centre
- Jandakot West

These centres are forecast to contain more of the future jobs in the City due in part to the available land at these locations, but primarily as a result of the significant industrial infrastructure and major export supply chains that flow through the City of Cockburn.

Within these areas, the potential of the strategic employment centres is to be protected and maximised through land use, transport and infrastructure planning which creates operational synergies.

The LCACS set the strategic vision and broad framework to guide the planning and development of the City's strategic employment centres, and this is proposed to be reviewed and consolidated into a new framework which also considers the matters discussed in this chapter.

4.3.1 Cockburn Central East

It has been identified that Cockburn Central East should be integrated with Cockburn Central to form a Strategic Metropolitan Centre by 2026.

This is based upon the clear opportunity that exists for office, commercial and light industrial space within both Cockburn Central and Cockburn Central East to meet the demands of a growing population and significant employment area within the Sub-region.

The role of Cockburn Central East would be focused towards a diverse range of commercial services and/or light industrial rather than retail. This is because this will provide the best opportunities to deliver the employment opportunities that will be required to meet the City's self-sufficiency targets. On this basis, Cockburn Central East could provide employment land capacity for a large proportion of the additional 40,000 local economy jobs by 2036.

The strategic intent for the Cockburn Central activity centre is for retail uses to be focused west of the freeway, with no identified demand for another retail centre.

4.3.2 Jandakot Airport Specialised Centre

Jandakot Airport Industrial Centre or 'Jandakot City' is identified as a specialised centre in State Planning Policy No. 4.2 'Activity Centres for Perth and Peel' (SPP 4.2).

It is comprised of 195 ha of the airport identified for non-aviation uses (mixed business), within the area reserved 'Public Purposes - Commonwealth Government' under TPS3. The area is subject to Commonwealth legislation.

Jandakot Airport Holdings Pty Ltd, as the operator of a leased federal airport, is required under the *Airports Act 1996* to prepare a Master Plan every 5 years. The Master Plan is a 20-year strategic vision for the airport that details how Jandakot Airport will be developed and operated.

The Jandakot Airport Master Plan (2014) projects the following land uses and proportion of total land area:

- Conservation - 119 hectares (19%) which includes 4 km² of Banksia Woodlands;
- Aviation Operations (includes runways and taxiways) - 260 ha (42%);
- Mixed Business - 195 ha (31%); and
- Roads and Services - 48 ha (8%).

The growth in aviation infrastructure will be undertaken in parallel with increased commercial activity to sustain the economic future of the

airport. The development of non-aviation land is critical to the future delivery of aviation and environmental outcomes on the airport as it provides a strategic diversity of income to secure the sustainability of the airport.

It is envisaged that ultimate non-aviation development of Jandakot Airport will occur within the 20 year period of the current Master Plan (to 2034), and will accommodate approximately 767,000m^2 of non-aviation floor space, comprising 560,000m^2 of warehouse, 140,000 square metres of manufacturing, 61,848m^2 of office and 5,000m^2 of retail (already constructed) floor space.

Upon this ultimate development it is expected that there will be approximately 7,100 employees associated with non-aviation development of Jandakot Airport. This will further strengthen the role of this area as important strategic employment area for the City of Cockburn.

4.3.3 Western Trade Coast

The Western Trade Coast (WTC) was established in 2011 and is the primary heavy industrial area within the Perth metropolitan area. It includes land within the Cities of Cockburn, Kwinana and Rockingham.

The WTC is the most important heavy industrial area in the state, and it is a significant contributor to the State's economy and a major employer in the Perth metropolitan area.

The WTC incorporates nearby industrial estates including the Kwinana Industrial Area (KIA) core area, Rockingham Industry Zone (RIZ), Latitude 32, and the AMC. A number of projects and initiatives are being progressed, which will see the importance of the WTC continue to grow.

Rural zoned land at the periphery of the Western Trade Coast should be the subject of ongoing monitoring and consideration in accordance with Government's strategic objectives and appropriate land use transitionary arrangements as per State Planning Policy 4.1 'Industrial Interface'.

Fremantle Outer Harbour – Westport

The long-term development of an efficient, well serviced marine harbour backed by effective infrastructure, well-connected to the surrounding metropolitan area and State is seen as critical to the development of Perth as a competitive, liveable and global city.

Fremantle has serviced WA's trade needs for more than 120 years, however as the population and industries continue to grow, freight demands are also growing. It has been determined that the Fremantle Inner Harbour footprint has limited capacity for growth and in the near future major freight routes into Fremantle Port will reach capacity.

The Westport Taskforce (Westport) was established by the State Government in September 2017 to develop a plan to manage the growing freight demands of Perth and surrounding regions for the next 50 years and beyond, to future-proof Perth's freight network.

The planning is based on the following assumptions:

- 50-year timeframe
- A population of around five million people
- Strong, diversified economy
- Trade task five times larger

In August 2020, the State Government announced a new land-backed port at Kwinana as the location for WA's future container port.

Westport have advised that this location was selected for the following reasons:

- Kwinana is the State's primary heavy industrial precinct, away from the suburbs and commuter traffic;
- It already supports a busy bulk freight port, servicing imports and exports of alumina, grain, fuel and more;

- It has capacity for an integrated road and rail network to connect logistics hubs, including capacity to:
    - build a new, deeper channel
    - new land-backed berths
    - attract larger, more efficient ships.

The proposed construction will be timed to meet demand, with the potential for the transition to be handled in two ways:

- Two ports operating initially – Fremantle and Kwinana – sharing the container freight task; or
- shift the freight task from Fremantle to Kwinana in one movement.

Westport's next steps focus on delivering the following information:

- Development of a detailed business case
- Commencement of rigorous environmental assessments
- Implementing environmental monitoring
- Investigating land use impacts, corridor protection, planning strategies and costs around Kwinana
- Stakeholder engagement (e.g. industry, Aboriginal people, community)

For the WTC and Westport the City will:

- Advocate for the protection of the supporting infrastructure needs for Rowley Road as the primary east west access to Latitude 32; the RAV 7 network for Latitude 32; and the delivery of the Fremantle-Rockingham Controlled Access Highway.
- Advocate for a strategic approach to transition and delivery of the WTC and the port, which will require the involvement of a range of stakeholders.
- Advocate for a governance framework setting out a clear approach to define the WTC and the port and to guide land use and strategic intent.
- Identify an implementation framework to identify what needs to occur and locate in the area in order to transition the port out of Fremantle to the new location.
- Promote an industrial ecosystem (industry and the environment).
- Explore the role and further advocacy matters for the WTC through the Economic Development Framework.

Australian Marine Complex

The Australian Marine Complex (AMC) in Henderson contains more than 150 businesses and services the marine, defence force and resource industries through manufacturing, fabrication, assembly, maintenance and technology development. The AMC has created more than 37,000 jobs since opening in 2003.

Given its importance, there is a need to protect the integrity of the AMC for strategic industry by zoning it 'Strategic Industry' whilst providing flexibility for a limited range of alternative and complementary uses where they are appropriately located and demonstrate adaptability to accommodate uses in line with the objectives of the zone.

This will provide for a degree of specialisation but not to the extent that it constrains any other complementary development which realistically needs to be enabled in response to changing economic conditions.

Latitude 32

Cockburn plays a significant role in the South Metropolitan Sub-region in terms of its traded economy employment. Protecting strategic employment land is in the interest of both the City and the Sub-region to continue to provide the Sub-region with adequate employment lands for an additional 17,000 traded jobs in Cockburn.

Latitude 32 has a role to play in providing land for strategic traded industries, particularly providing linkages with manufacturing and water transport clusters.

It is important to note that the City does not have planning control in this area, and the *Hope Valley Wattleup Redevelopment Act 2000* specifies a number of functions to the Western Australian Land Authority including that of planning, undertaking, promoting and coordinating the development and redevelopment of land in this area. In this area, all other planning schemes are repealed by this Act.

4.4 Industrial areas

The City's industrial areas/strategic employment centres will play a key role in developing the City's prosperity and local job opportunities, and are therefore the City's key employment areas.

During times of economic uncertainty, the availability of industrial land and infrastructure is important in order to encourage new industries to develop. An adequate supply of appropriately serviced industrial land can assist in staving off the effects of economic slowdown, and improve confidence in any industrialised economy[27].

Planning for industrial land is challenging. In the first instance this is because industrial land use activities are diverse and varied, and through technological advancement and innovation, are changing rapidly in nature.

However, one of the greatest challenges is that the need for industrial land is derived from unpredictable economic cycles, which makes it difficult for planning frameworks to respond.

The Department of Planning, Lands and Heritage (DPLH) *Economic and Employment Lands Strategy: non-heavy industrial Perth metropolitan and Peel Regions* (2012) recognised this and advocated for an intuitive and responsive planning framework that factors in flexibility to accommodate this constantly changing environment.

In order to do that, there are a number of key land use planning issues that require addressing to ensure the City's industrial areas are resilient and robust to maximise their contribution to the local economy and jobs. These are discussed in the following sub-sections.

4.4.1 Non-industrial uses

There has been an increasing trend of non-industrial uses in industrial zones in the Perth metropolitan area. This includes gyms, places of worship, and indoor sport and recreation uses which can be difficult to locate in other areas due to land use and operational requirements. However, it is critical that these uses do not prejudice the availability of land for future industrial uses in industrial zones.

Non-industrial uses also have the potential to sterilise adjacent landholdings which is highly undesirable, given the primary purpose of these areas is to accommodate industrial uses. Often these uses also generate less employment opportunities, and the City's industrial areas are critical as employment lands.

It is also important that industrial zones do not accommodate uses which are primarily oriented to retail sales and which are more appropriately located in centres. This is because allowing these uses in industrial areas has the potential to compromise the viability of centres which is undesirable.

In some circumstances, non-industrial uses can complement the operating hours of industrial uses, allowing for shared parking arrangements. They can also be uses that add amenity to industrial areas for employees and visitors. However, these types of arrangements based on particular uses and businesses can restrict and jeopardise future uses.

Therefore, industrial developments that are designed around specific uses and hours of operation require careful consideration to demonstrate future adaptability to ensure the arrangements do not jeopardise future uses and sterilise industrial areas.

[27] Department of Planning, Lands and Heritage (2012) Economic and Employment Lands Strategy: non-heavy industrial Perth metropolitan and Peel regions

In this regard, guidance within the local planning framework is required to:

- Identify priority industrial land for where industrial uses should be prioritised, and non-industrial uses restricted or controlled.
- Provide opportunities for non-industrial land uses where appropriate, including to support industrial areas where they will not compromise the long-term use of the land for industrial purposes, and create a framework for considering non-industrial land uses within industrial areas.
- Provide guidance around what is deemed to be adaptable development to ensure industrial areas are future-proofed.
- Provide guidance to future-proof the City's industrial areas by ensuring developments do not compromise adjacent and future uses; safe movement of vehicles; and attractive streetscapes.

These actions align with the DPLH *Economic and Employment Lands Strategy: non-heavy industrial Perth metropolitan and Peel regions* (2012).

4.4.2 Subdivision

Fragmentation of industrial land, through subdivision or strata subdivision can threaten the adaptability of industrial areas and developments.

In some cases, larger lots are being further subdivided into smaller more affordable lot sizes and inappropriate uses are being allowed in industrial areas, in the absence of any industrial land use guidelines stipulating otherwise.

Once land has been subdivided this constrains future land use and development which undermines the future-proofing of industrial areas. Of particular note this is undesirable within the AMC and other priority employment areas.

The local planning framework is to include guidance for considering subdivision/strata of industrial land to ensure that fragmentation of land and/or strata titling of buildings does not compromise the ability of industrial areas to adapt over time.

4.4.3 Parking and access

The City's *Parking Plan* identified parking issues within some of the City's industrial areas, and it is an issue that threatens the functionality and adaptability of these areas.

Historically, the parking requirements for industrial uses have varied for each use, with considerable differences in the rates. For example, the required rate for 'warehouse' uses has been very low. In this regard, speculative warehouse developments built with low rates of parking have created developments with limited adaptability which is undesirable when seeking to create resilient industrial areas.

It is critical that parking provision is not disproportionate to the building and/or scale of development in a manner that unreasonably restricts a range of other appropriate uses in the future.

Under-provision of parking can undermine the robustness of the City's industrial areas, and the local planning framework will need to determine appropriate parking rates to create resilient and adaptable industrial developments and precincts.

Inadequate crossovers and access arrangements can threaten the robustness and adaptability of industrial areas. It is imperative that these arrangements, including tenure arrangements, do not only respond to specific business needs, but also demonstrate adaptability to be suitable for other uses to future-proof industrial areas.

In this regard, the local planning framework will identify appropriate parking and access guidance for industrial developments to ensure safe and functional vehicle movements can be facilitated over time, including appropriate parking rates within the new Scheme. This will include exploration of the appropriateness of cash-in-lieu. (see also *15. Local Planning Framework Guidance*)

4.4.4 Industrial area amenity

High quality, well-designed, attractive and accessible industrial areas attract investment and provide amenity for employees and visitors.

In order to achieve high quality industrial areas, the intended future character of industrial areas will be identified through the local planning framework, and measures identified to achieve this.

An important consideration is the requirements for vehicle access and parking to ensure they do not negatively impact on the safety or appearance of streetscapes.

Measures should be identified to enhance the streetscapes within industrial areas to improve their appearance and make them more walkable.

Opportunities will also be explored for public open space within or accessible from industrial areas to improve the amenity of these areas.

Industrial areas also provide an opportunity to contribute to increasing tree canopy to reduce the heat island effect across the City, increasing the City's climate change resilience. These opportunities should be maximised.

There is an identified potential need for a future local centre within Latitude 32 that would serve employees within that area. There is also a potential future additional neighbourhood centre in the north-west of the City, and while that would primarily be needed to support population growth in that area it would also support industrial/employment areas.

4.4.5 Accessibility and public transport

The City's industrial areas are not currently well-serviced by public transport and the City will continue to advocate for improved services to employment areas. This includes the east-west transit link.

This is considered critical to improve equitable access to employment areas; support employment self-sufficiency targets; and to provide for a genuine transport mode shift to active transport modes to manage projected future traffic congestion.

Providing improvements to walkability and cycling connections to and within industrial areas will also be important to support this mode shift.

4.4.6 Industrial Investigation Areas

Perth and Peel @3.5 million identifies three industrial investigation areas within the City of Cockburn, as follows:

- Jandakot Industrial Investigation Area
- Wattleup Industrial Investigation Area (see 14.3.1)
- Munster Industrial Investigation Area (see 14.1.3)

Jandakot Industrial Investigation Area – Planning Area C

The Jandakot Industrial Investigation Area is identified as 'Planning Area C'. This area is zoned 'Rural – Water Protection' under the MRS but was used as a sand quarry and largely cleared of vegetation in the 1990s, with the exception of the northern area of approximately 13ha which is Bush Forever site 388.

The cleared area has been the subject of an additional use allowing for masonry production and a range of commercial uses with a low risk of polluting the Jandakot Groundwater Mound. In 2018, the zoning for this area was updated through Amendment No. 112 to TPS3, including an extensive range of requirements to address groundwater protection, environmental issues, interfaces, buffers, and road upgrades.

To take advantage of the site's location near the Jandakot Specialised Activity Centre and respond to the historical land uses and planning framework, it is appropriate to continue to allow this area to provide for a range of commercial uses on lots of a minimum of 2ha that do not have a negative impact on the groundwater mound, environmental values, and surrounding character and amenity.

Part 1 includes Planning Directions and Actions for this area.

4.5 Activity Centres

The City's network of activity centres will be a key focal point for commercial and social activity, and the delivery of services to residents living nearby. Importantly they will continue to provide for local jobs within communities. This will allow more people to live closer to where they work with the aim of reducing overall commuting distances.

This is another reason to protect and support the City's network of centres. In this regard, prioritising the location of appropriate employment generating uses within centres is important to support the viability of centres. This will also maximise the use of, and add value to existing infrastructure, including transport, community/ social and service infrastructure. It will also provide opportunities for new infrastructure and investment in centres to derive the greatest value-add and community benefit.

Actions to improve connectivity and accessibility to these centres will be important to reduce vehicle trips, and promote the mode shift to active transport.

As part of the preparation of Local Area Plans the City will identify opportunities to support centres which will help their role in delivering local employment opportunities, including:

- Improving accessibility and connections
- Improving safety and security
- Supporting Activity Centres to become hubs for the community

(See also *3.3.8 Improving liveability in established suburbs'*)

The employment allocation modelling indicates potential for expansion of strategic employment at Cockburn Central, Phoenix and the future Cockburn Coast District Centre. These centres are appropriately located in the activity centre hierarchy to develop a diverse and sophisticated range of employment industries based around servicing broader population-driven demands and integration within supply chains providing goods and services to external markets.

The City will prepare a framework for considering uses within activity centres which takes into consideration the employment generating potential.

(see also *5.0 Centres and retail)*

4.6 Working from home/home business

Between 2013 and 2018 there were 996 new businesses in the City of Cockburn, and 75 per cent were on residential zoned land.

Working from home and home-based businesses provide the opportunity to remove or reduce the need to commute to work. This can reduce costs of living and reduce traffic, in addition to numerous other benefits.

There is likely to be a trend of more people working from home some days of the week, and more people in the suburbs during the day. This could mean more demand for local services, cafes and places to meet etc. which could help support the City's centres, particularly smaller suburban centres.

The City will look at ways to support this, including opportunities to transition parks to 'urban spaces' within or adjacent to the centres.

Home-based businesses and occupations may involve deliveries or customers coming to the house, resulting in the need for on-site parking. Pursuant to the Deemed Provisions home occupations and home based-businesses are defined, and this ensures the scale is typically appropriate for a residential setting.

However, it is important to ensure that the range of non-residential uses that are permissible within the 'Residential' zone is compatible with residential amenity and character. This typically means that commercial uses should be limited to protect that amenity and character as a priority.

4.7 High quality urban environment

To attract more people to live, work, and invest, in Cockburn it will be important to create a high quality and liveable urban environment. In this regard, this Strategy identifies a wide range of aspirations and mechanisms to improve the City's liveability.

For residential areas, this includes:

- Identification of future intended character and measures to strengthen that character;
- Provision of high quality public open space that meets recreational and leisure needs, but also public spaces within proximity to activity centres to transition to urban parks and meeting places;
- Community facilities and infrastructure that support the health and well-being of residents; and
- High levels of accessibility.

For activity centres, this includes:

- High quality built form that responds to local context;
- Mix of uses to meet the needs of the community;
- Provision of quality public realm that meets the recreational and leisure needs of the community.
- Good connectivity to the surrounding area.

Economy and Employment Issues and Analysis

The City will be proactively considering economic development opportunities by preparing an Economic Development Framework.

Employment land requires protection through the planning framework to maximise economic benefit and job creation, and to meet self-sufficiency targets, and this includes:

- *Identifying priority industrial land where non-industrial uses are restricted or controlled.*
- *Guidance for considering subdivision/strata of industrial land to ensure that fragmentation of land and/or strata titling of buildings does not compromise the ability of industrial areas to adapt over time.*
- *Guidance to future-proof industrial areas by ensuring developments do not compromise adjacent and future uses; parking; safe movement of vehicles; and attractive streetscapes.*
- *Protection of the integrity of the Australian Marine Complex for strategic industry whilst providing flexibility for a limited range of alternative and complementary uses.*

Cockburn Central East will be focused towards a diverse range of commercial services and/or light industrial rather than retail. On this basis it could provide employment land capacity to meet the needs of the population and contribute to employment self-sufficiency.

The local planning framework will identify and support an appropriate range and scale of home-based business opportunities whilst protecting residential amenity and character.

The City's network of centres needs to be protected and supported to provide accessible local employment opportunities.

5. Centres and retail

Activity centres perform a variety of roles and functions in the community. They are places to combine employment and retail functions with education hubs, business services and health and community services whilst providing distinctive places to meet and socially interact.

Across the City there is a range of activity centres ranging from small local centres to Cockburn Central. These centres are at varying stages of their maturity, with many needing to evolve over time to meet the needs of the community and function more as community focal points.

It is critical to plan and support a robust network of activity centres that meet the needs of the community, support population growth, enhance liveability and provide local employment opportunities.

A successful network of centres is:

- Distributed to meet the needs of the community;
- Well-connected and easy to move around for pedestrians and bike riders;
- Designed to support community connections;
- Designed to have a mix of uses to meet the needs of the community appropriate to their hierarchy level;
- Well-designed with high levels of amenity to meet the needs of all users;
- Appropriately interfaced with the surrounding area;
- Designed to contribute positively to identified neighbourhood character; and
- Designed to be robust and adaptable so that they can evolve over time.

State Planning Policy 4.2 Activity Centres (SPP 4.2) was updated in July 2023 and its main purpose is to specify broad planning requirements for the planning and development of new activity centres, and the redevelopment and renewal of existing centres.

5.1 Centre hierarchy

The core aim of Perth's activity centre hierarchy is to achieve the optimum distribution of activity centres to meet community needs by enabling employment, goods and services to be accessed efficiently and equitably. The hierarchy also provides certainty for public and private investment in activity centres.

The City's highest order activity centre is Cockburn Central, which is a Secondary Centre.

Phoenix District Centre is the only established District Centre, with another proposed in Cockburn Coast. There are ten Neighbourhood Centres and 26 Local Centres located throughout the City.

Council adopted the City of Cockburn *Local Commercial and Activity Centres Strategy* (LCACS) in 2012 and it sets the strategic vision and framework to guide the planning and development of the City's activity centres and to guide planning for the City's strategic employment centres.

The LCACS sets out the activity centre hierarchy, and this has been reviewed as part of the preparation of this Strategy. It has been determined that this hierarchy is largely still relevant, and will meet the needs of the community both in terms of functionality and distribution, with the exception of the following:

1. *Proposed elevation of Cockburn Central from a Secondary Centre to a Strategic Metropolitan Centre.*
2. *Potential future need for an additional neighbourhood centre to service the high growth eastern corridor of the City.*
3. *Potential additional centre within Latitude 32.*

These are discussed in further detail in the following sections.

All commercial development within the City is to be cognisant of this hierarchy. To protect the hierarchy of centres, the City will further articulate their role, function and growth expectations through an updated LCACS. This will include a framework for considering uses within these centres. The table below sets out the neighbourhood centres and higher, and Appendix B shows all activity centres, including local centres.

ACTIVITY CENTRE HIERARCHY
Secondary Centre
Cockburn Central Regional Centre *(proposed elevation to Strategic Metropolitan Centre)*
District Centres
Phoenix District Centre
Cockburn Coast *
Neighbourhood Centres
Barrington Street Neighbourhood Centre
Coolbellup Neighbourhood Centre
Hamilton Hill Neighbourhood Centre
Harvest Lakes Neighbourhood Centre
Lakes Neighbourhood Centre
Yangebup/Beeliar Neighbourhood Centre
Port Coogee Marina Neighbourhood Centre
Russell Road Neighbourhood Centre
Hammond Park Neighbourhood Centre
Treeby Neighbourhood Centre
Potential additional Centre north east – location to be determined.
Potential additional Local Centre within Latitude 32 – location to be determined.
****Proposed centre***

Appendix C sets out the floorspace needs for each centre, as required by SPP 4.2.

5.1.1 Potential additional local/neighbourhood centre - north east

Preliminary analysis has identified the potential future demand for a local/neighbourhood centre to service the future population in the eastern corridor of the City.

An additional centre in the north-east will need to be justified through a Needs Assessment, demonstrating whether a new centre is required and whether this be designated as a Local or Neighbourhood Centre. Any additional centre will need to respond to the needs of the community without negatively impacting the City's hierarchy of centres.

LCACS will explore this need further, including investigating potential location options, identifying criteria for urban design outcomes, and identifying potential population triggers.

The expectation would be for a future centre to be created as a well-connected hub for the community, and to support employment areas, not just a car-based destination for retail uses.

5.1.2 Potential local/neighbourhood centre – Latitude 32

Latitude 32 has a role to play in providing land for strategic traded industries, particularly providing linkages with manufacturing and water transport

clusters. Given this, preliminary analysis indicates this may generate demand for an additional centre within Latitude 32, and the review of LCACS will explore this need and potential locations in further detail, including through the preparation of a Needs Assessment. This is likely to be a local centre, and will be based on the density of employment in this area.

5.2 Secondary Centre

Cockburn Central is the City's only Secondary Centre, and contains the largest amount of retail floorspace in the City. Population growth has had a direct impact on Cockburn Central and further change is expected as the City's population grows. Cockburn Central has been identified as 'Planning Area H: Cockburn Central Activity Centre', and Part 1 sets out Planning Directions and Actions for this area.

Over the last decade, centres of activity and influence have shifted with the concentration of populations creating a new core of population surrounding Cockburn Central, straddling the Kwinana Freeway and Perth-Mandurah Railway.

Council's vision is for Cockburn Central to be positioned as a Strategic Metropolitan Centre and the most influential Activity Centre in the South West Metropolitan Sub-Region by 2031. In this regard a key difference between a Secondary Centre and a Strategic Metropolitan Centre is that a Secondary Centre is more likely to be a Sub-regional employment node for higher order population driven employment, whereas the latter provides for high quality strategic employment.

Currently, Cockburn Central's employment is driven by the local population and is generally service-based so there is a need to continue to attract strategic employment to ensure the continual evolution of the Centre. An opportunity exists for clusters of office and commercial space within the activity centre to meet this objective given the quality urban environment planned for the precinct.

SPP 4.2 suggests that for Cockburn Central to be elevated to a Strategic Metropolitan Centre, the future indicative population within the trade area is required to be between 150,000 and 300,000 persons. Updated population statistics and forecasting since the publication of the *Cockburn Central Activity Centre Strategy* in 2015 suggest Cockburn Central's main trade area had a trade area population of approximately 244,000 in 2016, with a secondary trade area population of approximately 163,000.

The main and secondary trade areas are projected to have a residential population of approximately 390,000 and 258,000, respectively by 2036 (see Figure 21). The population growth in main trade area translates to a retail floorspace to population ratio of 0.23m^2 NLA per resident to 0.18m^2 NLA per resident, assuming no changes in retail floorspace supply over the next 15 years. This further strengthens the argument to elevate Cockburn Central to a Strategic Metropolitan Centre and confirms the strategic intent of this important activity centre.

On the basis of the projected population outlined in Figure 22, Cockburn Central has the potential to be elevated to a strategic metropolitan centre. The projected main trade area population is 280,000 residents by 2021 and 390,000 by 2036. Furthermore, the potential integration of Cockburn Central East into the Strategic Metropolitan Centre as soon as 2021 will support the activity centre with strategic employment.

The core area of the activity centre encompasses land located within the 800m catchment of the Cockburn Central Train Station, east of the Kwinana Freeway (see Figure 20). The role of Cockburn Central East would be focused towards a diverse range of commercial services and/or light industrial rather than retail, and on this basis, provide employment within the centre. This will provide for high-quality strategic employment to support elevation of the centre to a Strategic Metropolitan Centre, and will contribute substantially to the City's employment targets.

The role of Cockburn Central West will be focused on delivering complementary uses to the

town centre including high density residential (with targets identified), development, offices, education and government offices, integrated with regional recreational aspirations.

This proposed change to the status of Cockburn Central Activity Centre will require approval from the WAPC through amendment to the Perth and Peel @3.5 Million Frameworks. This will require consideration of the SPP 4.2 policy measures around proposals seeking to elevate centres in the hierarchy, including analysis of centres in the South Metropolitan Peel Sub-regional planning framework, a Needs Assessment, further detailed examination of population forecasts, and meeting the objectives and outcomes of the Perth and Peel @3.5million Frameworks and SPP 4.2.

Area		
1	Mandurah	800 ha
2	Rockingham	600 ha
3	Joondalup	475 ha
4	Stirling	360 ha
5	**Cockburn**	**360 ha**
6	Morley	220 ha
7	Cannington	200 ha
8	Midland	180 ha
9	Yanchep	106 ha
10	Fremantle	100 ha
11	Armadale	85 ha

Future Population		
1	Rockingham	36,000
2	Stirling	25,000
3	Cannington	25,000
4	Joondalup	18,000
5	Fremantle	~15,000
6	Midland	14,000
7	**Cockburn**	**13,000**
8	Morley	12,000
9	Mandurah	~8,000
10	Armadale	6,000
11	Yanchep	5,500

Catchment Population		
1	Joondalup	350,000
2	Cannington	280,000
3	**Cockburn**	**280,000**
4	Midland	270,000
5	Rockingham	130,000
6	Armadale	120,000
7	Mandurah	110,000

Employment (jobs)		
1	Joondalup	17,000
2	Fremantle	8,500
3	**Cockburn**	**8,500**
4	Morley	5,000
5	Cannington	5,000
6	Armadale	3,000
7	Yanchep	0

Within the Cockburn Central Activity Centre the Gateways Retail Precinct provides the focus for retail uses and has a significant impact on the public realmThe Gateways Retail Precinct, given its location adjacent to the Kwinana Freeway, is an important gateway site both for access into the activity centre and for visual connections for passing trade. The continual expansion of the retail offer is a key strength for the activity centre; however a key focus is how the shopping centre better connects with its surroundings and contributes to a vibrant activity centre core.

The City will also liaise with the Department of Education to consider the future educational needs of the Core of the Cockburn Central Activity Centre; particularly as they relate to Primary Education.

Figure 19. Cockburn Central Activity Centre core and frame area

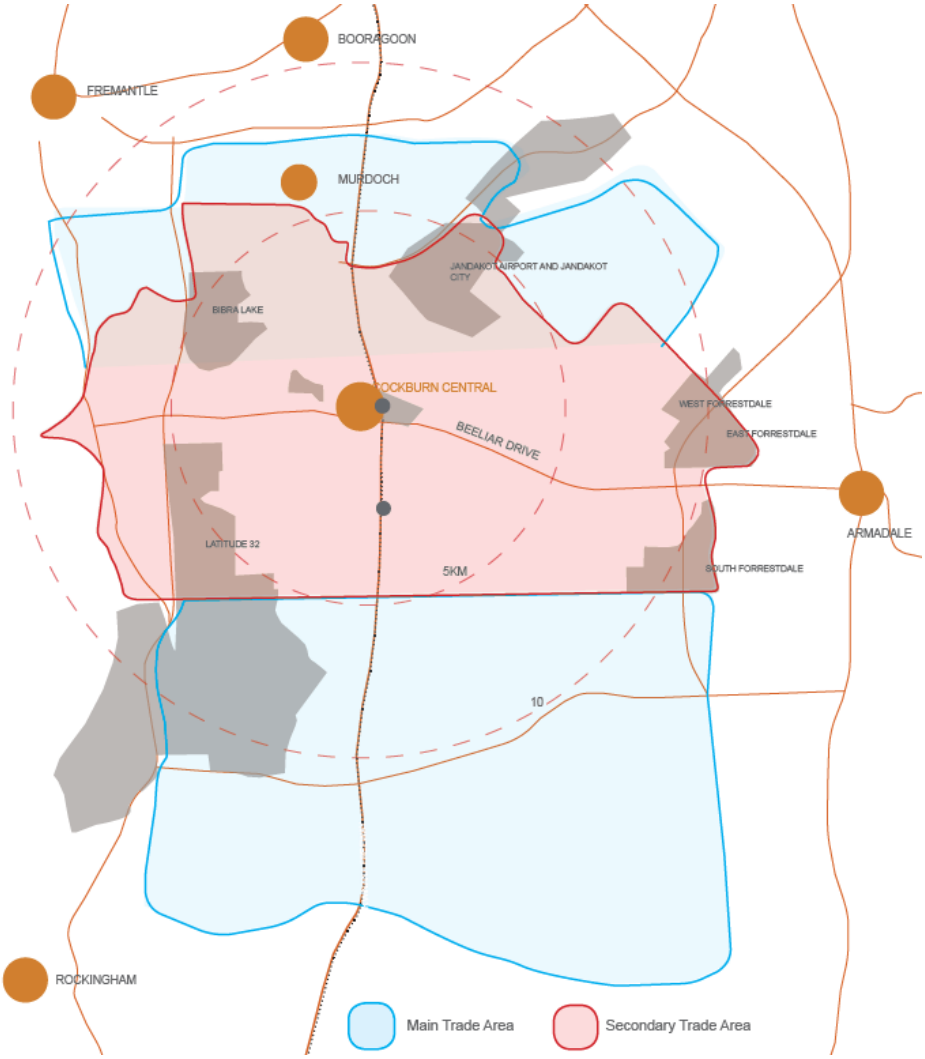


Figure 20. Cockburn Central Main and Secondary Trade Area

Figure 21. Cockburn Central Primary and Secondary Traded (Source Department of Planning Lands and Heritage Western Australia Tomorrow Population Forecasts 2018; Forecast id 2020

5.3 District Centres

5.3.1 Phoenix Activity Centre

The Spearwood Activity Centre (also referred to as the 'Phoenix Centre') has been designated within SPP 4.2 as a District Centre. It is the City of Cockburn's second largest centre with 28,000m^2 of retail floor space, and many other associated commercial uses.

Spearwood Activity Centre has been identified as 'Planning Area I: Phoenix/Spearwood District Centre', and Part 1 sets out Planning Directions and Actions for this area. There is a proposed district centre identified for Cockburn Coast. This will be important to meet the needs of the catchment of this area, but also to help achieve the vision set out in the Cockburn Coast District Structure Plans and standard structure plans to create a vibrant and mixed use urban environment with high levels of amenity.

There has been a considerable amount of strategic planning work completed for the Phoenix District Centre. The *Phoenix Revitalisation Strategy* was adopted by Council in 2009. In line with the recommendations of the Revitalisation Strategy, there has been an increase to the residential densities within the 800m catchment around the centre, rezoning of a new 'Mixed Use' area, and numerous improvements to the public realm.

There is capacity for the Phoenix Shopping Centre to undergo refurbishment and possible expansion in the future. The new 'Mixed Use' zoning in the activity centre is likely to generate new land uses and development proposals. The *Phoenix Revitalisation Strategy* identified the need for improvements to movement and connectivity in the area to improve the performance of the centre.

An Activity Centre Structure Plan has been adopted for the centre to further address these issues and to guide development. This will be updated and consolidated into a Precinct Structure Plan.

The Activity Centre Structure Plan determined that the Phoenix Activity Centre has the 6.63 ha of land required to meet the employment target of 1,393 jobs by 2031 (a 369 shortfall). LCACS identifies the anticipated market potential of Office Business activity – this anticipates a significant increase in knowledge intensive consumer services (KICS) office uses for the Phoenix Activity Centre (e.g. accountants, real estate agents etc.). This will strengthen the centre's move from a population driven centre to a diverse population driven centre.

The City will continue to implement the public realm improvements for the Phoenix Activity Centre, including the major upgrade of Rockingham Road to transform it into a pedestrian-friendly town centre boulevard and support its transition to a hub for the community. The City will also continue to work with the landowner/centre owners to promote the regeneration of the centre.

5.3.2 Cockburn Coast District Centre

Perth and Peel @3.5millon and SPP 4.2 'Activity Centres for Perth and Peel' identified an emerging district centre for Cockburn Coast.

The district and local structure planning for this area has always included a district centre. This centre will be important to meet the needs of the catchment but will also help achieve the vision to create a vibrant, high density mixed use urban environment with high levels of amenity.

The future of the South Fremantle Power Station site is critical as it will be a huge influence on the regional status of Cockburn Coast as a place to visit and recreate. The district structure planning identifies the Power Station as the primary and ultimate employment hub for Cockburn Coast. It will be an important commercial, recreation and prime visitor destination.

The Power Station Activity Centre will provide a range of opportunities relating to recreation, entertainment and tourism. It is the preferred site for a hotel or short stay accommodation.

It is expected that there is a strong element of public access and community use as a key part of any adaptive reuse proposal for the South Fremantle Power Station building and site.

The district and local structure planning has been premised on the delivery of a high frequency, high quality public transit system within this area, connecting it to Fremantle and Cockburn Central. A range of studies and projects have previously investigated high frequency transit links in relation to Cockburn Coast and the east-west transit link, demonstrating the merits. Further work is required to determine the appropriate alignment between Cockburn Coast and Cockburn Central, and the appropriate mode type. (see also 12.3.1)

This area has been identified as 'Planning Area J: Cockburn Coast District Centre', and Part 1 sets out Planning Directions and Actions for this area.

5.4 Neighbourhood and Local Centres

There are ten Neighbourhood Centres and 26 Local Centres located throughout the City. This network of neighbourhood centres is adequately distributed to service the City's residential communities to ensure the majority of residents have good accessibility to shops and services.

It is projected that population growth will create demand for growth of existing centres. This potential already exists, with many neighbourhood centres currently underperforming. This means that no additional neighbourhood centres are required based on current residential zoned land, including within structure plan areas.

The following actions will support the role of neighbourhood centres and their ability to adapt to meet increased demand:

Principle	Action
Focusing commercial uses in centres by not supporting out of centre development	Restrict uses which are primarily oriented to retail sales outside Commercial zones.
Improve accessibility to centres	Preparation of Local Area Plans to identify improvements to pedestrian and cycling connection to centres.
Improve the functionality and urban design of centres	Preparation of Local Area Plans to improve the public realm of centres; identify POS that can transition; and preparation of a framework setting out design guidance for centres to improve urban design outcomes and mix of uses. Standard structure plans and precinct structure plans to respond to these issues.

The majority of the City's local and neighbourhood centres were built to meet the needs of a growing low density suburban residential community in a car-based era. This meant provision of ample parking that was highly visible, resulting in built form setback from the road.

The purpose of these centres is to meet the daily or weekly needs of the community, however changing shopping patterns and the closure of anchor supermarkets and grocery stores has negatively impacted the viability of these centres and affected their role.

The City has undertaken extensive community engagement through revitalisation strategies which identified that some of these centres are below community expectation.

These smaller centres need to adapt to meet the needs of today's communities, with the following elements critical:

1. *Role as a community hub which means*:
    - High levels of amenity
    - Role as a meeting place, such as cafes, public spaces, seating, high quality landscaping

2. *Better integration with the fabric of neighbourhoods by:*
    - Improving pedestrian and cycling accessibility
    - Improving safety
    - More trees to contribute to green leafy neighbourhood character
    - Reflecting the uniqueness of its context and contributing to a unique sense of place

In considering how these centres could be enhanced, it is important to acknowledge that there is a significant difference between the traditional main street neighbourhood centres seen in pre-1950s suburbs, and the car-based centres that are predominate throughout Cockburn, as set out below:

Traditional centres vs car-based centres

Traditional centres	Car-based centres
Designed to be accessed by pedestrians	Designed to be accessed by car
Built form addressing the street creating visual interest and surveillance	Built form setback from the street separated from the public realm
Active ground floors	Enclosed internalised design not providing surveillance
Signage generally integrated into buildings	Freestanding signage often required to provide visibility

Revitalising these car-based centres presents a greater challenge because:

- They were typically designed to prioritise access by car and retrofitting for pedestrians often requires more than just footpath improvements, with improved connectivity usually needed within the site.
- Limited interface with the public realm can reduce the impact that public realm improvements can make.
- The built form often does not lend itself to renovation and may require major reconfiguration to adapt.
- Fragmented landownership and common property can mean a lack of ownership of common areas such as parking and landscaping which can become neglected.

The City can contribute to this transition through improvements to the public realm, including footpaths, wayfinding and street trees. However, it is important to note that enhancing the public realm adjacent to a centre does not have as much of an impact as it does on a main street because of the significant area of privately owned land typically in the form of car parking. Therefore, if the City is going to invest in public realm improvements it will be critical that this is undertaken in partnership with businesses and landowners undertaking on-site private realm improvements to secure maximum community benefit.

Local Area Plans will examine centres and identify ways to rejuvenate local and neighbourhood centres, including public domain upgrades to improve their appearance, safety, accessibility.

The Simms Road Neighbourhood Centre, Hamilton Hill is an example of successful public realm upgrade that has rejuvenated this neighbourhood centre, making it safer for pedestrians and giving it a unique sense of place.

A framework will be created to guide land uses within centres to facilitate an appropriate range and mix of land uses; and to identify urban design and connectivity outcomes to ensure these centres contribute positively to neighbourhood character.

As part of this, careful consideration of the permissibility of residential land uses in centres/commercial zones is required. Under TPS3 grouped and multiple dwellings were permissible uses within the district and local centre zones. This created development pressure, particularly in smaller centres, to develop whole centres, or large portions of centres for residential development. This pressure arises when the current to short term demand for commercial and retail floorspace does not warrant the immediate development of the land for these uses. This phenomenon

threatens the ability of future residents to access goods and services.

In this regard residential uses should not be 'P' (permitted) uses in the commercial zone, and guidance is required regarding how discretion will be exercised in relation to residential uses.

Restricting out-of-centre development and restricting commercial uses in the 'Residential' zone will also assist in supporting the role and viability of centres to benefit local communities.

5.4.1 Supporting centre evolution

It is recognised that supporting the transition and evolution of centres may require flexibility for pop-up uses and other elements that support amenity such as parklets. The City will investigate these opportunities through LCACS and the local planning framework to ensure they are managed appropriately, particularly to ensure there are no negative impacts on residential character and amenity.

5.4.2 Small local centres

Across the City there are a number of small local centres (zoned 'Local Centre' under TPS3) that are typically comprised of one lot that is less than 3,000m^2.

In the past smaller local centres often functioned as a corner store to meet the needs of a small catchment, and often accommodated convenience retailing. Other examples accommodate particular businesses or commercial uses.

Over the past 20 years as shopping trends have changed, a number of TPS3 'Local Centre' sites have been developed for residential uses, particularly given that TPS3 allowed grouped dwellings as a 'P' use (with a coding of R60 applicable).

Consideration is now required as to the future of these small local centres, and what their role is into the future. In this regard, the following are pertinent matters:

- These sites are typically not large enough to function as a centre and it may not be feasible to support convenience retailing (such as a small supermarket) given the nature and demand for supermarkets.

- Given their small size and interface with residential development, consideration is required to ensure an acceptable interface that does not impact residential character and amenity.

Allowing these centres to be developed wholly for residential development removes a key opportunity within suburban areas to provide for small scale commercial uses, such as offices or cafes that could provide for local business opportunities, innovation, and add vibrancy and amenity to local neighbourhoods. This is considered undesirable.

As an example, in Hamilton Hill, a local centre on the corner of Kerry and Stratton Streets had grouped dwellings developed on an undeveloped vacant portion of the site, with the original commercial tenancies retained. A vacant corner tenancy is now a café with alfresco seating, and the blighted concreted verge area has been converted to a 'pop-up forest' with seating (see Figures 23-24). This use provides a local meeting place, contributes to placemaking and provides activity and surveillance of the street that would not have been possible if the whole 'local centre' zoned area had been developed for residential development.

Given these factors, it is considered that a 'Mixed Use' zoning is most appropriate for these smaller centres, providing for some residential development if it is part of a mixed-use development.

Figure 22. 'Local Centre' corner of Kerry and Stratton Streets, Hamilton Hill in 2015

Figure 23. Pear Street Cafe and verge enhancement (2020)

A 'mixed use' zoning is also appropriate because the objectives provide for street level activity that is compatible with residential uses which do not have a negative impact on amenity or health or safety of residents. The objectives of the zone are as follow:

- *To provide for a wide variety of active uses on street level which are compatible with residential and other non-active uses on upper levels.*
- *To allow for the development of a mix of varied but compatible land uses such as housing, offices, showrooms, amusement centres, eating establishments and appropriate industrial activities which do not generate nuisances detrimental to the amenity of the district or to the health, welfare and safety of its residents.*

This zoning and objective would provide for residential development on the site but ensure there is still the potential for commercial uses designed into the development. A local planning policy could provide further guidance regarding what is expected to achieve this, for example adaptable ground floor tenancies.

5.5 Stock Road Central

Stock Road Central, or the Stock Road Markets are located within the 'Mixed Business' zoned area (TPS3) of the Bibra Lake Industrial area.

The development of the Stock Road Markets complex took place in the early 1980s after Council granted planning approval for the site to be developed for showrooms, warehouse and weekend market use. The development at that time included 22 small units to support the showroom/warehouse component, whilst the outdoor markets use took place within the open area between the showroom units.

Over time the 'markets' use was extended within an indoor structure, and the purpose-built warehouse/showroom units remained as such, with no retail uses permissible.

There was a subsequent decline in popularity of the markets, and fire damage to the main markets structure, rendering it obsolete. A number of retail and quasi-retail shop businesses were established within the showroom/warehouse units that adjoin the car parking area adjacent to the markets. Some of these uses were determined to be 'shop' uses which were not permissible in the 'Mixed Business' zone (TPS3).

It was considered that these particular uses were operating without a negative impact, and an 'Additional Use' was added to portions of the site to allow for 'shop' uses (Figure 24), as follow:

Shop: subject to the total retail floor space being restricted to a maximum of 2000m^2 GLA, and a maximum tenancy size of 550m^2 GLA.

The 'Additional Use' was included to formalise these uses that evolved at the site within the unique circumstances of a 'market' style commercial format. These uses were purposefully restricted both spatially and in terms

of maximum floor space, to ensure they did not impact the viability and intensity of uses of identified centres.

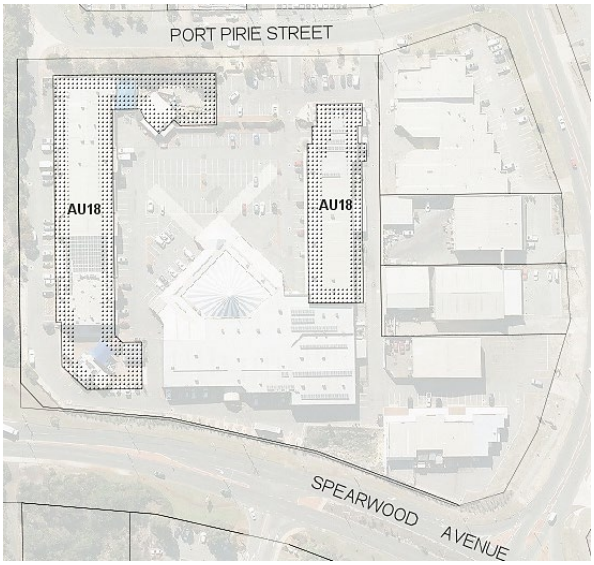


Figure 24. Stock Road Markets Additional Use areas

There is not considered to be any community benefit to allowing 'shop' uses or other uses that belong within a centre at this location. It is poorly serviced by public transport and is not located within the walkable catchment of a residential area.

There is also no identified need for a centre at this location; and given its proximity to Spearwood (Phoenix) District Centre and Coolbellup Neighbourhood Centre, such uses in this location would have the potential to undermine those centres. Ensuring the location of 'shop' uses specifically within identified centres supports their role in meeting the community's needs and supports the provision of these uses where they can be easily and equitably accessed by the community.

Therefore to protect the network of centres, particularly Spearwood (Phoenix) District Centre and to ensure 'shop' uses are located in highly accessible areas, no further expansion of the 'Additional Use' in this area is supported. The current physical extent and floor space area of the 'Additional Use' is proposed to continue in the new Scheme, with the underlying zone being 'Service Commercial' which is the model provision zone that best correlates to the TPS3 'Mixed Business' zone.

5.6 Out of centre development

Out of centre development has the potential to threaten the viability of activity centres and for that reason will generally not be supported. In this regard SPP 4.2 includes provisions that relate to 'out of centre development' and states as follows:

(1) Health, welfare, community services, entertainment, recreation, commercial and cultural facilities likely to attract a significant number of employees or users and/or generate significant vehicle trips should generally be located in, or adjacent to, activity centres.

(2) Where such uses cannot be accommodated within, or adjacent to, activity centres development should be restricted to established Mixed Business or equivalent zones with good access to public transport, rather than being dispersed.

5.7 Centres framework for decision-making

The City's existing activity centres (with the exception of the very small local centres) were assessed in the development of the LCACS. Their performance was measured against a range of criteria including intensity, diversity, employment, accessibility, economic activation and urban form. This found that the City's activity centres largely perform at Perth metropolitan average levels or below across the defined performance metrics.

Table 11 sets out some of the key issues and concerns relating to centres, and sets out outcomes that the City is seeking to avoid.

To address these and improve the performance of centres, the City will develop a framework to guide commercial uses and proposals for centres. This will be explored through LCACS, and adopted through the local planning scheme and precinct planning. A review of LCACS will inform this framework, which will provide for consideration of the following key factors:

- Impact on centre performance
- Impact on the network of centres
- What to control, monitor, influence

The framework will provide for identification of the following, amongst other things to be explored through LCACS:

Ultimate neighbourhood vision	Key minimum standards – e.g. • Trees and landscaping • Providing transition option for a café (i.e. through provision of a toilet)
Public benefit	• Gap analysis • Community consultation • Contribution to local employment.
Urban design analysis	• Contribution to local character • High quality built form • Active ground floor frontages
Adaptability	Ability to reasonably be adapted in the future for another use to ensure robustness of the centre and ability to transition

This framework will include setting out:

- Criteria for proposals;
- Triggers for requirements for proposals of a certain size/scale; and
- What is expected of proponents in addressing/demonstrating they meet the criteria.

5.7.1 Centres zoning

The Model provisions include only a 'Commercial' zone for centres. Therefore, LCACS will need to identify a robust framework for centres, differentiating between centres in the hierarchy where appropriate, given the zone objective will be the same for all centres under the new Scheme. This will then require implementation through a local planning policy to articulate the role, function and different requirements for centres.

TABLE 11. KEY ISSUE AND OUTCOMES FOR CENTRES

Poor quality commercial and mixed use built form outcomes	• Low cost materials/finishes (e.g., tilt-up concrete) resulting in poor quality built form, lacking articulation and visual interest; ground floor 'active facades' that lack appeal for certain uses, often only appropriate for office uses. • Standardised construction, styles and materials results in development that does not respond to local context. • Lack of design expertise. • Limited number of builders undertaking 'mixed use' development. • Box format purpose-built buildings and parking (e.g. medical centres) detracting from streetscapes.
Inappropriate mix of uses within centres eroding ability to meet community needs and evolve and mature	• Centres comprised of uses that lack diversity to serve community needs. • Issue exacerbated where there is fragmented landownership within centres, and individual disjointed uses, restricting future potential for centres to mature and evolve.
Existing Centres with internalised design, 'big-box' format that restricts potential to evolve	• Existing centres that have an internalised design, do not address the street and are surrounded by parking are constrained to adapt and evolve to meet changing needs of the community (particularly where in multiple landownership).
Negative impact of 'car-based' development (eg. service stations, drive throughs, car washes etc.)	• Uses that have a negative impact on the streetscape and desired future character by nature of built form, signage, and required/associated vehicle access and hardstanding. • Compromise walkability and pedestrian environment (quality and connectivity) by nature of their required siting and vehicle access, fragmenting centres. • May be low employment generating uses (e.g., self-serve car wash). • Can have a cumulative negative impact on centres where there is a number of them.
Poor quality pedestrian environments and connectivity to surrounding area often due to placement/design of parking areas	• Fragmented landownership within centres, and individual commercial development (and associated parking) disconnected from adjacent development, compromising permeability, pedestrian connectivity and legibility objectives.

Centres that do not reflect the local neighbourhood character	• Centres that detract from neighbourhood character, typically due to built-form outcomes, car parking and access; and do not contribute positively to streetscapes.

5.8 Bulky Goods Retailing and Mixed Business

Bulky goods retailing has emerged as a separate and popular retail category in Australia, and has in recent times been the fastest growing sector in the retail market in Australia.

Bulky goods are displayed and sold from retail showrooms that typically comprise extensive display and storage areas with direct vehicle access and car parking. Bulky goods retailing does not include the sale of food, clothing or personal effects goods.

Commensurate with the nature of large format retailing, the built form is typically bulky and lacks articulation, therefore having the potential to detract from the amenity of an area where a finer grained scale is sought.

SPP 4.2 and LCACS outline a number of principles for the control of bulky goods, including:

- Promotion of clusters of bulky goods retail adjacent to, or in close proximity to activity centres and the regional road and public transport networks.
- Avoid the encroachment of bulky goods retail in industrial and residential zones.
- Avoid development of bulky goods retail in an ad-hoc manner or as ribbon development along regional roads.
- Access and urban design controls so as not to interfere with traffic flow and safety, or detract from the amenity of public transport or the locality.

In general, bulky goods retailing is unsuited to the walkable catchment or the core of activity centres given their size and car parking requirements, low employment densities and need for freight vehicle access. It is recommended for the 'Commercial' zone that guidance is provided within a local planning policy for 'Bulky good showroom' to ensure they do not negatively impact on centres.

Under TPS3 bulky goods were a permitted use within all of the City's industrial zones. This can erode industrial land; increase traffic volumes due to the increase in single-purpose car trips; and result in the economic under-performance of traditional activity centres. It is therefore recommended that the permissibility of bulky goods be reconsidered in industrial zones as part of the new Scheme.

Centres and Retail Issues and Analysis

The City's is seeking to create and support a robust network of activity centres that meet the needs of the community, support population growth, enhance liveability and provide local employment opportunities.

The City's network of centres needs to be protected and supported to ensure its viability to meet the needs of the community.

The City will plan and advocate for the elevation of Cockburn Central to a Strategic Metropolitan Centre in the Metropolitan Centres Hierarchy, and address the local planning framework accordingly.

Local Area Plans will examine ways to rejuvenate local and neighbourhood centres, including public domain upgrades to improve their appearance, safety and accessibility.

The City will develop a framework through the local planning scheme and precinct planning setting out how we will guide decision-making to protect the network of centres and support their viability for the benefit of the community, and to provide local employment opportunities.

6. Tourism and visitors

Attracting tourists and visitors is important for the local economy and can provide local job opportunities.

The City of Cockburn is fortunate to have a broad array of attractions and high-quality facilities for local visitors and tourists. The natural elements of the City are a key attractor, and provide opportunities for unique nature based experiences and education. This includes the central chain of wetlands, the associated regional parklands and nature reserves, the beach and foreshore environment of Cockburn Sound.

Added to this is the emerging experience on offer at Cockburn Regional Centre, which includes the Cockburn ARC aquatic and recreation centre. This facility is also co-located with the Fremantle Football Club's AFL/WAFL administration and elite training centre, which now sees Cockburn ARC represent a regional drawcard for visitors. The proposed Surf Park in Jandakot will also be an additional significant attraction for tourists.

A proposed Aboriginal Cultural Centre in Bibra Lake is set to become a key tourist destination, and the Centre will provide education about Nyungar and other Aboriginal Cultures. The broad range of experiences on offer will include bush tucker tours, medicine tours, Aboriginal dreaming and contemporary cultural stories, historical displays, language classes, dance performances, art exhibitions, and music workshops. The centre will include a café and Visitors Information Centre. It will provide a pivotal opportunity to elevate the importance of Aboriginal culture and history in the City.

The Australian Marine Complex and Jandakot Airport offer unique experiences for people to view large ships and aircraft from a very close observer perspective. It will be important to have the supporting infrastructure in place to support visitors to these areas.

The City of Cockburn supports the local visitor economy in a range of areas including:

- Providing visitor related infrastructure, including community spaces, facilities and services that enhance the visitor experience and the safety of residents and visitors;
- Investment, management and maintenance of visitor assets including trails, wetlands, recreation parks, skate parks, pump tracks and the Bibra Lake Regional Park playground;
- Supporting environmental practices and conservation projects including water management, wetlands and nature trails;
- Creating and supporting festivals, music performances, events and cultural programs.

Planning has an important role to play in protecting those elements of the City that attract tourists and visitors, as well as facilitating development that can leverage from and further enhance this experience, and identifying the infrastructure that is needed to support this.

Critically, planning decisions that may lead to land being used in certain ways to capitalise on such experiences must not detract from that experience or what makes it unique in the first place.

Careful consideration needs to be given to the relationship between land and the experiences which attract tourism and visitors. Managing the impact of tourism and visitors is also important role of the planning system, including impacts on residential amenity and traffic.

One example of planning helping to create a positive synergistic relationship has been in the adventure play experience focussed around the western foreshore of Bibra Lake. This comprises the regional adventure playground, Perth's major amusement park of Adventure World and Cockburn Ice Arena. Planning has enabled the placement of these three facilities/attractors in a highly accessible location, concentrated to benefit from transport infrastructure provision and protected from sensitive land uses like housing. In this area, use of reserves must be consistent with the objectives of the reserve, ensuring

protection of environmental and recreational values in a way that does not privatise the land.

This precinct includes land zoned 'Private Recreation' under the MRS, and has high environmental, landscape and recreational vales. All uses and development should be consistent with these values providing an appropriate interface to the 'Parks and Recreation' reserve.

Consideration must also be given to the demand for tourism and visitor accommodation within the City, and how this can be facilitated appropriately through land use planning to ensure it appropriately located, and does not impact on residential amenity or environmental values.

6.1 Identifying tourism aspirations and opportunities

The City's tourism aspirations have not been comprehensively explored, and in this regard preparation of a Tourism and Visitor Strategy will be pivotal in identifying tourism opportunities for the City, and how to appropriately and sensitively support them.

Currently, there is no formal network of tourism and visitor-oriented businesses in the area and there is a lack of connectedness between attractions and experiences. It is likely that there is a lack of awareness and information available about what the area has to offer, with the area having many 'hidden secrets'.

The Tourism and Visitor Strategy will also look at how the City can foster appropriate entertainment, and food and beverage opportunities to support tourism and also benefit local residents.

Cultural tourism is the fastest growing international tourism sector. In the past five years, the number of international tourists who engaged in cultural tourism in Australia has grown at a higher rate (47 per cent), than international tourist numbers overall (37 per cent)[28].

Adventure tourism, such as bike riding and trails, is one of the fastest growing tourism categories worldwide, and includes the potential for a niche range of offerings in this area. Twenty-seven per cent of overnight visitors to WA in 2015-16 participated in nature-based outdoor recreation activities, an increase of 15 per cent on previous years[29]. The City's natural assets and investment in various recreational trails provide excellent opportunities for adventure tourism.

The following are potential key tourism themes for a tourism strategy to explore:

- Nature based
- Family friendly
- Indigenous culture
- Cultural events
- Entertainment
- Business, industry and education
- Adventure, sport and recreation
- Adventure tourism activities (beyond just bike riding and trails) to diversify experience offerings in the City.
- Proposed Surf Park in Jandakot and the associated opportunities.
- Protection of the 'Private Recreation' uses associated with Bibra Lake.

6.2 Tourist Accommodation

A Tourism and Visitor Strategy should include analysis of tourism accommodation needs in the City. A hotel has been flagged for Cockburn Central, with a possible site identified in Port Coogee Marina Village structure plan. However, analysis for Port Coogee suggests a hotel may not be feasible there, particularly given proximity to Fremantle which may be more attractive for

[28] Australia Council for the Arts (2018) International Arts Tourism Report

[29] Department of Local Government, Sport and Cultural Industries (2019) Two Year Tourism Action Plan for Local Government, Sport and Cultural Industries 2019-2020

recreational visitors due to the diversity of offering. There is the potential however for a short stay option to transition over time in this location, rather than this potential being planned out.

There is a possible demand for short stay accommodation in association with the Australian Marine Complex (AMC) which requires further exploring.

Across the world in recent times, Airbnb has impacted the viability of hotels and has increased the number of 'holiday homes' operating. For the City, a hotel may not have been viable regardless of this, and 'holiday homes' may have the potential to meet demand within the City for short stay accommodation if hotels are not feasible.

However, holiday homes have had some land use planning issues, and the local planning framework needs to provide further guidance to ensure residential amenity is protected from potential negative impacts from short stay accommodation.

While traditionally, holiday homes have been proposed in coastal locations (primarily North Coogee), there is the potential to see an increase across the City outside areas that may be perceived as being attractive for tourists. In this regard, the City's local planning framework must respond to this, and a local planning policy should set out how the City will exercise discretion. Given the model provision definition of 'Holiday Home – Standard', it is considered that it is not necessarily appropriate to restrict these to 'tourist' areas. Review of the City's local planning policy for tourist accommodation will identify appropriate guidance to ensure these uses do not have an impact on residential amenity regardless of their location. This will include consideration of on-site parking and strict management plans. Short term approvals are likely to be considered appropriate to monitor the impact of uses and ensure residential amenity is protected.

6.3 Coastal areas

The City's coast is a key attractor, offering a diverse range of experiences not seen elsewhere on the Perth metropolitan coast.

To help plan these areas in a way that balances competing needs and aspirations, it is recommended that a coastal node hierarchy be identified through a coastal planning strategy and/or foreshore management plan(s).

It will be critical to ensure that key coastal destinations remain highly accessible, without destroying those elements which make the coast so valued.

There is the natural attraction of the beaches, and of particular note, Coogee Beach foreshore reserve is a popular coastal destination with high recreational, commercial and environmental value. Major activities include water activities, sports and social activities including major community events. This node is supported by other important features including the Holiday Park, Coogee Beach Integrated Community Facility and associated businesses, the Coogee Beach Café and Coogee Common within the Old Coogee Hotel.

There is a key opportunity to support this area as a high amenity coastal destination with sustainably managed community facilities and a range of activities and events for enjoyment by residents and visitors where they respect the values of the area.

The coast also offers a variety of recreational experiences, including the Coogee dive trail, associated with the Omeo wreck. Uniquely there is also the attraction of numerous cultural heritage elements with some relatively unknown parts of Western Australia's history, as outlined below:

Woodman Point

The Woodman Point Recreational Boating Precinct is one of the largest and busiest recreational boating hubs in the Perth Metropolitan area. DoT Maritime Planning has

established a concept design for the precinct which will see it transform into the largest recreational boating facility in Western Australia, increasing public amenity in the area, creating employment, potential tourist activities and contributing to the State's economy.

The current vision is to establish a maritime services precinct, co-located with existing publicly accessible recreational maritime facilities which would facilitate the development of complimentary maritime services and business opportunities. When fully developed, it is intended that the precinct will include boat building and maintenance facilities, showrooms, and boat stacking facilities, as well as commercial leases that support recreational boating activities. It is considered that this is significant enough to require recognition in the Local Planning Strategy to inform planning for the precinct and surrounding area.

Woodman Point has significant tourism potential because of the wide range of conservation and recreational values, and its historical remnants of European settlement. This precinct includes the former quarantine station, crematorium and gravesites, railway link to Fremantle, explosives magazines and jetty, as well as the naval shed and groyne.

The former munitions magazines and the former quarantine station (Woodman Point Recreation Camp) are permanently listed on the State Register of Heritage Places. The former quarantine station is also listed on the Register of the National Estate and is classified by the National Trust.

Recreation and heritage precinct former Quarantine Station

The former Quarantine Station was established in 1886[30] and is a rare example of a quarantine station in Western Australia. The precinct includes a variety of intact buildings and remnant fabric elements including quarantine quarters, crematorium, cemetery, morgue ruins, railway ruins, and memorial plaques (see Figure 25) showing restored buildings within the precinct.

This area has a heritage trail that combines interpretive displays, informative signs, audio trail and an interactive digital app experience that connects with a wide audience and allows for individual connections with the place, the quarantine process, its stories and its people.

For this area, one of the critical issues is the future impact of coastal processes, with the area identified as being vulnerable to future erosion and inundation. In managing planned retreat in this area, careful consideration is required as to how this can be undertaken in a way that minimises the impact on cultural heritage.

Figure 25. Former Quarantine Station buildings at Woodman Point

Former Explosives Reserve

The former Explosives Reserve is located to the north of the quarantine station, centred around the Munitions jetty. The Woodman Point Explosives Reserve was established in 1907, and in 1942, during the Second World War, three munitions magazines were built to house explosive materials. The buildings still exist, located on Conservation Close (see Figure 26).

One of the buildings was taken over in 1995 by the Woodman Point Caravan Park, and has since been restored and adapted for use as a camp kitchen.

Each building is surrounded by a distinctive barrier berm, built from a stack of concrete 'pillows' designed to absorb the impact of a possible explosion[31]. They represent a

[30] Woodman Point Recreation Camp: a history, 1886-1982'

[31] Office of Heritage (2002) Register of Heritage Places – Assessment of Woodman Point Munition Magazines (fmr)

significant period in the early development of the mining industry in Western Australia.

Two large ammunition stores were built in what is now the Recreational Boating Precinct. One still exists as the Cockburn Pleasure Boat Storage Facility. These were connected to the explosives magazines by rail and the ammunition was exported via a landing at Jervoise Bay.

Large sections of the original north-south rail lines remain at the Reserve (see Figure 27). The jetty, remnant rail lines, visible barrier berms, and the buildings together facilitate interpretation of the precinct as a whole, and create a distinctive landscape which strongly reflects the history of the locality.

While the former quarantine station precinct has received significant investment and serves a purpose as a holiday camp, the former explosives magazines and associated structures have not found a purpose and continue to deteriorate and be subject to vandalism. Though they now form part of the Woodman Point Quarantine Station heritage trail, the various structures have no on-site interpretation.

It is considered imperative that the remaining structures have an adopted management plan. This should explore a vision for the area, whether it should be left as more of an undiscovered informal attraction forming part of the passive recreational use of the area; or whether there is the potential for adaptive reuse of the buildings for tourism and/or education opportunities.

Figure 26. Remaining munition magazines, Woodman Point

Figure 27. Remnant section of narrow gauge railway line

Coastal jetties

In the past, the Western Australian coast was dotted with various jetties, and the coast between Henderson and North Coogee alone had at least three other jetties that are no longer extant (Robb Jetty, Quarantine Jetty and Naval Base Jetty). The Magazine Jetty (Figure 28) and Coogee Beach Jetty are remaining.

Coogee Beach Jetty was constructed in the 1960s and has been important for recreational use since that time. The Magazine Jetty is one of the last remaining significant ocean jetties in the Perth metropolitan area, reflecting a bygone era of transport by sea. It is a very popular recreational fishing, scuba diving, snorkelling and swimming spot, and a significant attractor at Woodman Point. There are also several annual events which attract large community participation.

Both jetties are considered to have cultural heritage, social, historical and recreational value, and are an important part of the City's coastal identity. For this reason they should be protected to the greatest extent possible.

Figure 28. Magazine Jetty, Woodman Point

South Fremantle Power Station

The former South Fremantle Power Station is the most recognisable structure on the coastline south of the Swan River. It has the potential to become a world class destination and major attractor because of its landmark location, its scale, brutalist architecture and prolific urban art.

The building has been vacant for longer than it was in operation as a coal-fired power station, and its derelict condition and urban art give it a dystopian character that it is now renowned for.

The City has requested that Development WA, and Synergy (landowner of the site) investigate an alternative approach to adaptive reuse that recognises the state of the building and embraces the place as a 'ruin' rather than pursuing in the first instance a full restoration to its original condition.

This approach would reflect and take inspiration from the notion of loss, transition, and ruin, rather than attempting to restore the building. It would provide the opportunity to showcase the rustic and picturesque quality of the place as an industrial 'ruin'. It is considered this approach would provide a more unique tourist experience, and could lend itself to accommodating the following types of uses:

- Protected, sheltered extensive foreshore playground/waterpark partially integrated within the structure that could offer a completely unique recreational experience on Perth's coast.
- Wide variety of public and private recreational uses in and around the building.
- Creation of unique, flexible large space(s) that could accommodate a wide range of uses from outdoor-style cinema, art displays, recreational activities such as BMX events, reception/function centre etc, and function as a flexible performance venue.
- Commercial uses such as cafes and shops within freestanding structures that sit sympathetically within or around the heritage fabric but do not rely on the structure itself.
- Ephemeral and interpretive art installations to explore the themes of defunct technology and building lifecycle.

This staged approach would also provide for the adaptive reuse ahead of the relocation of the operational switchyard to the north of the power station.

The City will continue to advocate for this adaptive reuse approach which is considered to be the most feasible; best reflect the cultural heritage of the place as it has evolved; and provide the greatest tourism potential for the State and district.

The future of the South Fremantle Power Station site is also critical as it will be a huge influence on the regional status of Cockburn Coast as a place to visit and recreate.

It is expected that there is a strong element of public access and community use as a key part of any adaptive reuse proposal for the former South Fremantle Power Station building and site.

Figure 29. South Fremantle Power Station

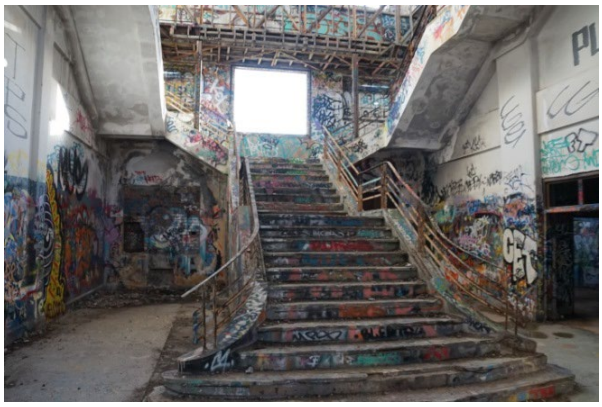


Figure 30. Graffiti within the interior of the South Fremantle Power Station

Coogee Beach Surf Life Saving Facility

The new Coogee Beach Surf Life Saving Club has created an attractive formal hosting space on the beach, for events such as weddings, birthdays, and conferences. Directly adjoining this is the Coogee Caravan Park, which offers some tourism facilities mixed with a large component of park-home residents. A tourism node may have the potential to grow at this location, however planning is needed to deliver the right accommodation outcome that would leverage effectively from what is already on offer.

Rottnest Island

Rottnest Island remains part of the district of Cockburn, yet has no direct relationship with the City. The delivery of the new marina at Port Coogee may open opportunities for ferry services to visit on route to Rottnest, which in turn may generate local business opportunities from which to grow. This opportunity should be investigated further through the Tourism and Visitor Strategy.

6.3.1 Events

The City creates and supports a number of annual and one-off festivals, music performances, events and cultural programs. In addition to the benefit these provide for the local community, these events attract visitor, activate places, support business and add vibrancy to the City.

There is a key opportunity to build on the success of the City's festivals, events and cultural programs by supporting and promoting the City as a great place for events for the benefit of the community and local economy.

To do this, the City will provide an improved framework for considering proposed events in the City that is more streamlined but still ensures they do not negatively impact on the amenity of residents, cultural heritage and the natural environment.

Figure 31. Christmas on the Green, Manning Park

6.3.2 Non-leisure visitors

People visit the City of Cockburn for a variety of reasons, and the Tourism and Visitor Strategy should explore this in more detail. This could include visits related to education, business and employment visitors, and medical services.

There may be the potential to build on and support those opportunities so people stay longer and diversify their stay, maximising local economic benefits and contributing to employment opportunities.

6.3.3 Future land use considerations

Car parking

The management of car parking within the City's marina precinct at Port Coogee demonstrates the importance of planning for the right transport infrastructure to support tourists and visitors.

Providing sufficient and realistic parking in these areas, cognisant of other alternative transport options, will be important.

In all circumstances it is important to ensure parking areas must not detract from the environmental, visual and cultural values of the place.

Coastal vulnerability

It is imperative to be cognisant of coastal vulnerability issues which will potentially threaten elements of the coast which are highly valued. This includes the beaches themselves, and important cultural heritage elements.

The City's Coastal Adaptation Plan sets out a framework for the City to manage this risk, including triggers for actions.

Landscape values and amenity

Landscape amenity and values have a role in developing tourism and leisure, particularly development of regional attractions including Bibra Lake and Coogee Beach.

It will therefore be important to ensure that the landscape significance of the City is not jeopardised by inappropriately placed development on private land. For example, the coastal limestone ridgelines provide a natural backdrop to both the ocean side and developed landward side of the ridges and should be protected.

Tourism and Visitors Issues and Analysis

A City of Cockburn Tourism and Visitor Strategy will be pivotal in identifying tourism opportunities for the City, and how to appropriately and sensitively support these opportunities.

Key coastal destinations need to remain highly accessible without destroying those elements which make the coast so valued.

The impact of coastal processes requires careful consideration to identify the best ways to protect the cultural heritage values and tourism potential of this area.

Having the supporting infrastructure in place to support the large amounts of visitors which are attracted to Jandakot Airport and the Australian Marine Complex is an important future planning factor.

There is a need to celebrate indigenous stories and meanings that are found throughout Cockburn, and their connectivity.

The Port Coogee Marina may open opportunities for ferry services to visit on route to Rottnest.

The South Fremantle Power Station has significant tourism potential, and will be a huge influence on the regional status of Cockburn Coast as a place to visit and recreate, and the City will continue to advocate for a more feasible adaptive reuse approach.

People visit the City of Cockburn for a variety of reasons, and the Tourism and Visitor Strategy should explore this to identify opportunities for people to stay longer and diversify their stay, maximising local economic benefits.

7. Recreation and open space

One of the key measures to the liveability of the City of Cockburn is the level of access that the community enjoys to recreation and open space areas, and the ability of this open space to meet the diverse recreational needs of the community.

The City's open space has an important role in:

- Supporting the health and well-being of residents and promoting active lifestyles.
- Contributing positively to neighbourhood character.
- Contributing to the urban forest and supporting the City's climate change resilience.
- Protecting environmental values.

Parks and public spaces provide invaluable opportunities for people to connect with nature and engage in physical activity with physical and mental benefits.

The City's network of green spaces is expected by the community to provide for the full range of recreational needs, from highly organised and formal sports grounds, to passive recreation, dog parks, and smaller local parks.

The City already undertakes an extensive level of strategic planning in respect of its diverse community, sport and recreation facilities, with this tied to a funding model that demonstrates delivery and maintenance capacity over time. This considers elements such as:

- Collocating of recreational facilities, to maximise efficiency and accessibility to consolidated precincts;
- The degree to which different functions can be performed within areas of open space, ranging from natural experiences, sporting experiences and active recreation pursuits;
- How we maintain site and contextually relevant open spaces, for example ensuring design and delivery of open spaces which match as much as possible the types of recreational needs that the immediate surrounding community hold.

Planning has an important role to play both in the physical provision of recreation and open space areas, as well its connectivity, accessibility and functionality.

7.1 Open space in new areas

The size and function of public open space (POS) in the metropolitan area has changed over time. Of particular note the introduction of Bush Forever, Water Sensitive Urban Design (WSUD) and greater retention of areas with environmental values has impacted on public open space.

A study undertaken in 2011 by the Centre for Sport and Curtin University confirmed an assertion that implementation of both Bush Forever and WSUD has caused a reduced supply of active open space, and that the implementation of Liveable Neighbourhoods may have also caused a reduced supply of active POS[32].

The allowance of restricted use drainage to contribute to up to 2 per cent of the 10 per cent POS requirement under Liveable Neighbourhoods has created this likely reduced supply of active POS. Of particular note, while intended to be useable areas, sometimes a lack of detail at the structure planning stage, or modifications to the subdivision layout can result in these drainage areas having limited functionality.

[32] Centre for Sport and Curtin University (2011) Emerging Constraints for Public Open Space in Perth Metropolitan Suburbs

Therefore, drainage areas require very careful consideration to ensure they are highly useable, and contribute to meaningful recreational opportunities. In some cases, POS is compromised with steep internal embankments that are needed to create space for storm water drainage basins, making the areas outside the drainage area unusable. This will require more detailed upfront information with structure plans to demonstrate these areas are level and useable.

It is considered imperative that consideration be given to the provision of opportunities for active POS in new areas, even in circumstances where bushland is being retained. This is because increasing evidence points to the importance of sufficient play space for children, particularly for supporting greater physical activity[33]. Specifically, grassed space is supportive of higher moderate to vigorous physical activity[34], and it is necessary to ensure that park and play areas are large enough and appropriately level to accommodate informal sports and play activities.

A concerted effort is required to ensure this is being provided in new areas, as increasing the quantity of POS in an area once it is developed is so difficult and costly that it is typically not possible.

In this regard, it is critical to acknowledge that the 10 per cent POS requirement is a minimum, and that where public open space is constrained and cannot meet the needs of the community a greater amount may be required by requiring a gap analysis to inform function and design. This is particularly important given the smaller average residential lot size and smaller private open space. The role of POS in meeting the recreational needs of the community is more important than ever.

The City has some areas zoned for residential development, such as Lake Coogee (formerly Munster) that have fragmented landownership and smaller lots which are being individually structure planned. This sometimes results in either provision of small parcels of POS that are limited in their useability; or the 10 per cent is considered to be too small to warrant the creation of POS and cash-in-lieu is therefore provided. In some cases, this is resulting in a lack of POS areas for the community.

To improve outcomes in these areas it is recommended that new structure plans and structure plan amendments be required to locate proposed POS where it can be consolidated with an existing or future area of POS wherever possible to increase provision of POS rather than cash-in-lieu provision. This will provide for larger and more connected POS that has greater potential to meet the needs of the community, including provision of grassed play areas.

POS should also be designed to achieve an appropriate design response with respect of land development, opposite or adjoining areas of open space, in order to maximise safety and security through passive surveillance whilst creating an acceptable level of amenity and privacy for those residents.

It is imperative that the water source to irrigate the POS is secured early in the planning process and water efficiency measures are incorporated into its design to ensure water resources are available to maintain the active spaces. The retention of native vegetation and the planting of green spaces to provide shade and urban cooling will also benefit the community as well as reducing the requirement for large volumes of irrigation.

To achieve improved POS outcomes in new areas, structure plans are to include Statements of Design Intent which implicitly outline the function and character of POS areas in response to recreational needs. This will improve the implementation of structure plans in relation to POS outcomes.

[33] Cradock AL, Melly SJ, Allen JG, Morris JS, Gortmaker SL. Characteristics of school campuses and physical activity among youth. Am J Prev Me0d. 2007;33(2):106-113.e101.

[34] Martin KE. School Environment Correlates of Children's Moderate to Vigorous Physical Activity During Class-time and Recess. 2010;Doctoral Thesis(The University of Western Australia):March, 2010.

Structure plans should also include cross sections of POS areas to demonstrate that they are useable and do not require radical landform modification involving extensive and numerous or high retaining walls.

7.2 Open space in existing areas

Within the City's older suburbs the City has identified POS improvements through revitalisation strategies, responding to the extensive feedback received through the community engagement. Many of the recommendations and actions have been implemented throughout Spearwood, Hamilton Hill and Coolbellup.

The City is proposing the preparation of Local Area Plans that will look at public realm (includes public open space) provision and improvements throughout the City's older suburbs to help cater for the existing and future community needs. For the existing Revitalisation Strategy areas this will include a review of those actions and recommendations regarding POS and streetscapes, and consolidation in new Local Area Plans.

Preparation of Local Area Plans will assist in the identification of opportunities to spend POS cash-in-lieu.

Figure 32. Improvements to MacFaull Park, Spearwood identified in the Phoenix Revitalisation Strategy and implemented

7.3 Public open space cash-in-lieu

Section 153 of the *Planning and Development Act 2005* contains provisions under which a cash payment can be made by the subdivider in lieu of providing land for POS where it is required.

This provision recognises that in certain circumstances the use of these provisions should be encouraged. These circumstances include subdivisions where:

- The land area is such that a 10 percent contribution would be too small to be of practical use;
- There may be sufficient POS already in the locality;
- POS is planned in another location by way of a town planning scheme or structure plan.

The City will not support provision of POS cash-in-lieu in new structure plan areas, as the provision of a minimum area of 10 per cent POS is considered to be a priority to meet the needs of the community as outlined in *Section 7.1 Open space in new areas*.

Portions of north Hamilton Hill (Revitalisation Strategy area) and Cockburn Coast Newmarket Precinct have an identified a shortfall of public open space, only approximately 6 per cent.

Through the *Hamilton Hill Revitalisation Strategy*, the City identified POS improvements to address this, noting that there is limited potential to increase the quantity of POS, given that the area is largely developed. These improvements aim to enhance the ability of these POS areas to meet the needs to the community. It was proposed that these embellishments be funded through cash-in-lieu contributions. The *Hamilton Hill Revitalisation Strategy* proposed that the requirement be imposed on 3 lots or more, however this is seen to be a significant disincentive to development/subdivision of 3-4 lots and would potentially undermine infill targets. A more reasonable approach has been taken whereby POS cash-in-lieu is required on 5 or

more lots, where the scale of development on a larger lot provides more reasonably for this cost.

There are a number of larger lots throughout Hamilton Hill so this will provide for cash-in-lieu to fund upgrades. Since the increase to residential codings through the *Hamilton Hill Revitalisation Strategy* this has provided for the collection of $562,193 public open space cash-in-lieu in Hamilton Hill.

This aligns with the general state-wide requirement for cash-in-lieu for public open space set out by the Western Australian Planning Commission (WAPC).

All other established residential areas have a minimum of 10 per cent POS that has generally been provided through the original subdivision of the area. Therefore, infill development in established residential areas (i.e. re-subdivision of existing residential lots) will not require the payment of POS cash-in-lieu unless specified in an applicable endorsed structure plan or Scheme requirement.

The City prepares a 'Public Open Space Cash-in-Lieu Expenditure Plan' to provide a strategic direction to the allocation of funds held within the City's POS reserve accounts. This is informed by relevant adopted strategies.

7.4 Urban Spaces

There is an opportunity to improve liveability in the suburbs by identifying open space within or adjacent to activity centres that could transition to 'urban park/spaces'. This will provide a greater diversity of open space and respond to changes in the City's suburbs, housing, and lifestyles.

This includes supporting working from home in suburban areas, with open spaces designed to include appropriate seating and informal meeting spaces, and potentially Wi-Fi, charging capabilities etc. in strategic locations.

These spaces may include high amenity urban style playground elements that provide a hub to meet in central, walkable locations, particularly where this is co-located or nearby a café.

Ideally these parks will be located within or adjacent to centres to support opportunities for commercial uses such as cafes which can also enhance the experience for users and enliven suburban areas.

While public open space will provide the obvious opportunities, potentially there are areas of unused road reserve (or similar) that could become urban spaces.

The location, type and form these urban spaces could take should be explored with the community through the development of Local Area Plans to deliver something that meets their needs; provides a diversity of open space; and supports working from home in suburban areas.

Figure 33. Example of an urban space - Frances Newton Reserve, Darlinghurst (City of Sydney)

7.5 Infrastructure

There will continue to be high levels of demand for infrastructure, especially fitness and active play equipment for all ages in the suburbs, as the traditional large backyard becomes more scarce with smaller lots and larger homes being built.

Playgrounds should encourage physical activity, social interaction, creativity and problem solving as well as contact and interaction with nature. In this regard research supports the trend towards natural playgrounds, with indications that they provide children with more opportunities than typical pre-formed playgrounds to develop gross-

motor skills[35]. Contact with nature has been associated with a number of health benefits for children, such as improved cognitive function, increased creativity and reduced rates of aggression, amongst other things. Over the past 10 years, the City has built a number of nature playgrounds in established suburban parks, including Basset Reserve in North Lake, and Dixon Park in Hamilton Hill (see Figure 34).

The City will also need to ensure that POS is climate change resilient, especially dealing with hotter summers and provision of adequate shade.

This includes how the design, delivery and maintenance of recreation and POS areas deals with the reality of tighter controls being placed by the State Government upon groundwater irrigation allowances. This will mean exploring alternative means by which to irrigate and maintain the vast network of green spaces, and alternative designs and retrofitting that do not require extensive irrigation whilst still meeting the community's needs.

Consideration will need to be given to emerging recreational interests, such as drone flying, and remote-controlled vehicle racing, and how these can be accommodated appropriately within public open space.

By 2024, there will be around 24,000 dogs in Cockburn, and this is driving demand for off and on-leash dog parks. The City's *Animal and Exercise Management Plan* identifies measures to ensure that facilities are appropriately accessible and equipped to manage the growing population of pets. It will be important that parks are designed to minimise conflict between different users.

It is also important to consider the ability for POS to be used for events where appropriate.

Other infrastructure within parks, especially lighting, fencing and access paths are also important in order to meet the broad accessibility needs of the community.

[35] What makes a good play area for children? (2010) Dr Lisa Wood and Dr Karen Martin, University of Western Australia

Whilst high levels of embellishment and facilities for POS will always be in demand, the City must consider the ongoing maintenance costs and ensure this is financially sustainable. This includes POS that is embellished by developers, given that once their maintenance period has ended the ongoing maintenance will be undertaken by the City at the cost of ratepayers unless there is a specified area rate.

Figure 34. Dixon Park Nature Playground, Hamilton Hill

7.6 Accessibility

Accessibility to POS is a key issue, including whether there are any gaps in the provision of facilities, such as where suburbs are separated by major pieces of transport infrastructure that make accessing designated areas of POS difficult.

Connections for bike riders and pedestrians to public open space should be safe and comfortable to encourage people to walk or cycle to their parks wherever possible to encourage active lifestyles and reduce cars on the road.

There is an opportunity to promote further use of green spaces within the City to encourage active transport (walking and cycling), connecting to local areas of interest.

Recreation and open space issues and Analysis

The City must ensure open space meets the needs of a diverse community, including opportunities for active POS in new areas, including grassed play areas for children, even in circumstances where bushland is being retained.

Drainage areas require careful consideration to ensure they are highly useable and contribute to meaningful recreational opportunities. This will require more information provided with structure plans to demonstrate this.

The 10 per cent POS requirement is a minimum, and where POS is constrained and cannot meet the needs of the community a greater amount may be required.

Larger, more connected and useable areas of POS will be sought in new areas by ensuring new areas of public open space can be consolidated with adjacent landholdings wherever possible.

'Statements of Design Intent' in structure plans will be important to ensure that POS can meet the recreational needs of the community and contribute positively to neighbourhood character.

POS design should continue to recognise the smaller backyards; and consideration will need to be given to emerging recreational interests.

In existing areas, POS upgrades may be required to cater for the additional demand generated by infill development, this is particularly the case in revitalisation areas where there is an existing undersupply of POS land. Subdividers may be required to contribute to POS upgrades when identified in a revitalisation strategy, structure plan or scheme.

Consideration is required to ensure that POS is climate change resilient, considering hotter summers and limited water availability for irrigation.

8. Community Infrastructure

Community infrastructure is essential for the physical and mental health, social wellbeing, and economic prosperity of communities. It plays an important role in bringing people together and supporting social networks, which help build strong and resilient communities.

Community services and facilities are provided by a range of government and non-government service providers. An overview of community facilities within the district, with an emphasis on the 'fixed' infrastructure provided by State and local government is as follows.

8.1 Neighbourhood and Local Services

Local Community Centres typically provide the base for neighbourhood level services and activities.

Sites are generally ceded via the subdivision process either as part of the 10 per cent POS contribution, or as a deduction to the gross subdivisible area upon which POS is calculated.

Community centre buildings are often provided through a combination of State and local government funding. They are usually designed to be multi-functional to accommodate a range of facilities and services and include the joint development of facilities between Council and government departments.

The City identifies the need for these facilities through the *Community, Sport and Recreation Facilities Plan*.

The City has a wide range of community centres across the City of various scale. The *Community, Sport and Recreation Facilities Plan* has identified that existing community centres are well utilised and there is a lack of available community centres or spaces across a number of areas in the City of Cockburn. The Community, Sport and Recreation Facilities Plan identifies solutions to these issues.

The need for the development of the Wetlands Education Centre/Native Arc was widely identified as a priority and this included the scout's facilities. The need for an Aboriginal Cultural Centre was also strongly supported. To meet the needs of the growing community at Treeby, there is a proposed Treeby Community and Sporting Centre.

Figure 35. Beeliar Community Centre

8.2 Regional and District Services

Examples of Regional and District level community facilities may go beyond local government facilities due to both their catchment size and the service provision role itself.

In terms of existing services, Cockburn residents access regional hospital facilities in Murdoch (Fiona Stanley Hospital and St John of God Hospital).

There are several technical college campuses (as part of South Metropolitan TAFE) both within Cockburn's district (Jandakot, Henderson, Munster) as well as within adjacent areas (Fremantle, Beaconsfield, Murdoch).

As an outcome of a review in December 2017, the structure of the WA Police Force moved from four to eight metropolitan districts, increasing the districts in Western Australia to 15, and creating a centralised State Operations Command Centre. Cockburn is located in the Fremantle District, which essentially covers the

municipalities of Cockburn, Melville, Fremantle and East Fremantle. There are four stations in the District (Fremantle, Cockburn, Palmyra and Murdoch) with the Fremantle and Cockburn stations providing a 24 hour service.

In recent years, Cockburn Central has emerged as a regional sporting hub with the relocation of the Fremantle Football Club to the centre, as well as the construction of the Cockburn ARC, to replace the South Lake Leisure Centre, which included a pool and fitness centre. These complement the centre's community centre and GP Superclinic.

8.3 Education Facilities

Recent and future additional schools within the district can be found in the growth corridor along the Kwinana Freeway, including the newer suburbs of Hammond Park and Treeby. In the City's west, there will be a new primary school in future at the Cockburn Coast development area. Hamilton Senior High School in Hamilton Hill closed in late 2017 and is being redeveloped for residential.

In accordance with the Western Australian Planning Commission's (WAPC) Operational Policy – Planning for School Sites (OP 2.4), the location and planning of school sites requires early planning to ensure they are accessible and well-connected to meet the needs of the community.

Should there be MRS zoning change(s) that increase 'urban' zoned land structure planning will be critical to appropriately plan for future schools.

With projected population growth in Lake Coogee, it is possible that there may be the need for an additional primary school in this area, particularly if the 'urban deferred' area is developed for residential. The City will liaise with the Department of Education to monitor this potential need and plan for an appropriate location if required.

The Aboriginal Cultural and Visitors Centre will be an iconic education and tourism destination in Bibra Lake. Located in a natural bushland environment, the Centre will provide education about Nyungar and other Aboriginal Cultures. The vision for the centre was established in the City of Cockburn's *Reconciliation Action Plan 2011*. The centre will also provide much needed local community meeting spaces for community events and activities and will include a café and visitors information centre.

8.4 Planning Issues

Community infrastructure has a much broader role than simply providing locations for service delivery and destinations for social activities and programs. It contributes to the built environment and influences the specific identities and character of the community.

The City will seek to ensure community infrastructure responds to community need and context. The City will continue to take a strategic approach to community infrastructure planning, and will advocate for an evidence-based approach that provides for equitable distribution and provision of community infrastructure that is also financially sustainable.

Community Infrastructure Issues and Analysis

Community infrastructure is essential for the physical and mental health, social wellbeing, and economic prosperity of communities and contributes to building strong and resilient communities.

The City will seek to ensure community infrastructure responds to community need and context, and contributes positively to the built environment.

The City will continue to take a strategic approach to community infrastructure planning.

9. Rural Areas

Under the State Government's Metropolitan Region Scheme (MRS), the City has two types of rural zones as follows:

- 'Rural' zone
- 'Rural-Water Protection' zone

The 'Rural-Water Protection' zone is located along the eastern part of the City, south of Jandakot Airport, taking in the suburbs of Jandakot (part), Treeby (part) and the whole of Banjup. This coincides with the Jandakot Groundwater Mound which spans this area. The Jandakot groundwater mound is a highly valued resource that contributes to Perth's integrated water supply scheme as well as provides ecological integrity of important wetlands, native vegetation and habitat. The Rural zone is in the southwestern part of the City. This comprises a mix of market gardening, turf and flower growing, limestone quarrying and rural living type activities, and areas of remnant bushland. TPS3 adopted a 'Rural' and 'Rural Living' zone for this area.

9.1 MRS Rural zone

9.1.1 'Rural' zone, Beeliar and Munster

The TPS3 'Rural' zoning spans portions of Beeliar, Munster and Wattleup between the Hope Valley Wattleup Redevelopment Area ('Latitude 32') to the west, and Harry Waring Marsupial Reserve to the east (see Figure 36). Lots in this area generally range in size from 1-2 ha.

Much of this area was cleared and established as a rural area in the 1960s as Spearwood market gardens were subdivided for residential development and agricultural uses moved further south. The landholdings became more fragmented in the 1970s, and the area was subsequently used primarily for agricultural uses, including flower growing and market gardening until 2000 when the area to the west was included within the Hope Valley-Wattleup Redevelopment area. Some landholdings in the area were not cleared and contain remnant bushland.

The majority of this area is located within the *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy* (Kwinana EPP) which was formally reviewed in 1999 and reissued unchanged, except in date title.

Since 2000 there has generally been a decline in agricultural uses in the 'Rural' zone and an increase in uses that are not associated with rural pursuits. These uses have the potential to impact negatively on rural amenity and character through vegetation clearing, visual impacts of structures and stored items, heavy vehicle movements and noise impacts.

There has been an increase in planning compliance issues in recent years, and uncertainty amongst some landowners regarding the planning framework, including the zoning and land use permissibility.

The area has been subject to some uncertainty, with the *Draft Outer Metropolitan Perth and Peel Sub-regional strategy* (2010) identifying the area as 'Urban Expansion Area', with the final document then identifying the area to remain 'rural'.

Perth and Peel identifies the following key planning framework principles that are relevant to the City's rural land:

- *Retain land for agriculture and food production.*
- *Limited support for new rural residential development, with the emphasis on areas currently zoned for the purpose.*

The South Metropolitan Peel Sub-regional Planning Framework also references the employment opportunities provided by agricultural areas as follows:

In addition to supplying food for local consumption, agriculture and related industries provide local employment and support economic activity. Proximity to the local market and labour

force is important for food processing and value-adding facilities. The sub-region's freight and logistics facilities are also vital to the export and import of food and agricultural commodities. Accordingly, it is important that the regions capacity for agricultural production and services should be facilitated and protected, land is retained for these uses and that freight and logistics infrastructure is protected.

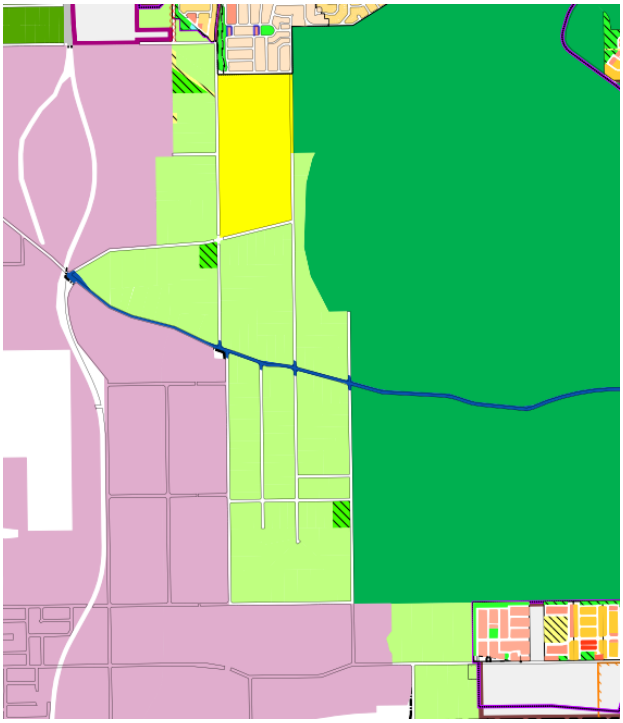


Figure 36. 'Rural' zone (light green area)

Agricultural viability

In 2018, the City of Cockburn undertook local planning strategy workshops with landowners of the Rural zone whereby landowners identified the following key constraints to the agricultural use and viability of their land:

- Small size of the landholdings
- Water allocation restrictions
- Possible contamination from industrial uses

The City has investigated these matters and the agricultural viability of this area to inform an appropriate local planning framework.

Horticultural potential

The Rural zone has good access to labour, roads, telecommunications, electricity, gas, agricultural service providers (fertiliser, chemical and irrigation suppliers) and trades people.

The soils in the Rural zone have a moderate to high capability for a range of horticultural uses. Yellow and orange coloured Spearwood soils cover 98 per cent of the Rural zone. These soils are well suited to horticulture and have a low phosphorus leaching risk.

The Rural zone occurs within the Thomsons groundwater sub area, and water resources in this sub area are fully allocated and no further licences will be issued for this area.

Water allocations by DWER will irrigate less than 20 per cent of the total area of 370 ha (assuming 10 ML per ha/annum is required).

Fifty-eight water licences have been issued for the Rural Zone, which represents 30 per cent of the properties. However, only 22 of the 58 licences have an allocation that is greater than 10 ML. The majority of the properties that have a water allocation do not have sufficient water to sustain a commercial sized vegetable enterprise.

The lot size in the City's Rural zone is typically 1-2 ha. Not all of the lot area can be farmed as land is required for sheds, internal tracks/roads and often a house. This makes these properties some of the smallest horticultural blocks in Western Australia.

As a trend, farming properties are getting bigger to achieve economies of scale, with farmers on smaller properties struggling to compete with larger operations. This is particularly true for more broadacre vegetable crops such as carrots, potatoes and the leafy vegetable lines. The smaller properties that were of a viable size in the past are now not of an economically viable size (unless more intensive activities are carried out).

Protected cropping potential

Protected cropping is the term used to cover all growing systems where the crop is protected from the environment by some form of structure. This includes net houses, plastic covered greenhouses and glasshouses.

Throughout the world, crops are increasingly being grown under protected cropping structures in order to improve yield and produce quality, and to increase the length and reliability of supply. For example, 30 per cent of Australia's tomatoes are now grown in greenhouses.

Protected cropping can reduce the risks involved with horticultural production. The crop is protected from adverse weather which results in higher yields and higher quality. Reliability of supply is greater as extreme weather events are less likely to affect the crop. It can also allow for a longer growing season and window of supply as the climatic conditions can be modified. Insect exclusion screens can exclude pests and diseases from the crop.

Protected cropping is a capital and labour intensive form of horticulture. The yields and returns per square metre of land are typically much greater than that of outside production. Consequently, a profitable business can be sustained on a smaller property, such as those in the Rural zone. There are some existing greenhouses in the Rural zone.

Greenhouses are mainly used to grow nursery plants, cut flowers and vegetable crops such as tomatoes, cucumbers, capsicums, eggplant, hydroponic lettuce and herbs. It is generally not economic to grow most other vegetable crops in protected cropping structures because of the low return on investment. Increasingly perennial crops such as blueberries, strawberries and some fruit trees are being grown under protected cropping.

The Rural zone is suited to protected cropping and does not have the same environmental constraints as the Peel Harvey Catchment area. The Spearwood soils in the City's Rural Zone have a low phosphorus leaching risk.

The water use efficiency of protected cropping (megalitres of water used per kilogram of produce produced) is much higher than outside production due to reduced evapotranspiration in the structure and higher yields. If crops are grown using recirculating systems then the water use can be reduced by as much as 40 per cent as compared to outside crops.

In total, about 750 megalitres (ML) of water is allocated to irrigators in the Rural zone. If an annual water requirement for greenhouse crops of 15 ML/ha is assumed, then approximately 50 hectares of greenhouses could be sustained. This is a significant area of greenhouses. However, this figure assumes that all the allocated water is used for protected cropping and none is required for other uses, which is very unlikely to be the case.

In terms of the market, it is noted that for Perth the market for most crops are generally considered to be fully supplied and currently few greenhouse grown crops are exported as it is difficult for Australian produce to compete in many markets due to high labour costs[36].

The capital costs of greenhouses vary from about $\$30/m^2$ for a low-tech poly house to over $\$200/m^2$ for a high-tech glasshouse (materials plus installation costs). Therefore, only certain higher value crops are generally grown under protected cropping as the return needs to justify the cost of the structure.

While it is unlikely that greenhouse production will become a major industry in the Cockburn area as water availability will limit the area of production, it is still a form of horticulture that is suited to the 'Rural' zone, and is a potential viable use of the land. There is also considered to be potential for a greater area of the City of Cockburn's 'Rural' zone to be used for protected cropping.

[36] Lantkze, N. (2020) Determination of high quality agricultural land – assessment of the City of Cockburn 'Rural Zone'

Impact from Kwinana Air Quality Buffer

There have been concerns raised by some landowners within the Rural zone about the air quality within the Kwinana Air Quality Buffer causing contamination of food crops.

There is no evidence to suggest that there is a problem with food safety in this area. The City's Horticultural Consultant sought feedback from the company that conducts the bulk of the residue testing of fresh produce in Western Australia. As part of a grower's quality assurance program the produce is tested for spray residues and other toxic compounds, and they have found no residues on produce from the area.

High Quality Agricultural Land Assessment

State Planning Policy 2.5 'Rural Planning' (SPP 2.5) aims to "protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values". It requires local planning strategies to identify whether rural areas are High Quality Agricultural Land (HQAL).

Priority Agricultural Land is defined as 'land of State, regional or local significance for food production purposes due to its comparative advantage in terms of soils, climate, water (rain or irrigation) and access to services'.

Figure 37 sets out the steps involved in determining Priority Agricultural Land.

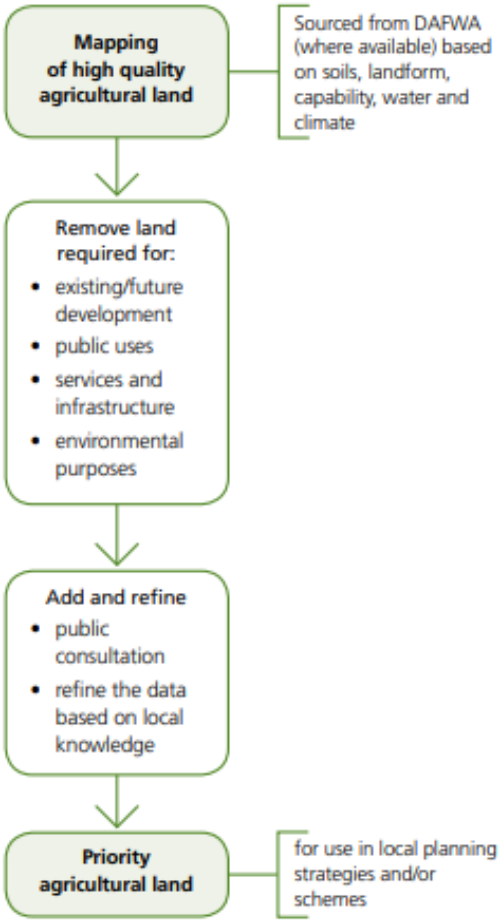


Figure 37. How to determine Priority Agricultural Land

The Department of Primary Industries and Regional Development (DPIRD) land capability mapping shows that the Rural zone has a moderate to very high capability for annual horticulture.

However, the water allocation data from DWER shows that groundwater is available to irrigate only about 20 per cent of the 370 ha of rural land in the Rural Zone. This is a major constraint to the development of a significant horticultural industry.

The Rural zone is therefore not HQAL because the amount of irrigation water is sufficient to only allow production of crops on a fraction of the total area.

Environmental values

The 'Rural' zone provides a transition between Latitude 32 (Hope-Valley Wattleup) and the Reserve/wetlands and Bush Forever to the east. The area contains areas of remnant bushland that have environmental values and serve an ecological function. It is therefore important that development in this area is cognisant of the environmental values.

Aboriginal Heritage

Within the 'Rural' zone there is one registered Aboriginal Heritage site (Place id 4357: Wattleup Road, Swamp), which is an 'artefact/scatter' site.

Within the adjacent area there are also a number of registered Aboriginal Heritage sites as follows:

- Place id 18938: Thomsons Lake Harry Waring Marsupial Reserve Ceremonial
- Thomsons Reservoir 1 and 2: Within 'Region Reserve - Public Purposes' (Water Corporation)

Interface with Latitude 32

The 'Rural' zone has an interface with the 'Latitude 32' area, and as this area develops with industrial uses this has the potential to have a perceived impact on amenity and character of the area. However, the Latitude 32 Structure Plan (Area 4) includes a 'light industrial' interface with the 'Rural' zone which should provide for a compatible interface to rural character, lifestyle and amenity.

Other constraints

There are a number of land uses within the 'Rural' zone that have applicable buffers, including poultry farms and a composting facility.

The Parmelia and Dampier to Bunbury Natural Gas Pipelines both traverse the 'Rural' zone. Planning Bulletin 87 'High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region' provides guidance on matters to be taken into account by the Western Australian Planning Commission (WAPC), local governments and applicants in considering planning proposals in the vicinity.

Future zoning

While it is acknowledged that the 'Rural' zone has limited agricultural capability, it still has some potential for protected cropping and rural pursuits. Given it is constrained by the Kwinana EPP buffer, it is considered appropriate to still provide for agricultural uses within this area.

The model provision objectives for the 'Rural' zone are as follows:

- *To provide for the maintenance or enhancement of specific local rural character.*
- *To protect broad acre agricultural activities such as cropping and grazing and intensive uses such as horticulture as primary uses, with other rural pursuits and rural industries as secondary uses in circumstances where they demonstrate compatibility with the primary use.*
- *To maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and watercourse systems from damage.*
- *To provide for the operation and development of existing, future and potential rural land uses by limiting the introduction of sensitive land uses in the Rural zone.*
- *To provide for a range of non-rural land uses where they have demonstrated benefit and are compatible with surrounding rural uses.*

It will therefore be important to define a specific local rural character for this area.

It is noted that lot sizes within the area more closely align with those set out in the model provision objective for 'Rural Residential' (i.e.. lot sizes in the range of 1-4 ha), although the 'Rural' zone objective does not specify lot sizes and is therefore still appropriate.

In considering an appropriate model scheme zone for the current 'Rural' zone, the following are relevant:

- Given the Kwinana Air Quality Buffer, further subdivision of land would not be supported regardless of the zoning (i.e. a 'Rural Residential' zoning would not provide any further subdivision potential).
- Perth and Peel stipulates a presumption against zoning of further rural residential land.

Given these two pertinent issues, the 'rural' zone is considered to provide the greatest range of flexibility for rural uses whilst protecting rural amenity and environmental values through clear identification of measures to protect these values.

The challenge will therefore be providing an appropriate range of uses to provide flexibility for landowners to use their land for rural pursuits, whilst protecting rural amenity, character and environmental values. In identifying this range of uses the limited agricultural potential will be acknowledged as a unique circumstance for the area that requires some flexibility in providing for appropriate use of the land.

For the new Scheme careful consideration will be given to whether uses such as 'storage' can be managed appropriately to protect rural character and amenity and environmental values, such as through controls within the Scheme or local planning policy, setting out setbacks, screening, vegetation retention etc, to allow this use to be undertaken in a sensitive way.

9.1.2 'Rural Living' Precinct, Beeliar

The TPS3 'Rural Living' zone is a small area of 108 properties in Beeliar. To the north is the residential area of Beeliar, and to the south is Cockburn Cement. This area has been identified as 'Planning Area F: Rural Living Precinct', and Part 1 identifies Planning Directions and actions for this area.

The majority of this area is located within the *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy* (Kwinana EPP), which is the key reason why the area has been identified in *Perth and Peel @3.5million* to remain rural.

The lots in this area are approximately 4,000m^2, and are typically used for rural lifestyle purposes, with a small number of landholdings being used for market gardening, including some small-scale agricultural uses such as vineyards and olive groves.

Development in this area first commenced in the late 1950s with small market gardening landholdings along East Churchill Avenue, and in the south-west portion of the TPS3 'Rural Living' zone. This area was an extension of the market gardening area to the east of Lake Coogee that was well-established, and that had moved south from the Spearwood area along Rockingham Road.

In the 1960s and 1970s further small market gardening landholdings were developed along Fanstone Avenue, generally reflecting the current pattern of smaller lots of approximately 4,000m^2, with some larger areas being used for agricultural purposes. Most of these areas were further fragmented through the 1990s and 2000s, and additional dwellings were built.

In the 1990s, the area to the north of East Churchill Avenue located outside of the Kwinana EPP Buffer was subdivided and developed for residential.

There are differing landowner and resident views on what is considered appropriate land use outcomes in this area. For some the

preservation of the natural environment is vital, for others, they would like to have the opportunity to subdivide, however this is restricted by the EPP buffer, and in accordance with Perth and Peel the area must remain rural. There is some desire for a broader range of land uses.

The needs of small business operators to locate in these areas has been raised by parts of the community, others have expressed concerns with how some small businesses currently operate and the need for any further permissible land uses to not detract from the amenity of the rural zones and those living there.

Given the size of the lots and their narrowness, it is not considered that a wider range of commercial uses would be appropriate in this area. Accommodating quasi-industrial uses has the potential to negatively impact on residential amenity on such small lots, with limited opportunities to mitigate the impacts. Furthermore, the current road network is not designed to accommodate heavy vehicles that could be generated by such uses. Therefore, it is considered appropriate that this area continue to function as a rural residential lifestyle precinct.

The WAPC have discontinued the use of 'Special Residential' and 'Rural Residential' zones, therefore it is proposed that the area be zoned 'Rural'. Given the size of the lots, there may be the need to use 'Additional Uses' or 'Restricted Uses' to ensure that the range of uses for the area is appropriate, cognisant of the size of the lots. In this regard, the range of uses permissible under the TPS3 'Rural Living' zone is generally considered appropriate to protect this rural residential lifestyle, with this intended future character to be more clearly identified.

TPS3 did not identify setback requirements for this area, and consideration will also be given to defining setbacks within the Scheme to provide a greater level of clarity in the planning framework, and to protect the streetscape character, which will be subject to further community consultation. In this regard, given the small size of the lots, consideration will be given to using Residential R5 setbacks.

There is a triangular portion of this area in the north-west corner that is outside of the current Kwinana EPP Buffer, but still within the 'Rural' zone in the MRS. The City does not support the rezoning of this area to 'urban' given the irregular shape and small size which would not allow for the orderly structure planning of the area to provide access for new lots and achieve an appropriate interface with the remaining 'Rural' Living' area.

9.2 Rural Water Protection zone

The MRS 'Rural - Water Protection' zone accounts for a significant portion of the City of Cockburn land east of the Kwinana Freeway, encompassing the semi-rural landholdings of the suburbs of Banjup, Jandakot and Treeby.

The MRS 'Rural - Water Protection' zone exists to protect groundwater quality and quantity, through ensuring land use and development protects the ecological integrity of important wetlands (which are hydraulically connected to groundwater), and also to maintain and increase natural vegetation cover. Tight control and limitation of land use and development is a clear imperative for the 'Rural - Water Protection' zone.

State Planning Policy 2.3 'Jandakot Groundwater Protection' (SPP 2.3) and Draft State Planning Policy 2.9 – Planning for Water regulate land use and development and provides guidance to protect this groundwater resource as part of strategic planning. Essentially, development of a single house on a single lot of generally 2ha in size is the key land use and development control for this area, and this has shaped the valued rural and environmental landscapes that define this part of the City.

The 'Resource' zone was first introduced into the City's former District Zoning Scheme in 2000 in response to the gazettal of SPP 2.3, and it was applied to land previously zoned 'Special Rural' and 'Rural' in parts of Jandakot and Banjup.

In the 1980s and 1990s, landholdings were further subdivided, with additional local roads constructed throughout the area.

The area has never been used extensively for agricultural purposes, and rural pursuits include uses such as garden centres.

The area has high environmental values and contains significant areas of remnant vegetation, as historically it has had limited use as an agricultural area. Figure 38 shows the extent of mapped Threatened Ecological Communities across the 'Rural - Water Protection' zone. There are also Bush Forever sites, and Conservation Category Wetlands (CCWs).

There has been some fragmentation of the natural environment that has occurred over time through past subdivisions, construction of driveways, firebreaks, buildings and bushfire requirements.

MRS Amendment 1289/57 - Treeby

MRS Amendment 1289/57 was gazetted 20 May 2016, rezoning approximately 20.34ha of land that had been utilised as a former sand quarry from 'Rural - Water Protection' zone to 'Urban'.

The MRS Amendment Report identified the subject site as being suitable for the MRS 'Urban' zone for the following reasons:

- *The subject land is identified as an 'Urban Expansion' in the draft South Metropolitan Peel Sub-regional Planning Framework which forms part of the Perth and Peel @ 3.5million plan. The proposal therefore has strategic context;*
- *The subject land is a former sand quarry. Urbanisation would therefore not result in the widespread clearance of vegetation or reduce the amount of vegetation in place over the Jandakot Underground Water Pollution Control Area; and*
- *The proposed amendment is considered to represent a logical extension of the existing Banjup Urban Precinct, and like that area is within close proximity of the Cockburn Central Activity Centre and railway station, and regional roads.*

9.2.1 Jandakot/Treeby Planning Urban Expansion Area

Perth and Peel @3.5million has identified a portion of the MRS 'Rural - Water Protection' zone as a 'Planning Investigation Area', now 'Urban Expansion'. This area has been included within 'Planning Area B''. Within this area, and other parts of the 'Rural - Water Protection' zone generally there has been some pressure for more intensive development to occur.

In addition to environmental matters related to the groundwater mound, much of the area has high conservation values, including:

- Conservation Category Wetlands (CCWs);
- Declared rare flora (DRF);
- Threatened ecological communities (banksia woodland);
- Carnaby Cockatoo habitat;
- Bush Forever; and
- Extensive remnant vegetation and identified ecological corridors, including regional linkages.

The area is also highly constrained by:

- Aircraft Noise (Proximity to Jandakot Airport)
- Bushfire prone area
- Dog kennel noise buffer and other land use buffers.

(see also Part 1 'Planning Area B - Jandakot/Treeby Planning Investigation Area')

The section below discusses some of these matters in further detail.

9.2.2 Future of Groundwater Protection Area

The Jandakot area, like many former rural areas of Perth, has experienced considerable change over the past two decades. It is understandable that for residents within the area there is a desire for some certainty regarding how any future change could affect their land and rural lifestyles.

Some residents assert that changes within the area, such as increased traffic, have negatively impacted amenity and character, with some

areas more affected than others. However, many residents enjoy the rural lifestyle of the area, and have chosen to live there for that reason. Many residents also strongly value the environmental values of the area.

There has been some pressure for urban development within this area, with a number of Metropolitan Region Scheme (MRS) Amendments lodged with the WAPC seeking modification to the groundwater protection zone.

The local planning framework must be consistent with the State Planning Framework, and the local planning scheme zone must be consistent with the MRS and State Planning Policies and reflect the groundwater protection area.

With regard to the groundwater mound, it is important to note that the complex underlying stratigraphy of impervious and porous layers and perched water tables associated with some of the Beeliar Wetlands means that there may be significant departures from the normal hydrological patterns of wetlands on the Swan Coastal Plain. Groundwater abstraction impacts on wetlands because it is a superficial aquifer.

The Jandakot mound is also located within the Peel–Harvey coastal catchment and therefore land uses here impact not only on groundwater quality, but also on eutrophication of the Peel-Harvey Estuary.

The Jandakot Mound area supports remnant wetlands and Banksia Woodlands which depend on the shallow groundwater resource. In turn, the wetlands and vegetation support a range of fauna which is highly valued by the community.

The hydrology of the groundwater mound is complex, and further studies are required to better understand this. The City will advocate for the State Government to undertake this study to provide greater certainty for landowners and to inform future planning of the area.

It is important to acknowledge that the groundwater mound is not the only constraint in this area and there are a wide range of other issues. Any contemplated change to the MRS boundary requires comprehensive consideration of all constraints. For example, clearing of vegetation may not negatively impact groundwater levels but it may impact groundwater quality or water levels of Thomsons Lake or other environmental values such as ecological corridors.

Critically, any change to the MRS will require identification of bushland to be retained, and a comprehensive district structure plan demonstrating how the constraints can be addressed and how orderly and proper planning can be achieved. This would need to demonstrate how the existing road network and land fragmentation can be dealt with. Community engagement will also be a critical part of any proposed MRS zoning change.

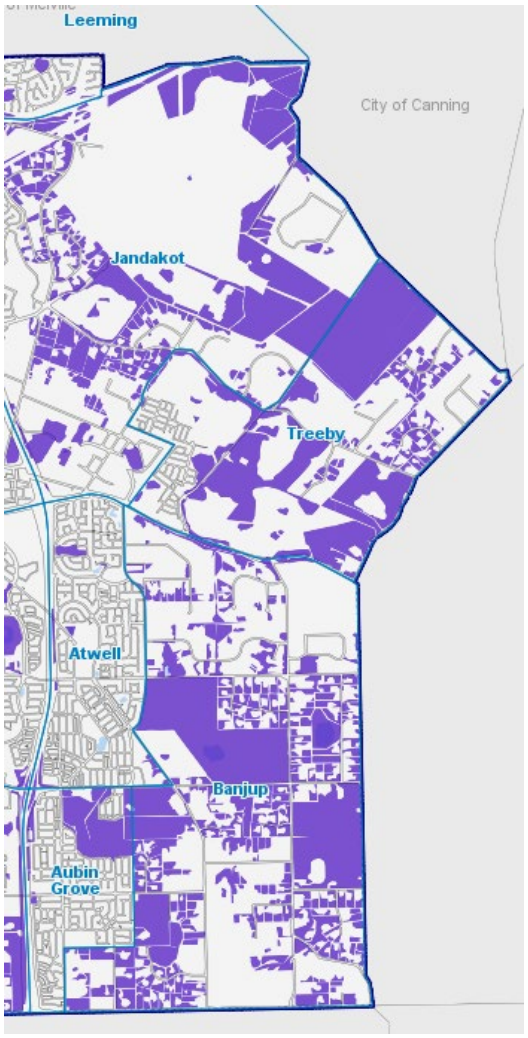


Figure 38. Threatened Ecological Communities (purple), 'Rural - Water Protection' zone

9.2.3 Proposed Scheme requirements

For the 'Water Protection' zone TPS3 required that development complied with SPP 2.3; and SPP 2.1 Peel-Harvey Coastal Plain Catchment Policy rather than specifying a range of permissible uses in the land use table in the normal manner. This has created ambiguity around some land uses and development requirements. It is therefore recommended that the Scheme identify a range of permissible uses and development controls for this area in the conventional manner, cognisant of SPP 2.3 and draft SPP 2.9.

Given the environmental values of this area, measures will be considered to minimise clearing of vegetation, including 'building exclusion areas', given that not all lots within the area have designated 'building envelopes'.

9.3 Rural Character

The character of the City's rural areas will be explored further through a local planning policy to define the intended future character of these areas. Below is a preliminary character snapshot of the character of these areas.

9.3.1 'Rural' zone character snapshot

The City's rural zone is a large area with a mixed streetscape and landscape character. This is typical of most rural areas which are rarely homogenous.

The lots are smaller than typically seen in agricultural areas, generally 1-2 ha with frontages between 50-100m. This means the area is not characterised by agricultural crop patterns for example, which are only seen occasionally in the area (such as shown in Figure 39). The area has more of a rural-residential or rural lifestyle character with dwellings generally setback 10-20m from the road, and given the narrow width of the lots they are a distinctive part of the landscape. Development typically respects the natural landscape form.

Typically the area has open streetscapes with a mixture of native mature trees and some formal landscaped gardens, including lawn.

The roadside vegetation pattern and naturalness varies, with some areas containing remnant bushland and mature trees, and other areas characterised by exotic species including Ficus', Queensland box trees, native tree species, and palms that in some cases have been planted as street trees.

In terms of built form, the majority of properties contain a residential dwelling and associated outbuildings, and there are often rural outbuildings. Generally buildings and structures are subservient to the agricultural use, established vegetation and open landscape character of the area.

Hardstand and storage uses have increased in more recent times and some of these properties have limited vegetation and landscaping and appear more as a rural pursuit or business.

Notwithstanding, it is considered that the predominate character of the area is still rural, not industrial. While some individual properties may not reflect what may be typically thought of as rural character, these properties and uses do not detract from an overall rural character because they are infrequently interspersed.

There is however the potential for an increase of such uses over time to have a cumulative effect on the character of the area if they continue. Removal of trees and landscaping, and an increase in hardstanding and outbuildings will change the character, and given that this area is identified to remain rural it is considered undesirable to allow an incremental erosion of the rural character towards that which is more 'industrial' or 'mixed business'.

The local planning framework should identify the intended future character of this area and measures to protect that character while still providing flexibility to recognise that rural areas are not homogenous.

Figure 39. Agricultural uses - Pearse Road, Wattleup

Figure 40. Streetscape of Lorimer Road

Figure 41. Streetscape within the 'Rural' zone

9.3.2 'Rural Living' zone character snapshot

The majority of lot frontages within the TPS3 'Rural Living' zone are less than 40m, with dwellings addressing the street with setbacks of 10m or less. The streetscape is generally characterised by open landscaped gardens with lawns and formal plantings similar to many well-established suburban residential areas, with some remnant native vegetation such as grass trees and Tuarts (see Figures 40 and 41). Large mature trees typically form a backdrop to the dwellings.

The area is punctuated by some larger lots with vineyards or olive groves (see Figure 42), and a number of larger lots, particularly corner lots that have a more rural character (e.g., rural style fencing and outbuildings rather than formal gardens). There are also some features throughout the area that reflect a rural character, such as windmills and dry-stone walls.

On balance this creates a character that reflects a rural residential lifestyle with hobby farms, rather than that of a working agricultural area.

Wells Road (north-south) has a distinctive avenue of trees, including a variety of Eucalyptus and gum trees (red gums, lemon scented gums) and peppermint trees that are an important part of the landscape setting of this area (Figure 43).

Figure 42. Grapevines in the 'rural living' precinct

Figure 43. Lemon scented gum on Wells Road

9.3.3 'Water Protection' zone character snapshot

Much of the 'Water Protection' zone is heavily vegetated, with large areas of vegetated conservation reserves and wetlands which contributes strongly to a natural bushland setting.

Building envelopes on many properties have minimised the extent to which structures and hardstanding detract from the natural landscape, and have minimised land clearing.

Most properties contain some remnant vegetation, and while some properties also

include introduced landscaping such as tree avenues to driveways, or formal garden areas adjacent to the dwelling, the natural landscape is generally the dominant feature.

Generally fencing is low and open rural style fencing, such as post and wire, which contributes to the rural lifestyle character.

Roadside vegetation is typically remnant trees, however in some areas there are more formal plantings, such as native species or introduced species like conifers.

The curved rural-standard roads and culs-de-sac throughout this area add to the distinctive rural lifestyle and natural landscape character.

Figure 44. Rural Water Protection Area

9.3.4 Key intended future character

The local planning framework will identify intended future character and measures to protect it for rural areas. However, in the meantime the following are considered to be key features of the intended future character of the MRS rural zones, which all development shall respect:

- Site responsive development that does not intervene with the natural typography, sited to minimise retaining or fill and vegetation removal.
- Buildings/structures, fencing and hardstand areas sited and designed to be subservient to the natural landscape and vegetation as much as possible.
- Open, natural front setbacks and verge areas characterised by vegetation and trees.
- Maximisation of mature tree retention.

9.3.5 Rural character and identity

In some rural areas there is an issue where delineation from adjacent or nearby industrial areas, such as Latitude 32, is not clear. This lack of a clear boundary has the potential to undermine the identity and character of rural zones. In conjunction with the community, the City will investigate ways to better delineate rural areas, and to support and enhance the character and distinctiveness of these areas. As an example, public art, signage and post and wire rural fencing could be used to create a unique rural identity. This could also provide an opportunity to reflect the City's rural history which includes market gardening and bushland conservation as part of this placemaking.

There has also been community feedback that some of the City's rural areas lack amenity for residents, such as footpaths. The City will look at ways to address these issues whilst protecting rural character. This will require particular consideration to be given to landscaping and the design and material finishes of infrastructure to ensure it reflects a rural rather than suburban character.

Rural Land Issues and Analysis

State government policy prevents the further subdivision of the City's rural zones, whether due to the presence of buffers such as the Kwinana EPP or constraints such as aircraft noise and protection of the Jandakot Groundwater Mound.

There is an opportunity to provide landowners with greater information regarding the zoning and permissible land uses within the 'rural' zone.

It is acknowledged that the 'rural' zone has limited agricultural capability due to the small size of the lots and limited water availability; however, given the location of this area within the Kwinana EPP buffer a 'rural' zoning is considered to be the best zoning for the area. This will provide the best opportunities and flexibility for rural pursuits whilst providing a transition between the Latitude 32 area and the environmentally sensitive wetlands to the east.

For the 'Rural – Water Protection' zone the Scheme should include the range of permissible uses, cognisant of SPP 2.3 and draft SPP 2.9, and the potential introduction of 'building exclusion' areas will be explored to minimise loss of vegetation.

For other rural areas under the MRS the Scheme should identify an appropriate range of uses that provide some flexibility for use of the land in a manner that does not negatively impact on identified intended future character.

It will be important to define future intended character for the rural zones, and measures to protect that character and rural amenity.

10. Cultural Heritage

The City of Cockburn has a rich and diverse history that is reflected in the built, natural, and cultural environment. As the area experiences growth and change, the community's interest in heritage and the history of the area strengthens. The challenge is to ensure this change is managed in a way that does not erode the City's unique character, but rather enhances it wherever possible.

10.1 Aboriginal Heritage

Cockburn's traditional owners are the Whadjuk Nyungar people, part of the Beeliar group. Their area extended south from the Swan and Canning Rivers. Today, Aboriginal people maintain strong links with the area. Aboriginal campsites along Cockburn's central chain of lakes avoided the salty waters nearer to the coast. Sixteen Aboriginal campsites have been found in Cockburn, most of them located on the fringes of Bibra Lake (Walliabup) and North Lake (Coolbellup).

Information on Aboriginal Heritage places protected under the *Aboriginal Cultural Heritage Act 1972* are a standard input required for planning assessments and is one of the relevant "Matters to be considered by the City" in planning applications and proposals, which are listed in the Scheme.

The process for submitting information about Aboriginal cultural heritage onto the Aboriginal Cultural Heritage (ACH) Directory and assessing whether an activity will harm Aboriginal cultural heritage, are administered under separate legislation. The ACH Directory is maintained and administered by the State Government's Department of Planning, Lands and Heritage. Locations and sites may be searched under the Department's Aboriginal Cultural Heritage Inquiry System and information obtained from that authority which then becomes a planning factor considered through administration of the local planning scheme.

There is an opportunity for there to be improved understanding and recognition of Aboriginal heritage, particularly the connection between places which is sometimes intangible. The study of the Hamilton Hill Swamp Precinct is an example of a project that explored the Aboriginal Heritage significance of this place, resulting in a new proposed listing to protect the area. The City will advocate for Main Roads WA to recognise the Aboriginal cultural significance of the Hamilton Hill Swamp Precinct, and the women's 'high ceremonial grounds' on the south side of Rockingham Road which hold intangible values and should not be interfered with.

Across the City it will be important to provide and support opportunities for the Aboriginal community to meet/yarn, and to undertake cultural history information sessions and health, wellbeing, healing and environmental workshops.

Other important actions include extending the City's Signage Style Guide to provide guidance on meaningful use of Aboriginal names throughout the City of Cockburn; and to identify opportunities to celebrate Nyungar language in the urban environment, in accordance with the advice and guidance of the Whadjuk Nyungar community.

The City will also develop an Aboriginal Engagement Framework, as per the City's *Reconciliation Action Plan*, that acknowledges the Whadjuk Nyungar people as a key stakeholder in the use and development of land in Cockburn.

10.2 Historic Heritage

The first European settlement in Cockburn was Thomas Peel's ill-fated venture at Clarence. Later in the 1880s a small group of Pensioner Guards from Fremantle established a compact village around Lake Coogee, building small cottages and establishing vegetable gardens and orchards. Remains of the cottages and their gardens can still be seen around Lake Coogee.

Upon the discovery of gold in Western Australia, there was rapid growth of Fremantle and Perth, and vegetable gardeners and orchardists were attracted to the Cockburn area. Jandakot, and later and more successfully, South Coogee grew to become the nursery of market gardening in Cockburn.

Nearer to Fremantle, new settlements at Hamilton Hill and Spearwood grew to meet the demands for building materials and food. By 1930, new settlements were scattered throughout Cockburn, although development stalled during the Depression and again with World War II. Settlement of the district commenced again in the post-war years. This time rather than market gardens and dairy farms, housing developments were established.

Much of this story is still visible throughout Cockburn in remnant buildings, ruins, and landscape elements. This includes a number of turn of the century weatherboard houses, and locally quarried limestone dwellings, constructed in the 1920s. There are a variety of other buildings reflecting Cockburn's cultural past, including halls, stores, stables, schools and hotels. There are also numerous natural features such as the Beeliar Wetlands Chain, significant Tuart trees and Norfolk pines, and parklands which contribute to the interpretation of the character of Cockburn.

Remnants of the war effort are still visible throughout the City – this includes the former explosives reserve at Woodman Point, the gun emplacements in Hamilton Hill, and the WWII Army Camp site in Bibra Lake that was only re-discovered in 2014.

Notably, the City has a rich and diverse industrial heritage which was instrumental in the economic development of Cockburn, including the lime kilns in Coogee, the Robb Jetty abattoirs, hide and tanneries, and the Watsonia Factory. Today, the area is renowned for its ship building industry located in Henderson.

The City's most prominent and significant heritage places include Manning Park, Memorial Hall, Newmarket Hotel, Old Coogee Hotel and Post Office, South Fremantle Power Station, Woodman Point Quarantine Station; and the Magazine Jetty and adjacent former explosives reserve. These sites have landmark qualities, contribute to local identify and provide recreational and tourism opportunities for the City.

Azelia Ley, Memorial Hall, Newmarket Hotel and the Old Coogee Hotel and Post Office have all been restored in recent times and are in use.

Heritage places on the coast, including the Magazine Jetty and former explosives reserve, and the Woodman Point Quarantine Station are potentially vulnerable to changing coastal processes which requires careful consideration.

10.2.1 State Government Owned Heritage Places

There are a number of key places with heritage significance that are owned or managed by the State Government. This includes the Lime Kilns (see Figure 45), Pensioner Guard Cottages, and former Explosives Reserve structures throughout Woodman Point Regional Park. These places have landmark significance and are important historical and cultural features for the City.

The City will therefore advocate for improved management of State Government owned and/or managed heritage listed places to ensure protection of their heritage values.

Figure 45. Lime Kilns, Coogee

South Fremantle Power Station

The former South Fremantle Power Station is a significant coastal landmark, and is included on the State Register of Heritage Places. The power station ceased operation in 1985 after 34 years. Since its closure, it has become renowned for its urban art and dystopian character as an industrial ruin, and this has become part of valued cultural heritage.

The City has recommended an alternative approach to the adaptive reuse of the South Fremantle Power Station and will continue to advocate for that as a key action, including a staging strategy that provides a more feasible pathway for reuse while protecting what is most valued by the community.

This approach would focus on stabilising the building as a ruin, capitalising on the notion of loss and decay while respecting the cultural heritage values. Critically, this approach would provide opportunities for adaptive reuse of the building prior to relocation of the switchyard, and would not prevent a further transition to full restoration in the future should it be desired/achievable.

In the first instance, the City will seek an understanding of the potential and estimated costs to stabilise the building as a ruin and make access safe (likely to include remediation), and to make it capable of accommodating freestanding (temporary or permanent) structures within and/or adjacent to the structure.

The City will also advocate for the Office of Heritage to update the State Heritage Place Record for the South Fremantle Power Station to reflect the cultural heritage significance associated with its history as an abandoned power station. *(*see also *Section 6.0 Tourism and Visitors)*

10.2.2 Council heritage assets

The City owns and manages a number of heritage places, including the former Jandakot School in Cockburn Central.

To ensure the appropriate management and protection of these places, the City will prepare and update Conservation Management Plans and/or maintenance plans for heritage assets.

The City will also ensure appropriate strategies and management of heritage assets predicted to be affected by coastal erosion and inundation.

10.2.3 Local Government Inventory/Local Heritage Survey

The City of Cockburn has adopted a Local Government Inventory (LGI - now referred to as Local Heritage Survey under the *Heritage Act 2018*). This is a comprehensive list of places in the City of Cockburn that have heritage significance, assisting the City in making decisions that are harmonious with heritage values. The LGI also provides a public cultural and historic record of the district, and it is an accessible and invaluable resource for both Council and the community.

The City's LGI includes 122 places of cultural heritage significance, with the 45 'Management Category A and B' places also included on the Heritage List, adopted pursuant to the Scheme. Twelve of these places are included on the State Register of Heritage Places, reflecting their state level cultural heritage significance. The City has one designated 'Heritage Area', being 'Naval Base Holiday Park'.

There are five categories of places in the Inventory with different management recommendations for each, reflecting the level of heritage significance of the places. These categories do not all have the same implications for the owners, as places in the highest category (A) require the highest level of protection, management and assessment than places in the lower categories. Places that have been demolished are retained on the LGI as 'sites only' to ensure a record of their existence, and to ensure the LGI provides a comprehensive record of important sites.

A robust statutory framework is at the forefront of heritage protection. This includes the statutory protection of places with the highest level of cultural heritage significance under the local planning scheme; supported by clear guidelines to assess proposals that affect heritage places, and to provide certainty to landowners of heritage places, and the community.

The City has a Local Planning Policy *Heritage Conservation Design Guidelines* adopted pursuant to the Scheme that sets out clear guidance for heritage proposals for each Management Category. In conjunction with State Planning Policy 3.5 'Historic Heritage Conservation', it broadly seeks to achieve the following:

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

10.2.4 Heritage Incentives

The majority of the places on the City's LGI are in private ownership. In the past 10 years, a number of key landmark heritage places have been restored and adapted for reuse including the Old Coogee Hotel and Post Office (Coogee Common) and the Newmarket Hotel (ballet school). Many other locally listed heritage places, particularly houses, have been subject to restoration works to bring them up to modern standards and ensure their ongoing viability.

All development associated with places on the heritage list require planning approval, including interior works. This is to ensure the works do not detract from the heritage significance of the place.

The whole community benefit from the contribution that heritage places make to the City of Cockburn. Therefore, in recognition of that, and to reduce the financial burden for landowners, it is recommended that consideration be given to offering heritage incentives.

In the first instance, consideration should be given to waiving planning application fees for heritage places. This will encourage their adaptive reuse and sends a positive message to landowners and the community about the importance of these places in reflecting the City's history and contributing to a unique sense of place.

The City must ensure all opportunities are taken to safeguard the area's unique history and character. This can be achieved through protection of heritage places, but also by encouraging the appropriate adaptive reuse of heritage places and buildings, and facilitating opportunities for new development to reflect or interpret the area's history.

10.2.5 Heritage Interpretation

Places that have been demolished are retained on the Local Heritage Survey as 'sites only' to ensure a record of their existence, and to ensure the Local Heritage Survey provides a comprehensive record of important sites. This also provides the opportunity for new development to reflect or interpret the site's past, adding richness and helping contribute to the 'sense of place' to support a unique local identity.

The retention and adaptive re-use of heritage buildings; and the appropriate interpretation of

heritage places and sites, such as through public art and street naming, is an important way to reflect the history and heritage of Cockburn, and to maintain its unique character.

10.2.6 Heritage Precincts

For heritage places, particularly larger sites or precincts, one of the threats is a lack of an identified overarching vision to guide development and changes. This can result in changes negatively impacting on the cultural heritage significance of the site, particularly the cumulative impact over time.

Heritage sites/precincts are often highly desirable locations for events, community uses, and can sometimes be under pressure to accommodate other unrelated heritage elements/artefacts or fabric from other sites or areas. Such additions have the potential to 'confuse history' and detract from the specific stories and heritage values of the site itself and therefore these must be very carefully managed.

To address this, the City will ensure that heritage precincts (i.e. areas with a number of elements of significant fabric) have a clear vision identified through a Management Plan, Precinct Plan (or similar) to ensure a robust framework for considering proposals.

10.2.7 Significant Trees

The City has a Significant Tree list contained within the Local Government Inventory.

Some examples of Significant Trees with historical value include the Moreton Bay fig trees on Cockburn Road, North Coogee (Cockburn Coast area) which were associated with Robb Jetty abattoir.

Council have adopted criteria for 'Significant Trees' which are used to consider proposed listings. The criteria are similar to those used by the Office of Heritage for heritage places, including historical, aesthetic, landmark and social significance, though they have been adapted for trees. While environmental values are one of the criteria, the 'Significant Tree' list is not intended to be a list for trees of environmental value only.

'Significant Trees' have been protected through the requirement for planning approval prior to their removal or significant pruning. This requirement is a supplemental provision in the Scheme.

With growing development pressures and change throughout the City, the preservation of trees which contribute to the urban canopy and character of the local area is becoming more important.

The City will explore the inclusion of tree protection measures through the local planning framework and will work with the State to investigate mechanisms within the local planning framework to protect trees.

Figure 46. Significant Trees - Rockingham Road, Spearwood

10.2.8 Intangible Cultural Heritage

Currently, ephemeral and more subtle remainders of the City's cultural heritage are vulnerable to loss by default because they are not recognised or recorded.

These are the sites that do not meet the criteria to be included on a formal heritage list or register through the *Heritage Act 2018* or *Aboriginal Cultural Heritage Act 1972*. This may be because their values are intangible and/or below threshold for formal listing.

This includes local cultural traditions that are vulnerable to destruction, including events and

festivals; and the alignment of roads due to historical events and activities.

These are often important to the community and the identity of a locality. The heritage of a place is an identifying link that brings people together and can engender and reawaken local pride by strengthening and celebrating the self-image of communities.

As a first step, the City maintains demolished places on the Local Government Inventory (Local Heritage Survey), lowering their management category to ensure a historical and locational record is maintained.

The City will also investigate an improved framework to map and record intangible and ephemeral cultural heritage, such as through a Cultural Heritage Strategy. This will assist with minimising the loss of cultural heritage, and maximising opportunities to respond to this meaningfully, and in a way that enriches the City's identity. This should include guidance on how the City should respond to these elements sensitively, adding to and developing local distinctiveness rather than diminishing it and creating uniformity or blandness.

Figure 47. Azelia Ley Homestead, Hamilton Hill

Cultural Heritage Issues and Analysis

The City will continue to advocate for investigation into the alternative adaptive reuse of the South Fremantle Power Station, given its landmark significance, and its importance in the success of Cockburn Coast.

The City will advocate for improved management of State Government owned/managed heritage places which have high cultural significance for the City of Cockburn.

The City will ensure the appropriate management and protection of Council owned or managed heritage places, preparing and updating Conservation Management Plans and/or maintenance plans for heritage assets.

The City will investigate financial and non-financial incentives for owners of places on the City's Heritage List to assist in the protection and adaptive reuse of heritage places in recognition of the fact that protection of heritage places benefits the whole community.

There is the potential for a Cultural Heritage Strategy to record cultural values of an intangible and ephemeral nature that do not meet criteria for inclusion on a statutory listing to enrich the City's unique local identity.

11. Urban Design and Local Character

As the City of Cockburn continues to experience growth and change, the challenge is to ensure this change is managed in a way that does not erode the City's unique character.

State Planning Policy 7.0 'Design of the Built Environment' (SPP 7.0) provides the overarching framework for the elevation of design matters, setting out objectives, measures, principles and processes which apply to the design and assessment of built environment proposals through the planning system.

'Context and character' is one of the key design principles of SPP 7.0, setting out that good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.

The distinctive characteristics of a local area include its prominent natural and built features, social, economic and environmental conditions, the overall qualities of its built environment, local Aboriginal culture and history and significant post-settlement heritage.

Good design responds sensitively to these factors in order to positively contribute to the identity of an area including adjacent sites, streetscapes and the surrounding neighbourhood. New development should integrate into its setting to reinforce local distinctiveness and respond positively to the intended future character of an area.

Consideration of local context is particularly important for sites in established areas that are undergoing change or are identified for change.

SPP 7.0 provides the overarching framework to review the City's local planning framework with a focus on the key design principles of SPP 7.0.

Historically, the City's local planning framework has not explicitly identified intended future character. This makes it difficult to ensure development respects and enhances valued local character, particularly within areas undergoing transition and activity centres where specific urban design and liveability objectives are sought.

The move to a more performance-based framework will require identification of intended local character to ensure identification of measures to protect it. This Strategy identifies residential character, and there is a need to identify intended future character more broadly across the City, including for rural areas, industrial areas and centres through local planning policies.

In order to achieve good design outcomes that meet community expectations there needs to be a coordinated strategy of design quality mechanisms, as outlined in Figure 48.

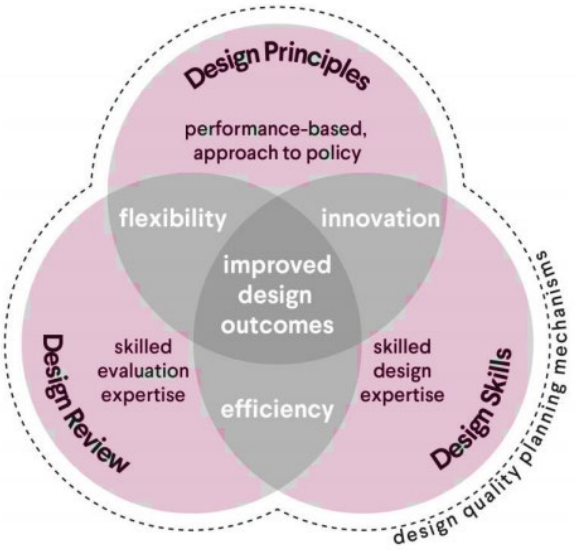


Figure 48. The coordination of design quality mechanisms, illustrated (State Planning Policy 7.0)

The City will elevate design considerations in decision-making, including through Design Review. Measures will be identified to ensure new development is responsive to its surrounding context; and to ensure that buildings and the spaces they create improve the quality and amenity of the adjoining public realm.

The City will require that individual developments respond to the local context, including adjacent development and the public realm.

11.1 Neighbourhood Character

In order to ensure that development contributes positively to neighbourhood character, it is critical to first identify the desired/intended future character to then determine the appropriate design guidance.

This is particularly important in areas undergoing transition, such as those areas where residential densities have been increased, to provide clarity regarding the future desired character where it may be ambiguous.

SPP 7.0 refers to 'intended future character of an area', and references 'intended future character' or 'desired future character' are also present throughout the Residential Design Codes which seek to ensure that residential development responds to the local context.

An assessment of the City's residential areas has been undertaken at a broad level to identify the key defining valued neighbourhood characteristics, and the desired/intended future character.

This approach seeks to protect valued neighbourhood character without imposing unnecessary restrictions on homeowners' choices and desire to express individuality with regards to dwelling styles.

For the purposes of defining the intended neighbourhood character it is considered there are broadly three key residential character areas as follows, and shown at Figure 53:

1. **Garden Character Areas** (Infill and Established): Well-established residential areas (generally established for 20+ years).

2. **New Garden Character Areas:** Newer residential areas, typically subject to a structure plan.

3. **Urban Garden Character Areas:** Residential areas that have a defined urban character (Cockburn Coast, South Beach, Port Coogee, Cockburn Central, Muriel Court).

The expectation is that all development within these areas contributes positively to the intended future character as outlined in the succeeding sections.

11.1.1 Residential Character Overview

Suburbs like Spearwood, Coogee and Lake Coogee have evolved from market gardening and agricultural areas to key residential growth areas, which has substantially changed their character.

When the City's first suburbs were established, the roads followed the landscape, and the width of road reserves, verge widths, lot sizes and setbacks provided for a residential character without any particular consideration or requirements needed. These areas had green leafy streets that were often pleasant environments for pedestrians.

Some of the City's first residential areas in recent years have again seen change through the Revitalisation Strategies, whereby higher residential densities have facilitated re-subdivision of these residential lots, resulting in intensification of residential development.

In addition to higher residential densities, there has also been a trend towards larger dwellings. Smaller three bedroom one bathroom dwellings that typified the original dwellings in a suburb such as Spearwood or Hamilton Hill, are being replaced by much larger dwellings.

Changes to the Residential Design Codes have also facilitated smaller street, side and rear setback requirements at all residential densities. This has changed the setting of dwellings, reducing private open space and garden areas, and changing the appearance of streetscapes in established residential areas as dwellings are replaced with a larger dwelling or multiple or grouped dwellings.

The mature trees in established suburbs, particularly Hamilton Hill and Coolbellup are highly valued by the community, and contribute significantly to the character of these suburbs. An issue facing many local governments, including Cockburn, is how to balance protecting and enhancing existing mature trees and accommodating further housing growth.

To ensure infill development does not detract from valued neighbourhood character, the City has commenced the 'Better Neighbourhoods, Better Homes' program which seeks to ensure that infill development and grouped dwellings have a positive impact on neighbourhoods, and to result in quality, well-designed homes that people want to live in.

Local Planning Policy 1.2 Residential Design Guidelines has been updated to reflect the 10 principles of State Planning Policy 7.0 'Design of the Built Environment', and sets out design guidance under each principle to ensure that grouped dwellings contribute positively to the intended future character.

Within newer areas, landscape character has been more impacted through the practice of bulk earthworks for subdivision. Smaller road reserves, smaller lots, smaller setbacks and larger houses have also resulted in reduced landscaping and a very different streetscape and neighbourhood character. These street environments can be hostile for pedestrians and discourage active transport modes. Furthermore, the heat island effect is more pronounced in these areas, and to be resilient to climate change a different approach will be required.

Double garages have become the norm, and even with the Residential Design Codes restricting their width, garages generally comprise a greater proportion of the façade of new dwellings. This restricts opportunities for articulation and interest in dwelling facades and means fewer windows facing the street which reduces surveillance of the street.

To summarise, new residential development is characterised by less green landscaping, more hard landscaping elements, and greater prominence of the built form in the streetscape.

Garden Character Areas - Intended future character

To establish the future desired character within well-established residential areas, the current valued neighbourhood character elements have first been identified (see Table 12), also setting out why they are valued.

In formulating this, consideration has been given to the feedback received through the extensive community engagement on the Revitalisation Strategies and other planning projects.

The character of these areas is still predominately 'suburban residential', even where infill development has occurred throughout Spearwood, Hamilton Hill and Coolbellup.

While all areas are unique in their own way there is no intention to control dwelling styles, or to create special character design guidelines, rather the intent is to protect the key neighbourhood characteristics that are valued by the community.

In this regard, the following streetscape characteristics are of particular note:

- Dwellings set amongst landscaping and open space, often including mature vegetation which contributes to a green, leafy character.
- Open verges that are often landscaped with lawn or native vegetation and trees.
- Predominately one (single or double) crossover for each existing established residential property which contributes to the creation of a green, leafy streetscape character; minimises disruption to the pedestrian and cyclist environment; and maximises opportunities for street trees and landscaping in verge areas, reducing the heat island effect.

Each of these suburbs are characterised by a variety of dwelling styles, with no identifiable architectural character or vocabulary dominating. However, notwithstanding different style, age and

size of dwellings, they are generally characterised by:

- Facades with different elements and details of design interest, including openings and articulation that provide visual interest and provide passive surveillance.
- Durable external material finishes that generally weather well and maintain a good appearance over time.
- Garages/carports that do not visually dominate the façade or street.
- Good levels of amenity, with some level of flexibility to accommodate furniture and personal goods to meet changing household requirements over time and the needs of different occupants/households.

New Garden Character Areas - Intended future character

In newer residential areas the neighbourhood character is often emerging, and Table 13 identifies a desired future character which is considered to reflect community expectations for new suburban areas as follows:

- Streetscapes that have a landscaped garden character, with landscaping and trees within the site, front setback, and verge areas that soften the appearance of the built form.
- Dwellings in a garden setting, with open spaces and landscaping creating amenity and functional spaces for occupants.
- Dwellings with facades that include different elements of design interest, including articulation.
- Dwellings that have openings to the street(s), providing visual interest and passive surveillance.
- Well-planned, liveable dwellings that provide high levels of amenity for occupants, and contribute to the creation of diverse and high quality housing for the community.
- Streets that are pedestrian and bike rider friendly.

Urban Garden Character Areas - Intended future character

'Urban Garden Character' areas have been planned to have a more urban character, differing from the low-density suburban residential character of established suburbs. Of particular note, the dwellings have greater site coverage, with smaller side and rear setbacks, which results in less of a landscaped setting than typically seen in older established suburbs. In these areas, the public realm has been designed to complement the urban built form, including more high quality hardscape elements, with careful selection of material finishes and landscaping.

Each of these areas is subject to an adopted structure plan, applicable design guidelines and local developments plans (LDPs) which set out objectives and a vision for these areas, including desired character.

For 'Urban Character Areas' the intended future character is as defined in the relevant structure plan and design guidelines, which have been subject to community consultation.

11.1.2 Character in new residential areas

In addition to the trend towards larger dwellings there are a number of matters relating to subdivision design and earthworks that are shaping the character of new residential areas.

In the last few decades there has been a significant change in land development practices in Western Australia. Most notably, 30 years ago when land was developed there was substantially less land clearing and earthworks than there is today. It has become standard practice that subdivisional areas are bulk earthworked and that each lot created is level and retained.

This has seen a greater impact on the natural landscape, and wholescale loss of vegetation in

greenfield developments to a much greater extent than there was when the City's first residential areas were established. Such practices can render an area unrecognisable, and it is recommended that development is required to be responsive to the local landscape and local distinctiveness.

The landscape of a place is part of its character and identity. The City will work to encourage the retention of mature trees and natural landscape elements in greenfield developments through the structure plan and subdivision process to create places with an identity and connection to the past.

The City will introduce a requirement for 'Statements of Design Intent' for structure plans, demonstrating how the proposal responds to the context and achieves a site-specific response to the existing landscape and topographical features.

The 'Statement of Design Intent' will also set out streetscape character, landscaping, open space, and built form outcomes to ensure structure plans are robust enough to provide flexibility at the subdivision and development stage whilst still ensuring development responds to the local landscape and achieves the design intent.

The City will identify measures to ensure that lot sizes and residential codings appropriately correlate to ensure built form outcomes, including setbacks and site coverage are appropriate to lot sizes and intended future character, to prevent higher codings being used to provide for dwellings with greater site coverage which can compromise streetscape character.

Local Development Plans (LDPs) will play an important role in ensuring good quality outcomes on smaller lots, ensuring that dwellings contribute positively to the streetscape, including maximising street tree opportunities and surveillance of the public realm.

In new suburban areas provision of functional and attractive multi-purpose open space has become more critical than ever to provide a recreational and aesthetic function, and to contribute to local character (see also 7. *Recreation and Open Space).*

11.2 Character of Activity Centres

Many of the City's activity centres are comprised primarily of shopping centres. These are typified by inward facing built form, lack of connectivity to the surrounding area, and a focus on access for cars rather than pedestrians.

SPP 4.2 encourages the development of activity centres as community focal points. They are hubs that attract people for a variety of activities such as shopping, working, studying and living. They include uses such as commercial, retail, higher-density housing, entertainment, tourism, civic/community, higher education and medical services.

SPP 4.2 sets out a policy requirement for activity centre structure plans (now precinct structure plans) to be prepared for all district level centres and above. They set out the spatial plan and strategy to achieve a compact, pedestrian-friendly, mixed use activity centre that will offer a range of lifestyle choices, reduce car dependency, and limit environmental impact.

Activity Centre Structure Plans have been prepared for Spearwood (Phoenix) and Cockburn Central and will ensure a focus on quality urban design outcomes for new development. This includes improvements to the public realm with the aim being to see these shopping centres function more as town centres so that they contribute to a unique sense of place for the community. For the Phoenix Activity Centre, the dominance of the shopping centre within the precinct means that there is a need for the centre to lead this change, although the City will continue with critical public realm improvements including the upgrade of Rockingham Road to provide the right environment.

As appropriate, existing Activity Centre Structure Plans will be reviewed and consolidated into Precinct Structure Plans.

The City will also prepare a framework for considering proposals for activity centres, which will include consideration of the design principles of SPP 7.0 to ensure they contribute positively to neighbourhood character and amenity.

All measures will be taken to ensure that all scales of development contributes positively to the character of activity centres, with an expectation that development applications be presented to the Design Review Panel.

11.3 Other areas

The City will identify the future intended character for rural and industrial areas through a local planning policy, and identify measures to ensure new proposals and development contributes positively to that character. *(*see also *Section 9.0. Rural Areas)*

11.4 Character of the public realm

Much of the public realm in Cockburn is strongly characterised by natural elements with trees in street verges and many open space areas that include retained bushland, complemented by new plantings. Grass trees are a strong feature in many areas across the City, and have been planted within road verges, medians and open space areas, often relocated from development sites (see Figure 49).

In addition to meeting recreational needs of the community, open space areas should be designed to reflect the local context and to contribute to local character.

In Urban Character Areas the public realm will reflect a more urban rather than suburban character. This includes parks that may function more as an urban space and meeting place.

In these areas elements such as public art, street furniture, landmarks and wayfinding become important to support an urban character and enhance legibility, and should be guided by clear themes that reflect the local context. These themes should extend to the character of streets, and reflect a clear design intent for the broader precinct.

While Urban Character Areas and activity centres may have more hardscaped elements they must be high quality, with careful selection of material finishes. In these areas trees and landscaping should still contribute to the unique character, and must provide for high quality pedestrian environments, considering the heat island effect and the need for shade.

In some rural areas there is an issue where delineation from adjacent or nearby industrial areas, such as Latitude 32, is not clear. This lack of a clear boundary has the potential to undermine the identity and character of rural zones. In conjunction with the community, the City will investigate ways to better delineate rural areas, and to support and enhance the character and distinctiveness of these areas in conjunction with the community. As an example, public art and signage could be used to create a rural identity. This could also provide an opportunity to reflect the City's market gardening history as part of this placemaking.

When considering public realm improvements in rural areas, such as footpaths, the City will give particular consideration to the design and material finishes of infrastructure to ensure it reflects a rural rather than suburban character to strengthen a rural identity for these areas.

Figure 49. Spearwood Avenue - Public art and grass trees

11.5 Heritage and Character

The City's heritage is an important part of its local character. In addition to appropriate protection of heritage places, there is an opportunity for new development to respond to this. The challenge is how to incorporate that history in a contemporary redevelopment so that enhances the City's unique local character.

An example of this is the redevelopment of the former Watsonia Factory site and surrounding buffer area which included retention of the rose garden and steps to Woodlands Homestead in public open space; and numerous pieces of interpretive artwork in the public realm. This has ensured the former use of the land is still reflected, and establishes a unique sense of place for this area.

In Cockburn Coast, the *Public Art and Place Making Strategy* has provided for the interpretation of remaining heritage fabric, the addition of public art, and a street naming theme in recognition of past land use and character (see Figure 50). On the former Coolbellup school sites, public art reflects the former use (Figure 51).

All opportunities should be provided for development to reflect, respond and interpret heritage elements to contribute to local character.

Figure 50. Light Horseman Shoreline, Cockburn Coast public art

Figure 51. Public art at Old Canteen Park, Coolbellup, reflecting the former primary school use

11.5.1 Percent for Artworks

The City's *Percent for Artwork Local Planning Policy* requires provision of artwork as part of the development of larger developments (over the identified threshold). The provision of artworks as part of larger scale developments seeks to improve the attractiveness and functionality of the City's built environment and develop and promote community identity within the City.

Artworks can also improve legibility by making streets and buildings more identifiable; and can produce landmarks that act as focal points and icons for the City.

They provide an opportunity to celebrate a place, generate vibrancy, contribute to cultural identity and engage with the community above and beyond the art involved in building design and landscaping or hardscaping elements that would normally be associated with development.

The Percent for Artwork local planning policy has provided the opportunity for larger multiple dwelling and commercial developments to contribute positively to local character (see Figure 52). The City will continue to implement this local planning policy, and encourage artworks to reflect local character, and be integrated and functional wherever possible.

With the exception of specific areas subject to a public art strategy, the City requires artworks under the policy to be provided on site so that it specifically enhances the contribution of the development to local character, and to allow it to

add value to the development. This approach has been successful, and it is proposed that this continues. This means that cash-in-lieu for public art will only be collected where there is a public art strategy clearly identifying themes and locations so it is clear where and how contributions will be spent.

Figure 52. Mural delivered through percent for artwork local planning policy (multiple dwelling development, Hamilton Hill)

Urban Design and Local Character Issues and Analysis

The City will elevate design considerations in decision-making; and continue to ensure the City's Design Review Panel informs decisions.

Measures will be identified to ensure new development is responsive to its surrounding context; and to ensure that buildings and the spaces they create improve the quality and amenity of the adjoining public realm.

Intended future character has been identified for residential areas, and all development must contribute positively to this.

The City will identify 'intended future character' across other various areas of the City to ensure measures can be identified to ensure development contributes positively to that character.

Structure plans will be required to include 'Statements of Design Intent', setting out the design intent, including streetscape character and built form outcomes to ensure structure plans are robust enough to provide flexibility at the subdivision and development stage whilst still achieving the design intent and liveability objectives.

Cultural heritage is an important aspect of local character, and all opportunities to maximise meaningful interpretation and reflection should be made.

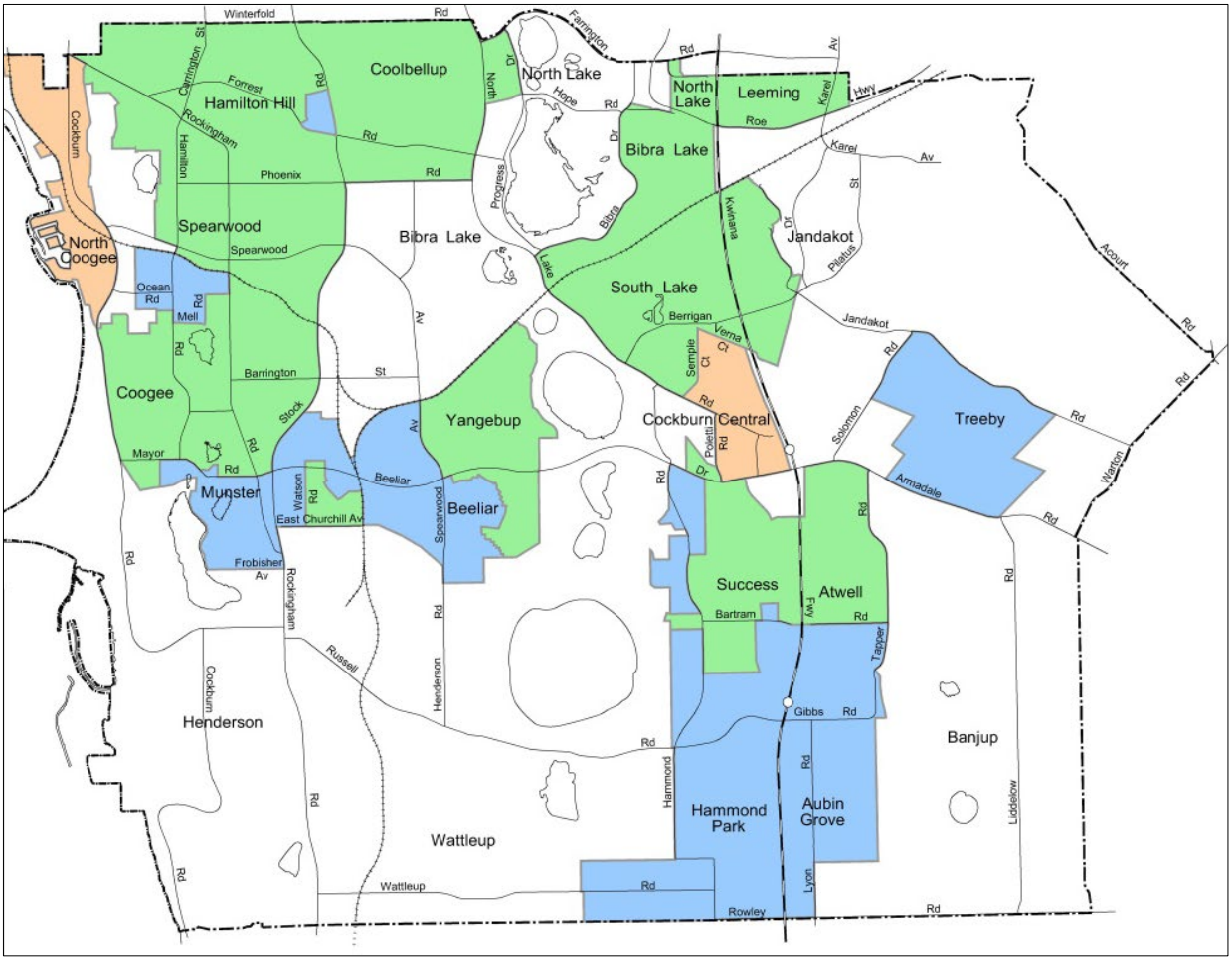


Figure 53. Residential Character Areas

TABLE 12. GARDEN NEIGHBOURHOOD CHARACTER AREAS – INTENDED FUTURE CHARACTER

	CURRENT VALUED CHARACTER ELEMENTS	INTENDED FUTURE DESIRED CHARACTER
1. FRONT SETBACKS	**Open front setbacks characterised by predominately soft green elements, often including lawn, mature vegetation and trees, with hardscaped elements being integrated and subservient.** **These are valued for:** **a) Contributing to the creation of a green, leafy streetscape character, with landscaping softening the appearance of built form elements.** **b) Creating open space for the amenity of dwelling occupants.** **c) Improving dwelling occupant and pedestrian comfort by creating shade and reducing glare.** **d) Reducing the heat-island effect.**	• Streetscapes that have a garden character, with landscaping and trees within the site, front setback, and verge areas that soften the appearance of the built form. • Hardscaping and car parking areas being subservient elements of the streetscape. • Open front setback areas that include landscaping, and the opportunity for trees to enhance the streetscape character. • Landscaping in front setbacks and verges that contribute to the amenity of pedestrians and bike riders. • Views of front gardens from the street maintained wherever possible.
2. OPEN SPACE	**Dwellings set amongst landscaping and open space, often including mature vegetation such as shrubs and trees.** **These are valued for:** **a) Contributing to the creation of a green, leafy streetscape character, with landscaping softening the appearance of built form elements.** **b) Creating open space for the amenity of dwelling occupants.** **c) Improving dwelling occupant and pedestrian comfort by creating shade and reducing glare.** **d) Reducing the heat-island effect.**	• Dwellings in a garden setting, with open spaces and landscaping creating amenity and functional outdoor spaces for occupants. • A reduced reliance on technology for heating and cooling and minimisation of energy use by minimising hardscaping and maximising opportunities for trees and plants.
3. BULK & SCALE	**Dwellings with a form, scale, bulk, style and roof line that generally does not detract from the open, landscaped streetscape, with a style that is distinctly 'suburban residential' in character; aligning with the predominately residential function of the neighbourhood.**	• Dwellings with a bulk, scale and form that can sit comfortably alongside single dwellings, and does not dominate the suburban garden streetscape character.
4. DWELLING DESIGN & LIVEABILITY	**Dwelling facades characterised by:** **a) Different elements and details of design interest, including openings and articulation (rather than being one flat surface), and a roofline and eaves that provide visual interest;** **b) Durable external material finishes that generally weather well and maintain a good appearance over time;** **c) Variety of openings to the street(s) that serve to provide visual interest, break up the facade, and provide passive surveillance; and** **d) Garages, carports that do not visually dominate the façade.** **Dwellings that provide high levels of amenity; meet the needs of occupants and flexibly accommodate furniture and personal goods.**	• Dwellings that are visually appealing, with facades and rooflines that include different elements of design interest. • Dwellings on corner lots that address and provide visual interest to both streets. • Dwellings that have openings to the street(s) to provide visual interest and passive surveillance. • Durable external material finishes that weather well, and maintain a good appearance over time. • Well-designed dwellings that provide high levels of amenity for occupants, flexibly accommodating furniture and personal goods, and contributing to the creation of diverse and high quality housing to meet the needs of the community.
5. CROSSOVERS & DRIVEWAYS	**Predominately one (single or double crossover) for each existing established residential property which:** **a) Contribute to the creation of a green, leafy streetscape character, with landscaping softening the appearance of built form elements.** **b) Minimise disruption to the pedestrian and cyclist environment, thereby improving safety and comfort.** **c) Maximises opportunities for street trees and landscaping in verge areas which reduces the heat island effect.**	• Streets that are pedestrian and bike rider friendly, with: ○ Minimal crossover interruptions to maximise pedestrian and bike rider safety, comfort and convenience. ○ Trees and landscaping in front setbacks and verges creating shade and reducing glare. • The width and number of crossovers minimised to: ○ Minimise hardstanding and maximise tree and landscaping opportunities in the verge and front setback ○ Maximise street tree retention ○ Minimise conflict between vehicles and pedestrian/bike rider movement and maximise pedestrian and bike rider safety and comfort.

TABLE 13: NEW GARDEN NEIGHBOURHOOD CHARACTER AREAS – INTENDED FUTURE CHARACTER

	KEY ELEMENTS OF FUTURE INTENDED CHARACTER	INTENDED FUTURE CHARACTER OBJECTIVES
1. FRONT SETBACKS	**Streetscapes that have a landscaped garden character, with landscaping and trees within the site, front setback, and verge areas that soften the appearance of the built form.**	• To create open front setback areas that include landscaping, and the opportunity for trees to contribute to the creation of a landscaped streetscape character. • To create functional on-site open spaces that contribute to the amenity of dwelling occupants and visitors. • To minimise hardscaping elements in the front setback and verge and maximise opportunities for landscaping. • To facilitate landscaping in front setbacks and verges that contributes to the amenity of pedestrians and bike riders. • To maintain views of front gardens from the street wherever possible.
2. OPEN SPACE	**Dwellings in a garden setting, with open spaces and landscaping creating amenity and functional spaces for occupants.**	• To reduce reliance on technology for heating and cooling and minimise energy use by minimising hardscaping and maximising opportunities for trees and plants. • Locate open space to optimise connection with living areas and support landscaping and tree planting.
3. DWELLING DESIGN AND LIVEABILITY	• **Dwellings with facades that include different elements of design interest, including articulation.** • **Dwellings that have openings to the street(s), providing visual interest and passive surveillance.** • **Well-planned, liveable dwellings that provide high levels of amenity for occupants, and contribute to the creation of diverse and high quality housing for the community.** • **Dwellings that contribute to the creation of a suburban residential neighbourhood character whilst contributing to housing diversity.**	• Dwellings with an internal layout that is functional for occupants, providing the ability to flexibly accommodate furniture and personal goods. • Dwellings that have healthy and comfortable living environments for occupants. • Durable external material finishes that weather well, and maintain a good appearance over time.
4. CROSSOVERS & DRIVEWAYS	**Streets that are pedestrian and cyclist friendly, with:** • **Trees and landscaping in front setbacks and verges creating shade and reducing glare.** • **Minimal crossover interruptions to maximise pedestrian and bike ridersafety, comfort and convenience.**	• To minimise the number and width of crossovers to: o Maximise tree and landscaping opportunities in the verge and front setback o Minimise hard standing. o Maximise street tree retention. o Minimise conflict between vehicles and pedestrian/bike ridermovement and maximise pedestrian and bike rider safety and comfort.
5. BULK & SCALE	**Dwellings with a bulk, scale and form that does not dominate the current or future desired landscaped streetscape character.**	• To ensure that the siting, bulk and scale of new development does not dominate the streetscape or public realm, or create a monotonous built form interface to internal driveways and common property. • To ensure that the bulk and scale of new buildings considers the impact on neighbouring properties and the streetscape, and achieves a compatible interface. • New development that enhances and complements the identified streetscape character.

12. Transport

A connected City makes it easy for people of all ages and abilities to move around, providing accessible pathways to accessible places.

Community surveys indicate that traffic remains the highest priority for residents of the City of Cockburn.

Projections indicate that by 2031 the volume of traffic using the City's roads is likely to exceed the capacity on many major arterial roads during peak hours. While new roads and road widening may be appropriate in some locations, this alone will not solve the problem. This means it will become difficult to move around the City which will negatively impact residents, businesses and economic opportunities.

There will need to be a transition to more sustainable transport modes like cycling, walking and public transport. This will create a more equitable, liveable, resilient and future-proof transport network that supports and prioritises the health and well-being of residents, and the environmental values of the City.

This mode shift will require the City to work with the community and government agencies.

The City will use an Integrated Transport Strategy (ITS) approach to transport planning. This provides the vision and high-level direction for the City of Cockburn transport network, which will inform policy, advocacy and infrastructure decisions.

The ITS covers the entirety of the City of Cockburn as well as considering the interfaces with the surrounding seven local governments – City of Fremantle, City of Melville, City of Canning, City of Gosnells, City of Armadale, Shire of Serpentine-Jarrahdale and City of Kwinana.

The purpose is to look at transport holistically across modes and trip purposes to define objectives for a network that enhances outcomes for the community. A key component of the strategy is to consider the interdependencies between transport and land use.

12.1 Road Network

A robust and carefully considered road network is critical to provide access to opportunities for residents as well as supporting the diversity of commercial and industrial land uses.

Importantly, the local road network is not just about moving cars safely and efficiently, it must provide a safe and comfortable environment for pedestrians and bike riders, while also providing for parking, servicing and waste vehicles. These streets are also the most prominent and extensive element of the public realm of the City's neighbourhoods, and provide opportunities for street trees to enhance a desirable streetscape character and contribute to the City's urban tree canopy and even ecological corridors.

In terms of regional connectivity, this needs to be balanced with local needs, as well as the protection of residential amenity, social, heritage, landscape and environmental values.

12.1.1 Regional Road Network

The City's regional road network is set out in the Metropolitan Region Scheme (MRS) as 'Primary Regional Roads' and 'Other Regional Roads' reservations. These reserves are automatically included in local schemes. This network is planned and determined by Main Roads WA in conjunction with the WAPC, with the City playing a more active role in recent years to advocate for outcomes that recognise local issues and ensure optimal outcomes for the community.

The regional road network is characterised by a north south orientation with a lesser emphasis on east west road linkages.

The 'Primary Regional Roads' Reserves within the district are:

- Kwinana Freeway (north-south)
- Stock Road (north - south)
- Fremantle to Rockingham Highway (north-south)

- Roe Highway (east - west)
- Armadale Road (east – west)

The 'Other Regional Roads' Reservations are:

- North Lake Road
- Spearwood Avenue
- Beeliar Drive
- Hammond Road
- Russell Road
- Cockburn Road (south of Woodman Point Wastewater Treatment Plant)
- Armadale Road and North Lake Road Bridge Interchange

The City's *District Traffic Study* (2018) demonstrates that without any modification to the road network the volume of traffic using the City's roads in 2031 is expected to exceed the capacity on many major arterial roads during the peak hours. This is measured as a ratio of volume to capacity (V/C). The issues are widespread, affecting north-south and east-west roads. It highlights that without infrastructure changes or mode shift, the road network will greatly exceed its capacity in the near future.

The results from the District Traffic Study highlight a need to ensure the future mobility needs of the City are carefully considered, particularly for the east-west arterial roads, highlighting a need to carefully consider and manage these corridors.

The State Government's *Perth and Peel @3.5 million – The Transport Network* plan outlines numerous proposed modifications to the road network within the City of Cockburn, including:

- Extension of Berrigan Drive to the east of the Jandakot Drive intersection
- Upgrades to both Jandakot Drive and Warton Road
- Extension of Spearwood Avenue.

The Future Roads Project reviewed and updated the Road Administrative Classification Process and used the updated methodology to identify roads that may meet the road classification criteria to become state roads in future.

The City will need to work with the State Government to determine suitable outcomes for the planning and management of both local and state roads. This may include negotiations and advocacy surrounding the plans outlined in *Perth and Peel @ 3.5million* to suit the City's aims and objectives for the road network.

East-west links

The ITS identifies the importance of ensuring strategic east-west road links are developed to provide regional connectivity (see Figure 54). This includes the following:

Upgrade and extend

Beeliar Drive has been identified as a preferred main east-west distributor for the City, but it falls short of linking important north-south routes. It is envisaged that this will require road upgrades along the identified corridor, particularly in the section between Stock Road and Cockburn Road, which is currently named Mayor Road and comprises only a single lane in each direction. Armadale Road and North Lake Road are currently being upgraded to provide a regional link without severing or impacting the Cockburn Central precinct.

Preserve and enhance

Russell Road and Rowley Road both provide an important function in terms of providing east-west connectivity across the City and access to existing and future industry and employment. These roads need to be preserved and enhanced to provide improved road safety and active transport amenity, whilst minimising impacts on the surrounding environment and land use, including y the City's urban and rural areas.

These roads also provide an important function for the movement of freight, and will likely require some road widening and intersection upgrades to better serve this functionality. It should be noted that the State Government's *Perth and Peel @ 3.5million – The Transport Networks* framework identifies Rowley Road as a future Primary Distributor and State Road, as part of the Fremantle to Rockingham Controlled Access

Highway and acknowledging its connectivity to a future freight and employment centre at Latitude 32.

Retain as is

Farrington Road should remain as an important east-west link, however due to the surrounding constraints in its vicinity, specifically the need to protect important environmental assets given the road's location within the Beeliar chain of wetlands, it is expected that any upgrades will have to be within the existing road reserve. Projects such as the Murdoch Drive connection are aimed to support this. As such it is expected that Farrington Road will remain as-is in terms of road hierarchy and function.

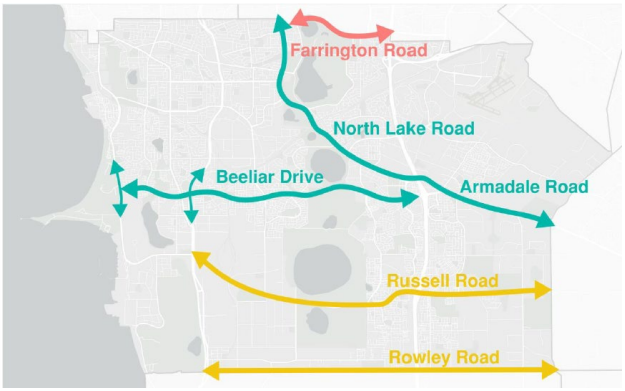


Figure 54. Notable east-west road links

North-south corridors

North-south corridors shown in Figure 55 will need to be preserved and enhanced.

Preserve and enhance

Cockburn Road, Rockingham Road, Stock Road, Spearwood Avenue and North Lake Road all work to provide north-south connectivity across the City (see figure 55). The objective for these corridors is to preserve and enhance their determined functionality within the transport network, including:

- Stock Road will continue to provide a freight link as part of the Fremantle to Rockingham Controlled Access Highway. The City will advocate for the upgrade of Stock Road at the AMC.
- Rockingham Road is planned to transition towards a more urban road function, the first stage of this is the Rockingham Road Revitalisation project.
- North Lake Road and Spearwood Avenue will provide the regional connectivity for non-freight vehicles between Kwinana Freeway and the Fremantle area, with the removal of the freight rail level crossing.

Effectively interface

Kwinana Freeway (Figure 55) is a highly important transport link for the City of Cockburn and surrounding areas. Collaborating and interfacing with Main Roads WA effectively in matters regarding management and modification of Kwinana Freeway and its ramps is of critical importance. Effective functioning of the Freeway enables other north-south routes in Cockburn to fulfil other regional and local access functions.

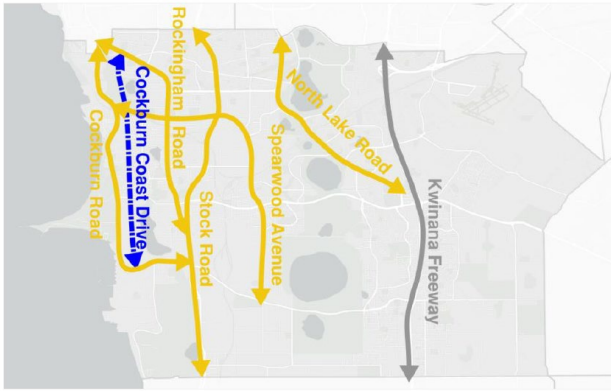


Figure 55. Notable north-south road links

Collaborate and plan

Cockburn Coast Drive (Figure 56) was identified as a future road corridor in the Cockburn Coast District Structure Plan, however Main Roads WA have advised they no longer intend to deliver Cockburn Coast Drive. This will impact on planning for the parallel section of Cockburn Road, which will likely need to be upgraded to provide for a 4 lane dual carriageway road in perpetuity.

Figure 56. Cockburn Coast Drive Primary Regional Road reserve

Cockburn Central

Traffic congestion around Cockburn Central has been a longstanding concern of Council, landowners, businesses and the community. Traffic on Armadale Road and around Cockburn Central has increased significantly due to:

- Economic investment
- New land developments for a rapidly growing population
- Limited public transport services
- Residential, commercial and retail growth

The North Lake Road Bridge/Freeway Interchange was funded by the Federal and State Governments and includes the following:

- Armadale Road/North Lake Road (Kwinana Freeway) – Constructing bridge and collector roads
- Kwinana Freeway (Russell Road to Roe Highway) – Widening of Northbound Lanes

Armadale Road Bridge:

- Links North Lake Road directly to Armadale Road, bypassing traffic at Cockburn Central
- Provides easier access to Kwinana Freeway
- Provides quicker entry/exit from Cockburn Central Train Station

This supports the enterprise arc for the southern metropolitan region, connecting strategic industrial areas so that supply chains and target markets can more efficiently access and interlink, helping to grow business and employment.

The Armadale Road and North Lake Road bridge diverts regional traffic out of the town centre and will allow Cockburn Central East to grow as a transport-oriented development.

12.1.2 Freight network

Perth and Peel @3.5m Transport Network sets out the regional road freight network of primary/secondary freight roads for the South Metropolitan Peel sub-region. It advocates for efficient and effective movement of people and freight that is integrated with land uses and links key economic and employment opportunities.

The current Restricted Access Vehicle (RAV) network within the City provides a good degree of connectivity to major arterial roads for the existing industrial land uses in Bibra Lake, Henderson, Cockburn Central and Jandakot, as well as the Latitude 32 industrial area (proposed RAV 7).

The future of the City of Cockburn's RAV network needs to consider future land use, as well as trends and needs in the freight industry in terms of vehicle sizes. By engaging with the local freight industry and industry bodies, the City can investigate what type of vehicles should be catered for. Planning and designing a freight network suitable for future needs will help to enable economic growth and commercial activity, as well as contributing to a safer road network with the separation of heavy vehicles and regular traffic.

With regards to Westport, in August 2020 the State Government announced a new land-backed port at Kwinana as the location for WA's future container port.

In terms of freight access, Anketell Road will be the main access, and Main Roads completed a high-level concept design and identified the following as important:

- An uninterrupted, modern freight corridor via Anketell Road and Tonkin Highway
- Serving a chain of intermodal sites throughout the metro area

Westport's next steps focus on delivering the following information:

- Development a detailed business case
- Commencement of rigorous environmental assessments
- Implementing environmental monitoring
- Investigating land use impacts, corridor protection, planning strategies and costs around Kwinana
- Stakeholder engagement – industry, Aboriginal people, community

As this progresses, consideration needs to be given to the road freight link requirements and how they might interface and affect the existing road network and land uses. The City will then focus on any advocacy from a local government level to ensure the appropriate delivery and coordination of infrastructure occurs in a logical and timely manner. The City will continue to advocate for a balanced approach to regional road needs and local needs, including impact on landowners and the environment.

The City will advocate for the protection of the supporting infrastructure needs for Rowley Road as the primary east west access to Latitude 32 and the delivery of the Fremantle-Rockingham Controlled Access Highway.

The potential need for and provision of High Wide Load (HWL) corridors within the City of Cockburn also needs to be further investigated. Currently an existing HWL corridor runs along Cockburn Road to the southern end of the Australian Marine Complex. Part of these investigations should include whether this should be extended or the HWL access to the AMC should be provisioned on another road. The investigation should look at current and future land uses and whether HWL routes will be beneficial or even essential to service certain land uses.

12.1.3 Roe Highway

In early 2017, sections of the Roe Highway 'Primary Regional Road' reservation, east of the Kwinana Freeway to west of Stock Road, were cleared of vegetation in preparation for the construction of the Roe Highway extension to Stock Road. Clearing work stopped in March 2017 when the Labor State Government was elected and the project ceased.

The cleared area has been fenced with conservation fencing to limit damage to the site, and a program of works to rehabilitate the site has commenced.

The *Metropolitan Region Scheme (Beeliar Wetlands) Bill 2021* removed the 'Primary Regional Road' reservation through Beeliar Park. The Department of Planning, Lands and Heritage (DPLH) have commenced a planning review for the remainder of the Roe 8/9 corridor (Roe 8 West, and Roe 9 Corridor Planning Study).

In terms of considering the future of the reservation, there are a wide range of important environmental, cultural, heritage and social considerations that will need to be addressed. For this reason the section of the Roe Highway Reserve west of North Lake Road has been included in a 'Planning Area' (Planning Area A), and Part 1 sets out key principles for consideration.

DPLH initiated Metropolitan Region Scheme (MRS) Amendment 1404/41 – Roe 8 (Remainder) and Roe 9 – Removal of Primary Regional Road Reservation in March 2023. The amendment was considered by the Western Australian Planning Commission in January 2024 and gazetted on <date>. Tthe City of Cockburn has initiated a local planning scheme amendment. Local Road Network

In the City's new areas the local street network has been designed through the structure planning and subdivision process as new suburbs are developed. This includes a network of neighbourhood connectors, access streets and laneways.

In new areas the creation of smaller lots, and smaller front setbacks mean that there is typically no onsite parking availability. Coupled with increased rates of car ownership this places greater pressure on the street to accommodate resident and visitor parking.

In areas such as South Beach and Port Coogee, characterised by smaller lots, larger dwellings and a more constrained road network, there have been ongoing concerns regarding vehicle parking.

The overuse of laneways, particularly, an excessive quantity of laneways, or a network of laneways is problematic because it reduces on-street parking (not permitted in laneways); and creates difficulty for safe waste vehicle access and placement of bin pads. In addition, the laneways themselves do not contribute to the pedestrian network as they generally do not have footpaths and opportunities for street trees are limited.

The City supports the creation of safe and efficient road networks that are also designed as an important part of neighbourhood environments, achieving the highest quality streetscape outcomes by considering all design and infrastructure elements, including servicing, waste collection and parking.

In this regard, the use of laneways is to be minimised and only supported in specific circumstances to ensure the creation of a road network that is safe and permeable, and maximises its contribution to the public realm and identified neighbourhood character, including maximising opportunities to include footpaths and trees.

The local planning framework is to provide further design guidance for roads in new areas to ensure high quality, high amenity streetscape outcomes are achieved, with maximum opportunities for street trees; visitor parking opportunities; and safe and convenient waste management arrangements.

The structure planning process provides the opportunity to address this, and to ensure the local road network is co-ordinated between different properties; a clear hierarchy is established; and the principles of the Liveable Neighbourhoods are adhered to.

Inclusion of appropriate paths in new structure plans and subdivisions in accordance with Liveable Neighbourhoods is critical to ensure integration and connectivity locally and to the greater network.

It is important to define the type and character of roads being created through the structure planning process. It is considered that structure plans should be clearer in outlining the design intent of roads and streetscapes, with sufficient detail demonstrating location of services, street trees etc. This will form part of a new requirement for 'Statements of Design Intent', which will ensure structure plans continue to be flexible instruments that can appropriately accommodate changes at the subdivision and/or development stage whilst still achieving the design intent.

Parking

While the City promotes use of sustainable modes of transport, and discourages overprovision of vehicle parking, realistic consideration must be given to providing for private vehicle parking to ensure the needs of the community are met. This requires consideration to be given through structure plans, subdivisions and local development plans to the availability of on-street parking when considering on-site parking requirements.

In residential areas, lack of on-street parking is prevalent where there is an over use of laneways, which is another reason they should only be used in specific circumstances and to achieve a particular urban design outcome.

Crossovers and access

It is critical to ensure additional crossovers proposed by new development are minimised given that they remove street tree opportunities, increase hard standing, and interrupt the pedestrian and cycling environment.

Careful consideration of matters such as garages, crossovers; location of utilities; street trees; waste management; and on-street parking embayments is critical to create safe, attractive well-designed streets that provide convenient resident and visitor parking.

It is expected that these matters will be addressed at the structure planning level wherever possible, demonstrating the creation of safe, attractive and functional street environments.

Existing Local Roads

Within the City's infill areas, consideration must be given to the capacity of local roads to ensure they can accommodate increased traffic and parking where higher residential densities are proposed.

The majority of the City's local roads currently have traffic volumes much lower than the maximum of 3,000 vehicles per day (vpd) recommended by MRWA, and are therefore able to accommodate the increased traffic that would generally be expected from an increase to residential densities in established areas.

However, in some circumstances it will be appropriate to monitor traffic volumes to ensure they remain appropriate, and to determine whether traffic calming or other interventions are required.

Traffic signals in older areas may require upgrading over time as traffic increases to provide for improved pedestrian crossing.

There may be other opportunities to retrofit existing roads in infill areas, including to facilitate on street parking, and safe crossing points. The *Coolbellup Revitalisation Strategy* included some of these types of retrofitting actions, and a model is required to determine how these types of works could be funded.

12.2 Green infrastructure

The *Strategic Community Plan*, *Sustainability Strategy*, *Natural Area Management Strategy* and *Urban Forrest Plan* have prioritised the retention and increase of natural assets within its boundaries. These natural assets retain and protect biodiversity, provide a sense of place and create a green living environment for local residents. From a transport perspective, they represent an opportunity to enhance active transport within the City, by providing increased amenity for bike riders and pedestrians.

The planning and delivery of transport infrastructure needs to consider these natural assets as a priority and opportunity. Projects need to consider the relevant objectives from these Strategies and Plans in the early stages of concept planning in order to ensure these considerations are at the forefront of the project development. Measures such as vegetation and landscaping enhancement of roads that cross through the ecological corridors, utilising the ecological corridors for active transport routes, and Water Sensitive Urban Design opportunities should be at the forefront of project development.

12.3 Public Transport

Public transport will be a critical component of a successful mode shift to more sustainable transport. This will assist in managing traffic across the City, and to create a more equitable, liveable, resilient and future-proof transport network that supports and prioritises the health and well-being of residents, and the environmental values of the City.

Public transport is also necessary to provide mobility to a large portion of the population who are unable to drive, do not have access to a vehicle, or choose not to drive. This is of particular importance with a local and national ageing population.

Public transport in Cockburn includes passenger buses operated by the State Government; and the Mandurah passenger train line which runs within the Kwinana Freeway 'Primary Regional Road' reserve, with a Station at Cockburn Central (opened in 2007), and Aubin Grove (opened in 2017).

In 2016, 9.7 per cent of the workforce in the City used public transport to commute to work. In 2006, this was 6.3 per cent, and in 1996, prior to the Mandurah train line, it was only 3 per cent. It is anticipated this has further increased with the introduction of the Aubin Grove train station in 2017.

The greatest proportions of people who travel to work on public transport are concentrated on the Mandurah train line, with the percentage increasing further south. Higher proportions are also observed along Rockingham Road which is well serviced by a number of bus routes.

With the addition of Aubin Grove Station and the ongoing Thornlie-Cockburn Link project, the City's heavy rail network has seen significant improvement.

Areas surrounding Cockburn Central and Aubin Grove as well as in close proximity to Fremantle have relatively high access to public transport. Existing bus routes provide a high level of service in the established and inner suburbs of the City where services converge on Fremantle and towards Perth. In the newly developing residential areas, services are not as effective as they tend to follow demand.

This means that significant portions of the network are subject to either infrequent, distant or a complete lack of public transport service.

Of particular note, there are no buses servicing industrial areas, which are important employment areas, and the City will advocate for public transport to these areas to support a mode shift.

The public transport network as a whole provides variable levels of mobility and access across the City's residential population. In order to improve public transport access for all of its residents the City will pursue improvements to both the existing bus and rail networks, as well as introducing a third public transport mode to provide rapid transit access.

The City will look at public transport accessibility across its residential areas in terms of access to employment, recreational, shopping, services and education opportunities. By undertaking this assessment, the City will identify areas of significant gaps in existing and proposed residential land-use, with a particular focus on areas with planned land use intensification, including infill areas.

The City will use this as a means to plan and advocate for improvements or alterations to the public transport network, in order to increase public transport access to opportunities for its current and future community.

12.3.1 Passenger Train

The Perth to Mandurah passenger train line traverses the City of Cockburn and as one of the newer rail lines in Perth, opening in 2007, its key features are limited stops with large car parks and for the segment within the City of Cockburn, positioning in the middle of the Kwinana Freeway. These defining features mean this line cannot be planned for in the same manner as older rail lines within Perth which have more stations, less parking and can have development within closer proximity.

Cockburn Central Station, outside the Perth Central Business District, is one of the busiest stations on the Perth to Mandurah Line with approximately 5,000 daily boardings, with bus to train transfers accounting for approximately 30 per cent of all boardings.

The Public Transport Authority (PTA) manages some 1,300 'park and ride' bays adjacent to Cockburn Central Station. The demand for these bays is high, with capacity reached by 7:30am each weekday.

Site surveys indicate a number of local businesses operate private shuttle services to Cockburn Central Station bridging the 'gap' between the place of work and the train station. The majority of bus routes into the Activity Centre

area act as feeder services for Cockburn Central Station, providing seamless connections at peak times for services to and from Perth. Multiple services allow connection through to Fremantle in approximately 45 minutes. Bus connectivity to other identified Activity Centres is limited.

The majority of bus routes operate frequencies between 10 and 20 minutes in peak times with frequencies between 30 minutes and 1 hour common outside of peak. Bus routes converge on a number of key points in the network providing for improved level of service in peak and off peak and shoulder times.

Aubin Grove Train Station, located approximately 3km south of Cockburn Central Train Station opened in April 2017. It features a bus station and significant car parking. The station has six bus feeder services into Cockburn and Aubin Grove stations and bicycle facilities for more than 80 bikes and connections to local paths.

The City will continue to enable the best precinct outcomes for Cockburn Central and Aubin Grove Train Stations through the ongoing implementation of recommendations in the Station Access Strategies.

Land use planning will continue to support the principles of transit-oriented design in decision making, particularly in relation to limiting the provision of parking.

High Priority Transit Corridor

The City of Cockburn has a long-standing aim for a rapid transit corridor to be developed between Cockburn Central and Fremantle. This objective aligns with the greater regional ambition for a South West Metro Rapid Transit Network advocated by the *South West Group* of councils. It also aligns with the 'Proposed high-priority transit corridor' identified in the State government's *Perth and Peel @ 3.5million – The Transport Network*.

The City sees this objective as a medium-long term ambition and will advocate to and work with State government agencies towards this objective.

The preferred mode and exact route of this corridor are to be determined. The City sees light rail, bus rapid transit and trackless trams as viable options to be investigated noting that any new mode should be able to integrate with other, secondary transit systems being contemplated across metropolitan Perth.

The introduction of this rapid transit corridor would not only work to improve public transport accessibility across the City and help to deliver an orbital transit route for Perth (along with the Thornlie-Cockburn Link), but would also support the City's land use and ultimate long term (stage 2) infill targets along the route by enabling land use intensification.

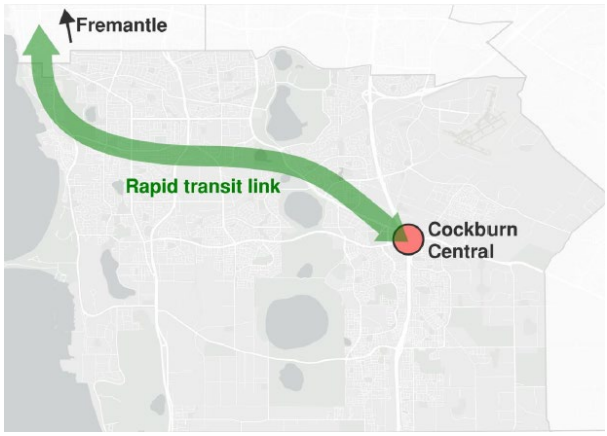


Figure 57. Future High Priority Transit Corridor (indicative alignment)

The *Cockburn Coast District Structure Plan* recommended the creation of a Bus Rapid Transit system (BRT) focussed on Cockburn Road and Hampton Road connecting to the Fremantle CBD and train station with the Cockburn Coast area.

It is proposed that the BRT corridor be created along Cockburn Road, and then through the Cockburn Coast development with a number of stops located approximately every 400-600 metres so that they are within walking distance for the majority of the development. The corridor was designed with the possibility that it could be used for a light rail in the future.

The BRT will help to encourage public transport use within Cockburn Coast and will reduce the reliance on private car travel. It was considered

to be an important element of the plan to create a vibrant and accessible urban environment.

This transit corridor is reflected in the two adopted structure plans for the area (Robb Jetty and Emplacement) and provided for in the City's Development Contribution Plan for Cockburn Coast. In Cockburn Coast it is critical that all development along this alignment supports this future transit corridor, including achieving the minimum densities, and the desired urban design outcomes.

12.4 Cycling and Walking

The City has an extensive network of bike rider and pedestrian infrastructure used for commuting and recreation.

One of the relevant outcomes from the City of Cockburn Community Survey in March-April 2019 was strong sentiment to improve walking and cycling infrastructure as well as streetscaping. This highlights the community's desire for an improved active transport network. Initiatives should not only focus on extending the network, but also closing the gaps.

It will be critical to provide walking/cycling access to local centres, key employment nodes, transport hubs, community facilities and schools, particularly those that experience traffic congestion on adjacent routes, both now and forecast for the future.

A key consideration in development of the active transport networks are the users. The infrastructure needs to respond to a broad array of ages and ability/mobility. These road networks need to recognise the barrier that roads with high volumes and speeds pose for bike riders and pedestrians and implement measures to mitigate these barriers.

Many roads on the network are not of an urban standard at present and are unsuitable and uncomfortable cycling environment for users. As such, quiet urban streets and off-road or separated cycle routes will be necessary to deliver a cycle network that is accessible to all.

Improving cycling and pedestrian connectivity and the quality of that environment is critical to encourage more active transport. Initiatives to extend the network, close gaps and improve the quality and amenity of connections will be critical. A priority is providing walking/cycling access to activity centres, key employment nodes, transport hubs, community facilities and schools, responding to a broad array of ages and ability.

Planning for cycle networks will consider the WA Long-Term Cycle Network (LTCN) to achieve an integrated cycle network.

The City will engage on a regular basis with the Department of Transport and surrounding local governments on wider, regional, cycle network planning objectives and routes.

The City will seek Western Australia Bicycle Network (WABN) funding to expand and enhance the cycle network to provide a safe and complete network for residents and visitors.

Importantly, the City will continue to ensure that development contributes positively to pedestrian and cycling environments by promoting high quality built form outcomes that provide visual interest, passive surveillance, include landscaping and shade, and minimise crossovers. Development will need to respond and connect to the pedestrian and cycling network.

Inclusion of end of trip facilities, and bicycle parking in new developments is also important to encourage cycling, particularly cycling to work.

12.5 Activity Centres connectivity

Activity centres represent the key areas of commercial and social activity within the City of Cockburn. Cockburn Central, Spearwood, Cockburn Coast (future centre) and Jandakot are the main centres, however the City additionally contains many more neighbourhood and major

employment hubs, including the Australian Marine Complex and Bibra Lake Business Park, that are also considered high priorities for fostering growth and providing connectivity.

It is recognised that the connectivity between some of these centres is currently lacking. These centres require special consideration from a transport perspective to ensure the network supports and enhances their functionality as places where people congregate, socialise, shop, access services and engage in other opportunities.

It is key that future transport infrastructure projects, as well as the relevant transport plans that sit under the ITS fully consider and are integrated with the relevant structure plans and precinct structure plans and strategies. Likewise, it is important for the centre planning to consider the objectives from the ITS and transport plans. By ensuring consistency and continuity across the transport and planning process and mechanisms, the integrated land use and transport outcomes necessary for the centres to fulfil their potential can be achieved.

Of particular importance is the planning and integration of pedestrian and cycling infrastructure. An environment that is both safe and provides high pedestrian amenity is an important element of success for centres.

Planning and development of the City's cycle network is also an important aspect of supporting these centres. More active travel to and from the centres reduces the requirement to provide parking, which is land intensive and has negative impacts on placemaking objectives.

Both Cockburn Central and Aubin Grove Train Stations are covered by *Station Access Strategies* prepared for the PTA, which set mode targets for those accessing the station as well as infrastructure modifications to achieve these mode targets. The City will work with and engage collaboratively with the PTA on these targets and infrastructure changes.

12.6 Recreational Trails

The City of Cockburn has a wide range of attractive and varied landscapes, and a great diversity in wildlife and vegetation. It has many kilometres of coastline, a chain of wetlands and lakes and a limestone ridge – all of which provide excellent natural areas for the development of a trails network.

Well-planned trails are an important recreational asset, performing a number of highly beneficial roles in the broader community, providing opportunities for low-key unstructured passive recreation for local residents and visitors.

They also provide physical exercise opportunities; foster general well-being; are a valuable tourism attraction; and can help educate and instil a conservation ethic amongst users. Continued efforts should be made to identify appropriate opportunities for trails where they will not have negative environmental impacts. Supporting infrastructure is also critical to maximise the success of these opportunities, for example the Manning Park stairs have been an added attractor and additional recreational facility to trails in this area (see Figure 58).

Figure 58. Manning Park stairs

The City has Recreational Shared Paths (RSPs) around Bibra Lake, Yangebup Lake, Market Garden Swamp North, in the Woodman Point area and around Lake Coogee connecting to Naval Base. Extensions are proposed to

complete circuits of these areas, to extend to Thomsons Lake and Harry Waring Marsupial Reserve; and to connect Market Garden Swamp North to Market Garden Swamp South.

The *City of Cockburn Trails Master Plan* sets out the range of improvements required on existing trails and proposed future trails, to establish a comprehensive network of recreation facilities. The plan includes paths to connect existing routes, focused in and around wetlands and Manning Park to improve connectivity.

12.7 Jandakot Airport

Jandakot Airport was opened in 1963 and is the principal general aviation airport in Western Australia. It is one of the busiest airfields and largest pilot training bases in Australia, and operates 24 hours per day, seven days per week.

It is owned by the Federal Government and the area of land controlled by the Airport is 622 hectares. In June 1998, the Jandakot Airport was leased for 49 years to Jandakot Airport Holdings Pty Ltd (JAH) a private company charged with the responsibility of operating, managing and developing the airport.

The airport is an important element of transport infrastructure, servicing both the region and the State as a whole. It also makes a significant contribution to the economy of the area in which it is situated, providing employment and a range of local economic opportunities. The economic analysis contained in the *Jandakot Airport Master Plan* suggests that the total employment within the estate could potentially reach 4,700.

Under the MRS it is primarily reserved for 'Public Purposes - Commonwealth Government' and the balance is zoned 'rural'. A portion is also included in the 'Water Catchment' Region Scheme Special Area. It is affected in some parts by SPP 2.3 Jandakot Groundwater Protection (SPP 2.3).

The airport has a significant role as a major training base for both local and international pilots. Flying training activities account for approximately 80 per cent of the annual movements conducted at the airport, with some 60 per cent of movements being repetitive 'touch-and-go' circuit operations.

The airport provides a base for essential service organisations such as the Royal Flying Doctor Service, Department of Environment and Conservation Forest and Bushfire Patrol, Department of Fire and Emergency Services emergency helicopter and the WA Police Air Support.

Jandakot Airport Holdings Pty Ltd, as the operator of a leased federal airport, is required under the *Airports Act 1996* to prepare a Master Plan every 5 years. The Master Plan is a 20 year strategic vision for the airport that details how Jandakot Airport will be developed and operated.

The Jandakot Airport Master Plan provides the framework for the future development of the airport, taking into account aviation operations, the environment, non-aviation land use, services infrastructure and ground transport. In accordance with the *Airports Act 1996*, this Master Plan identifies a planning period of 20 years with the Master Plan to be replaced every five years.

The airport, because of its location and high level of use, impacts on the adjoining rural and residential areas in terms of development potential, land use and amenity.

The City will continue to advocate for a balance between the operational needs of the Jandakot Airport with the amenity expectations of sensitive land uses and physical environmental constraints.

12.8 Fremantle Outer Harbour – Westport

The long-term development of an efficient, well serviced marine harbour backed by effective infrastructure, well-connected to the surrounding metropolitan area and State is seen as critical to the development of Perth as a competitive, liveable and global city.

Fremantle has serviced WA's trade needs for more than 120 years, however as the population and industries continue to grow, freight demands are also growing. It has been determined that the Fremantle Inner Harbour footprint has limited capacity for growth and in the near future major freight routes into Fremantle Port will reach capacity.

The Westport Taskforce (Westport) was established by the State Government in September 2017 to develop a plan to manage the growing freight demands of Perth and surrounding regions for the next 50 years, and beyond to future-proof Perth's freight network.

The planning is based on the following assumptions:

- 50-year timeframe
- A population of around five million people
- Strong, diversified economy
- Trade task five times larger

Existing port locations at Fremantle, Kwinana and Bunbury were assessed by Westport, including associated road and rail links, and intermodal terminals to determine the best long-term integrated freight transport plan to meet the State's needs.

In August 2020, the State Government announced a new land-backed port at Kwinana as the location for WA's future container port.

Westport have advised that this location was selected for the following reasons:

- Kwinana is the State's primary heavy industrial precinct, away from the suburbs and commuter traffic;
- It already supports a busy bulk freight port, servicing imports and exports of alumina, grain, fuel and more; and
- It has capacity for an integrated road and rail network to connect logistics hubs, including capacity to:
    - build a new, deeper channel
    - new land-backed berths
    - attract larger, more efficient ships.

The proposed construction will be timed to meet demand, with the potential for the transition to be handled in two ways:

- Two ports operating initially – Fremantle and Kwinana – sharing the container freight task; or
- shift the freight task from Fremantle to Kwinana in one movement.

Westport have advised that they will be making a scientifically-led investment in building resilience in Cockburn Sound in areas such as:

- seagrass
- fish habitats
- coastal vegetation

In terms of freight access, Anketell Road will be the main access, connecting the port with Tonkin Highway and supporting wider growth of the Kwinana industrial area..

The early concept for the corridor between Clementi Road in Mandogalup to Tonkin Hwy in Oakford includes:

- Upgrading Thomas and Anketell Roads to four lanes between Tonkin Highway in Oakford and Lyon Road in Anketell and creating two lanes in each direction for general traffic plus dedicated freight only lanes (one in each direction) between Lyon Road and Clementi Road in Mandogalup, which will include new bridges over Kwinana Freeway.

- New interchanges, bridges, roundabouts and ramps at Thomas and Kargotich and Thomas and Nicholson roads.
- Service roads to provide access to properties on Anketell and Thomas roads.
- A shared path along the south side of the corridor for pedestrians and cyclists.

The concept provides uninterrupted east-west movement for freight vehicles, and enhanced safety for local road users, as well as high-grade pedestrian and cyclist access.

Five Planning Control Areas (PCAs) (168-172) were endorsed by the Western Australian Planning Commission (WAPC) on 17 March 2023. These PCAs are located within the City of Kwinana and Shire of Serpentine-Jarrahdale, identifying land potentially required to support the future construction of the Anketell-Thomas Road Freight Corridor.

Westport's next steps focus on preparation of a business case, and determining when and how a new Kwinana port and logistics network should be developed. Westport will recommend the high-level designs and best time and way to transition from the Inner Harbour in Fremantle to the Outer Harbour in Kwinana. As this progresses, the City will consider the impact of connections, and will focus on any advocacy from a local government level to ensure the appropriate delivery and coordination of infrastructure occurs in a logical and timely manner.

The City will advocate for the protection of the supporting infrastructure needs for Rowley Road as the primary east west access to Latitude 32 and the delivery of the Fremantle-Rockingham Controlled Access Highway.

12.9 Community Education

In order to influence travel behaviours, the City will expand its delivery of the *Your Move* Program or equivalent, to include all travel options and wider community projects, as well as becoming an active participant in the program itself. The program will continue to work closely with State Government, including Department of Transport, Public Transport Authority and Main Roads WA. The program will support ongoing, and future, major infrastructure projects, in order to develop, agree and deliver coordinated travel advice for the community of Cockburn during these periods.

The aim is for the community to be actively engaged in these initiatives and others, building upon the existing program of community events, promotions and marketing activities. As well as schools, working with major employers (including the freight and manufacturing industries), developers, key trip destinations (such as shopping centres), State Government and adjacent Council's will also be integral to travel behaviour change activities.

For the community to understand how their travel choices impact on the transport network, the City will be proactive in reporting on progress, sharing stories and developing a monitoring program. Monitoring will assist in understanding the City's collective progress and inform adjustments that may need to be made to the action plan.

Transport Issues and Analysis

By 2031, traffic is likely to exceed capacity on many major arterial roads during peak hours. To manage this, the City will support and promote a transition to sustainable transport mode choices and improve the efficiency of the City's movement network through integrated transport planning.

To ensure efficient regional connectivity, identified east-west road links and north-south corridors will need to be preserved and enhanced.

The City will promote and lobby for improved public transport, including the benefits of the Fremantle to Cockburn High Priority Transit Corridor, which will also be critical in providing future residential infill opportunities.

The local planning framework is to provide further design guidance for roads in new areas to ensure high quality, high amenity streetscape outcomes with maximum opportunities for street trees; visitor parking opportunities; and safe and convenient waste management arrangements.

Careful consideration of matters such as garages, crossovers; utilities; street trees; waste management; and on-street parking is critical to create safe, attractive well-designed streets that can accommodate trees.

Realistic consideration must be given to provision of vehicle parking in residential areas to ensure the needs of the community are met.

The preservation and enhancement of vegetation along roads and other transport infrastructure, and implementation of green infrastructure into road planning and design is a priority.

The City will advocate for the protection of the supporting infrastructure needs for Rowley Road as the primary east west access to Latitude 32 and the delivery of the Fremantle-Rockingham Controlled Access Highway.

13. Infrastructure

13.1 Sewerage

The City's residential areas have now all been sewered by the State Government under the *Sewer Infill Program*. Extension of sewer infrastructure in the last 10 years, including Spearwood and Coogee, has provided some impetus for residential redevelopment that was otherwise hindered by lack of available sewer.

There is no infill sewer in the City's 'Resource', and 'Rural' zoned areas (TPS3), and these areas rely on the installation of onsite effluent disposal systems. These are regulated by the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974* and controlled by the *Government Sewerage Policy (2019).* There is also legislation which is specific to the City of Cockburn and the Water Protection Area.

The majority of industrial localities in the City are also sewered, including Phoenix Business Park. While infill sewerage is available, properties in the south western area of the Bibra Lake Industrial area are not connected to sewer.

The Woodman Point Wastewater Treatment Plant is the largest wastewater treatment plant in Western Australia. It treats wastewater for a population of about 680,000 people living south of the Swan River in the Perth metropolitan area. The plant currently treats approximately 140 million litres of wastewater every day. As the population in the catchment area continues to grow, additional treatment capacity is required at the plant.

The Water Corporation have undertaken numerous upgrades to increase capacity, and have implemented odour reduction measures. The Woodman Point Wastewater Treatment Plant is proposed to remain in its current location and is likely to require further expansion in the future. The impact of this facility is discussed further under *Section 14.1 Wastewater Treatment Plan Urban Deferred area.*

13.2 Water Supply

Reticulated water supply is currently provided to existing residential localities within the City.

However, for manufacturing firms the availability of water has been criticised as being insufficient for their needs. Currently, some firms are importing water due to inadequate local supply, an unsustainable practise for many key fabrication and manufacturing firms in the area.

'Resource' and 'Rural' (TPS3) zoned properties are serviced by on-site potable groundwater bores or a rainwater supply.

The Jandakot Public Ground Water Supply Area currently contributes approximately 3 per cent of the metropolitan public scheme water supply.

Private abstraction of this groundwater resource is also substantial, supporting a range of industrial, rural, special rural and domestic uses. The Stage 1 public supply borefield has been in operation since 1979.

Statutory protection of the groundwater resource is provided through a range of measures, including Bylaw and Licensing provisions for the Jandakot Underground Water Pollution Control Area; State Planning Policy 2.3 'Jandakot Groundwater Protection', Draft State Planning Policy 2.9 – Planning for Water and the Water Catchment reservation and the 'Rural-Water Protection' zone of the Metropolitan Region Scheme.

SPP 2.3 and draft SPP 2.9 provide guidance regarding planning requirements that need to be considered in the policy area and should be read in conjunction with DWER's 'Water quality protection note 25: Land use compatibility tables in public drinking water source'.

Wellhead protection zones surround water abstraction bores and are particularly vulnerable to water quality contamination risks. Any development proposal in these zones is to have regard to the *Metropolitan Water Supply, Sewerage and Drainage By-laws 1981* and 'Water Quality Protection Note 25: Land use

compatibility tables for public drinking water source areas'. A map of the wellhead protection zones can be found on the Department of Planning, Lands and Heritage (DPLH) website.

13.3 Power

Existing residential localities are serviced with either aerial or underground supply depending upon the era in which subdivision occurred.

For the past 30 years, State Government Policy has required that new subdivisions incorporate a mandatory underground power supply.

The State Government *Underground Power Program* was established in 1996 and projects are awarded through competitive rounds similar to a public tender (subject to a budget for each funding round). The project is jointly funded by Western Power, the State Government and local government.

Underground reticulation provides significant benefits to the community, including improved aesthetics and a safer and more reliable power supply.

The State Government *Underground Power Program* has seen the undergrounding of distribution powerlines and poles in East Hamilton Hill and East Coolbellup, and the western and eastern areas of South Lake have been identified for future underground power. This has allowed for additional street tree planting, reduced street tree pruning allowing trees to grow to natural height, and feature lighting which is improving the appearance of streetscapes and allows brighter, safer and more evenly lit streets with the new lighting system.

The City will continue to make submissions for underground power. Infill areas are considered to be a priority in this regard, to contribute to the beautification of streetscapes in these areas, and because as subdivision of private land occurs there will be requirements for existing dwellings to be connected to underground power regardless.

Existing high voltage aerial transmission lines blight the appearance of some local streetscapes within a number of the City's suburbs. However, these are not part of the program as the costs are too expensive to replace with an underground network.

13.4 Gas

Atco Gas's current policy on connecting gas distribution pipework in new subdivisions is based on the economic justification of individual proposals. Frontal extension of infrastructure is generally feasible. In some cases road upgrades may require modification to gas lines, and the upgrade of Jandakot Road required the realignment of gas infrastructure.

For manufacturing firms, both the quantity and availability of gas has been criticised as being insufficient for their needs. Currently, some firms are using bottled gas in order to maintain fabrication facilities, which they see as being an unsustainable practice.

The Parmelia Pipeline traverses the district adjacent to the railway line and south through Yangebup, adjacent to Spearwood Avenue and Henderson Road.

The Dampier Bunbury Natural Gas Pipeline traverses through Wattleup, and the south east corner of the City in Banjup.

There are buffers and notification areas associated with these high-pressure pipelines, set out in Planning Bulletin 87 'High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region'.

13.5 Stormwater

Stormwater is water that originates during rain events and runs off all urban surfaces such as roofs, pavements, car parks, roads, gardens and vegetated open spaces. Stormwater can be harvested and reused for many purposes. In urban areas, the best quality water is rainfall captured from roofs before it mixes with other storm water at ground level or in drains.

According to Australian Rainfall & Runoff (2016) guide to flood estimation, the main purpose of urban drainage systems is to collect and convey, to receiving waters, with minimum nuisance, danger or damage. The drainage network within the City is a combination of pits, pipes, open channels, natural waterways and road reserves. Storm water is disposed of at source where possible through infiltration or carried and disposed of in lakes, wetland reserves or other catchments eventually discharging to the ocean.

Drainage in the City, as a result of its period of development, was not established in a manner that has all roads or properties serviced by constructed drainage systems. This is particularly the case in the older areas of the City. Retrofitting and gaining good drainage practice is often difficult to achieve because of narrow road reserves, inaccessible easements or intensive development within the area.

Some areas have developed in a manner that resulted in the filling of minor waterways, occasionally without a replacement pipe system. This creates concerns around poor property access and drainage systems that have to service a large area and are often more susceptible to failure. Forecasting future service delivery needs and the capacity of the drainage assets to meet short, medium and long-term needs will be important.

The City contains a significant number of stormwater systems end catchments (where stormwater is disposed of in drainage sumps) and four main arterial drainage catchments.

Water Sensitive Urban Design (WSUD) is an approach to water quantity and quality management through the implementation of sustainable 'soft' engineering measures which improve water quality while also enhancing the landscape and providing amenity to the local community.

WSUD systems are primarily used to improve stormwater quality and reduce mains water use. Incorporating WSUD within the City's existing drainage system may offer a variety of means of minimising pollution and mitigating the environmental impact on the City's watercourses, valuable wildlife areas and wetlands. With proper implementation into new and existing infrastructure, WSUD systems can have far reaching benefits not only on environmental and social levels, but also on economic ones. From cutting down on capital costs of new developments through the reduction in the size of pipe work and stormwater infrastructure, to the improvement in market value of existing developments, the implementation of WSUD systems can prove to be a cost-effective measure to the City's overall water management strategy. Most WSUD measures can be retrofitted (in the most cost-effective manner) into the existing drainage systems.

The City will continue to implement best practice WSUD for stormwater management through new and upgraded drainage infrastructure to meet the pollutant load reduction targets of the City's *Drainage Management Strategy*. Furthermore, new structure plans are required to comply with the *Better Urban Water Management*, a joint government agency framework.

13.5.1 District Drainage

The City has two Drainage Schemes, being the Russell Road Arterial Drain Scheme; and the Cockburn Central and Solomon Road Development Areas Arterial Drainage Scheme. An issue for the City in relation to these schemes is the need to share the funding with those deriving a benefit. This has now been put in place through several Development Contribution Plans.

Russell Road Arterial Drain Scheme

The Russell Road Arterial Drain Scheme is the stormwater drainage system to service the Southern Suburbs District Structure Plan Area, which covers the localities of Success, Atwell, Wattleup, Hammond Park and Banjup.

Over 10 years ago, the Water Corporation agreed to provide a stormwater Main Drainage outfall to service the agreed catchment to facilitate subdivisional development. The City of Cockburn was to assume responsibility for the

coordination of the design and operate the drainage systems upstream of the proposed Water Corporation's Russell Road Buffer Lake in Success.

The Russell Road Arterial Drain Scheme report addressed the philosophy and design requirements of the major “Arterial Drains” which are required to enable the subdivisional development of the area covered by the Southern Suburbs District Structure Plan. This allows for an ordered, unified drainage system which will effectively serve the entire catchment but can be constructed in fragmented portions as the subdivisions occur on various fronts. This has facilitated the subdivisional process in the area.

Cockburn Central and Solomon Road Development Areas Arterial Drainage Scheme

The Cockburn Central and Solomon Road Development Areas Arterial Drainage Scheme provides a strategic drainage concept for the entire catchment to facilitate an integrated drainage system to be constructed in fragmented sections.

Prior to this the lack of an integrated drainage system hampered the development in the area, including within the Muriel Court Structure Plan area.

13.6 Telecommunications

Telecommunications is more central to home and work life than it has ever been. As almost everyone rely on these services, access to networks that keep people connected is becoming essential.

Telecommunications support the entire economy, enable innovation, and impact on liveability and productivity.

Telecommunications infrastructure includes a number of established exchanges, for example, Wattleup, Munster and Spearwood.

In 2017, the National Broadband Network (NBN) drew together wired communication: copper, optical and hybrid fibre-coaxial; and radio communication: satellite and fixed wireless networks at 121 Points of Interconnect (POI) typically located in Telstra owned telephone exchanges throughout Australia.

NBN cable infrastructure is available in North Hamilton Hill, parts of Bibra Lake and South Lake, Yangebup, Cockburn Central and new areas such as Packham North and Port Coogee, where it has been required. The majority of the rest of the City is earmarked for NBN connection, with the exception of Coogee (‘old Coogee’), southern Spearwood, northern Munster, the southern portion of the Bibra Lake industrial area and the ‘Resource’ zone.

Telecommunications networks change constantly as frontal extensions to accommodate new subdivisions occur as new technology is introduced. New cabling occurs underground, using subdivision trenching shared with other services.

Significant investment is occurring in the telecommunications sector, responding to growth in demand for data-driven services and new uses for telecommunications. Telecommunications networks are constantly evolving, and of all infrastructure sectors, telecommunications is today the least recognisable sector from a generation before. Change is set to continue which includes investment in a new generation of mobile networks.

In this context, planning for the physical infrastructure particularly within established urban areas will be a challenge. This is further exacerbated by the fact that telecommunications infrastructure in Australia is privately owned; and that under telecommunications legislation much of the infrastructure is exempt from local government approvals.

New infrastructure is constantly being established by telecommunications carriers operating in a deregulated commercial environment. No published strategic plans for new infrastructure provision have been made available by the telecommunications carriers. Consequently, the City is required to respond to

individual applications for new mobile phone towers and other 'high impact' facilities on an individual basis. This is guided by Council Policy which has a presumption towards the establishment of 'high impact' facilities in non-residential zones.

State Planning Policy 5.2 'Telecommunications Infrastructure' (SPP 5.2) applies throughout Western Australia in respect to above and below ground telecommunications infrastructure, other than those facilities exempted under the *Commonwealth Telecommunications Act 1997*.

Clause 6.2 (a) of SPP 5.2 states that:

In the preparation and assessment of structure plans at the local level, consideration should be given to the need for telecommunications services in supporting documentation. Early consideration of wireless and mobile phone telecommunication system requirements allows for them to be incorporated into the design process and mitigate any potential visual impacts to the community.

The City has adopted a local planning policy that sets out the information required to be provided with structure plans to address the forward planning for telecommunications infrastructure. During the advertising period the City will refer structure plans to all telecommunications infrastructure providers seeking information regarding forward planning, which they are obliged to provide pursuant to the *C564:2011 Mobile Phone Base Station Deployment* made under Part 6 of the *Commonwealth Telecommunications Act 1997*.

This will assist in ensuring that the earliest consideration of telecommunications infrastructure occurs through the structure planning process to facilitate orderly and proper planning.

The City will also continue to explore ways to better plan for telecommunication infrastructure and other technology to minimise their visual intrusion and impact on neighbourhood character.

Telecommunications has been flagged as an issue in the Henderson industrial area, where firms appear to be suffering significant delays in establishing adequate commercial telecommunications facilities. While capacity appears not to be an issue once the facilities are established, the significant initial delays result in substantial economic losses for growing firms.

13.7 Climate Change and Infrastructure

A changing climate will affect decisions about the location, construction and maintenance of infrastructure (e.g. buildings, roads, bridges, pathways, drainage). Consideration must be given to the risk to this infrastructure from climate change. This includes adapting existing infrastructure, particularly for assets that deliver critical services to the community.

Consideration will be required for the following:

- Exposure of asset to fire risk
- Stormwater drainage capacity to cope with larger volumes of water or more frequent flash flooding
- Road maintenance requirements to deal with the increased impact of heat or rainfall on bitumen
- Impact of drought on the maintenance of local parks, and sports and recreation facilities.

The City's *Climate Change Adaptation Plan* includes a set of actions to manage the specific risks, including to infrastructure.

Infrastructure Issues and Analysis

The City will seek to ensure community infrastructure responds to community need and context.

The City will continue to take a strategic approach to community infrastructure planning and will advocate for an evidence-based approach that provides for equitable distribution and provision of community infrastructure that is also financially sustainable.

Underground reticulation benefits the community, including improved aesthetics and a safer and more reliable power supply. The City will continue to make submissions for underground power with infill areas a priority because as subdivision of private land occurs will require existing dwellings to be connected to power underground.

The City will continue to be guided by Water Sensitive Urban Design (WSUD) principles for stormwater drainage.

New infrastructure is constantly established by telecommunications carriers and the City will continue to explore ways to better plan for telecommunication infrastructure and other technology to minimise their visual intrusion and impact on neighbourhood character.

A changing climate will affect decisions about the location, construction and maintenance of infrastructure (e.g. buildings, roads, bridges, pathways, drainage) which must be cognisant of potential impacts – the Climate Change Adaptation Plan will address these issues in further detail.

14. Major land use constraints

The City is affected by a wide range of constraints. Many of these have been discussed throughout this Strategy, including how the land use planning system should respond to the issue. This section sets out the key major constraints that the land use planning system needs to respond to, and areas where action is required.

14.1 Wastewater Treatment Plant urban deferred area

The Woodman Point Wastewater Treatment Plant (WWTP) is located on the western side of Lake Coogee, and opened in this location in 1966.

In 1984, it underwent substantial expansion, becoming a large primary treatment plant, and in 2002 became an advanced secondary treatment plant. The plant currently treats wastewater for a population of about 680,000 living south of the river in the Perth metro area. As the population in the catchment area continues to grow, additional capacity is likely to be required at the plant and further upgrades required.

14.1.1 Background buffer information

When the original primary wastewater treatment plant was developed, the buffer area used was a nominal 1000m distance from the plant boundary (the odour source) to the nearest residential land. This buffer distance was at the time set out in the Environmental Protection Authority (EPA) Draft Guidance Document No 3 'Industrial-Residential Buffer Areas (Separation Distances)' dated July 1997.

In 1992, the EPA reduced the nominal 1 km odour buffer to the existing 750m buffer based on modelling undertaken by the Water Corporation with this boundary being 7 odour units at 99.8 percentile.

In 1997, Metropolitan Region Scheme (MRS) Amendment No 939/33 was approved by the Minister which rezoned land from' Rural' to 'Urban Deferred' within this 750m area.

Prior to the gazettal of the MRS Amendment in 1995 the Minister for the Environment issued a statement that the proposal may be implemented subject to conditions which are summarised below:

- *The construction of residential dwellings on any lot requiring the subdivision of land is not permitted.*
- *Short stay accommodation (e.g. hotels and motels) are not permitted.*
- *Developments which compel the public to remain on the lot(s) for long periods of time (e.g. primary schools and hospitals) are not permitted.*

In 1999, the City of Cockburn Local Planning Strategy identified this 'Urban Deferred' area as being within an 'odour/pollution buffer' for the Woodman Point WWTP.

In 2002, the land was zoned 'Development' in the City's Town Planning Scheme No 3 (TPS3), with Development Area 5 and Development Contribution Area 6 also applying to the 'Development' zone.

Development Area 5 included the following provision: *"To provide for residential development except within the buffers to the Woodman Point WWTP, Munster Pump Station and Cockburn Cement."*

The identification of the buffer to the WWTP within the 1999 Local Planning Strategy effectively provided for a 'prescribed buffer'. The status of the 'buffer' was explored in a State Administrative Tribunal (SAT) case, where it was determined that this was a 'prescribed buffer',

being a buffer relevantly 'prescribed' by the Council under TPS3 in the form of the applicable 1999 Local Planning Strategy.

In response to on-going concerns about odour emissions from the WWTP, the then Minister for the Environment on 8 March 2004 requested the EPA to provide advice under section 16(e) of the *Environmental Protection Act 1986* on the buffer for the WWTP.

In 2006, the EPA released a section 16 report (bulletin 1240) on the Woodman Point WWTP which recommended maintaining the existing buffer (750m) until after the implementation of stage 1 measures, which were to achieve a 50 per cent odour reduction, to be completed by the end of 2008.

The EPA noted that the 750m buffer was not a technically established buffer, and that they could not recommend an appropriate, technically defensible long-term buffer at that stage.

There have been a number of proposals that have included proposed changes to the WWTP buffer area, including inclusion within the Kwinana EPP buffer, although none of these have been based on a technical assessment of the odour/impacts, and none have been implemented.

14.1.2 Odour Issues

Prior to 2009 there is an extensive history of odour problems and complaints concerning the operation of the WWTP with a clear impact on the 'Urban Deferred' area at that time. The EPA Bulletin 1240 in 2006 was prepared in response to ongoing concerns about odour emissions, and advised that 'current odour management is not adequate and fails to meet the goal of no impact at odour sensitive premises'.

The Water Corporation prepared a *Strategic Environmental Review* (SER) document for consideration by the EPA in 2005, which acknowledged that a further significant reduction in odour emissions from the WWTP was required. The Water Corporation also proposed a three staged programme of work to upgrade the WWTP to Australian best practice in odour control which has now been completed.

Since that time there have been a number of upgrades to the facility, including expansion and odour reduction measures. This has resulted in a substantial reduction in complaints regarding noise or odour, and the City of Cockburn and Water Corporation now receive a negligible amount of complaints either within or adjacent to the Lake Coogee 'Urban Deferred' area.

Therefore, while it is understood that odour-reduction measures can be costly, it is clear the substantial financial investment to date has been successful, and that such measures will continue to be required into the future to ensure there is no unacceptable impact within the existing residential area outside the buffer, regardless of whether there is further residential development within the 'urban deferred' area.

14.1.3 Perth and Peel @ 3.5million

Perth and Peel @3.5million South Metropolitan Peel Sub-regional Planning Framework identifies the Lake Coogee 'Urban Deferred' area as 'Industrial Investigation' (see Figure 59).

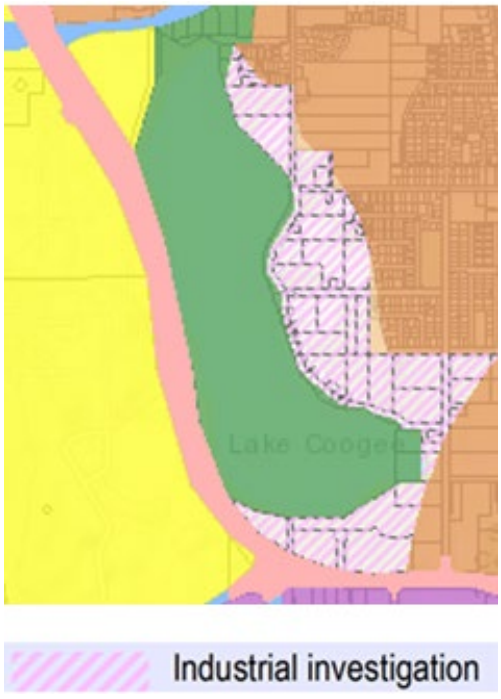


Figure 59. Extract from Perth and Peel - Lake Coogee Urban Deferred area identified as 'Industrial Investigation'

The Lake Coogee 'Urban Deferred' area has been identified as 'Planning Area E' (see Part 1). The City has undertaken an assessment of the appropriateness of this area for industrial or mixed business development and concluded there is no identified need for additional industrial/mixed business land.

Preliminary assessment undertaken by Farlane Consultants (2020) of the City's employment land indicates no identified need for additional industrial or mixed business zoned land. However a more comprehensive assessment will be undertaken as part of future planning for this precinct, in accordance with Perth and Peel@3.5 Million's directions for this area.

It is noted that in terms of its potential to be an employment area, the precinct has poor levels of accessibility with limited opportunities for improvement.

While the area directly abuts a residential area to the east, its catchment is severely constrained by the location of Lake Coogee and the WWTP to the west; the AMC to the south; and natural areas including Bindjar Lake. It is therefore not considered to have the qualities of a successful employment area.

The subject area is also 1km away from Latitude 32, which is a 1400ha master planned industrial area that will support the economic and employment growth in the important Western Trade Coast region over the next 30 years.

1. Interface with existing residential development

The 'Urban Deferred' area interfaces with existing residential development to the east. Existing east-west residential streets terminate with culs-de-sac and extension of these roads to access an industrial or mixed business area would be inappropriate as it would:

- Result in inappropriate levels of traffic and heavy vehicles within residential streets creating unsafe road environments and negatively impacting on residential amenity.
- Create an inconsistent streetscape character with insufficient opportunities to provide an appropriate interface and transition from residential to mixed business or industrial.

The size and shape of the 'Urban Deferred' area significantly limits opportunities to design an appropriate interface between the residential area and other uses. The distance between Lake Coogee and Bindjar Lake is only 120m, and at its largest section there is only 340m between Lake Coogee and existing residential development. There is no logical way to transition to an industrial or even mixed business precinct within such a small area, particularly given the Conservation Category Wetland (CCW) (Lake Coogee) to the west which will require a buffer.

2. ***Traffic and access***

The 'Urban Deferred' area is not currently well-connected, and the functional road hierarchy demonstrates that this area is not located adjacent to higher order roads that would provide for the types of levels of access that would be appropriate for heavy vehicles to access an industrial or mixed business area.

3. Environmental Values

The 'Urban Deferred' area directly abuts Lake Coogee to the west which is a CCW and part of Beeliar Regional Park, and Bindjar Lake to the east. There is also an identified local ecological corridor between Lake Coogee and Bindjar Lake through the area. Any development within the area will require buffers to these wetlands, and consideration of the environmental value and hydrological processes associated with these wetlands.

4. Impact on landscape values

This current interface of 'rural lifestyle' or 'rural residential' character provides an open and largely natural setting to Lake Coogee. Any change to land uses within this area should have consideration of the natural landscape of this area, and identify the desired future character. This is particularly important given how narrow the current foreshore is, which provides a limited opportunity in itself to protect the setting of Lake

Coogee both from a visual and recreational point of view.

Industrial or mixed business development in this area would significantly change the character of this area, with the bulk and scale of the built form, in addition to parking areas of a commercial nature, having the potential to detract from the natural setting, making it difficult to achieve a compatible interface with such uses.

Given the narrowness of the precinct, its irregular shape and existing interfaces, it will be difficult to achieve a compatible interface and respect the valued character of this area.

5. Lack of Community Benefit

There is not seen to be any community benefit to creating an industrial or mixed business precinct in the 'urban deferred' area from an economic or local employment perspective.

Furthermore, there are a number of reasons why industrial or mixed businesses uses would not have a community benefit, including:

- The likelihood that industrial or mixed business land uses and built form would detract from the natural landscape setting that is valued by the community.
- The negative impact of increased traffic to the precinct, including heavy vehicles.
- The limited opportunity to improve the recreational value and accessibility of Lake Coogee through industrial or mixed business subdivision and/or development.

In 2018 the City of Cockburn conducted a number of targeted stakeholder workshops and these demonstrated a very strong consensus that industrial use of the urban deferred area is not appropriate and that the focus should be on residential use and improving amenities. This was both from landowners within the 'urban deferred' area and the adjacent residential area.

14.1.4 Consideration of appropriate zoning and land uses

In accordance with Perth and Peel @3.5million and the WWTP's operational requirements, the City will continue to investigate the appropriateness of this area for non-sensitive land uses.

Based on preliminary investigations of this area for industrial or mixed business uses and early findings, the City will also continue to advocate for the investigation of this area for residential development. It will do so, working with key government stakeholders and addressing the relevant planning requirements to enable the WWTP's continued operations to service the growing population in the catchment area

The existing road network lends itself to a logical extension to the west for additional residential development, which would provide the best opportunity to achieve a compatible interface.

Residential development within this area would also provide the opportunity to secure additional public open space (a minimum of 10 per cent) which would benefit the existing residential community, and provide additional recreational and conservation opportunities.

In terms of landscape character, with careful siting of public open space; appropriate lot sizes and interface to public open space and Lake Coogee, residential development could be undertaken in a way that did not detract from the natural landscape character of the area.

However, the area is subject to a number of constraints that require consideration, including:

- Bushfire
- Wetlands
- Acid Sulphate Soils

In order for this area to be available to be structure planned for residential development the MRS urban deferment would need to be lifted. This occurs under Clause 27 of the *Metropolitan*

Region Scheme whereby land included within the urban deferred zone may be transferred to the urban zone by resolution of the WAPC. The requirements for this are set out in the WAPC *Lifting of Urban Deferment Guidelines* (2019).

In accordance with the guidelines, before agreeing to the transfer of land from the urban deferred zone to the urban zone, the WAPC will require evidence, such as a draft structure plan, that:

- the land is capable of being provided with essential services and agreement has been reached between the developers and service providers with regard to the staging and financing of services;
- planning is sufficiently advanced to depict an acceptable overall design to guide future development;
- the proposed urban development represents a logical progression of development;
- regional requirements (such as regional roads, open space and public purposes) have been satisfied or provision made for them; and
- any constraints to urban development, including in relation to environmental, hazard and risk issues, can be satisfactorily addressed.

Proposals to lift urban deferment are referred to relevant State Government agencies for comment. This will provide the opportunity for Water Corporation to provide their comments on the proposal.

The proposal, together with supporting information and justification in accordance with section 6 of the guidelines, will generally be considered and determined by the WAPC.

Where land was included in the 'Urban Deferred' zone prior to August 1996, when legislative provisions providing for environmental assessment of planning schemes, and amendments to planning schemes, were enacted, the WAPC will seek advice from the EPA prior to considering the lifting of urban deferment, to ensure that environmental issues have been identified. This will provide the mechanism for the EPA to consider the issue of odour impacts from the WWTP.

This area has been included within 'Planning Area E', and Part 1 of this Strategy outlines Planning Directions and Actions for this area.

The City will also advocate for the removal of this 'Industrial Investigation Area' from *Perth and Peel @ 3.5million* when it is next updated.

14.2 Aircraft Noise

Jandakot Airport has strategic importance as an aviation base for emergency services and is one of the busiest airfields and largest pilot training bases in Australia, operating 24 hours per day, seven days per week.

The strategic importance of Jandakot Airport supports the need for it to be recognised in the planning of the region, and for its operation to be protected as far as practicable, from development that could potentially prejudice its performance. At the same time however, it is important to recognise the physical context in which the Airport is situated; and to minimise as far as practicable, adverse impacts on adjacent development such as aircraft noise.

Jandakot Airport is a general aviation airport which undertakes significant pilot training within the frame area (see Figure 60). Aircraft training movements can have a substantial effect on the amenity of surrounding noise sensitive land uses, due to the frequency of noise events and the inability to screen aircraft noise emissions from reaching affected parties on the ground.

SPP 4.1 'State Industrial Buffer '(SPP 4.1) and State Planning Policy 5.3 'Land Use Planning in the Vicinity of Jandakot Airport' (SPP 5.3) aim to address the amenity impacts associated with noise sensitive development in the vicinity of the Jandakot Airport and to protect the Airport from encroachment by incompatible development.

Applicants for noise sensitive development within the Jandakot Airport Frame Area, excluding the area outside the 20 ANEF Noise Contour are to provide an Acoustic Report to the City addressing noise intrusion to residential developments.

All development within the Jandakot Airport Frame Area, excluding the area outside the 20 ANEF Noise Contour is required to be provided with a Notification on Title stating:

"This lot is situated in the vicinity of Jandakot Airport, and is currently affected, or may in the future, be affected by aircraft noise. Noise exposure levels are likely to increase in the future as a result of increases in numbers of aircraft using the airport, changes in aircraft type or other operational changes. Further information about aircraft noise, including development restrictions and noise insulation requirements for noise-affected properties, are available on request from the relevant local government offices."

In relation to noise from general aviation aircraft movements from Jandakot Airport, much of the Frame area identified by SPP 5.3 falls within the area identified by the "Noise Above Contours" identified by the Jandakot Airport Master Plan corresponding with:

a. 20 or more daily events greater than 70 dB(A);
b. 50 or more daily events of greater than 65 dB(A);
c. 100 events or more daily events of greater than 60 dB(A); or
d. 6 or more events of greater than 60 dB(A) between the hours of 11pm and 6am.

Consideration of the noise impacts based on the Noise Above Contours is consistent with the Federal Department of Infrastructure and Regional Development's National Airports Safeguarding Framework.

There is strong evidence demonstrating the negative impacts of chronic noise exposure, including sleep disturbance and potential health impacts[37].

In order to protect the long-term health and amenity of residents, and to ensure that residential amenity is adequately protected within noise sensitive developments, the City strongly encourages all noise sensitive development within the frame area, excluding the area outside the 20 ANEF Noise Contour to be provided with 6.38mm laminated glazing to all habitable rooms. This is consistent with noise control measures

[37] Enhealth Council (2018) The health effects of environmental noise – other than hearing loss

recommended in the WAPC's "*Aircraft Noise Insulation for Residential Development in the Vicinity of Perth Airport*".

The City will encourage developers to opt-in to this requirement and include it within any Local Development Plan or where planning is approval is required in the frame area, in addition to notifications on titles.

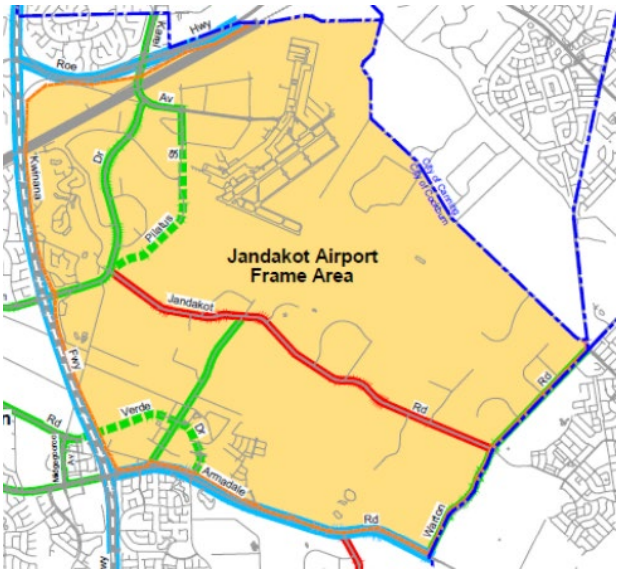


Figure 60. Jandakot Airport Frame Area

Any land use changes/zoning changes within the frame area must be cognisant of the airport operations and noise impacts to both ensure it does not impact the operation of this as a strategically important aviation base, and to ensure that residents are not unduly affected by noise impacts.

14.3 Kwinana Air Quality Buffer

In the late 1970s emissions of sulfur dioxide (SO^2) from Kwinana industries caused significant pollution in nearby residential areas. The Environmental Protection Authority (EPA) initiated the development of the *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1992* and associated *Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992* in order to provide the basis for managing and protecting air quality in the region.

The purpose of the Kwinana air quality buffer is to protect residents outside the Kwinana industrial area and the Hope Valley-Wattleup redevelopment area from pollutants such as sulfur dioxide, risk, dust, noise, light and odour as well as avoiding restrictions on industrial operations in the buffer.

Pursuant to Section 36 (1)(b) of the *Environmental Protection Act 1986*, the EPA is legally required to undertake a statutory review of Environmental Protection Policies every seven years.

The *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy* (Kwinana EPP) was formally reviewed in 1999 and reissued unchanged, except in date title.

The EPA undertook consultation on the Kwinana EPP via a discussion paper in June 2009 in preparation for a review. On the basis of this consultation and EPA advice, in November 2010 the Minister directed the EPA not to review the Kwinana EPP at that time.

The Western Australian Planning Commission (WAPC) through the Kwinana Buffer Review Committee has sought to review the Kwinana EPP buffer. A report was released in 2002 but not finalised. A further report was released in 2008 titled: *Review of the Kwinana Air Quality Buffer – Position Paper*. This included an 'Interim Buffer' which included several areas of expansion to the Kwinana EPP buffer.

In 2010 the WAPC prepared a draft report titled: *Kwinana Air Quality Review: Options and Recommendations for a Revised Buffer for Areas 5 and 9 of the Kwinana Air Quality Buffer Position Paper 2008 (Wattleup and Mandogalup).* This report, though considered by the WAPC, has been withheld from public release. This 2010 report seeks further expansion of the Kwinana EPP.

In the City of Cockburn, the Kwinana EPP buffer affects approximately 2157 ha of land, primarily within Wattleup, Henderson, Munster and Lake Coogee. A large part of this area is comprised of the Latitude 32 industrial area, and the Australian Marine Complex (AMC), which provide for

compatible with uses. However there are also rural areas, including the TPS3 'Rural Living' and 'Rural' zone. Further subdivision for sensitive land uses within this area is not permitted which means the areas effectively function as rural and rural lifestyle areas. The City is therefore proposing zonings for this area that provide for a reasonable level of use of the land, whilst protecting a rural lifestyle amenity and character.

Should there be any proposed change to the boundary of the Kwinana EPP buffer, the City will respond by identifying appropriate zoning changes in consultation with the community, considering the various other constraints and the environmental values of the area.

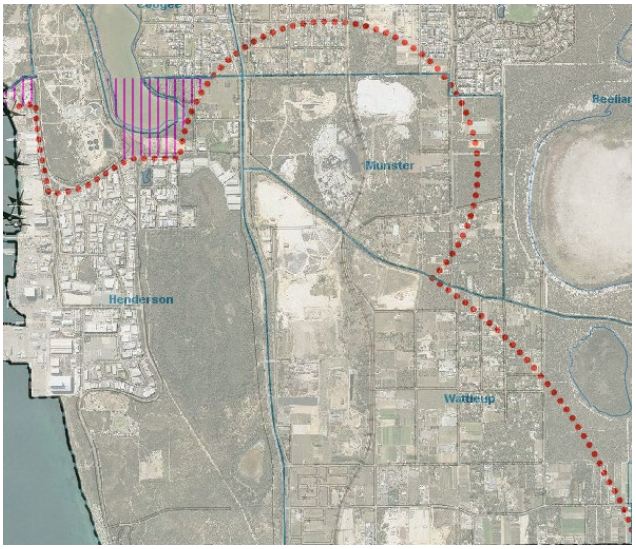


Figure 61. Kwinana air quality buffer (hatched area for investigation – has not proceeded)

14.3.1 Wattleup Perth and Peel Industrial Investigation Area

Perth and Peel @ 3.5million identifies rural landholdings to the east of Latitude 32 as an 'Industrial Investigation Area' (Figure 62).

The rural interface between the Latitude 32 industrial area and the central wetlands system has been a longstanding feature of the strategic planning undertaken by the State Government to deliver Latitude 32. That is, impacts being associated with Latitude 32 being restricted to the boundary of Latitude 32.

In the *Fremantle Rockingham Industrial Area Regional Strategy* (FRIARS) the rural area to the east of Latitude 32 was retained as a transition between industrial and conservation areas. This principle was strongly supported by the landowners in that area, and it is known that many still hold that view and do not wish to relocate or develop for industrial purposes. It was also an important principle in retaining the rural area in the FRIARS study that the industrial area would be planned and developed in such a way that all impacts (including noise, dust, odour and risk) would be contained within the industrial area and there would be no impacts on residents in the rural or residential areas.

This planning objective to protect the sensitive environmental wetlands through a precinct of rural development on the eastern side of Latitude 32 still has planning merit and as a result remains supported.

Importantly the 'Rural' zoning of this area provides an appropriate interface to the future residential area to the west.

This area is heavily vegetated and contains a Conservation Category Wetland (CCW) and the environmental qualities of the area would stand to be adversely impacted by the introduction of industrial uses.

The area also contains a listed Aboriginal Heritage site (No. 4357 – Wattleup Road Swamp).

Preliminary assessment undertaken by Farlane Consultants (2020) of the City's employment land indicates no identified need for additional industrial or mixed business zoned land. However, a more comprehensive assessment will undertaken as part of future planning for this precinct.

Given these sensitivities and constraints, and the small size of the precinct, retention of the rural zoning is supported in the short-term, with further engagement with key stakeholders and investigations required to determine an appropriate land use outcome for this area. For this reason, the area as annotated as 'Possible Transitional Land Use Areas'.

Should further investigations confirm that the rural use is appropriate into the future, the City will therefore advocate for the removal of the 'Industrial Investigation Area' from *Perth and Peel @ 3.5million* when it is next updated, and to have it identified as a 'rural' area.

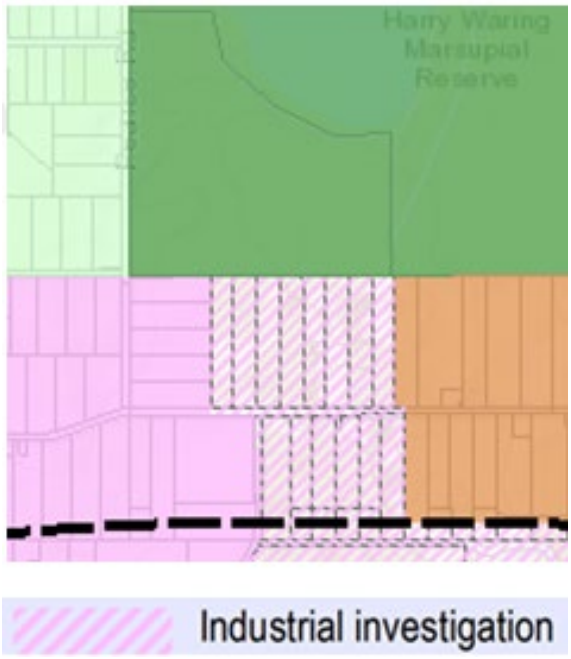


Figure 62. Wattleup Perth and Peel 'Industrial Investigation Area'

14.4 Bushfire

Bushfires are an inherent part of the Australian environment. In many parts of Western Australia, bushfire threat is increasing due to hotter, drier weather conditions associated with long-term climatic changes and development expansion where urban, rural and natural areas interface.

Bushfire threat can never be completely eliminated, and reducing vulnerability to bushfire is the collective responsibility of State and local government, landowners, industry and the community. It requires ongoing commitment and diligence to a range of management measures such as the appropriate location and design of development; managing potential fuel loads; implementing bushfire management plans; providing emergency services; increasing awareness of the potential risk through education; and ensuring emergency evacuation plans are in place. Such measures, in conjunction with planning policy and building controls, have the effect of increasing community resilience to bushfire.

State Planning Policy 3.7 'Planning in Bushfire Prone Areas' (SPP 3.7) directs how land use should address bushfire risk management in Western Australia. It applies to all land which has been designated as bushfire prone by the the Department of Fire and Emergency Services (DFES) Commissioner as highlighted on the Map of Bushfire Prone Areas. The City of Cockburn has extensive areas of bushland reserves, wetlands and remnant vegetation on private properties, with large portions of the district identified as bushfire prone.

SPP 3.7 requires higher order strategic planning documents such as frameworks, region schemes and sub-regional structure plans to include high level consideration of relevant bushfire hazards when identifying or investigating land for future development.

The City has undertaken a bushfire hazard assessment for the City at a higher level to inform the preparation of the Local Planning Strategy and the new Scheme.

Whilst this Strategy does not identify any additional urban areas, this high level assessment will inform the preparation of an action and implementation plan for existing areas.

14.5 Road and rail noise

Road and rail transport corridors play a vital role in moving people and goods safely and efficiently around the State and provide wide-ranging economic and social benefits to the community.

Perth and Peel @3.5million notes that the volume of freight movement on the regional road and rail networks will increase substantially by 2050.

Road and rail noise can have an adverse impact on human health and the amenity of nearby communities, so it is important that a balanced approach is taken in land use planning and development.

Within the City, the freight rail line traverses along the coast through North Coogee and west through Spearwood, Yangebup, South Lake, Bibra Lake and Jandakot. In North Coogee and Spearwood (Packham District Structure Plan) more recent planning addressed the issue of rail noise, and in Cockburn Coast vibration was also addressed through the 'Development Area' provisions and structure plan.

The purpose of SPP 5.4 is to minimise the adverse impact of road and rail noise on noise-sensitive land use and/ or development within the specified trigger distance of strategic freight and major traffic routes and other significant freight and traffic routes.

SPP 5.4 will apply to subdivision and development for noise-sensitive land uses within 200m (centreline) of the freight rail line, and noise assessments would be required to support these proposals.

In 2017 the City and PTA engaged Lloyd George Acoustics to prepare a Freight Train Noise & Vibration Assessment Bibra Lake (north), Bibra Lake (north-east) and South Lake (north). The purpose of this report was to support proposed rezonings in this area (the *Lakes Revitalisation Strategy*), and to define noise and vibration affected areas, based on recent noise and vibration measurements, prior to any further development occurring.

The purpose of this was to allow the City to identify affected lots and provide deemed to satisfy (DTS) construction packages for redevelopment of the site as development applications were submitted. Alternatively, site specific assessments could be undertaken by the developer rather than adopting the DTS standard.

While the proposed rezonings did not proceed as they were refused by the Minister for Planning, this study contains valuable analysis of noise and vibration.

While there are no proposed increases to residential codings in Yangebup, South Lake, and Bibra Lake there is potential for modest levels of infill under the current residential codings, particularly on corner lots 700m^2 or larger.

It is noted that the Freight Train Noise and Vibration Assessment Bibra Lake (north), Bibra Lake (north-east) and South Lake (north) study predates the final adoption of updated SPP 5.4 and would require updating to reflect the noise metrics used in the final version of the SPP. It would also require extrapolation along the freight rail line east to include Yangebup and Spearwood.

The City will investigate whether it is feasible and beneficial to update this study to include residential areas to the west, with implementation through a local planning policy. The potential benefit of this approach would be:

- A more accurate and evidence-based analysis of noise and vibration for the area, rather than the generic 200m setback area set out in SPP 5.4;
- Reduced costs for landowners undertaking individual acoustic reports as required by SPP 5.4.

SPP 5.4 also provides measures that apply to noise-sensitive land use within the policy's trigger distance of the identified transport corridors. This includes consideration of future development and associated increases in traffic anticipated for the next 20 years; and transport corridor proposals where there is sufficient certainty regarding the corridor's alignment and function.

To assist in the implementation of SPP 5.4, and ensure the protection of the health and amenity of residents from road and rail noise (and other sources), the City has adopted a local planning policy (Noise Attenuation) to:

- Detail the noise attenuation and noise management reporting process when

undertaking development within the City of Cockburn.
- Provide details of the City's requirements for the different types of acoustic reports.
- Provide guidance to applicants as to when an acoustic consultant should be engaged and provide information on the type of assistance an acoustic consultant might provide.

14.6 Midge and mosquitos

There is a problem of seasonal midge swarms in the vicinity of lakes and wetlands, which adversely affects the quality of life of nearby residents. This is evidenced in the complaints the City receives from residents living within 1km from wetlands subject to midge infestation.

Mosquitos are also a problem in some areas close to wetlands, and there were a large number of cases of Ross River Virus (RRV) in Cockburn during summer of 2011-12. These were investigated by the Western Australia Department of Health (DoH). The DoH subsequently advised the City that there is a heightened risk of contracting the disease for people residing near Thomsons Lake. It is considered prudent and responsible for the City to ensure that prospective purchasers of residential properties in this area are alerted to this emerging risk.

While comprehensive public awareness campaigns are used to educate, a further means of communicating the risk recommended by the DoH is through placing memorials on new land titles created at subdivision stage.

The City has two local planning policies to manage the issues of midge and mosquitos:

- LPP 1.10 *Subdivision Around Thomsons Lake*
- LPP 1.11 *Residential Rezoning and Subdivision Adjoining Midge Infested Lakes and Wetlands*

To manage the RRV risk from Thomsons Lake, LPP 1.11 provides a long-term mechanism to inform prospective purchasers of properties in proximity to Thomsons Lake of the potential risk to assist them in exercising greater precaution to reduce their risk.

Notifications are also required to be imposed on any infill residential subdivision, strata and development on land already zoned Residential within 500m of the edge of any lake or wetland subject to potential midge infestation (as defined in the local planning policy).

LPP 1.11 also requires a mosquito management plan as a condition of subdivision approval for all new subdivisions proposing the creation of new road infrastructure and/or open space located within the policy area. In this regard a wetland/lake has the potential to be subject to midge infestation if it holds water during spring and summer and is nutrient enriched or has the potential to become nutrient enriched. The City has 18 wetlands that meet these criteria, as set out in LPP 1.1.

The WAPC may require subdivider(s)/developer(s) of land between 500m and 800m of the lake or wetland edge to impose a Notification, pursuant to Section 165 of the *Planning and Development Act 2005* on the title of each new residential lot advising prospective purchaser(s) that the land may be affected by midge infestation.

The City will continue to implement these measures within the local planning framework to manage the health and nuisance risk associated with midge and mosquito to protect the health and quality of life of residents living within proximity to wetlands.

15. Local Planning Framework Guidance

15.1 Planning Context

For the past 20 years the City of Cockburn's local planning framework has been focussed on orderly and proper planning - coordinating development, development control, and managing land use conflict. This has been focused on rapid greenfield residential development and population driven growth.

The City is now entering a new phase in its evolution, and forecasts indicate that from 2036 onwards the last phase of greenfield development will be fully developed, and the majority of the City's residential growth will be within Coogee, North Coogee, Cockburn Central, and infill within Hamilton Hill, Coolbellup and part of Spearwood.

As the built environment evolves, it is appropriate that the planning system adapts to the increasing complexity of planning proposals by requiring a greater emphasis on design quality.

State Planning Policy 7.0 'Design of the Built Environment' (SPP 7.0) provides the overarching framework for the elevation of design matters, setting out objectives, measures, principles and processes which apply to the design and assessment of built environment proposals through the planning system.

There is a move to a more performance-based framework and this will require identification of intended local character to ensure identification of measures to protect it.

The local planning framework will need to explicitly identify intended future character to ensure development respects and enhances valued local character, particularly activity centres and within areas undergoing transition. (See section *11. Urban Design and Local Character)*

15.1.1 Local Planning Strategy role in decision making

The Local Planning Strategy itself has a high level role in guiding decision-making, as shown in Figure 65, with the expectation that all land use planning is consistent with the identified strategies in Part One, and cognisant of Part Two.

15.2 Exercising discretion

This Strategy provides the overarching framework for the creation of a robust and flexible local planning framework for land use planning decisions.

The local planning framework includes guidance for the exercise of discretion to deal with new challenges faced by the City. To achieve this, the following are important:

- An evidence-based approach to land use planning and decision-making that considers community benefit to drive improved outcomes that do not only benefit the developer. To assist with this, a Community Benefit Framework will be prepared to provide the City with a tool to assess the social outcomes and community benefits of proposals.

- Creation of a transparent local planning framework that provides clarity around how planning decisions are made, including when there is a departure from policy using an evidence-based approach.

To do this, it is important that the local planning framework is:

- Well-structured and integrated around clear overarching objectives;
- Sufficiently flexible to deal with market shifts whilst still providing an appropriate level of certainty;
- Balanced appropriately between flexibility and certainty, particularly given the shift to a more performance-based approach to ensure consistent decision making, and transparency.

In this context consideration needs to be given to which elements of the planning framework should be contained within the Scheme, and which elements will be better included within local planning policies.

SPP 7.0 and the shift towards a more performance-based approach suggests a planning framework supported more strongly by targeted local planning policies, rather than inflexible development control provisions. This approach requires special consideration as to the role of the Scheme (including supplementary provisions), and the relationship between the Scheme and local planning policies.

15.2.1 Design of the built environment

The City is committed to elevating design considerations in the City's decision-making with a coordinated strategy of design quality mechanisms to achieve design outcomes that meet community expectations.

Key elements of achieving this are outlined below:

Design Quality Mechanisms	City's approach
DESIGN PRINCIPLES performance-based approach to policy	Review and update of local planning policies to reflect SPP 7.0 principles and identify intended future character.
DESIGN REVIEW skilled evaluation expertise	Continue to ensure the City's Design Review Panel informs decisions where appropriate to support improved design outcomes, including for structure plans.
DESIGN SKILLS skilled design expertise	Continue professional development to support improved design outcomes in decision-making.
REPORTING AND ASSESSMENT to reflect design matters	Review of the Ordinary Council Meeting (OCM) report template to include design matters.

15.2.2 Informing the Scheme

This Strategy has discussed and analysed a wide range of key land use planning issues faced by the City, and will inform the preparation of a new local planning scheme.

Zonings

Given that TPS3 has been amended and kept up to date, the majority of the TPS3 zonings will be appropriate to carry over into the new Scheme without modification.

The model provisions however provide for a fixed number of zones and objectives, that do not all correlate to TPS3 zones.

Zones in a new local planning scheme will generally align with those of the model provisions of the Regulations.

There is no correlating zone for the TPS3 'Resource' zone, and a new zone is proposed for this area - 'Water Protection' zone, and an objective should be formulated, cognisant of SPP 2.3 and draft SPP 2.9; environmental values; and the protection of rural lifestyle amenity and character.

Residential codings

Residential codings were increased in Hamilton Hill, Coolbellup, and part of Spearwood through the revitalisation strategies to facilitate infill development, and this will provide for the City's infill targets to 2035.

Therefore, based on the assessment undertaken of existing residential areas there are no changes to residential codings of TPS3 proposed with the exception of consideration being given to a higher coding for the R5 lots located adjacent to Tapper Toad in Atwell (see Figure 63).

These lots are adjacent to an R20 coded area, and there is an opportunity to achieve some infill in this area with a higher coding if consideration is given to how this can be undertaken in a manner that respects the current primary street frontages, and the interface with Tapper Road and the 'Rural Water Protection' zone.

TPS3 includes a provision specifying that an R60 coding will apply to residential development outside the residential zone. This clause should be removed, and appropriate residential codings applied where relevant to ensure that appropriate densities and interfaces are achieved in the 'Commercial' and 'Mixed Use' zone.

Local Centre (small)

As discussed in *Section 5.4.2 Small local centre'*, small sites zoned 'Local Centre' under TPS3 are proposed to be zoned 'Mixed Use' to provide for small-scale commercial opportunities compatible with residential amenity and character that will enhance neighbourhoods.

Special Use zones

All TPS3 'Special Use' zones will be reviewed to determine whether there is an appropriate correlating model provision zone rather than the continuance of a 'Special Use' zoning. The benefit of this is that a clear objective is set out in the Scheme, and another layer of planning is removed.

This will include investigating the inclusion of power line easements (Special Use 23) through South Lake, Success, and Hammond Park within the 'Environmental Conservation' zone with a similar list of 'Restricted Uses' to support this area as an ecological corridor (Map 1).

Other zones

There is an area of 'Light and Service Industry' in Bibra Lake that is considered to be appropriate for 'General Industry', as it does not form part of the interface to residential development, and has the same characteristics as the adjacent 'General Industrial' zoned land (Figure 64). Further analysis should be undertaken as part of the preparation of the new Scheme to confirm that a 'General Industrial' zoning is appropriate for this area.

No. 85 (Lot 1001) Prinsep Road, Jandakot is reserved 'Public purposes - State Energy Commission' under the MRS and is proposed to be rezoned to 'Urban'. It is considered that a zoning of 'Mixed Business' under the local planning scheme is most appropriate given the interface with the 'Rural Water Protection' zone, proximity to the Jandakot Planning Investigation Area, and its location on the Jandakot Groundwater Protection Zone. In this regard,

consideration should also be given to a concurrent rezoning with the MRS Amendment.

Figure 63. R5 (TPS3) lots, Atwell

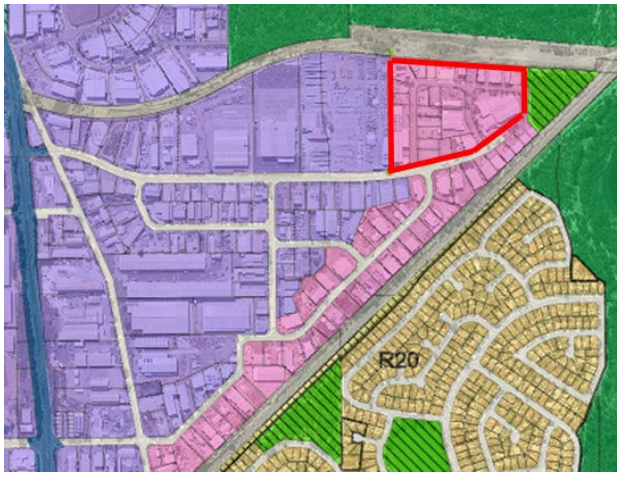


Figure 64. TPS3 'Light and Service Industry'

Land use permissibility

One of the important roles of a local planning scheme is identifying the range of permissible uses for each zone. The model provisions define land uses and objectives for each zone. The City must then consider these objectives and other pertinent matters in determining the range of uses that are appropriate. Where uses are considered fundamentally unacceptable they will be prohibited (identified as an 'X' use). Where uses could be acceptable they will be identified as a 'D' or 'A' use requiring planning approval and the exercise of discretion. Table 16 provides some key guidance regarding land use permissibility, but is not exhaustive.

The strategies of Part One of the Local Planning Strategy will be used to underpin the range of permissible uses, along with this framework. It is critical that these designations be based on an evidence-based approach that considers the appropriateness of each use in each zone in the context of this Strategy. In doing this, consideration needs to be given to understanding how discretion will be exercised, and whether local planning policies are needed to provide further guidance in exercising that discretion and making decisions.

Opportunities to streamline processes will be explored to determine whether there is potential to add further planning approval exemptions in certain zones, cognisant of Part One of this Strategy in determining what is appropriate.

Development Provisions

Providing a flexible framework may result in fewer traditional development standards within the Scheme, and more guidance outlined within local planning policies. The benefit of this approach is that objectives and intent can be set out more clearly. This also has the benefit of being more responsive to changes. It provides a greater level of clarity as development standards set out in the Scheme may seem arbitrary and can hinder innovative responses.

The design principles of SPP 7.0 are high level, and to improve their implementation it is recommended that local planning policies be reviewed to articulate more specific guidance for the principles. This will provide a more clear understanding of how the City will use SPP 7.0 in decision-making for various types of proposals, and what is expected of proponents. LPP 1.2 'Residential Design Guidelines' is an example of how this can be achieved for grouped dwellings, setting out guidance under each design principle.

Special Control Areas

Development Area Provisions

TPS3 contains 41 'Development Areas' which generally correlate to 'Development' zoned land, setting out provisions to guide structure planning, land use and development for the area. Many of the provisions are no longer relevant as the area may be fully developed and the specific provisions may already have been implemented.

In the first instance, all structure plans should be reviewed to determine which can be rationalised into the Scheme to remove unnecessary layers of planning. Where structure plans are still operational and cannot be rationalised into the Scheme, any superfluous or defunct provisions that no longer serve a purpose or have already been implemented should be removed. Some provisions will still be relevant, and may serve a purpose in guiding changes of use, therefore careful consideration must be given to the potential impact of removing 'Development Area' provisions, and whether there is sufficient guidance elsewhere in the planning framework to ensure desired outcomes are achieved.

All provisions should be reviewed to ensure they are still relevant, and align with this Strategy and the State and local planning framework.

Additional Uses and Restricted Uses

All 'Additional Uses' and 'Restricted Uses' should be reviewed to ensure they are still appropriate in the context of the strategies of Part One. Where still appropriate, all land use definitions should be updated to align with the model land use definitions.

Development Contribution Areas

These will carry over into the Scheme and should be rationalised progressively as they are finalised.

Supplementary Provisions

The following are key matters that should be included as supplementary provisions within the new Scheme:

- Requirement for planning approval prior to the demolition of a place on the Local Government Inventory/Local Heritage Survey.

The purpose of this is to ensure that an archival record can be obtained as a condition of development approval prior to demolition of any place on the Local Government Inventory/Local Heritage Survey.

15.2.3 Community Benefit Framework

The City aims to take an evidence-based approach to land use planning and decision-making that responds to the local planning framework and considers community benefit. In order to do this, it is considered that a Community Benefit Framework should be prepared to provide the City with a tool to assess the social outcomes and community benefits of proposals to assist with decision-making.

15.2.4 Responsive Planning Framework

The State Planning Framework has been changing faster than it ever has, and some of these changes represent significant shifts that directly impact planning outcomes and the effectiveness of local level planning frameworks.

The local planning framework and the City must be able to respond quickly to changes to ensure good outcomes for the community continue, and maximum benefit is achieved.

The City is committed to responding in a timely manner to changes in the State Planning Framework or changes outside of the City's control in a way that ensures the intent of this Strategy and the *Strategic Community Plan* continue to be implemented in the best interests of the community.

In this regard it is important to ensure that the local planning framework is structured in a way that is flexible and responsive to changes while ensuring the intent of this Strategy and the community's need are considered.

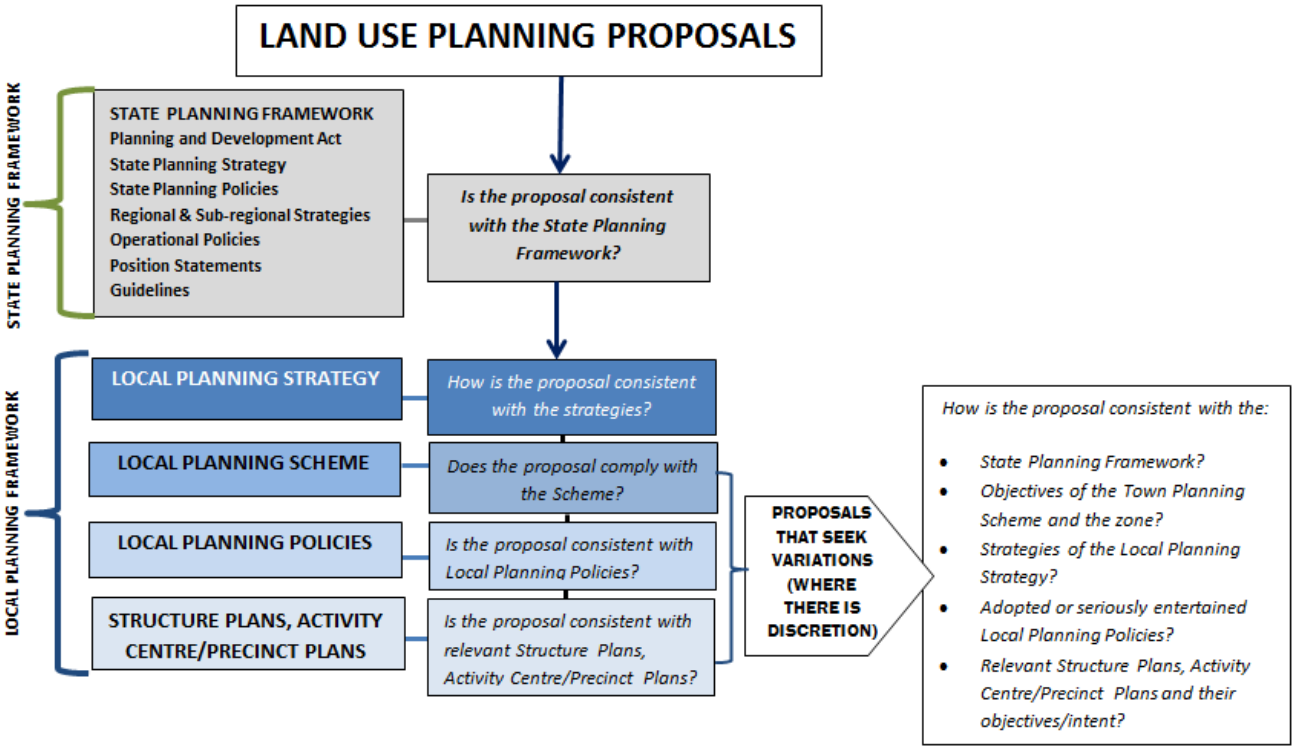


Figure 65. How land use planning decisions will be made

APPENDIX A: ASSESSMENT OF LOWER-CODED RESIDENTIAL AREAS FOR SHORT-MEDIUM TERM INFILL (<15 years)

	Coogee	South Lake	Bibra Lake	North Lake	Spearwood (South)	Yangebup	Cockburn Central/ Success
1.0 HIGH LEVELS OF ACCESSIBILITY							
Accessible to high frequency public transport	No	No	No	No	No	No	Yes
Accessible to higher order centre (greater than neighbourhood centres)	No	No	No	No	No	No	Yes
2.0 SUITABLE ROAD NETWORK							
Permeable road network *Road network must be highly permeable to maximise walkability and reduce car ownership and use*	Curvilinear with culs-de-sac	Curvilinear with culs-de-sac	Curvilinear with culs-de-sac	Curvilinear with culs-de-sac	Curvilinear with culs-de-sac	Curvilinear with culs-de-sac	Mix of curvilinear and modified grid
On-street parking facilitated appropriately *Streets must be able to accommodate on street parking safely and reasonably*	Constrained by road network	Constrained by road network	Constrained by road network	Constrained by road network	Constrained by road network	Constrained by road network	Some constraints due to road network
3.0 APPROPRIATE LOT SIZES AND HOUSING STOCK							
Lot sizes *Appropriate to support infill development*	Some larger lots.	Some larger lots.	Some larger lots.	Smaller lots.	Smaller lots.	Some larger lots.	Smaller lots.
Housing stock *Older housing stock nearing redevelopment/ replacement*	Some older housing in 'Old Coogee'	Ageing housing stock suitable for possible replacement	Some older housing stock	1990s brick dwellings generally not likely to be replaced in medium term	Same older housing stock suitable for possible replacement	Same older housing stock suitable for possible replacement	Newer housing stock not available for redevelopment within the 15 years
4.0 POTENTIAL TO CONTRIBUTE POSITIVELY TO NEIGHBOURHOOD CHARACTER							
Interface *Potential for appropriate coding to provide compatible interface*	Larger lots would provide more opportunity	Larger lots would provide more opportunity	Some larger lots would provide more opportunity	Smaller lots provide a constraint	Smaller lots provide a constraint	Smaller lots provide a constraint	Smaller lots provide a constraint
CONCLUSION	Does not currently meet locational criteria and road network is a constraint	Does not currently meet locational criteria and road network is a constraint	Does not currently meet locational criteria and road network is a constraint	Does not currently meet locational criteria and road network is a constraint	Does not currently meet locational criteria and road network is a constraint	Does not currently meet locational criteria and road network is a constraint	Meets locational criteria but housing stock not ready for redevelopment
RECOMMENDATION	**REVIEW AREAS IN SUBSEQUENT LOCAL PLANNING STRATEGY AND CONSIDER FOR STAGE 2 INFILL**						

APPENDIX B: ACTIVITY CENTRE HIERARCHY

Activity Centres

- Secondary centre
- District centre
- District centre (currently residential)
- Neighbourhood centre
- Neighbourhood centre (currently residential)
- Local centre
- Local centre (existing commercial zoned area currently developed with residential land uses)
- Mixed business/use area
- Mixed business/use area (currently residential)
- Specialised centre
- Strategic employment centre

City of Cockburn
wetlands to waves

GNA
Mar 2024

0 1km
Scale

APPENDIX C: ACTIVITY CENTRE FLOORSPACE

APPENDIX C: ACTIVITY CENTRE FLOOR SPACE BREAKDOWN

AC1	Cockburn Central Secondary Centre				
	2011	2016	2021	2026	2031
SHP	24,328-40,547	43,169-71,948	72,398-120,663	76,312-127,186	76,312-127,186
RET	1,471-2,452	1,830-3,050	2,101-3,502	2,202-3,670	2,202-3,670
OFF	623-1,038	11,054-18,424	17,052-28,420	18,001-30,002	18,001-30,002
ENT	166-276	857-1,429	2,001-3,335	2,106-3,511	2,106-3,511
Total	26,588-44,313	56,911-94,851	93,552-155,921	98,621-164,368	98,621-164,368

AC2	Cockburn Coast District Centre				
	2011	2016	2021	2026	2031
SHP	0-0	6,952-11,587	17,959-29,932	19,108-31,846	19,108-31,846
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	125-208	301-502	491-819	491-819
Total	0-0	7,077-11,795	18,260-30,434	19,599-32,665	19,599-32,665

AC3	Phoenix District Centre and Phoenix Mixed Business Area				
	2011	2016	2021	2026	2031
SHP	15,864-26,440	18,890-31,483	21,231-35,385	22,508-37,513	22,508-37,513
RET	54-89	68-113	80-133	85-142	85-142
OFF	1,666-2,777	2,064-3,440	2,406-4,011	2,558-4,264	2,558-4,264
ENT	114-190	142-237	165-275	175-292	175-292
Total	17,697-29,496	21,163-35,272	23,882-39,803	25,326-42,210	25,326-42,210

AC4	Barrington Street Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	2,465-4,108	3,020-5,033	3,492-5,821	3,767-6,278	3,767-6,278
RET	0-0	0-0	0-0	0-0	0-0
OFF	166-277	213-355	257-428	278-463	278-463
ENT	53-88	68-114	82-136	88-147	88-147
Total	2,684-4,473	3,301-5,501	3,831-6,385	4,133-6,888	4,133-6,888

AC5	Coolbelup Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	2,235-3,725	2,603-4,338	2,844-4,739	2,957-6,136	2,957-6,136
RET	0-0	0-0	0-0	0-0	0-0
OFF	109-181	130-217	147-245	153-255	153-255
ENT	225-374	272-453	305-508	317-529	317-529
Total	2,568-4,280	3,005-5,008	3,295-5,492	3,427-12,632	3,427-12,632
NB. Based on Coolbellup Town Centre Structure Plan additional 3,200m^2 for full-line supermarket (in addition to 2,936m^2 of existing shop floorspace at that time)					

AC6	Hamilton Hill Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	2,984-4,973	3,488-5,813	3,839-6,399	4,014-6,691	4,014-6,691
RET	54-90	66-110	76-127	80-134	80-134
OFF	125-209	151-252	172-287	180-301	180-301
ENT	75-125	92-153	104-173	109-181	109-181
Total	3,238-5,397	3,797-6,329	4,192-6,986	4,384-7,306	4,384-7,306

AC7	Harvest Lakes Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	0-0	3,202-5,337	3,584-5,973	3,802-6,337	3,802-6,337
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	3,202-5,337	3,584-5,973	3,802-6,337	3,802-6,337

AC8	Lakes Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	4,699-7,832	5,512-9,186	6,078-10,129	6,410-10,683	6,410-10,683
RET	155-258	192-320	222-370	235-392	235-392
OFF	156-261	189-316	216-361	229-381	229-381
ENT	18-30	22-36	25-41	26-44	26-44
Total	5,028-8,380	5,915-9,858	6,540-10,901	6,900-11,500	6,900-11,500

AC9	Merevale Gardens Neighbourhood Centre / Beeliar Village				
	2011	2016	2021	2026	2031
SHP	0-0	4,791-7,985	9,223-15,372	9,786-16,310	9,786-16,310
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	4,791-7,985	9,223-15,372	9,786-16,310	9,786-16,310

AC10	Port Coogee Marina Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	0-0	3,108-5,180	3,571-5,951	3,841-6,401	3,841-6,401
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	3,108-5,180	3,571-5,951	3,841-6,401	3,841-6,401

AC11	Russell Road Neighbourhood Centre / The Park Hive, Hammond Park				
	2011	2016	2021	2026	2031
SHP	0-0	2,189-3,649	2,864-4,774	3,461-5,768	3,461-5,768
RET	0-0	76-127	102-171	124-207	124-207
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	73-121	97-162	118-196	118-196
Total	0-0	2,338-3,897	3,064-5,106	3,703-6,171	3,703-6,171

AC12	Atwell Local Centre / Stargate Atwell				
	2011	2016	2021	2026	2031
SHP	1,805-3,008	2,106-3,509	2,290-3,817	2,401-4,001	2,401-4,001
RET	0-0	0-0	0-0	0-0	0-0
OFF	56-94	68-113	77-128	80-134	80-134
ENT	0-0	0-0	0-0	0-0	0-0
Total	1,861-3,102	2,173-3,622	2,367-3,945	2,481-4,135	2,481-4,135

AC13	Treeby Neighbourhood Centre (small) / Former Banjup Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	662-1,103	727-1,211	762-1,270	1,270-2,800
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	662-1,103	727-1,211	762-1,270	1,270-2,800

AC14	Berrigan Drive Local Centre				
	2011	2016	2021	2026	2031
SHP	1,712-2,853	2,006-3,343	2,218-3,696	2,363-3,938	2,363-3,938
RET	0-0	0-0	0-0	0-0	0-0
OFF	77-128	93-155	107-178	114-190	114-190
ENT	105-176	129-216	147-246	157-262	157-262
Total	1,894-3,157	2,228-3,713	2,472-4,120	2,634-4,390	2,634-4,390

AC15	Bibra Lake Local Centre				
	2011	2016	2021	2026	2031
SHP	674-1,123	782-1,304	856-1,427	900-1,501	900-1,501
RET	0-0	0-0	0-0	0-0	0-0
OFF	90-150	107-179	121-202	128-213	128-213
ENT	0-0	0-0	0-0	0-0	0-0
Total	763-1,272	889-1,482	977-1,629	1,028-1,714	1,028-1,714

AC16	Churchill Avenue Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	340-566	392-653	422-703	422-703
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	340-566	392-653	422-703	422-703

AC17	Forrest Road Local Centre				
	2011	2016	2021	2026	2031
SHP	225-375	264-440	292-487	307-511	307-511
RET	0-0	0-0	0-0	0-0	0-0
OFF	13-21	15-25	17-29	18-31	18-31
ENT	0-0	0-0	0-0	0-0	0-0
Total	238-396	279-466	310-516	325-542	325-542

AC18	Glen Iris Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	1,122-1,870	1,227-2,045	1,288-2,146	2,146-2,500
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	1,122-1,870	1,227-2,045	1,288-2,146	2,146-2,500
NB. As per Glen Iris Structure Plan					

AC19	Hamilton Road Local Centre				
	2011	2016	2021	2026	2031
SHP	551-919	684-1,140	801-1,335	871-1,451	871-1,451
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	551-919	684-1,140	801-1,335	871-1,451	871-1,451

AC20	Hammond Park Neighbourhood Centre				
	2011	2016	2021	2026	2031
SHP	0-0	596-993	684-1,140	736-4,780	4,780-5,620
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	596-993	684-1,140	736-4,780	4,780-5,620
NB. As per Hammond Park Neighbourhood Structure Plan Amendment and RSA					

AC21	Lakefront Avenue Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	0-0	0-0	0-0	0-0
RET	0-0	0-0	0-0	0-0	0-0
OFF	10-16	12-20	14-23	15-24	15-24
ENT	11-18	13-22	15-26	16-27	16-27
Total	20-34	25-42	29-49	31-51	31-51

AC22	Latitude32 East Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	562-937	648-1,080	701-1,168	701-1,168
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	562-937	648-1,080	701-1,168	701-1,168

AC23	Latitude 32 West Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	557-929	645-1,075	697-1,162	697-1,162
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	557-929	645-1,075	697-1,162	697-1,162

AC24	Lyon Road Local Centre				
	2011	2016	2021	2026	2031
SHP	500-834	610-1,017	689-1,149	735-1,225	735-1,225
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	500-834	610-1,017	689-1,149	735-1,225	735-1,225

AC25	Memorial Hall Local Centre and Memorial Hall Business Area				
	2011	2016	2021	2026	2031
SHP	660-1,101	779-1,299	867-1,445	913-1,522	913-1,522
RET	34-56	42-70	49-82	52-87	52-87
OFF	58-96	71-118	82-136	86-143	86-143
ENT	32-54	40-66	46-76	48-80	48-80
Total	784-1,307	932-1,554	1,043-1,739	1,100-1,833	1,100-1,833
NB. Subject to outcomes of Former Roe Highway Amendments and structure planning					

AC26	Muriel Court / Cockburn Central North Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	742-1,236	818-1,363	868-1,447	868-1,447
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	742-1,236	818-1,363	868-1,447	868-1,447

AC27	Newmarket Local Centre				
	2011	2016	2021	2026	2031
SHP	6,602-11,003	7,778-12,963	8,624-14,373	9,066-15,109	9,066-15,109
RET	445-741	544-907	621-1,035	650-1,083	650-1,083
OFF	2,902-4,837	3,539-5,898	4,054-6,756	4,273-7,122	4,273-7,122
ENT	410-684	504-839	575-959	605-1,009	605-1,009
Total	10,360-17,266	12,364-20,607	13,874-23,124	14,594-24,323	14,594-24,323

AC28	Rockingham Road Local Centre (North)				
	2011	2016	2021	2026	2031
SHP	1,067-1,778	1,260-2,101	1,403-2,339	1,480-2,466	1,480-2,466
RET	57-94	71-118	82-137	87-145	87-145
OFF	71-118	87-145	100-167	106-176	106-176
ENT	197-328	242-404	278-464	294-490	294-490
Total	1,391-2,318	1,660-2,767	1,864-3,106	1,967-3,278	1,967-3,278

AC29	Rockingham Road Local Centre (South) and Mell Road Business Area				
	2011	2016	2021	2026	2031
SHP	314-523	350-583	416-694	504-840	504-840
RET	14-23	17-29	22-37	27-45	27-45
OFF	116-193	146-244	186-311	227-379	227-379
ENT	117-195	147-245	185-309	223-372	223-372
Total	561-935	660-1101	809-1350	981-1637	981-1637

AC30	Southwell Local Centre				
	2011	2016	2021	2026	2031
SHP	167-279	197-328	218-363	228-381	228-381
RET	0-0	0-0	0-0	0-0	0-0
OFF	21-34	25-42	29-48	30-51	30-51
ENT	0-0	0-0	0-0	0-0	0-0
Total	188-313	222-370	246-411	259-431	259-431

AC31	Spinaker Heights Yangebup Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	715-1,192	802-1,337	849-1,415	849-1,415
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	715-1,192	802-1,337	849-1,415	849-1,415

AC32	St. Paul's Local Centre				
	2011	2016	2021	2026	2031
SHP	191-318	222-371	244-406	254-424	254-424
RET	0-0	0-0	0-0	0-0	0-0
OFF	17-29	21-35	24-40	25-41	25-41
ENT	0-0	0-0	0-0	0-0	0-0
Total	208-347	244-406	268-446	279-465	279-465

AC33	Stratton Street Local Centre				
	2011	2016	2021	2026	2031
SHP	59-99	70-116	77-129	81-135	81-135
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	59-99	70-116	77-129	81-135	81-135

AC34	Tony Ales Local Centre / Hammond Road North				
	2011	2016	2021	2026	2031
SHP	490-817	573-955	626-1,043	657-1,095	657-8,170
RET	103-172	127-212	145-241	151-252	252-8,740
OFF	0-0	0-0	0-0	0-0	0-740
ENT	0-0	0-0	0-0	0-0	0-0
Total	593-989	700-1,167	771-1,284	808-1,347	909-17,650
NB. As per Hammond Road North Activity Centre Structure Plan (incl. Retail Sustainability Assessment) adopted 12/4/2021					

AC35	Watsons Local Centre				
	2011	2016	2021	2026	2031
SHP	0-0	770-1,283	887-1,478	955-1,592	955-1,592
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	0-0	770-1,283	887-1,478	955-1,592	955-1,592

AC36	Winterfold Road Local Centre				
	2011	2016	2021	2026	2031
SHP	103-171	120-199	131-219	137-228	137-228
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	103-171	120-199	131-219	137-228	137-228

AC37	Yangebup Local Centre				
	2011	2016	2021	2026	2031
SHP	1,142-1,903	1,350-2,250	1,495-2,492	1,572-2,620	1,572-2,620
RET	0-0	0-0	0-0	0-0	0-0
OFF	59-99	73-121	84-139	88-147	88-147
ENT	0-0	0-0	0-0	0-0	0-0
Total	1,201-2,002	1,423-2,372	1,579-2,631	1,660-2,766	1,660-2,766

AC38	Yangebup South Local Centre				
	2011	2016	2021	2026	2031
SHP	402-670	476-794	528-880	556-927	556-927
RET	0-0	0-0	0-0	0-0	0-0
OFF	0-0	0-0	0-0	0-0	0-0
ENT	0-0	0-0	0-0	0-0	0-0
Total	402-670	476-794	528-880	556-927	556-927

AC39	East Treeby Local Centre	
	2026	2031
SHP	0-1,500	0-1,500
RET	0-0	0-0
OFF	0-0	0-0
ENT	0-0	0-0
Total	0-1,500	0-1,500

	Bibra Industrial Centre (Strategic Employment Centre)				
	2011	2016	2021	2026	2031
SHP	3,214-5,356	3,561-5,934	4,151-6,919	4,887-8,146	4,887-8,146
RET	2,016-3,360	2,506-4,176	3,061-5,101	3,635-6,058	3,635-6,058
OFF	11,099-18,499	13,724-22,873	16,636-27,727	19,663-32,772	19,663-32,772
ENT	1,157-1,928	1,434-2,389	1,734-2,891	2,038-3,397	2,038-3,397
Total	17,485-29,142	21,224-35,373	25,583-42,638	30,224-50,373	30,224-50,373

	Henderson Industrial Centre (Strategic Employment Centre)				
	2011	2016	2021	2026	2031
SHP	138-230	171-284	198-330	214-357	214-357
RET	279-465	361-602	435-725	470-783	470-783
OFF	8,909-14,849	11,443-19,071	13,749-22,915	14,959-24,931	14,959-24,931
ENT	101-168	130-217	156-259	169-281	169-281
Total	9,427-15,712	12,105-20,175	14,537-24,229	15,812-26,353	15,812-26,353

	Jandakot East Industrial Centre (Strategic Employment Centre)				
	2011	2016	2021	2026	2031
SHP	0-0	0-0	0-0	0-0	0-0
RET*	0-0	0-0	0-0	0-0	0-0
OFF	4,813-8,021	5,775-9,624	6,538-10,896	6,873-11,455	6,873-11,455
ENT	341-568	417-695	467-779	490-817	490-817
Total	5,154-8,589	6,192-10,219	7,005-10,896	7,363-12,272	7,363-12,272
* All retail assumed to be located within the Tony Ales Local Centre					

	Jandakot West Industrial Centre (Strategic Employment Centre)				
	2011	2016	2021	2026	2031
SHP	1,057-1,762	1,244-2,073	1,377-2,295	1,464-2,440	1,464-2,440
RET	119-199	148-247	171-286	182-303	182-303
OFF	2,568-4,280	3,114-5,190	3,583-5,972	3,821-6,369	3,821-6,369
ENT	127-212	157-262	179-299	191-318	191-318
Total	3,872-6,453	4,663-7,772	5,311-8,851	5,658-9,430	5,658-9,430