



Local Planning Strategy



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The City of Nedlands Local Planning Strategy certified for advertising on 16 March 2016.

Signed for and on behalf of the Western Australian Planning Commission

Lee O'Donohue

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

Date 17 March 2016

ADOPTED

The City of Nedlands hereby adopts the Local Planning Strategy, at the meeting of the Council held on the sixteenth day of August 2016

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CHIEF EXECUTIVE OFFICER

N6714

ENDORSEMENT

Endorsed by the Western Australian Planning Commission on

Lee O'Donohue

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

Date 26 Sept 2017

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Published by the
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Published October 2017

Schedule of Modifications

Version	Comment	Document Date	Approval Date
1.0	Draft for Council consideration	13 October 2015	-
2.0	Draft submitted for WAPC certification	27 October 2015	27 October 2015
3.0	Modified for WAPC certification	17 February 2016	16 March 2016
4.0	Draft after consult for Council consideration	9 August 2016	-
5.0	Council adopted for WAPC endorsement	9 September 2016	-
6.0	Modified for WAPC endorsement	11 August 2017	26 September 2017

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ABS	Australian Bureau of Statistics
ACPS	Activity Centres Planning Strategy
CBD	Central Business District
Directions 2031	Directions 2031 and Beyond
LGA	Local Government Area
MRS	Metropolitan Region Scheme
MRWA	Main Roads Western Australia
PLUC	Planning Land Use Category
POS	Public Open Space
QEII/QEII MC	Queen Elizabeth II / Queen Elizabeth II Medical Centre
R-Codes	Residential Design Codes
SPP	State Planning Policy
TOD	Transit Oriented Development
TPS 2	Town Planning Scheme No. 2
UWA	University of Western Australia
WAPC	Western Australian Planning Commission
WESROC	Western Suburbs Regional Organisation of Councils
WWTP	Wastewater Treatment Plant

Guide to density terminology

Existing Residential Predominantly R10 – R12.5
(10 – 12.5 dw/ha)

Low density Below R40 (< 40 dw/ha)

Medium density R40 - R80 (40 - 80 dw/ha)

High density Above R80 (> 80 dw/ha)

Low rise 1 – 3 storeys

Medium rise 3 – 9 storeys

High rise 9+ storeys

1 Introduction

This Local Planning Strategy sets out the long term strategic direction for land use and development within the City of Nedlands and has been prepared to reflect the community and Council vision for the future of the City.

The Local Planning Strategy has been prepared following the City's *Our Vision 2030* project, which was an initiative designed to engage the community in a shared vision for the future. It was developed by community members, local businesses and organisations in a collaborative process supported by the City. The outcomes from *Our Vision 2030* have been used to inform this strategy and provide the basis for meeting the community's expectations in shaping the future growth of the City.

This strategy also provides the framework and direction to ultimately support the operation of a new Local Planning Scheme and gives the rationale and context for its content.

Under the *Planning and Development (Local Planning Schemes) Regulations 2015* a local planning strategy must:

- set out the long-term planning directions for the local government; and
- apply any State or regional planning policy that is relevant to the strategy; and
- provide the rationale for any zoning or classification of land under the local planning scheme.

In compliance with these Regulations, the City of Nedlands has prepared this Local Planning Strategy to outline the approach for guiding land use and development in the City through to 2030 and beyond.

This Local Planning Strategy sets out the City's vision and principles and seeks to address the state planning framework that affects the City. The Local Planning Strategy gives clarity on how the City seeks to respond to the requirements of the State. The format of the strategy has been prepared in accordance with the Western Australian Planning Commission's *Local Planning Manual* (March 2010).

This Local Planning Strategy has been set out in two parts:

- Part 1** The main document which sets out the City's intentions as they relate to planning matters and the strategies the City will implement in order to direct the development of the City of Nedlands into the future
- Part 2** The background information including local and state planning documents and technical information which has been compared against the community demographics to set out the issues facing the City. These issues have been analysed to determine the most effective strategies for the City to pursue.

PART 1

2 Vision

Our Vision 2030, was a City of Nedlands initiative designed to engage our community in a shared vision for the future. From the community engagement exercise and the subsequent *Nedlands 2023 Strategic Community Plan*, the following vision for the City of Nedlands was created:

“Our overall vision is of a harmonious community.

We will have easy access to quality health and educational facilities and lively local hubs consisting of parks, community and sporting facilities and shops where a mix of activities will bring people together, strengthening local relationships.

Our gardens, streets, parks will be well maintained, green and tree-lined and we will live sustainably within the natural environment.

We will work with neighbouring Councils and provide leadership to achieve an active, safe, inclusive community enjoying a high standard of local services and facilities.

We will live in a beautiful place.”

This Local Planning Strategy, and subsequently a new planning scheme, is guided by the City’s vision for the future and this will be further reflected in the City’s planning practices and procedures.

2.1 Planning Principles

There are general guiding principles that have been considered and applied throughout the Local Planning Strategy. These principles represent best practice urban planning for established urban areas.

- Protect and enhance local character and amenity.
- Respect the community vision for the development of the district.
- Achieve quality residential built form outcomes for the growing population.
- To develop and support a hierarchy of activity centres.
- To integrate land uses and transport systems.
- Facilitate improved multi-modal access into and around the district.
- Maintain and enhance the network of open space.
- Facilitate good public health outcomes.
- Facilitate a high quality provision of community services and facilities.
- Encourage local economic development and employment opportunities.
- To maintain, protect and enhance natural resources.
- Respond to the local physical and climatic conditions.
- Facilitate efficient supply and use of essential infrastructure.

3 Project Objectives

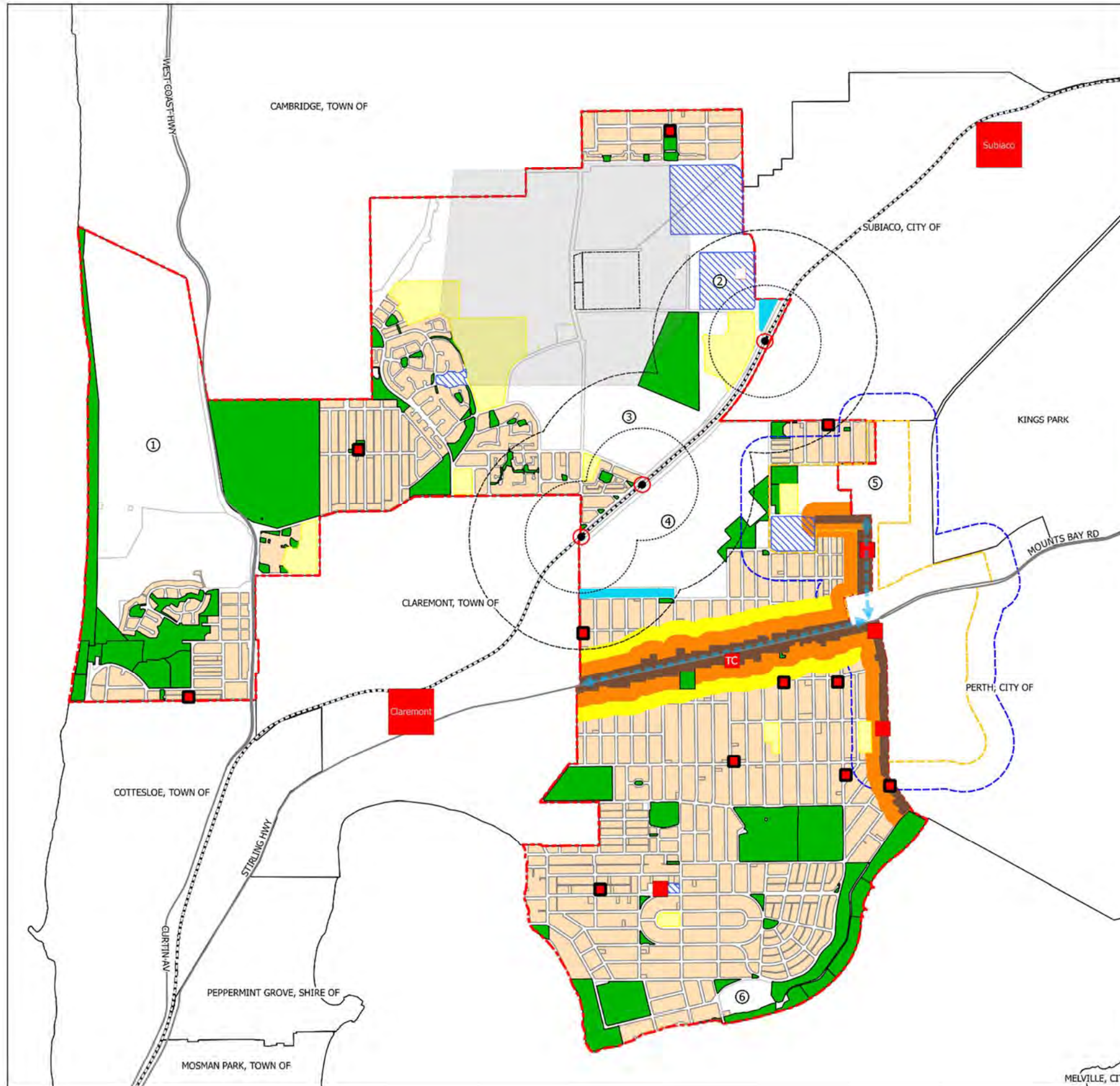
The Local Planning Strategy is the framework for local urban planning and the strategic basis for the City of Nedlands new Local Planning Scheme. It provides the interface between State and local planning and will be used as a means by which to address economic, resource management, environmental and social issues that affect, and in turn are affected by, land use and development.

The production of a Local Planning Strategy, as the principal planning document for the City of Nedlands, sets out to:

- Provide strategic direction for land use planning and development to 2030 and beyond as the basis for a Local Planning Scheme,
- Provide a high level strategic plan which is consistent with State planning,
- Set out the strategic direction for sustainable resource management and development in the context of state planning,
- Provide the rationale for the zoning and reservation of land and for the provisions of a Local Planning Scheme relating to development and development control,
- Provide a strategic framework for assessment and decision-making in relation to a Local Planning Scheme, scheme amendments, subdivision and development,
- Provide the context for coordinated planning and programming of physical and social infrastructure at the local level,
- Identify the need for further studies or investigation within the City to address longer-term strategic planning and development issues, and
- Provide a flexible and robust framework that can readily adapt to forecasted growth and market trends and changing community expectations as they arise.

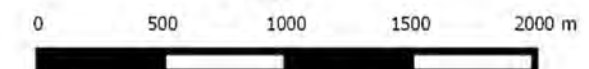
The Local Planning Strategy seeks to integrate all relevant aspects of land use planning and development. This recognises the interrelationships between individual elements and land use planning and development, whilst acknowledging the limitations of land use planning to provide a means for all issues at a local level.

4 Local Planning Strategy Map



Legend

- Activity Centres**
 - Local
 - Neighbourhood
 - Proposed
 - Secondary Centres
- TC = Town Centre
- Targeted Infill**
 - Urban Growth Areas
 - Redevelopment/Development Areas
 - First Transition Zone
 - Second Transition Zone
- UWA-QEII Specialised Centre
- UWA-QEII Immediate Catchment
- Reserves
- Schools
- Existing Residential Areas
- High Frequency Bus Routes
- Train Station
- 400m Train Station Catchment
- 800m Train Station Catchment
- Mixed Business
- Waste Water Treatment Plant (WWTP)
- WWTP Odour Buffer
- Landmark Areas**
 - ① Campbell Barracks/Rifle Range
 - ② Shenton Park Redevelopment
 - ③ Irwin Barracks
 - ④ Karrakatta Cemetery
 - ⑤ QEII Medical Centre
 - ⑥ Sunset Hospital



4.1 Explanatory Notes

Centres:

The hierarchy of Activity Centres represented on the map directly reflect the Activity Centres Strategy Map contained in Attachment 1.

Urban Growth Areas:

Urban Growth Areas will contain the most intense development in the City of Nedlands. Multiple dwellings (apartments), commercial and mixed-use developments will be the predominant development types in these areas. Development is not necessarily expected to be homogenous between Urban Growth Areas or even within Urban Growth Areas.

Transition Zones:

Transition Zones will exist immediately adjacent to Urban Growth Areas for the purposes of creating a buffer between high intensity and low intensity development. This buffer will visually smooth the differences in built form (e.g., height, bulk etc.) and help mitigate any conflict between non-compatible land uses.

It is expected the Transition Zones will contain mostly residential developments of multiple dwellings (apartments) and grouped dwellings (townhouses and similar). Some small scale non-residential uses may still be appropriate.

Specialised Centre and Immediate Catchment:

The boundary of the Specialised Centre is as displayed in the Perth & Peel @ 3.5million suite. The Immediate Catchment demonstrates that there is an influence the centre exerts on its surrounds, but this cannot be considered a defined frame.

Train Station Catchments:

400m radius represents a 5 minute walk from the station.

800m radius represents a 10 minute walk from the station.

Frequent Bus Service:

Denotes a bus route that runs a service at least every 15 minutes (approximately).

5 Intentions

5.1 Population and Housing

To facilitate potential realisation of the specified housing targets through a strategic approach that aims to conserve and enhance the quality of the City of Nedlands' existing attractive residential neighbourhoods. Strongly encourage development of a considerable number of additional dwelling units of a diverse nature within the targeted infill areas.

Strategies:

- Pursue diverse high intensity development within Urban Growth Areas (particularly Stirling Highway).
- Develop appropriate Transition Zones of predominantly residential development adjacent to Urban Growth Areas to realise the conscious effort to maintain separation from existing high quality, low density residential areas.
- Facilitate quality development in targeted infill areas and along transit corridors to respond to the growing demand for high quality residential development in well serviced areas.
- Facilitate redevelopment opportunities for medium density residential development within Neighbourhood Centres.
- Aim to achieve residential densities within and in the immediate vicinity of Neighbourhood Centres in line with the scale of the particular centre.
- Facilitate greater diversity, specifically higher density multiple and grouped dwelling developments in targeted infill areas to provide a diverse range of dwelling types to accommodate changes in population trends.
- Develop controls to ensure key sites are not underdeveloped, thus ensuring existing residential character is protected long term and development is focused in a few specified locations.
- Maintain established residential urban areas to ensure the retention of the existing residential character and lot configurations.

5.2 Retail and Commerce

The City will implement the Activity Centres Planning Strategy (ACPS) developed as part of the Local Planning Strategy contained as Attachment 1. The following Intention has been summarised from the ACPS, accordingly the ACPS should be relied upon for accuracy.

Facilitate the provision and continued evolution of a viable and conveniently accessible network of attractive activity centres within the established hierarchy. Encourage a high standard of urban design in all activity centres. Consider appropriate community and non-retail uses within activity centres and consider proposals for medium and high density housing within and immediately adjacent to activity centres which are compatible with the surrounding character of the area.

Strategies:

- Define and consistently implement a hierarchy of mixed use activity centres incorporating sufficient retail floorspace quantity controls to ensure that a clear, functional centres hierarchy is maintained, while nevertheless allowing for sufficient flexibility within that framework for consideration of fresh ideas and the viable operation of the market.
- Facilitate the maintenance and expansion of the Captain Stirling Neighbourhood Centre (and nearby civic facilities such as City of Nedlands Administration and Library) as the main Town Centre. Plan for this centre to be the largest and most complex mixed-use activity centre in the hierarchy of centres.
- Actively promote the redevelopment of properties within Urban Growth Areas incorporating residential, retail, offices or other commercial land uses.
- The City should take a proactive role in encouraging and facilitating improvements to existing activity centres through initiatives aimed at improvements to the public domain of the existing neighbourhood and local centres.
- The City should be willing to consider any development or change of use proposal that would improve the condition and/or performance of an existing local activity centre.
- Encourage SPP 4.2 'mix of land use' provisions, in neighbourhood and local activity centres where practicable, even though they are not specifically required for these classes of centre by SPP 4.2.

5.3 Physical Features, Climate and Natural Areas

Encourage sustainable practices that respond to the City's physical features and climate. Maintain, protect and enhance existing key natural resources.

Strategies:

- To encourage all facets of sustainability in existing and new development (including but not limited to; climate responsive design, effective water management and efficient resource use).
- To employ and encourage sound urban water management techniques.
- Identify and actively maintain and enhance natural areas in the interest of conservation via a sound management framework.
- To maintain, protect and enhance natural resources; and where appropriate, encourage the retention, protection and enhancement of significant existing natural resources in new development.

5.4 Recreation and Open Space

Retain and enhance useability of existing Public Open Space and pursue opportunities for new Public Open Space in areas experiencing growth. Exercise flexibility for quality alternative public realms to be provided as part of significant development.

Strategies:

- Develop a Public Open Space Strategy to manage the City's recreation and open space assets and provide for future community needs.
- Plan for development within Urban Growth Areas to improve the pedestrian experience by encouraging landscaping, public art and pedestrian amenity.
- Improve the functionality of existing open space areas and encourage the co-location of services and activities.
- Provide continued maintenance of existing public open space, seeking improvements and efficiency where possible.
 - Consider and plan for the role of natural areas and linking networks in maintaining and improving existing provision of public open space.

5.5 Community Facilities

Ensure that there are sufficient community services and facilities accessible to residents of the City of Nedlands. Manage the useability of existing community facilities. Exercise flexibility to allow for the ability of varied service providers to deliver leisure facilities and community services.

Strategies:

- Ensure that there are sufficient community services and facilities of appropriate variety available within the City of Nedlands.
- Improve, upgrade and/or repurpose local government facilities and services to provide an enhanced level of service to the community.
- Favour a performance based approach to decision making regarding new development, which responds specifically to the type of facility, its location and context.

5.6 Traffic and Transport

Promote a movement network that foremost enables mobility, and particularly encourages non-car modes. Locate land uses (particularly higher density residences) and transport networks in a way that maximises efficiency.

Strategies:

- Increase opportunities for residents, businesses and visitors to use cycling, walking and public transport as their preferred mode of transport.
- Plan for enhanced cycle access through a combination of infrastructure and non-infrastructure proposals.
- Apply the principles of Transit Oriented Development for any future development around train stations and along high frequency bus routes, promoting land uses with significant trip generating potential in close proximity to high frequency public transport services.
- Provide for a more efficient use of the existing public transport network to support the viability of business and activity centres in the City.
- Provide direction for the future of laneways throughout the City and maximise their opportunity to contribute positively to the neighbourhood.
- Seek to minimise the negative impacts of parking and congestion through careful consideration and continuous improvement of management techniques, while being open to innovation.

5.7 Infrastructure Services

Ensure, within local government authority, that utility service providers maintain the necessary services to meet community needs.

Strategies:

- Provide monitoring of the capacities of the existing infrastructure and services to ensure that they are capable of dealing with the increase in population and changes to the environment stemming from the requirements for urban growth and intensification.
- Ensure that the City's infrastructure is accessible to all people.
- Continue to lobby for improved services to providers on behalf of residents.

5.8 Urban Design, Character and Heritage

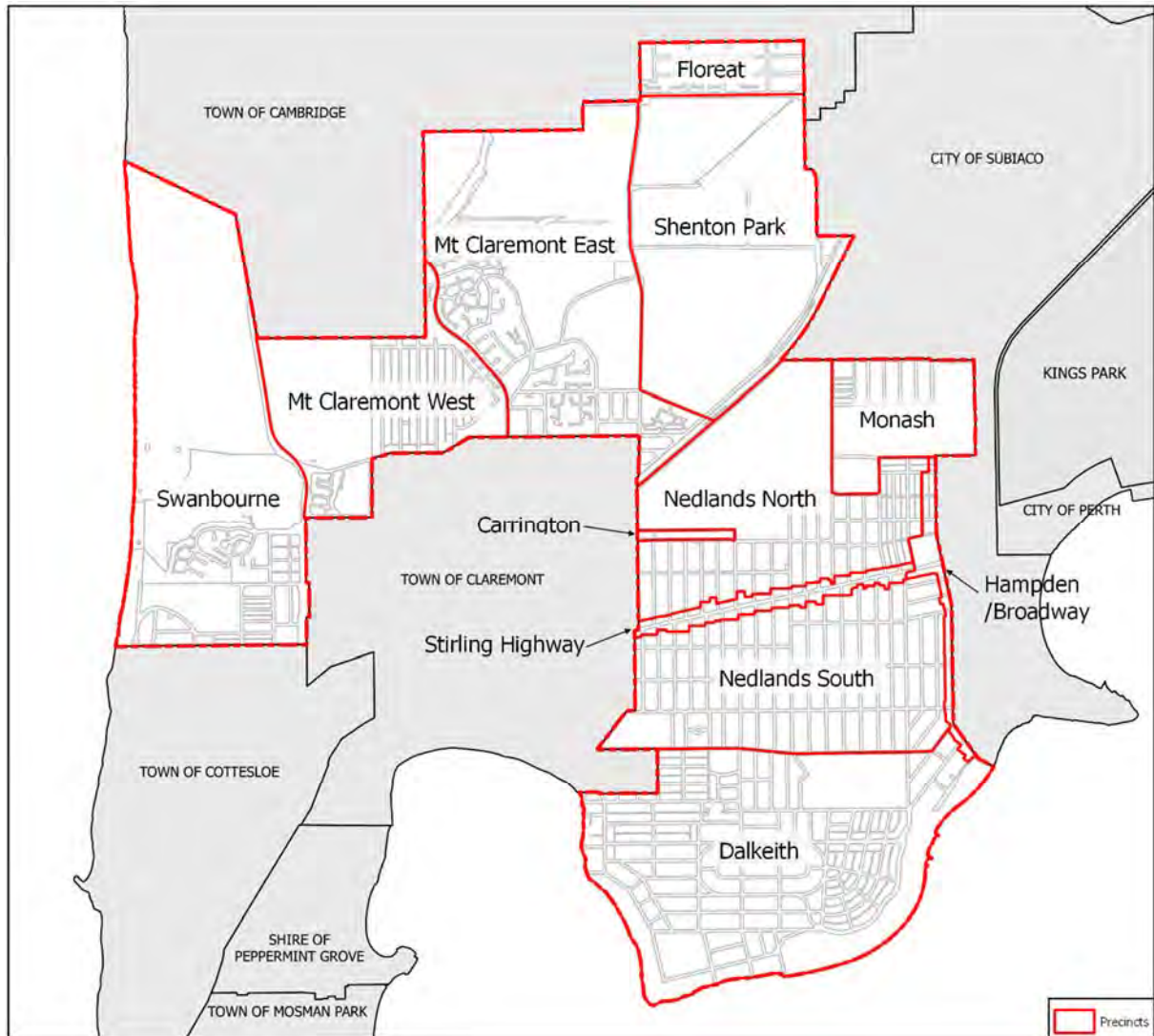
Retain and enhance the character and streetscape of the City's existing residential areas whilst promoting best practice urban design principles in targeted infill areas. Maintaining and enhancing high quality streetscapes will be of the utmost importance to decision making, and developments will need to respond to the unique character of each precinct.

Strategies:

- Ensure the Local Planning Scheme and other development controls are in place to retain and enhance the existing character of each identified precinct.
- Develop mechanisms to promote and/or incentivise best practice urban design outcomes in areas experiencing change and in areas of transition (for example, between precincts, corner sites, different densities/land uses, targeted infill areas etc.).
- Within Urban Growth Areas and Transition Zones provide opportunities for City lead investment into improvement of the public realm.
- Further understand the elements that contribute to streetscapes to inform consistent statutory control.
- Protect and promote places of heritage significance through the City, including civic, commercial and residential buildings, parks and gardens.

5.9 Precinct Specific Strategies

The following Strategies apply to the precincts as identified in Map 1 and are to be read alongside and in conjunction with the City's overall Intentions and Strategies.



Map 1 Precinct Boundaries

5.9.1 Swanbourne

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas.
- As an immediate priority, comprehensively plan for Allen Park and surrounding areas.
- Rationalise split density codes in order to protect the established character of the precinct.
- Protect and enhance remnant bushland and greenway corridors within the precinct.

5.9.2 Mt Claremont West

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas, in order to protect the established character of this precinct.
- Rationalise the outdated zoning mechanism (1 in 5 split coding), in conjunction with investigating appropriate density options to deliver a desirable streetscape and residential form.

5.9.3 Mt Claremont East

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas.
- Comprehensively plan for the remaining non-residential areas.
 - Land uses and development within this area shall not conflict with the urban character being predominantly of sporting, research and educational facilities.
- Prevent the encroachment of sensitive land uses and residential development within the Subiaco WWTP odour buffer area.
- Consider opportunities to consolidate and improve access throughout the precinct.

5.9.4 Floreat

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas, in order to protect the established character of this precinct.

5.9.5 Shenton Park

Strategies:

- Prevent the encroachment of sensitive land uses and residential development within the Subiaco WWTP odour buffer area.
- As a priority, comprehensively plan for the precinct to resolve land use within and surrounding the Subiaco WWTP odour buffer.
 - With urgency, comprehensively plan for land in proximity to the Shenton Park Hospital Redevelopment site and Lot 4 Underwood Avenue, and Bedbrook Place to resolve land use, desired built form and reservations.

5.9.6 Monash

Strategies:

- Plan Monash Avenue as a medium intensity, low to medium rise Urban Growth Area within the City of Nedlands.
- Provide a Transition Zone abutting Monash Avenue to quickly integrate development intensity into the surrounding precincts.
- Within the Urban Growth Area, built form shall respect the existing established residential character of the area.
- Within the Smyth Road redevelopment/development area, comprehensively plan to allow the maximum potential redevelopment of the site with land uses that are complementary to the existing site and the UWA-QEII Specialised Centre.
- Comprehensively plan for Highview Park and surrounding areas.
- Careful consideration will be given to short stay and alternative stay accommodation.
- Investigate appropriate treatment of Aberdare Road and lots abutting as a transit corridor.
- In appropriate and identified locations, consider a range of uses (particularly knowledge based uses) and accommodation types that complement the Health/Education/Research function of the UWA-QEII Specialised Centre on a scale that will not detract from other centres in the hierarchy.
- Ensure strategic planning of the UWA-QEII Specialised Centre and its boundaries is completed in partnership with the affected local governments and State government instrumentalities.

5.9.7 Nedlands North

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas outside Urban Growth Areas and Transition Zones.
- Within the Transition Zones adjoining Stirling Highway, ensure the height, scale and bulk of redevelopment smoothly integrates back to the established residential character of the area.
 - Facilitate medium rise, medium intensity predominately residential redevelopment within the first Transition Zone.
 - Facilitate low rise, diverse residential built form within the second Transition Zone.
- Within the Transition Zone adjoining Hampden Road, ensure the height, scale and bulk of redevelopment smoothly integrates back to the established residential character of the area.
 - Facilitate appropriate non-residential land uses within the Transition Zone.
 - Ensure a quick transition of built form to integrate back to the established residential character of the area.
- In appropriate and identified locations, consider a range of uses (particularly knowledge based uses) and accommodation types that complement the Health/Education/Research function of the UWA-QEII Specialised Centre on a scale that will not detract from other centres in the hierarchy.
- Ensure strategic planning of the UWA-QEII Specialised Centre and its boundaries is completed in partnership with the affected local governments and State government instrumentalities.

5.9.8 Hampden/Broadway

Strategies:

- Plan Hampden/Broadway as a medium intensity, low to medium rise Urban Growth Area within the City of Nedlands.
- Provide a Transition Zone abutting Hampden/Broadway to quickly lower development intensity into the surrounding precincts.
 - Where applicable on Broadway, the significant east-west topography variation will function as the Transition Zone.
- Focus compatible development around identified residential and non-residential pockets, acknowledging that the intensity of redevelopment will vary in response to the predominant land use.
 - Hampden Road is encouraged to be predominantly non-residential with small scale tenancies and strong ground floor to street interaction.
 - Broadway is encouraged to provide greater residential development which may consist of a component of non-residential use.
 - In light of the above, provide flexibility to consider any redevelopment which demonstrates exemplar urban design and is sympathetic to the existing character of the area.
- Careful consideration will be given to short stay and alternative stay accommodation.
- In appropriate and identified locations, consider a range of uses (particularly knowledge based uses) and accommodation types that complement the Health/Education/Research function of the UWA-QEII Specialised Centre on a scale that will not detract from other centres in the hierarchy.
- Ensure strategic planning of the UWA-QEII Specialised Centre and its boundaries is completed in partnership with the affected local governments and State government instrumentalities.

5.9.9 Carrington

Strategies:

- Facilitate the natural evolution of the Carrington Street commercial strip as a mixed business area and encourage a reasonably high standard of redevelopment.

5.9.10 Stirling Highway

Strategies:

- Plan Stirling Highway as a high intensity, predominately medium rise Urban Growth Area within the City of Nedlands.
- Provide Transition Zones abutting Stirling Highway to incrementally integrate development intensity into the surrounding precincts.
- Focus compatible development around identified residential and non-residential pockets, acknowledging that the intensity of redevelopment will vary along the Highway in response to the predominant land use.
- Investigate opportunities to provide rear laneway access as part of development along Stirling Highway.

5.9.11 Nedlands South

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas outside Urban Growth Areas and Transition Zones.
- Within the Transition Zones adjoining Stirling Highway, ensure the height, scale and bulk of redevelopment smoothly integrates back to the established residential character of the area.
 - Facilitate medium rise, medium intensity predominately residential redevelopment within the First Transition Zone.
 - Facilitate low rise, diverse residential built form within the Second Transition Zone.
- Within the Transition Zone adjoining Broadway, ensure the height, scale and bulk of redevelopment appropriately integrates back to the established residential character of the area.
 - Ensure a quick transition of built form to integrate back to the established residential character of the area.
- In appropriate and identified locations, consider a range of uses (particularly knowledge based uses) and accommodation types that complement the Health/Education/Research function of the UWA-QEII Specialised Centre on a scale that will not detract from other centres in the hierarchy.
- Ensure strategic planning of the UWA-QEII Specialised Centre and its boundaries is completed in partnership with the affected local governments and State government instrumentalities.

5.9.12 Dalkeith

Strategies:

- Retain and enhance the character and streetscape of the existing residential areas, in order to protect the established character of this precinct.
- Facilitate consolidation and realisation of the existing development potential for non-residential and residential purposes within the Dalkeith Neighbourhood Centre.
- Facilitate increased dwelling diversity by providing for increased residential density in the immediate vicinity of the Dalkeith Neighbourhood Centre, in line with the scale of the centre.

6 Implementation

The Local Planning Strategy is intended to provide a broad framework for future land use planning and development within the City of Nedlands for the next 10-15 years and beyond.

The City of Nedlands will play the lead role in the implementation of the Local Planning Strategy. The intentions and strategies contained within have implications across all operations of the City. Additionally, an effective partnership between local and state government, surrounding local governments, businesses and particularly the community, is key to its success.

A number of recommendations within the Local Planning Strategy will be translated into a new Local Planning Scheme in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Other recommendations contained within the Local Planning Strategy refer to specific actions, such as the preparation of further studies, strategies, policies and the like, to provide guidance on particular matters.

6.1 Monitoring and Review

The Strategy will be reviewed every five years, preferably in line with the review of the Local Planning Scheme. A review may be conducted sooner should Council determine it is warranted.

Whilst the Local Planning Strategy is designed to guide decision making over the next 10+ years, it is inevitable that there will be emerging or changing planning issues and pressure over time. Ongoing monitoring and reviews will ensure that it remains relevant to current planning practice to best reflect community needs. Reviews of the strategy will not occur to facilitate individual property developments, but within the wider context to enhance long term strategic planning.

There are two factors that underpin much of the Local Planning Strategy that are considered worthy of particular attention. Firstly, specific population projections have been employed to provide some basis for decision making. In the event accepted population projections or trends deviate dramatically from those contained within this document, the City will need to update the Local Planning Strategy. This will prove most important in reflecting future dwelling targets and occupancy trends.

Secondly, the City considers the WAPC dwelling targets to be aspirational projections, rather than soundly based demand-driven estimates. The City can and will facilitate redevelopment through its Local Planning Scheme provisions, however the realisation of the targets will largely be dependent on the propensity of property developers to invest. Redevelopment will need to contain significant numbers of dwelling units either as such, or as part of mixed use redevelopments. Some redevelopment opportunities may only ever be realised if there is significant amalgamation of land holdings. This has been partially mitigated by favouring the 2050 dwelling target of 4,400 in the preparation of this Strategy.

PART 2

7 State and Regional Planning Context

7.1 State Planning Strategy 2050 (2014)

The State Planning Strategy provides a broad strategic plan for Western Australia. The vision outlined in the State Planning Strategy is for sustained growth and prosperity in WA with a focus on diversity, liveability, connectedness and collaboration. The State Planning Strategy identifies six interrelated and interdependent principles to guide the strategic goals, strategic direction and implementation of land use planning in WA which are as follows:

- Community: Enable diverse, affordable, accessible and safe communities;
- Economy: Facilitate trade, investment, innovation, employment and community betterment;
- Environment: Conserve the State's natural assets through sustainable development;
- Infrastructure: Ensure infrastructure supports development;
- Regional Development: Build the competitive and collaborative advantages of the regions; and
- Governance: Build community confidence in development processes and practices.

Planning Implications

Apply the above planning principles in the preparation of the Local Planning Strategy.

7.2 State Planning Framework Policy (2006)

The State Planning Framework Policy is a statement of planning policy made pursuant to Section 26 of the *Planning and Development Act 2005*. The State Planning Framework acts as an umbrella, bringing together existing state and regional policies, plans, strategies and guidelines which apply to land use and development in Western Australia. The State Planning Framework enables state planning policies to have force and effect and be implemented through planning processes, including local planning strategies and schemes.

The Policy states that the primary aim of planning is to provide for the sustainable use and development of land and further sets out five key principles which describe the considerations which influence good decision making in land use and development.

Planning Implications

Implement the five key principles which influence good decision making in land use and development through the formation of the Local Planning Strategy.

7.3 State Planning Policies

7.3.1 State Planning Policy 2 Environmental and Natural Resources Policy (2003)

This policy gives guidance to local governments in relation to the protection and management of the environment and natural resources of the State. The policy provides guidance for the integration of social, environmental and economic factors in decision making.

The objectives of this policy are to:

- Integrate development and natural resource management with broader land use planning and decision-making.
- Protect, conserve and enhance the natural environment.
- Promote and assist in the wise and sustainable use and management of natural resources.

Implementation of this policy is primarily through the preparation of strategic plans, regional and local statutory schemes, conservation and management strategies, and other relevant plans to achieve the objectives of the policy.

The key principles of the Environment and Natural Resources Policy involve integration of the environment and natural resource management with broader land use planning and decision making. Protecting, conserving and enhancing the natural environment and promoting and assisting in the wise and sustainable use and management of natural resources.

7.3.2 State Planning Policy 2.6 State Coastal Planning Policy (2013)

The State Coastal Planning Policy provides guidance for decision making within the coastal zone. This covers managing development and land use change; establishment of foreshore reserves; and to protect, conserve and enhance coastal values. The policy recognises and responds to regional diversity in coastal types, requires that coastal hazard risk management and adaptation is appropriately planned for, encourages innovative approaches to managing coastal hazard risk, and provides public ownership of coastal foreshore reserves.

The policy objectives are to:

- Ensure that development and the location of coastal facilities takes into account coastal processes, landform stability, coastal hazards, climate change and biophysical criteria.
- Ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities.
- Provides for public coastal foreshore reserves and access to them on the coast.
- Protect, conserve and enhance coastal zone values, particularly in areas of landscape, biodiversity and ecosystem integrity, indigenous and cultural significance.

This policy is applicable to Swanbourne as the only area of the City of Nedlands within the coastal zone.

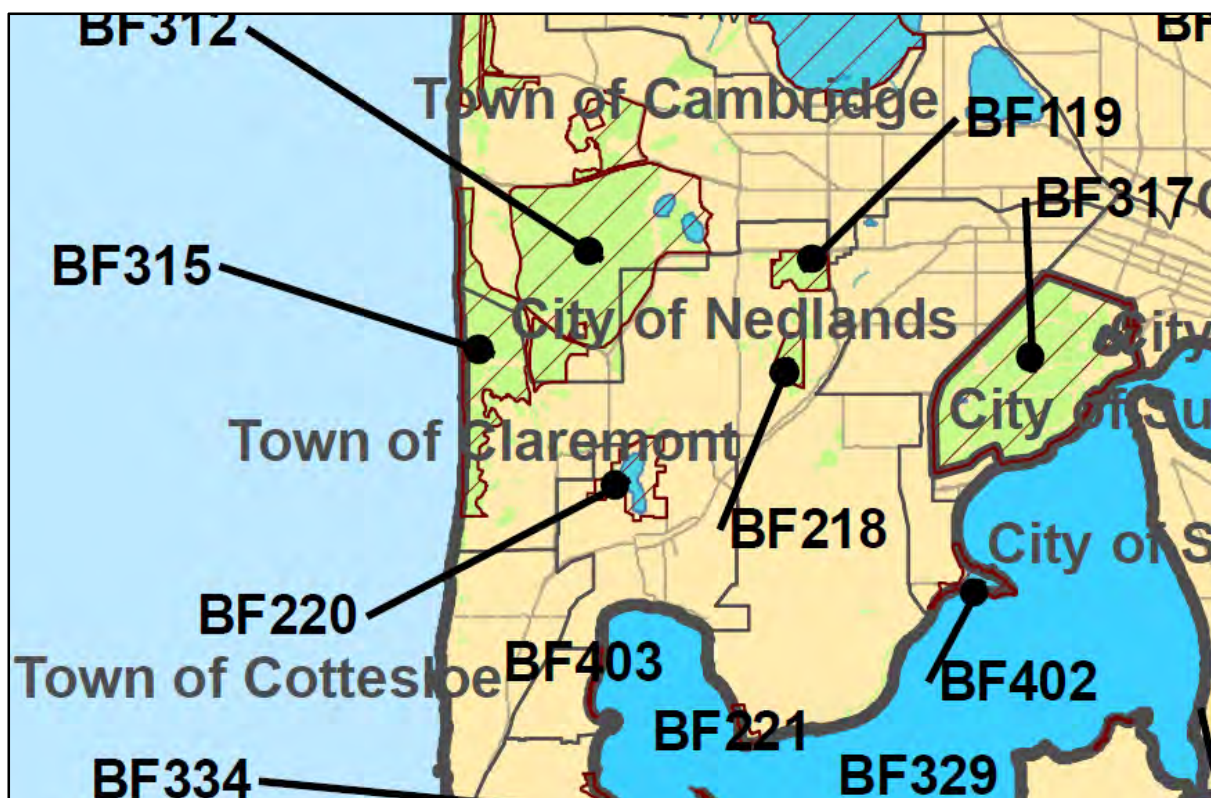
7.3.3 State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region (2010)

The aim of this policy is to provide a framework for the implementation of positive bushland protection and management across the Perth metropolitan region, encouraging the integration of these protections into broader planning processes. The policy specifically involves the long-term retention of areas of environmental importance in the metropolitan region in the form of 'Bush Forever' designations and the support for the preparation of bushland protection at a local government level.

The three key objectives of this policy are:

- To establish a conservation system at the regional level (through Bush Forever areas and to operate with the clearing controls under the *Environmental Protection Act 1986*) that is, as far as is achievable, comprehensive, adequate and representative of the ecological communities of the Swan Coastal Plain portion of the Perth metropolitan region.
- To seek to protect and manage significant bushland recommended for protection and management for conservation purposes through a range of implementation mechanisms and as a collective and shared responsibility and general duty of care on the part of government, landowners and the community.
- To provide a policy and implementation framework for significant bushland areas recommended for protection and management to assist conservation planning, planning assessment and decision-making processes.

The policy provides impact assessment frameworks for proposals which may impact regionally significant bushland and Bush Forever sites. The following Map 2 and associated Table 1 identifies the Bush Forever sites which will need to be protected and managed in accordance with this policy.



Map 2 Bush Forever sites¹

Table 1 Bush Forever sites

Bush Forever Site No.	Bush Forever Site Name	Ownership	Management
B119	Underwood Avenue Bushland, Shenton Park	Private	No management agency
B218	Shenton Bushland, Shenton Park	State Government	Crown reserve vested in City of Nedlands
B221	Point Resolution Reserve, Dalkeith	State Government	Crown reserve vested in City of Nedlands
B312	Bold Park and adjacent Bushland, City Beach	State Government, Local Government, Private	Part Botanic Gardens and Parks Authority, part Local Government, part private.
B315	Swanbourne Bushland, Swanbourne/City Beach	State Government, Private	Part Crown Reserve, part leasehold, part no management agency

7.3.4 State Planning Policy 2.9 Water Resources (2006)

This policy provides specific guidance for the identification and protection of water resources and catchments in the preparation of planning mechanisms and the consideration of planning proposals and applications. The policy primarily relates to

¹ Source: Urban Bushland Council WA Inc. Prepared March 2013. bushlandperth.org.au/bush-forever-overview/18-why-bush-forever/188-bush-forever-overview

the protection of water resources, total water cycle management and the encouragement of the adoption of water sensitive urban design practices.

The objectives of this policy are to:

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

7.3.5 State Planning Policy 2.10 Swan-Canning River System (2006)

This policy contains a vision statement for the future of the Swan-Canning river system, provides guiding principles for future land use and development along the river system and sets performance criteria and objectives for specific precincts.

The objectives of this policy are to:

- Provide a regional framework for the preparation of precinct plans based on precincts identified in the Swan River System Landscape Description;
- Provide a context for consistent and integrated planning and decision making in relation to the river; and
- Ensure that activities, land use and development maintain and enhance the health, amenity and landscape values of the river, including its recreational and scenic values.

The City of Nedlands is included in the Melville Waters precinct. Residential development is the predominant land use on the river, whilst foreshore reserves are generally extensive and developed as formal active and passive recreation areas.

7.3.6 State Planning Policy 3 Urban Growth and Settlement (2006)

This policy aims to facilitate sustainable patterns of urban growth and settlement by establishing requirements for sustainable settlements and communities and the broad policy in accommodating growth and change.

The objectives of this policy are:

- Promote a sustainable and well planned pattern of settlement across the State, with sufficient and suitable land to provide for a wide variety of housing, employment, recreation facilities and open space;
- Build on existing communities with established local and regional economies, concentrate investment in the improvement of services and infrastructure and enhance the quality of life in those communities;
- Manage the growth and development of urban areas in response to the social and economic needs of the community and in recognition of relevant climatic, environmental, heritage and community values and constraints;
- Promote the development of a sustainable and liveable neighbourhood form which reduces energy, water and travel demand whilst ensuring safe and convenient access to employment and services by all modes, provides choice

and affordability of housing and creates an identifiable sense of place for each community; and

- Coordinate new development with the efficient, economic and timely provision of infrastructure and services.

The City of Nedlands as an established area, will apply this policy in a manner that respects the existing neighbourhood character.

7.3.7 State Planning Policy 3.1 Residential Design Codes (2013)

The Residential Design Codes (R-Codes) provides detailed provisions to control residential development consistently across Western Australia. These provisions assist in the interpretation and assessment of residential development proposals. Development applications can be assessed using this policy in two methods, prescriptive 'Deemed-to-Comply' provisions or through performance based 'Design Principles'. The R-Codes are also used as a tool for the assessment of residential subdivision together with other State Planning Policies and Development Control Policies.

The R-Codes are introduced by reference into a local planning scheme, with residential development being required to comply with the R-Codes. Local governments may vary the provisions of the R-Codes where a particular matter is locally important and requires specific planning/development controls, which can be achieved through Local Planning Policies and Local Development Plans or via specific provisions in a Local Planning Scheme.

7.3.8 State Planning Policy 3.5 Historic Heritage Conservation (2007)

This policy applies to historic cultural heritage including heritage areas, buildings and structures, historic cemeteries and gardens, man-made landscapes and historic or archaeological sites with or without built features, at both a state and local level.

The objectives of this policy are:

- To conserve places and areas of historic heritage significance;
- To ensure that development does not adversely affect the significance of heritage places and areas;
- To ensure that heritage significance at both the State and local levels is given due weight in planning decision-making; and
- To provide improve certainty to landowners and the community about the planning processes for heritage identification, conservation and protection.

The conservation and protection of places and areas of local heritage significance is provided for in the *Planning and Development Act 2005*, which enables local governments to protect heritage places and objects in local planning schemes.

The policy clearly identifies local government's role in supporting the Act by implementing the following:

- Ensure local planning schemes are consistent with current model scheme text provisions;
- Ensuring heritage places and areas are identified consistent with the common standards provided by the Heritage Council;

- Having due regard to heritage significance in development assessment, planning schemes and planning strategies; and
- Adopting local planning policies affecting places entered in heritage lists.

The City will need to have due regard to heritage places and areas in the Local Planning Scheme and Local Planning Policies, with specific reference to the State Heritage List, the City's Heritage List and Municipal Inventory.

7.3.9 State Planning Policy 3.6 Development Contributions for Infrastructure (2009)

This policy sets out the objectives and framework for administering Development Contribution Plans for the provision of standard infrastructure in new and established urban areas. The policy provides a consistent, equitable and transparent system for planning and charging development contributions and provides certainty to developers, the City and the community about the charges that apply, and how funds will be spent.

The policy has the following overarching objectives:

- To promote the efficient and effective provision of public infrastructure and facilities to meet the demands arising from new growth and development;
- To ensure that development contributions are necessary and relevant to the development to be permitted and are charged equitably among those benefiting from the infrastructure and facilities to be provided;
- To ensure consistency and transparency in the system for apportioning, collecting and spending development contributions; and
- To ensure the social well-being of communities arising from, or affected by, development.

Infrastructure includes utilities and services to lots (water, electricity, gas, drainage, footpaths, roads, street lights and signage) but can also include community infrastructure such as community centres, sporting and recreation facilities, libraries and cultural facilities to enable communities and neighbourhoods to function effectively.

7.3.10 State Planning Policy 3.7 Planning in Bushfire Prone Areas (2015)

The intent of Planning in Bushfire Prone Areas is to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The policy forms the foundation for land use planning to address bushfire risk management in Western Australia and should be used to inform and guide decision-makers, referral authorities and proponents.

The objectives of SPP 3.7 are as follows:

- Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount;
- Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process;

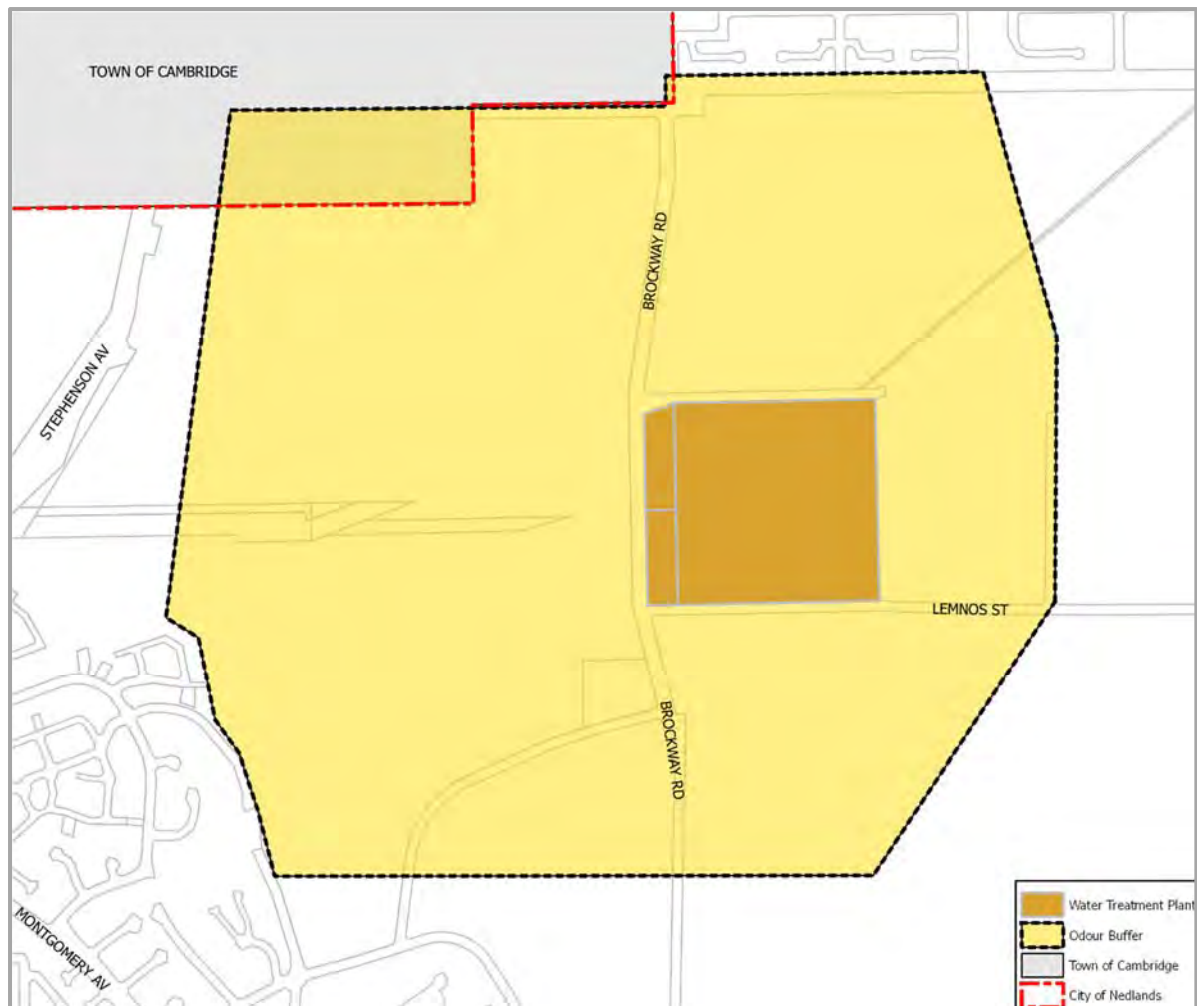
- Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures; and
- Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

The policy applies to land which has been designated as bushfire prone by the Fire and Emergency Services Commissioner as highlighted on the Map of Bushfire Prone Areas or land otherwise identified in the guidelines that accompany the policy. The Map of Bushfire Prone Areas is given statutory effect through an amendment to the *Fire and Emergency Services Act 1998* and acts as an additional administrative overlay to local governments, therefore local governments are not required to adopt the map or provisions into their local planning scheme.

7.3.11 State Planning Policy 4.1 State Industrial Buffer Policy (1997)

The purpose of the State Industrial Buffer Policy is to provide a consistent state-wide approach for the protection and long term security of industrial zones, transport terminals, other utilities and special uses. For the City of Nedlands, this policy is applicable to the Subiaco Wastewater Treatment Plant which is an infrastructure asset of regional significance necessary to supply recycled water for reuse.

Map 3 depicts the odour buffer area associated with Subiaco Wastewater Treatment Plant. The intent of a buffer zone is to protect the treatment plant from the encroachment of inappropriate land uses and also protects residents from the risks of living close to a treatment plant. The buffer has not been secured through the statutory planning system.



Map 3 Wastewater Treatment Plant Buffer²

7.3.12 State Planning Policy 4.2 Activity Centres for Perth and Peel (2010)

The main purpose of SPP 4.2 is to specify broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel. The policy is mainly concerned with the distribution, function, broad land use and urban design criteria of activity centres, and with coordinating their land use and infrastructure planning.

The objectives of SPP 4.2 are as follows:

- Distribute activity centres to meet different levels of community need and enable employment, goods and services to be accessed efficiently and equitably by the community.
- Apply the activity centre hierarchy as part of a long-term and integrated approach by public authorities and private stakeholders to the development of economic and social infrastructure.
- Plan activity centres to support a wide range of retail and commercial premises and promote a competitive retail and commercial market.

² Source: Water Corporation

- Increase the range of employment in activity centres and contribute to the achievement of sub-regional employment self-sufficiency targets.
- Increase the density and diversity of housing in and around activity centres to improve land efficiency, housing variety and support centre facilities.
- Ensure activity centres provide sufficient development intensity and land use Movement mix to support high-frequency public transport.
- Maximise access to activity centres by walking, cycling and public transport while reducing private car trips.
- Plan activity centre development around a legible street network and quality public spaces.
- Concentrate activities, particularly those that generate high numbers of trips, within activity centres.

The policy contains considerable guidance outlining how it is to be applied in planning for an activity centre and also in regulatory decision making.

7.3.13 State Planning Policy 5.2 Telecommunications Infrastructure (2015)

Telecommunications Infrastructure aims to balance the need for effective telecommunications services and effective roll-out of networks, with the community interest in protecting the visual character of local areas. The policy intends to provide clear guidance pertaining to the siting, location and design of telecommunications infrastructure.

The City shall have due regard to SPP 5.2 in the preparation of a Local Planning Scheme, to facilitate best practice in the preparation, assessment and determination of applications for planning approval of telecommunications infrastructure.

7.3.14 State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning (2009)

This policy aims to promote a system in which sustainable land use and transport are mutually compatible. It seeks to minimise the adverse impact of transport noise, without placing unreasonable restrictions on noise-sensitive residential development, or adding unduly to the cost of transport infrastructure. It aims to provide a standardised and consistent triple bottom line framework for the consideration and management of the impacts of transport noise and freight operations when dealing with:

- New noise-sensitive development in the vicinity of existing or future major transport corridors or freight handling facilities;
- New major road or rail infrastructure projects, including major redevelopments, in the vicinity of existing or future noise-sensitive land uses; and
- The location of freight handling facilities.

The City will need to ensure that any development nearby major transport corridors is undertaken within the context of SPP 5.4 policy objectives.

Planning Implications

Focus infill development around identified areas of under-utilised land, utilise planning controls to ensure new development does not conflict with, or undermine, neighbourhood character and heritage conservation.

Ensure that the community's commercial needs are catered for, by identifying appropriate growth and management of activity centres.

Ensure that development near major transport corridors is undertaken to minimise the adverse impact of transport noise.

Protect the Subiaco Wastewater Treatment Plant from the encroachment of inappropriate land uses and also protect residents from potential risks associated with living too close to a treatment plant.

Promote the efficient and effective provision of public infrastructure and community facilities to meet the demands arising from new growth and development.

Protect, conserve and enhance the natural environment and assist in the sustainable use and management of natural resources, with specific regard to:

- *Setbacks, building height limits and applicable variations on coastal land;*
- *Protection of identified Bush Forever sites; and*
- *Protection of the environmental, recreational and cultural values of water resources and the prevention of adverse effects upon water quality and quantity.*

7.4 Regional Strategies

7.4.1 Directions 2031 and Beyond (2010)

Directions 2031 and Beyond is a high-level spatial framework and strategic plan to guide the delivery of housing, infrastructure and services necessary to accommodate the future growth of the metropolitan Perth and Peel region. Directions 2031 outlines population growth scenarios and land use patterns for an anticipated city population of 3.5 million people. Directions 2031 identifies the 'connected city' model as the most realistic scenario for growth of the city based on integrated activity centres, movement and green networks.

Directions 2031 establishes five strategic themes with objectives which have been informed by community, economic and environmental issues and set the strategic directions to guide government decision-making on land use, transport and service infrastructure planning coordination and development. These themes and objectives are:

A Liveable City	Living in or visiting our city should be a safe, comfortable and enjoyable experience.
A Prosperous City	Our success as a global city will depend on building on our current prosperity.
An Accessible City	All people should be able to easily meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home.
A Sustainable City	We should grow within the constraints placed on us by the environment we live in.
A Responsible City	We have a responsibility to manage urban growth and make the most efficient use of available land and infrastructure.

Directions 2031 seeks a 50% improvement on current infill residential development, setting a target of 47% of new housing as infill development. Under Directions 2031, the central sub-region of the Perth metropolitan area, of which the City of Nedlands is a part, is expected to accommodate population growth of 205,000 people, 121,000 dwellings and maintain 121% employment self-sufficiency.

The City shall execute initiatives relating to the integration of activity centres, movement networks and green networks, as well as contributing to the urban expansion program as applicable.

7.4.2 Central Metropolitan Perth Sub-Regional Strategy (2010)

The Central Metropolitan Perth Sub-Regional Strategy provides a broad framework for delivering the objectives of Directions 2031 and identifies a strategic plan of actions, agency responsibilities and delivery timeframes. It links state and local government strategic planning to guide the preparation and review of local planning strategies by:

- Providing information about the level of expected growth in each local government area through the housing targets as identified in Directions 2031;

- Outlining widespread development opportunities throughout the sub-region;
- Investigating the development potential of targeted locations in growth areas, activities centres, urban corridors and transit oriented developments;
- Prioritising actions to revitalise or create vibrant activity centres and facilitate the supply, affordability and choice of available housing in areas with easy access to public transport and other essential services;
- Supporting the planning and delivery of land for employment growth and economic development;
- Identifying key public transport and service infrastructure projects to support growth; and
- Informing all levels of government decision-making on where and when to fund the most efficient roll out or upgrading of public infrastructure.

The Central Metropolitan Perth Sub-Regional Strategy identifies specific housing targets and growth areas to deliver the outcomes sought by Directions 2031. The City's original housing target was 3500 dwellings to be facilitated by 2031, however Delivering Directions 2031 – Report Card 2013 revised the total dwelling allocation for the City of Nedlands to 2,540.

7.4.3 Draft Perth and Peel @ 3.5million (2015)

Perth and Peel @ 3.5million is a suite of documents consisting of a main report which provides a snap shot of greater Perth's urban environment and four draft sub-regional planning frameworks.

The main report sets out that greater Perth is currently home to more than two million people and that it is expected that by 2050, 3.5 million people will be living in this area. The main report recognises that our current form of urban development, which involves expansion into greenfield areas on the urban fringe, is not sustainable. A shift in the way Perth develops is needed if we are to accommodate a substantial population increase without impacting on our valued way of life, the natural environment and our crucial social and physical infrastructure.

The four draft sub-regional planning frameworks provide specifics for applying the principles of urban development that apply to the sub-regional areas. These principles relate to the overarching themes developed from Directions 2031 and fit within the State's existing planning framework. The draft sub-regional planning frameworks also set out revised infill targets for each local government area, which for the City of Nedlands has been revised to 4,400 dwellings by 2050.

7.4.4 Perth Capital City Planning Framework (2013)

The Capital City Planning Framework provides a key planning strategy for Central Perth that sets out how it is to respond to its role as a state capital, and envisions a renewed sense of landscape character and connectivity. The framework indicates how the objectives can be delivered in this focus area, provides overarching principles to guide and complement local government plans whilst also spatially depicting strategic patterns for future development, highlighting opportunities for intensified development.

The Capital City Planning Framework sets out a spatial framework for central Perth, the 12 kilometre by 12 kilometre area around the city centre. The framework indicates how the objectives of Directions 2031 can be delivered in this focus area and is guided by several Directions 2031 implementation elements.

Planning Implications

Execute initiatives relating to the integration of activity centres and corridors, movement networks and station precincts, and green networks.

Contribute to the metropolitan Perth urban infill program by identifying specific housing targets and areas that have potential to accommodate infill.

7.5 Regional Planning Schemes

7.5.1 Metropolitan Region Scheme

The Metropolitan Region Scheme (MRS) is the relevant Regional Planning Scheme for the Perth Metropolitan Region and defines the future use of land, dividing it into broad zones and reservations. It requires local government town planning schemes to provide detailed plans for their part of the region and these local government schemes must be consistent with the MRS.

Planning Implications

Local Planning Schemes must be consistent with the zones and reservations as set out in the MRS.

7.6 Operational Policies

7.6.1 Liveable Neighbourhoods (2009)

Liveable Neighbourhoods is a Western Australian government sustainable cities initiative which addresses both strategic and operational aspects of structure planning and subdivision development. The purpose of the policy is to better structure new urban development on greenfield and large urban infill sites.

The policy aims to increase support for efficiency, walking, cycling and public transport, achieving density targets, urban water management, public open space planning, retention of environmental features, landscaping needs, street cross section standards and movement networks and speed controls.

7.6.2 Development Control Policy 1.6 - Planning to Support Transit Use & Transit Oriented Development (2006)

DC Policy 1.6 seeks to provide local government with a consistent set of provisions to be applied within local planning schemes and associated planning policies and design controls to enable the delivery of Transit Oriented Development (TOD) outcomes.

DC Policy 1.6 provides a set of policy measures around development patterns, land use, pedestrian facilities and the integration of transit infrastructures.

The provisions of this policy would apply to Stirling Highway, the Fremantle railway line and other regional roads within the City of Nedlands.

7.6.3 Development Control Policy 2.3 - Public Open Space in Residential Areas (2002)

DC Policy 2.3 is designed to ensure that all residential development in WA is complemented by adequate, well-located areas of public open space that will enhance the amenity of the development and provide for the recreational needs of local residents.

DC Policy 2.3 sets out the requirement for 10% of a subdivisible area be given up free of cost by the subdivider and vested in the Crown as a Reserve for Recreation. Provisions are contained within DC Policy 2.3 to require the imposition of conditions on a subdivision approval where a local government has identified an existing or potential deficiency of public open space and has an adopted strategy to improve or provide open space by land acquisition in the locality.

Planning Implications

Integrate transport networks with appropriate development and land use.

Enhance the amenity of large infill sites by considering community design, movement networks, lot layout, public parkland, urban water management and utilities that provide for future residents.

7.7 Other Relevant Strategies, Plans and Policies

7.7.1 Draft Perth and Peel Growth Plan for 3.5 Million (2015)

The draft Green Growth Plan delivers a comprehensive environmental program for the protection of both Commonwealth matters of national environmental significance and State environmental values, with a view to integrate strategic environmental assessment into urban planning.

The suite of draft Green Growth Plan documents considers the avoidance and mitigation of environmental impacts and presents a Conservation Program that will aim to deliver significant improvements to the protection and management of the environment as the Perth and Peel regions grow to a population of 3.5 million people.

It is important to note this document has been advertised for public comment and submissions are being considered. It is likely the document will undergo substantial modification prior to being finalised.

7.7.2 State Sustainability Strategy (2003)

The purpose of the State Sustainability Strategy is to illustrate how the State Government will respond to the sustainability agenda by adopting the sustainability framework and highlighting actions across government that give meaning to the framework.

The State Sustainability Strategy focuses on the need to simultaneously integrate a consideration of the environment, the economy and society into decision-making.

7.7.3 Draft Perth Transport Plan – Transport @ 3.5million (2016)

The draft Perth Transport Plan document outlines the State Government's proposed transport network designed to be compatible with a longer-term vision for a metropolitan area of 3.5 million people. The document considers roads, freight, public transport and active transport and is designed to complement the Perth and Peel @ 3.5million suite. Time estimates within in the plan are broad and are linked with population growth and there are no finding estimates attached to the proposals.

Specific to the City of Nedlands, the draft plan identifies:

- Orbital heavy rail route linking UWA-QEII to Murdoch and Stirling (see Figure 1).
- Light rail from the CBD to UWA-QEII (see Figure 1).
- Stock Road extension with tunnel/s surfacing north of the Fremantle rail line (Shenton Park/Floreat).
- Pedestrian and cycle bridge linking Point Resolution to Chidley Point and Point Walter.



Figure 1 Draft Integrated Mass Transit Network³

³ Source: Perth Transport Plan *Draft for Consultation*. August 2016.

7.7.4 Designing Out Crime Planning Guidelines (2006)

The principal purpose of the guidelines is to provide local government, government agencies, town centre management, the public and private sector development industry and planning and design practitioners, with a context for understanding the principles of designing out crime and a toolbox of design criteria and approaches to address crime prevention in their local areas.

The guidelines are intended to assist in the decision-making process. It is important that the relevant parts of the guidelines are incorporated in part or as a whole in local planning policies and state development control policies.

7.7.5 Urban Forest of Perth & Peel Statistics Report

The Urban Forest of Perth & Peel Statistics Report is concerned with the spatial distribution of trees across three broad land use categories and aims to generate discussion around the management of the urban tree canopy and the effects of land use and infrastructure.

This report is used to monitor future improvement or areas of concern regarding tree canopy loss. Future research could take the form of investigating the correlations between high levels of canopy coverage and household energy and water use, property values, health and lifestyle choices, and housing types, as well as comparison between suburbs, street blocks, activity centres and corridors.

The report discusses the aesthetic contribution urban forests make to neighbourhoods and town centres, but also focuses on the environmental benefits mentioned above.

7.7.6 City of Subiaco Local Planning Strategy (2013)

The City of Subiaco aims to facilitate the development of 3000 dwellings to meet the infill targets of Directions 2031 and *Central Metropolitan Perth Sub-Regional Strategy*. The City of Subiaco has nominated that 'the majority of new dwellings (other than single) will be within and around nominated activity centres, within large under-developed sites or other large sites presently occupied by government institutions and already identified for redevelopment in the short, medium and long term' (City of Subiaco, 2013). This includes the following areas adjacent to the City of Nedlands:

- Shenton Park railway station;
- Around the periphery of the 'Hollywood Precinct', specifically along Winthrop Avenue, Hampden Road and Monash Avenue;
- UWA/QEII precinct;
- Light rail service corridor; and
- Adjacent to UWA.

7.7.7 Draft Town of Cambridge Local Planning Strategy (2010)

The Town of Cambridge has adopted a Local Planning Strategy Working Document to guide the review of its Town Planning Scheme No. 1. The Local Planning Strategy has not been endorsed by the WAPC.

The Town of Cambridge is developing a number of planning strategies and plans to guide infrastructure provision and development.

The Strategy identifies elements which may have an impact on the City of Nedlands. The impact on the City of Nedlands will likely depend on the actions employed to address the following:

- The need for the Town of Cambridge to provide additional housing (infill and as part of new developments);
- The need to consider opportunities for increasing residential development around centres (local and district) and along activity/public transport corridors (particularly Cambridge Street) as part of planning exercises/centre planning; and
- The need to encourage more housing choice as part of infill development and as part of new development sites, particularly more smaller dwellings (potentially through development incentive, supplementary urban regeneration activities or the introduction of built-form codes).

7.7.8 Town of Claremont Local Planning Strategy (2011)

The Town of Claremont Local Planning Strategy was formally endorsed by the WAPC in February 2011 and sets out to achieve the following:

- Encouraging more appropriate mixed use developments to generate activity and reduce car trips taking into consideration the locality and sale;
- Providing more attainable housing to permit people to stay in the locality over the long term (i.e. age in place) through removing barriers for granny flats, adaptive reuse and intergenerational housing;
- Mature areas having different development criteria to new areas and redevelopment areas;
- Permitting uses which are conducive to other means of transport than car based transport adjacent to areas of high frequency, pushing car reliant uses further from these areas.
- More accurate and flexible parking standards based on site specific and development standards; and
- Establishing parking maximums to ensure oversupply is not provided.

Significantly for the City of Nedlands, the strategy shows increased housing diversity and land use diversity planned for residential and commercial properties within proximity of Stirling Highway and Railway Road. Given the large area of shared boundary between the Town of Claremont and the City of Nedlands there may be some significant implications for properties within the City of Nedlands through increases in population, demand for services and traffic impacts.

Planning Implications

Adopt the sustainability framework by integrating the environment, economy and society into decision-making.

Consider the implications of rapid transit infrastructure (and other public transport) on the City's existing and future urban fabric.

Consider compatibility with the City's neighbours to ensure the region functions as a shared community.

8 Local Planning Context

8.1 Visioning and Community Plan

8.1.1 City of Nedlands Our Vision 2030

The Our Vision 2030 document summarises the outcomes of substantial community consultation and expresses the community's vision for the future and a range of prioritised strategies for achieving the vision.

Four visioning statements were developed focusing on key areas.

Built environment vision

“Our built environment will provide for a diverse community of all age groups, where people can live ‘from cradle to grave’. People will be able to ‘age in place’ and continue to enjoy local relationships and supports as their housing needs change. Diverse housing will be located around vibrant community hubs, creating a friendly village atmosphere. We will no longer go in one direction to the library - and a different direction to the shops! Local shops, libraries, community facilities and parks will be located together and easily accessed. Many people will walk or cycle to their local community hub. Our community as a whole will be made up of pockets of vibrant, innovative communities, each with its own identity.”

Natural environment vision

“We will live sustainably within a thriving natural environment. Our gardens, streets and parks will be leafy and green despite water restrictions. Our bushland, river and beaches will be healthy ecosystems supporting local wildlife and enjoyed by people. We will be recognised as a global benchmark for sustainable living because of our innovative use of water, energy and other resources.”

Transport vision

“A state-of-the art public and private urban transport system will enable us to move easily within and beyond our community. We will still drive cars but many people will prefer to use public transport which will be well-designed, convenient and affordable. Our transport systems will be designed to minimise negative impact on the environment. Our streets will be lively and safe as people walk and cycle to local destinations on a well-planned network of linked, accessible pathways.”

Community connections vision

“Ours will be a safe, friendly community with a sense of neighbourliness and a strong community spirit. Community events and sporting activities will bring us together often. Easy access to local shops, businesses, markets, community centres, libraries and parks will also strengthen local connections. We will have access to excellent services for children, families, youth, seniors and people with disabilities. Our community organisations and sporting clubs will be strong and well supported. We will be a diverse, inclusive community that provides many opportunities for local interaction.”

8.1.2 City of Nedlands Strategic Community Plan (2013)

The Strategic Community Plan for the City of Nedlands from 2013 - 2023 further develops the achievements of *Our Vision 2030* by refining an overall community vision, establishing key focus areas and setting out Council's strategic priorities.

The vision adopted under the Strategic Community Plan is:

“Our overall vision is of a harmonious community.

We will have easy access to quality health and educational facilities and lively local hubs consisting of parks, community and sporting facilities and shops where a mix of activities will bring people together, strengthening local relationships.

Our gardens, streets, parks will be well maintained, green and tree-lined and we will live sustainably within the natural environment.

We will work with neighbouring Councils and provide leadership to achieve an active, safe, inclusive community enjoying a high standard of local services and facilities.

We will live in a beautiful place.”

Planning Implications

Plan for a diverse community with appropriate housing, located around parks, shops, community and sporting facilities.

Support sustainable practices through innovation.

Maintain a healthy natural environment, which includes actively managing streets, urban parks and bushland.

Promote alternative transport systems to support an active and lively community.

8.2 City Strategies and Policies

8.2.1 Sustainability Strategy (2009)

The City's Sustainability Strategy was adopted in 2009 with the aim to define the role of the Council in establishing the long-term sustainability of the City of Nedlands.

The City has defined sustainability as 'meeting the needs of current and future generations through the integration of environmental protection, social advancement and economic prosperity.'

The Strategy has helped Council to work with the community in encouraging private sustainability, as well as working internally to establish corporate sustainability encompassing economic, social, and environment concerns.

8.2.2 Travel Plan (2009 – 2012)

The City of Nedlands Travel Plan aims to facilitate the movement of people within the City by prioritising actions to educate, inform and lobby for change or improvement. To achieve this, the Travel Plan considers a number of competing initiatives to assist in the provision of a balanced system, mindful of the conflicting needs of residents and the wider community.

The key objectives of the Travel Plan include:

Safety

The transport system must be safe for all users of the transport network.

Convenience

The local community should have good access to transport options at all times of the day, during weekends and public holidays at reasonable cost and by a variety of modes.

Efficiency

The transport system should provide effective access and movement for all. Routes should be direct and operate without unnecessary delays. Investment in transport should improve the efficiency of the overall transport system rather than a particular mode or group.

Responsibility

The transport system as a whole must provide equitable opportunities for the whole community with social costs and benefits being shared by all beneficiaries. The transport system should also be provided and used in an environmentally responsible manner.

Sustainability

The Travel Plan must maximise community opportunity with transport modes and conversely minimise any adverse effects as a result of implementing actions. The system must be able to respond to changes in the future.

The Travel Plan is the operational plan that outlines how the City's Strategic Plan will be met in relation to alternative transport across the built environment, infrastructure and community wellbeing key focus areas.

8.2.3 Strategic Recreation Plan (2010 – 2015)

The purpose of the City's Strategic Recreation Plan 2010 - 2015 is to establish the local community's current and future needs for sporting, recreational and leisure facilities and services. The Recreation Plan is used as a basis to guide future decision-making and development in relation to sport and other recreational and leisure facilities, infrastructure and services.

The key initiatives for the Strategic Recreation Plan include:

- Identifying a number of key reserves on which the City's major sporting facilities will be concentrated; and
- Identifying a number of major recreational reserves to guide future decisions about the location of recreational facilities. This will focus expenditure efficiently and will help channel resources towards multi-use facilities.

8.2.4 Natural Areas Management Plan (2013 – 2018)

The Natural Areas Management Plan was developed as an outcome of the City's Strategic Community Plan and outlines strategies and actions necessary for the protection, enhancement and restoration of natural areas and biodiversity within the City of Nedlands.

The policy provides actions for natural area management in the following areas:

- Shenton Bushland,
- Allen Park,
- Point Resolution Reserve,
- Birdwood Parade Reserve,
- Hollywood Reserve, and
- Mt Claremont Oval Reserve.

8.2.5 Foreshore Enhancement and Management Plan (2010)

The City's Foreshore Enhancement Management Plan aims to guide the future use and management of the Nedlands foreshore. The key objectives and strategies of the Foreshore Management Plan are to provide a vision and management of the foreshore with regard to:

- Legislative and management framework;
- Biophysical environment;
- Social environment; and
- Visual environment.

8.2.6 WESROC Western Suburbs Greening Plan (2002)

The Western Suburbs Regional Organisation of Councils (WESROC) Greening Plan was adopted in 2002 by all western suburbs local governments to provide direction in conservation planning. The Greening Plan enables new design approaches to

streetscapes, parks, and gardens and includes an inventory of existing open space areas and identifies additional green space possibilities.

The Greening Plan sets out the following aims:

- Maintaining and enhancing the existing remnant vegetation within the urban and suburban framework;
- Integrating these remnants through vegetated corridors;
- Creating additional habitat areas where possible;
- Creating public open space, streetscapes and gardens that better contribute to the ecological, aesthetic and cultural value of the area;
- Galvanising public support for the program through information and educational programs;
- Developing demonstration sites that illustrate new designs for streetscapes, public open space and institutional and private gardens; and
- Involving institutions, individuals, corporations, schools and government organisations in support of a Green Plan ethos.

The Greening Plan contains objectives and guiding principles for greening projects and provides recommendations to achieving the above aims.

Planning Implications

Integrate environmental protection with social advancement and economic prosperity.

Facilitate the movement of people with a balanced transport system.

Establish the community's needs for sporting, recreational and leisure facilities and services.

Guide the future use and management of the river foreshore in relation to the biophysical, social and visual environment.

Facilitate conservation planning and sustainable design approaches to streetscapes, parks and gardens.

8.3 Town Planning Scheme, Strategies and Policies

8.3.1 Town Planning Scheme No. 2 (1985)

Town Planning Scheme No. 2 (TPS 2) was gazetted in April 1985 and has been an adequate planning and development control instrument during its tenure. TPS 2 provides guidance on the processes to be followed before development can occur and provides the City with the ability to enforce land use and development control provisions.

TPS 2 has been reviewed and it is considered that it does not adequately take into account the latest objectives of the State nor reflect the aspirations of the community. TPS 2 is not consistent with the Model Scheme Text and the recent gazettal of the *Planning and Development (Local Planning Schemes) Regulations 2015* creates a further divide between TPS 2 and current planning standards.

It is considered appropriate that the aspirations set out in this Local Planning Strategy be implemented through the creation of a new Local Planning Scheme, which should enable the effective implementation of State objectives and policy positions whilst also respecting the community's vision for the City of Nedlands.

8.3.2 Local Commercial Strategy (2001)

The Local Commercial Strategy was adopted by the City in 2001 and outlines general measures to support centres as follows:

- Ensure that centres are attractively designed in terms of their general appearance, their relationship to the street, and their integration within the urban fabric;
- Centres can be supported by Council through improved civic design such as street lighting, landscaped user-friendly streets and other public spaces;
- Flexibly manage the supply of Shop Retail floorspace in centres to keep vacancy rates low and existing shops viable. Vacant shops conduce to a very poor centre appearance;
- Ensure that pedestrian access to the centre from surrounding residential areas is direct, convenient and safe;
- Ensure that carparks are heavily planted with appropriate shade trees; and
- Where practicable, facilitate increased residential densities in the immediate vicinity of neighbourhood and local centres.

The recommendations of the Commercial Strategy were never fully realised through the introduction of a new planning scheme or through any meaningful amendments to TPS 2 and as such the majority of the recommendations regarding land use and zoning of the City's existing centres are still considered relevant to the future planning of the City of Nedlands.

8.3.3 Local Housing Strategy (2001)

The Local Housing Strategy generally recognised the need to provide a greater mix of housing types to accommodate the changing demographics of the area, but it is also conscious of not compromising the existing residential character of the area.

The Housing Strategy provides a comprehensive assessment of 19 housing precincts within the City. The Housing Strategy provides a detailed background, examines the

constraints and opportunities for housing development in each precinct and sets out actions intended to provide clear direction for the formation of policies, guidelines and controls for future housing development.

From the Housing Strategy recommendations, Council resolved to undertake some changes to residential densities in the following areas:

- Swanbourne (James Road/Knutsford Street/North Street);
- Mt Claremont (Rochdale Road/Alfred Road);
- Nedlands (Dalkeith Road/Aberdare Road/Karella Street); and
- Dalkeith (Alexander Road).

This resulted in the creation of Design Guidelines for these areas and the adoption of these Design Guidelines into TPS 2 in order to give effect to their provisions. The City will need to ensure that these Design Guideline areas are adequately zoned and provisions adopted through an appropriate mechanism as part of a new Local Planning Scheme.

As the City has not changed significantly since the adoption of this document many of the recommendations regarding the location of housing density are still considered relevant to the future planning of the City of Nedlands.

8.3.4 Housing Diversity Study (2006)

The Housing Diversity Study was endorsed by Council in November 2006 to address the various housing pressures experienced within the City and to provide a clear approach for future decision making on planning matters of density and housing diversity.

The Housing Diversity Study identified that the City of Nedlands has high demand for housing with relatively high property prices in comparison to other areas within the metropolitan area. This demand coupled with changing demographic structure strongly suggests housing must be diversified.

The Housing Diversity Study found that different areas of the City have specific features and characteristics. This led to the identification of distinct precincts which allowed clearer analysis of localised preferences and better definition of planning requirements. Consequently, whole-of-City decisions may be effective in some circumstances but precinct based decision making is more likely to fit with the interests of the community.

Key points from the study are as follows:

- The basic character of Nedlands should be seen as an asset and protected as far as possible, in respect to good access to public open space, beach and river foreshores;
- Housing styles are already changing and are impacting on Nedlands character and housing diversity;
- Lack of smaller dwellings is leading to a demographic shift in Nedlands, resulting in a lower proportion of young people and younger families and a higher proportion of older people than the rest of the metropolitan area;
- The average length of residence in Nedlands is 11 years with the pattern across showing the majority of respondents in each precinct have resided there for between 0 and 9 years.

- 56% of respondents believe that landowners in their area should be able to subdivide; and
- 15 out of 19 precincts recorded a higher proportion of those who believe that other landowners in their area should be allowed the opportunity to subdivide than those who believe landowners in their area should not be allowed to subdivide.
- Analysis of detailed community responses and plans has been carried out by precinct and suitable strategies for each precinct have been proposed.

The methodology and findings of the Housing Diversity Study indicates that precincts within the City can achieve a desired built form, land use mix and housing diversity whilst still protecting their unique characteristics. Given the age of the study, application of the findings and key points will recognise changes that may have occurred to today.

8.3.5 Local Hubs Framework (2013)

The Local Hubs Framework was adopted in October 2013 and has the overarching aim of protecting an aspect of the City's quality living environment and resolving the long term future of each of the local hubs.

A Local Hubs Framework has been established as a result of the *City of Nedlands Strategic Community Plan*, which seeks to strengthen local hubs or centres. The objectives of the framework are to:

- Create a framework/process for local hubs to be upgraded/improved;
- Guide decision making regarding place-making;
- Assist in decision making regarding infrastructure;
- Establish the guiding values of hubs within the City;
- Define the meaning of hubs; and
- Outline a typology of hubs within the City.

Through this framework, more detailed planning is intended to be carried out for each identified hub within the City and appropriate planning tools derived to guide development of those hubs.

8.3.6 Draft Stirling Highway Redevelopment Project (2009)

The Stirling Highway Redevelopment Project resulted in a set of provisions for the development of lots on and near to Stirling Highway. These provisions were given in principle support by Council in October 2009 for inclusion into a new planning scheme.

The provisions contained within this document provide a solid foundation for the type of development that is considered appropriate along Stirling Highway. However, since endorsement by the City, the road reservation that affects Stirling Highway has been reviewed with an amendment in place to reduce the road width. Additionally, there have been some key planning documents released by the State that will significantly affect how development along Stirling Highway and its surrounds should progress.

As a result, it would not be appropriate to translate the provisions of this document directly into scheme controls without careful consideration of the new environment within which these provisions would operate. The provisions do offer a good starting point from which development along Stirling Highway could be realised.

8.3.7 Hampden/Broadway Precinct Study (2014)

The City of Nedlands and Subiaco reviewed the Hampden Road Neighbourhood Centre Guidelines in May 2014 in order to determine the appropriate redevelopment of Hampden Road to ensure that it suitably services the area.

Hampden Road is located within the UWA-QEII Specialised Centre where significant growth is expected to take place. Many of the shops, restaurants and offices are orientated towards servicing UWA and QEII staff, students and other visitors with Hampden Road largely functioning at a local level, offering convenience retail facilities and specialised services.

The study recommends an urban design framework covering:

- Land use and zoning;
- Built form;
- Strategic development sites;
- Car parking and movement;
- Streetscape character; and
- Open space.

The study also covers development of public domain, statutory implementation and outlines the specific development control provisions recommended to be introduced through Local Planning Scheme and Local Planning Policy mechanisms.

8.3.8 Local Planning Policies

The City has prepared various Local Planning Policies over a number of years to address a broad range of planning matters. Below is a list of these policies.

- Cash in Lieu of Car Parking
- Swanbourne Design Guidelines A (Precincts 1 to 5 and 9)
- Swanbourne Design Guidelines B (Precincts, 6, 7 and 8)
- Subdivision Policy
- Two Grouped Dwellings in Dual Coded Areas
- Allen Park Residential Estate Design Standard For Lots 11 To 17 Clement Street And Lots 18 To 25 North Streets, Swanbourne
- Road Widening (Stirling Highway)
- Cash In Lieu Of Car Parking - Government Road
- Listed Heritage Places - Demolition Policy
- Intensification of Residential Density
- Reduction of Front Setbacks
- St Peters Square Design Guidelines
- Carports And Minor Structures Forward Of The Primary Street Setback
- Hollywood Design Guidelines
- Old Swanbourne Hospital Precinct
- Sea Containers
- Ancillary Accommodation
- Advertisement Signs on Zoned and Reserved Land (Except Road Reserves)
- Fill and Fencing

A detailed review of these Local Planning Policies and other Council Policies will be undertaken in order to consolidate the Policy Manual. The review will include rationalising existing policies and the creation of new policies in order to ensure a consistent approach to development control is established which is complementary to the aims of this Local Planning Strategy.

Planning Implications

Town Planning Scheme No. 2 is out of date and no longer reflects the aspirations of the community. The City's Local Planning Policies and other Council policies also need detailed review. There are specific development control provisions recommended to be introduced through new Local Planning Scheme and Local Planning Policy mechanisms.

Strengthening local hubs (centres) and protecting the quality living environment are key elements in the further development of the City.

The City has distinct precincts that have unique characteristics. This must be considered when planning for a desired built form, land use mix and housing diversity.

Previous strategies and studies concerning development, land use and zoning throughout the City and for specific areas (Stirling Highway, Hampden Road and commercial centres) are still considered relevant. Revision of the data, issues and recommendations will be needed in light of changes to demographics, state government policy direction and community expectations.

9 Local Profile

9.1 Population and Housing

The information in this section is based mainly on the Australian Bureau of Statistics time series profile (Census 2001 and 2011), which is based on the place of enumeration rather than place of usual residence. References to 'Nedlands' within this section are to be taken as references to the City of Nedlands.

9.1.1 Population

Figure 2 shows the population of the City of Nedlands as a whole in both 2001 and 2011.

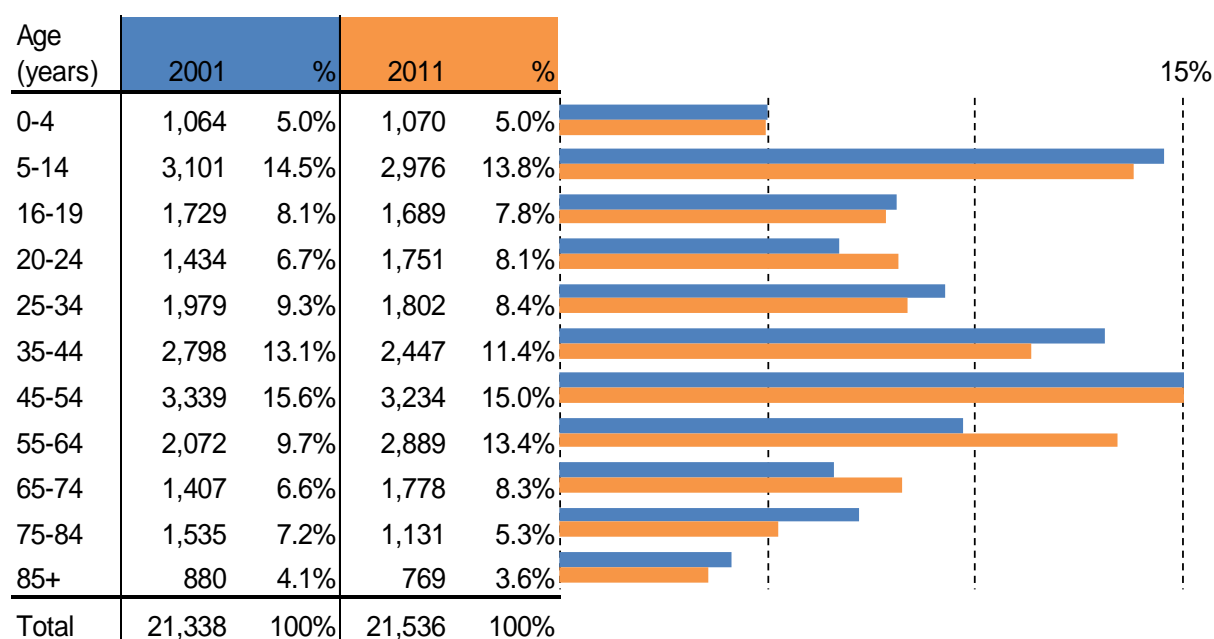


Figure 2 Population and Age Distribution 2001 and 2011, City of Nedlands

Points of note include:

- Minimal population increase overall, however some changes in several of the age groups occur:
 - a reasonably significant decline in the 35-44 and 75-84 years age groups
 - some reasonably significant increases in the 20-24; 55-64; and 65-74 years age groups (the population of these three age groups totalled 4,913 persons in 2001, increasing to 6,418 persons in 2011)
- The median age has remained constant over the decade (40; 41; and 41 years), thus the population as a whole, although older than the Greater Perth regional population (median age 36 in 2011 – see Figure 3) has not shown a pronounced ageing trend over the decade
- Females outnumbered males by 996 in 2001, but by 2011 this difference had narrowed to 665 (not shown in chart)

Figure 3 shows the population of Nedlands as a whole in 2011 compared to Greater Perth.

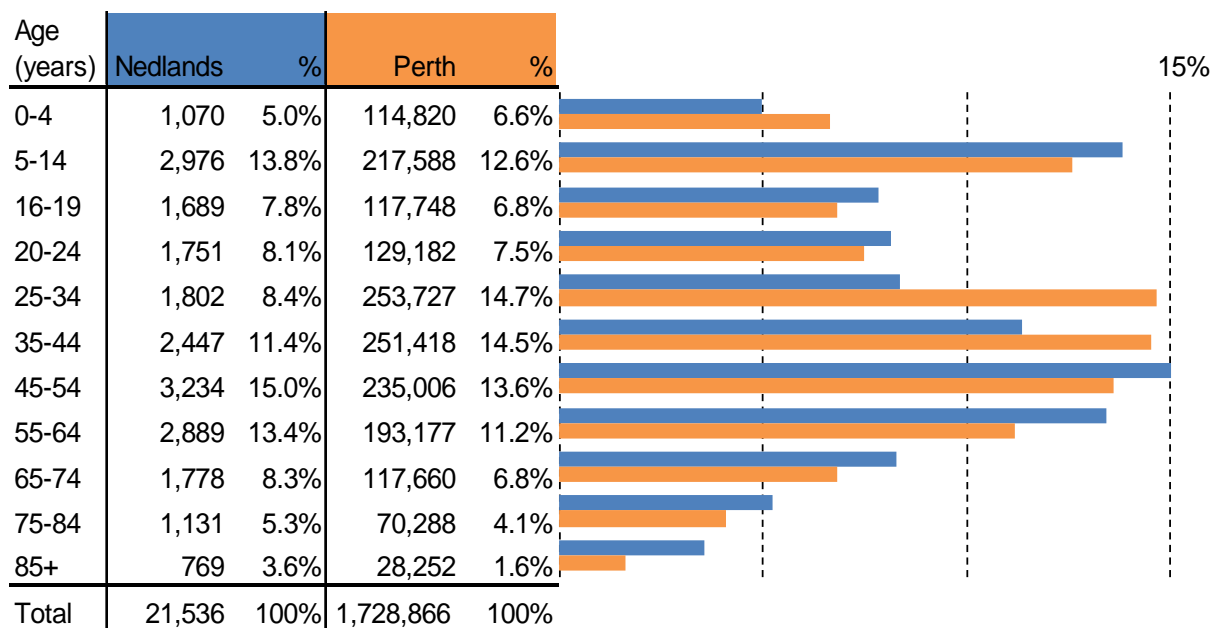


Figure 3 Population and Age Distribution 2011, City of Nedlands and Greater Perth

Points of note include:

- Greater Perth has a younger population overall, with the 25-34 and 35-44 years age groups being the most significant in this regard.
- Nedlands has a higher proportion of persons in all age groups above 45 years.
- Interestingly, Nedlands also exceeds Greater Perth in the proportion of persons aged between 5 and 24 years.

It can be said that Nedlands as a whole does not have a particularly old population. Although it is certainly mature, the proportions of most of its young residents (5-24 years), as well as its oldest residents (45 years plus), exceed those for Greater Perth. The only age groups where the Perth proportions exceed the Nedlands proportions are the 0 - 4 year's group and the 25 - 44 years groups.

9.1.2 Ethnicity

As an indicator of ethnic diversity, Figure 4 shows the Nedlands population’s country of birth in 2011 compared to Greater Perth.

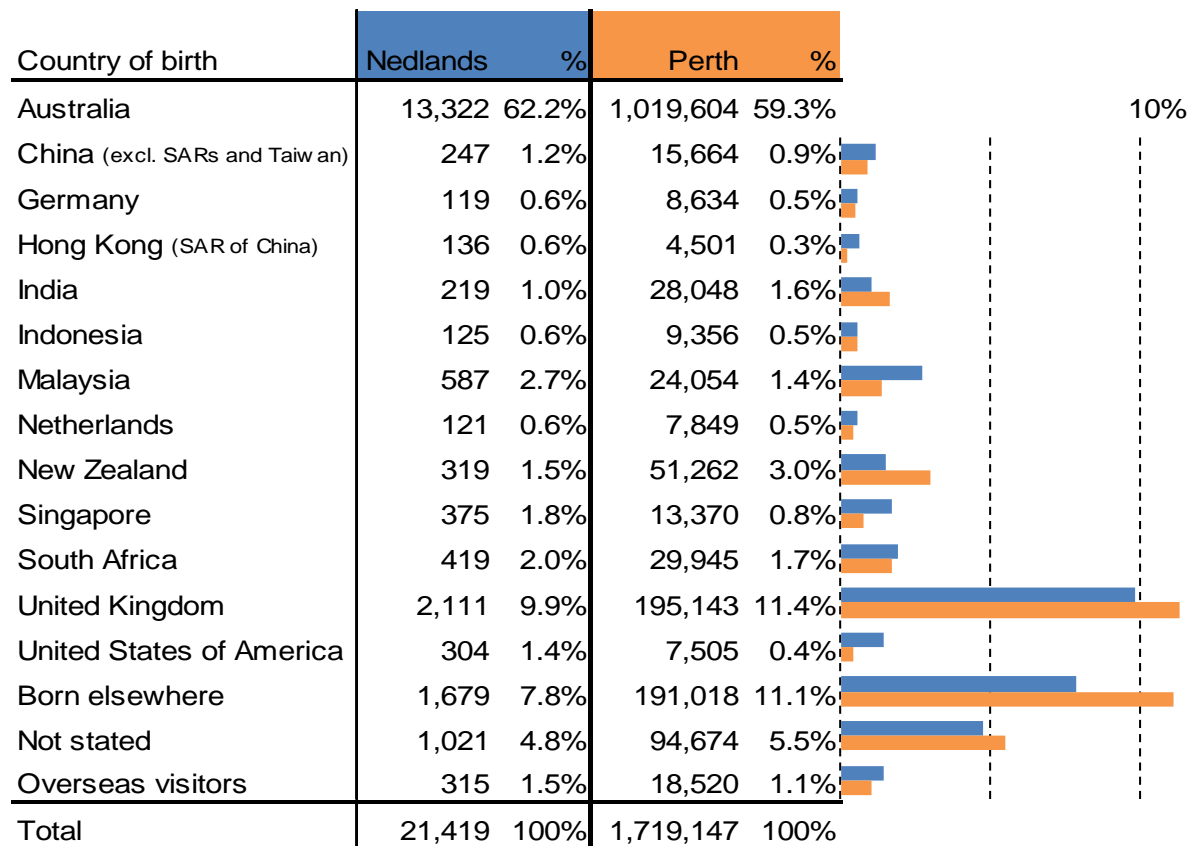


Figure 4 Country of Birth 2011, City of Nedlands and Greater Perth⁴

Points of note are:

- Australia and the United Kingdom clearly dominate as the birthplace in both Nedlands and Greater Perth.
- Nedlands has a relatively higher proportion of its population born in:
 - Australia
 - Malaysia
 - Singapore
 - USA
- Although most residents (59%) were born in Australia, Greater Perth had relatively higher proportion of its population born in:
 - India
 - New Zealand
 - United Kingdom

The Nedlands population is not significantly multinational, though it does exhibit diversity and is on a par with Greater Perth. 72% of the population was born in Australia or the United Kingdom, however, the birthplace of the remaining 28% is

⁴ This table includes as “born elsewhere” all countries with a representation in Nedlands LGA of 0.5% or less. In the interests of readability the chart associated with the table excludes Australia.

spread over a very long list of other countries. This is not dissimilar to Greater Perth, where 71% of the population was born in Australia or the United Kingdom and 29% were born in other countries.

9.1.3 Religious Affiliation

Religious affiliation is also a potential indicator of ethnic diversity. Figure 5 shows the trend in religious affiliation within Nedlands between 2011 and 2011. This very closely reflects the situation in Greater Perth (see Figure 6).

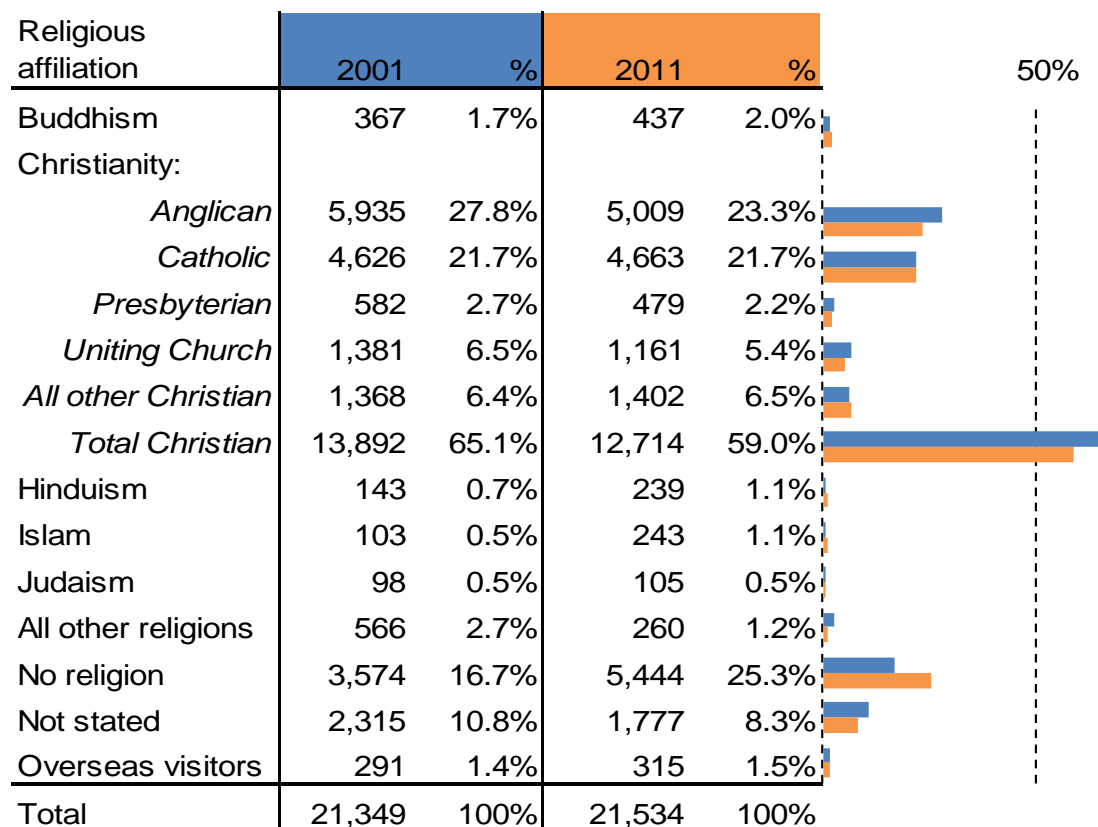


Figure 5 City of Nedlands Religious Affiliation 2001 and 2011, City of Nedlands

Religious affiliation	Nedlands		Perth		50%
		%		%	
Buddhism	437	2.0%	42,687	2.5%	
Christianity:					
<i>Anglican</i>	5,009	23.3%	314,330	18.2%	
<i>Catholic</i>	4,663	21.7%	418,182	24.3%	
<i>Presbyterian</i>	479	2.2%	38,222	2.2%	
<i>Uniting Church</i>	1,161	5.4%	51,864	3.0%	
<i>All other Christian</i>	1,402	6.5%	174,734	10.1%	
<i>Total Christian</i>	12,714	59.0%	997,332	57.9%	
Hinduism	239	1.1%	19,786	1.1%	
Islam	243	1.1%	36,348	2.1%	
Judaism	105	0.5%	5,583	0.3%	
All other religions	260	1.2%	28,545	1.7%	
No religion	5,444	25.3%	428,778	24.9%	
Not stated	1,777	8.3%	145,873	8.5%	
Overseas visitors	315	1.5%	18,520	1.1%	
Total persons	21,534	100%	1,723,452	100%	

Figure 6 Religious Affiliation 2011, City of Nedlands and Greater Perth

Points to note are:

- There is a high proportion of Christian religious affiliation in both Nedlands and Greater Perth.
- The fairly significant proportion of people reporting 'No Religion' and this has increased from 2001 compared to 2011.

The moderate cultural diversity displayed in Figure 4 'Country of Birth' does not extend to religious affiliation as the various denominations of Christianity predominate over other religions. However, those reporting no religious affiliation are a significant (25%) section of the population, both in Nedlands and Greater Perth.

9.1.4 Dwelling Types⁵

The housing characteristics of Nedlands has remained fairly static throughout the 2001-2011 decade (see Figure 7):

Dwelling types	2001		2011		
		%		%	
Separate house	6,014	82.2%	6,147	84.5%	
Semi-detached, row, townhouse	552	7.5%	640	8.8%	
Flat, unit or apartment:	726	9.9%	479	6.6%	
Other dwelling	8	0.1%	6	0.1%	
Dwelling structure not stated	19	0.3%	0	0.0%	
Total	7,319	100%	7,272	100%	

Figure 7 Types of Private Dwellings 2001 and 2011, City of Nedlands⁶

Points to note are:

- In 2011 there were slightly more separate houses.
- In 2011 there were slightly more semi-detached/townhouses.
- These gains were offset by a reasonably significant decline in the number flats/units/apartments.

The proportion of separate houses increased from 82% of total housing stock in 2001 to 85% in 2011. This was due not only to an increase in the number of single houses, but more significantly to an actual decrease in the number of flats/units and apartments.

In proportional terms, Nedlands housing profile is much the same as that for Greater Perth, albeit there are some differences as outlined in Figure 8.

Dwelling types	Nedlands		Perth		
		%		%	
Separate house	6,147	84.5%	492,962	78.6%	
Semi-detached, row, townhouse	640	8.8%	74,518	11.9%	
Flat, unit or apartment:	479	6.6%	56,753	9.1%	
Other dwelling	6	0.1%	2,585	0.4%	
Dwelling structure not stated	0	0.0%	276	0.0%	
Total	7,272	100%	627,094	100%	

Figure 8 Types of Private Dwellings 2011, City of Nedlands and Greater Perth⁷

Points to note are:

- Separate houses heavily predominate, even more so in Nedlands than in Greater Perth.

⁵ Dwelling type is derived from assessment by the Census Collector who records the type of dwelling. Further detail may be accessed in the Census Dictionary abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter9502011

⁶ Occupied dwellings only.

⁷ Occupied dwellings only.

- There is a lower proportion of townhouse and unit/apartment accommodation in Nedlands, with both these housing types combined accounting for 15.4% of Nedlands housing stock, compared to 21% in Greater Perth.

It is noteworthy that this percentage for Greater Perth was 20% in 2001 (not shown), indicating little progress has been made at the regional level, in the planned transitioning away from single houses towards medium and higher density residential development.

The above data shows that most of the houses in Nedlands are separate houses, which indicates that housing diversity throughout the City is relatively low.

9.1.5 Dwelling Occupancy

For the purposes of discussing dwelling occupancy, 'Separate House' (Sep. Hse) is compared to 'Other', with 'Other' encompassing all dwelling types that are not a separate house.

It is interesting to consider the occupancy rates of the existing housing stock (Figure 9).

No. of Residents	2001				2011			
	Sep.Hse	%	Other	%	Sep.Hse	Prop.	Other	%
1	960	16%	794	64%	889	15%	537	51%
2	1,704	29%	342	27%	1,769	30%	317	30%
3	931	16%	74	6%	1,017	17%	121	11%
4	1,366	23%	33	3%	1,419	24%	58	5%
5	661	11%	7	1%	671	11%	20	2%
6+	203	3%	-	0%	198	3%	6	1%
Total	5,825	100%	1,250	100%	5,963	100%	1,059	100%

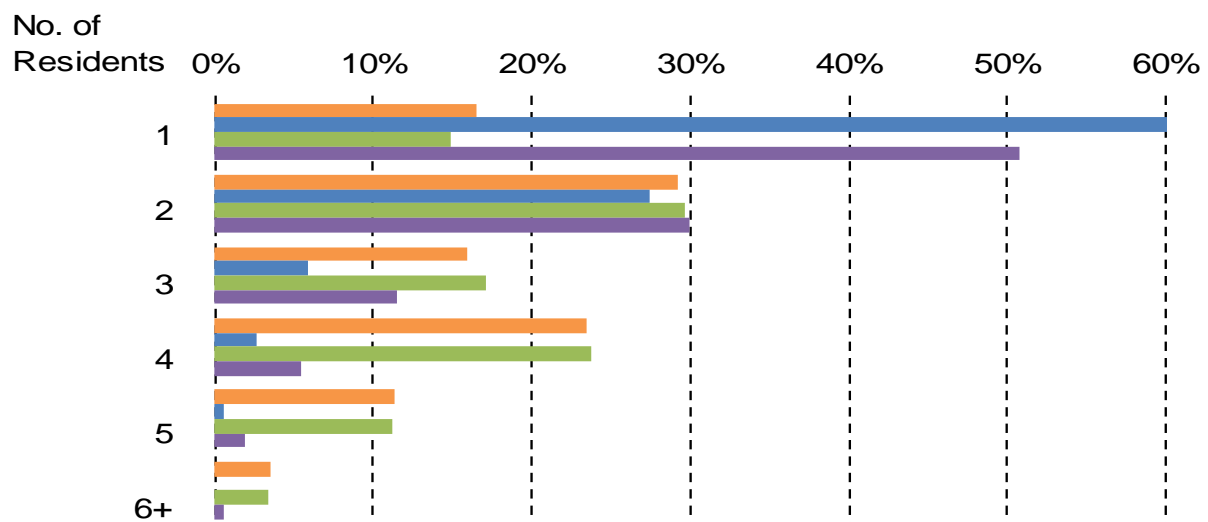


Figure 9 Residents in Occupied Private Dwellings 2001 and 2011, City of Nedlands

Table 2 Residents in Occupied Private Dwellings 2001 and 2011, City of Nedlands

No. of Residents	2001						2011					
	Sep.Hse	Pers	Other	Pers	Total Dw	Pers	Sep.Hse	Pers	Other	Pers	Total Dw	Pers
1	960	960	794	794	1,754	1,754	889	889	537	537	1,426	1,426
2	1,704	3,408	342	684	2,046	4,092	1,769	3,538	317	634	2,086	4,172
3	931	2,793	74	222	1,005	3,015	1,017	3,051	121	363	1,138	3,414
4	1,366	5,464	33	132	1,399	5,596	1,419	5,676	58	232	1,477	5,908
5	661	3,305	7	35	668	3,340	671	3,355	20	100	691	3,455
6	203	1,218	-	-	203	1,218	198	1,188	6	36	204	1,224
Total	5,825	17,148	1,250	1,867	7,075	19,015	5,963	17,697	1,059	1,902	7,022	19,599
<i>ppd</i>		2.94		1.49		2.69		2.97		1.80		2.79

Points to note are:

- 82% of dwellings were separate houses in 2001, which increased to 85% by 2011.
- The proportion of separate houses occupied by the various numbers of residents has not changed much between 2001 and 2011.
- There has been a reduction in the number of total dwellings accommodating a single-occupant from a total of 1,754 in 2001 to 1,426 in 2011.
- However, there is only a slight reduction the number of separate houses accommodating a single-occupant between 2001 and 2011. So although many single occupants still favour accommodation other than single houses, in 2001 some 55% of single-occupant dwellings were separate houses, with this proportion increasing to 62% by 2011.
- Between 2001 and 2011 the occupancy ratio⁸ (average persons per dwelling) has increased slightly, with the main increase being in dwellings other than single housing. This is a positive trend as it suggests increasing efficiency in non-single houses in terms of accommodating population.

Figure 10 presents a 2011 comparison between Nedlands dwelling occupancy compared to Greater Perth.

⁸ The occupancy ratio (shown in tables as 'ppd'), approximates the average number of persons per occupied dwelling.

No. of Residents	City of Nedlands 2011				Greater Perth 2011			
	Sep.Hse	%	Other	%	Sep.Hse	%	Other	%
1	889	15%	537	51%	86,359	18%	61,655	46%
2	1,769	30%	317	30%	166,478	34%	46,979	35%
3	1,017	17%	121	11%	87,643	18%	14,747	11%
4	1,419	24%	58	5%	95,723	19%	7,547	6%
5	671	11%	20	2%	39,235	8%	2,312	2%
6+	198	3%	6	1%	17,524	4%	892	1%
Total	5,963	100%	1,059	100%	492,962	100%	134,132	100%

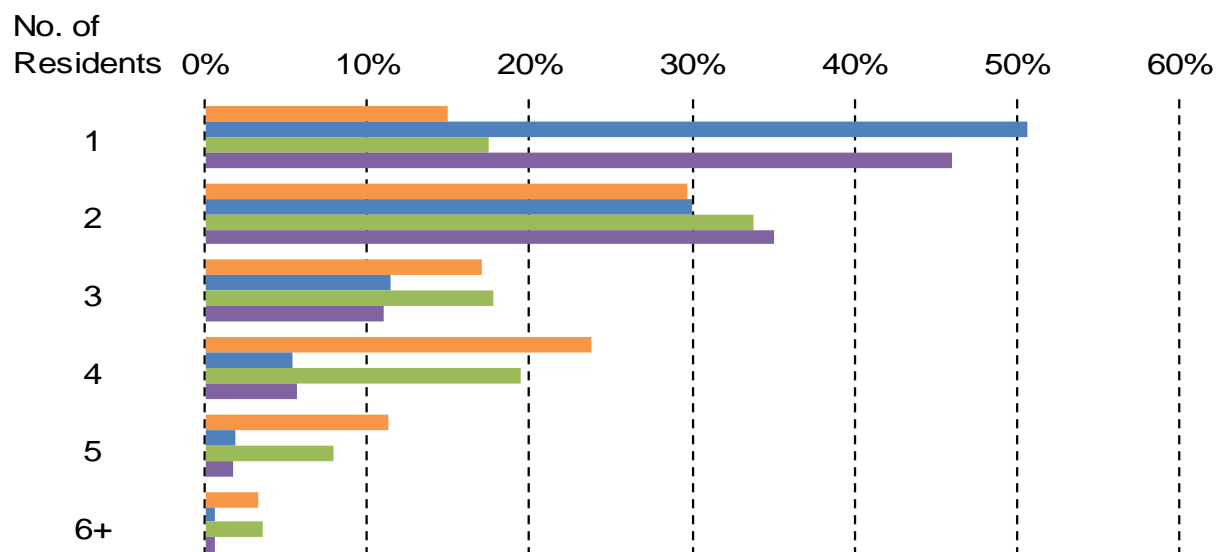


Figure 10 Residents in Occupied Private Dwellings 2011, City of Nedlands and Greater Perth

The proportional differences between Nedlands and Greater Perth are not substantial, however:

- Separate houses comprised 85% of all occupied dwellings in Nedlands, compared to 79% in Greater Perth.
- Therefore, 'Other' houses (being semi-detached, row, townhouse, flat, units, apartment, other dwelling and a dwelling structure not stated) comprised 21% of all dwellings in Greater Perth compared to 15% in Nedlands being.

This difference is fairly significant given that Nedlands is inner-city while the Greater Perth figure includes vast tracts of single-residential outer suburbia.

- Greater Perth has a higher proportion of separate houses (18%), and a lower proportion of 'Other' houses (46%) accommodating only one resident, compared to Nedlands (15% and 51% respectively).
- Some 81% of 'Other' housing stock in both Nedlands and Greater Perth are accommodating 1 or 2 residents.
- Nedlands has a higher proportion of its separate houses accommodating 4 and 5 residents (35%) than Greater Perth (27%).

It can be concluded from these figures that, at present, housing supply within the City of Nedlands seems to be trending slightly in the wrong direction.

There are some mismatches between housing types and housing occupancy. In both 2001 and 2011, some 45% of separate houses provided accommodation for only one or two person households.

While low-occupancy single houses are certainly appropriate for young singles or couples prior to family formation, an apartment could well be preferred by confirmed single or older couples if suitable examples were available. The increase in the proportion of one person households occupying separate houses also indicates a desire for individual living options needing to be provided.

9.1.6 Dwelling Tenure

Dwelling tenure data is presented in Figures 11 and 12.

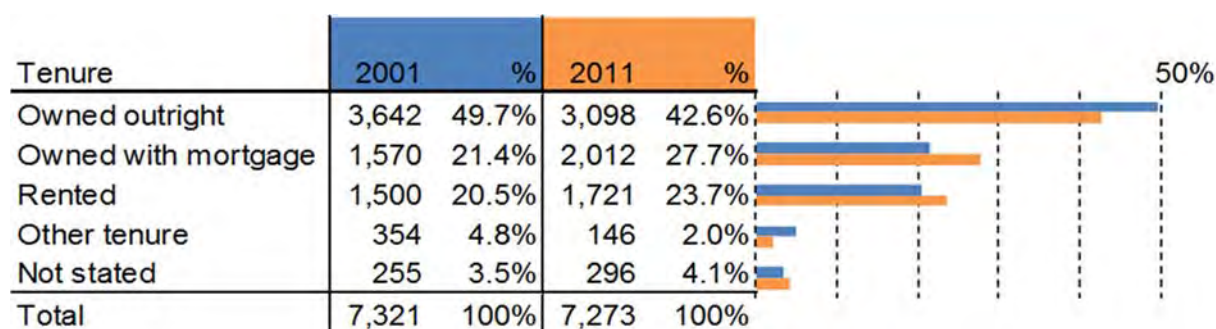


Figure 11 Dwelling Tenure 2001 and 2011, City of Nedlands

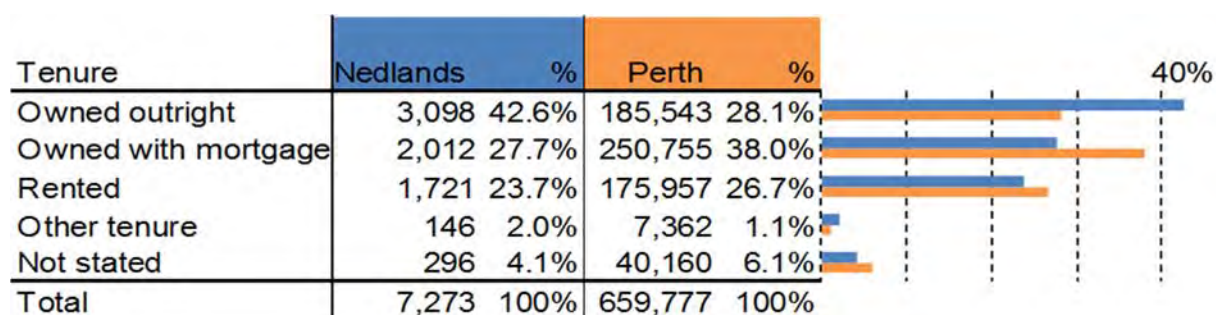


Figure 12 Dwelling Tenure 2011, City of Nedlands and Greater Perth

Figure 11 applies to Nedlands as a whole and indicates the following:

- Between 2001 and 2011 outright home ownership has declined, whereas ownership with a mortgage has increased.
- Over the decade the proportion of dwellings being rented has increased.

Figure 12 applies to Nedlands and Greater Perth in 2011 and indicates the following:

- The proportion of outright home ownership in Nedlands significantly exceeds that for Greater Perth. The reverse is the case in relation to ownership with a mortgage.
- The proportion of dwellings being rented is only slightly higher in Greater Perth.
- This indicates that home ownership is high with most housing stock in Nedlands either owned outright (a relatively significant 43%) or owned with a mortgage (28%), with 24% being rented.

9.1.7 Projected Population and Dwelling Units

As indicated in the sections above, population and dwelling units in Nedlands has been mostly static over the decade 2001 to 2011. There is every reason to believe that this situation has not changed a great deal since 2011 and at present, there appears to be little natural impetus for it to do so.

Therefore, population and dwelling projections based on current trends would indicate an expectation of very slow incremental growth in both population and dwelling stock well into the future. This scenario is more or less what is depicted in the mid-line Band C of the current *WA Tomorrow* population projections for the City of Nedlands (Figure 13).

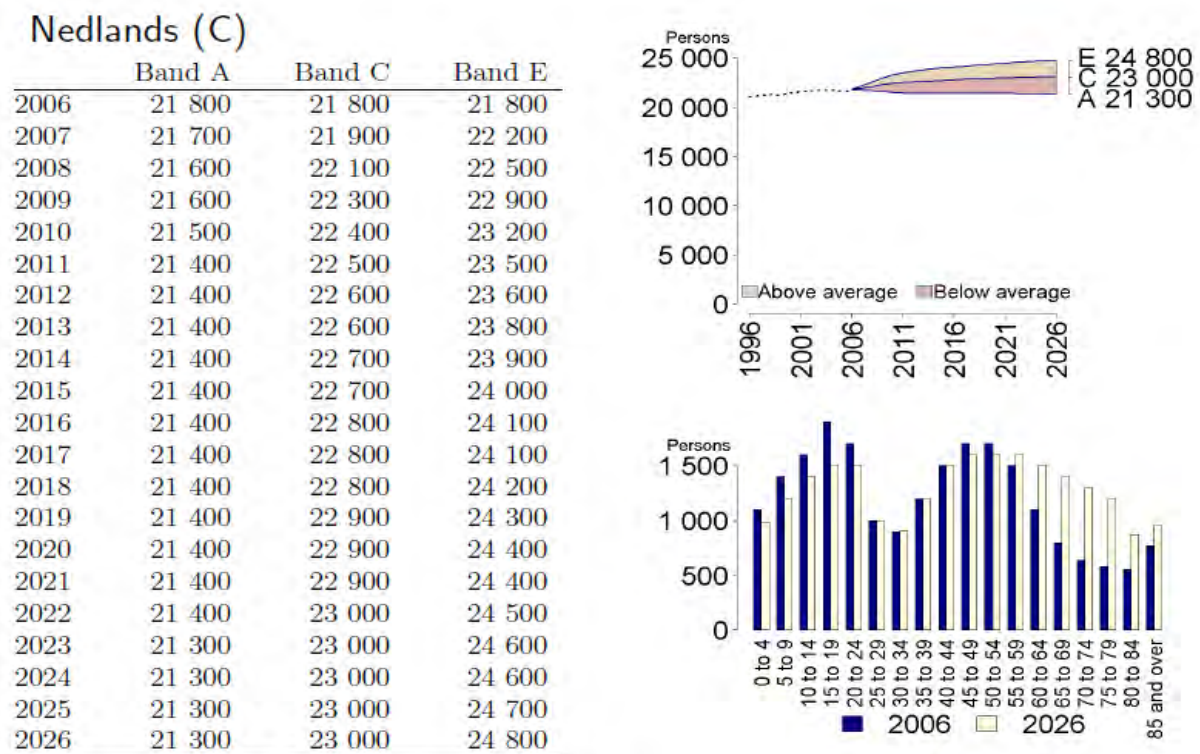


Figure 13 Population Forecast for City of Nedlands, 2006 to 2026⁹

These projections may be regarded as ‘business as usual’ projections. However, for current planning purposes such projections are not appropriate because, there is considerable pressure by the WAPC on all local governments to meet urban infill housing targets in order to ensure that the Perth and Peel region as a whole develops more sustainably into the future.

The current housing targets set by the WAPC for the City of Nedlands are:

- **The 2031 Target** - an additional 2,540 dwelling units to be developed by 2031 (*Report Card 2013*)
- **The 2050 Target** - a further 1,860 additional dwellings to be developed between 2031 and 2050 to reach an overall target of 4,400 additional dwellings by 2050 (*Perth & Peel @ 3.5million*)

⁹ Extract from *Western Australia Tomorrow*, WAPC, 2012.

Given current actual trends, for the purposes of the strategy, the WAPC housing targets may reasonably be regarded as the estimated demand for future additional housing in Nedlands.

As a comparison with the existing trends, the projections presented in Figure 14 comprise two scenarios:

- A continuation of the 'business as usual' scenario pertaining between 2001 and 2011, which is reflected in *WA Tomorrow*, and
- The WAPC *Directions 2031* (Report Card 2013) and *Perth and Peel @ 3.5million* housing targets. Dwellings and population estimates reflecting the housing targets have been projected in five-yearly increments to 2036.

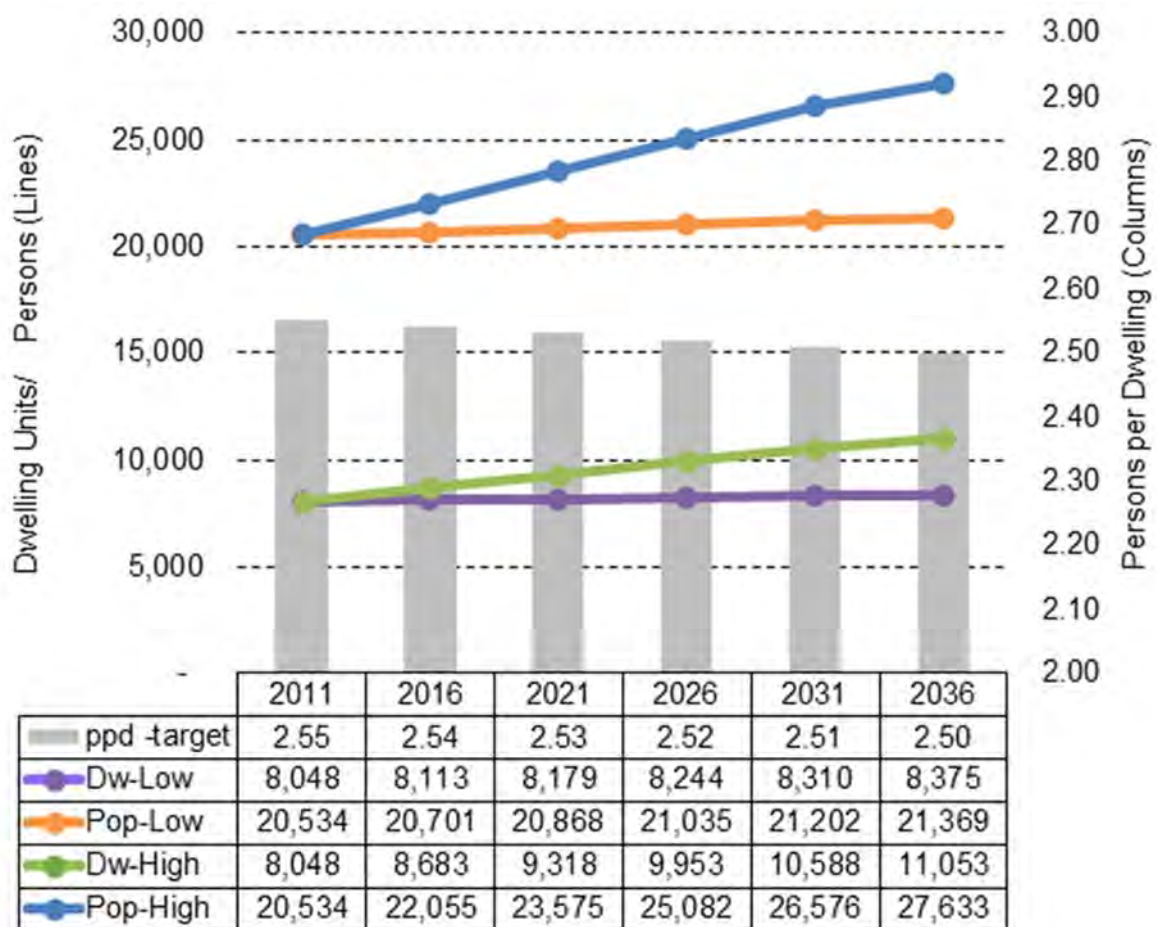


Figure 14 Population Scenario Projections 2011 to 2036, City of Nedlands

The following assumptions are incorporated into the Figure 14 projections:

- As *Directions 2031* was released in 2010, the housing targets projection is assumed to start from the 2011 census year.
- The low population figures are the *WA Tomorrow* projection (Band C), however, they start with the actual 2011 population, not the previously projected *WA Tomorrow* 2011 figure.

- The low dwelling projections are based on the low population projection, with the 2011 occupancy ratio of 2.55 persons per dwelling assumed to remain constant¹⁰.
- The high dwellings projection to 2031 is based on the WAPC's 2031 housing target from Report Card 2013; and from 2031 - 2050 on the WAPC's housing target from *Perth & Peel @ 3.5million*.
- The high population projection assumes that occupancy ratios will reduce slightly over the planning period from 2.55 persons per dwelling to 2.50 persons per dwelling, reflecting the assumption that the majority of new housing intended to meet the required housing targets will be medium or high density housing.

9.1.8 Land Requirements

Acknowledging the growing population and demand for dwellings, a 'business as usual' approach will not satisfy housing requirements into the future.

One solution to meet the housing targets is to allow general infill throughout the City of Nedlands.

Marginally increasing residential densities will result in a greater number of dwellings but in itself is unlikely to be able to satisfy the population's growth or the requirement for genuinely diverse housing. A modest but widespread increase in residential densities also brings the distinct risk that the valuable existing residential character of the City's established suburban areas will be permanently changed.

A more substantial increase in allowable residential densities is likely to facilitate increased population growth and the development of apartments and townhouses. The undesirable flow on effect however, would be the demolition of high quality houses to make way for multiple or grouped dwelling developments in areas that do not necessarily have the capacity or amenity to cater for an increased population density. A significant, widespread increase in residential densities also brings the risk that the valuable existing residential character will be permanently changed. To this end, general infill throughout the City cannot reasonably be supported or pursued.

To assist in determining a better approach to providing housing diversity some land requirement calculations have been completed. The approximate area of land required to accommodate the housing targets is indicated in the following tables. There is any number of possible combinations of the various housing types that may be developed over time and, although those selected for illustration in the following tables are considered to represent a reasonable split for illustrative purposes, they should not be regarded as firm estimates.

¹⁰ Given the long term nature of this planning, the occupancy ratios used in the modelling relate to the total number of dwellings, rather than an estimate of occupied dwellings.

The 2031 Target

The following two tables apply to the 2031 target.

Table 3 Additional Separate Houses 2011-2031

Development Component	Assumed No. Dwelling Units
Residential Units (R30)	540
Net Residential Land Area (ha)	16.20
Subdivisional Roads (ha)*	6.30
Public Open Space (ha)**	2.50
Gross Residential Land Area (ha)***	25.00

NOTES:

* Assumes 28% of net subdivisible area used for local roads

** 10% of gross residential land area

*** Excludes all non-residential land uses (shops, schools, etc)

Table 4 Additional Group and Multiple Dwellings 2011-2031

Housing Type			RCode				
S-D/ Row/ Terrace	Assumed Total Units	700	<i>R30</i>	<i>R35</i>	<i>R40</i>	<i>R60</i>	<i>R80</i>
	Avg Site Area/ Unit		300	260	220	150	120
	Total Site Area (ha)		21	18	15	10	8
Flat/ Unit/ Apartment	Assumed Total Units	1,300	<i>R40</i>	<i>R60</i>	<i>R80</i>	<i>R100</i>	<i>R160</i>
	Avg Site Area/ Unit		220	150	120	120	120
	Total Site Area (ha)		29	20	16	16	16
All Medium/ High Density	Total Site Area (ha)		50	38	31	26	24

Based on the various assumptions, the total land area required to satisfy the 2031 target ranges between 49 and 75 hectares.

The 2050 Target

The following two tables apply to the 2050 target, between 2031 and 2050:

Table 5 Additional Separate Houses 2031-2050

Development Component	Assumed No. Dwelling Units
Residential Units (R30)	100
Net Residential Land Area (ha)	3.00
Subdivisional Roads (ha)*	1.17
Public Open Space (ha)**	0.46
Gross Residential Land Area (ha)***	4.63

NOTES:

* Assumes 28% of net subdivisible area used for local roads

** 10% of gross residential land area

*** Excludes all non-residential land uses (shops, schools, etc)

Table 6 Additional Group and Multiple Dwellings 2031-2050

Housing Type			Rcode				
S-D/ Row/ Terrace	Assumed Total Units	250	<i>R30</i>	<i>R35</i>	<i>R40</i>	<i>R60</i>	<i>R80</i>
	Avg Site Area/ Unit		300	260	220	150	120
	Total Site Area (ha)		8	7	6	4	3
Flat/ Unit/ Apartment	Assumed Total Units	1,500	<i>R40</i>	<i>R60</i>	<i>R80</i>	<i>R100</i>	<i>R160</i>
	Avg Site Area/ Unit		220	150	120	120	120
	Total Site Area (ha)		33	30	18	18	18
All Medium/ High Density	Total Site Area (ha)		41	37	24	22	21

Based on the various assumptions, the total land area required to satisfy the 2050 target ranges between 25 hectares and 46 hectares. Total land area, comprising both the 2031 and 2050 targets, therefore ranges between 74 and 121 hectares.

In theory, some accounting might be considered necessary in relation to any existing houses that were redeveloped to make way for new ones, although the practicability of this is questionable.

Furthermore, much of the medium and higher density housing requirement could be incorporated into mixed-use developments comprising significant amounts of commercial floorspace, so additional land over and above that needed for the commercial component may not be required in many circumstances. These points serve to illustrate the very theoretical and indicative nature of the land requirements presented in the above tables.

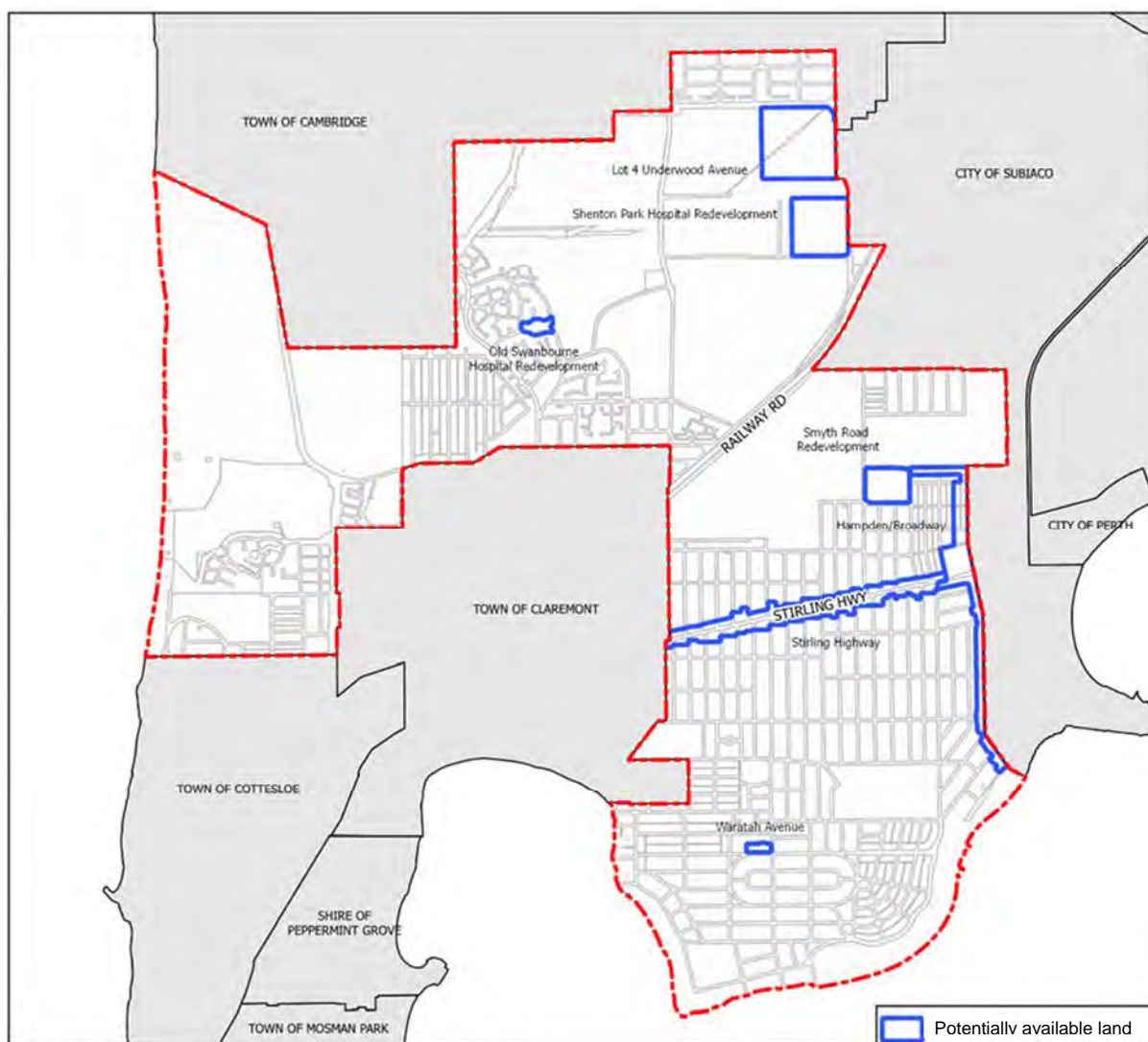
9.1.9 Targeted Infill

Following from the above chapter, the question arises as to where the housing targets can be realised within the City of Nedlands. As the City contains predominantly older established suburbs there are few areas which present development potential for single, grouped or multiple dwellings.

It is likely that any significant number of single houses would be built on larger greenfield sites or brownfields sites. Other housing types (townhouses and apartments) could be built in both green/brownfield sites and through redeveloping existing commercial and/or residential areas in selected strategic locations.

In identifying the sites suitable for infill there are many considerations including proximity to transport, access to employment, adjacent land uses, state and local priorities and land tenure.

The areas which the City considers to have reasonable future development potential are illustrated below in Map 4.



Map 4 Potentially Available Land¹¹

Details of the areas identified as potentially available development/redevelopment for the purposes of increasing dwelling numbers are listed in Table 7.

Table 7 Indicative Land Availability

Name	Status	Area (ha)
Stirling Highway (numerous sites)	Developed***	17.70
Hampden/ Broadway (numerous sites)	Developed***	16.90
Regis site Smyth Road	Partially vacant	7.40
Waratah Avenue Neighbourhood Centre	Sites available***	0.72
Shenton Park Hospital redevelopment site	Developed	15.67
Lot 4 Underwood	Vacant, undeveloped	25.05
Old Swanbourne Hospital redevelopment site	Under construction	2.34
Aria Apartments Swanbourne	Under construction	0.70
Total Land Area (ha)		86.48

*** These land areas exclude roads (ie include lot areas only); other areas are defined by the blue boundary lines.

¹¹ Boundaries are indicative only.

Relating the indicative land area requirements needed (Tables 4 and 6) to meet the housing targets discussed previously and the available land estimate presented in Table 7 it can be seen that, in theory, there is sufficient potentially available land to accommodate the housing targets to 2031 (between 49 - 75 hectares required); but potentially not to 2050 (a total of 74 - 121 hectares being required). To meet the 2050 housing targets the City will need to plan to allow for more development/redevelopment areas at higher densities.

In considering these various estimates and potentialities, however, it cannot be stressed too strongly that realisation of the WAPC's housing targets within the intended timeframes within the City of Nedlands context is conditional. It will require sufficient land to become available and sufficient investment and commitment by the development industry needed to bring about a consistent, sustained, development/redevelopment process.

9.2 Economy and Employment

References to 'Nedlands' within this section are to be taken as references to the City of Nedlands.

This section presents some economic and employment data for the City of Nedlands and Perth's western suburbs as a whole. This section should also be considered in conjunction with the following chapter (Retail and Commerce) as they are closely related.

9.2.1 Household Income

Figure 15 illustrates the household income profile for Nedlands in 2011¹².

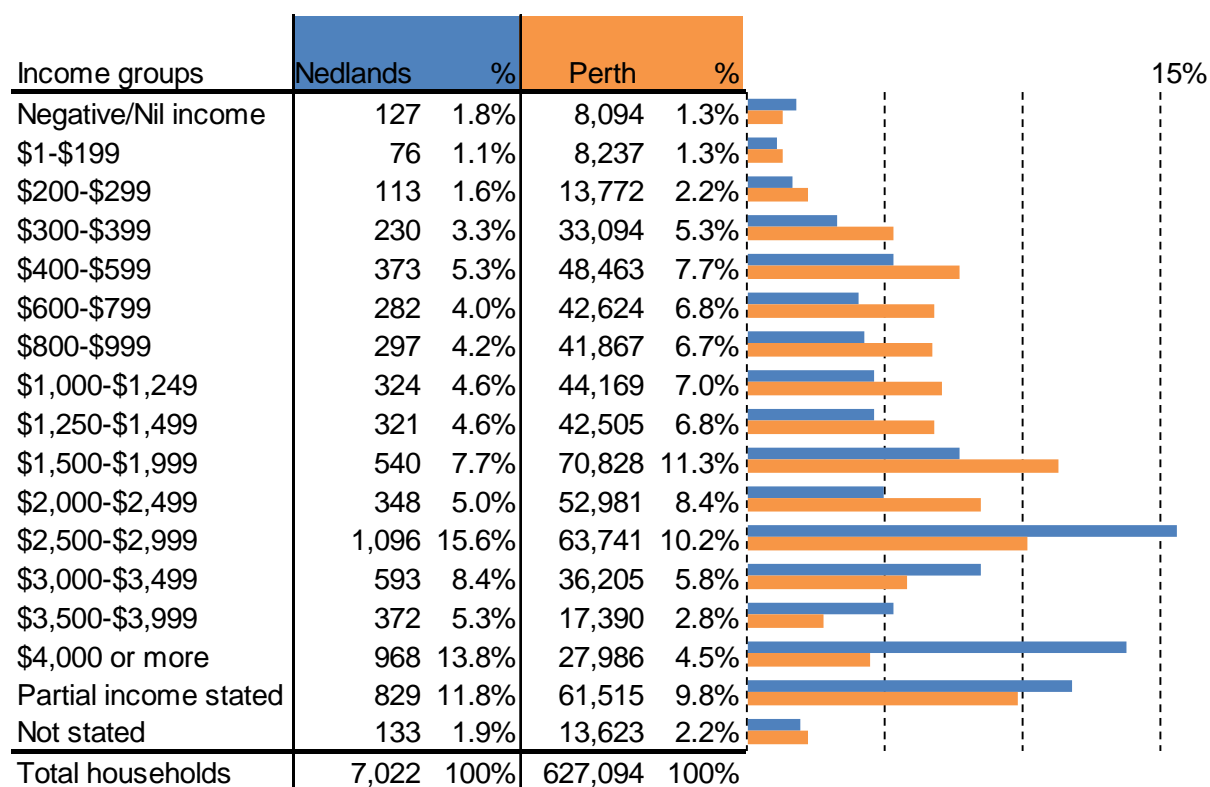


Figure 15 Weekly Household Income 2011, City of Nedlands and Greater Perth

Points of note include:

- Although all income groups are represented, Nedlands has on average a significantly lower proportion of its households within the lower and middle income groups compared to Greater Perth.
- The proportion of households in all income groups below \$2,499 is 43.2%, compared to 64.8% for Greater Perth.
- In the \$2,500 and above income groups the proportions are 43.1% and 23.3% in Greater Perth.
- The difference between Nedlands and Greater Perth is particularly evident in the highest group of all (\$4,000+ per week).

¹² No comparison between census years due to the distorting effects of inflation.

Nedlands is, on average, a wealthy LGA with significantly higher levels of household income than Greater Perth as a whole, and marginally higher levels than the WESROC area.

9.2.2 Motor Vehicles

As an additional indicator of relative economic strength, as well as a factor in transport and sustainability issues, it is interesting to compare Nedlands car ownership profile with the Greater Perth profile (Figure 16).

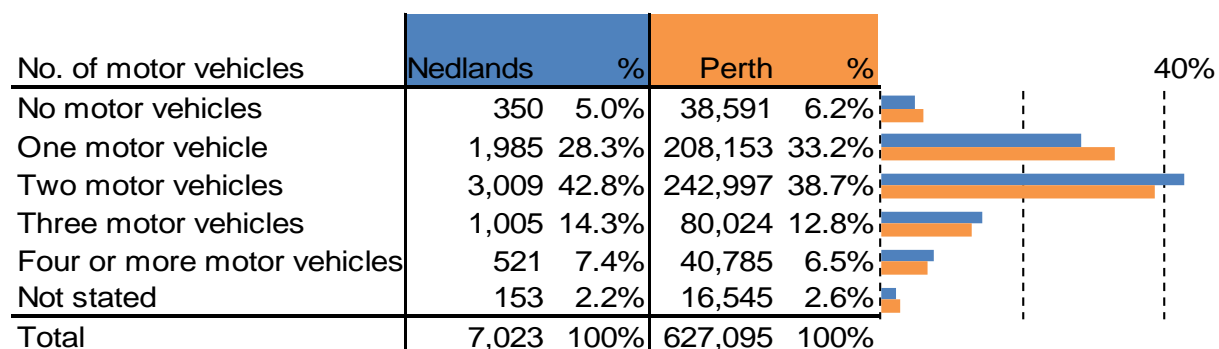


Figure 16 Motor Vehicle Ownership by Dwelling 2011, City of Nedlands and Greater Perth

These figures indicate that, although household income probably has some relationship with motor vehicle ownership, there are clearly other factors at play (for example outer suburban necessity) resulting in Nedlands only slightly exceeding the Greater Perth average for ownership of two motor vehicles or more.

9.2.3 Non-School Qualifications

Data on non-school qualifications in Nedlands in 2011 and 2011 is presented in Figure 17.

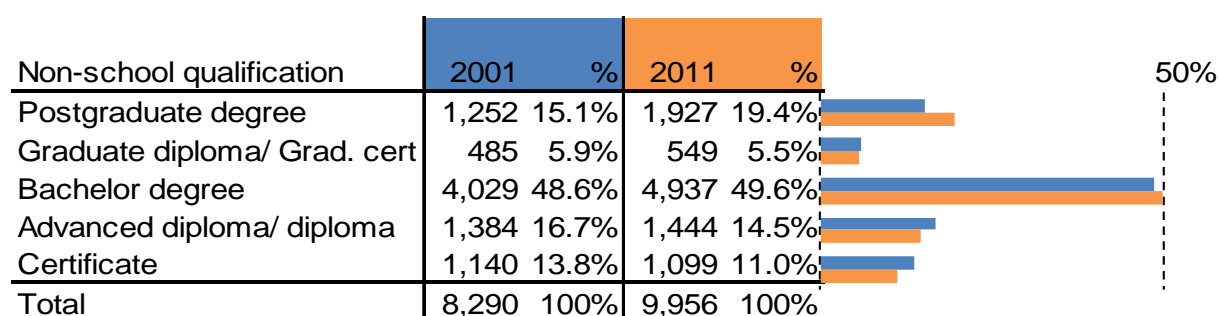


Figure 17 Non-School Qualifications 2001 and 2011, City of Nedlands

It can be seen that the overall standard of non-school education increased over the decade, with the proportion of postgraduate degrees increasing and the proportion of the lesser qualifications decreasing slightly. These changes come off an already very high base as indicated in Figure 18.

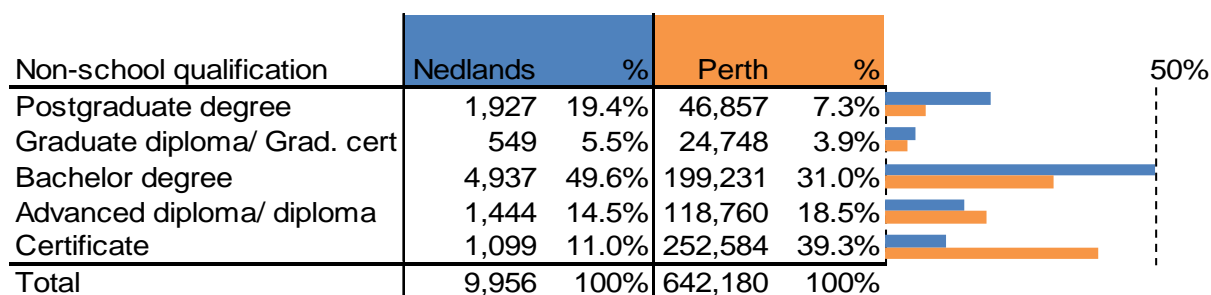


Figure 18 Non-School Qualifications 2011, City of Nedlands and Greater Perth

It is clearly evident from Figure 18 that the average level of qualification in Nedlands is significantly higher than for Greater Perth.

The local community is becoming better educated over time, with both the number and proportion of post-graduate degrees in Nedlands increasing between 2001 and 2011, and significantly exceeding those of Greater Perth. The socio-economic indicators presented above clearly indicate a population that is, on average, highly educated and economically well-off.

9.2.4 Labour Force Participation

Data on Nedlands participation in the labour force in 2001 and 2011 is presented in Figure 19.

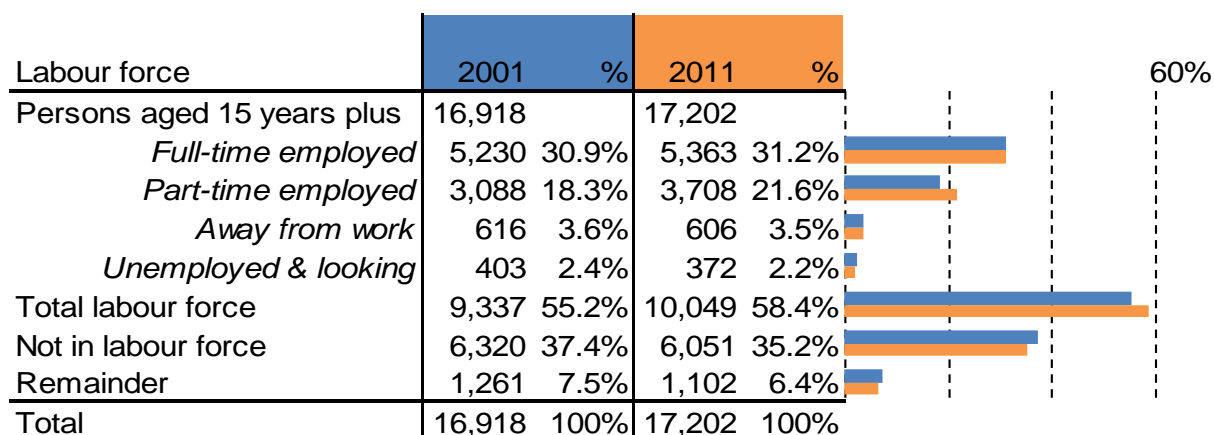


Figure 19 Labour Force 2001 and 2011, City of Nedlands

Points worthy of note in Figure 19 include:

- Full-time employment remained virtually constant during the decade 2001-2011.
- Part-time employment increased fairly significantly and accounted for 33% of the total labour force in 2001. By 2011 it had increased to 37% of the labour force.
- The total labour force therefore increased slightly during the period.

During the decade 2001-2011 part time employment in the Nedlands has increased, while full-time employment has remained steady.

Figure 20 presents a comparison of the Nedlands labour force with Greater Perth in 2011.

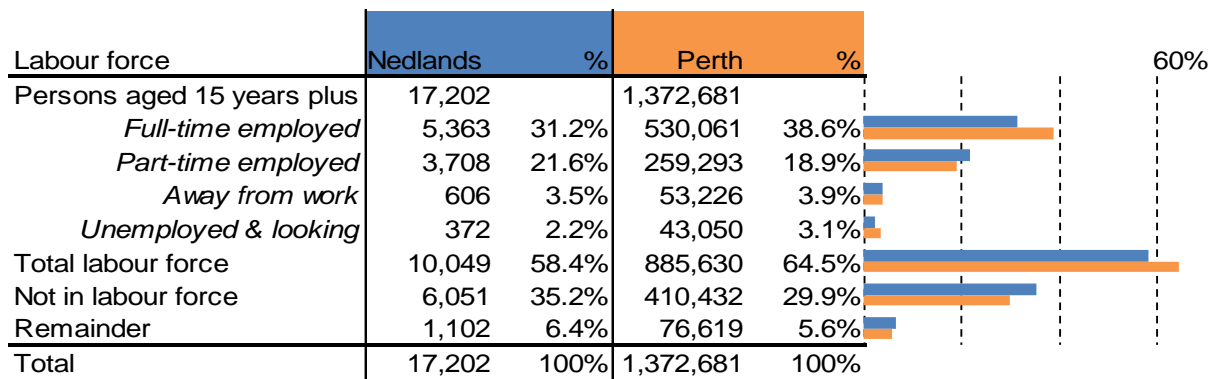


Figure 20 Labour Force 2011, City of Nedlands and Greater Perth

Points worthy of note include:

- Greater Perth has a higher proportion of full-time employment and a slightly lower proportion of part-time employment.
- In Greater Perth, part-time employment accounted for 29% of the total labour force as compared to Nedlands being 37%.

The proportion of full-time employment in Nedlands is lower than for Greater Perth, with the reverse being the case for part-time employment.

9.2.5 Labour Force by Industry

Employment of the Nedlands labour force by industry is illustrated in Figure 21.

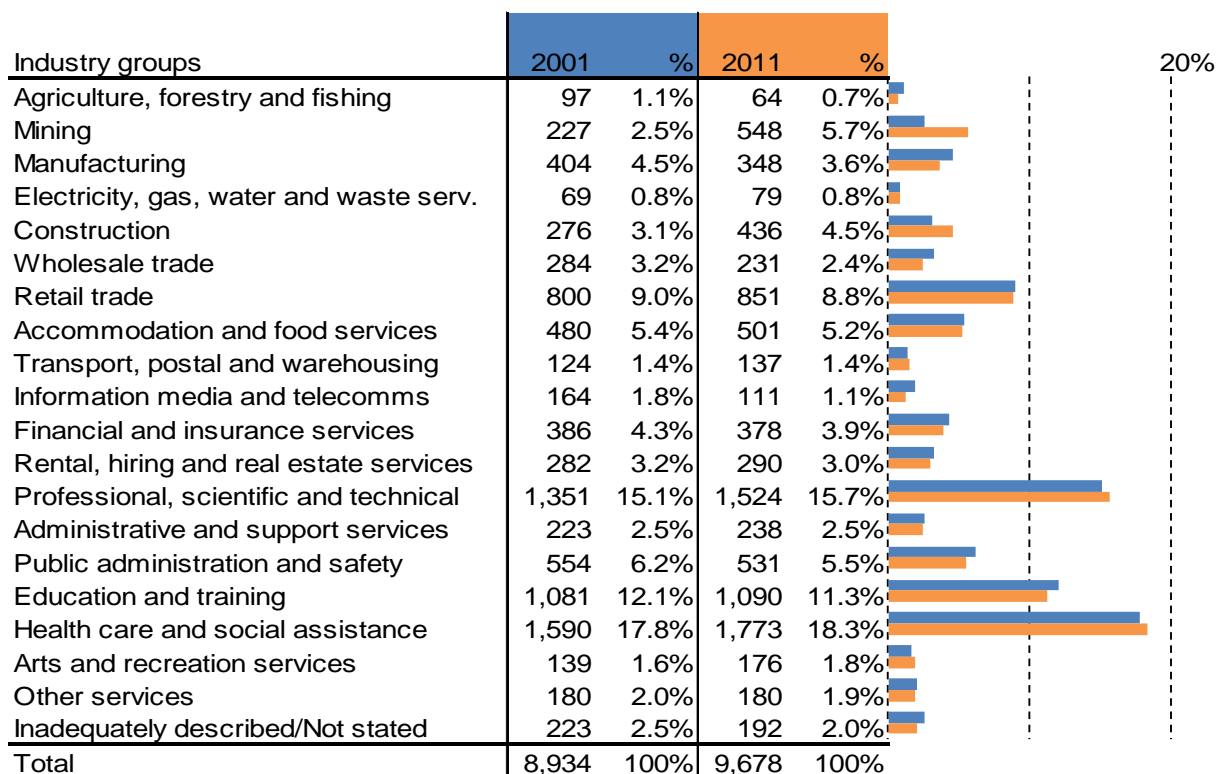


Figure 21 Employment by Industry Group 2001 and 2011, City of Nedlands

Points worthy of note include:

- The industries of most significance to the Nedlands labour force are:

- o Retail trade
- o Professional, scientific and technical industries
- o Education and training
- o Health care and social assistance.
- The proportions of workers in these industries has not changed very much between 2001 and 2011.
- The only industry that has registered a significant change in participation between 2001 and 2011 is Mining, where the relatively low proportion of 2.5% in 2001 more than doubled to 5.7% in 2011.

Employment by industry of the Nedlands labour force compared to Greater Perth in 2011 is illustrated in Figure 22.

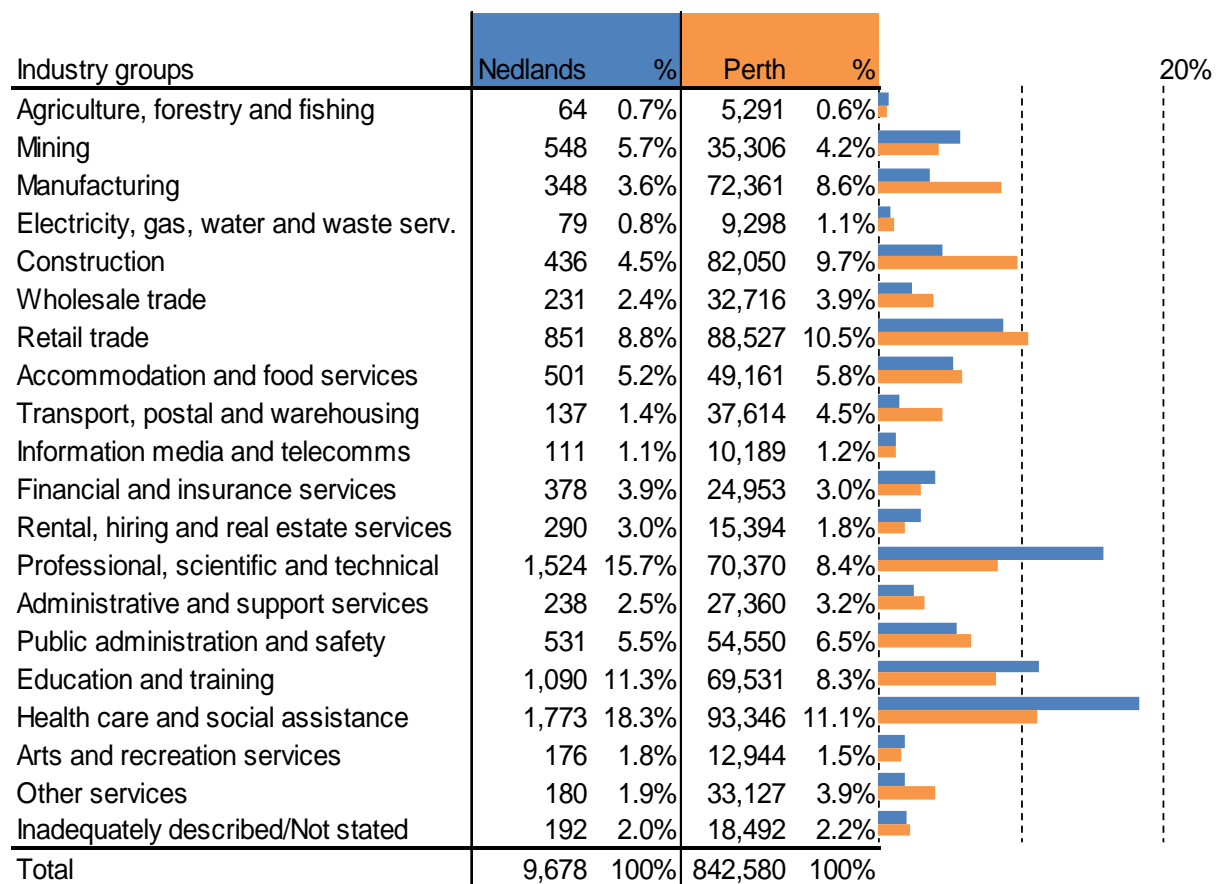


Figure 22 Employment by Industry Group 2011, City of Nedlands and Greater Perth

Points worthy of note include:

- The industry groups in which Greater Perth significantly exceeds Nedlands are:
 - o Manufacturing
 - o Construction
 - o Transport, postal and warehousing
- The industry groups in which Nedlands significantly exceeds Greater Perth are:
 - o Professional, scientific and technical industries
 - o Education and training
 - o Health care and social assistance

- Retail trade is a substantial employer and is almost as well represented in the Nedlands workforce as for Greater Perth.

The types of industries people are employed in are not changing much over time, with Retail, Professional, Education, and Health Care industries continuing to predominate over an extended period, both within Nedlands and when compared to Greater Perth.

9.2.6 Employment by Occupation

Employment by occupation data are presented in Figure 23.

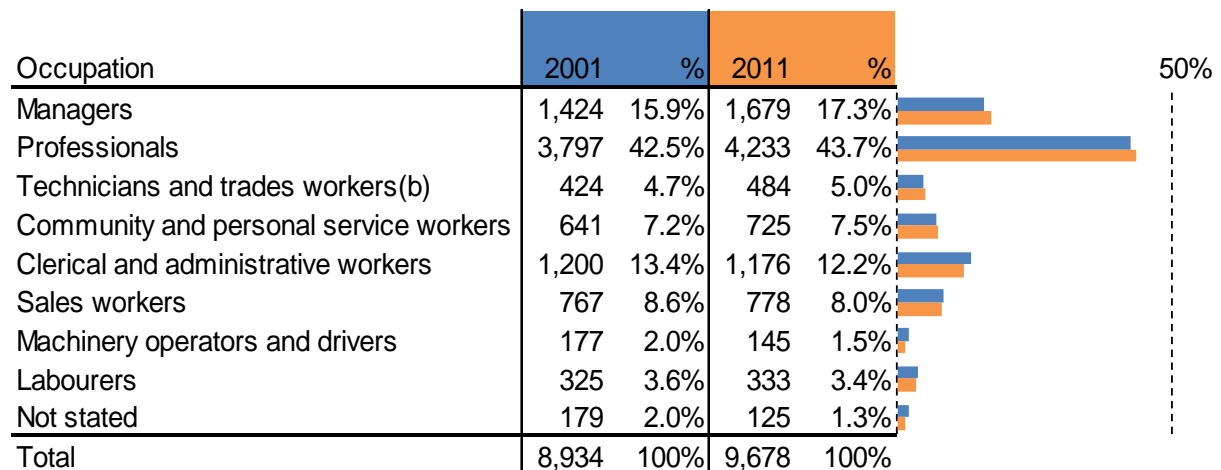


Figure 23 Employment by Occupation 2001 and 2011, City of Nedlands and Greater Perth

It can be seen from Figure 23 that management and professional occupations account for most of the employment in Nedlands (61% in 2011) with clerical and administrative jobs also accounting for a reasonably high proportion. There has been very little change in this profile between 2001 and 2011.

A comparison of the 2011 data with that for Greater Perth is presented in Figure 24.

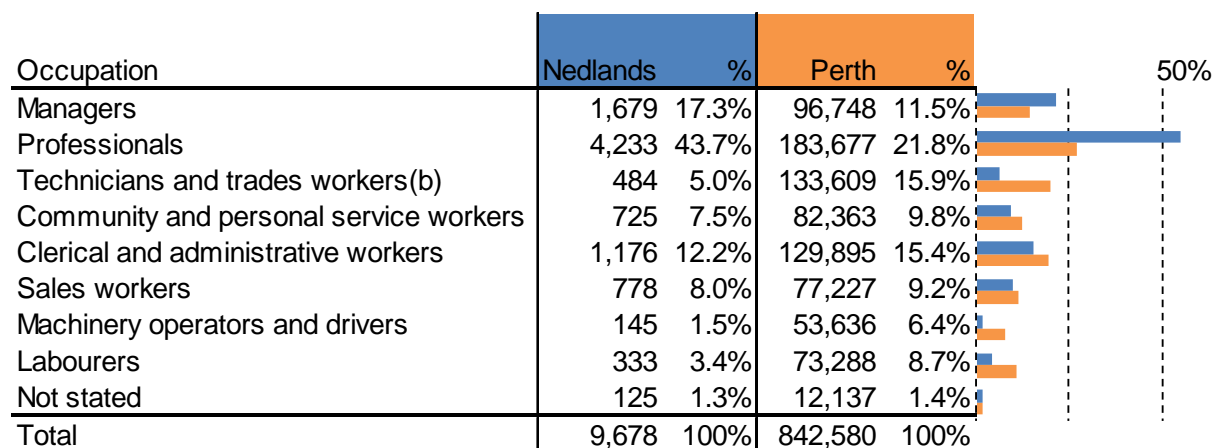


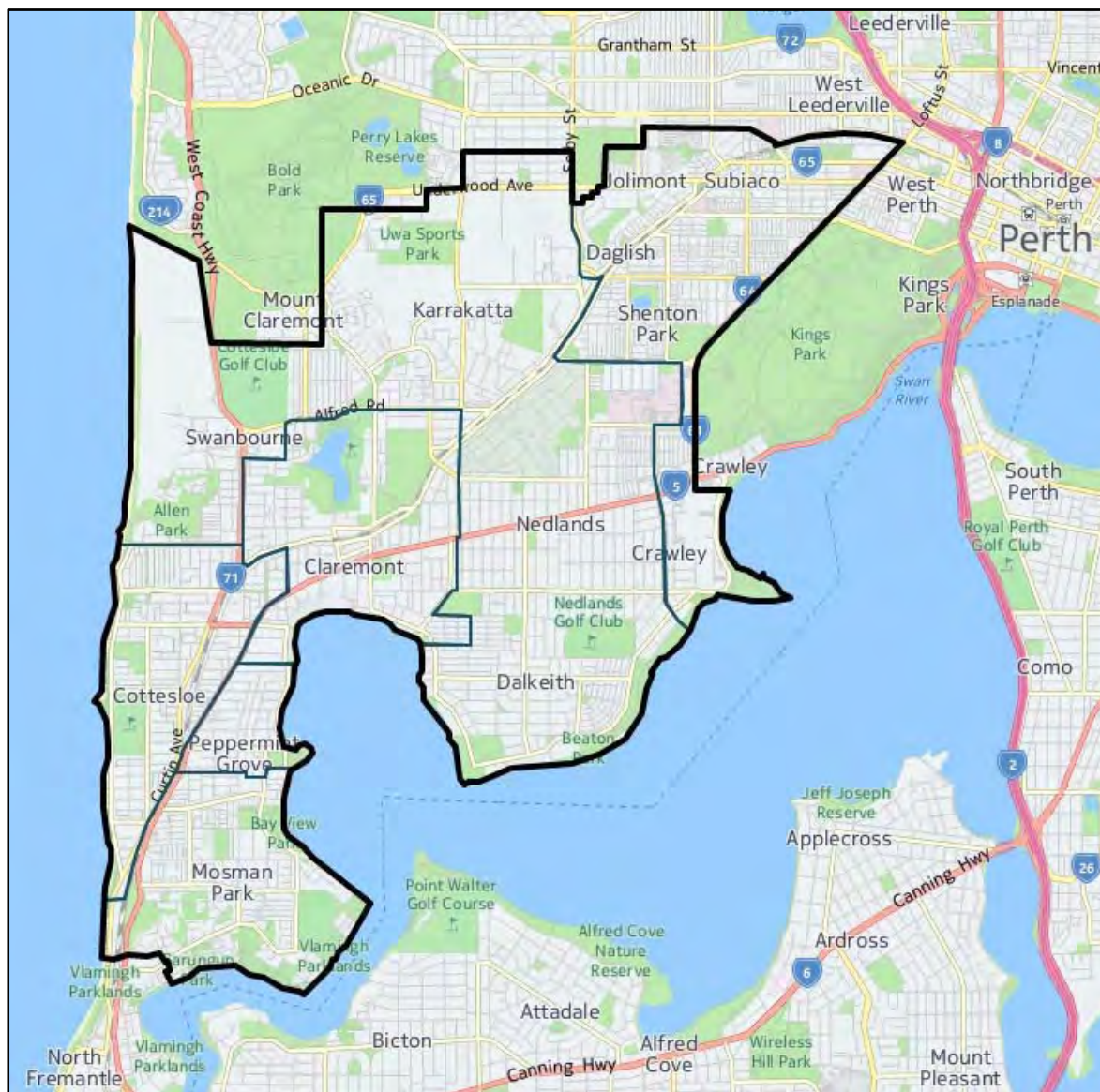
Figure 24 Employment by Occupation 2011, City of Nedlands and Greater Perth

In this figure it can be seen that the Managerial and Professional occupations in Nedlands are the only two categories the proportions of which exceed those for Greater Perth. All other categories are less represented in Nedlands than in Greater Perth.

9.2.7 The Economy and Employment in a wider context

Given the nature of our economy it would be misleading to draw too many conclusions on employment issues in Nedlands independently of its wider western suburbs context, which is the minimum rational geographic context for such consideration. This is due to the obvious economic and social interdependence between the various western suburbs Council's, and between the western suburbs and the nearby Perth CBD.

The interdependence between Nedlands and the surrounding local governments is particularly pronounced due to the absence of a major retail activity centre within Nedlands, as well as its unusual geometric shape and relationship with the neighbouring Town of Claremont and City of Subiaco, both of which contain significant retail activity centres. This wider context is most usefully analysed by reference to the available data compiled by Economy.id for the defined WESROC area (Map 5).



Map 5 WESROC Area¹³

¹³ Economy.id

According to Economy.id the Gross Regional Product (GRP) of the WESROC area was \$10.45 billion in 2014, up 5.5% on the preceding year, which was fairly typical of a significant upwards trend dating back to 2001 (Table 8).

Regarding this table Economy.id explains that:

“Headline Gross Regional Product (GRP) is a measure of size or net wealth generated by the local economy....

Local Industry GRP shows the value of the local economy, generated by the workers within the area regardless of where they live, after taxes and dividends leave the area. It is best thought of as GRP produced by local industries.

Local Residents GRP refers to the economic output of the residents of the area regardless of where they work. It is best thought of as the income received by people in the City. If the Residents GRP is high relative to the Local Industry GRP, this indicates that residents are contributing their economic productivity to other areas (most likely commuting out)....

To understand the relative size of these measures and reasons behind the differences, GRP data should be viewed in conjunction with Employment Capacity and Self-Containment datasets....”

Table 8 WESROC Area GRP Data¹⁴

Year ending June	Headline GRP \$m	% change from previous year	Local industry GRP \$m	Local residents GRP \$m	Local industry to residents ratio
2014	10,450	+5.5	10,274	7,777	1.32
2013	9,904	+6.4	9,578	7,450	1.29
2012	9,310	+8.3	9,285	7,218	1.29
2011	8,599	+3.2	8,692	6,895	1.26
2010	8,336	+0.8	7,997	6,509	1.23
2009	8,273	+3.2	8,312	6,978	1.19
2008	8,015	+3.2	7,565	6,482	1.17
2007	7,769	+7.1	6,882	6,031	1.14
2006	7,252	+6.3	6,326	5,609	1.13
2005	6,824	+0.6	6,059	5,329	1.14
2004	6,786	+3.5	5,841	5,171	1.13
2003	6,557	+7.5	5,506	4,896	1.12
2002	6,101	+5.5	5,491	4,904	1.12
2001	5,785	--	5,378	4,809	1.12

Source: National Institute of Economic and Industry Research (NIEIR) ©2015. Compiled and presented in economy.id by .id, the population experts. Data is based on 2012-13 constant prices for all years. NIEIR data are inflation adjusted each year to allow direct comparison, and new data releases normally adjust previous years' figures to a new base year.

Employment capacity and self-containment will be explored in later sub-sections.

Consideration of the figures in Table 8 indicates the following:

- With a couple of exceptions, Headline GRP has shown a significant increase each year for well over the previous decade.
- Local residents GRP is significantly lower than Local Industry GRP indicating a relatively high degree of employment self-containment. For example, the local industry to residents ratio in 2014 (1.32) is much higher compared to that of an

¹⁴ Economy.id

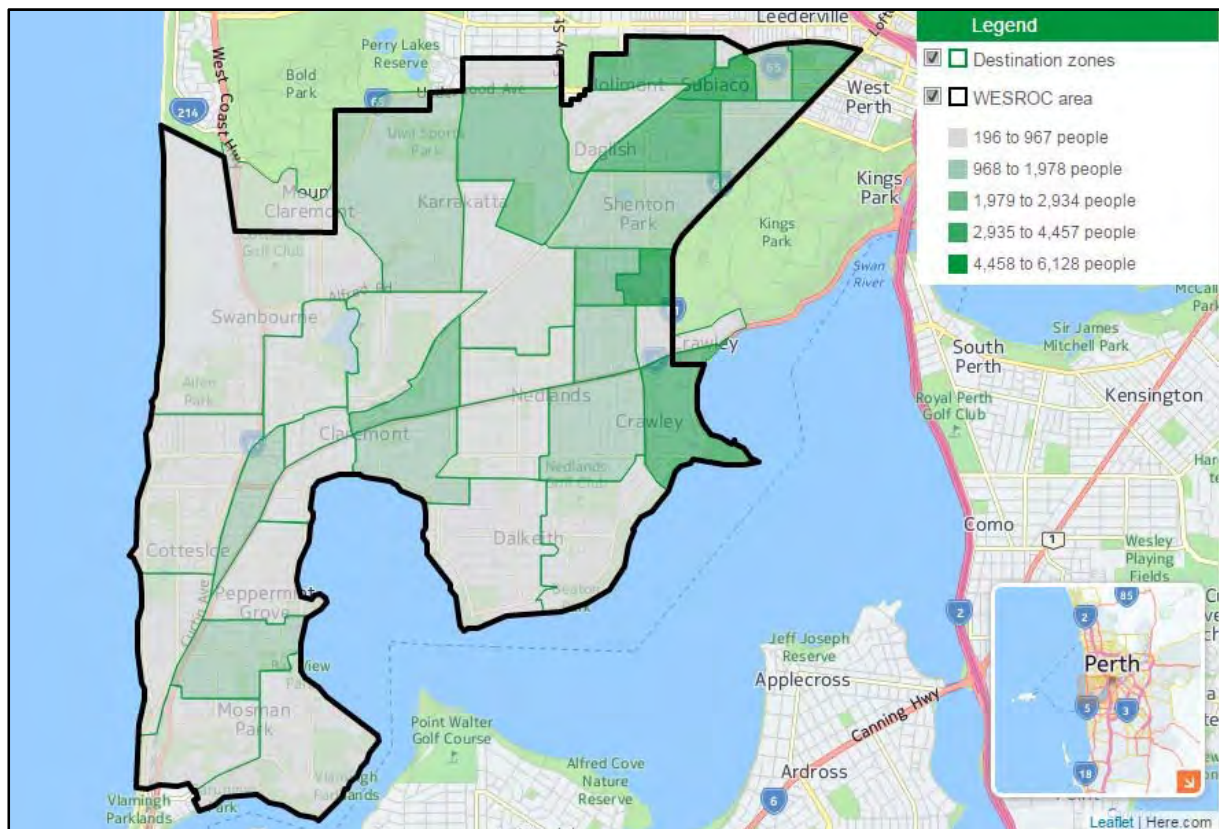
outer local government area (in this case Wanneroo), where the equivalent 2014 ratio was only 0.60.

The escalating Headline GRP is being driven by the steady growth in the number of jobs being created within the WESROC area. In 2001 there were 51,770 jobs located within the area. More than a decade later, by 2014 this number had increased to 75,411 jobs – an increase over the period of 46%. Between 2001 and 2014 the number of employed residents in the WESROC area increased from 32,595 to 38,137 – an increase of 17%. It can therefore be appreciated that, over time, the WESROC area is becoming significantly more important as an employment destination and wealth generator.

These economic factors that pertain to the WESROC area are also reflected in the data for Nedlands as shown in previous sections.

Location of Employment

The concentration of employment throughout the WESROC Area is indicated in Map 6.



Map 6 WESROC Area: Location of Employment¹⁵

As indicated on this map, the main concentrations of employment in the WESROC area are to the east and north, mainly focused on Subiaco, QEII and UWA. There are also lower order concentrations on both sides of Stirling Highway, particularly at Claremont.

¹⁵ Economy.id

In Nedlands, the most significant concentrations are in the diverse and dispersed complexes in Shenton Park, Mt Claremont and in and around the QEII hospital precinct, as well as both sides of Stirling Highway in the vicinity of UWA.

Employment self-sufficiency and self-containment

An important planning objective is to try and reduce the need for lengthy commuting between homes and workplaces. Time and energy wasted in this manner has both economic and environmental negative effects, and is the main cause of traffic congestion.

Employment self-sufficiency and self-containment measure the relative participation and potential participation of a local workforce in locally available jobs, and thus indicate the extent to which the quantity and nature of employment provision in an area might be problematic.

The WAPC and Economy.id definitions of employment self-sufficiency mean different things:

WAPC definition:

The ratio of total jobs available within each sub-region as a proportion of the number of people in the workforce living in that area.

Economy.id definition:

...the proportion of workers in the local area who also live in the Local Government Area or region.

The WAPC definition of employment self-sufficiency is the same as the Economy.id definition of Employment Capacity and is the one that should be used for planning purposes in WA.

Under the WAPC definition, in 2013/14 there were a total of 71,411 jobs in the WESROC Area. There were also a total of 38,137 employed residents of the area. Thus the employment self-sufficiency ratio by this measure is a significant 1.98 jobs to each employed resident.

The WESROC area's level of employment self-sufficiency is very high by Perth metropolitan standards. As a comparison with an outer local government, the equivalent ratio for the City of Wanneroo in 2013/14 was 0.52 jobs to each employed resident.

The industries with the highest levels of employment self-sufficiency in the WESROC area in 2013/14 were:

- Information Media and Telecommunications (4.38)
- Health Care and Social Assistance (3.86)
- Education and Training (2.65)
- Arts and Recreation Services (2.53)

The WAPC and Economy.id definitions of employment self-containment are essentially the same:

WAPC definition:

The percentage of employed residents of a local government area who are also employed within the boundaries of the same local government area.

Economy.id definition:

...the proportion of employed residents who are employed within the boundaries of the Local Government Area or region.

In 2011, there were a total of 31,542 employed residents of the WESROC area. Of these employed residents, 12,331 were employed within the boundaries of the WESROC area. Therefore, the percentage of employment self-containment was $12,331/31,542 = 39.0\%$, which was very close to the 2006 figure of 38.8%.

This level of employment self-containment is also very high by Perth metropolitan standards – probably second only to the City of Perth¹⁶. As a comparison with an outer LGA, the equivalent self-containment percentage in the City of Wanneroo was 23.8% in 2011, up from 23.1% in 2006.

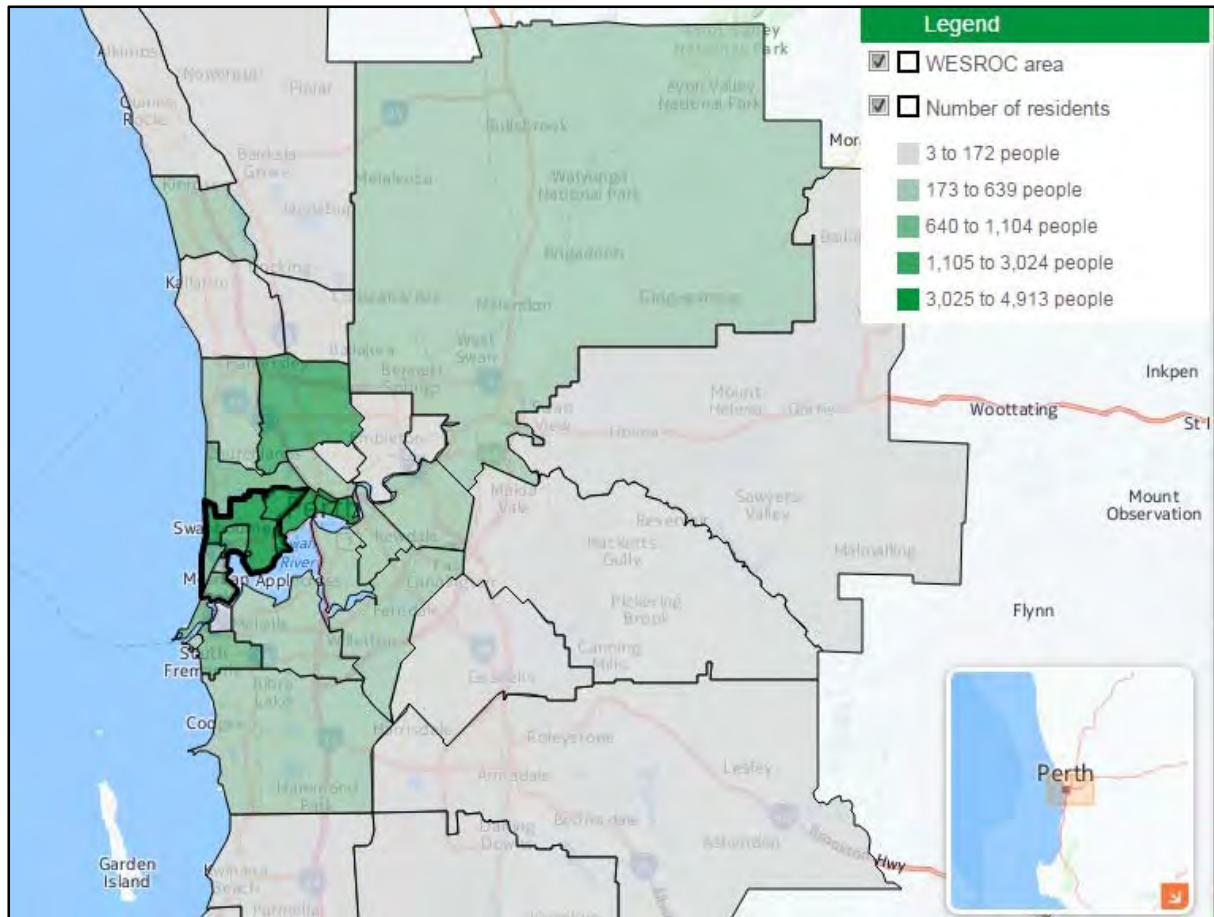
The industries with the highest levels of employment self-containment in the WESROC area in 2011 were:

- Accommodation and Food Services: 59.6%
- Education and Training: 55.4%
- Retail Trade: 55.1%
- Rental, Hiring and Real Estate Services: 52.9%

Additional insight into employment self-containment can be achieved by considering the following maps. Map 7 provides a generalised indication of the location of the workplaces of residents of the WESROC area.

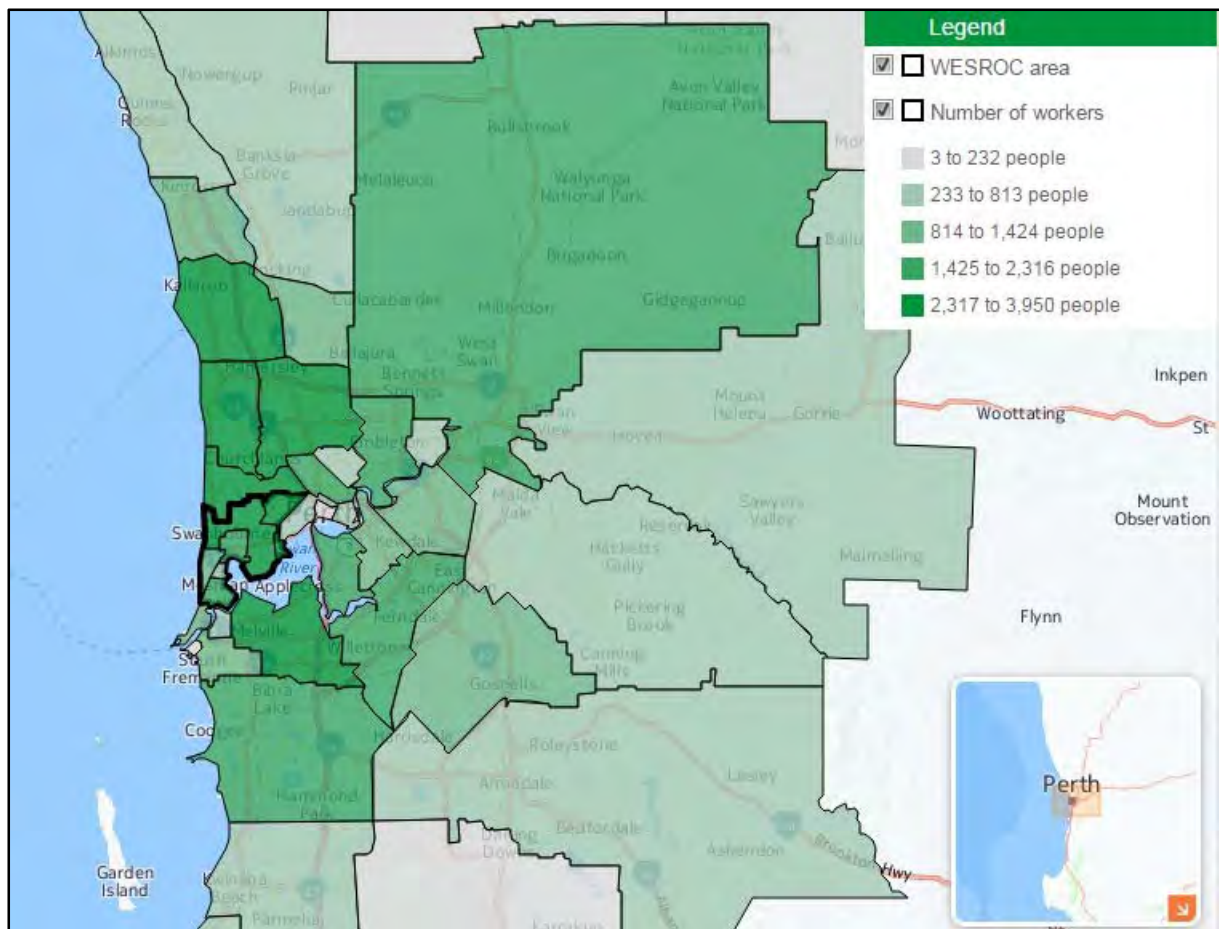
It is apparent that this distribution is highly concentrated on the WESROC area itself, and the Perth CBD, and noticeably less concentrated elsewhere.

¹⁶ An informal search was carried out of the relatively available economic data pertaining to most of the inner LGAs in Perth, but the results cannot be regarded as totally definitive.



Map 7 WESROC Area: Employment Location of Workers¹⁷

¹⁷ Source: Economy.id



Map 8 WESROC Area: Residential Locations of Workers¹⁸

Map 8 on the other hand provides a generalised indication of where the employees working within the WESROC area commute from.

It is apparent that this distribution is extensive, with high concentrations of employees living, not only within the WESROC area itself (thus reflecting the more localised emphasis in Map 7), but much further afield (excluding Perth CBD for fairly obvious reasons).

The relatively high levels of employment self-sufficiency and self-containment, and the wide distribution of employees commuting into the WESROC area to work clearly emphasises the role of the WESROC area as primarily an important employment destination, rather than a grouping of dormitory suburbs.

¹⁸ Source: Economy.id

9.3 Retail and Commerce

9.3.1 Terminology

The following terms are used throughout this chapter:

Retail – is used in the interests of general readability, in its non-technical, common sense meaning.

Shop/Retail – Planning Land Use Category (PLUC) 5 – specifically refers to one of two retail categories defined by the WAPC (see SPP 4.2 for details) and includes virtually all retail activities normally found within shopping centres. It excludes most of the activities normally referred to as bulky goods retail, but does include household appliances.

Other Retail – Planning Land Use Category (PLUC) 6 – is the other specific retail category defined in detail by the WAPC. It mostly includes those retail activities normally referred to as bulky goods (e.g., furniture, floor coverings, etc.), but also includes hardware.

Total Retail – specifically refers to Shop/Retail plus Other Retail.

Net Lettable Area (NLA) – in square metres is the unit of measurement for all retail and other commercial floorspace. It includes all internal floorspace except stairs, toilets, lift shafts and motor rooms, escalators, tea rooms and other service areas, lobbies and areas used for public spaces or thoroughfares. Note that non-public storerooms within large shops (such as supermarkets) are not classified as Shop/Retail NLA, but as Storage NLA.

Retail Needs Assessment (RNA) – The study required under Clause 6.2.2 of SPP 4.2 to estimate the retail needs and indicative distribution of floorspace across the activity centres in a local government area; and to guide the preparation of district and activity centre structure plans. This chapter and Appendices B and C are considered the City's RNA to guide future decision making.

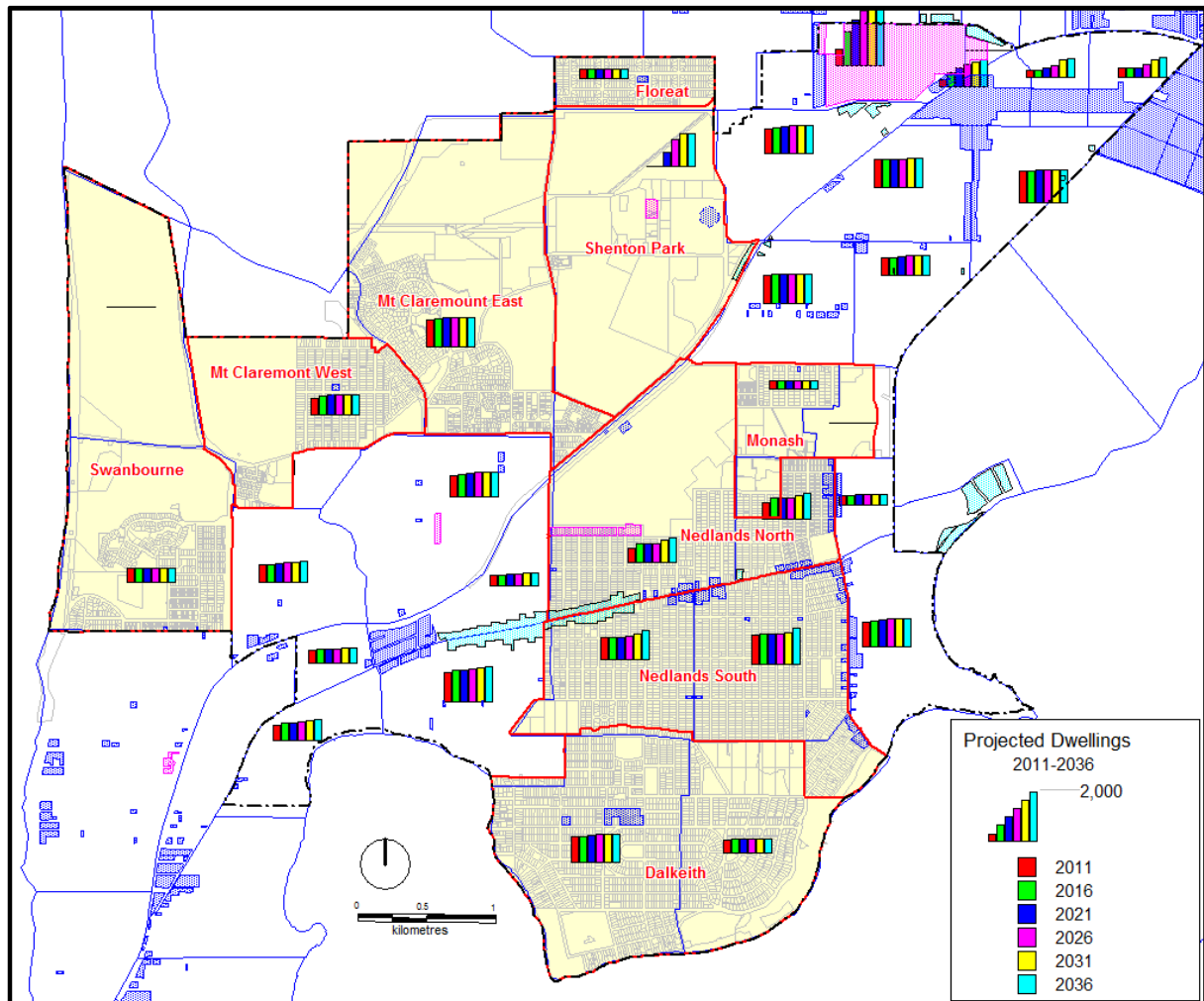
Retail Sustainability Assessment (RSA) – The study required under Clause 6.5 of SPP 4.2 to assess the potential economic and related effects of a significant retail expansion on the network of activity centres in a locality. RSAs are not required where the proposed development is in accordance with an endorsed planning strategy or structure plan that has been based on an RNA.

Note: Retail and commerce data is largely sourced from the WAPC Land Use and Employment Survey. Names of 'complexes' (commercial areas), have been renamed from those assigned at the time of collection (2008-10) to names that fit more intuitively with the remainder of this document.

9.3.2 Population

Current and projected dwelling and population figures for the City of Nedlands are discussed in detail in Chapter 9.1. This RNA is based on the 'high' dwelling and population projections as these reflect the WAPC housing targets to be realised. In short, the number of dwelling units in the City is projected to increase from 8,048 in 2011 to 11,053 in 2036. This is a reasonably significant increase of 3,005 dwelling units (37%) over the period. The main focus of the RNA is on dwelling units, as it is dwelling units rather than population, which constitute the demographic basis of the activity centres modelling.

For the purposes of the modelling the dwelling unit projections have been disaggregated into numerous smaller geographic areas (Main Roads Zones [MRZ]). Map 9 shows how the 2011 – 2036 dwelling unit projections are distributed throughout Nedlands. Existing activity centres and commercial/industrial complexes are also presented in Map 9 in order to relate their location to dwelling unit growth areas. Projections for the City of Subiaco and the Town of Claremont are also shown in Map 9, as these neighbouring LGAs form part of the primary study area for the RNA.



Map 9 Dwelling Unit Projections by Planning Precinct and Modified MRZ, 2011 - 2036

The actual values shown diagrammatically in Map 9 are presented in Table 9 by precincts.

Table 9 Dwelling Unit Projections by Planning Precinct, 2011-2036

Precinct	2011	2016	2021	2026	2031	2036
Dalkeith	1,583	1,640	1,680	1,709	1,722	1,722
Floreat	375	380	385	388	389	389
Monash	362	362	362	362	362	362
Mt Claremont East	1,089	1,130	1,160	1,170	1,170	1,170
Mt Claremont West	654	784	805	805	805	805
Nedlands North	1,244	1,630	1,641	1,665	1,858	2,085
Nedlands South	2,094	2,109	2,109	2,170	2,359	2,597
Shenton Park	52	52	580	1,088	1,327	1,327
Swanbourne	595	595	595	595	595	595
Total	8,048	8,683	9,318	9,953	10,588	11,053

As indicated above, significant growth in the number of dwellings is anticipated in the Nedlands North and Nedlands South precincts where future development opportunities for increasing the number of dwellings along Stirling Highway, Hampden Road and Broadway are anticipated. Eastern portions of these precincts fall within the UWA-QEII specialised centre. The Shenton Park precinct's projection is dependent upon key land holdings being developed in accordance with current expectations of the Shenton Park Hospital Redevelopment.

9.3.3 Household Income

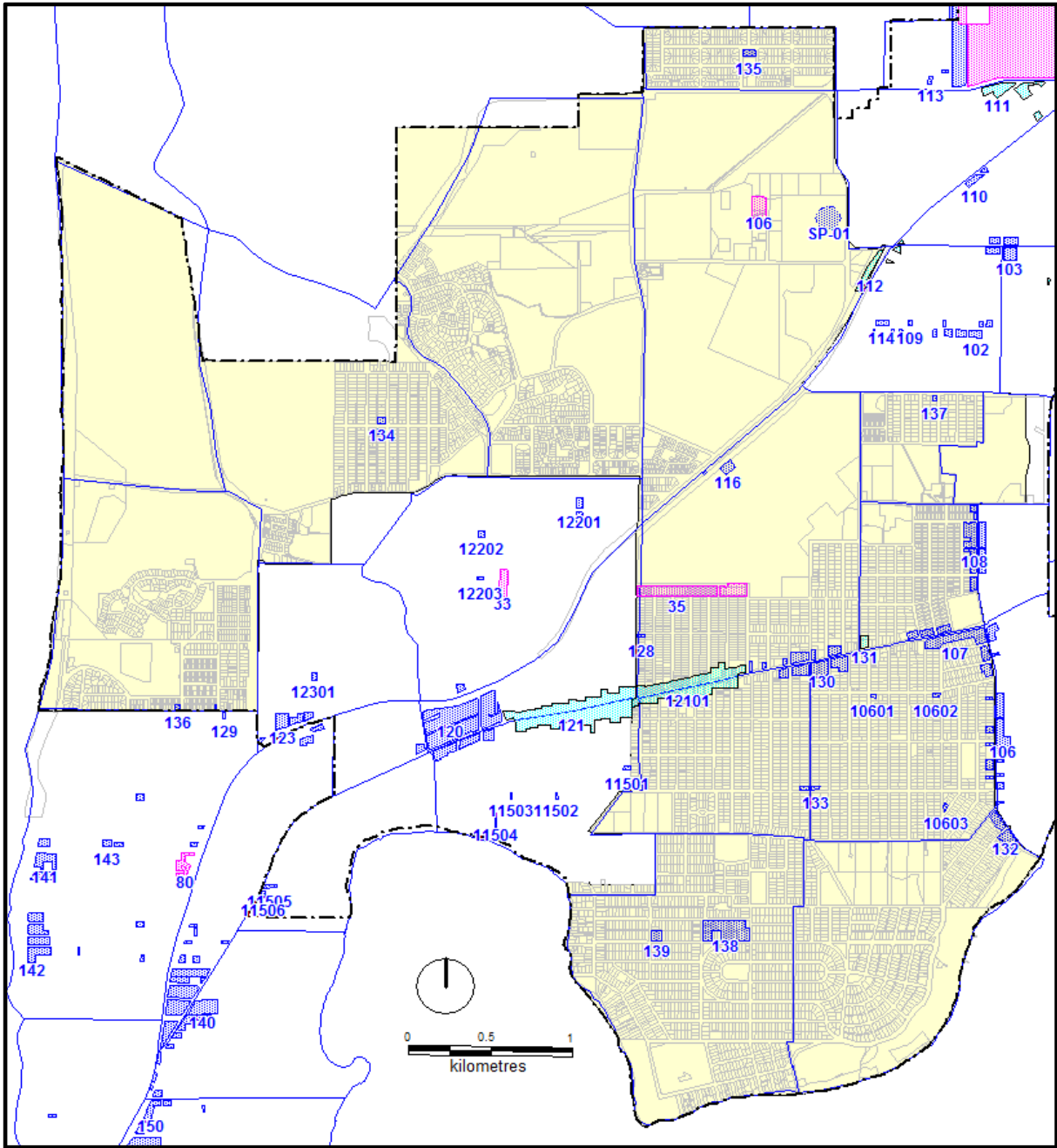
The household income profile for the City of Nedlands as a whole is presented in chapter 9.2. As is discussed in the chapter, the household income profile and related factors indicate a relatively wealthy population with high retail expenditure potential.

9.3.4 Activity Centres

Existing Activity Centres

Most of the activity centres in the City of Nedlands are relatively minor as retail centres, with only Hampden Road, Dalkeith and Captain Stirling performing clear neighbourhood retail functions; with all others performing local centre functions, or highway commercial functions. Broadway Fair also serves a neighbourhood function, but its main retail component is on the eastern side of Broadway, within the City of Subiaco.

The most recently available WAPC data on the activities and floorspace within the commercial and industrial complexes within the City of Nedlands are presented in the following Map 10 and Table 10. The complex numbers on the map refer to rows in the table.



Map 10 Commercial and Industrial Complexes¹⁹

¹⁹ WAPC Land Use and Employment Survey 2008-10

Table 10 Commercial and Industrial Complexes - Floorspace by PLUC²⁰

Type	No.	Name	MAN	STO	SER	SHF	RET	OFF	HEL	ENT	RES	UTE	VFA	TOTAL
C	107	*BROADWAY	130	45	85	1676	40	11139	3763	280	0	0	3715	20873
C	108	*HAMPDEN ROAD	0	2413	1250	3546	120	11271	750	385	0	0	858	20593
C	112	*SUBIACO - ISO USES	260	200	1702	0	235	2369	0	140	0	0	0	4906
C	116	KARRAKATTA	0	0	0	160	0	60	0	0	0	0	0	220
C	12101	**STIRLING HWY E	328	1532	1126	6389	6372	7287	227	339	0	0	1417	25017
C	128	LOCH STREET	0	0	0	70	0	0	0	0	0	0	0	70
C	130	CAPTAIN STIRLING	220	565	780	3160	600	3422	349	3250	0	625	58	13029
C	131	NEDLANDS COUNCIL	0	0	0	0	0	1100	0	0	0	0	0	1100
C	132	STEVES	0	125	0	1130	125	270	0	0	0	0	800	2450
C	133	PRINCESS ROAD	90	0	140	290	40	160	0	0	0	0	0	720
C	134	ASQUITH STREET	100	0	0	499	202	110	0	0	0	74	91	1076
C	135	FLOREAT	90	0	100	75	0	1251	182	0	0	0	0	1698
C	136	NORTH ST WEST	0	60	0	230	0	0	0	0	0	0	0	290
C	137	CROYDEN STREET	0	0	0	155	0	63	0	0	0	0	67	285
C	138	DALKEITH	60	0	431	2255	635	1822	0	0	0	22	355	5580
C	139	WARATAH AVENUE W	0	0	0	630	100	0	0	538	0	0	345	1613
Total Commercial Complexes			1278	4940	5614	20265	8469	40324	5271	4932	0	721	7706	99520
I	35	CARRINGTON	1630	3767	3835	630	1245	2291	695	225	0	610	220	15148
I	106	BEDBROOK	(no data)											
Total Industrial Complexes			1630	3767	3835	630	1245	2291	695	225	0	610	220	15148
Total			2908	8707	9449	20895	9714	42615	5966	5157	0	1331	7926	114668

Note:

*Complex overlaps with a neighbouring LGA boundary

** Complex overlaps includes Nedlands LGA portion only.

Retail and commerce data is largely sourced from the WAPC Land Use and Employment Survey. Names of 'complexes' (commercial areas), have been renamed from those assigned at the time of collection (2008-10) to names that fit more intuitively with the remainder of this document.

These figures are now somewhat out of date, which does not affect the City of Nedlands greatly, as the major changes to retail floorspace since the survey was completed in 2009 have occurred in neighbouring Claremont and (to a lesser extent) Subiaco. Notwithstanding these data currency problems, a comparison of the data in Table 10 with the previous equivalent data collected in 2001 is still of some interest (see Table 11).

²⁰ Source: WAPC November 2010 Survey conducted during 2007-2009 (median date mid 2008)

Table 11 Floorspace Changes by PLUC and Complex Type Between 2001/02 and 2008/10²¹

Planning Land Use Category (PLUC)	2002			2008			Change		
	Comm.	Ind	Total	Comm.	Ind	Total	Comm.	Ind	Total
Manufacturing, Etc	620	6,325	6,945	1,278	1,630	2,908	658	- 4,695	- 4,037
Storage/ Distribution	3,022	3,182	6,204	4,940	3,767	8,707	1,918	585	2,503
Service Industry	3,422	6,983	10,405	5,614	3,835	9,449	2,192	- 3,148	- 956
Shop/ Retail	19,971	105	20,076	20,265	630	20,895	294	525	819
Other Retail	8,137	1,074	9,211	8,469	1,245	9,714	332	171	503
Office/ Business	29,247	1,609	30,856	40,324	2,291	42,615	11,077	682	11,759
Health/ Welfare/ Community	4,702	450	5,152	5,271	695	5,966	569	245	814
Entertainment/ Rec/ Culture	6,582	-	6,582	4,932	225	5,157	- 1,650	225	- 1,425
Residential	1,672	-	1,672	-	-	-	- 1,672	-	- 1,672
Utilities/ Communications	836	500	1,336	721	610	1,331	- 115	110	- 5
Vacant Floor Area	10,970	773	11,743	7,706	220	7,926	- 3,264	- 553	- 3,817
Total Floorspace	89,181	21,001	110,182	99,520	15,148	114,668	10,339	- 5,853	4,486

As indicated in Table 11, the total amount of floorspace in commercial complexes increased over the period by 10,339m² (11.6%) from 89,181m² to 99,520m². The largest increase (38%) was in the Office/Business PLUC, with that of the Service Industry PLUC (31%) being second largest in percentage terms, albeit off a relatively small base. There was little change in either of the retail categories. Although the quantity of floorspace in commercial complexes increased overall, the floorspace in several PLUCs reduced – including vacant floorspace, which reflects a positive trend.

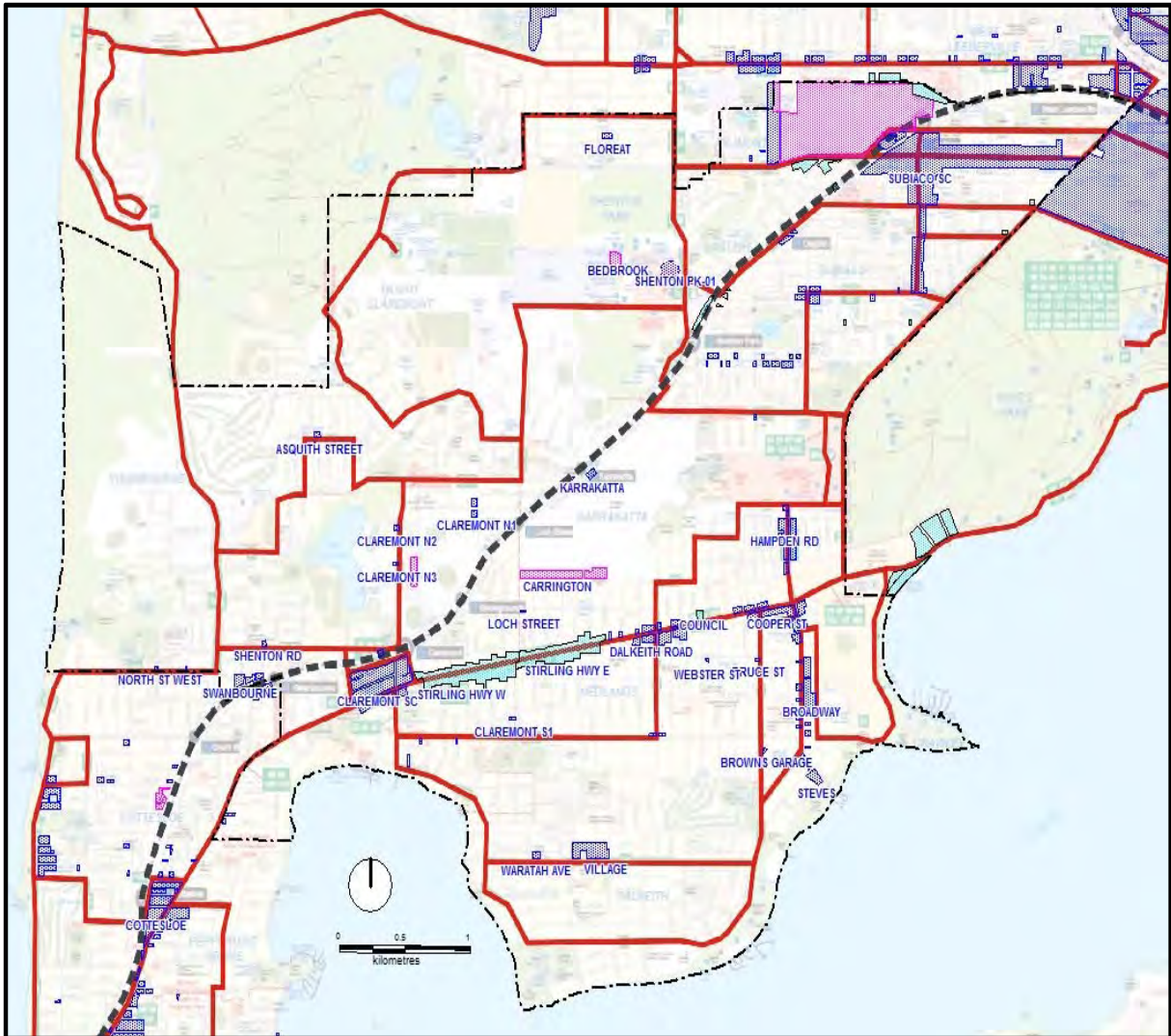
The increase in commercial complex floorspace is quite large when compared to the change in industrial complex floorspace – i.e. the service commercial strip of Carrington Street. This decreased by 5,853m² (28%) from 21,001m² to 15,148m². The decrease is fully accounted for by the manufacturing and service industry sectors, which together decreased by 7,843m² (59%), a figure that was not fully offset by increases in all the other PLUCs (except vacant floor area). The biggest increase in floorspace in Carrington Street was in the Office/Business category, indicating a transition occurring in this area from an industrial/service industrial precinct to a more commercially-oriented mixed business precinct. This transition is appropriate given the location and context of the complex.

Public transport

The location of activity centres in relation to existing bus routes is shown diagrammatically in Map 11.

As indicated on this map, the existing activity centres are quite well served by bus routes though service frequency may be lacking at present. The City also benefits from access to the Perth – Fremantle railway, which bisects the area, although the railway does not closely serve any of the City's own activity centres.

²¹ Source: WAPC Commercial and Land Use Surveys. Values in table are NLA m²

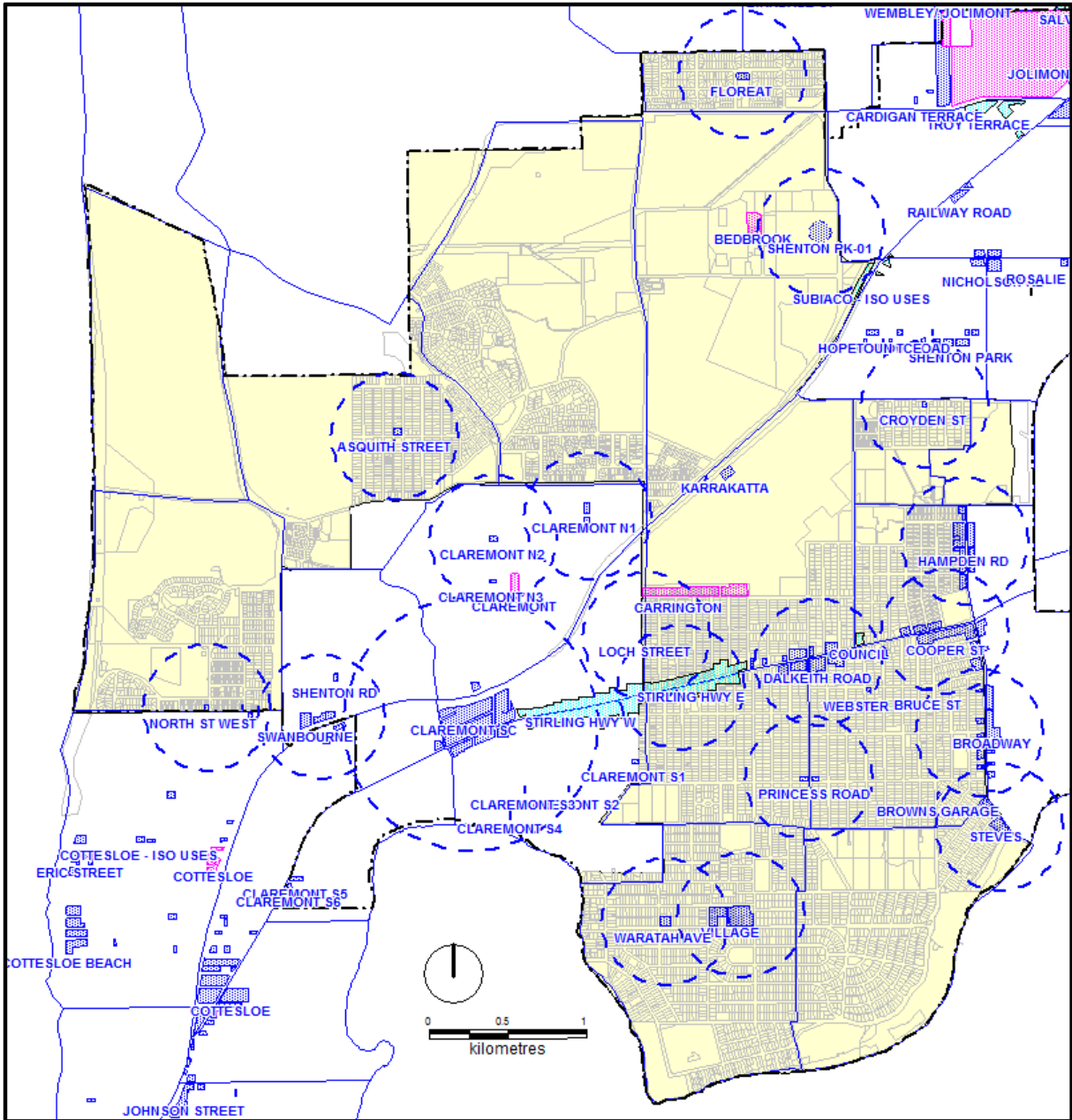


Map 11 Existing Activity Centres and Public Transport Routes

Walkable catchments

Map 12 illustrates the activity centres in the City of Nedlands and the Town of Claremont together with their 400m walkable catchments. Being large and focussed on a railway station, the walkable catchment of the Claremont secondary centre is shown as an 800m radius

As indicated in Map 12, most residential areas are within 400 metres of an activity centre, or reasonably close. The most noticeable exceptions are south and east Dalkeith, and Mt Claremont East.



Map 12 Walkable Catchments

Planned future Activity Centres

At present there is only one additional future activity centre planned in the City of Nedlands (shown diagrammatically as Shenton Pk-01 in Map 12). This centre is intended to be part of the planned redevelopment of the Shenton Park Rehabilitation Hospital and surrounds.

9.3.5 Other Commercial Areas

Carrington Street

Apart from the few ‘isolated uses’ on Stubbs Terrace near the Nicholson Road railway underpass, there is only one service industrial area in the City of Nedlands – a Light Industry zoned strip on the northern side of Carrington Street. As mentioned above, this area is undergoing a transition from a service industrial area to a more

commercially-oriented precinct characterised by some new office development at the corner of Carrington and Loch Streets.

Stirling Highway

Highway commercial development in the Stirling Highway East complex is not an activity centre as such, extending in a virtually unbroken strip between Claremont secondary centre and the Captain Stirling complex. This development is characterised by offices, large retail showrooms, and a range of other commercial developments of various sizes and accommodating a range of activities.

9.3.6 Retail Trends

A review of current and recent retail trends is presented in Appendix B. It can be seen from this review that most of the notable trends relate to retail operational and customer service factors driven by rapid technological change and the globalisation of markets. As such, the individual trends appear to have little bearing on urban planning at present. The sum of the cumulative effects of the trends does, however, potentially have quite significant urban planning implications insofar as:

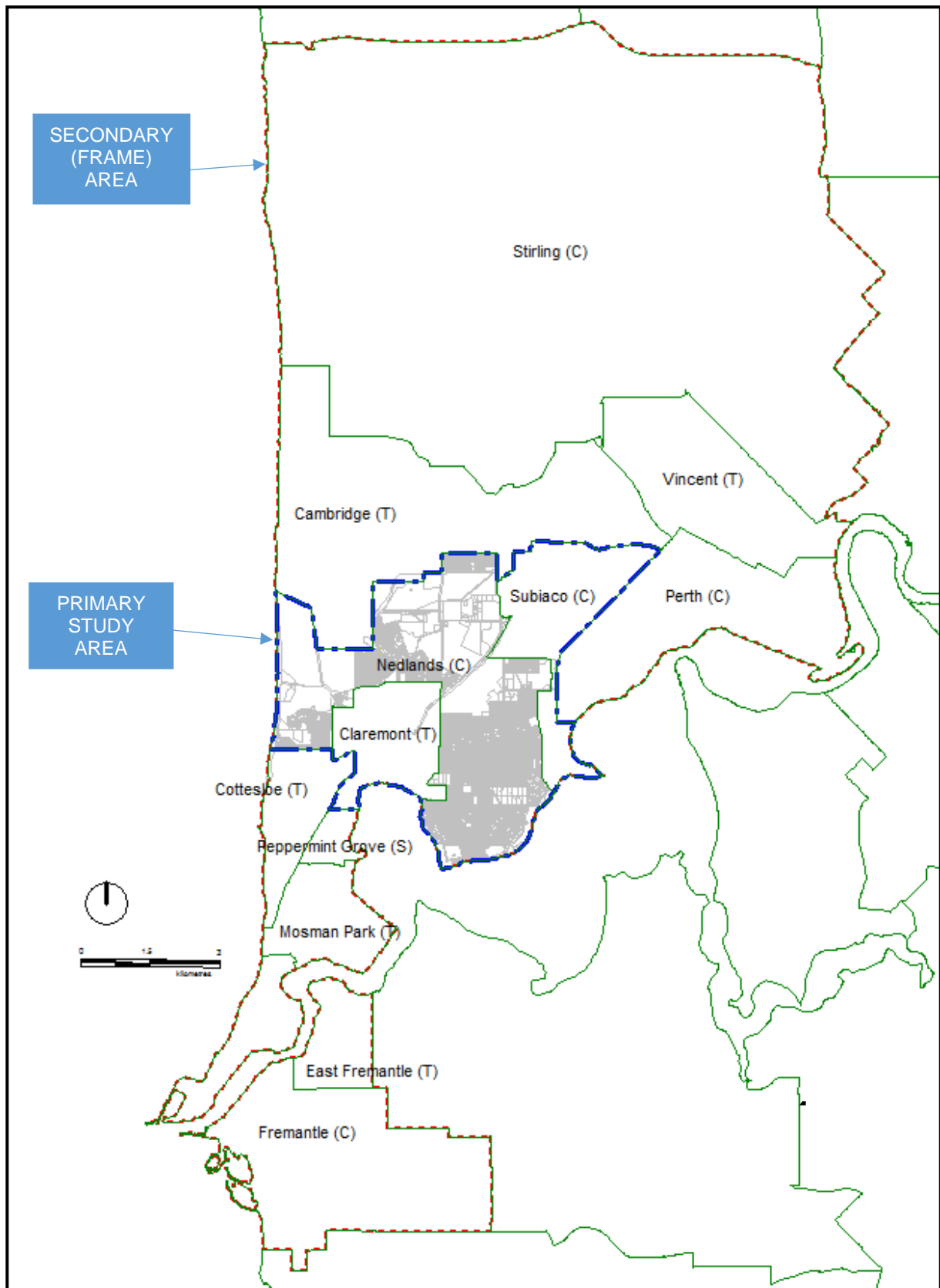
- The potential for necessary intra-urban travel by householders could be reduced as home-delivery of goods purchased online increases.
- The required quantity of physical retail floorspace may significantly reduce (by up to 40% in some estimates) as technology facilitates greater economic efficiency and productivity.
- Onerous planning system requirements relating to retail developments provide an economic incentive for such trends to be adopted more quickly.
- Activity centres with fewer shops (brought about by the various trends) could negatively impact upon the attractiveness of centres, with potential negative social or community side effects. These may, however, be offset by trends for tenancies to move away from certain types of online facilitated markets (such as books and music) towards more socially-oriented markets (such as coffee shops and restaurants).

For the purposes of this RNA, most of these trends and potential implications are simply noted with caution at the present time. In terms of strategic planning there is no imperative, at this stage, to strategically plan activity centres any differently in response to the possible consequences of currently identified trends. Should the various trends start to exhibit clearly tangible physical consequences, then appropriate strategies can be devised. Predicting such changes and acting on them at this stage is inadvisable. The exception is in the area of planning system requirements, where an effort should be made to implement a more flexible and responsive planning system to more readily facilitate retail floorspace development, albeit necessarily operating within a principles-based strategic framework.

9.3.7 Centres Modelling

Study area

The study area for the centres modelling has two parts: a primary area and a secondary (frame) area (Map 13).

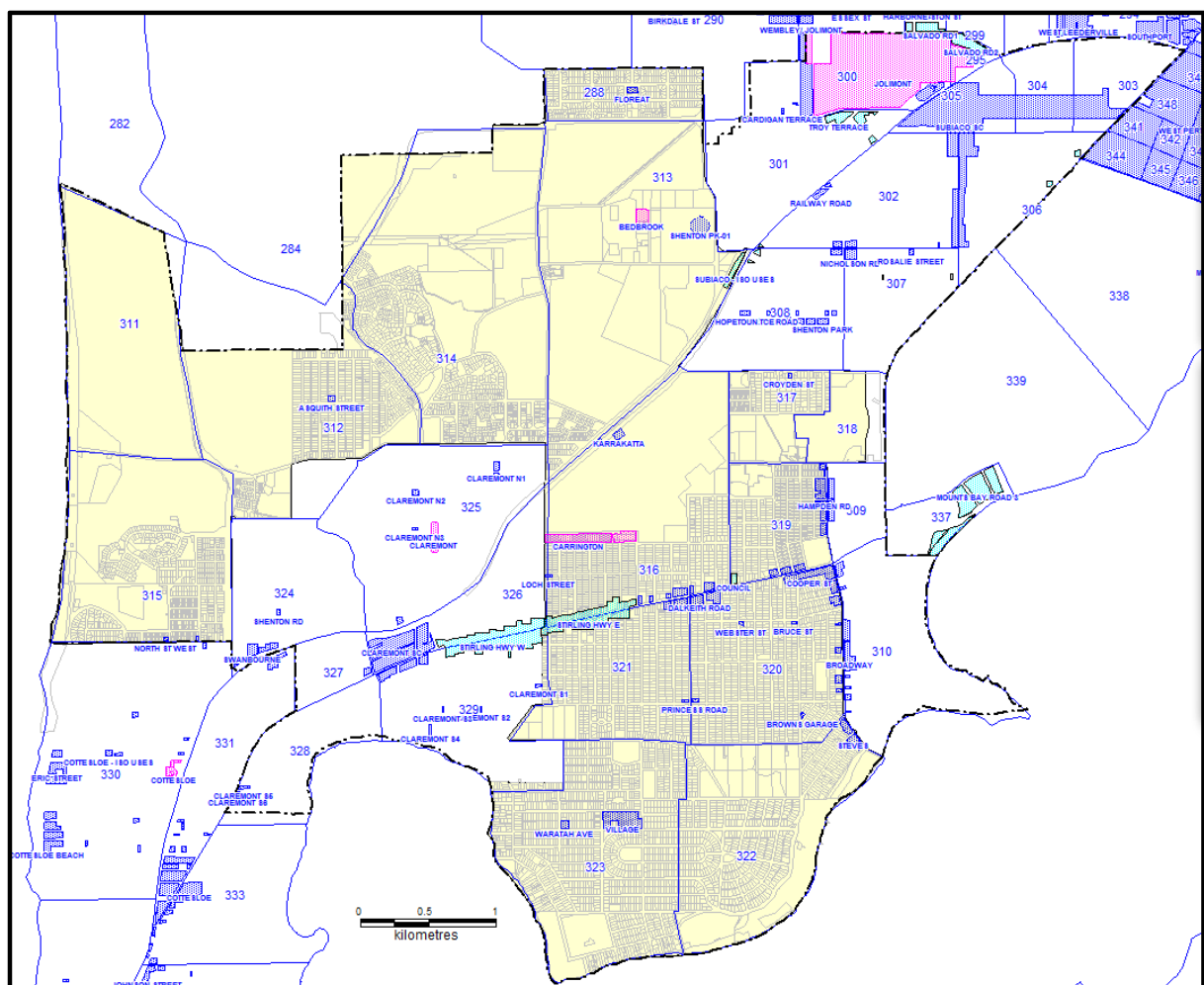


Map 13 Study Area Used for Centres Modelling

The primary study area is the area within which the results of the modelling provide a sound basis for the planning of activity centres within the area. The secondary or frame

area is included to ensure that the model's results for the primary area are sufficiently accurate for this purpose. The primary area comprises the Nedlands, Claremont and Subiaco Local Government Areas. In terms of providing retail and other commercial services to the City of Nedlands population, these three local governments are so interdependent that trying to analyse them separately produces nonsensical results. For this reason they are considered together for the purposes of the modelling. It should also be noted that new population projections for these three local governments based on the WAPC's targets for additional housing up to and beyond 2031 have been incorporated into the model.

A more detailed diagram of the primary study area is presented in Map 14 and shows existing, planned and potential centres the subject of this modelling project. As mentioned previously, only one potential future planned centre (Shenton Pk-01) has been included.



Map 14 Primary Study Area, Activity Centres and Residential Areas

Gravity model

The main tool used for the purposes of the RNA is a mathematical retail gravity model. A detailed description of the model is provided in Appendix C. The main purpose of the modelling project is to quantify the extent of existing and future retail needs and investigate/confirm the most appropriate locations within which these could potentially be satisfied.

The results of the modelling also serve as a guide for the market in relation to the retail floorspace development potential of individual centres. As stated previously, however, it is not intended that the detailed results of the modelling (i.e. centre by centre floorspace estimates) be implemented as specific requirements.

Modelling process

In the base year (in this case 2016) existing retail floorspace data obtained from the Department of Planning (updated where relevant information was available) is used in the model. The performance for each existing activity centre, and all centres considered together, is then calculated. These performance levels are used as a benchmark, or basis for comparison with the equivalent calculations for future years, which are modelled on the 5-yearly census cycle through to 2036.

In future years, population growth potentially requires provision of additional retail floorspace in appropriate existing and planned centres. The modelling involves an iterative process of calculating, for each 5-yearly period, the amount of retail floorspace required in each activity centre to maintain centre performance levels at or near the benchmarks. The various quantities are adjusted until, for the year being modelled, a reasonable balance is found between increasing retail floorspace in the centres that can support it, whilst ensuring that the performance of competing centres, particularly existing centres with below-average performances, are not unreasonably impacted upon.

Summary of results

The results of the modelling in terms of the estimated retail floorspace potential for each activity centre within the City of Nedlands at particular points in time are summarised in Table 12.

Table 12 Summary of Detailed Model Results - Future Retail Needs

ID	Centre	Shop/Retail (sqm NLA)					Other Retail (sqm NLA)				
		2016	2021	2026	2031	2036	2016	2021	2026	2031	2036
130	Captain Stirling	3160	4500	5500	6000	6000	600	600	600	600	600
107	Broadway	1676	1676	1676	1676	1676	40	40	40	40	40
138	Dalkeith	2255	2500	2500	2500	2500	635	635	635	635	635
108	Hampden Road	3546	3546	4000	5000	5000	120	120	300	400	400
106	Broadway Fair***	4050	4500	5000	5000	5000	200	200	500	500	500
Total Neighbourhood		14687	16722	18676	20176	20176	1595	1595	2075	2175	2175
116	Karrakatta	0	0	0	0	0	0	0	0	0	0
128	Loch Street	70	70	100	100	100	0	0	0	0	0
132	Steve's	1130	1250	1500	1500	1500	125	125	125	125	125
133	Princess Road	290	400	500	500	500	40	40	40	40	40
134	Asquith Street	500	500	500	500	500	200	200	200	200	200
135	Floreat	75	75	150	150	150	0	0	0	0	0
136	North Street W	230	230	230	230	230	0	0	0	0	0
137	Croyden Street	155	200	250	250	250	0	0	0	0	0
139	Waratah Ave	630	630	630	630	630	100	100	100	100	100
10601	Webster Street	0	150	150	150	150	0	0	0	0	0
10602	Bruce Street	0	150	150	150	150	0	0	0	0	0
10603	Brown's Garage	0	0	150	150	150	150	150	150	150	150
SP-01	Shenton Pk-01	0	0	1500	3000	3000	0	0	0	0	0
Total Local		3080	3655	5810	7310	7310	615	615	615	615	615
112	Isolated uses	0	0	0	500	500	235	250	250	250	250
131	Nedlands Council	0	0	0	0	0	0	0	0	0	0
12101	Stirling Highway East	6389	6500	7000	7500	7500	6372	7000	8000	9000	9000
Total Mixed Business		6389	6500	7000	8000	8000	6607	7250	8250	9250	9250
35	Carrington	630	700	700	700	700	1245	1500	2000	2500	2500
106	Bedbrook	0	0	0	0	0	0	0	0	0	0
Total Industrial Areas		630	700	700	700	700	1245	1500	2000	2500	2500
Total		24786	27577	32186	36186	36186	10062	10960	12940	14540	14540

The full set of model output summary sheets is presented at the end of Appendix C. The information on these sheets provides detailed information relating to the modelling calculations, which include assumptions regarding future additional expansions of the Claremont and Subiaco secondary centres. In the case of Subiaco, the assumed expansions are significant, reflecting several major redevelopment projects currently in the development or approvals process.

The main finding of the modelling project is that the existing supply and distribution of Shop/Retail floorspace serving the City of Nedlands are more than sufficient to cater for the needs of the existing and longer-term future population. This theoretical over-supply is mainly the result of the Claremont and Subiaco secondary centres, which will expand further, catering for the retail needs of populations well beyond the bounds of the defined primary study area.

However, although there is no pressing need to provide for additional retail floorspace in the City of Nedlands for the foreseeable future, there are several potential opportunities to do so to positive effect.

Points to note from Table 12 include:

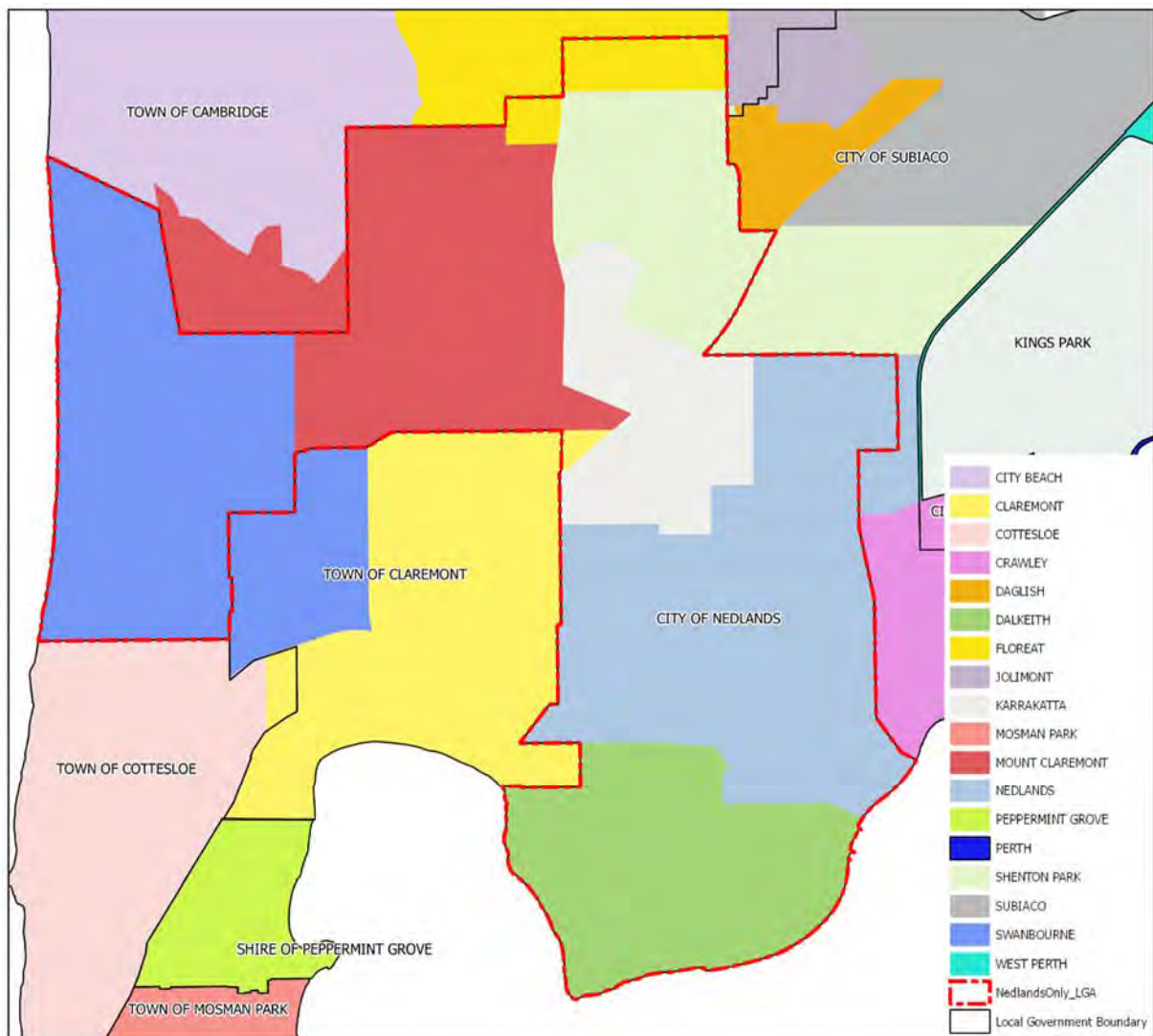
- The Shop/Retail floorspace in the neighbourhood activity centres could potentially be increased by approximately 5,500m² (37%) between 2016 and 2031, with the most significant expansion potential being in the fairly strategically located Captain Stirling centre, as well as the Hampden Road centre.
- Additional retail floorspace in the Captain Stirling centre would not only be in line with some current commercial interests, but would provide the opportunity of enhancing and intensifying this centre to provide for a larger and more attractive community focus within the City of Nedlands, in reasonably close proximity to the Council offices.
- There is very limited potential for more Other Retail floorspace in the neighbourhood centres.
- The Shop/Retail floorspace in the local centres could potentially be increased by approximately 4,200m² (137%) between 2016 and 2031. This result primarily reflects the planned future centre (Shenton Pk-01) intended to be located in the vicinity of the Shenton Park Hospital site's eventual redevelopment.
- The potential increase in local centre floorspace also reflects a planning intention to encourage some limited expansion of local centres within walkable catchments where the modelling indicates this may be feasible over time. Some currently underutilised existing small commercial sites in the Nedlands South precinct present opportunities to encourage more local centre activation.
- No potential to increase the Other Retail floorspace in local centres has been identified.
- There is potential for some expansion of retail floorspace generally in the Stirling Highway East commercial complex. Limited Shop/Retail expansion could potentially occur through mixed use redevelopments incorporating residential apartments. Expansion potential for Other Retail floorspace also exists due to the prominent highway location and population growth in the catchment area more generally.
- There is also potential for an eventual doubling in size of Other Retail floorspace in the Carrington Street industrial strip as it continues to transition from a service industrial precinct to a mixed business precinct – a positive trend.
- Given the established nature of the urban form in Nedlands, the estimated future retail potential indicated by the modelling, the location and context of the various centres and the fact that most of the retail floorspace expansion in the primary study area is likely to occur in the Claremont and Subiaco secondary centres, it is considered that there is unlikely to be any particularly problematic vehicular traffic issues associated with the City of Nedlands activity centres, per se.

9.4 Physical Features, Climate and Natural Areas

9.4.1 Morphology²²

The City of Nedlands is located in Perth's western suburbs, about 6 km from the Perth GPO, and covers approximately 20 km². The City of Nedlands is bounded by the Town of Cambridge in the north, the Cities of Subiaco and Perth in the east, the Swan River and the Towns of Claremont and Cottesloe in the south, and the Indian Ocean in the west.

The City comprises of the suburbs Dalkeith, Nedlands, Karrakatta and parts of Floreat, Mt Claremont, Shenton Park, Swanbourne and Claremont.



Map 15 City of Nedlands Context

Map 15 above shows the irregular shape of the City of Nedlands, in particular the manner in which the Town of Claremont is somewhat encircled by the City. It is important to note that for many practical purposes the current local government boundaries are entirely arbitrary. Attributes and amenities that ought to be spread

²² As a result of the *City of Perth Act* which took effect 1 July 2016, the area south of Aberdare Road, east of the City of Nedlands boundary and the UWA Nedlands site are now part of the City of Perth.

throughout the urban area (for example activity centres, or particular recreational opportunities) may not be present within the City of Nedlands, but are located within an adjacent local government area.

A person is unlikely to consider local government boundaries when accessing facilities or services that are geographically close to them but not within the local government area they reside in. As a result, the City of Nedlands looks to cooperate and coordinate with neighbouring authorities to achieve common goals for the region.

9.4.2 Land Use

The predominant land use within the City of Nedlands is single residential dwellings. There are a number of neighbourhood and local centres dispersed across the municipality and a strip of varied commercial activity along Stirling Highway.

Other notable land uses within the City include Karrakatta Cemetery, health facilities, two Department of Defence barracks and large areas dedicated to various sporting activities.

9.4.3 Physical Geography

Located on the Swan Coastal Plain, the area is generally flat with local topographical variations. The soils in the locality are generally sands with underlying limestone. Sands are susceptible to erosion when vegetation is removed.

There are some significant parcels of land within the City of Nedlands that are identified as contaminated sites. Management of these sites must be in accordance with the *Contaminated Sites Act 2003*.

The City of Nedlands has three areas identified on the Swan Coastal Plain Acid Sulfate Soil Risk Map²³ being Mason's Gardens, the artificial lake within the QEII Medical Centre grounds and Swan River foreshore.

9.4.4 Climate

The City of Nedlands, as part of the Perth region, experiences a Mediterranean climate with mild winters and hot, dry summers. Summer generally lasts from December to late March, with February usually being the hottest month of the year. The strongest prevailing winds are generally from the south-west. Perth receives moderate though highly seasonal rainfall. Winters are relatively cool and wet, with most of Perth's annual rain falling between May and September. Relative to other capital cities, Perth receives a high daily solar exposure.

²³ Shared Land Information Platform, accessed June 2015

Table 13 Monthly Climate Statistics - Perth²⁴

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Mean max. temperature (°C)	31.2	31.7	29.6	25.9	22.4	19.3	18.4	19.1	20.3	23.3	26.5	29.1	24.7
Highest temperature (°C)	44.4	44.5	42.4	37.3	34.3	26.2	25.8	27.2	34.2	37.2	40.3	44.2	44.5
Mean min. temperature (°C)	18.1	18.4	16.6	13.8	10.6	8.5	7.6	8.3	9.6	11.4	14.2	16.4	12.8
Lowest temperature (°C)	8.9	10	6.3	4.7	1.3	-0.7	0	1.3	1	2.2	5	7.9	-0.7
Mean rainfall (mm)	15.4	8.8	20.5	36.5	90.2	128	147	123	89.6	39.5	23.8	9.9	729
Mean solar exposure (MJm ²)	29.4	26	21.1	15.2	11.3	9.3	10	13	16.9	22.7	26.7	30	19.3

9.4.5 Climate Change

The global and local climate is changing, and will continue to change, in ways that affect the planning and operation of the City.

The Department of the Environment, Bureau of Meteorology *Climate Change in Australia* document identifies the key projections for the Southern and South-Western Flatlands area (this includes the Perth metropolitan region) as follows:

- Average temperatures will continue to increase in all seasons.
- More hot days and warm spells, and fewer frosts.
- A continuation of the trend of decreasing winter rainfall is projected. A decrease in spring rainfall is also projected. Changes in other seasons unclear.
- Increased intensity of extreme daily rainfall events.
- Mean sea level will continue to rise. Height of extreme sea-level events will also increase.
- A harsher fire-weather climate in the future.
- On annual and decadal basis, natural variability in the climate system can act to either mask or enhance any long-term human induced trend, particularly in the next 20 years and for rainfall.

Water resources are likely to be further stressed due to projected growth in demand and climate-driven changes in supply for irrigation, cities, industry and environmental flows. A decrease in annual rainfall together with higher levels of evaporation would lead to a tendency for less run-off into rivers. More frequent and severe droughts in the region are likely.

²⁴ Source: Australian Government Bureau of Meteorology. Monthly Climate Statistics for PERTH METRO [009225], Created on 10 Jun 2015 Commenced: 1993, Last Record: 2015

9.4.6 Natural Areas

The City of Nedlands has defined six natural areas, as described in Table 14.

Table 14 Natural Areas

Natural Area	Area (ha)	MRS Zone	
Shenton Bushland	26.00	Parks and Recreation	Shenton Bushland contains: A Class Reserve 43161 vested in the City of Nedlands for Conservation and Recreation, C Class Reserve 20074 which is vested with the Department of Health for Health Purposes, and a small area (0.4 ha) owned by the Department of Education on the eastern edge of the bushland.
Allen Park	18.80	Parks and Recreation Public Purpose Urban	Allen Park contains: Various A and C Class reserves, primarily vested in the City of Nedlands for Recreation, or Parks and Recreation, City of Nedlands freehold land and A Class Reserve 7804 owned by the Commonwealth of Australia and vested with the Department of Defence for Public Purposes.
Hollywood Reserve	6.41	Parks and Recreation	Hollywood Reserve is vested in the City of Nedlands as A Class Reserve 32545 for Gardens and Parks.
Birdwood Parade	5.70	Parks and Recreation	Birdwood Parade is vested in the City of Nedlands as A Class Reserve 1624 for Parks and Recreation. Birdwood Parade falls within the Swan Canning Development Control Area.
Point Resolution	4.00	Parks and Recreation	Point Resolution is vested in the City of Nedlands as A Class Reserve 17391 for Parks and Recreation. Point Resolution also falls within the Swan Canning Development Control Area.
Mt Claremont Oval Reserve	2.21	Urban	Mt Claremont Oval Reserve is vested in the City of Nedlands as A Class Reserve 26102 for Parks and Recreation.

The key threats to the City's natural areas include environmental weeds, plant diseases, feral animals, fire management, illegal dumping and access, and climate change. A series of Natural Area Management Plans have been produced to ensure these matters are addressed adequately.

Some smaller natural areas that form part of local greenways exist within the City. These consist of small fragmented patches of urban bushland around Mt Claremont, Swanbourne, the Swan River foreshore and along road reserves. The management of these areas follows the general management actions contained within the Natural Area Management Plans.

In addition to the natural areas and greenways, there are over 21,000 trees (native and exotic) within nature strips and parks which add substantially to the City's 'garden suburb' character.

9.4.7 Biodiversity Conservation

The City is highly urbanised, but does contain pockets of relatively high quality indigenous vegetation and habitat. In comparison to other inner city local government areas, the City of Nedlands has a number of significant parklands and recreational areas that are valued by both the City's community and the general public of the wider Perth area.

The City recognises that there is an opportunity and likely need to re-establish, conserve and enhance biodiversity within the City, which requires the participation of the whole community. An important aspect is to create faunal corridors, or vegetated linkages, allowing the movement of birds and other fauna between native habitat areas.

The *Environmental Protection and Biodiversity Conservation Act* (EPBC Act) enables the Australian Government to protect matters of national environmental significance. A number of flora and bird species listed under the *EPBC Act* are known to be found in the City's natural areas. Careful management of the natural areas where these species are found is vital in the protection of these species of national environmental significance.

9.4.8 Impacts of Climate Change on Biodiversity

The unique biodiversity found in Western Australia is largely a result of its climate, soils and isolation. Current and future climate change will affect biodiversity directly through changes to temperature, rainfall, extreme events, and through altering the nature and intensity of existing biodiversity pressures. This will bring changes to landscapes and ecosystem services as species adapt, emigrate or immigrate and others become isolated.

Key actions in the Australian Biodiversity Conservation Strategy 2010-2030²⁵ were identified as building ecosystem resilience so it can adapt to changes and disturbances resulting from climate change. Maintaining natural areas and creating ecological linkages is the most effective strategy to build resilience in a changing climate as they provide for species migration and protection. Undertaking ongoing natural area management activities will also build ecosystem resilience by reducing existing threats to natural areas such as feral animals and environmental weeds and by increasing the connectivity and protection of fragmented landscapes. Maintaining a comprehensive, adequate and representative reserve system is the best way to secure the habitats of vulnerable species.

²⁵ Department of the Environment, Water, Heritage and the Arts.

9.5 Tourism and Visitors, Attractors and Facilities

9.5.1 Attractors

The City of Nedlands is rich in cultural history, with attractive heritage properties and well-treed streetscapes. There is a distinct mix of old and new architectural styles throughout the City, as well as an abundance of parks and gardens.

The City has numerous restaurants, parks and passive recreation areas which attract international/interstate tourists and people from within the Perth metropolitan area.

The following are examples of leisure amenities within the City of Nedlands that may attract non-resident visitors:

- Swanbourne Beach;
- Retail activity and shopping opportunity along Hampden Road and Broadway;
- Sporting facilities – Allen Park, UWA Sports Park, AK Reserve, Cottesloe Golf Club, Swanbourne Surf Lifesaving Club, Nedlands Yacht Club, Flying Squadron Yacht Club;
- Swan River foreshore;
- Tresillian Arts Centre;
- City of Nedlands community events; and
- Whadjuk Trails.

The University of Western Australia is a significant attractor of domestic and international visitors. In 2010, UWA student enrolments totalled 22,590 with a total staff of 3,526²⁶. The number of visitors to UWA during the teaching semesters is significant but it is also an attractor of longer term visitors with international students, visiting academics and the like staying in the area for extended periods. Events and festivals held at UWA, in particular the Perth International Arts Festival, attract people from the area and other suburban areas as well as visitors from overseas.

There are three hospitals located within or adjacent to the City of Nedlands (QEII/IMC, Graylands Hospital and Hollywood Private Hospital) all of which are significant attractors of visitors. Medical institutions also attract a regular stream of visiting academics and professionals in addition to patients and friends and families of patients.

The QEII/UWA specialised centre is the second largest commuter destination in the metropolitan area outside of the CBD²⁷. Ascertaining the numbers of day visitors to attractions such as those listed above is prohibitively difficult. The land use planning impacts of each of these attractors are best considered on a case-by-case basis, taking into account their context and unique characteristics.

²⁶ UWA Campus Plan 2010, <http://www.cm.uwa.edu.au/plan/campus-plan-2010/university>

²⁷ UWA Campus Plan 2010, <http://www.cm.uwa.edu.au/plan/campus-plan-2010/university>

9.5.2 Visitor Population and Duration of Stay

Quantifying tourism (overnight visitors) within the City of Nedlands is difficult as ABS data is collected for parcels (Statistical Areas Level 2 [SAL2]) that do not match local government boundaries. The data reproduced below is collected for the Nedlands-Dalkeith-Crawley SAL2 which includes properties within the Cities of Subiaco and Perth.

The following tables (sourced from Tourism Research Australia) outline average length of stay and accommodation type of both domestic and international visitors within the area.

Table 15 Annual Average Number of Visitors and Average Length of Stay²⁸

	Domestic	International	Total
Visitors	25,700	9,400	35,100
Nights	160,700	471,200	631,900
Average length of stay (nights)	6.3	50.1	18

Table 16 Accommodation Type²⁹

	All Overnight Visitors	Visitors Staying (minimum one night in accommodation)
Friends or relatives	14,100	40%
Hospital or hospital related accommodation	8,700	25%
Hotels and similar accommodation	5,000	14%
Rented house/apartment/flat or unit	3,500	10%
Own property	2,200	6%
Education/University	1,700	5%

Almost 700 visitors come into the Nedlands-Dalkeith-Crawley area every week with the majority using friends of relatives for accommodation, closely followed by health or hospital accommodation.

It is considered appropriate to assume the numbers of overnight visitors in the SAL2s that make up the remainder of the City of Nedlands do not warrant further investigation. This is due to the lack of suitable attractors in these areas.

9.5.3 Accommodation

Currently there is very little tourist accommodation in the City with only one accommodation establishment that meets the parameters for inclusion in the ABS dataset 'Tourist Accommodation 2013-14'.

However, there are some small scale bed and breakfast facilities and other short-stay accommodation opportunities scattered throughout the locality. Some residents are renting out their homes for visitors, usually for periods up to three months via online websites such as 'Stayz' and 'Air bnb', however the exact locations of these residences and the frequency of the stays is unknown to the City of Nedlands.

²⁸ Average, years 2011/12/13.

²⁹ Average, years 2011/12/13. Accommodation type allows multiple response.

Forty per cent of UWA's international students live within accommodation facilities (residential colleges) located within the City of Perth and the City of Subiaco. A further six per cent of international students live in other university-owned accommodation units in the vicinity. Currently there are approximately 4,000 international students, with an expectation that this will rise to around 5,000 by 2018.

There are some hospital related accommodation facilities provided within the City of Nedlands, such as Crawford Lodge and Milford Lodge run by the Cancer Council WA for patients undergoing treatment who require accommodation services.

9.5.4 Projected Visitor Population

While the City of Nedlands may not be considered a traditional tourism destination there are certain attractors within the City that do bring a significant number of visitors.

The medical facilities located within the QEII complex have been expanded since this latest data set was collected and it continues to be expanded in accordance with the QEII Medical Centre Masterplan³⁰. It is probable that those visiting a hospital would prefer accommodation close by, regardless of the motivation for their visit.

UWA attracts a regular stream of visitors from short day trippers, to long stay students, academics and professionals. UWA Campus Plan indicates that UWA aims to grow to 25,000 enrolments with the next 10 years and also shows expansion of facilities to develop the Crawley area as a small city³¹.

Therefore it is likely the need to provide accommodation for visitors will grow as the local attractors expand and tourism to the state as a whole, increases. There is reason and opportunity to allow for appropriate tourist and visitor accommodation to be developed within the City over time.

³⁰ QEII Medical Centre Master Plan
<http://www.nmahs.health.wa.gov.au/BuildingProgram/QEII/index.html>

³¹ UWA Campus Plan 2010 <http://www.cm.uwa.edu.au/plan/campus-plan-2010/university>

9.6 Recreation and Open Space

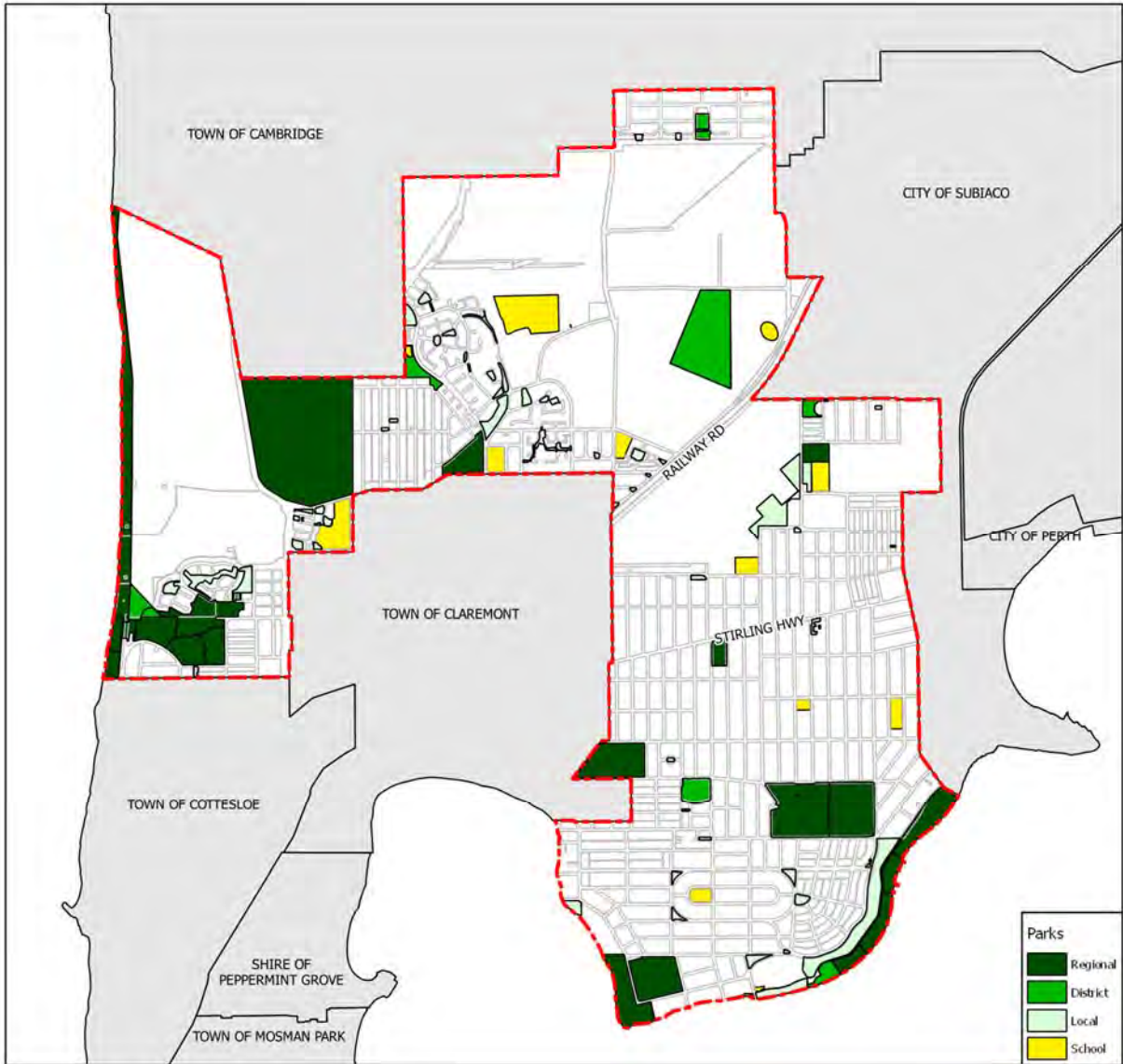
The provision of recreation opportunities and open space is a basic requirement of urban planning. In providing and managing these areas, local governments assist in increasing physical activity, promote social inclusion and provide an important landscape in built up cities.

The City of Nedlands has a range of parks, gardens and natural areas within its boundaries that provide varied opportunities for recreation. The City aims to manage recreation areas to ensure optimal use for the current and future community needs.

9.6.1 Public Open Space

Liveable Neighbourhoods is the current standard for the provision of public open space and parklands in new residential developments. As the City of Nedlands is a long established, predominantly residential area it is inappropriate to attempt to retrofit the individual requirements of Liveable Neighbourhoods to the City. Instead, the general objectives relating to parklands will be pursued. In particular, the City aims to 'provide a network of well-distributed parks and recreation areas that offer a variety safe, appropriate and attractive public open spaces'³². The following series of maps illustrates the provision of POS across the City and includes spaces immediately adjacent to the City of Nedlands where appropriate.

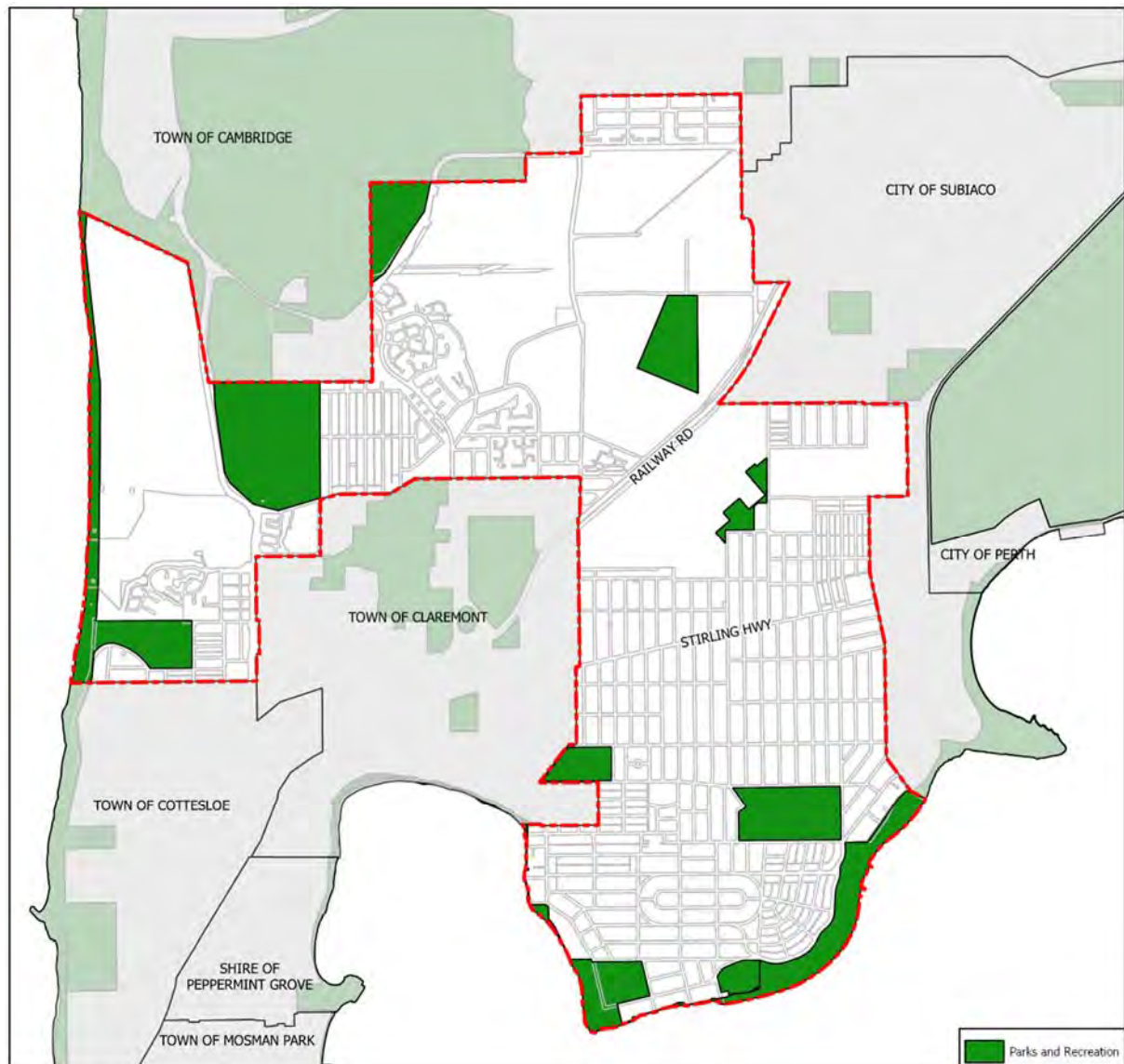
³² Objective 6: Liveable Neighbourhoods.



Map 16 Open Space Distribution

Regional Open Space and Foreshore Reserves

Regional Open Space describes land that is zoned Parks and Recreation under the Metropolitan Region Scheme. In the City of Nedlands, river and ocean foreshore reserves are also zoned Parks and Recreation and can be considered Regional Open Space. Regional Open Space totals 264 hectares in the City of Nedlands. See Map 17 for the location of Regional Open Space within, and in close proximity to, the City of Nedlands.



Map 17 Regional Open Space

City of Nedlands Parks Classification and Hierarchy

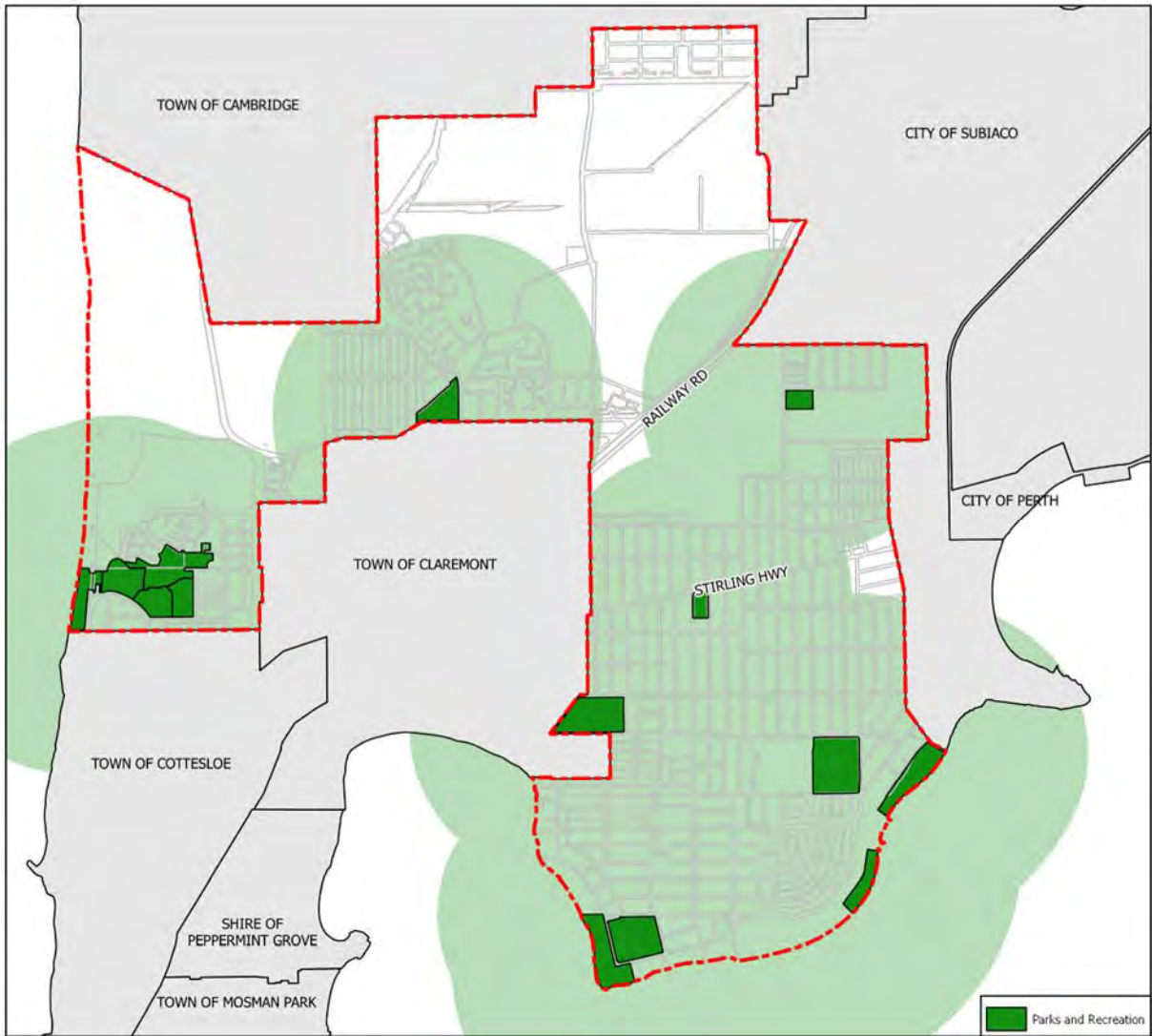
Public Open Space within the City of Nedlands is defined in a hierarchy that relates to its size and level of service. This hierarchy has been developed to respond to the needs of the City and its community. The hierarchy does not mimic the requirements in Liveable Neighbourhood, but generally aligns in its intent.

Regional Parks

These parks are major recreation, sports and/or significant bushland parks that offer a wide variety of opportunities to the broad cross section of residents within the City as well as those visiting the City. Generally large in size, these parks are a major destination within the City. In addition to those listed below, some narrow areas of Regional Open Space exist along the Swan River.

Table 17 Regional Parks

Ref.	Park	Primary Uses
R1	Allen Park	Rugby, football, cricket, playground, BBQs, dog exercise, playgroups, nature walking, nature conservation.
R2	Charles Court Reserve	Rugby, T-ball, soccer, playground, skate park, walking.
R3	College Park	Football, cricket, walking, BMX riding, sports carnivals, playgroups, dog exercise.
R4	David Cruickshank Reserve	Football, cricket, tennis, lawn bowls, playground, dog walking, childcare, kindergarten.
R5	Highview Park	Hockey, gridiron, beach volleyball, lawn bowls, childcare, kindergarten, playground, Girl Guides.
R6	Melvista Park	Cricket, football, hockey, tennis, bridge club, kindergarten, playgroup, dog exercise.
R7	Mt Claremont Oval	Soccer, cricket, school sports, BBQs, playground, nature walking, nature conservation, dog exercise.
R8	Paul Hasluck Reserve	Soccer, walking, dog exercise.
R9	Peace Memorial Rose Gardens	Heritage memorial, playground, picnics, walking.
R10	Pt Resolution Reserve	Weddings, nature walking, nature conservation, playgrounds, picnics.
R11	Swanbourne Beach Reserve	Surfing, swimming, BBQs, surf lifesaving, nature conservation.



Map 18 Regional Parks

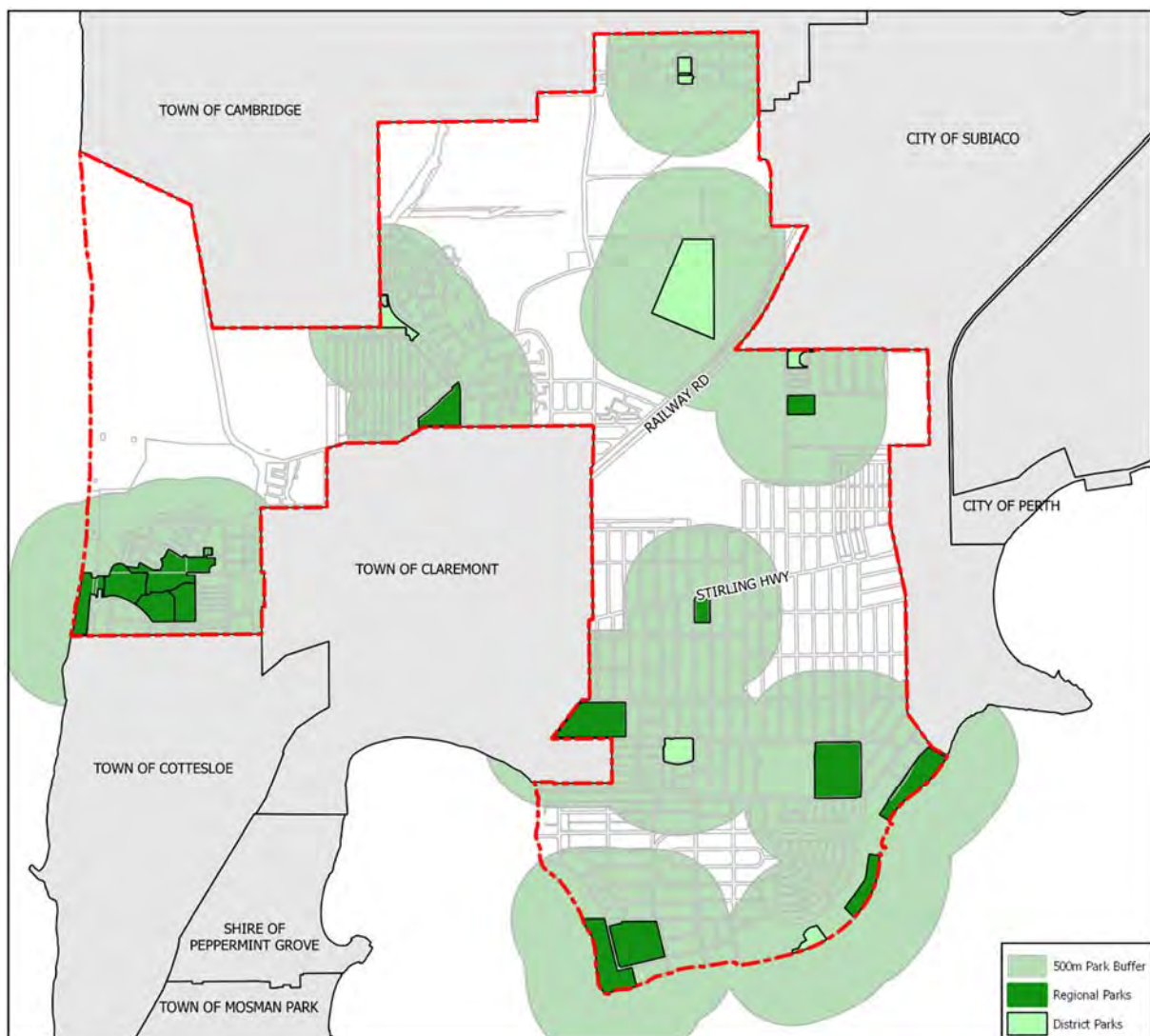
Regional parks are well distributed throughout the City of Nedlands. The majority of residential areas are within one kilometre of a regional park. With the exception of the Peace Memorial Rose Gardens (R9), these areas are either foreshores or used for organised sports.

District Parks

These parks can provide active and/or passive recreation opportunities to the broad cross section of residents within the City. These parks are mid-sized and well known to residents of the City.

Table 18 District Parks

Ref.	Park	Primary Uses
D1	Beaton Park	Function centre, BBQs, weddings, walking, playground.
D2	Dot Bennett Park	Casual football, BBQs, walking, dog exercise.
D3	Lawler Park	Casual football, BBQs, playgroups, community hall, Scout hall, tennis.
D4	Masons Gardens	Walking, dog exercise, playground, natural habitat.
D5	Mt Claremont Reserve	Tennis, library, community centre, respite centre, BBQs, half-court basketball.
D6	Nedlands Library Surrounds	Library.
D7	Shenton Bushland	Nature walking, nature conservation.



Map 19 District Parks

District parks are well distributed throughout the City of Nedlands. A large portion of residential areas are within 500 metres of a district (or regional) park space. It is important to support legible, easy access to these spaces.

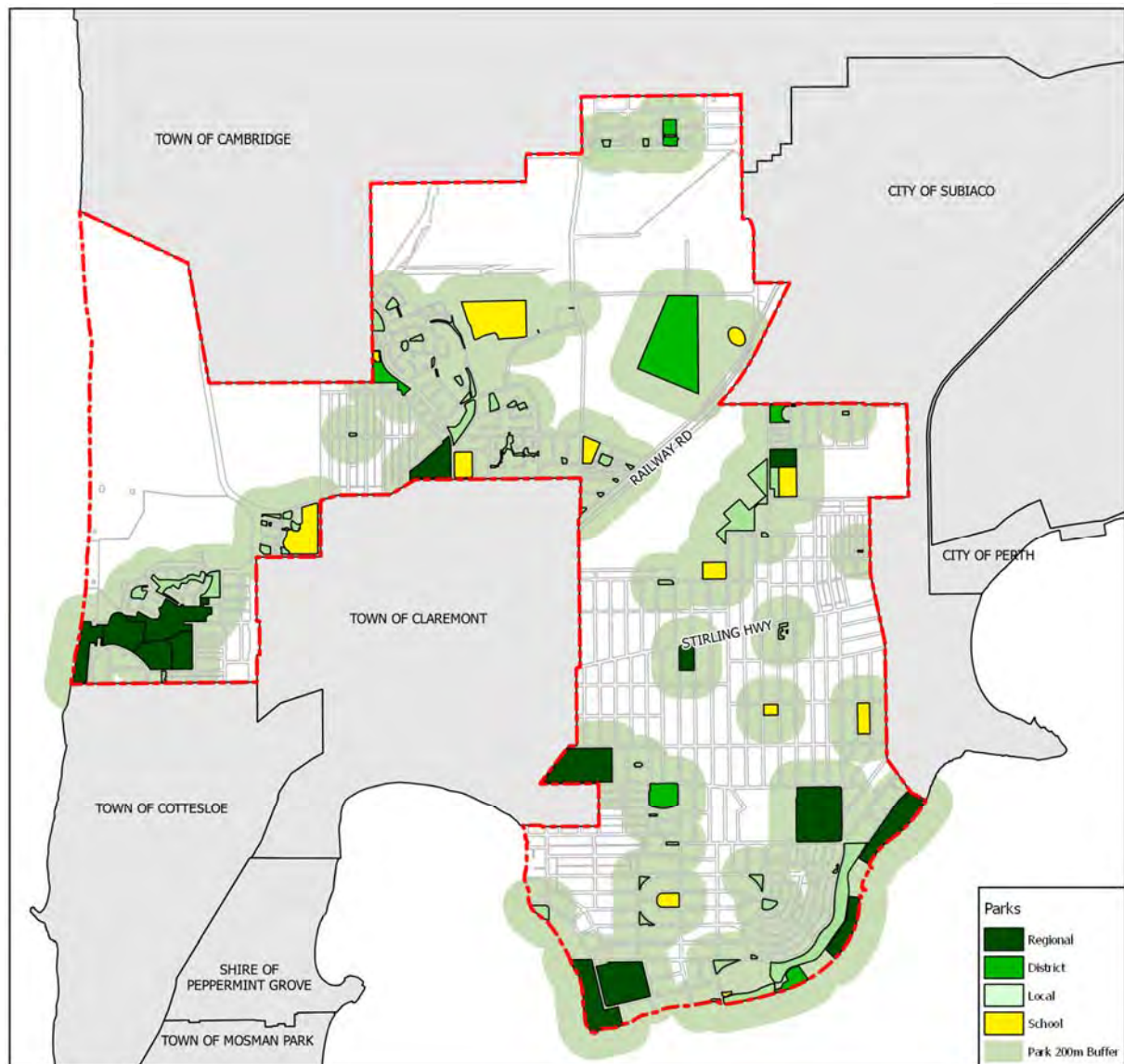
Local Parks

These are minor parks and provide limited opportunity for recreation within the City. These parks are generally known to the residents living within the immediate locality.

Table 19 Local Parks

Park	Primary Uses
Asquith Park	Passive recreation.
Baines Park	BBQs, informal cricket, walking, dog exercise.
Beatrice Road Reserve	Half-court basketball, passive recreation.
Birdwood Parade	Passive recreation, local war memorial, nature conservation, nature walking.
Bishop Rd Reserve	Passive recreation.
Blain Park	Passive recreation, playground.
Brockman Reserve	Passive recreation, playground.
Campsie Park	Passive recreation, playground.
Carrington Park	Passive recreation, playground, half-court basketball, dog exercise.
Cavendish Gardens	Passive recreation.
College Green	Passive recreation.
Dalkeith Mews	Road reserve.
Daran Park	Passive recreation.
Directors Gardens	Passive recreation.
Sunset Foreshore	Passive recreation, walking.
Genesta Park	Passive recreation.
Goldsmith Reserve	Passive recreation.
Grainger Reserve	Passive recreation, playground, half-court basketball.
Granby Park	Passive recreation.
Hamilton Park	Passive recreation, playground.
Harris Park	Passive recreation, playground.
Hollywood Reserve	Nature walking, nature conservation, passive recreation.
Hollywood Tennis Court Reserve	Tennis, passive recreation, playground.
Jones Park	Nature conservation, playground, passive recreation.
Karella Park	Passive recreation, playground.
Lesley Graham Reserve	Passive recreation, playground.
Leura Park	Passive recreation, playground.
Limekiln Field	Passive recreation.
Memorial Light Reserve	Local war memorial.
Mooro Park	Passive recreation, nature conservation.
Mossvale Gardens	Passive recreation.
Nardina Crescent Reserve	Passive recreation.
New Court Gardens	Passive recreation, playground, BBQs.
Paiera Park	Passive recreation, playground.
Pine Tree Park	Passive recreation, playground, nature conservation.
Poplar Gardens	Passive recreation.
Rogerson Gardens	Passive recreation.
Shirley Fyfe Park	Passive recreation.
St Johns Wood Boulevard	Passive recreation.

St Peters Square Gardens	Passive recreation, playground.
Strickland Street Reserve	Passive recreation, child care centre.
Stubbs Terrace Reserve	Passive recreation.
Terrace Gardens	Passive recreation.
Zamia Park	Passive recreation, playground.



Map 20 Local Parks

Local parks are scattered throughout the City of Nedlands, with a high number occurring in the western portion of Mt Claremont. A portion of residential lots are within 200 metres of a local (or district, or regional) park space. In particular the suburb of Nedlands is not well serviced by park spaces at this fine grain.

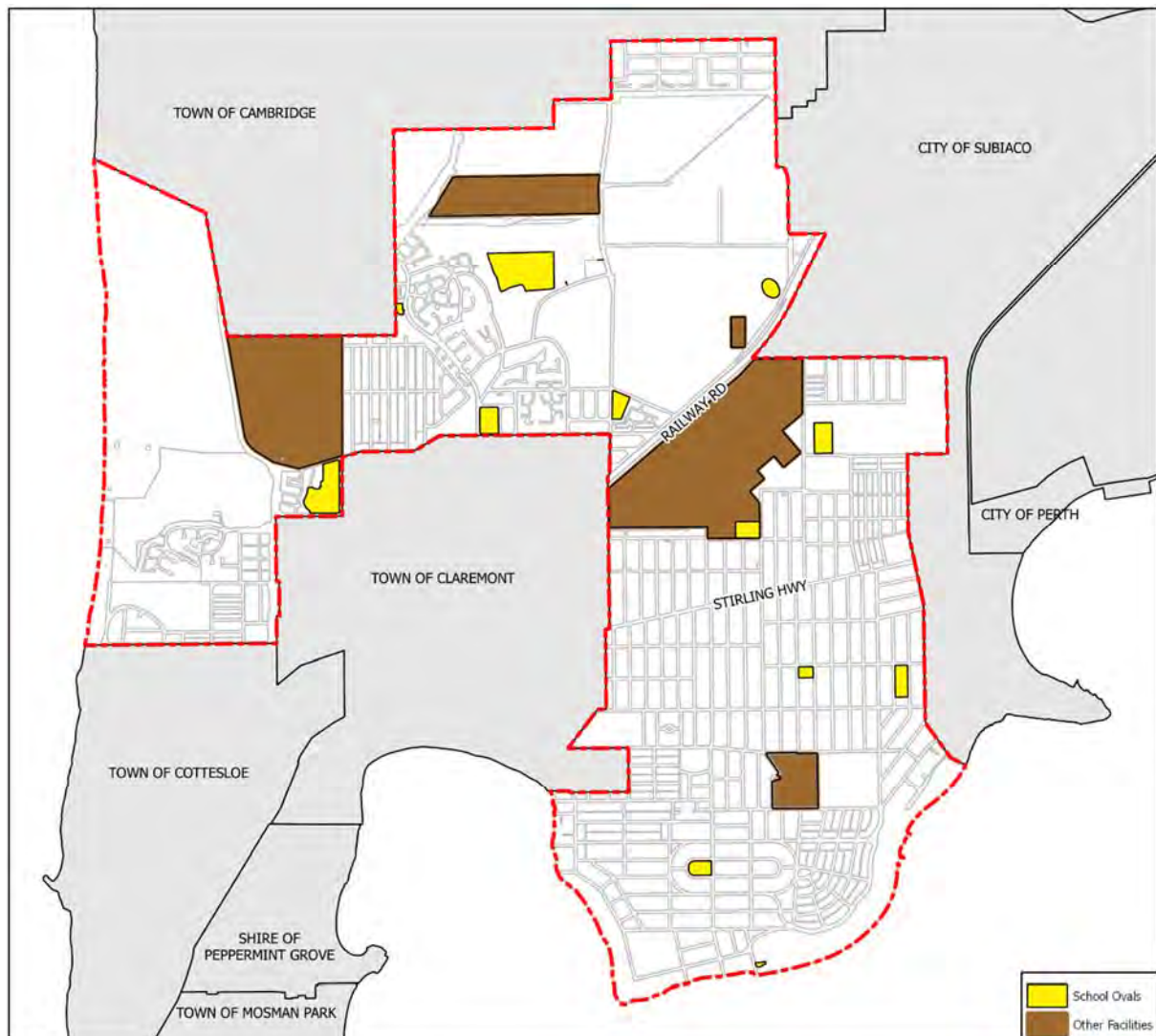
School ovals are also shown in Map 20 and Map 21. These spaces are not managed by the City but can offer local residents suitable areas for both passive and active recreation outside of scheduled school hours.

9.6.2 Other Facilities

In addition to the network of parks and open spaces, the City (and immediate surrounds) contains a number of other areas and facilities that provide recreation opportunities or other desirable attributes.

Table 20 Other Open Space

Map Ref	Facility	Function
O1	HBF Stadium	Gym, swimming pools, indoor courts.
O2	Karrakatta Cemetery	Opportunities for walking, established vegetation.
O3	UWA Sports Park	Large playing fields and turfs, organised sport.
O4	Private golf clubs	Cottesloe and Nedlands Golf Clubs.
O5	Campuses	Open space, established vegetation, walking.
O6	AK Reserve	Athletics stadium, basketball centre.
O7	Shenton Turf	Hockey turf.
O8	Netball Centre	Netball courts.



Map 21 Other Open Space

9.6.3 Participation in Sport and Physical Recreation

The ABS collects annual information on adult (15 years and over) participation in sport and physical recreation for each state and territory. The data indicates 63% of the adult population of Western Australia participate in sport and physical recreation, above the national average of 60.2%. This data set is showing increases in participation in sport and physical recreation as population increases.

The following table shows the top 20 activities by participation (defined as competing at least once in the previous 12 months).

Table 21 Participation in Sport and Physical Recreation 2011-12³³

Participants	Estimate ('000)	Participation rate (%)
Australian Rules football	47.0	2.5
Basketball (indoor & outdoor)	37.8	2.0
Bush walking	37.9	2.0
Cricket (outdoor)	33.8	1.8
Cycling/BMX	166.0	8.8
Dancing/Ballet	38.9	2.1
Fishing	38.6	2.0
Fitness/Gym	321.7	17.1
Football sports	14.0	0.7
Golf	86.4	4.6
Jogging/Running	142.6	7.6
Lawn bowls	33.0	1.8
Martial arts	28.8	1.5
Netball (indoor & outdoor)	45.1	2.4
Soccer (outdoor)	52.5	2.8
Surf sports	22.2	1.2
Swimming/Diving	180.9	9.6
Tennis (indoor & outdoor)	66.9	3.6
Walking for exercise	422.9	22.5
Yoga	28.7	1.5

The top five activities are:

- walking for exercise,
- fitness/gym,
- swimming/diving,
- cycling/BMX, and
- jogging/running.

It is interesting to note these activities do not necessarily require 'active' sporting grounds. In order to support the continuation of these type of activities the City may consider outdoor exercise equipment (such as that located at Charles Court Reserve),

³³Participation across Western Australia, ABS, Participation in Sport and Physical Recreation, Australia, 2011-12

shared or separated paths, shade and rest opportunities, public toilets, safety of use and access, outdoor showers, dog exercise, drinking water and the like.

9.6.4 Recreation Facilities

Recreation activities can be undertaken in a variety of facilities. The table below shows the number of participants reporting use of different types of facilities. These facilities are distributed fairly evenly across the City of Nedlands, perhaps with exception of indoor sports and fitness centres. The City of Nedlands does not have the type of 'community recreation centre' that is common to many other local governments. However, similar facilities can be found at HBF Stadium, UWA and Lords. Care should be taken to ensure appropriate facilities can be maintained or developed as required.

Table 22 Use of Facility Types 2011-12³⁴

Type of facility	Total participants (%)
Public playing fields or ovals	26.0
Schools or educational facilities	8.8
Outdoor sports facilities	23.7
Parks or reserves	34.7
Indoor sports or fitness centres	39.0
Off-road cycleways or bike paths	26.1

9.6.5 Projected Recreation Needs

The City is well serviced with a number of parks, reserves and recreational facilities. In particular the City has significant areas of regional open space and district parks that provide for organised (club based) recreation within the City and draw patronage from across the western suburbs. Despite an increased population, there is ample POS of the regional and district orders to cater for anticipated population increases.

However, there is a lack of local parks in the municipality, specifically within the City's older suburbs, which is attributable to the fact that most of the City was developed and subdivided prior to the adoption of the 10% public open space requirement.

Any increased population would have an impact on the use of existing POS within the City, especially where existing deficiencies occur within the order of Local Parks.

³⁴ Use across Western Australia (multiple response), ABS, Participation in Sport and Physical Recreation, Australia, 2011-12

9.7 Community Facilities

There are a range of community facilities available to residents within the City of Nedlands which are provided by government, non-government organisations and private companies.

Local governments usually provide local and district level community centres, including community halls and recreation centres, libraries, child care and assist in the administration of buildings for community health, youth and aged support services.

State government usually provides schools, medical facilities, cemeteries and emergency services with the Federal government providing tertiary facilities, social security and other welfare, children's and family services.

Non-government organisations have traditionally provided independent and church based schools, and church and charity welfare services. Whilst private companies are increasingly entering the market providing some community based facilities, most prominently recreation facilities and childcare services.

9.7.1 Audit of Facilities

For the purpose of capturing and auditing all community facilities and services that are available to City of Nedlands residents, community facilities and services provided by local, state and federal government, non-government organisations and private companies have been incorporated. Also, community facilities and services that are nearby, but not necessarily within the City of Nedlands, have been included.

The City has used the Parks and Leisure Australia WA - Guidelines for Community Facilities³⁵ (PLA WA Guidelines) as its benchmark for assessing the provision of community facilities for its residents.

It is recognised that the use of these guidelines as a tool for assessing community infrastructure provision is not an accurate measure in isolation. Nonetheless, it can be used as an indicator to inform whether further analysis is needed.

An assessment of community facilities and services accessible to City of Nedlands residents (against PLA WA – Guidelines) has been undertaken for both the current and projected population. Population figures align with those outlined in Chapter 9.1. The complete audit of facilities can be found at Appendix D.

9.7.2 Analysis of Facilities and Services

From the completed assessment it has been established that residents of the City generally have access to a wide range of facilities and that the provision of these facilities is broadly in accordance with PLA WA Guidelines. The following main points can be made from the assessment:

The analysis shows that there is a strong presence of community groups with both child based (playgroups) and theatrical/arts communities within the locality. These facilities exist within the City, yet the current standard these are in may not be meeting contemporary requirements. Residents are extremely well provided with traditional community facilities such as outdoor recreation spaces, sporting clubs and libraries.

³⁵ Parks and Leisure Australia WA. 2010, Guidelines for Community Facilities
<https://www.parksleisure.com.au/regions/wa/community-facilities-guidelines-2>

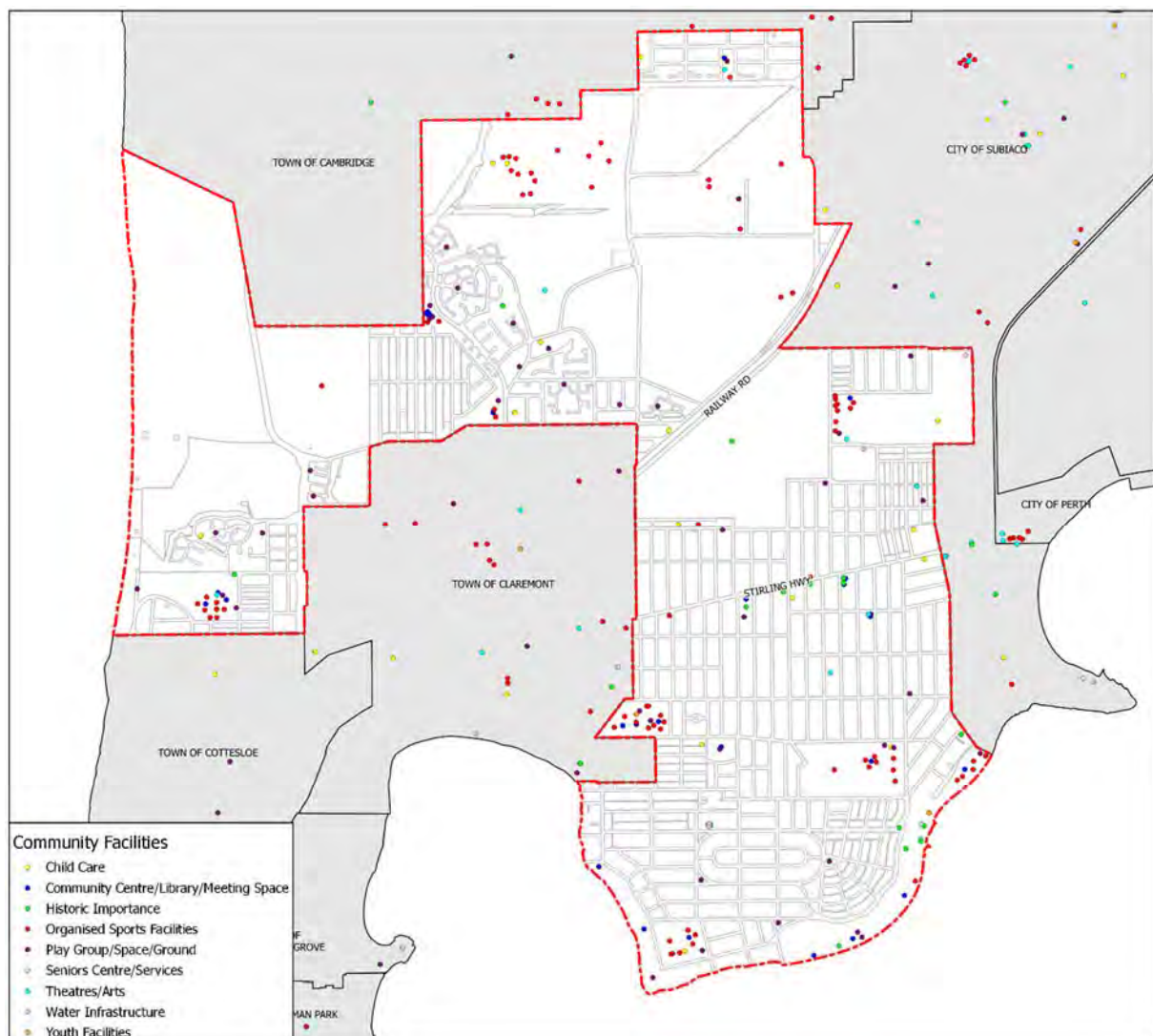
Conversely, the City does not provide any indoor recreation facilities which is evident in the lack of provision of basketball and netball courts or an aerobics/fitness/gym facility. This is, however, supplemented by the large amount of private indoor recreation.

The City provides one child care centre but this in itself does not meet the recommended standard for the number of facilities that should be provided within the City. This shortfall is addressed by private providers, a number of which are operated within buildings leased from the City.

The audit also shows that the City is deficient in youth specific facilities such as skate parks, BMX facilities and adventure/specialty playgrounds, but it is recognised that there is a vast abundance of sporting facilities and clubs that are enjoyed by the youth of the local area.

9.7.3 Distribution of Facilities

All the community facilities and services categorised in the assessment against the PLA WA Guidelines under Map 22 have been mapped accordingly.



Map 22 Distribution of Community Facilities

The main points shown by Map 22 include:

- There is some clustering of reciprocal and compatible facilities and services.
- Despite clusters occurring, these clusters are dispersed and overall facilities are well distributed throughout the City.
- The City is well provided with a multitude of facilities even if they are not directly provided by the City (privately owned/operated).
- The City is well provided with a multitude of facilities even if they fall outside the City's boundaries.
- Access to facilities located outside the City's boundaries are in some cases closer than facilities within the City's boundaries.

It can be commented that whilst the City may not directly provide some facilities which leads to the assessment against PLA WA (Map 22) indicating a shortfall, there are ample opportunities for residents of the City of Nedlands to access these, or similar, services within nearby areas.

9.7.4 Adequacy of Facilities

In an audit of the City owned facilities undertaken for the City's Strategic Community Plan, the condition of many buildings were found to be below acceptable standard.

In the review of the City's facilities, the following was identified:

- The average age of the City's buildings is 52 years;
- 12% of City owned buildings require demolition and rebuilding due to their age and deterioration;
- 26% require major works to be brought up to current standards for community facilities/public buildings; and
- 41% require minor works to be brought up to standard.

The renewal of the City's existing facilities has been identified as a major theme of the Strategic Community Plan 2013 - 2023. Over the next 10 years, these key facilities are planned to be redeveloped to meet current requirements.

The key facilities identified for renewal from the Strategic Community Plan are as follows:

- DC Cruikshank³⁶,
- Highview Park,
- Allen Park,
- Melvista Park, and
- Nedlands Library.

9.7.5 Projected Community Needs

The analysis undertaken and shown in Appendix D included extrapolation to the year 2030 based on a population figure derived from the projections undertaken in Chapter 9.1. The general trends in community infrastructure provision as described below hold true with the projected increased population.

³⁶ Completed 2016

The PLA WA Guidelines indicate that the City does not provide adequate community infrastructure in the fields of child care services, indoor recreation facilities and youth facilities, however it can be seen that residents of the City actually have good access to these services through their provision by other service providers and by their close proximity to services and facilities that fall outside the City's boundaries.

In relation to indoor recreation facilities, the City's residents are well positioned with access to the State Basketball Centre, State Netball Centre, HBF Stadium and Lords (Subiaco) along with various small scale private fitness studios and gymnasiums.

There are also a large number of private operators in the child care sector of the market so it is not considered that the provision of child care facilities by the City will be a cause for concern now or into the future.

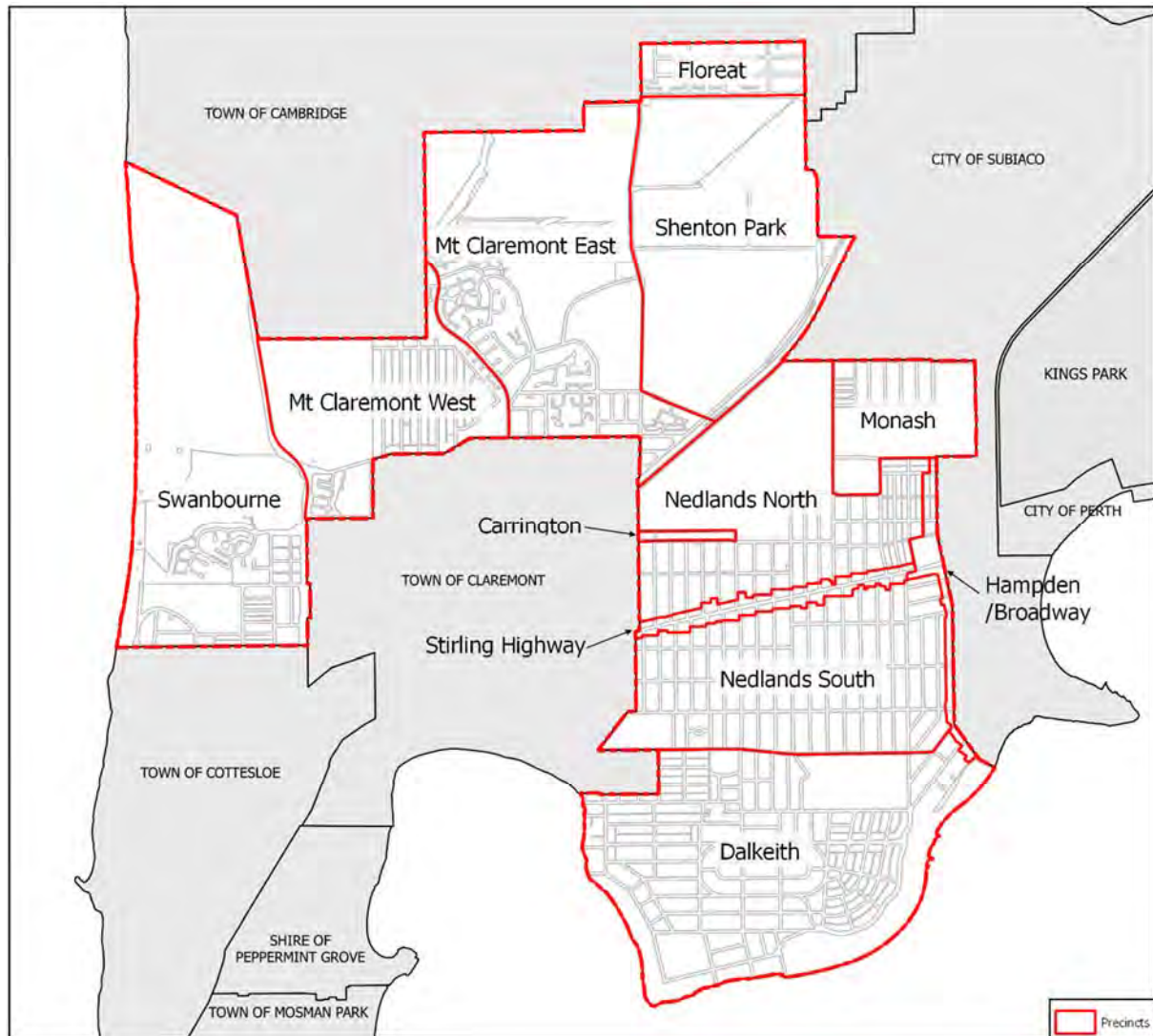
The provision of more inclusionary and youth spaces has been identified by the City as a priority in its Strategic Recreation Plan 2010 – 2015 and the development of the All Abilities Play Space forms part of that plan. Additionally, proximity to Claremont, Subiaco and Leederville youth facilities also aids in off-setting the apparent deficit in this category.

9.8 Urban Design, Character and Heritage


















9.8.1 Urban Design and Character Precincts

The City has developed in certain areas over time with each having clear characteristics that are largely dependent on the decade the area was developed, architectural trends at the time, geographical features and land barriers.

Thus, there are specific precincts within the City (see Map 23), and as such each area has been treated as distinct. The boundaries generally align with identity features, not suburb boundaries.



Map 23 Precinct Map

Precinct Legend			Specialised Centres
	Department of Defence Land		Land owned by UWA
	Parks and Recreation		Shenton Hospital Redevelopment Site
	Residential		Subiaco Wastewater Treatment Plant
	Neighbourhood Centre		Department of Health
	Local Centre		Non-Residential
	Department of Education		Hotel
	Train Station		Karrakatta Cemetery
	Graylands Hospital		Civic Uses

Swanbourne



The Swanbourne precinct is the western most part of the City of Nedlands with Swanbourne Beach forming the western boundary of the precinct. The southern boundary is North Street, the eastern boundary is West Coast Highway and the northern boundary comprises the interface between Campbell Barracks and the Town of Cambridge.

The Swanbourne precinct is predominantly non-residential with a large portion being occupied by the Department of Defence. Allen Park almost evenly shares the remainder of the precinct with residential development and a couple of small scale corner stores.

Of the Department of Defence owned land, Campbell Barracks occupies three-quarters of the precinct extending from the north down to Seaward Village, a residential estate developed to house families of those serving in the Defence force. This estate is inward facing and secluded from the remainder of the Swanbourne precinct.

Allen Park occupies a large portion of the remainder of the area and is a regional recreation facility that contains a number of ovals, tennis courts and Swanbourne

Beach. The creation of Allen Park also played a significant role in establishing the community and it still holds importance today.

The rest of the area is residential and generally follows a traditional grid layout. The area was developed in response to an increasing population within the City after World War I.

The residential pocket to the west generally has larger lot sizes, ranging from 776m² to 1,300m². Due to the topography of the area, proximity to the coast and a general desire for ocean views, large multi-storey dwellings dominate. Large shaded verges and isolation from the remainder of the City of Nedlands, helps create the quiet community character of the area and fosters interaction between land owners.

The residential area to the eastern side of the precinct is a more established area containing large street trees with mostly modest dwellings. The density increases from west to east following a progression from R12.5 to R40. This area has seen renewed interest from new home builders in recent times. These lots on average are 300m², whilst historic lot sizes still exist at 1,012m² which is more common throughout the greater City of Nedlands. Weatherboard cottages and 'beach shacks' are dotted throughout the precinct. Some newer architectural styles are imposing due to their bulk and scale, particularly on some of the smaller lots. The area alludes to small coastal town characteristics, vastly different from the greater City of Nedlands.

North and Kirkwood Street corners are traditional corner stores, currently supplying speciality/food products. There is also a restaurant facing Swanbourne Beach, located next to Swanbourne Nedlands Surf Life Saving Club, abutting Allen Park.

Mt Claremont West



The Mt Claremont West precinct has West Coast Highway as its western boundary, Montgomery Drive as its eastern boundary and Alfred Road as its southern boundary.

The precinct is split between the Cottesloe Golf Club occupying the western half of the precinct, an established residential area to the east and the Swanbourne Primary School and old Swanbourne High School redevelopment site to the south.

The topography throughout this area plays an important role in the layout and character of the precinct. The high point, being 'Mt Claremont', exists primarily within the golf course, falling into Mayfair Street and Alfred Road. The topography continues to fall east, then plateaus and falls again to Beecham Road which creates a natural transition between the adjoining precinct (Mt Claremont East). The southern fall has been valuable to the redevelopment of the Swanbourne High School site, generating city views.

The land occupied by the golf course in the western half of the precinct, is a Regional Reserve which is managed by the City of Nedlands and leased to the Cottesloe Golf Club.

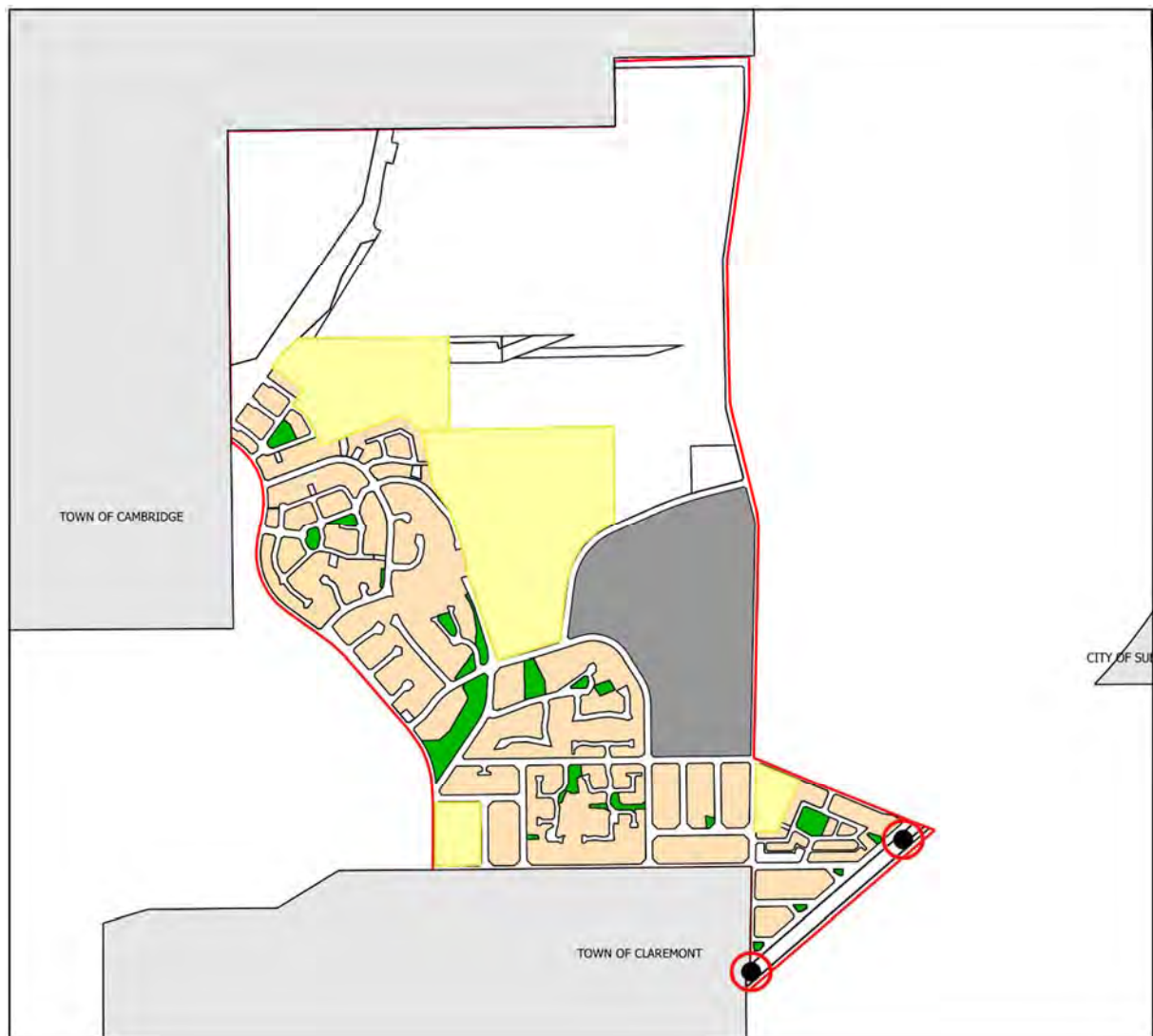
The residential component in the eastern half of the precinct, more commonly referred to as 'Old Mt Claremont', is a typical grid layout with steep topography to the west, large lots, a mix of single storey 1960s bungalows and modern double storey architectural homes. Alfred Road is the sole access point into 'Old Mt Claremont' due to the historical development of the area and topographical constraints. The built form varies largely due to topography, where views of both the City and the Cottesloe Golf Club are achievable, dwelling design has been maximised to take advantage of these assets.

Lot sizes vary, but the majority are 1,012m². The precinct is inconsistent in relation to building setbacks, street trees and verge maintenance, which is predominantly due to the topography and the age of dwellings. There appears to be a slow transition to restore the older Californian bungalows which aids in maintaining the established nature of the precinct, however there is also demolition and replacement of some of these older homes with new architectural builds, which is making some change to the overall character of the area.

The old Swanbourne High School site, located in the south-west pocket of the precinct, has recently undergone mixed-density redevelopment. Topography again is significant within this area and the built form is reflective of this. The redevelopment is subject to design guidelines which aim to build a contemporary architectural style (bold, edgy and original). The area is a representation of housing variety within the City, with smaller lot sizes and some apartments. The area has a reduced front setback, in comparison to the remainder of the City, which ranges from 3.5m to 6m, fostering this housing variety.

Throughout the precinct there are a small number of non-residential land uses, including a group of shops with residences above on the corner of Asquith and Strickland Streets, a library/community centre and the Mt Claremont oval. The Asquith Street shops are unique to the area and create a very active focal point for the local community. The Mt Claremont library is a well utilised community centre, not only by residents of the City, but also the wider Perth community.

Mt Claremont East



The precinct is bound by Montgomery Drive to the west, Alfred Road to the south, Stubbs Terrace and Brockway Road to the east. The northern boundary is Underwood Avenue. The precinct lies between Mt Claremont West and Shenton Park and is serviced by Karrakatta train station.

Currently, the precinct is a mix of residential development and land reserved for public purpose. This reserved land includes HBF stadium, Western Australian Institute of Sport, McGillivray Sporting Complex, UWA Science and Research, John XXIII College, Mt Claremont Primary School and Graylands Hospital.

The residential component consists of three distinct developments, including St Johns Wood estate, St Peters Square estate and the remaining existing residential.

Mt Claremont East contains heritage listed old Swanbourne Conservation Area and Graylands Hospital. Both are listed on the State Register and the City's Municipal Inventory.

The old Swanbourne Hospital site has been incorporated into the St John's Wood estate subdivision, developed in the 1980-90s. The built form within this subdivision is sympathetic to the style of the old Swanbourne Hospital site, many of the dwellings

having pitch roofs and red brick. The subdivision layout consists of loops and cul-de-sacs.

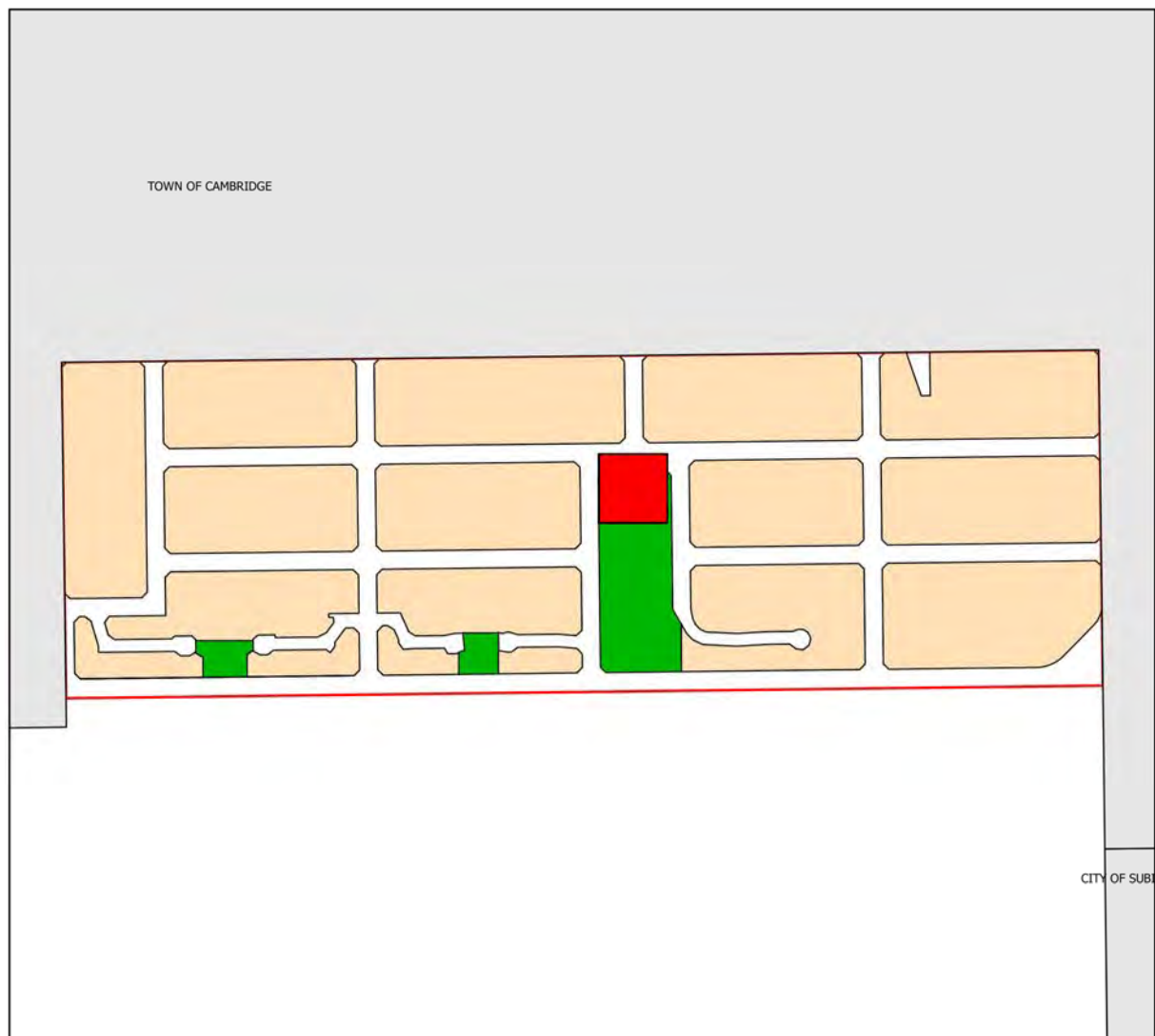
St Peters Square estate is bounded by Quintilian Road to the north, Stubbs Terrace to the east, Alfred Road to the south and Brockway Road to the west. The subdivision lies adjacent to the Perth to Fremantle railway line. The area has a varied but cohesive streetscape, with innovative and attractive design. The variety of housing styles suit current and future living requirements and are a great example of medium density living within the City of Nedlands. The density of the development is softened by the centrally located public open space and walkable streets.

Both St Johns Wood and St Peters Square housing estates have design guidelines which have shaped the built form. Many of the roads have been paved which contribute to the walkability of the areas. Due to the recent nature of development, street trees are of medium size but should form a good canopy to shade hard surfaces in the future. The areas are quiet, some with laneways, leading to reduced carport appearance and active frontages. The precinct has well-manicured private front gardens. The setbacks are on average 6m within both areas. The lot sizes are also reflective of a more recent development, being a smaller lot size with higher density coding (in comparison to the greater City of Nedlands).

A large portion of the precinct is a recreation facility and known as the Mt Claremont Sporting Precinct. The area is a hub of sports including rugby, athletics, hockey, soccer, ultimate (frisbee), swimming and water polo.

Other land uses within the area include John XXIII College and Graylands Hospital Campus. A small portion of land located to the north of St Johns Wood is currently under development by Christ Church Grammar School which will see the emergence of additional private open space.

Floreat



The Floreat precinct is defined by Underwood Avenue to the south, Brookdale Street to the west, Selby Street to the east and the City's northern boundary, Alderbury Street.

The precinct was developed in the 1950s as a part of the wider Hackett Estate and is predominantly residential with a local commercial strip and adjoining park located in the middle of the precinct.

In style with a typical 1950s subdivision, the road pattern follows a grid arrangement with the lots being 900m² or larger, laid out in a north-south orientation. Of note, the corner lots follow a fanned arrangement resulting in irregular corner lot shapes and dwellings facing outwards from street corners with little to no side fences evident. This results in good passive surveillance throughout the area and gives a wide open feeling to the street intersections.

The majority of the housing stock throughout this precinct is made up of the original dwellings from the 1950s development of the estate, comprising modest, single storey, post-war brick and tile dwellings. However, there are a notable portion of dwellings that have been renovated, from approximately 1980s onwards, displaying a newer architectural style. Despite renovations and rebuilds throughout the precinct, the form

of the precinct has been maintained. That is, the original large lots, with single dwellings, located with generous setbacks and wide verges remains a common feature.

A distinctly different part of the precinct exists along the southern border, where smaller lots, being approximately 500m², are occupied by newer, smaller dwellings, serviced by paved internal cul-de-sacs which are joined by pocket parks.

In the centre of the precinct there is a focal point of a mix of commercial buildings, community facilities and public open space. The local commercial strip is generally single storey with one larger two storey building. Commercial uses such as a hairdresser, café, office, childcare and homewares face Kirwan Street with a rear laneway backing onto Lawler Park. Lawler Park is a local park with a shaded playground, park benches and contains Hackett Hall, a Scout Hall and tennis courts.

Hackett Hall is registered on the Municipal Inventory and is recognised as having social and historic significance. Established for the people of the Hackett Estate in 1960, it was a centre for social functions and activities such as playgroups. The Scout Hall was opened by the City in 1967 for the sole use for scouts and guides. The hall is now utilised for a range of community activities.

Shenton Park

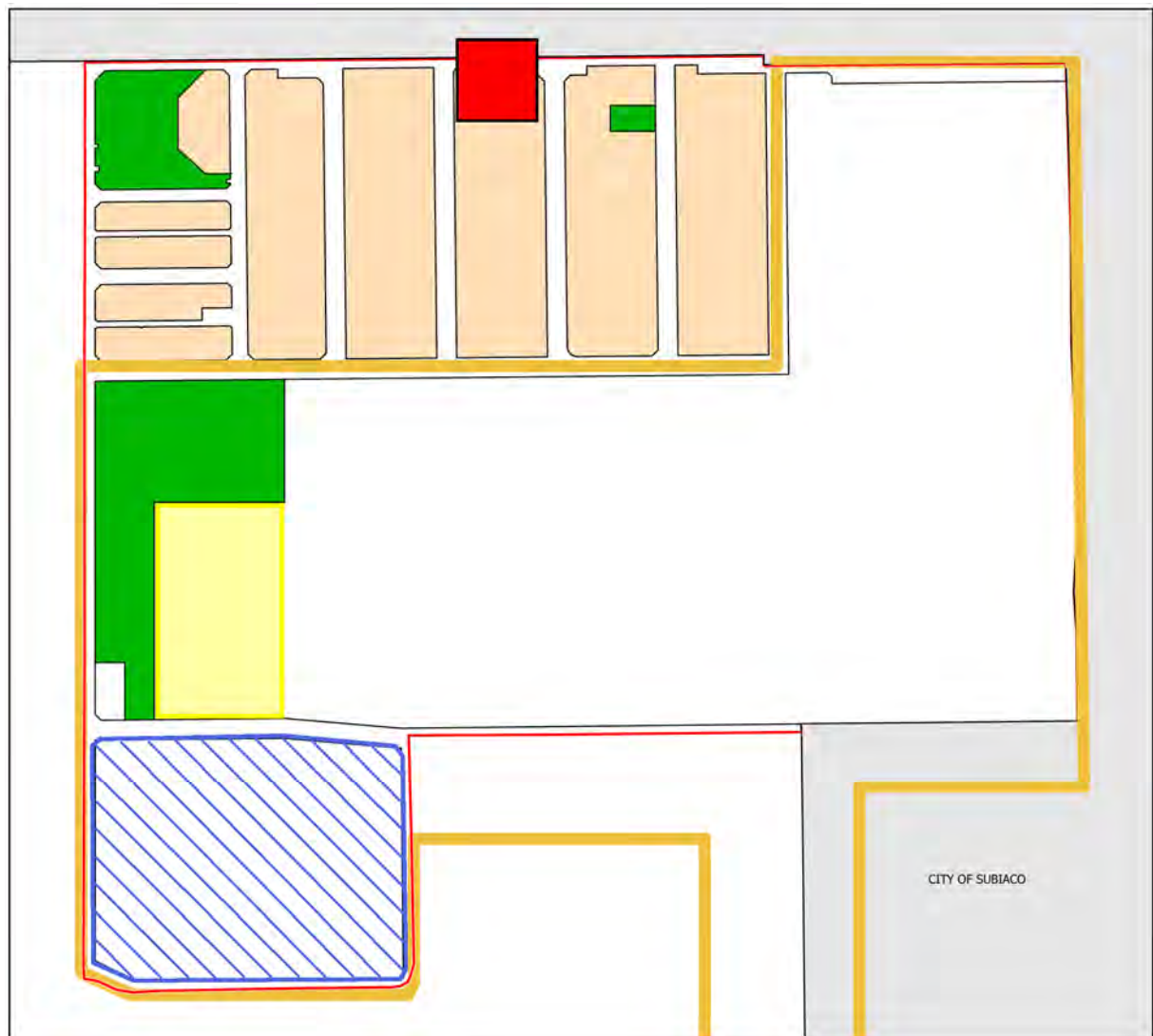


Shenton Park is located east of Brockway Road, south of Underwood Avenue, west of Selby Street, abutting the Perth to Fremantle rail line.

The precinct is mostly non-residential, containing the Subiaco Wastewater Treatment Plant, Irwin Barracks, Shenton College, Department of Health, Dog & Cat Refuges, Bush Forever sites and a number of land holdings owned by the University of Western Australia.

The old Royal Perth Hospital is currently under redevelopment, which will see the emergence of residential development and a small scale commercial centre.

Monash



This precinct is defined by Aberdare Road (northern boundary of the City), Smyth Road to the west, Karella Street East, Williams Road and Monash Avenue as southern boundaries and to the east is the QEII Medical Centre. The majority of the Monash precinct is taken up by hospital, aged care, school and recreation land uses.

The residential component consists of properties facing Monash Avenue and an inward facing pocket from Verdun Street to Aberdare Road. This includes the recently redeveloped Hollywood High School site. The newly developed northern pocket is made up of 300m² to 700m² lots and includes a portion of apartments. The majority of these lots face north-south which is uncommon within the City of Nedlands. This pocket has detailed design guidelines, which aim to have a distinct, high quality contemporary and robust identity. Public open space requirements for development have meant the City has benefited from an additional local park within the precinct. Due to the topography (slope from south-west to north-east) of the area, passive surveillance of the public realm has become an important design feature of the development.

The lots sizes for the remainder of precinct are consistently 1115m² and boxy with 24m wide frontages. The low density, quiet precinct, is an older established area

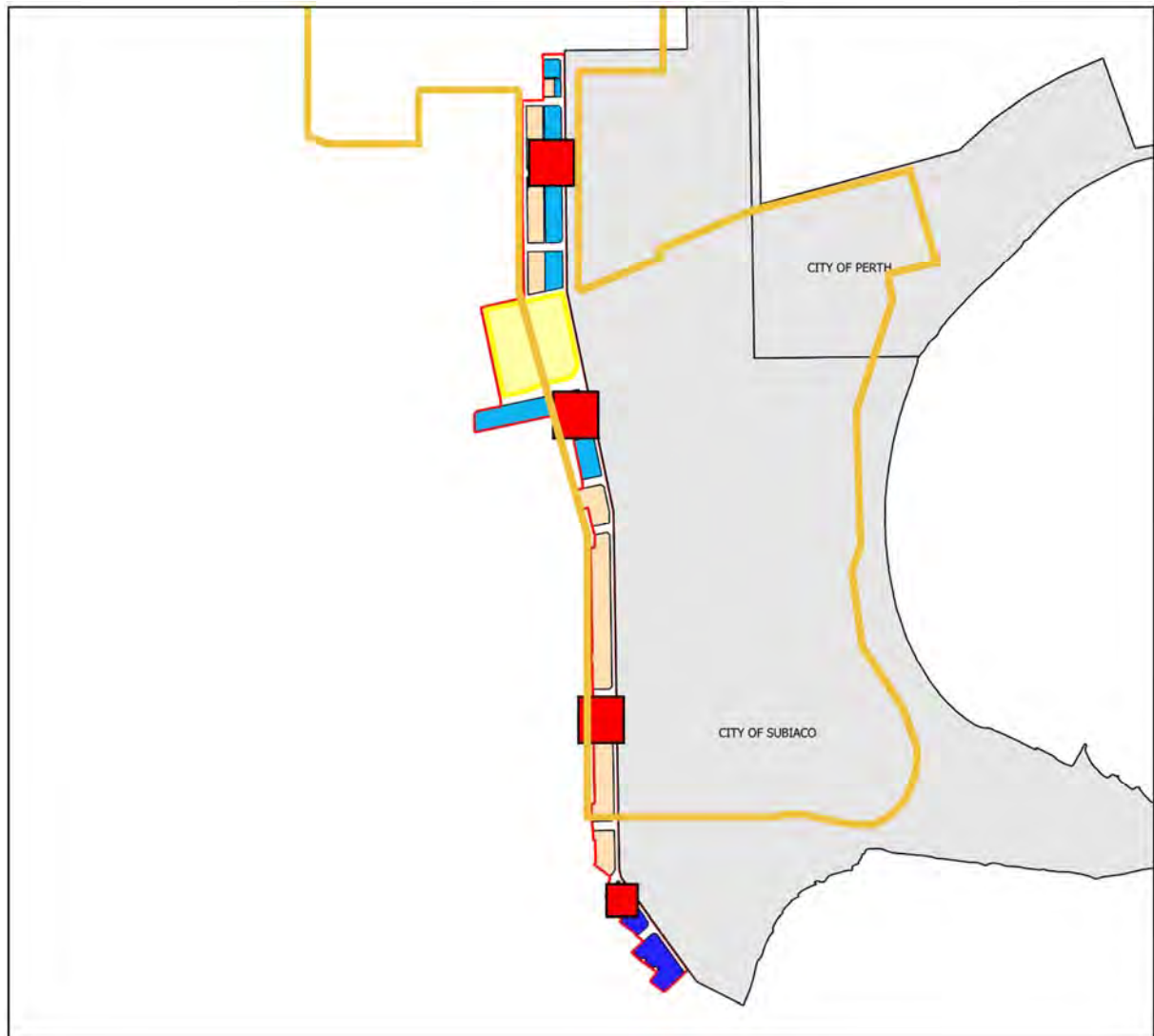
having mature street trees and quality footpaths. New two storey dwellings are steadily appearing amongst the original single storey housing.

The precinct also includes those properties facing Monash Avenue which are approximately half the lot size (600m²) of above. These lots are serviced by a laneway, giving these properties good rear access. Many of these are existing established dwellings.

The non-residential component of the precinct includes QEIMC and Hollywood Private Hospital. The precinct also includes Hollywood Primary School site and Highview Park which includes a range of sporting facilities such as volleyball, hockey, lawn bowls and social sports.

The Monash precinct also includes a small store/deli, located on the corner of Aberdare Road and Croydon Street and a small park on Campsie Street.

Hampden Road / Broadway



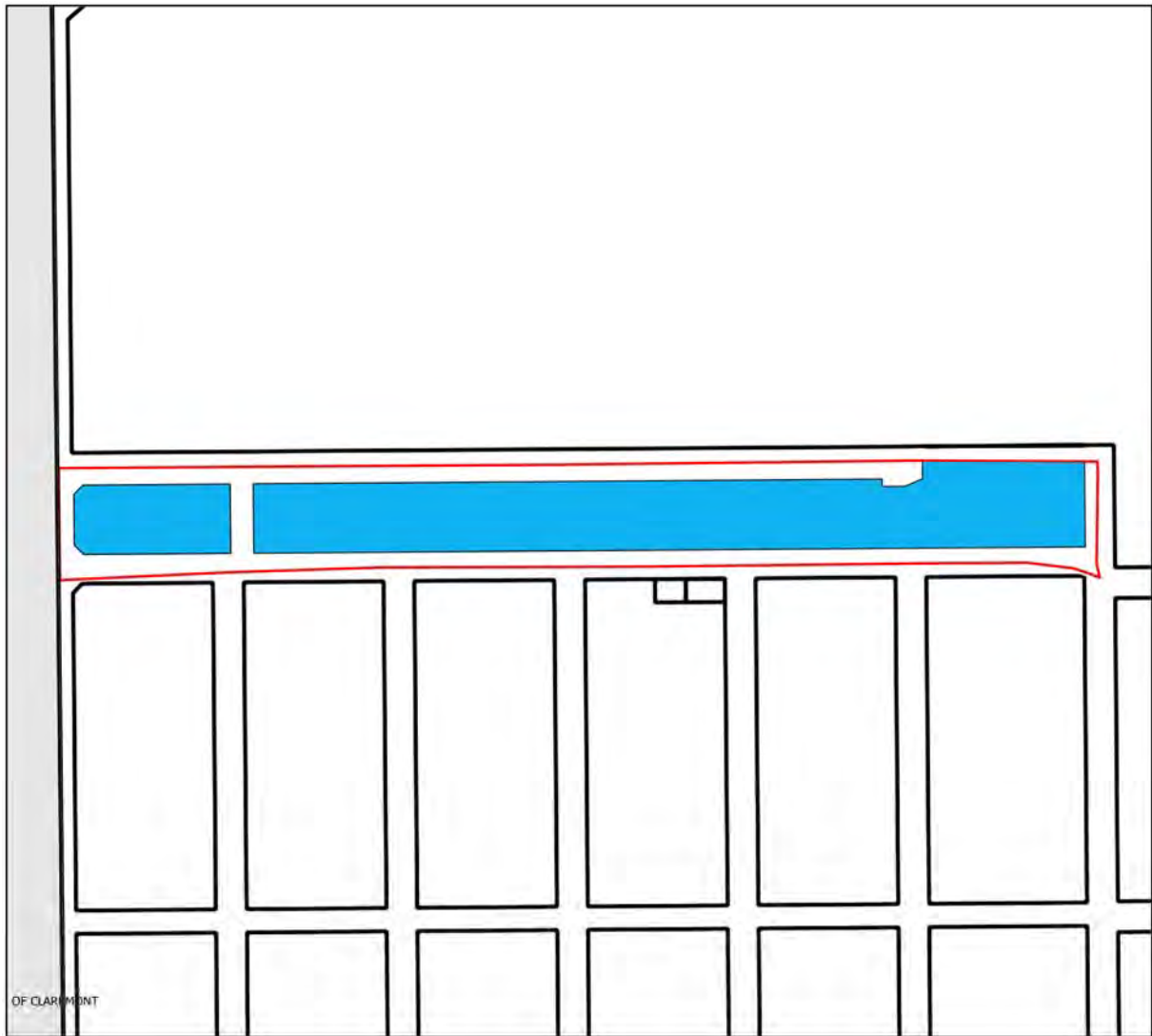
The Hampden/Broadway precinct runs parallel with the eastern boundary of the City. The mostly commercial strip includes all properties abutting Hampden Road and Broadway, inclusive of the UWA Architecture, Landscape and Visual Arts campus and the lots fronting Stirling Highway between Bruce Street and Broadway. The northern boundary is Monash Avenue and the southern boundary is the Esplanade.

Hampden Road is a mix of restaurants, retail shops, pharmacies, convenience stores, consulting rooms and offices. Broadway is a more eclectic mix of commercial and residential. Shop and retail cluster around the northern end of Broadway, with office and consulting as an additional use scattered throughout the residential pockets. South of Hillway is another collection of non-residential uses which include retail, cafe and restaurant.

Located further south on Broadway is the historically iconic Steve's Hotel which has undergone redevelopment.

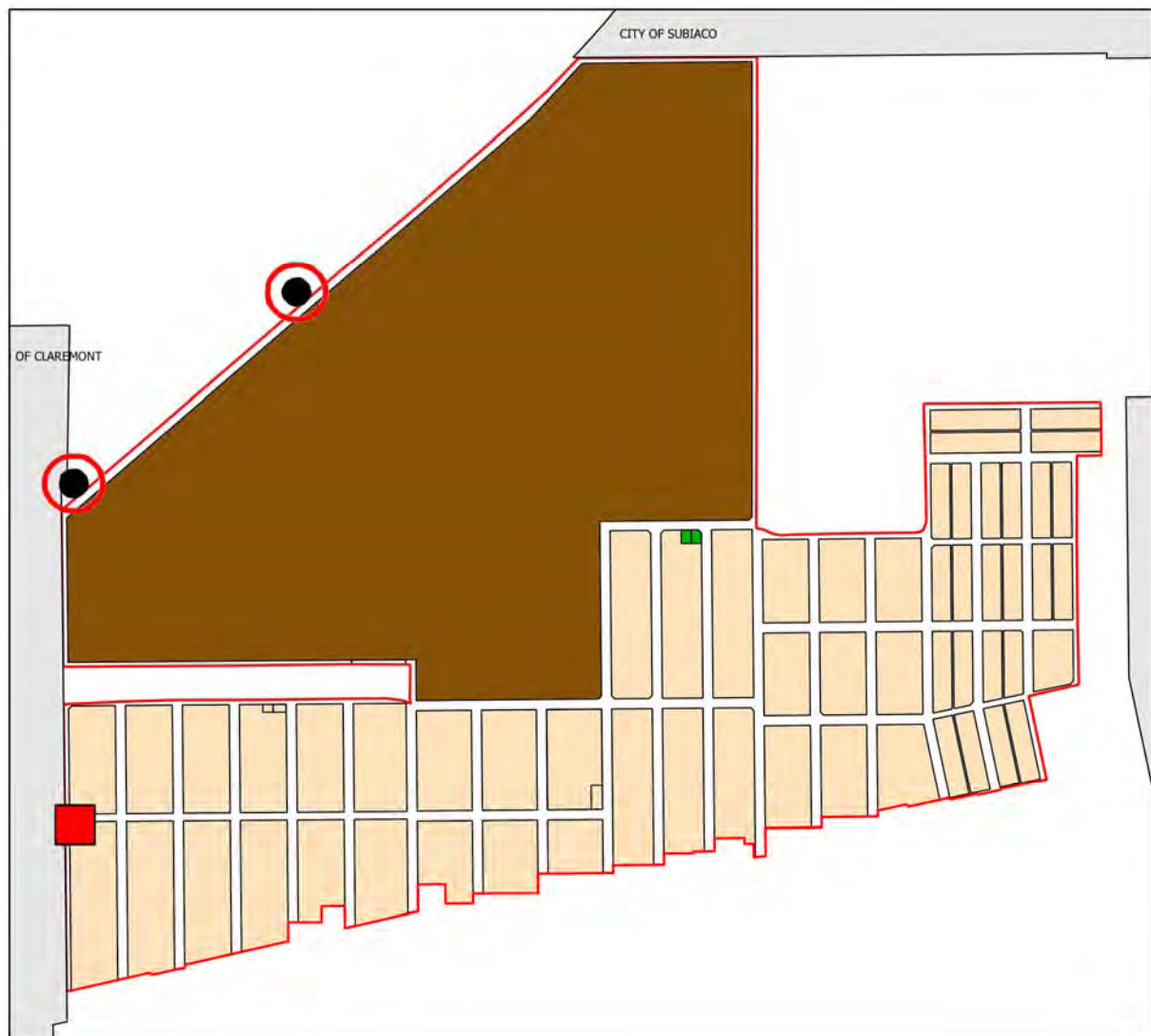
It must be recognised that the dramatic topography (west to south slope) within some of the more southern lots of Broadway, has shaped the built form and development potential.

Carrington



Carrington precinct is located along Carrington Street, adjacent to Karrakatta Cemetery, bound by Loch and Broome Street forming a narrow rectangle shape. The eastern end comprises the City of Nedlands Depot and the remainder of the precinct is a varied mix of light industry and commercial operations.

Nedlands North



This precinct is defined by properties abutting Stirling Highway, Loch Street, the Perth to Fremantle rail line, Smyth Road and properties abutting Hampden Road.

Around the 1920s the Nedlands North precinct was cleared of bush to allow residential development. Its existence was fortuitous, owing more to historical and geographical accident rather than to overall planned urban growth. The Claremont Road Board (prior to Nedlands Road Board/City of Nedlands) fought hard for large lots with 20m frontages as they believed it to be in the district's best interest. These features still exist today with large lots west of Williams Road maintaining 20m frontages, something that holds historical significance and characterises the area.

The majority of lots within the precinct face east-west. From Loch Street to Broome Street, lots range from 696m² to 787m² with 15m frontages, from Broome Street to Williams Road rectangular lots of 1,012m² with approximately 20m frontages are most prevalent, whilst from Williams Road to Hampden Road lots are consistently 455m² with 12m frontages.

Housing is generally modest with 1930s housing stock, however, new developments and extensions to existing dwellings are continually occurring. West of Williams Road new two storey dwellings are steadily appearing amongst the original single storey

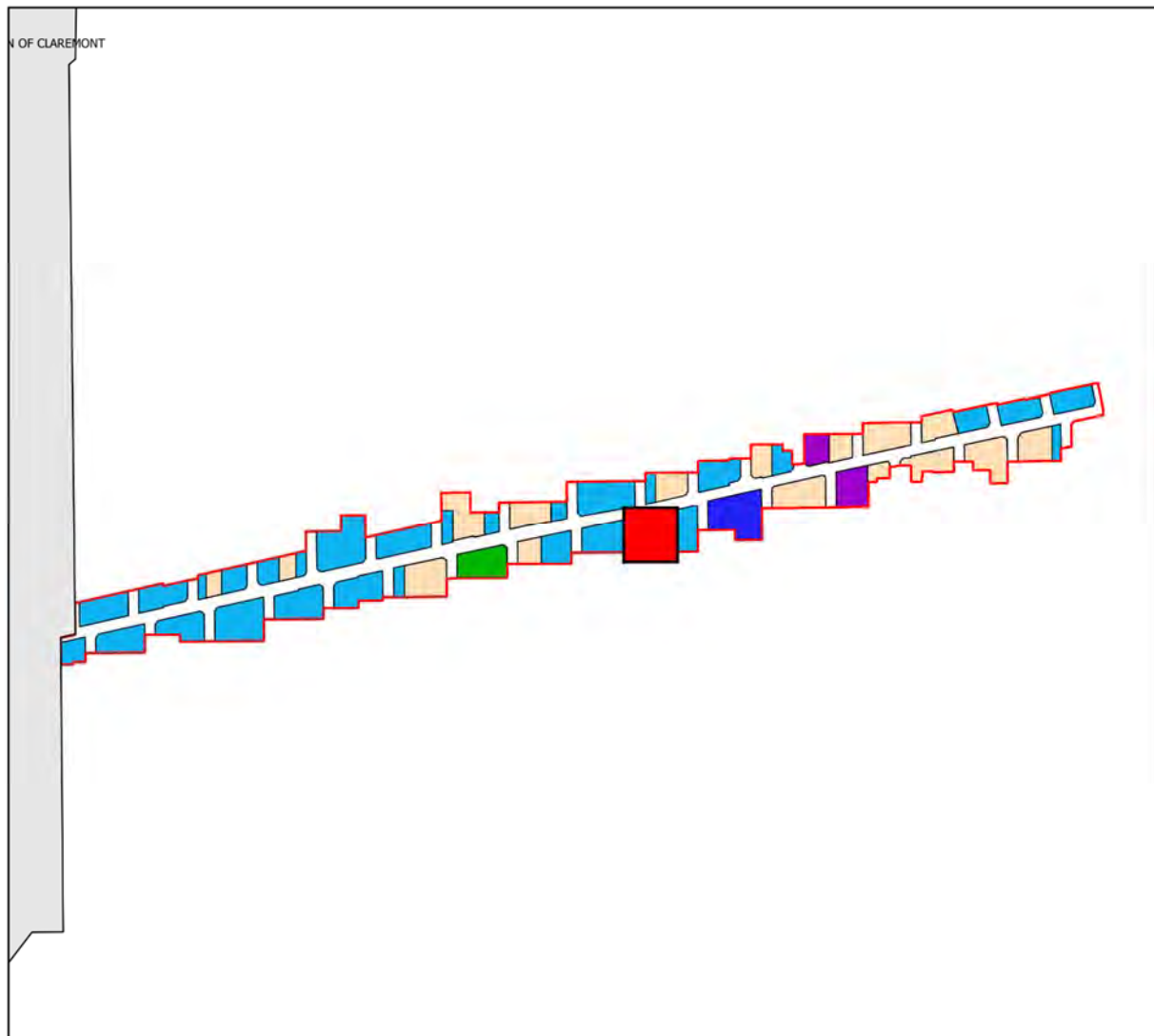
housing. This has influenced the built form in appearance and scale. Consistent street trees with 9m front setbacks assist to soften these larger bulky dwellings. Overhead power lines reduces the ability for the street trees to create a continuous canopy. The presence of a canopy would further enhance the green character and also shade hard surfaces to increase the walkability of the precinct.

East of Williams Road, the existing single storey character houses have been retained and with lot sizes considerably smaller, new two storey dwellings are seemingly out of place. However, the development of new larger two storey dwellings appears to be focussed on corner lots only.

Hard surfaces such as footpaths and crossovers are dominant (due to lack of complete street tree canopy over footpaths and road). Yet with absence of front fences and prominent 9m front setback, the street is open, green and friendly.

Notable features of the precinct include Karrakatta Cemetery, two train stations (Karrakatta and Loch Street) and close proximity to the QEIIIMC and UWA Architecture, Landscape and Visual Arts campus. The precinct is influenced by the adjacent commercial activity of Stirling Highway and Hampden Road and on-street car parking occurs in streets abutting the commercial areas and on those in the vicinity of the QEIIIMC and UWA complexes.

Stirling Highway



The Stirling Highway precinct includes all properties abutting Stirling Highway, spanning the entire length of the City, from Loch Street in the east to Hampden Road/Broadway in the west.

Stirling Highway is characterised by relatively well defined pockets of residential and commercial areas. At the east end of Stirling Highway, on the corners of Broadway and Hampden Road is a strip of non-residential land uses, which includes the UWA Architecture, Landscape and Visual Arts buildings, a service station, restaurants, offices and retail businesses. West of this a mostly established residential pocket exists which includes civic uses such as the City of Nedlands Library and Administration building.

The Captain Stirling Hotel and shopping centre start the formation of the next predominantly non-residential pocket and this includes retail, showroom, office and mixed uses. The Peace Memorial Rose Garden site, situated relatively centrally along Stirling Highway, is then surrounded by predominantly residential properties.

Continuing west, remains mostly non-residential, with a number of bulky showrooms, offices, retail, a supermarket and Chelsea Village.

Key historic sites located within the Stirling Highway precinct include the Captain Stirling Hotel, Windsor Theatre, Peace Memorial Rose Garden and an array of interwar two storey apartment buildings. The strong trend for flats as an alternative to single houses was particularly targeted towards city workers and couples without children during the 1930s.

A Mediterranean style of architecture was adopted for some buildings which is an indicative trend towards a design that was more in keeping with the climate and ambience of Perth, and a move away from the English inspired Tudoresque or Old English style that had been favoured in Nedlands for homes built during the 1930s.

The Captain Stirling Hotel has considerable aesthetic significance as a fine example of Inter-War Spanish Mission architecture. The drive through bottle-shop has some aesthetic significance as a modest but well-designed example of modernist architecture.

Nedlands South



The precinct is defined by the western boundary of the City, Melvista Avenue to the south, and the interface between properties abutting Stirling Highway to the north and Broadway to the east.

The precinct is predominantly residential with a small number of non-residential land uses. Made up of generally large lots, arranged east-west in a grid layout, the housing stock is mostly of the 1920s/1930s era.

The Nedlands South precinct was developed in the 1920s, much like the area to the north and was fortuitous planning, owing more to historical and geographical accident. The western third of the precinct contains lots that are mostly 923m², the central third mostly 1,012m² - which is unique to the Nedlands South and Dalkeith precincts - and those in the eastern third are slightly smaller at 809m² to 880m².

The area is defined by traditional single storey dwellings with low, visually permeable fencing. Architectural styles feature Californian Bungalows, Tudor and Federation Cottages with some interesting materials such as tin/tile roofs, weatherboard and decorative eaves, characteristic of 1930s architecture.

Many existing dwellings have been retained yet the emergence of two storey architectural designs are becoming predominant. The bulk and scale between established dwellings and newer 1990s/2000s development is maintained and there is little disparity. The soft coloured renders most commonly present within the precinct mean the architectural expression of newer facades are sympathetic and do not dominate the streetscape.

A consistent 9m setback, the low, visually permeable, or complete absence of, front fencing and mature street trees allows for passive surveillance and interaction with the street. Lack of overhead power lines has allowed the tree canopy to develop over streets creating harmony between public and private spaces.

A small commercial hub exists at the corner of Princess and Dalkeith Roads, comprising of individual retail and cafe tenancies. This single storey strip of shops are suitable for the area and blend well into a strong residential area. Other land uses throughout the precinct include schools, churches and recreation areas.

Nedlands South is wedged between Stirling Highway and Broadway, which are both substantial commercial strips. This, in addition to proximity to the University of Western Australia, results in on-street parking occurring towards the northern, and more prominently eastern, edges of the precinct.

Dalkeith



This precinct is defined by the properties abutting Broadway, the southern boundary of the City defined by the Swan River and Melvista Avenue on the northern side.

Around the 1900s Dalkeith Estate was subdivided into quarter acre residential blocks. Surveyors decided on the pattern due to a planned tram link from the University of Western Australia to Claremont Station. This resulted in curved corners (to allow for tram bend) and small pocket parks vested back to the local governing authority, all present today. Birdwood Parade was developed as the South Nedlands Estate, circa 1920, and sold for considerably high prices due to proximity to UWA and the river, with transport by tram. Many of the original Dalkeith lot layouts included rights of ways which local residents later had closed.

The precinct is predominantly residential. New two storey dwellings are steadily appearing amongst the original single storey housing. A broadly uniform precinct, most lots are orientated north-south, which is different to the remainder of the City. Housing density is low, with substantial dwellings set on large lots, nearly all of which are 1,012m² in area. There is an even mix of established character homes and new modernist architecture. The established character homes are mostly single storey Californian Bungalows, most of which have seen significant restoration, but still

maintain their character. Pitched roofs, street facing windows with large garages sit behind front fences with plenty of landscaping on a 9m setback. The quaint dwellings sit juxtaposed to those modern and contemporary styles of architecture. Due to the large lots and consistent 9m setback, these styles generally sit comfortably together and project a sense of affluence within the precinct.

The streets are quiet with tree canopies shading hard surfaces. Due to a mostly grid pattern layout, footpaths on major roads are present and well utilised. The precinct has mostly residential traffic only, due to its geographical location and lack of major transport corridors. This isolation further enhances the character of the area which has proven desirable to landowners.

Notable areas which further characterise the precinct include Circe Circle, Birdwood Parade, Jutland Parade and Victoria Avenue. Circe Circle has been described as typical of a garden suburb due to its layout which is circular in shape. Birdwood Parade, Jutland Parade and Victoria Avenue all have views to the Swan River with sloping topography, some with development control to allow uninterrupted views and increased amenity.

These areas with river views have substantial, grand dwellings, most of multiple levels set on sloping blocks. Whether these are renovated, established dwellings or modern architectural designs, the bulk and scale fit within the large lot sizes, varying between 1000m² to 2000m². Most include large front fences which seclude them from the street.

Waratah Avenue comprises commercial uses from Adelma Road to Robert Street. This road was established to link Nedlands and Dalkeith residents to Claremont and has therefore developed organically to comprise of uses and shops that are utilised by residents on a needs basis only. Recent development will see the emergence of apartments which adds further growth to an established precinct.

The Dalkeith precinct has an abundance of open space, most prominent being the Swan River foreshore reserve.

9.8.2 Heritage

The City of Nedlands has many fine examples of residential, commercial and government buildings that represent different eras of development.

The City's Municipal Inventory contains place records of many properties but is used as an information source only. Inclusion on the Municipal Inventory has no implications for the development of a property over and above the requirements that are already in place as part of the City's planning scheme.

The City of Nedlands does list some properties within TPS 2 that are subject to further planning controls, as contained within Table 23.

Table 23 Properties Protected Under TPS 2

Name	Location
Gallop House	Reserve 27111 The Esplanade, Nedlands
Directors House and Gardens	Lot 65 and 40614 Grainger Drive, Mt Claremont
Swanbourne Hospital Conservation Area	Lot 171 Heritage Lane, Mt Claremont
Irwin Barracks Army Magazine Buildings	Stubbs Terrace, Mt Claremont
Oxnam native plant garden	No. 55 Philip Road, Dalkeith
Cork Oak	Karrakatta Cemetery, Railway Road, Karrakatta
Tom Collins House	Reserve A 780 Allen Park, Swanbourne
Sunset Mens Home	Reserve A 1667 Jutland Parade, Dalkeith

The Heritage Council maintains the State Register under the *Heritage of Western Australia Act 1990* to protect and recognise places of cultural heritage significance. Table 24 lists places within the City of Nedlands currently on the State Register of Heritage Places.

Table 24 Properties Entered in the State Register of Heritage Places

Name	Location
Gallop House	22 Birdwood Pde Dalkeith
St Lawrence's Church	56 Viking Rd Dalkeith
Sunset Hospital	Birdwood Pde Dalkeith
War Memorial	Birdwood Pde / Waratah Ave Dalkeith
Chisolm House	32 Genesta Cres Dalkeith
Irwin Barracks Magazine	Stubbs Tce Karrakatta
Graylands Hospital	1 Brockway Rd Mt Claremont
Swanbourne Hospital	1 Heritage La Mt Claremont
Director's House	1 Grainger Dr Mt Claremont
Director's Gardens	Grainger Dr Mt Claremont
The Maisonettes	67 Stirling Hwy Nedlands
Peace Memorial Rose Gardens	Stirling Hwy Nedlands
Nedlands Tennis Club	121 Bruce St Nedlands
St Margaret's Church	58 Tyrell St Nedlands
David Foulkes-Taylor Showroom	33 Broadway Nedlands
Old Post Office	35 Stirling Hwy Nedlands
Lemnos Hospital	Stubbs Tce Shenton Park
Tom Collins House	Kirkwood Rd Swanbourne
Mattie Furphy House	Kirkwood Rd Swanbourne

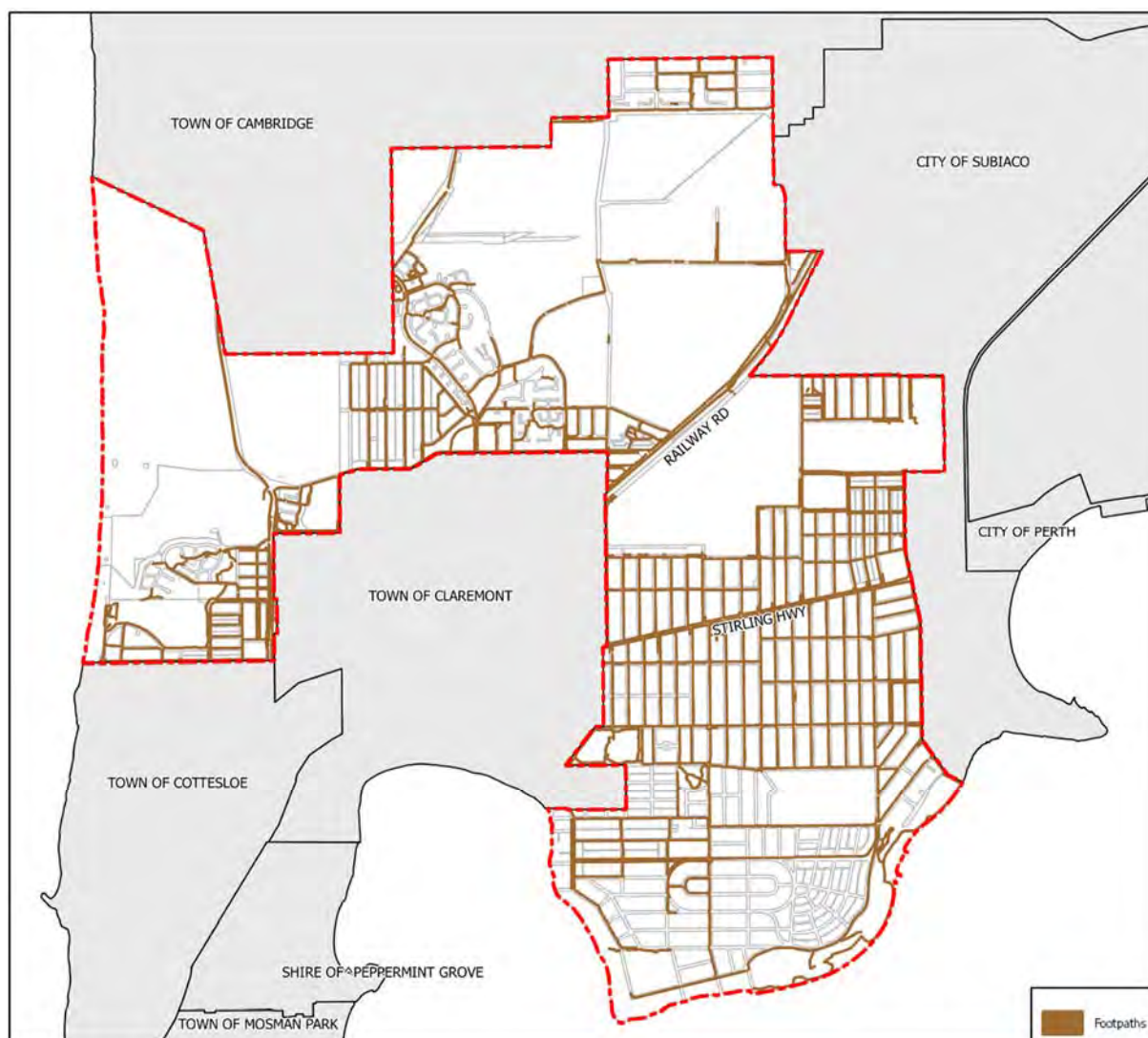
9.9 Traffic and Transport

9.9.1 Pedestrian Network

Much of the City is serviced by footpaths as shown in Map 24. Notably, there are many streets in Dalkeith that do not have footpaths. The grid layout of much of the City, along with tree-lined, attractive streets make for a generally pleasant pedestrian environment within the current residential areas. In contrast to this, many of the higher order roads connecting residential areas and other destinations do not provide an attractive pedestrian environment. In the example of Stirling Highway, the fragmented development, frequency of vehicular crossovers and lack of safe crossing opportunities have created a hostile pedestrian environment.

In planning for pedestrians and walking as a transport mode the City will demand a network that is 'connected, comfortable, convenient, convivial and conspicuous' (*Department of Transport, Planning and Designing for Pedestrians Guidelines*). It will be of particular importance to ensure pedestrian networks complement activity centres and public transport routes.

Liveable Neighbourhoods pedestrian access principles and current best practice examples from established suburban settings would also be considered in new development works.



Map 24 Footpaths

9.9.2 Cycle Network

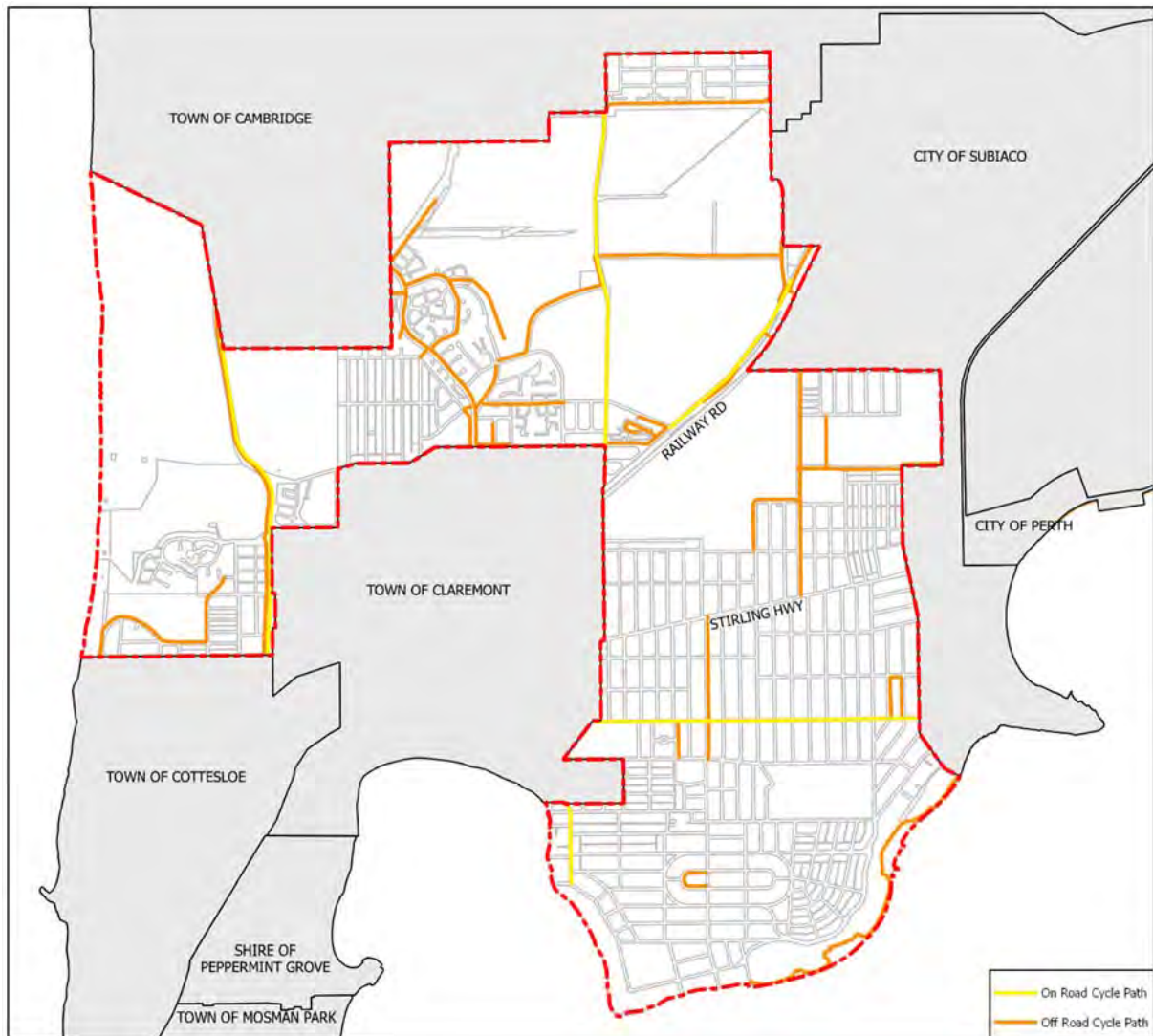
Cycling facilities in the City of Nedlands include (on road) exclusive bike lanes and sealed shoulders and (off road) shared paths. These facilities are shown in Map 25. In addition, the City has areas serviced by a network of quiet roads, which are generally wide, carry low volumes of traffic and follow a grid pattern. These roads are often appropriate for competent adult cyclists to ride on.

Publicly accessible bike parking is scattered throughout the City, but there are no end of trip facilities of note.

In future planning for cycling infrastructure the City is guided by the Western Australian Bicycle Network Plan and the draft City of Nedlands Bike Plan. Care will be taken to ensure the needs of different types of cyclists and different road environments are considered when planning for infrastructure development. For example, separated facilities will be given priority along high volume or high speed roads. In a low speed, more local context, shared facilities may cater for the types of trips undertaken in the area.

As the City is generally well established, site constraints often prevent easy modification of the road environment to incorporate cycling facilities. However, it is expected that over time, infrastructure solutions will evolve and the City may look to creative local, national and international examples to better provide for cycling within the municipality.

The City considers changes to the planning framework and increased development potential of lots an opportunity to encourage the provision of high quality cycling facilities.



Map 25 On Road and Off Road Cycle Facilities

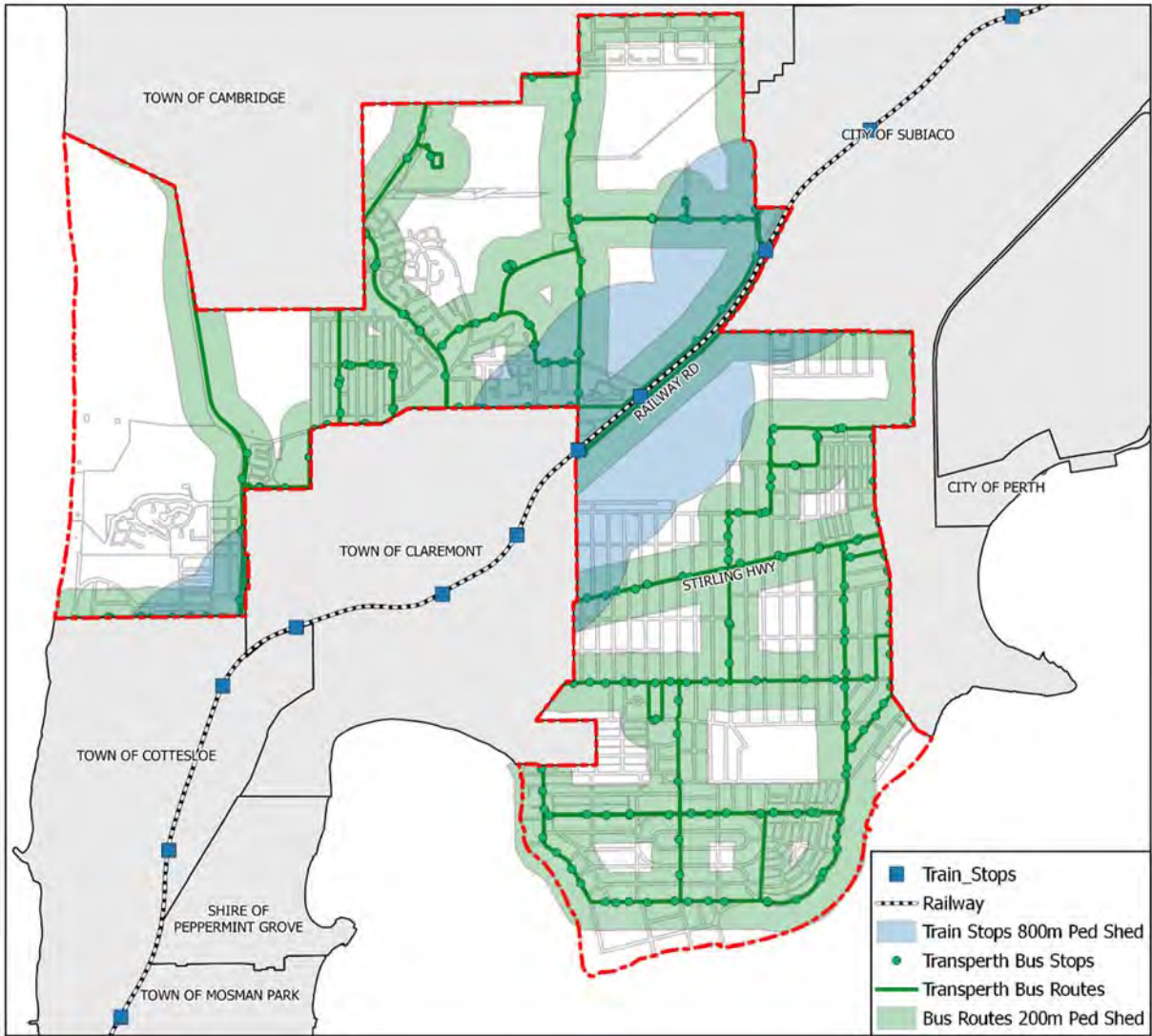
9.9.3 Bus Network

The City of Nedlands is serviced by a number of bus routes that are generally CBD-centric (Map 26). The high frequency routes mostly service the UWA-QEII specialised centre. The current network provides opportunities for increased residential development in this area as per DC Policy 1.6 and the transport oriented design (movement and accessibility) principles of SPP 3.0 and 4.2. The level of service of public transport in the UWA-QEII area is high enough to provide a viable alternative to the private car for many trips.

A number of bus routes utilise Stirling Highway however at current service levels the route is only on the cusp of providing a genuine high frequency service. The bus services along this route are generally adequate for peak commute purposes but do not connect the range of other centres and attractors at a frequency required by transit oriented development. It is possible that in the future the Stirling Highway route may be afforded higher frequency services. As such, development along this arterial must be carefully considered to encourage and capitalise on the access to public transport, while not overestimating the ability of public transport to serve the movement needs of residents and visitors.

Table 25 Bus Services

Route No	Route	Peak	Off peak	Saturday	Sunday
23	CBD – Claremont	40 mins	120 mins	Nil	Nil
24	East Perth – Claremont	20 mins	30 mins	60 mins	60 mins
25	East Perth - Claremont	30 mins	60 mins	60 mins	Nil
27	East Perth - Claremont	20-30 mins	60 mins	60 mins	60 mins
28	East Perth - Claremont	30 mins	60 mins	60 mins	60 mins
97	Subiaco - UWA	15 mins	15 mins	30 mins	60 mins
98,99	Circle Route	10-15 mins	15 mins	30 mins	30 mins
102	CBD - Cottesloe	15 mins	30 mins	30 mins	30 mins
103	East Perth – Fremantle	15 mins	30 mins	30 mins	60 mins
107	CBD – Fremantle	20 mins	60 mins	60 mins	120 mins
950	Morley – QEII MC	2-5 mins	15 mins	10 mins	10-20 mins



Map 26 Public Transport Network

9.9.4 Rail Network

The Perth to Fremantle train line cuts through the City of Nedlands and includes three railway stations; Loch Street, Karrakatta and Shenton Park. The local context of each station is described below.

Table 26 Loch Street Station Facilities

Car parking	14 bays, some additional parking available in nearby streets.
Kiss and drop	No
Bicycle shelter	No
Bus interchange	No
Other	Limited stopping pattern outside of peak.
Surrounding land use (800 metre radius)	
<ul style="list-style-type: none"> • This station is on the border of the Town of Claremont and City of Nedlands. A large portion of the surrounding land is within the jurisdiction of the Town of Claremont. • Karrakatta Cemetery and the Irwin Barracks are significant features of the station catchment and are not expected to change substantially in the life of this Strategy. • The residential lots to the north of the station are currently zoned R20-R40, many of these were developed in the early 2000s and provide limited opportunity for increased residential density. • The southern portion of the catchment includes Carrington Street, a strip of commercial lots that has potential to grow into a small activity centre. 	

Table 27 Karrakatta Station Facilities

Car parking	Nil, parking designed to service Karrakatta Cemetery is likely utilised by train users, though this is contrary to the intended use of the car park.
Kiss and drop	No
Bicycle shelter	No
Bus interchange	No
Other	Limited stopping pattern outside of peak.
Surrounding land use (800 metre radius)	
<ul style="list-style-type: none"> • Karrakatta Cemetery and the Irwin Barracks are the overwhelming features of the station catchment and are not expected to change substantially in the life of this Strategy. • The residential lots to the west of the station are currently zoned R20-R40, many of these were developed in the early 2000s and provide limited opportunity for increased residential density. 	

Table 28 Shenton Park Station Facilities

Car parking	11 bays, some additional parking available in nearby streets.
Kiss and drop	No
Bicycle shelter	Yes
Bus interchange	No, but links to 98/99 Circle Route.
Other	Limited stopping pattern outside of peak.
<p>Surrounding land use (800 metre radius)</p> <ul style="list-style-type: none"> • This station is near the border of the City of Subiaco and City of Nedlands. Approximately a quarter of the surrounding land is within the jurisdiction of the City of Subiaco. • Shenton College and Shenton Bushland are significant features of the station catchment and are not expected to change substantially in the life of this Strategy. • The former Royal Perth Hospital site is within the station catchment and is currently the subject of a State Government redevelopment project with an aim to provide a substantial number of dwellings and some commercial opportunities. • There is a small strip of light industrial uses adjacent to the station. • A number of private, semi-private and public organisations exist within the station surrounds. 	

9.9.5 Freight

There are two identified freight routes within the City of Nedlands, Stirling Highway and West Coast Highway. These roads both fall under control of MRWA. Land use planning along these routes ought to give due regard to SPP 5.4.

Stirling Highway as a freight route presents significant planning issues as it is also:

- an important corridor for private vehicle movements,
- a key public transport corridor,
- identified as an Activity Corridor suitable for higher density residential development, and
- directly abuts a number of low-level activity centres.

Land use planning along this route must ensure the potential negative effects of each function are mitigated

9.9.6 Road Network

The following Primary and Other Regional Roads identified under the MRS traverse the City of Nedlands.

Primary Regional Roads

Stirling Highway

West Coast Highway

Other Regional Roads

Aberdare Road

Railway Road

Stephenson Avenue

Underwood Avenue

The City's road network is well established. Much of the City is serviced by a grid layout of roads, with some curvilinear areas in Mt Claremont. These roads also provide a large proportion of the City's parking opportunities.

The Metropolitan Road Hierarchy was developed to designate a function to all roads and represents the role that the road is intended to perform. The hierarchy as it relates to the City of Nedlands is demonstrated below.

Table 29 Road Hierarchy

Road Type and Purpose	City of Nedlands roads
Primary Distributor: Movement of inter-regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	Stirling Highway West Coast Highway
Distributor A: High capacity traffic movements between industrial, commercial and residential areas.	Aberdare Road Alfred Road Brockway Road Railway Road
Distributor B: Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Broadway Hampden Road Loch Street Monash Avenue Rochdale Road Stephenson Avenue Underwood Avenue
Local Distributor: Movement of traffic within local areas and connect access roads to higher order Distributors.	Adelma Road Birdwood Parade Bruce Street Carrington Street Dalkeith Road John XXIII Avenue Jutland Parade Lemnos Street Montgomery Avenue Mooro Drive North Street Princess Road Smyth Road Stubbs Terrace The Avenue Victoria Avenue Vincent Street Waratah Avenue
Access Roads: Provision of vehicle access to abutting properties	All other roads

One notable feature of the City's road infrastructure is the network of laneways that have been gazetted as roads. Many of these laneways are narrow (3 metres) and they have been constructed to various standards. The City must consider the treatment of the laneways into the future, particularly if they are to service areas of infill development.

The City must give due regard to the road hierarchy in planning for changes in land use and density. In some cases, infrastructure upgrades may be required before changes to the land use would be allowable.

Stirling Highway

It must be noted that Stirling Highway emerges as a key feature in each of the movement networks discussed. Stirling Highway is also identified as an urban corridor, runs alongside activity centres and abuts buildings of heritage significance. All of this is not only applicable to the City of Nedlands, but to the other local authorities between the CBD and Fremantle. As a result, the Highway, and land in proximity to the Highway, is currently subject to investigation by the Department of Planning as part of the Stirling Highway Activity Corridor Study (SHACS).

This study is investigating the future of Stirling Highway in terms of the form and function of the Highway itself, and the land use and development surrounding it. The study (and associated MRS amendment) has not yet been finalised.

9.10 Infrastructure Services

9.10.1 Water Supply

The Department of Water is responsible for managing and protecting the State's water resources, with the Water Corporation being the chief service provider to the Perth region.

The City of Nedlands, being a heavily built up inner city area has no storage reservoirs, groundwater treatment plants or desalination plants located within its district. Reticulated water supply is available to all areas within the City through the Integrated Water Supply System. This supply system secures water through a combination of groundwater, surface water, desalination, groundwater replenishment and recovery and effective demand management. Bore water licences also exist for some residential and non-residential uses throughout the City.

The Department's *Water Futures for Western Australia 2008-2030* document provides modelling for future water demand to ensure that the State's water resources can meet supply.

Water Futures states that even under a low growth scenario, the Perth region will be in water deficit by 2020. Under the high growth and drying climate scenarios, the deficit would be much greater. All scenarios suggest a substantial increase in water use.

Table 30 Water Use Scenarios³⁷

Scenario	2008	2020	2030
Medium Growth	562.1 GL	720.9 GL	815.1 GL
High Growth	562.1 GL	824.5 GL	1,001.5 GL
Low Growth	562.1 GL	657.2 GL	703.7 GL
Climate-dependent	562.1 GL	757.5 GL	892.0 GL

The *Water Futures* document suggests that there will need to be a progressive change in the way residential gardens, public parks, and ovals are landscaped and watered to adopt to changing climate conditions

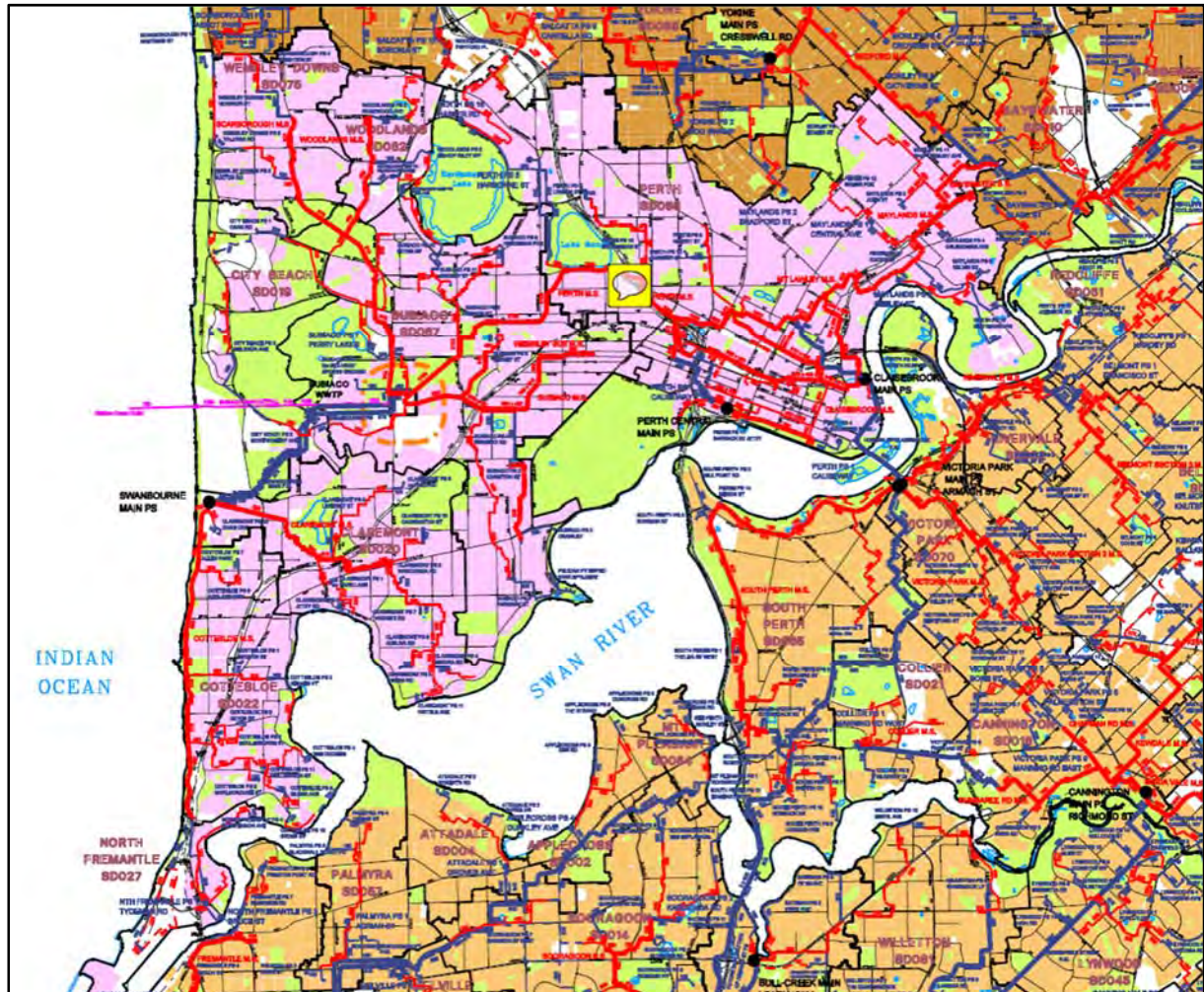
9.10.2 Wastewater

The vast majority of the existing developed areas within the City of Nedlands are connected to reticulated sewerage. A reticulated sewerage system refers to the system of pipes, sewers and drains that are used to convey sewage from a property to a sewage treatment plant.

The Subiaco Wastewater Treatment Plant (WWTP) located on the corner of Brockway Road and Lemnos Street services the central Perth area. The plant is designed to treat up to 61 million litres a day, enough water for a population of 350,000 people. An upgrade to the plant was completed in 2004 which primarily provided a high level of odour control.

³⁷ *Water Futures for Western Australia 2008-2030*

Modifications to the existing plant to improve hydraulic capacity to 68 million litres a day are anticipated to commence in October 2015 which will increase service to service 388,000 people³⁸. The geographic catchment of the Subiaco WWTP is shown as the pink coloured area on the below plan Map 27. The plant is projected to be expanded to provide a capacity of 75 million litres each day by 2025³⁹.



Map 27 Subiaco Wastewater Treatment Plant Catchment⁴⁰

The Water Corporation periodically reviews its infrastructure planning for each Sewer District. These reviews take into account local government strategic directions, zoning and coding changes which have occurred since the previous review, to ensure that the capacity of infrastructure is able to meet future population demands.

Water Corporation data indicates that the City of Nedlands makes up only a small part of the total WWTP catchment. With the projected targets over a 25-35 year period the Water Corporation do not consider the City's dwelling and population increase great enough to create a need to upgrade the WWTP. At a local sewerage reticulation scale, upgrades to infrastructure may be required as densities increase.

³⁸ Water Corporation, 2015.

³⁹ Water Corporation, 2015.

⁴⁰ Water Corporation, 2015.

An odour buffer has been defined for the facility however this is not secured through the statutory planning system.

9.10.3 Telecommunications

Telecommunications infrastructure is provided by a number of different organisations with the development of telecommunications infrastructure administered by the *Commonwealth Telecommunications Act 1991* and the *Telecommunications National Code 1996*.

The National Broadband Network Company (NBN) is a key initiative from the Commonwealth Government to deliver high speed broadband telecommunications throughout Australia. NBN has not yet been rolled out within the City of Nedlands. The NBN rollout requires a large amount of local planning information from local governments, if this information can be provided in advance there is an opportunity to streamline the process.

The Australian Local Government Association has produced the *Best practice guide for Councils when initially dealing with NBN Co (2011)* to provide councils with key engagement insights from the first release of NBN and a framework as to how to prepare and manage their interaction with NBN.

9.10.4 Electricity

Western Power is the main service provider in the Perth metropolitan region for the transmission and distribution of electricity and provides connection services to new developments and subdivisions.

There are a number of sites containing electricity network infrastructure within the City of Nedlands.

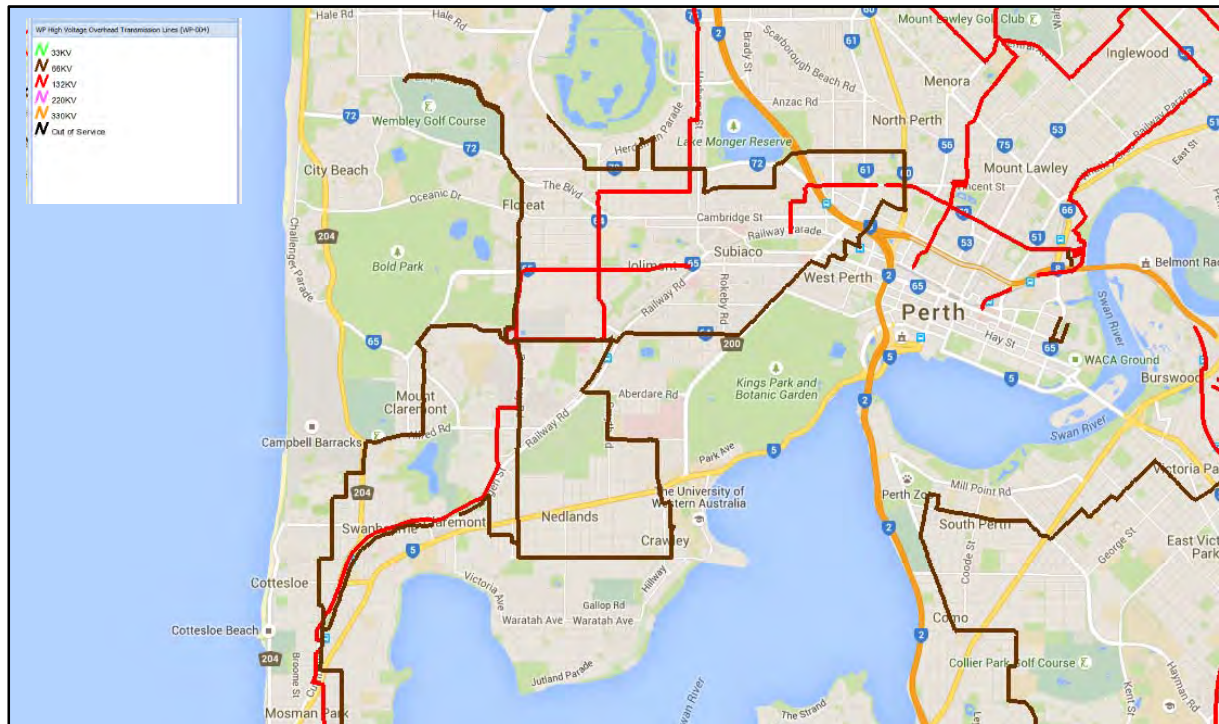
Table 31 Electricity Infrastructure

Existing Sites	Location	Land Tenure	Current Zone
Western Terminal	Lot 12972 John XXIII Avenue, Mt Claremont	State Energy Commission	MRS Public Purpose-Hospital
Shenton Park Substation	Lot 5584 Selby Street, Shenton Park	State Energy Commission	MRS Urban TPS 3 No Zone
Nedlands Substation	Lot 195, 197, 300 and 301 Rockton Road, Nedlands	State Energy Commission	Residential R10
Medical Centre Substation	Lot 9075 Hospital Avenue, Nedlands	State owned land	MRS Public Purpose-Hospital

Developed areas of the City of Nedlands are serviced by either overhead or underground power supply. High voltage transmission lines also traverse the City as shown in Map 28.

Where Western Power does not have easements on freehold land, it relies on 'Restriction Zones' to ensure appropriate development occurs in the vicinity of its assets. This includes appropriate setbacks of buildings, vegetation and use of land in the vicinity of the power line assets. Western Power is able to apply conditions with respect to restriction zones under the *Energy Operators (Powers) Act 1979*.

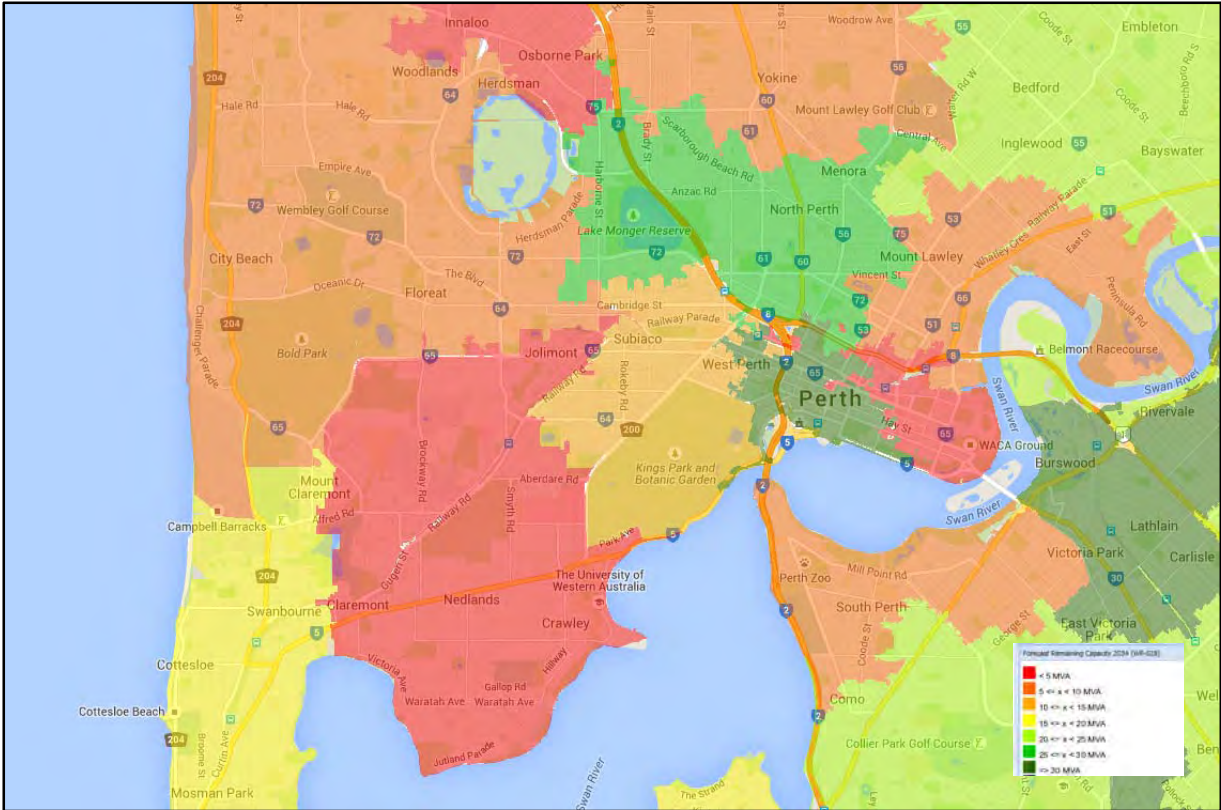
Western Power have identified one future upgrade to the existing transmission line from QEII Medical Centre University in a 10-25 year indicative timeframe, with a 20m easement or restriction zone.



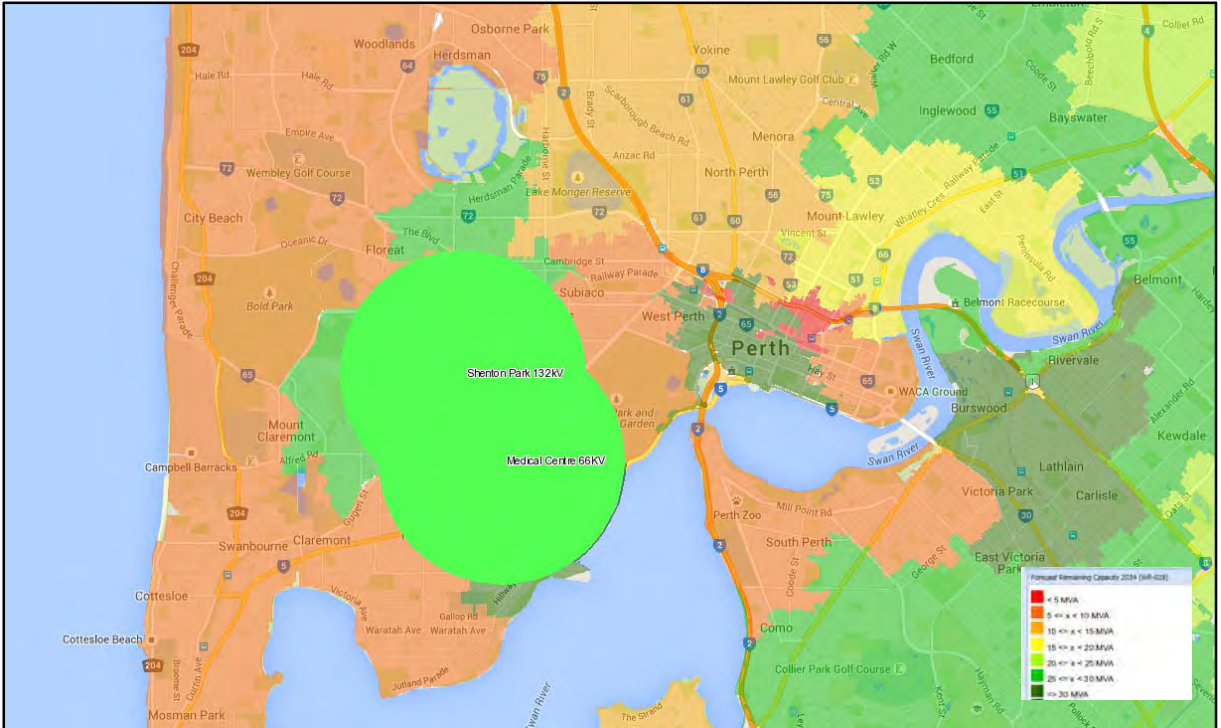
Map 28 High Voltage Overhead Transmission Lines

The Network Capacity Mapping Tool provides a 20 year outlook of the annual forecast remaining capacity available at Western Power zone substations. The following Map 29 and Map 30 display the forecast capacity levels as colours that represents the actual supply area for each zone substation for 2015 and forecast to 2030.

In 2015 the City of Nedlands is predominantly coloured to indicate low capacity levels. By 2030 the mapping shows an increase in capacity. This coincides with planned upgrades to Western Power substations at Shenton Park and QEII Medical Centre. Additionally, Western Power have identified one future upgrade to the existing transmission line from QEII Medical Centre University in a 10-25 year indicative timeframe, with a 20m easement or restriction zone.



Map 29 Electricity Network Capacity 2015⁴¹



Map 30 Electricity Network Capacity Forecast 2030⁴²

41 Western Power, Network Capacity Mapping Tool
 42 Western Power, Network Capacity Mapping Tool

10 Discussion of Key Issues

10.1 Statutory Planning Framework

The City is required to prepare a new Local Planning Scheme realise the intent of the Local Planning Strategy as the current operating Town Planning Scheme No. 2 adopted in 1985 is outdated.

In 2009 the Department of Planning and the Western Australian Planning Commission (WAPC) began a comprehensive and extensive reform process to the land use and development approvals system in Western Australia. As a result of the work conducted as part of the reform, the WAPC have gazetted the *Planning and Development (Local Planning Schemes) Regulations 2015* replacing the *Town Planning Regulations 1967*. The new regulations are a major part of the planning reform affecting local planning strategies, schemes and amendments. In particular the regulations replace the Model Scheme Text and introduce 'deemed provisions' that will take effect in every Local Planning Scheme.

The impact upon the City of Nedlands will be significant with any new Local Planning Scheme required to follow these regulations. This will result in a new scheme format and implementation dramatically different from the existing Town Planning Scheme No. 2. As part of the work conducted in the Local Planning Strategy, the new Scheme will need to be flexible and align with new practices/legislation, to adapt to changing demographics and market trends. This has been much of the recent challenge of Town Planning Scheme No. 2, which over time has become increasingly inflexible and difficult to administer. A new Local Planning Scheme will conform to current terminologies and provide a framework for other planning mechanisms such as local planning policies, structure plans and design guidelines to realise the outcomes of the Local Planning Strategy.

10.2 Population and Housing

The most obvious and pressing issue for the City is how to accommodate a growing population in appropriate housing given that for largely historic, economic and cultural reasons housing diversity in the City of Nedlands is low.

Administratively, the City is considering;

- The reasonableness and practicability of the WAPC's housing targets as applied to City of Nedlands as a primary means of addressing the issue of Perth's urban sprawl, and the extent to which the City of Nedlands can directly implement these targets.
- The wide range of planning mechanisms, settings and management measures that can potentially be deployed to encourage and facilitate additional residential dwellings.
- The changes that may be needed and the steps necessary to facilitate provision of additional services and facilities to a larger population as additional housing is produced.

In most areas of the City of Nedlands the status quo of actively seeking to conserve and enhance the physical quality and value of the existing residential neighbourhoods is to prevail. The very low density residential form and established character is

somewhat unique within the wider metropolitan context and worthy of protection into the future.

That being said, the City also must consider the application of state policies that consider infill development in the inner city context, namely DC Policy 1.6 and SPP 4.2. DC Policy 1.6 provides guidance as to providing higher residential densities around public transport nodes and high frequency routes. This general philosophy of transit oriented development is fully accepted by the City of Nedlands, however there is limited capacity to apply this policy in the jurisdiction. Most areas of available land adjacent to train stations are unavailable to residential development (as discussed in the Traffic and Transport local profile). The policy can be applied around the few routes served by multiple high frequency bus services (Stirling Highway and Hampden Road), however it is unlikely to be a key policy document given the complex array of issues surrounding corridor development in an infill setting.

The core aim of SPP 4.2 is to achieve the optimum distribution of activity centres across the metropolitan area. An element of this is increasing density and diversity of housing to support the centres. The City of Nedlands is cautious in assigning SPP 4.2 as a blunt mechanism to increase residential density in centres, as it is a regional level policy that does not detail treatment of local and neighbourhood centres. Aside from the UWA-QEII Specialised Centre, the City of Nedlands has only neighbourhood and local centres. Local centres are not, as a rule, considered a priority in increasing residential density. The neighbourhood centres may offer opportunities to increase residential densities as the propensity for redevelopment of the centre emerges, and the application of SPP 4.2 will foremost consider the scale and local context of the centre.

10.2.1 Achieving Diversity

There are two overarching issues to be addressed in achieving housing diversity and the targets set by the WAPC:

- The current lack of available, suitable land needed to satisfy the housing targets, and the uncertainty surrounding the availability and timing of the obvious candidate sites; and
- The dwelling types that should be promoted through redevelopment, noting the recent decline in the number of flats, units and apartments within the City. The evident demand for well-located apartments (for example, Claremont on the Park) demonstrates excellent potential in this regard.

As discussed in the Population and Housing local profile, in theory, there is sufficient potential land available to accommodate housing targets to 2031, however not the potential to accommodate the housing targets to 2050. To meet the 2050 housing targets the City will need to plan to allow for development to occur at significantly higher densities.

Some areas have current approvals or existing development control provisions that give an indication as to likely dwelling yield (Table 32). In regards to dwelling types, the Shenton Park Hospital Site and Lot 4 Underwood Avenue are considered the only areas appropriate for single dwellings (in substantial volume).

Table 32 Indicative Redevelopment/Development Potential

Indicative land availability	Dwelling Potential	Likely time for development uptake
Shenton Park Hospital Redevelopment Site	1,100*	Short Term to Medium Term
Lot 4 Underwood Avenue	178*	Short Term to Medium Term
Aria Apartments Swanbourne	156	Short Term
Waratah Avenue Neighbourhood Centre	65*	Medium Term

*These figures are approximate only.

The above table indicates that the City will need to plan for an additional 3,000 new dwellings to reach the 2050 target. It is considered most appropriate to limit growth to a few key areas, to be referred to as Urban Growth Areas.

Four Urban Growth Areas have been identified as suitable for substantial residential development:

- Stirling Highway
- Hampden Road
- Broadway
- Monash Avenue

To ensure the identified Urban Growth Areas can (in theory) accommodate the required dwelling yield, a basic set of calculations have been completed.

Multiple dwellings

The calculation of the potential multiple dwelling (apartment) yield was determined on the basis that the average apartment size constructed is 90m². This includes accommodating for single bedroom to multiple bedroom apartments within the development. The following calculation has been used to determine the development potential of sites.

$$\text{Dwelling Potential} = \frac{\text{Site Area (m}^2\text{)} \times \text{Plot Ratio}^*}{90^{**}}$$

*The plot ratio value is dependent on the proposed zoning of the land.

** 90m² has been taken as the average size of an apartment.

Grouped dwellings

The following illustrates the calculation for grouped dwelling (townhouse) yield. It is also acknowledged that the calculation does not take into account the need for individual lots to be amalgamated to achieve maximum dwelling yields.

$$\text{Dwelling Potential} = \frac{\text{Site Area (m}^2\text{)}}{\text{Average Lot Area}^*}$$

*The average lot area is determined by Table 1 in the R-Codes.

The dwelling yields calculated assume complete redevelopment of the site, and do not take into consideration land development limitations. It is also acknowledged that the

calculation dwelling potential was always ‘rounded down’ and does not take into account any site area variations.

Total dwelling yield

The below table provides the results of the analysis undertaken of the potential dwelling yields in the Urban Growth Areas. This shows the dwelling yield targets may be achieved if sites become available and are developed in an appropriate manner.

Table 33 Dwelling Potential for Planned Urban Growth Areas

Urban Growth Areas	Dwelling Potential to 2050
Stirling Highway	2000-2500**
Hampden Road	500-1000**
Broadway	
Monash Avenue	

**These figures are indicative only

The figures above (Table 33) are entirely theoretical and require further consideration. It is worth noting the following:

- Over time, as redevelopment does occur, less land will be available for development/redevelopment and therefore delivery of additional dwellings becomes more difficult.
- As the designated R-Code increases, the land required to achieve the housing target decreases, and vice versa.
- Development other than traditional residential form (for example, mixed use development) will have different land requirements.

Further detail as to the type of development expected in the pursuit of achieving housing diversity and the housing targets is explained below.

Urban Growth Areas

The identified Urban Growth Areas are Stirling Highway, Hampden Road, Broadway and Monash Avenue. These areas are accessible by public transport and present the best opportunities for an increase in dwelling densities. These areas are also ideal locations for some non-residential land uses, leading to an expectation that these areas will result in a mixed use environment (horizontally and vertically as appropriate).

It is expected the Urban Growth Areas will contain the most intense development in the City of Nedlands and that multiple dwellings (apartments) will be the predominant development type in these areas. Development is not necessarily expected to be homogenous between Urban Growth Areas or even within Urban Growth Areas. Development controls will ultimately reflect the local context.

In order to ensure the Urban Growth Areas are confined to a reasonably small area (as to not erode existing residential character), development heights must be sufficient to accommodate substantial residential components. This is most applicable to the Stirling Highway Urban Growth Area.

Transition Zones

Due to the anticipated difference in scale between the Urban Growth Areas and the predominantly low intensity existing built form within the City of Nedlands, it becomes necessary to designate Transition Zones. Transition Zones will exist immediately adjacent to the Urban Growth Areas for the purposes of creating a buffer between high intensity and low intensity development. This buffer will visually smooth the differences in built form (such as height and bulk) and help mitigate any conflict between non-compatible land uses.

It is expected the Transition Zones will contain mostly residential developments of multiple dwellings (apartments) and grouped dwellings (townhouses and similar). Some small scale non-residential uses may still be appropriate.

Transition Zones, and the methods of development control associated with them, will evolve differently depending upon their context. Where the Transition Zone is adjacent to very high intensity development (i.e. Stirling Highway) two 'bands' of Transition Zones will be necessary to facilitate a smooth transition from high intensity to medium intensity to low intensity development.

Where abutting a less intense Urban Growth Area such as Hampden Road, the Transition Zone is expected to exist as a relatively narrow band. A Transition Zone is not necessary where the intensity of development within the Urban Growth Area is already compatible with the surrounding residential area.

It is important to note that in addition to the areas identified, there may be other long term development/redevelopment opportunities that are yet far too uncertain to identify at this time. There are also numerous small opportunities scattered elsewhere throughout the City which have not been specifically identified. Although these have the potential to contribute to realisation of housing targets, the scale of development potential is not considered reasonable enough to be included as part of this investigation into land availability at such a high level.

10.3 Economy and Employment

From an urban planning perspective, the economic and employment situation in the WESROC area as a whole is not far short of all that one could wish for. Much of this advantage is due to large region-serving facilities that are located within the sub-region (such as UWA, QEIIIMC and major private secondary schools). The fact that the Perth CBD is also so close and accessible to the WESROC area is an additional massive advantage to the central sub-region area's access to employment opportunities.

While greater employment self-containment levels are always preferred, it is inherently difficult for urban planning activity to generate them. Urban planning can ensure that sufficient land is available for all the civic, commercial and cultural activities and services needed and expected by a modern community, but it cannot actually create these activities except through, for example, a development authority. In most cases normal economic activity, including the location decisions of firms, will largely determine what activities, and thus employment, are established in any particular area.

The UWA-QEII Specialised Centre is perhaps the most obvious location requiring strategic urban planning to facilitate its ongoing development. Basic boundaries for the UWA-QEII Specialised Centre are demonstrated in the Perth & Peel @ 3.5million suite. It is acknowledged that the influence of the Specialised Centre extends beyond

this boundary, however defining a frame is difficult as suitability for development other than the status quo depends on far more than simple proximity to the Specialised Centre. Future planning of the area is complicated by the number of decision making bodies in the vicinity of the centre; multiple local governments plus state and federal instrumentalities. It is considered crucial that there is a coordinated and agreed vision for the Specialised Centre.

In general terms, the City of Nedlands will encourage flexible development outcomes, compatible with the Health/Education/Research function of the centre. While the importance of the economic and employment role of the specialised centre is acknowledged it would be undesirable to see these compatible uses unnecessarily 'diluted' throughout a large frame area that currently displays quality residential character.

More generally, the improved sustainability of the Perth region will depend on attention and resources being focussed elsewhere than on the City of Nedlands and the WESROC area. The intention should not be to deliberately attempt to push more and more employment generating uses into the area purely as a matter of employment policy. This will continue to happen as a matter of course due to the area's locational advantages and already well-established major facilities. Rather, deliberate policy action aimed at increasing employment opportunities should be very energetically focussed on Perth's outer suburbs.

Notwithstanding the above argument, there is one area where the City of Nedlands itself is lacking somewhat, and that is in local retail and other very localised services. That is not an employment issue per se, but does have local employment implications, albeit of a relatively minor nature. Strategies of this nature are best integrated with those addressing the retail and commerce environment.

10.4 Retail and Commerce

As indicated in the Retail and Commerce local profile, the findings of the Retail Needs Assessment present the potential for leveraging additional retail floorspace growth for wider integrated benefits, rather than indicating any pressing unmet needs or demands that require rectification. This potentially beneficial situation gives rise to a range of urban planning issues that may be considered.

- How to maintain and enhance the attractiveness and viability of the activity centres in the City of Nedlands given the significant amount of retail floorspace already in existence, and particularly the size and attractiveness of the large secondary centres outside the City of Nedlands with the clear potential for them to expand further and continue to dominate the retail landscape.
- How to make small local centres operate better in the interests of current environmental sustainability objectives and in terms of local community interactions and benefits.
- How to best use the opportunities presented by the additional retail floorspace potential to leverage and anchor mixed-use or residential apartment developments aimed at realising the WAPC's housing targets; particularly along Stirling Highway, Hampden Road and Broadway.
- How can the principles of good urban planning in relation to activity centres be reliably implemented at the same time as maintaining a flexible, less restrictive

approach to strategic planning in the City of Nedlands, should the planning system need to respond to emerging and/or different retail trends.

Further discussion of these issues, the City's position in relation to them and the City's intended response is contained in the Activity Centres Planning Strategy, which is included as Attachment 1.

The Activity Centres Planning Strategy forms part of this Local Planning Strategy and will be relied upon by the City to inform its decision making on matters relating to Activity Centres.

10.5 Physical Features, Climate and Natural Areas

The City of Nedlands' irregular shape will influence strategies across a number of topics, but in and of itself, is not an issue or concern to be acted upon.

In general, the City does not have any climatic and environmental considerations additional to those prevailing in the wider Perth region. The City of Nedlands must be sensitive to the natural environment and conserve valuable environmental assets. Climate change and associated impacts are acknowledged and accepted as a key issue to be cognisant of in future development.

10.6 Tourism and Visitors, Attractors and Facilities

While the City of Nedlands may not be considered (or planning to become) a traditional tourism destination it is likely the need to provide accommodation for visitors will grow as the local attractors expand and tourism to the state as a whole, increases.

Bearing in mind the significant destinations within and adjacent to the City (namely QEIIIMC and UWA), and the proximity to the Perth CBD it is noted there is limited accommodation choice for those not seeking traditional residential tenure. It appears that some of these limitations are currently mitigated by homeowners renting out their homes for visitors.

There is reason and opportunity to allow for appropriate tourist and visitor accommodation to be developed within the City over time. It will be important to ensure the integrity of the amenity enjoyed in the established residential areas is maintained.

10.7 Community Facilities, Recreation and Open Space

Due to the established nature of the City, opportunities to create new recreation and community spaces are limited. The accepted method of acquiring POS through the subdivision process is problematic for the City as there will not be many large scale subdivision opportunities and pieces of POS from smaller subdivisions will not create recreation spaces of the order required by the City.

This coupled with the current distribution of open space and facilities results in the main concerns for the City being:

- the ongoing management of competing demands on already highly valued spaces and facilities;
- the current declining condition of some City owned buildings, and the ability to fund the redevelopment of these facilities; and

- how to ensure Urban Growth Areas are serviced adequately given the increased population and more intense development form (particularly applicable to Stirling Highway).

In the realm of community facilities, where opportunities present themselves for redevelopment, the City should consider options to expand and repurpose existing assets and co-locate facilities with other agencies or the private sector. The City could also explore strengthening its civic role in the community by rationalising and reconciling its assets and providing opportunities for the City's assets to become community assets.

An emerging issue may be the deficiency of local parks within some areas of the City. This is currently mitigated in part by the large lot sizes (allowing for yards), large front setbacks and well treed nature strips. In order to continue this, these characteristics will need to be protected, most likely through strong scheme provisions.

In instances where it is desirable but not possible to provide traditional POS, alternative measures to provide the desirable attributes of POS must be pursued. Enhancement of the existing streetscape by including street trees and park benches in strategic locations to improve the existing environment may complement this approach. Additionally, a reduction in the average size of residential lots (or dwellings) and private open space into the future will put more emphasis on the importance on the open space the City currently provides.

10.8 Urban Design, Character and Heritage

The City's precincts, in particular the residential precincts, are greatly valued by residents for the high level of amenity offered. The desire to protect the high quality residential areas will factor into most, if not all, of the urban planning decisions to be made by the City of Nedlands. In the detailed planning stages, it is assumed most residential areas are to remain 'as is', with specific identification of select areas suitable for redevelopment or infill dwellings.

To this end, where areas have been selected for suitable redevelopment, specific attention will need to be given to ensuring that the character of identified pockets of residential and non-residential areas are maintained. Furthermore, land uses shall be managed between these pockets so to ensure conflicting uses are not in proximity to one another and so they do not erode the character of one another.

Further to the general desire to protect the character of established Nedlands, any development of listed heritage sites must be treated in compliance with State and Federal legislation as required. Places of local significance should also be considered, and there are a myriad of ways in which this can occur at a local government level. A measured and balanced management style is favoured rather than introducing overly onerous restrictions upon property owners.

10.9 Traffic and Transport

The City of Nedlands is influenced by a number of major traffic generators (UWA, QEIIIMC, private schools), and by traffic flows into and out of the Perth CBD. Travel demand management, congestion, parking and accessibility will be continuing issues over the coming years. In particular, existing parking shortfalls and parking demand in centres and high-trip generating areas will need to be managed.

The City of Nedlands older, established nature means accessibility and connectivity via road is generally high, but also creates a difficult environment for retro-fitting of infrastructure for walking and cycling. It has also created a situation where laneways exist (commonly as gazetted roads), but have often been neglected, and their potential not capitalised upon.

The bus network reaches much of the City of Nedlands but only Stirling Highway and Hampden Road enjoy high frequency services. As public transport is provided by the State government and is partly linked to population demand for trips, the City would expect investment into the public transport network as population density increases.

Around the train stations within the City of Nedlands there is little opportunity to take advantage of the proximity to quality public transport, aside from the identified Shenton Park Hospital redevelopment. This is largely a historical legacy and does not always present a good example of land use planning and transport network integration. It is expected that should any development opportunities arise in proximity to a train station, TOD principles would be fully embraced.

The City has identified that the built form, land uses, density and access requirements of lots in the proximity of Stirling Highway is one of the most important set of issues to be addressed by this Strategy. Until the resolution of the MRS amendment to rationalise the road reservation is finalised, this set of issues will be difficult to address properly.

10.10 Infrastructure Services

Increased future population will place demand pressure on existing infrastructure, however services are generally expected to support future development with manageable upgrading.

Where there are planned to be significant changes in the type or intensity of land use, public service providers will need to be consulted. More detailed planning may be required to identify the need to provide new infrastructure and facilities or the augmentation of existing infrastructure and facilities.

The provision of major infrastructure services is the responsibility of organisations managed by the State Government and the State Government Infrastructure Coordinating Committee. The absence of proper State Government strategic infrastructure provision will be detrimental to delivering appropriate infill across the metropolitan area.

ATTACHMENT 1

Activity Centres Planning Strategy

Shrapnel Urban Planning

Given the findings of the Retail Needs Assessment described in Chapter 9.3, the Activity

Centres Planning Strategy (ACPS) seeks to define a high-level strategy for considering the planning and development control of the City's activity centres that integrates readily

with other essential planning strategies – housing, community facilities, transport, etc. It is not the intention of this strategy to go into comprehensive detail regarding land use policy or zoning. Rather, this strategy seeks to provide the rational strategic context within which such details can be confidently worked out and flexibly implemented.

1.1 Objectives of the Activity Centres Planning Strategy

- Appropriately contribute towards the implementation of Directions 2031 and State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2), to contribute towards the evolution of a better and more sustainable wider urban region.
- To provide an effective and durable strategic planning rationale for:
 - Preparation and implementation of the City of Nedlands' new Planning Scheme, including the nature of the various commercial and mixed-use zones and related provisions in the City's town planning scheme.
 - Informing the preparation and rationalisation of local plans and planning policies relating to activity centres and residential densities/land uses in their immediate vicinity.
 - Guiding the preparation of local government action and action plans aimed at implementing the ACPS.
 - Informing the consideration and determination of development applications relating to activity centres.

1.2 Strategic approach

The recommended key approach to the ACPS is to adopt a planning principles based but otherwise open-minded and flexible attitude towards managing growth and change in activity centres by acknowledging inevitable uncertainty, while positively seeking to create activity centre development opportunities and satisfactory outcomes.

1.3 Activity centres hierarchy

In terms of details there are numerous potentially satisfactory future outcomes for development of activity centres in the City of Nedlands. Rather than preparing and seeking to implement a too specific or detailed physical plan or "vision", the ACPS aims to create a clear but flexible planning framework based on the activity centres hierarchy. The concept of a centres hierarchy remains the centrepiece of SPP 4.2 and should be the key driving principle and intention of any activity centres planning strategy.

1.4 Process and planning principles

The strategy should also be about process. The basic framework of an activity centres hierarchy has within it the potential for a lot of flexibility in the detail, so in order to ensure satisfactory outcomes, ongoing management must embrace a principles-based readiness to respond positively to unexpected proposals and/or other development opportunities.

The adoption of a principles-based approach within a complementary flexible planning framework is necessary to ensure that the results on the ground are always satisfactory. Urban planners know, in principle, what is appropriate in terms of good urban planning, land use, design, accessibility, convenience, efficiency and sustainability. Accordingly, there is no reason why, within a generalised framework, development proposals, including hitherto unplanned ones, cannot simply be evaluated on their merits using the basic principles that are at the core of the professional planner's expertise.

This does not mean that the ACPS should be ill-defined or weak. On the contrary, it should provide clear intent and guidance to all stakeholders. It can reasonably be anticipated that in many cases, particularly in the short to medium term, actual development will be in straightforward accordance with the adopted strategy. However, within the strategic framework, a process of appropriate consideration of alternative proposals to anything actually envisaged in the strategy should be recognised as part of the strategy itself. To this end, the City will generally not respond to alternative proposals that seek to solely facilitate individual property developments. Rather, the City may consider proposals that align with significant changes in the local environment and/or the wider context which suggest an enhancement to long term strategic planning could take place outside of that currently envisaged within this Strategy.

1.5 Wide framework with strong boundaries

The degree of flexibility inherent within the proposed framework justifies it having fairly strong boundaries. Maintenance of a functional hierarchy of centres does certainly necessitate careful monitoring and control. For this reason, where development proposals seek to go beyond the hierarchical boundaries established by the framework, there will be a need for such proposals to be fully justified – in most cases through a competent and convincing Retail Sustainability Assessment (RSA).

This approach to an activities centre strategy envisages that, through embracing a principles and process-based approach, the ACPS itself should remain “alive” during its currency. Why is this important? It is widely recognised that practical day-to-day planning activity should take place within a strategic context or framework, which provides its rationale. Strategic plans are, however, normally produced relatively infrequently, while day-to-day planning activity is constant. With the passage of time an inflexible strategy can lose relevance as it is either repeatedly by-passed or (which is worse) rigidly adhered to thus stifling economic activity by not adequately responding to market conditions and new (valid) ideas. Either way, over time, day-to-day planning activity and decision making can come adrift from its original underlying rationale. While the current system of periodic strategic review and update is all very well, such reviews are often delayed longer than they should be, and an update invariably requires a major new study.

The proposed approach is intended to keep day-to-day planning focussed on and guided by the big picture with the option of (if necessary) deliberately changing aspects of the big picture itself where this can be achieved while maintaining the fundamental intentions of the strategy and the integrity of established planning principles.

The basic requirement to be enforced during implementation is that every planning decision or initiative, whatever it is, should demonstrably reflect and serve a specific relevant strategy or strategic intention.

1.6 Planning Framework

The recommended strategic planning and implementation framework is basically comprised of:

- Intentions (what is planned to be achieved, and why);
- Strategies (in general terms how it is proposed to go about realising the intentions); and
- Actions and action plans (specific implementation tasks, projects, or products, both “active” and “passive”, required to implement the strategies).

This top down list is for descriptive purposes only – the intentions, strategies and actions themselves are not always amenable to organising into straightforward hierarchical sequences. For example, more than one intention may be realised or supported, in whole or part, by a single strategy and vice-versa; specific actions may serve to implement more than one strategy or intention, or only partially serve a particular strategy. It is also the case that, in practical terms, there is inevitably some conceptual overlap between Intentions, Strategies and Actions, with some high-order strategies suggesting a need for sub-strategies as a prelude to specific actions, and so on. This real and inevitable issue simply needs to be managed as efficiently as possible, without people spending too much time getting hung up on definitional issues.

Although the Actions are absolutely essential as a part of the implementation process, a programme of specific actions should not form part of an ACPS. Actions are strategy implementation measures of one kind or another and are intended to remain as a work in constant progress within the highly flexible and responsive realm of everyday planning activity. Premature listing of pages of detailed actions has the potential to obsolete a new planning strategy within just a few months.

1.7 Intentions

- Facilitate the provision and continued evolution of a viable and conveniently accessible network of attractive activity centres within the established hierarchy (to comprehensively and conveniently serve the shopping, other commercial and socio/cultural needs of the population).
 - Encourage and facilitate the viability of existing activity centres (to enhance their economic success and thus their greater usefulness to the community).
 - To the maximum practicable extent encourage a high standard of urban and development design in all activity centres, in accordance with relevant State-level policies (to create high levels of amenity and attractiveness in centres and in their neighbourhoods).
-

- Encourage and facilitate establishment of compatible community and non-retail commercial uses in activity centres at all levels in the hierarchy (in order to improve their urbanity, convenience, utility, security and robustness).
- Encourage and facilitate development of medium and, in appropriate locations, high density housing within and immediately adjacent to activity centres which are compatible with the surrounding character of the area (to enhance the viability of centres while simultaneously furthering wider sustainability objectives such as walkability, housing choice, and reduced car dependence).

1.8 Strategies

The following is a list of each of the recommended strategies. Some of these strategies are discussed and, where appropriate, elaborated upon in the sub-sections that follow:

- Define and consistently implement a hierarchy of mixed use activity centres incorporating sufficient retail floorspace quantity controls to ensure that a clear, functional centres hierarchy is maintained, while nevertheless allowing for sufficient flexibility within that framework for consideration of fresh ideas and the viable operation of the market.
- Facilitate the maintenance and expansion of the Captain Stirling Neighbourhood Centre (and nearby civic facilities such as City of Nedlands Administration and Library) as the main “Town Centre”. Plan for this centre to be the largest and most complex mixed-use activity centre in the hierarchy of centres.
- Actively promote the redevelopment of properties within Urban Growth Areas incorporating residential, retail, offices or other commercial land uses.
- The City should take a proactive role in encouraging and facilitating improvements to existing activity centres through initiatives aimed at improvements to the public domain of the existing neighbourhood and local centres.
- The City should be willing to consider any development or change of use proposal that would improve the condition and/or performance of an existing local activity centre.
- Encourage SPP 4.2 “mix of land use” provisions, in neighbourhood and local activity centres where practicable, even though they are not specifically required for these classes of centre by SPP 4.2.

1.9 Centres hierarchy & strategy map

The activity centres hierarchy and centres within each level of the hierarchy are illustrated on the Activity Centres Strategy Map (over leaf) and replicated on the Local Planning Strategy Map. Whilst in theory there are no retail floorspace caps applicable to any centre in the City, the maintenance of a retail hierarchy, which is still the centrepiece of SPP 4.2, does in fact require some effective mechanism to selectively limit centre sizes.

Activity Centres Strategy Map

ACTIVITY CENTRES



Secondary Centres
(Claremont and Subiaco;
largest activity centres, but
outside City of Nedlands)



Neighbourhood Centres:
Various Shop/Retail
maxima apply; an RSA will
be required to vary them.
RSA required for
any new neighbourhood
centre not indicated
on this map



Existing Local Centres:
Various Shop/ Retail
maxima and parking
concessions apply.



Planned Local Centre:
(Shenton Pk-01)
Eventual floorspace and
status subject to more
detailed planning



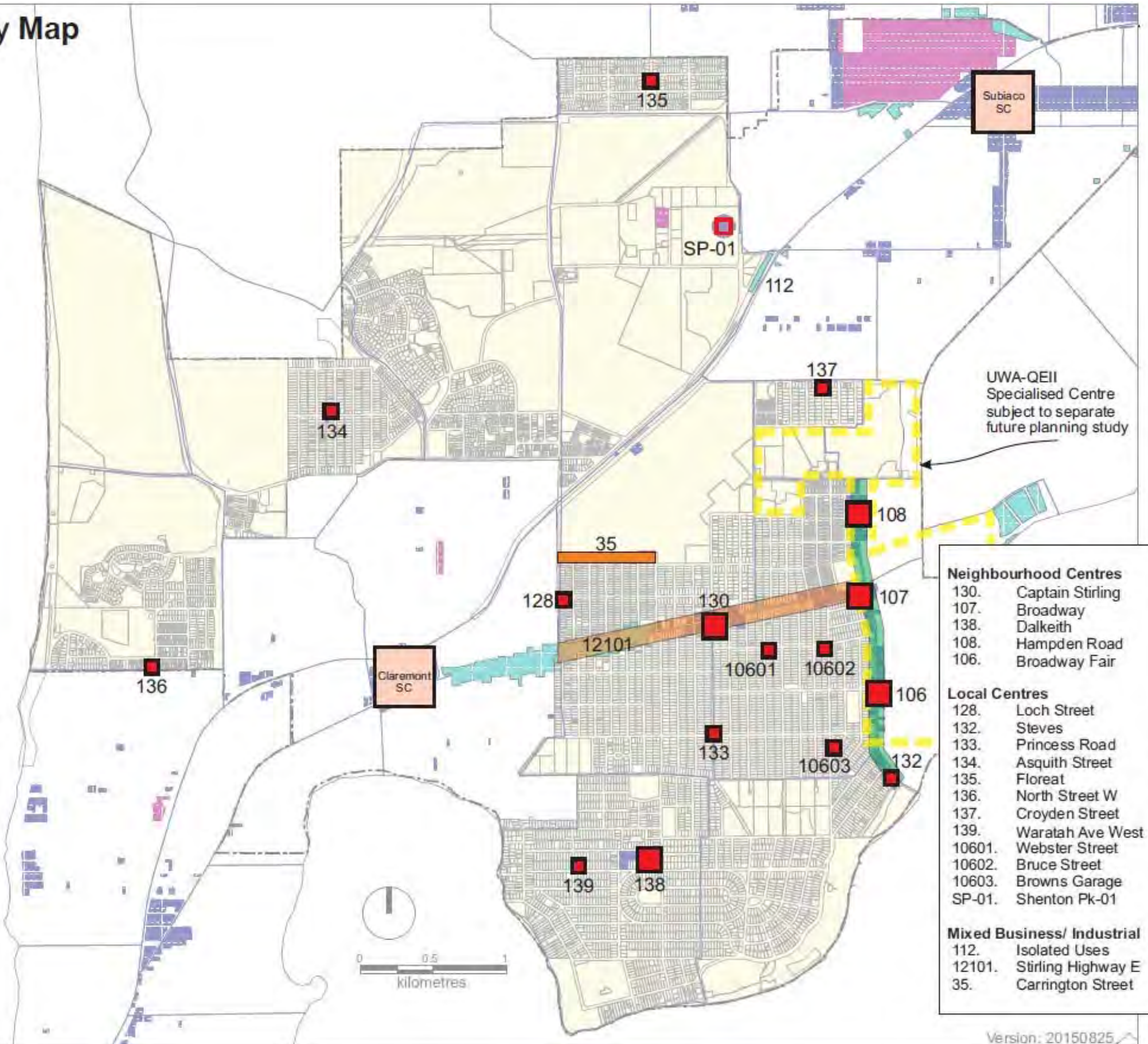
Mixed Use Area
(includes residential)



Combined Mixed Use Area
(includes residential) and
Mixed Business area
(limited residential)
depending on context
and amenity opportunities



Mixed Business Area
(limited or no residential)



UWA-QEII
Specialised Centre
subject to separate
future planning study

Neighbourhood Centres	
130.	Captain Stirling
107.	Broadway
138.	Dalkeith
108.	Hampden Road
106.	Broadway Fair
Local Centres	
128.	Loch Street
132.	Steves
133.	Princess Road
134.	Asquith Street
135.	Floreat
136.	North Street W
137.	Croyden Street
139.	Waratah Ave West
10601.	Webster Street
10602.	Bruce Street
10603.	Browns Garage
SP-01.	Shenton Pk-01
Mixed Business/ Industrial	
112.	Isolated Uses
12101.	Stirling Highway E
35.	Carrington Street

Maintenance of a retail hierarchy is important to ensure that appropriate levels of retail and other community services are conveniently provided, and to optimise the return on public investment in infrastructure, particularly transport infrastructure. As the large Claremont and Subiaco secondary centres are not in the City of Nedlands, the retail hierarchy specified in this RNA for the City of Nedlands itself is as follows:

- Neighbourhood Centres
- Local Centres
- Other Centres/Mixed Business/Industrial Areas

This strategy requires that the following, or similar, criteria for controlling the size of centres at the various levels within the defined retail hierarchy should apply. The criteria are, for the most part, generous and provide a lot of room within which the market can manoeuvre to deliver floorspace in response to demand, while still ensuring the hierarchy of centres is maintained. Indeed, it is anticipated that most centres will probably not be developed to the extent potentially permitted by this strategy. Should a developer wish to develop a centre larger than specified by the criteria, however, then a persuasive Retail Sustainability Assessment (RSA) will be required prior to any such consideration by the Council. This will be necessary to confirm that the centres hierarchy would not be undermined by the proposal.

The modelling carried out for the RNA, together with the hierarchy criteria, are intended to serve as the Retail Sustainability Assessment (RSA) for all retail floorspace increases that either accord with the modelling results, or the following additional controlling criteria. Thus, if a developer wishes to develop or increase a centre to a size within the thresholds specified by the criteria, an RSA will not be required. The criteria for centres at each level in the hierarchy are as follows (all floorspace figures are for Shop/Retail NLA unless otherwise specified).

1.10 Neighbourhood centres

The basic strategy for the neighbourhood centres is to retain those that currently exist at sizes that would permit them to fulfil a significant local convenience or mixed-use residential anchor role, without becoming any larger than necessary to perform that function. The specific strategy for the neighbourhood centres may be summarised as:

- Comprehensive RSA required prior to the creation of any neighbourhood centre other than those currently existing and/or shown on the Activity Centres Strategy Map.
 - There is a presumption against expansion of any neighbourhood centre beyond the defined maxima listed below. A convincing RSA will be required if the following maxima are to be exceeded (Shop/Retail floorspace only). It should be noted that the following figures are not specific recommendations for the centres listed; they are thresholds beyond which an RSA will be required:
 - Captain Stirling: 8,000m²
 - Broadway: 2,500m²
 - Dalkeith: 3,000m²
 - Hampden Road: 8,000m²
 - Broadway Fair: 8,000m²
 - Encourage mix of land use requirements as defined by SPP 4.2 (e.g.: local offices, community services, and adjacent or integrated higher density
-

residential development), despite their not necessarily being required for this class of centre.

- Encourage development in a manner that does not result in a predominantly single purpose or single tenancy centre.

1.11 Local centres

The strategy for local centres is similar to that for neighbourhood centres insofar as seeking to balance the need for convenience with the need for appropriate subservience in terms of the centres hierarchy. However, the issue of amenity for local centres is of particular importance and accordingly needs to be addressed in a bit more detail. The recommended strategy for the local centres (which may benefit from some refinement based on further research) may be summarised as:

- Local centres illustrated on the Activity Centres Strategy Map may be permitted to expand to the sizes indicated by the modelling results (Table 12 on Page 92 in Chapter 9.3) provided no individual tenancy, other than a supermarket or similar, exceeds 150m².
- Subject to making overall sense in planning terms, new local centres not illustrated on the Activity Centres Strategy Map may be permitted without an RSA provided they do not exceed 250m² of Shop/Retail floorspace and are proposed to be located 600 metres or more by road or footpath from any other activity centre.
- Minimal off street parking for new or established local centres of 150m² or less will be required.
- Single large-format Shop/Retail activities with a non-local catchment (e.g.: a chain liquor store) are not considered appropriate in local centres and will not be permitted in them.
- Encourage mix of land use requirements as defined by SPP 4.2 (e.g.: local offices, community services, and adjacent or integrated higher density residential development), despite their not necessarily being required for this class of centre. Care should be taken, however, to ensure that the scale and character of non-retail development and uses in local centres remains consistent with the intended role of a local centre.

1.12 Highway commercial/mixed use/mixed business areas

The main highway commercial area in the City of Nedlands is the Stirling Highway East complex. Other “centres” on the highway (Captain Stirling and Broadway) also exhibit some degree of highway commercial development in addition to more consolidated, centre-like, precincts.

The City’s previous Local Commercial Strategy recommended that the entire length of Stirling Highway where it bisects Nedlands should be planned as a mixed business area – i.e. without residential development. It is considered that this concept is no longer appropriate given the WAPC’s additional housing targets. Yet it is likely to take a considerable while before the existing nature and uses along Stirling Highway change appreciably.

The recommended strategy for Stirling Highway is to identify sites and groups of sites considered potentially suitable for both the future development of mixed use (containing residential) and mixed business (excluding residential) uses. The RNA

modelling indicated that the complex known as Stirling Highway East (which is actually located at the western end of the City's boundary) has excellent long term potential for development of more Other Retail and bulky goods floorspace, as well as mixed use residential development. The recommended strategy for the mixed business areas, particularly Stirling Highway East, may therefore be summarised as:

- Only permit additional Other Retail, bulky goods and general service commercial/industrial floorspace within areas where these uses are already well-established.
- Where practicable, encourage/incentivise the incorporation of medium/high density residential development selectively within such developments where a reasonable degree of street-level amenity can be achieved.
- Encourage/incentivise residential/mixed-use development in all other areas along the highway – i.e. don't permit stand-alone showroom developments to establish in areas not yet dedicated to them.

1.13 Carrington Street

Over time the Carrington Street precinct has evolved from a service industrial area into a highly diverse mixed business area, which still contains many service industrial uses as well as non-industrial uses. The suggested strategy for Carrington Street is to continue to let it evolve, but to zone it "Mixed Business" or similar rather than "Light Industry" in order to more formally acknowledge the transition taking place and encourage a reasonably high standard of redevelopment.

1.14 Management Processes

As previously stated, the basic principle that should be enforced in the implementation of this strategy is that every planning decision or initiative should be in pursuit of a specific relevant strategy or strategic intention. Such an approach is intended to provide greater focus to decision making by always requiring that it is based on some recognition, response or reconciliation with the strategic framework. Such an approach is essential if the City is to take an effective strategic approach to the planning and development of its activity centres.

Establishing the internal processes required to maintain this focus will require some effort, and maintaining the system will require ongoing commitment. The essential requirements to keep the Activity Centres Planning Strategy alive and relevant throughout the currency of the Local Planning Strategy are:

- An active and on-going commitment by management to implementing the strategy as intended;
- Establish a process of relating all specific actions/decisions pertaining to activity centres to a specific stated intention and/or other provision of the strategy; and
- Establish an in-house procedural ability to responsibly modify the Strategies in response to altered circumstances, without the need for a formal amendment.

This last point is arguably the most important. Without it, the valued "strategic approach" can become something of a straightjacket or, and this is more likely, simply be dropped in favour of a more pragmatic ad hoc approach. However, it will be readily

understood that arbitrary and ill-considered modification to the strategy simply in order to keep it alive would also be, in effect, non-strategic and ad hoc planning. This is

where a conscientious adherence to planning principle is the main tool. Such committed adherence is the only guarantee the community, including those being encouraged to invest in commercial and mixed-use developments will have that the strategic but flexible approach being advocated is appropriate.

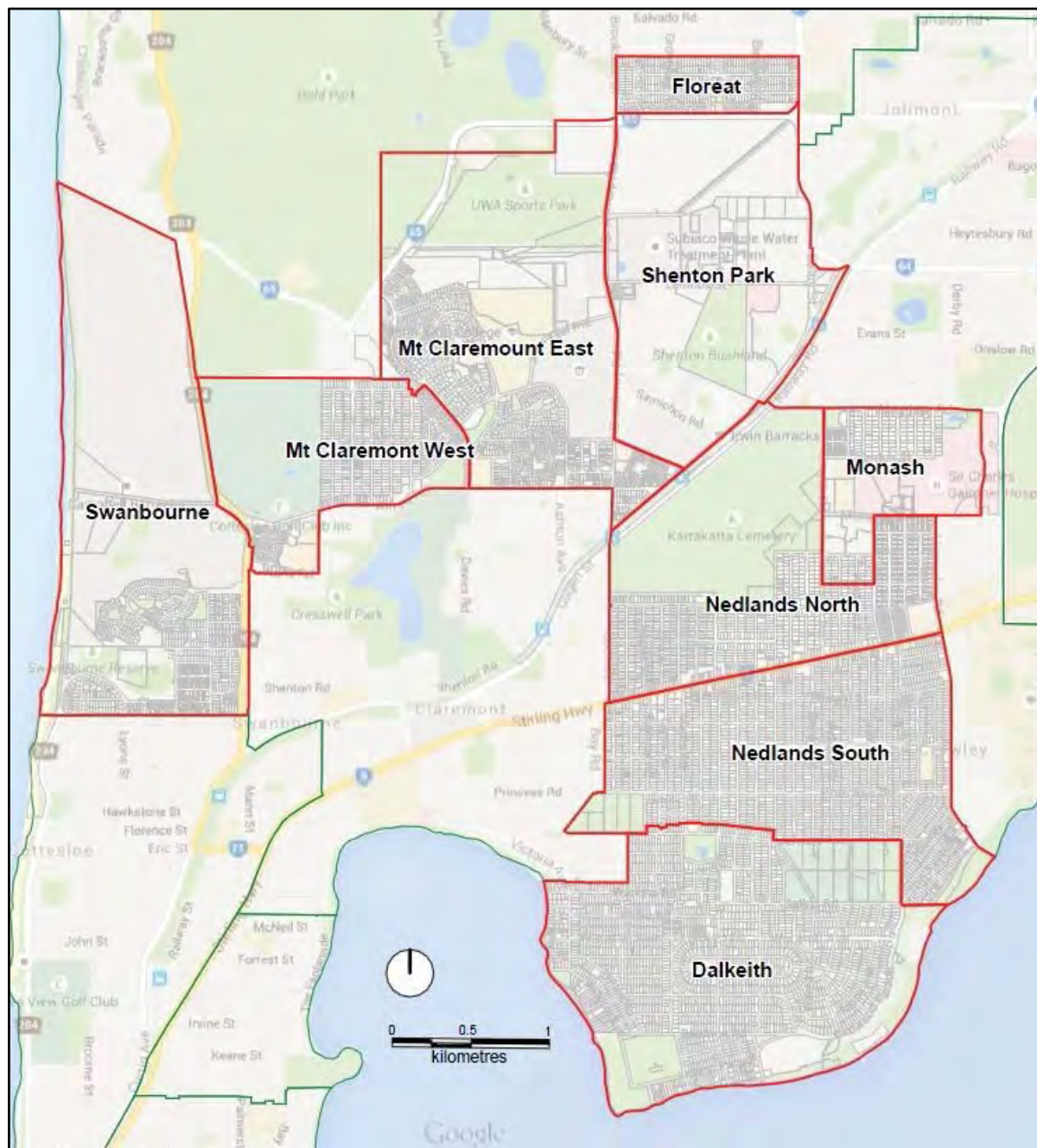
Accordingly, the key recommended strategy is for the Council to maintain an active readiness to responsibly move to change any existing Strategy and/or Action provided all three of the following conditions are met:

- It is clearly necessary and appropriate under all of the circumstances to make the proposed change.
 - Such change is clearly still in accordance with, or (as an absolute minimum) is not contrary to, sound planning principles.
 - The change would not unduly compromise or negate any other Intention or Strategy identified in the ACPS.
-

APPENDIX A

Population and Housing Precinct Data

In addition to considering the demographic and housing characteristics for the Nedlands LGA as a whole, consideration was also given to the characteristics of each of nine, fairly diverse planning precincts defined for the purpose of this strategy. These precincts are illustrated in Map 1 of this Appendix.



Map 1 Precinct Boundaries

The Appendix presents a series of tables which provide detailed statistics about each of the individual precincts compared to the equivalents for the Nedlands LGA and Greater Perth region as a whole. The following sub-sections provide a very concise synopsis of the key population and housing characteristics in each of the precincts,

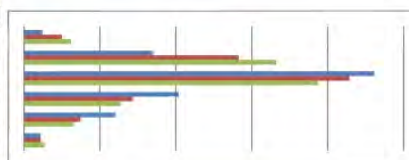
with the emphasis being primarily on characteristics that vary significantly from those applicable to the population of the Nedlands LGA as a whole.

Dalkeith

The Dalkeith precinct is mainly comprised of the suburb of Dalkeith, which is an attractive suburb bounded by the Swan River on three of its four sides. In urban planning terms it is a well-designed low density neighbourhood (mainly R10 and R12.5) with local shops at its centre where its two main distributor roads cross, and a school nearby. Compared to the Nedlands LGA as a whole, the Dalkeith precinct has:

- a slightly younger population
- a higher proportion of people born in Malaysia and Singapore
- a higher proportion of households on high incomes
- higher motor vehicle ownership
- fewer small households and more larger ones
- a high proportion of separate houses
- higher home ownership, with fewer rentals
- higher employment in health care and social assistance
- a higher proportion of journeys to work by private car (as driver)

Motor vehicles by dwelling	DALKEITH		Nedlands (LGA)		Greater Perth Region	
	Dwellings	Prop.	Dwellings	Prop.	Dwellings	Prop.
No motor vehicles	32	2.4%	350	5.0%	38,591	6.2%
One motor vehicle	229	17.0%	1,985	28.3%	208,153	33.2%
Two motor vehicles	621	46.1%	3,009	42.8%	242,997	38.7%
Three motor vehicles	274	20.3%	1,005	14.3%	80,024	12.8%
Four or more motor vehicles	162	12.0%	521	7.4%	40,785	6.5%
Number of motor vehicles not stated	29	2.2%	153	2.2%	16,545	2.6%
Total dwellings	1,347	100%	7,023	100%	627,095	100%

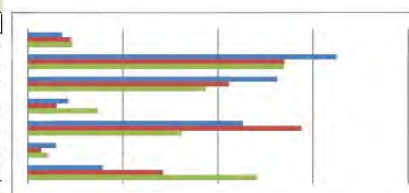


Floreat

The Floreat precinct is simply that small part of the Floreat suburb falling within the City Nedlands north of Underwood Avenue. It is mostly residential (R12.5 and R20), albeit with some centrally located shops, and an office complex at the corner of Underwood Avenue and Selby Street. Compared to the Nedlands LGA as a whole, the Floreat precinct has:

- a higher proportion of young people at school
- a higher proportion of households on modest incomes
- dwellings are almost exclusively separate houses
- higher home ownership, with fewer rentals
- fewer managers but more professionals
- a higher proportion of journeys to work by private car (as driver)

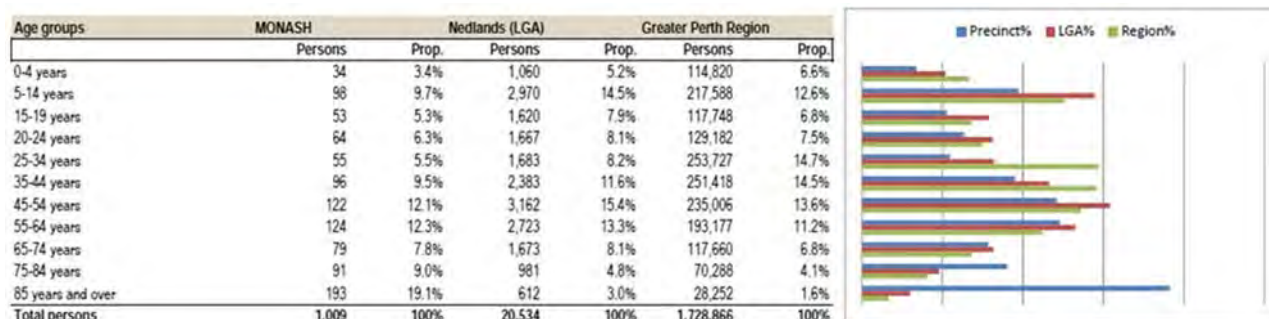
Type of educational institution	FLOREAT		Nedlands (LGA)		Greater Perth Region	
	Persons	Prop.	Persons	Prop.	Persons	Prop.
Pre-school	11	3.6%	332	4.5%	24,683	4.7%
Infants/Primary	99	32.5%	1,994	27.0%	141,949	26.9%
Secondary	80	26.2%	1,562	21.1%	98,667	18.7%
Technical or Further Education	13	4.3%	222	3.0%	38,680	7.3%
University or other Tertiary Institution	69	22.6%	2,127	28.8%	85,428	16.2%
Other type of educational institution	9	3.0%	104	1.4%	11,328	2.1%
Not stated	24	7.9%	1,050	14.2%	127,199	24.1%
Total persons	305	100%	7,391	100%	527,934	100%



Monash

Monash is an unusual precinct as, in addition to some small residential areas (ranging between R10 and R60); it contains the Hollywood Private Hospital, the QEII Medical Centre and a major retirement and aged persons village. Compared to the Nedlands LGA as a whole, the Monash precinct has:

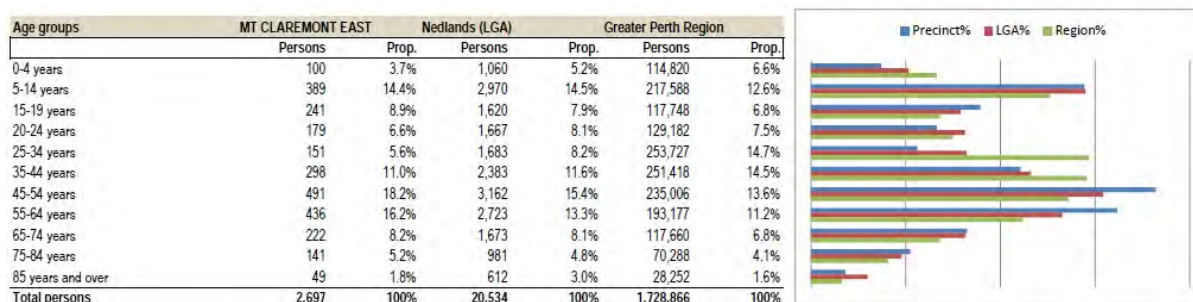
- a disproportionately high percentage of elderly people (75 years plus), and a correspondingly low proportion in the younger age groups
- a lower proportion of young people at school
- a higher proportion of households on modest incomes
- lower motor vehicle ownership, particularly dwellings with no motor vehicles
- a high proportion of single-resident households
- a significantly higher proportion of row/ terrace/ townhouses and flats/ units/ apartments; and lower proportion of single houses
- a higher proportion of dwellings with no internet connection



Mount Claremont East

Mount Claremont East is also an unusual precinct. In the northern two-thirds it contains an eclectic array of scientific, utility, health, educational and sports uses, including HBF Stadium. The southern remainder is mainly residential (R12.5-R20) with some R40 plus), the majority of which was developed in the comparatively recent 1990's. Compared to the Nedlands LGA as a whole, the Mount Claremont East precinct has:

- fewer people under 34 years; more over 45 years
- a higher proportion of people born in the UK
- proportionately more semi-detached, row/ terrace or townhouses
- higher employment in mining, retail and education
- a higher proportion of people catching the train to work

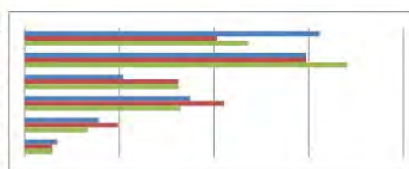


Mount Claremont West

Nearly 50% of the Mount Claremont West precinct is open space, with the majority of it comprising the Cottesloe Golf Club course. The balance is fairly long-established residential development (mostly R10/20). The precinct also contains the Lisle Lodge retirement village. Compared to the Nedlands LGA as a whole, the Mount Claremont West precinct has:

- a significantly higher proportion of people aged over 75 years
- a lower proportion of Uni students
- a higher proportion of households on modest incomes
- lower motor vehicle ownership
- more one-person households
- fewer internet connections
- higher employment in construction
- lower employment in health care and social assistance

Persons resident in households	MT CLAREMONT WEST		Nedlands (LGA)		Greater Perth Region	
	Households	Prop.	Households	Prop.	Households	Prop.
One	171	31.1%	1,426	20.3%	148,016	23.6%
Two	163	29.7%	2,085	29.7%	213,456	34.0%
Three	57	10.4%	1,139	16.2%	102,389	16.3%
Four	96	17.5%	1,478	21.0%	103,270	16.5%
Five	43	7.8%	691	9.8%	41,546	6.6%
Six or more	19	3.5%	203	2.9%	18,418	2.9%
Total households	549	100%	7,022	100%	627,095	100%

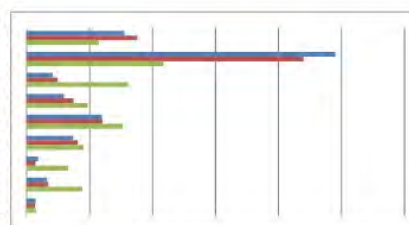


Nedlands North

About 50% of the Nedlands North precinct is occupied by the Karrakatta Cemetery, while most of the balance is residential development (mainly R10 to R25). The Stirling Highway and its associated fronting uses define the southern boundary of the precinct. Compared to the Nedlands LGA as a whole, the Nedlands North precinct has:

- a higher proportion of people aged between 20 and 44 years
- more Uni students
- more single motor vehicle households
- more townhouses and apartments and people living therein
- more rented accommodation
- more people employed in accommodation/ food services and education and training
- a slightly higher proportion of professionals
- slightly more people bussing to work and fewer driving

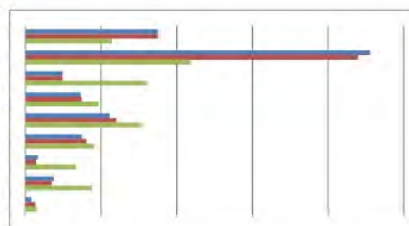
Occupations	NEDLANDS NORTH		Nedlands (LGA)		Greater Perth Region	
	Persons	Prop.	Persons	Prop.	Persons	Prop.
Managers	242	15.5%	1,707	17.6%	97,848	11.4%
Professionals	766	49.0%	4,275	44.0%	186,251	21.7%
Technicians and trades	64	4.1%	476	4.9%	137,916	16.1%
Community/ personal service workers	91	5.8%	721	7.4%	82,863	9.7%
Clerical and administrative workers	186	11.9%	1,165	12.0%	130,916	15.3%
Sales workers	115	7.4%	782	8.0%	77,544	9.0%
Machinery operators and drivers	28	1.8%	134	1.4%	56,543	6.6%
Labourers	50	3.2%	336	3.5%	75,390	8.8%
Inadequate description/ not stated	22	1.4%	126	1.3%	12,359	1.4%
Total employed persons 15 years+	1,564	100%	9,722	100%	857,630	100%



Nedlands South

Apart from some playing fields in its south-west corner, Nedlands South is an extensive residential precinct (mainly R10 and R12.5), with other community-focussed uses such as local shops, churches and schools embedded within it. Its northern boundary is defined by Stirling Highway and its associated fronting uses. To its east the precinct is bounded by Broadway and its fronting residential and commercial uses. The Nedlands South precinct can be regarded as “typical Nedlands” with only minor variations from the LGA average in all the demographic indicators across the board. The following graphic example exhibits the situation quite well. It is typical of more-or-less all of the statistical indicators.

Occupations	NEDLANDS SOUTH		Nedlands (LGA)		Greater Perth Region	
	Persons	Prop.	Persons	Prop.	Persons	Prop.
Managers	473	17.6%	1,707	17.6%	97,848	11.4%
Professionals	1,227	45.6%	4,275	44.0%	186,251	21.7%
Technicians and trades	132	4.9%	476	4.9%	137,916	16.1%
Community/ personal service workers	197	7.3%	721	7.4%	82,863	9.7%
Clerical and administrative workers	299	11.1%	1,165	12.0%	130,916	15.3%
Sales workers	201	7.5%	782	8.0%	77,544	9.0%
Machinery operators and drivers	43	1.6%	134	1.4%	56,543	6.6%
Labourers	101	3.8%	336	3.5%	75,390	8.8%
Inadequate description/ not stated	20	0.7%	126	1.3%	12,359	1.4%
Total employed persons 15 years+	2,693	100%	9,722	100%	857,630	100%



Shenton Park

The Shenton Park precinct is almost totally non-residential, recording a total population of only 137 persons in the 2011 Census. It is the location for a highly eclectic mix of military, educational, health services, utilities (including the Subiaco Wastewater Treatment Plant), and conservation (Shenton Bushland) uses.

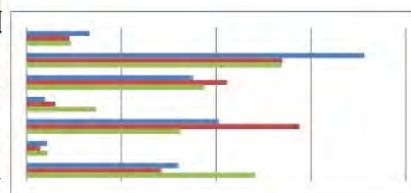
The precinct also offers the only remaining opportunity for a substantial future greenfield residential subdivision and development on the University of WA endowment land holding located at the south-west corner of Underwood Avenue and Selby Street in the precinct's north. There is a current subdivision approval covering the land, but development needs to await a Commonwealth government environmental clearance associated with Carnaby Cockatoo habitat.

Swanbourne

Swanbourne is the Western-most precinct in the Nedlands LGA, and the only one bounded by the Indian Ocean. It is also unusual in that the majority of its area is occupied by Campbell Barracks and Seaward Village – the associated military personnel housing estate. The precinct is bounded to its south by North Street and the residential precinct to its north is a pleasant neighbourhood (R12.5/20 to R35), much enhanced by the significant and popular Allen Park open space. Compared to the Nedlands LGA as a whole, the Swanbourne precinct has:

- a significantly higher proportion of people aged 44 years and under
- a higher proportion of Australia-born residents
- more primary school students and fewer university students
- fewer very high income earners
- more couple families with children under 15 years
- significantly higher rented accommodation
- significantly higher proportion of people employed in public administration and safety
- more people catching the train to work

Type of educational institution	SWANBOURNE		Nedlands (LGA)		Greater Perth Region	
	Persons	Prop.	Persons	Prop.	Persons	Prop.
Pre-school	31	6.6%	332	4.5%	24,683	4.7%
Infants/Primary	167	35.6%	1,994	27.0%	141,949	26.9%
Secondary	82	17.5%	1,562	21.1%	98,667	18.7%
Technical or Further Education	9	1.9%	222	3.0%	38,680	7.3%
University or other Tertiary Institution	95	20.3%	2,127	28.8%	85,428	16.2%
Other type of educational institution	10	2.1%	104	1.4%	11,328	2.1%
Not stated	75	16.0%	1,050	14.2%	127,199	24.1%
Total persons	469	100%	7,391	100%	527,934	100%



APPENDIX B

Review of Retail Trends

Shrapnel Urban Planning

The traditional role of the retail industry has been revolutionised over the past decade or so by the rise of the internet and associated advances in digital technology, in turn facilitating the advent and popularisation of online shopping and the increasing globalisation of the marketplace – these trends are likely to further accelerate in the foreseeable future with the expansion of web-enabled mobile devices (m-commerce) and, in Australia, the roll-out of the NBN.

In recent years this revolution has been accompanied by the global financial crisis (GFC). The GFC and its aftermath have prompted households in Australia to curb consumer spending and reduce debt, which in turn has had a major negative effect on bricks and mortar retailing and helped accelerate the trend towards the on-line alternative.

This new era has produced a new type of retailer – “pure play” (online only) operations which do not have a physical shopfront – as well as prompting many traditional “bricks and mortar” stores to adopt a multi-channel approach by adding an internet presence of some sort (not necessarily for sales). Some bricks and mortar stores (notably those selling books, CDs/DVDs) have faced more competitive pressure from online retailers than others and been forced out of business in recent times, generating growing concern for the future viability of traditional shopping precincts.

Some in the industry regard the outlook for bricks and mortar retail, even in the relatively short term future, as bleak – for example Australian analyst Dennis Price on the website Inside Retail foresees that prevailing trends have the potential to cause “massive, irrevocable disruption” to traditional retail over the next ten years. There is, however, an alternative more optimistic, view – held, for instance, by retail “futurist” Morris Miselowski – that new models of bricks and mortar retailing will emerge as retailers innovate and adapt to new technology and consumer preferences and expectations. Research from various sources (both on and off-line) has highlighted the following trends:

- Technology – digital technology will continue to transform the retail landscape over the next decade and beyond, with advantages for both shoppers and retailers resulting from the strategic use of embedded (industry specific) computing at multiple points in the retail system. Examples include:
 - Networked digital signs that detect shoppers’ interest and engage them in purchases.
 - In-store localisation that determines the precise locations of shoppers and products while sensors track in-store traffic patterns and crowd-sourced analytics (from shopping history, social networks and other stores).
 - Pre-view shopping enabled by smarter mobile devices and GPS technologies, providing shoppers with details about the retail environment before they visit the store – e.g. interior view, directions, product inventory and sales data. As well as increasing convenience and efficiency, this will empower consumers by enabling real-time information about retail locations and may affect consumer habits such as shopping times.
-

- Applications informed by data about individual and collective consumer behaviour that enable retailers to deliver customised information and discounts to individual shoppers at particular times.
 - Applications that enable retailers to track inventory in real time, reducing or eliminating lost revenue due to misplaced or out-of-stock merchandise.
 - Increased use of internet enabled mobile devices such as tablets by sales staff will allow retailers to deliver a higher level of service to shoppers by facilitating ready access to product information, enhanced communication both in-store and with other locations, mobile check-out and other features.
 - In-store robots may handle tasks such as folding clothing items, stocking shelves, and helping customers to locate items and load their purchases into their cars, freeing staff to focus on providing more attentive service.
 - Other future retail apps may enable shoppers to experience products virtually e.g. through digital unboxing, virtual dressing rooms and body scanning kiosks.
 - Integration of Formats – a key challenge for successful multi-channel retailers will be to embrace and respond to changing technology by fully integrating all the communication formats or “touchpoints” with which consumers interact including bricks and mortar stores, email marketing, websites, call centres, kiosks, mobile apps, social media, SMS messages and interactive advertising across smartphones, tablets, TV sets, cars and even home appliances. Commentary on this subject refers to “agile commerce” whereby firms reconfigure their operations so that perceived barriers between different sales channels (e.g. in-store versus online) are eliminated and customers can readily research, shop, buy and get services across all touchpoints – one basic example of this is the ability to return goods purchased online to a bricks and mortar store. Such integration will eventually lead to a customised supply chain, with seamless service and communication centred on the customer.
 - Store Content – goods and services offered by retailers are less likely to be affected by online suppliers where personal interaction, physical presence or immediate fulfilment are highly valued by the customer – the product-orientation of bricks and mortar stores will respond over time to this principle.
 - Green retailing – as both customer and regulatory demands tighten for the industry distinct environmental plans will become essential components of retail strategies. Implications include premium payments for enviro-friendly products, more low energy production and energy efficient stores, and increasingly higher standards for ethical trading.
 - Individualised service – service and in-store experience will become more specialised for increasingly differentiated demographic groups (e.g. working women, singles, children, teenagers) wanting distinctive products, services and shopping experiences. Leading retailers will aim to satisfy these requirements by diversifying, leading to the growth of niche stores where service is finely-calibrated according to the target customer group.
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- Enhanced Shopping Experience – to create a point of difference with online trade, retailers will need to re-think the way bricks and mortar shops are used and generally “up the ante” by cultivating an immersive brand experience incorporating education and entertainment together with hands-on demonstrations, interactive displays and immediate service. Shopping will become more of a “customer-centric” event than a transaction. Interactivity will be particularly important in “empowering customers to buy” rather than merely selling goods.
- Shop Size – global retail branding consultancy Interbrand predicts that, in the future, bricks and mortar retail outlets in urban centres will largely comprise smaller “microformat” stores, and that shops generally will require around 40% less floorspace than at present. The trend towards less floor stock will be aided by technology such as in-store kiosks in which full body scanners will scan a customer’s image and enable them to experience products virtually before ordering them for later delivery.
- Design – retail space will need to be designed with sufficient flexibility so it can be readily adapted and updated to keep pace with prevailing trends and attitudes.
- Mobile and Temporary Retail – in an effort to create unique experiences which attract attention, several retailers are moving outside the traditional retail environment and delivering products and services directly to the customer in unexpected locations through mobile or temporary facilities (‘pop-up’) in combination with social networking.

Australian Productivity Commission Report – Economic Structure and Performance of the Australian Retail Industry (November 2011)

- Over the past three decades retail sales growth in Australia has trended down as consumers spend more of their rising incomes on a range of non-retail services including financial, property, travel and entertainment (retail spending as a percentage of overall consumer spending falling from over 35% in the early 1980s to just under 30% in 2010) – one of the reasons for this is that retail goods have become cheaper.
 - It is estimated that online retailing currently represents approximately 6% of total Australian retail sales – made up of 4% domestic online (\$8.4 billion) and 2% overseas (\$4.2 billion).
 - Australia appears to lag behind comparable countries in its development of online retailing – for example, online sales in the UK and US are estimated at 11% and 8% of total retail expenditure respectively.
 - Online sales in Australia are predicted to grow strongly, between 10% and 15% per annum over the next three years at least.
 - Online penetration in Australia is much higher in retail industry segments such as books, CDs, DVDs, clothing, sporting goods, electrical and electronic goods, cosmetics and toys, and much lower for groceries.
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- The retail industry is the second highest employing industry in Australia, accounting for 10.7% of the workforce (approx. 1.2 million) in 2010. After steady growth between the early 1990s and 2005, however, it grew only slightly by 32,500 or 2.8% between 2005 and 2010 at a time when overall employment growth was 12.5% – indeed employment in retail actually fell by 1,900 between 2007 and 2010.
 - Views differ on the employment outlook for the retail industry, particularly in response to the possible impact of growth of online shopping. The National Retail Association sees the possibility of between 53,000 and 105,000 jobs being lost from the Australian economy due to online shopping. The Retail Traders Association of WA, on the other hand expects employment levels in both retail and wholesale to fluctuate in the short term as the industries respond to technological changes and changing business models, but to be steady in the longer term.
 - The Productivity Commission itself anticipates some structural employment loss in retail as the result of continued online shopping growth, especially for bricks and mortar retailers. The extent of the loss in the retail industry as a whole is difficult to predict, and will depend on the share that Australian online retailers are able to secure relative to overseas operators. It is expected that there will be a redistribution of employment away from bricks and mortar operations to “non-store” (online) retail, and services such as website development and maintenance. Employment is also expected to shift to industries linked to retail, such as transport delivery services and warehousing, as a result of online shopping growth.
 - Bricks and mortar retailers in Australia operate under several regulatory regimes that reduce their competitiveness – among the restrictions which, the Productivity Commission suggests, require improvement ***are planning and zoning regulations which are complicated, excessively prescriptive and often exclusionary***. Other areas needing review are retail trading hours regulation and constraints on workplace flexibility.
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APPENDIX C

Activity Centres Gravity Model

Shrapnel Urban Planning

THE RETAIL MODEL

The retail model used in this study is a form of gravity model which has been used in retail analysis for many years. The term "gravity" model is derived from an early analogy, formed in the late 1950's and early 1960's, between physics and social behaviour. In the same manner that the attraction between physical bodies is related to their mass and distance between them, so too (it was hypothesized) is the attraction between certain social phenomena such as commercial centres and populations.

Though there is no true parallel between the physical and social sciences, this phenomenon of "social gravity" has been clearly demonstrated by numerous overseas and local researchers. The name "gravity model" has therefore persisted, and many useful models derived from this concept have been produced and used in various parts of the world, particularly in the United States of America and England.

SHRAPNEL URBAN PLANNING has used gravity models for retail analysis since 1982, and has produced a significant body of work for various public and private sector clients. The form of the gravity model which SHRAPNEL URBAN PLANNING has adapted for local use was originally developed by Lakshmanan and Hansen¹ to aid in the location of large new shopping centres in the Baltimore region. The model is expressed mathematically as follows:

Where:

$$P_{ij} = T_i \frac{A_j^a / d_{ij}^b}{\sum_{j=1}^n A_j^a / d_{ij}^b}$$

P_{ij} = The number of people living in zone i who are attracted to centre j

T_i = The total number of people living in zone i

A_j = A measure of the relative attractiveness of centre j

d_{ij} = A measure of the distance between zone i and centre j

a = An exponent applied to the attraction variable.

b = An exponent applied to the distance variable.

The basic premise of this model is that people are more likely, on the whole, to use shopping centres which are located close to where they live than they are to use centres which are located further away. This is not always the case, however, and some people will travel further to shop than they really need, sometimes

¹ Lakshmanan T.R. and Hansen W.G. (1965). A Retail Market Potential Model, *AIP Journal*, May 1965

passing one centre to visit a preferred one further away. Often this by-passing will be the by-passing of a smaller centre to visit a larger one. This "real world" situation is reflected in the results of the model. The older method of describing a centre's "catchment area" by a single line around the centre, and assuming that all persons or dwellings on the inside of the line are "in" the catchment and all those outside the line are "out" of the catchment is clearly artificial.

The basic data unit (**P**) is usually population grouped into identifiable zones, such as suburbs. Population counts and forecasts are reasonably easily obtained. Other data units can, however, be used. It may be decided to use households rather than population, or household income or estimates of household retail expenditure. Whichever data unit is used, the way it is processed is the same. When estimates of household expenditure are used, however, the total amount of retail dollars attracted to the centre can then be divided by the floor area of the centre to provide a calculation of the annual turnover per square metre of the centre.

The measure of attractiveness of each centre (**A**) which is used is normally the size of the centre in square metres of net lettable floor area. This most significant of inputs can be easily measured and kept up-to-date. Other measures of attractiveness can be included in the model as well (such as values representing relative "image", ease of car parking, etc); but these factors are much more difficult to reliably quantify. Unless the results of detailed empirical research are available to clearly demonstrate the reliability of measuring these types of additional variables, the model provides more useful results without them. Where such research can be done, then these additional factors will increase the sophistication of the model.

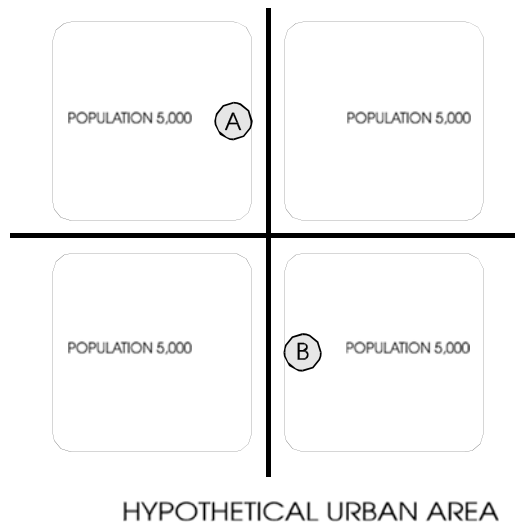
The measure of the distance between each residential zone and each shopping centre (**d**) is usually an estimate of the driving time in minutes. This estimate may be derived from measures of the straight line distances involved, or by distances along traffic routes. There is little difference in the model's results between straight line measures and road network measures where major physical impediments to direct travel are absent. A measure which takes account of the structure of the road network is superior to the straight line distance measure, however, where major geographic features (such as lakes or rivers for example) make straight line distance measures less accurate.

Thus the model relates **all the shopping centres** in a study area with **all the people** (grouped into zones) within the area. The relationship between these two sets of data is determined by the **set of driving times** - a separate measurement between each shopping centre and each residential zone. The model's main use is to estimate the future relative performance of a shopping centre given the future size and distribution of the population and all other shopping centres. The impact of creating or expanding any shopping centre, or even the effects of changing the road network, can also be estimated using the model.

It must always be remembered that the model results are a calculation, based on a mathematical formula and certain selected data inputs. When the results are presented in a way which has real meaning to a shopping centre developer, such as dollar turnover per square metre, it is tempting to assume that the model is actually predicting the future financial performance of the centre. This is not the case, and is why other considerations must always also be taken into account by decision

makers. The model is therefore an aid to decision making - not a "black box" which spits out the "right" answer.

For example, in a hypothetical urban area of 20,000 people, there might be two centres of exactly equal size - Centre A and Centre B, spaced evenly in relation to the population. The situation might be as illustrated in the following diagram:



In this simple hypothetical situation, as common sense itself dictates, the model would distribute half the total population to Centre A and half to Centre B (though a higher proportion of the population living near Centre A would be distributed to Centre A and vice versa). This is because the two centres are equal in size, and are located equally in relation to an evenly distributed population. But if "in reality" Centre A was a clean, well managed centre containing many excellent shops; while Centre B was run down, had poor car parking and an uninteresting array of shops, Centre A would out-perform Centre B easily. The model would not indicate this difference unless the research was available to quantify the additional relative attraction factors. Thus the results of the model are a function of the inputs. They only represent the real world partially. This does not detract from the model's usefulness as an analytical tool, but it illustrates its limitations and the need for the use of sound judgment as well.

Lookup ID	Type	Name	Hierarchy	SHP nla	RET nla	TOT nla	SHP-\$Mil	PerSqm	RET-\$Mil	PerSqm	TOT-\$Mil	PerSqm	SHP-Pers	Sqm/Cap*	RET-Pers	Sqm/Cap*	
3	130	C	DALKEITH ROAD	6 NHD	3,160	600	3,760	\$20.6	\$6,533	\$3.7	\$6,196	\$24.4	\$6,479	1,391	2.27	661	0.91
1	107	C	COOPER ST	6 NHD	1,676	40	1,716	\$10.3	\$6,149	\$0.2	\$5,932	\$10.5	\$6,144	731	2.29	43	0.93
4	138	C	VILLAGE	6 NHD	2,255	635	2,890	\$14.9	\$6,588	\$3.8	\$5,912	\$18.6	\$6,440	938	2.41	646	0.98
2	108	C	HAMPDEN RD	6 NHD	3,546	120	3,666	\$19.9	\$5,612	\$0.7	\$5,941	\$20.6	\$5,623	1,497	2.37	130	0.92
39	106	C	BROADWAY	6 NHD	4,050	200	4,250	\$25.7	\$6,336	\$1.1	\$5,661	\$26.8	\$6,304	1,755	2.31	205	0.98
5	116	C	KARRAKATTA	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
6	128	C	LOCH STREET	7 LOC	70	-	70	\$0.4	\$5,002	\$0.0	\$0	\$0.4	\$5,002	23	3.08	-	-
7	132	C	STEVES	7 LOC	1,130	125	1,255	\$4.5	\$3,993	\$0.7	\$5,333	\$5.2	\$4,126	304	3.72	119	1.05
8	133	C	PRINCESS ROAD	7 LOC	290	40	330	\$1.6	\$5,417	\$0.2	\$6,053	\$1.8	\$5,494	103	2.81	43	0.94
9	134	C	ASQUITH STREET	7 LOC	500	200	700	\$2.7	\$5,374	\$1.1	\$5,748	\$3.8	\$5,481	175	2.86	200	1.00
10	135	C	FLOREAT	7 LOC	75	-	75	\$0.3	\$4,621	\$0.0	\$0	\$0.3	\$4,621	23	3.26	-	-
11	136	C	NORTH ST WEST	7 LOC	230	-	230	\$1.2	\$5,207	\$0.0	\$0	\$1.2	\$5,207	75	3.07	-	-
12	137	C	CROYDEN ST	7 LOC	155	-	155	\$0.8	\$4,971	\$0.0	\$0	\$0.8	\$4,971	52	2.98	-	-
13	139	C	WARATAH AVE	7 LOC	630	100	730	\$3.6	\$5,689	\$0.6	\$5,991	\$4.2	\$5,730	224	2.82	103	0.97
14	10601	C	WEBSTER ST	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
15	10602	C	BRUCE ST	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
16	10603	C	BROWNS GARAGE	7 LOC	-	150	150	\$0.0	\$0	\$0.9	\$5,747	\$0.9	\$5,747	-	-	153	0.98
17	SP-01	C	SHENTON PK-01	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
18	112	C	ISO USES	8 OTH C	-	235	235	\$0.0	\$0	\$1.5	\$6,210	\$1.5	\$6,210	-	-	258	0.91
19	131	C	COUNCIL	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
20	12101	C	STIRLING HWY E	8 OTH C	6,389	6,372	12,761	\$39.0	\$6,101	\$39.9	\$6,264	\$78.9	\$6,183	2,544	2.51	6,988	0.91
21	35	I	CARRINGTON	9 IND	630	1,245	1,875	\$3.4	\$5,467	\$7.7	\$6,160	\$11.1	\$5,927	226	2.79	1,346	0.92
22	106	I	BEDBROOK	9 IND	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
23	120	C	CLAREMONT SC	4 SEC	39,000	3,500	42,500	\$276.5	\$7,091	\$21.8	\$6,238	\$298.4	\$7,020	17,598	2.22	3,766	0.93
24	123	C	SWANBOURNE	6 NHD	1,500	200	1,700	\$8.8	\$5,884	\$1.2	\$6,250	\$10.1	\$5,927	566	2.65	214	0.93
25	11501	C	CLAREMONT S1	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
26	11502	C	CLAREMONT S2	7 LOC	150	-	150	\$0.8	\$5,301	\$0.0	\$0	\$0.8	\$5,301	49	3.06	-	-
27	11503	C	CLAREMONT S3	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
28	11504	C	CLAREMONT S4	7 LOC	150	-	150	\$0.7	\$4,645	\$0.0	\$0	\$0.7	\$4,645	43	3.46	-	-
29	11505	C	CLAREMONT S5	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
30	11506	C	CLAREMONT S6	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
31	12201	C	CLAREMONT N1	7 LOC	650	248	898	\$3.1	\$4,711	\$1.5	\$6,098	\$4.6	\$5,094	199	3.27	265	0.94
32	12202	C	CLAREMONT N2	7 LOC	200	100	300	\$1.0	\$4,884	\$0.6	\$6,055	\$1.6	\$5,274	63	3.16	105	0.95
33	12203	C	CLAREMONT N3	7 LOC	120	40	160	\$0.6	\$4,768	\$0.2	\$6,098	\$0.8	\$5,100	37	3.25	42	0.94
34	12301	C	SHENTON RD	7 LOC	180	-	180	\$1.0	\$5,311	\$0.0	\$0	\$1.0	\$5,311	63	2.84	-	-
35	121	C	STIRLING HWY W	8 OTH C	8,518	8,495	17,013	\$46.9	\$5,501	\$53.4	\$6,283	\$100.2	\$5,892	2,967	2.87	9,219	0.92
36	33	I	CLAREMONT	9 IND	200	220	420	\$1.1	\$5,540	\$1.4	\$6,150	\$2.5	\$5,860	71	2.81	235	0.94
37	101	C	SUBIACO SC	4 SEC	48,200	6,300	54,500	\$303.2	\$6,290	\$40.9	\$6,498	\$344.1	\$6,314	19,591	2.46	7,196	0.88
38	102	C	SHENTON PARK	6 NHD	3,542	-	3,542	\$20.1	\$5,677	\$0.0	\$0	\$20.1	\$5,677	1,313	2.70	-	-
40	103	C	NICHOLSON RD	7 LOC	533	-	533	\$2.4	\$4,537	\$0.0	\$0	\$2.4	\$4,537	157	3.39	-	-
41	109	C	ONSLow ROAD	7 LOC	160	-	160	\$0.9	\$5,565	\$0.0	\$0	\$0.9	\$5,565	57	2.83	-	-
42	110	C	RAILWAY ROAD	7 LOC	192	-	192	\$0.9	\$4,812	\$0.0	\$0	\$0.9	\$4,812	60	3.21	-	-
43	113	C	CARDIGAN TERRACE	7 LOC	253	-	253	\$1.2	\$4,798	\$0.0	\$0	\$1.2	\$4,798	80	3.18	-	-
44	114	C	HOPETOUN TCE	7 LOC	595	-	595	\$2.8	\$4,783	\$0.0	\$0	\$2.8	\$4,783	183	3.25	-	-
45	166	C	ROSALIE STREET	7 LOC	565	-	565	\$2.4	\$4,202	\$0.0	\$0	\$2.4	\$4,202	156	3.63	-	-
46	111	C	TROY TERRACE	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
47	227	C	SALVADO RD2	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
48	24	I	JOLIMONT	9 IND	8,574	8,090	16,664	\$44.9	\$5,240	\$53.3	\$6,592	\$98.3	\$5,897	2,975	2.88	9,446	0.86

Dwelling Unit/ Population Projections... (NEDLANDS, CLAREMONT & SUBIACO)

Primary Study Area

Year	2011	2016	2021	2026	2031	2,036
Dwellings	20,990	23,025	24,720	26,385	27,890	28,839
Population	46,321	50,527	54,084	57,704	61,080	63,073

Data Sets (this sheet)

DW2016	SHP16	RET16
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Model Run Stats (this sheet)

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita**
Regional	87,200	\$579.7	\$6,648	37,189	2.34	1.73
District	-	\$0.0	\$0	-	-	-
N'hood	19,729	\$120.3	\$6,098	8,191	2.41	0.39
Local	6,828	\$32.7	\$4,796	2,125	3.21	0.14
Other Com	14,907	\$85.8	\$5,758	5,512	2.70	0.30
Industrial	9,404	\$49.5	\$5,262	3,272	2.87	0.19
Total SHP	138,068	\$868.1	\$6,287	56,289	2.45	2.73
crosscheck	OK	OK		OK		

Other Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita**
Regional	9,800	\$62.8	\$6,405	10,963	0.89	0.19
District	-	\$0.0	\$0	-	-	-
N'hood	1,795	\$10.8	\$6,019	1,900	0.94	0.04
Local	1,003	\$5.9	\$5,864	1,030	0.97	0.02
Other Com	15,102	\$94.8	\$6,274	16,465	0.92	0.30
Industrial	9,555	\$62.4	\$6,526	11,027	0.87	0.19
Total RET	37,255	\$236.6	\$6,350	41,385	0.90	0.74
crosscheck	OK	OK		OK		

TOTAL Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Sqm/ Capita**	NOTE:
Regional	97,000	\$642.5	\$6,623	1.92	NOTE: Totalling of Person Equivalents for Total Retail is a double-count of population and therefore not valid.
District	-	\$0.0	\$0	-	
N'hood	21,524	\$131.1	\$6,091	0.43	
Local	7,831	\$38.6	\$4,932	0.15	
Other Com	30,009	\$180.6	\$6,018	0.59	
Industrial	18,959	\$111.8	\$5,899	0.38	
Total RET	175,323	\$1,104.6	\$6,301	3.47	
crosscheck	OK	OK			

* Derived from person equivalents attracted to centre
~ Derived from main study area population projection alone

NOTE:
Centre names are a combination of DoP Complex names, LGA local names, and SUP database reference names. They may or may not accord with their commercial trading names.

NOTE:
This page displays the calculations of a mathematical "Retail Floorspace Potential" model, which is used to estimate retail floorspace needs and impacts for urban planning purposes.
Various qualitative aspects of centres are not fully accounted for in the model, and the actual economic performance of a centre will not necessarily accord with its theoretical potential as calculated by the model.

District & Higher Only	87,200	9,800	97,000	\$579.7	\$6,648	\$62.8	\$6,405	\$642.5	\$6,623	37,189	2.34	10,963	0.89
TOTAL (This Page)	138,068	37,255	175,323	\$868.1	\$6,287	\$236.6	\$6,350	\$1,104.6	\$6,301	56,289	2.45	41,385	0.90

Lookup ID	Type	Name	Hierarchy	SHP nla	RET nla	TOT nla	SHP-\$Mil	PerSqm	RET-\$Mil	PerSqm	TOT-\$Mil	PerSqm	SHP-Pers	Sqm/Cap*	RET-Pers	Sqm/Cap*	
3	130	C	DALKEITH ROAD	6 NHD	4,500	600	5,100	\$28.4	\$6,305	\$3.8	\$6,380	\$32.2	\$6,314	1,901	2.37	675	0.89
1	107	C	COOPER ST	6 NHD	1,676	40	1,716	\$9.9	\$5,922	\$0.2	\$6,119	\$10.2	\$5,927	704	2.38	44	0.91
4	138	C	VILLAGE	6 NHD	2,500	635	3,135	\$16.2	\$6,480	\$3.9	\$6,081	\$20.1	\$6,399	1,015	2.46	659	0.96
2	108	C	HAMPDEN RD	6 NHD	3,546	120	3,666	\$19.4	\$5,459	\$0.7	\$6,151	\$20.1	\$5,482	1,463	2.42	134	0.90
39	106	C	BROADWAY	6 NHD	4,500	200	4,700	\$27.4	\$6,082	\$1.2	\$5,833	\$28.5	\$6,071	1,868	2.41	209	0.95
5	116	C	KARRAKATTA	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
6	128	C	LOCH STREET	7 LOC	70	-	70	\$0.3	\$4,946	\$0.0	\$0	\$0.3	\$4,946	22	3.14	-	-
7	132	C	STEVES	7 LOC	1,250	125	1,375	\$4.8	\$3,835	\$0.7	\$5,495	\$5.5	\$3,986	321	3.89	122	1.03
8	133	C	PRINCESS ROAD	7 LOC	400	40	440	\$2.1	\$5,173	\$0.2	\$6,221	\$2.3	\$5,268	135	2.96	43	0.92
9	134	C	ASQUITH STREET	7 LOC	500	200	700	\$2.7	\$5,427	\$1.2	\$5,949	\$3.9	\$5,576	175	2.85	206	0.97
10	135	C	FLOREAT	7 LOC	75	-	75	\$0.4	\$5,059	\$0.0	\$0	\$0.4	\$5,059	25	2.99	-	-
11	136	C	NORTH ST WEST	7 LOC	230	-	230	\$1.2	\$5,250	\$0.0	\$0	\$1.2	\$5,250	75	3.07	-	-
12	137	C	CROYDEN ST	7 LOC	200	-	200	\$1.0	\$4,876	\$0.0	\$0	\$1.0	\$4,876	65	3.05	-	-
13	139	C	WARATAH AVE	7 LOC	630	100	730	\$3.5	\$5,623	\$0.6	\$6,163	\$4.2	\$5,697	219	2.87	105	0.96
14	10601	C	WEBSTER ST	7 LOC	150	-	150	\$0.9	\$5,856	\$0.0	\$0	\$0.9	\$5,856	59	2.54	-	-
15	10602	C	BRUCE ST	7 LOC	150	-	150	\$0.9	\$5,815	\$0.0	\$0	\$0.9	\$5,815	59	2.53	-	-
16	10603	C	BROWNS GARAGE	7 LOC	-	150	150	\$0.0	\$0	\$0.9	\$5,910	\$0.9	\$5,910	-	-	156	0.96
17	SP-01	C	SHENTON PK-01	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
18	112	C	ISO USES	8 OTH C	-	250	250	\$0.0	\$0	\$1.6	\$6,539	\$1.6	\$6,539	-	-	286	0.87
19	131	C	COUNCIL	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
20	12101	C	STIRLING HWY E	8 OTH C	6,500	7,000	13,500	\$38.8	\$5,970	\$45.1	\$6,450	\$84.0	\$6,219	2,512	2.59	7,837	0.89
21	35	I	CARRINGTON	9 IND	700	1,500	2,200	\$3.8	\$5,405	\$9.5	\$6,360	\$13.3	\$6,056	246	2.84	1,660	0.90
22	106	I	BEDBROOK	9 IND	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
23	120	C	CLAREMONT SC	4 SEC	39,000	3,500	42,500	\$278.5	\$7,142	\$22.5	\$6,431	\$301.1	\$7,084	17,571	2.22	3,848	0.91
24	123	C	SWANBOURNE	6 NHD	1,500	200	1,700	\$8.9	\$5,964	\$1.3	\$6,439	\$10.2	\$6,019	569	2.63	219	0.91
25	11501	C	CLAREMONT S1	7 LOC	150	-	150	\$0.7	\$4,822	\$0.0	\$0	\$0.7	\$4,822	46	3.30	-	-
26	11502	C	CLAREMONT S2	7 LOC	150	-	150	\$0.8	\$5,300	\$0.0	\$0	\$0.8	\$5,300	48	3.10	-	-
27	11503	C	CLAREMONT S3	7 LOC	150	-	150	\$0.8	\$5,100	\$0.0	\$0	\$0.8	\$5,100	47	3.21	-	-
28	11504	C	CLAREMONT S4	7 LOC	150	-	150	\$0.7	\$4,670	\$0.0	\$0	\$0.7	\$4,670	43	3.48	-	-
29	11505	C	CLAREMONT S5	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
30	11506	C	CLAREMONT S6	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
31	12201	C	CLAREMONT N1	7 LOC	650	248	898	\$3.1	\$4,728	\$1.6	\$6,311	\$4.6	\$5,165	198	3.28	271	0.91
32	12202	C	CLAREMONT N2	7 LOC	200	100	300	\$1.0	\$4,914	\$0.6	\$6,258	\$1.6	\$5,362	63	3.17	108	0.93
33	12203	C	CLAREMONT N3	7 LOC	120	40	160	\$0.6	\$4,795	\$0.3	\$6,298	\$0.8	\$5,170	37	3.26	43	0.92
34	12301	C	SHENTON RD	7 LOC	180	-	180	\$1.0	\$5,381	\$0.0	\$0	\$1.0	\$5,381	64	2.82	-	-
35	121	C	STIRLING HWY W	8 OTH C	9,000	8,495	17,495	\$49.4	\$5,489	\$55.0	\$6,474	\$104.4	\$5,967	3,096	2.91	9,413	0.90
36	33	I	CLAREMONT	9 IND	200	220	420	\$1.1	\$5,564	\$1.4	\$6,350	\$2.5	\$5,976	71	2.82	241	0.91
37	101	C	SUBIACO SC	4 SEC	58,000	6,300	64,300	\$373.9	\$6,447	\$43.3	\$6,867	\$417.2	\$6,488	24,052	2.41	7,538	0.84
38	102	C	SHENTON PARK	6 NHD	3,542	-	3,542	\$20.0	\$5,642	\$0.0	\$0	\$20.0	\$5,642	1,300	2.73	-	-
40	103	C	NICHOLSON RD	7 LOC	533	-	533	\$2.4	\$4,554	\$0.0	\$0	\$2.4	\$4,554	157	3.39	-	-
41	109	C	ONSLow ROAD	7 LOC	160	-	160	\$0.9	\$5,571	\$0.0	\$0	\$0.9	\$5,571	56	2.83	-	-
42	110	C	RAILWAY ROAD	7 LOC	192	-	192	\$0.9	\$4,943	\$0.0	\$0	\$0.9	\$4,943	61	3.14	-	-
43	113	C	CARDIGAN TERRACE	7 LOC	253	-	253	\$1.3	\$5,056	\$0.0	\$0	\$1.3	\$5,056	84	3.03	-	-
44	114	C	HOPETOUn TCE	7 LOC	595	-	595	\$2.9	\$4,836	\$0.0	\$0	\$2.9	\$4,836	184	3.23	-	-
45	166	C	ROSALIE STREET	7 LOC	565	-	565	\$2.4	\$4,168	\$0.0	\$0	\$2.4	\$4,168	154	3.68	-	-
46	111	C	TROY TERRACE	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
47	227	C	SALVADO RD2	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
48	24	I	JOLIMONT	9 IND	8,574	8,090	16,664	\$46.6	\$5,431	\$56.5	\$6,990	\$103.1	\$6,188	3,074	2.79	9,933	0.81

Dwelling Unit/ Population Projections... (NEDLANDS, CLAREMONT & SUBIACO)

Primary Study Area

Year	2011	2016	2021	2026	2031	2,036
Dwellings	20,990	23,025	24,720	26,385	27,890	28,839
Population	46,321	50,527	54,084	57,704	61,080	63,073

Data Sets (this sheet)

DW2021	SHP21	RET21
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Model Run Stats (this sheet)

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	97,000	\$652.5	\$6,727	41,624	2.33	1.79
District	-	\$0.0	\$0	-	-	-
N'hood	21,764	\$130.2	\$5,980	8,819	2.47	0.40
Local	7,703	\$37.1	\$4,822	2,399	3.21	0.14
Other Com	15,500	\$88.2	\$5,691	5,609	2.76	0.29
Industrial	9,474	\$51.5	\$5,432	3,391	2.79	0.18
Total SHP	151,441	\$959.4	\$6,335	61,842	2.45	2.80
crosscheck	OK	OK		OK		

Other Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	9,800	\$65.8	\$6,711	11,386	0.86	0.18
District	-	\$0.0	\$0	-	-	-
N'hood	1,795	\$11.1	\$6,198	1,941	0.92	0.03
Local	1,003	\$6.1	\$6,053	1,055	0.95	0.02
Other Com	15,745	\$101.8	\$6,464	17,536	0.90	0.29
Industrial	9,810	\$67.5	\$6,879	11,833	0.83	0.18
Total RET	38,153	\$252.2	\$6,611	43,751	0.87	0.71
crosscheck	OK	OK		OK		

TOTAL Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm	Sqm/ Capita~	NOTE:
Regional	106,800	\$718.2	\$6,725	1.97	NOTE: Totalling of Person Equivalents for Total Retail is a double-count of population and therefore not valid.
District	-	\$0.0	\$0	-	
N'hood	23,559	\$141.3	\$5,997	0.44	
Local	8,706	\$43.2	\$4,963	0.16	
Other Com	31,245	\$190.0	\$6,081	0.58	
Industrial	19,284	\$118.9	\$6,168	0.36	
Total RET	189,594	\$1,211.7	\$6,391	3.51	
crosscheck	OK	OK			

* Derived from person equivalents attracted to centre
~ Derived from main study area population projection alone

NOTE:
Centre names are a combination of DoP Complex names, LGA local names, and SUP database reference names. They may or may not accord with their commercial trading names.

NOTE:
This page displays the calculations of a mathematical "Retail Floorspace Potential" model, which is used to estimate retail floorspace needs and impacts for urban planning purposes.
Various qualitative aspects of centres are not fully accounted for in the model, and the actual economic performance of a centre will not necessarily accord with its theoretical potential as calculated by the model.

District & Higher Only	97,000	9,800	106,800	\$652.5	\$6,727	\$65.8	\$6,711	\$718.2	\$6,725	41,624	2.33	11,386	0.86
TOTAL (This Page)	151,441	38,153	189,594	\$959.4	\$6,335	\$252.2	\$6,611	\$1,211.7	\$6,391	61,842	2.45	43,751	0.87

Lookup ID	Type	Name	Hierarchy	SHP nla	RET nla	TOT nla	SHP-\$Mil	PerSqm	RET-\$Mil	PerSqm	TOT-\$Mil	PerSqm	SHP-Pers	Sqm/Cap*	RET-Pers	Sqm/Cap*	
3	130	C	DALKEITH ROAD	6 NHD	5,500	600	6,100	\$33.4	\$6,069	\$3.8	\$6,370	\$37.2	\$6,098	2,225	2.47	671	0.89
1	107	C	COOPER ST	6 NHD	1,676	40	1,716	\$9.5	\$5,688	\$0.2	\$6,118	\$9.8	\$5,698	675	2.48	44	0.91
4	138	C	VILLAGE	6 NHD	2,500	635	3,135	\$15.8	\$6,305	\$3.9	\$6,065	\$19.6	\$6,256	981	2.55	654	0.97
2	108	C	HAMPDEN RD	6 NHD	4,000	300	4,300	\$21.1	\$5,278	\$1.9	\$6,170	\$23.0	\$5,340	1,602	2.50	335	0.90
39	106	C	BROADWAY	6 NHD	5,000	500	5,500	\$29.1	\$5,828	\$2.9	\$5,827	\$32.1	\$5,828	1,980	2.53	521	0.96
5	116	C	KARRAKATTA	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
6	128	C	LOCH STREET	7 LOC	100	-	100	\$0.5	\$4,764	\$0.0	\$0	\$0.5	\$4,764	31	3.28	-	-
7	132	C	STEVES	7 LOC	1,500	125	1,625	\$5.5	\$3,667	\$0.7	\$5,491	\$6.2	\$3,807	367	4.09	121	1.03
8	133	C	PRINCESS ROAD	7 LOC	500	40	540	\$2.5	\$4,954	\$0.2	\$6,205	\$2.7	\$5,047	161	3.11	43	0.93
9	134	C	ASQUITH STREET	7 LOC	500	200	700	\$2.6	\$5,254	\$1.2	\$5,944	\$3.8	\$5,451	169	2.96	204	0.98
10	135	C	FLOREAT	7 LOC	150	-	150	\$0.8	\$5,238	\$0.0	\$0	\$0.8	\$5,238	52	2.90	-	-
11	136	C	NORTH ST WEST	7 LOC	230	-	230	\$1.2	\$5,144	\$0.0	\$0	\$1.2	\$5,144	73	3.16	-	-
12	137	C	CROYDEN ST	7 LOC	250	-	250	\$1.2	\$4,743	\$0.0	\$0	\$1.2	\$4,743	79	3.15	-	-
13	139	C	WARATAH AVE	7 LOC	630	100	730	\$3.5	\$5,484	\$0.6	\$6,147	\$4.1	\$5,575	213	2.96	104	0.96
14	10601	C	WEBSTER ST	7 LOC	150	-	150	\$0.8	\$5,602	\$0.0	\$0	\$0.8	\$5,602	56	2.67	-	-
15	10602	C	BRUCE ST	7 LOC	150	-	150	\$0.8	\$5,555	\$0.0	\$0	\$0.8	\$5,555	57	2.65	-	-
16	10603	C	BROWNS GARAGE	7 LOC	150	150	300	\$0.8	\$5,163	\$0.9	\$5,894	\$1.7	\$5,529	51	2.93	155	0.97
17	SP-01	C	SHENTON PK-01	7 LOC	1,500	-	1,500	\$7.1	\$4,708	\$0.0	\$0	\$7.1	\$4,708	463	3.24	-	-
18	112	C	ISO USES	8 OTH C	-	250	250	\$0.0	\$0	\$1.7	\$6,653	\$1.7	\$6,653	-	-	290	0.86
19	131	C	COUNCIL	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
20	12101	C	STIRLING HWY E	8 OTH C	7,000	8,000	15,000	\$40.6	\$5,798	\$51.5	\$6,441	\$92.1	\$6,141	2,613	2.68	8,900	0.90
21	35	I	CARRINGTON	9 IND	700	2,000	2,700	\$3.7	\$5,261	\$12.7	\$6,360	\$16.4	\$6,075	238	2.94	2,203	0.91
22	106	I	BEDBROOK	9 IND	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
23	120	C	CLAREMONT SC	4 SEC	42,000	4,000	46,000	\$294.6	\$7,015	\$25.7	\$6,418	\$320.3	\$6,963	18,465	2.27	4,365	0.92
24	123	C	SWANBOURNE	6 NHD	1,500	200	1,700	\$8.8	\$5,859	\$1.3	\$6,420	\$10.1	\$5,925	556	2.70	217	0.92
25	11501	C	CLAREMONT S1	7 LOC	150	-	150	\$0.7	\$4,704	\$0.0	\$0	\$0.7	\$4,704	44	3.40	-	-
26	11502	C	CLAREMONT S2	7 LOC	150	-	150	\$0.8	\$5,177	\$0.0	\$0	\$0.8	\$5,177	47	3.20	-	-
27	11503	C	CLAREMONT S3	7 LOC	150	-	150	\$0.7	\$4,991	\$0.0	\$0	\$0.7	\$4,991	45	3.31	-	-
28	11504	C	CLAREMONT S4	7 LOC	150	-	150	\$0.7	\$4,581	\$0.0	\$0	\$0.7	\$4,581	42	3.58	-	-
29	11505	C	CLAREMONT S5	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
30	11506	C	CLAREMONT S6	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
31	12201	C	CLAREMONT N1	7 LOC	650	248	898	\$3.0	\$4,617	\$1.6	\$6,317	\$4.6	\$5,086	192	3.39	270	0.92
32	12202	C	CLAREMONT N2	7 LOC	200	100	300	\$1.0	\$4,788	\$0.6	\$6,254	\$1.6	\$5,277	61	3.27	107	0.93
33	12203	C	CLAREMONT N3	7 LOC	120	40	160	\$0.6	\$4,678	\$0.3	\$6,291	\$0.8	\$5,082	36	3.36	43	0.93
34	12301	C	SHENTON RD	7 LOC	180	-	180	\$0.9	\$5,276	\$0.0	\$0	\$0.9	\$5,276	62	2.89	-	-
35	121	C	STIRLING HWY W	8 OTH C	9,500	8,495	17,995	\$50.9	\$5,361	\$54.9	\$6,462	\$105.8	\$5,881	3,173	2.99	9,346	0.91
36	33	I	CLAREMONT	9 IND	200	220	420	\$1.1	\$5,432	\$1.4	\$6,343	\$2.5	\$5,909	69	2.91	239	0.92
37	101	C	SUBIACO SC	4 SEC	65,000	7,000	72,000	\$428.0	\$6,584	\$49.1	\$7,020	\$477.1	\$6,627	27,517	2.36	8,533	0.82
38	102	C	SHENTON PARK	6 NHD	3,542	-	3,542	\$19.7	\$5,565	\$0.0	\$0	\$19.7	\$5,565	1,280	2.77	-	-
40	103	C	NICHOLSON RD	7 LOC	533	-	533	\$2.4	\$4,546	\$0.0	\$0	\$2.4	\$4,546	157	3.40	-	-
41	109	C	ONSLow ROAD	7 LOC	160	-	160	\$0.9	\$5,508	\$0.0	\$0	\$0.9	\$5,508	56	2.87	-	-
42	110	C	RAILWAY ROAD	7 LOC	192	-	192	\$1.0	\$5,023	\$0.0	\$0	\$1.0	\$5,023	62	3.09	-	-
43	113	C	CARDIGAN TERRACE	7 LOC	253	-	253	\$1.3	\$5,239	\$0.0	\$0	\$1.3	\$5,239	87	2.92	-	-
44	114	C	HOPETOUN TCE	7 LOC	595	-	595	\$2.9	\$4,819	\$0.0	\$0	\$2.9	\$4,819	184	3.24	-	-
45	166	C	ROSALIE STREET	7 LOC	565	-	565	\$2.3	\$4,137	\$0.0	\$0	\$2.3	\$4,137	152	3.71	-	-
46	111	C	TROY TERRACE	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
47	227	C	SALVADO RD2	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
48	24	I	JOLIMONT	9 IND	8,574	8,090	16,664	\$47.9	\$5,591	\$57.9	\$7,162	\$105.9	\$6,354	3,172	2.70	10,151	0.80

Dwelling Unit/ Population Projections... (NEDLANDS, CLAREMONT & SUBIACO)

Primary Study Area

Year	2011	2016	2021	2026	2031	2,036
Dwellings	20,990	23,025	24,720	26,385	27,890	28,839
Population	46,321	50,527	54,084	57,704	61,080	63,073

Data Sets (this sheet)

DW2026	SHP26	RET26
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Model Run Stats (this sheet)

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	107,000	\$722.6	\$6,754	45,982	2.33	1.85
District	-	\$0.0	\$0	-	-	-
N'hood	23,718	\$137.4	\$5,794	9,300	2.55	0.41
Local	9,858	\$46.4	\$4,705	2,997	3.29	0.17
Other Com	16,500	\$91.5	\$5,547	5,786	2.85	0.29
Industrial	9,474	\$52.7	\$5,563	3,479	2.72	0.16
Total SHP	166,550	\$1,050.7	\$6,308	67,543	2.47	2.89
crosscheck	OK	OK		OK		

Other Retail

Regional	NLA (sqm)	\$million /annum	\$/sqm	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	11,000	\$74.8	\$6,801	12,899	0.85	0.19
District	-	\$0.0	\$0	-	-	-
N'hood	2,275	\$14.0	\$6,139	2,441	0.93	0.04
Local	1,003	\$6.1	\$6,048	1,049	0.96	0.02
Other Com	16,745	\$108.1	\$6,455	18,536	0.90	0.29
Industrial	10,310	\$72.1	\$6,989	12,593	0.82	0.18
Total RET	41,333	\$275.0	\$6,653	47,518	0.87	0.72
crosscheck	OK	OK		OK		

TOTAL Retail

Regional	NLA (sqm)	\$million /annum	\$/sqm	Sqm/ Capita~	NOTE: Totalling of Person Equivalents for Total Retail is a double-count of population and therefore not valid.
Regional	118,000	\$797.4	\$6,758	2.04	
District	-	\$0.0	\$0	-	
N'hood	25,993	\$151.4	\$5,824	0.45	
Local	10,861	\$52.5	\$4,829	0.19	
Other Com	33,245	\$199.6	\$6,004	0.58	
Industrial	19,784	\$124.8	\$6,306	0.34	
Total RET	207,883	\$1,325.7	\$6,377	3.60	
crosscheck	OK	OK			

* Derived from person equivalents attracted to centre
~ Derived from main study area population projection alone

NOTE:
Centre names are a combination of DoP Complex names, LGA local names, and SUP database reference names. They may or may not accord with their commercial trading names.

NOTE:
This page displays the calculations of a mathematical "Retail Floorspace Potential" model, which is used to estimate retail floorspace needs and impacts for urban planning purposes.
Various qualitative aspects of centres are not fully accounted for in the model, and the actual economic performance of a centre will not necessarily accord with its theoretical potential as calculated by the model.

District & Higher Only	107,000	11,000	118,000	\$722.6	\$6,754	\$74.8	\$6,801	\$797.4	\$6,758	45,982	2.33	12,899	0.85
TOTAL (This Page)	166,550	41,333	207,883	\$1,050.7	\$6,308	\$275.0	\$6,653	\$1,325.7	\$6,377	67,543	2.47	47,518	0.87

Lookup ID	Type	Name	Hierarchy	SHP nla	RET nla	TOT nla	SHP-\$Mil	PerSqm	RET-\$Mil	PerSqm	TOT-\$Mil	PerSqm	SHP-Pers	Sqm/Cap*	RET-Pers	Sqm/Cap*	
3	130	C	DALKEITH ROAD	6 NHD	6,000	6,600	\$37.2	\$6,206	\$3.9	\$6,541	\$41.2	\$6,237	2,474	2.43	687	0.87	
1	107	C	COOPER ST	6 NHD	1,676	40	1,716	\$9.7	\$5,781	\$0.3	\$6,288	\$9.9	\$5,792	685	2.44	45	0.89
4	138	C	VILLAGE	6 NHD	2,500	635	3,135	\$15.7	\$6,265	\$3.9	\$6,172	\$19.6	\$6,246	971	2.58	663	0.96
2	108	C	HAMPDEN RD	6 NHD	5,000	400	5,400	\$26.6	\$5,330	\$2.5	\$6,344	\$29.2	\$5,405	2,024	2.47	458	0.87
39	106	C	BROADWAY	6 NHD	5,000	500	5,500	\$29.5	\$5,903	\$3.0	\$5,978	\$32.5	\$5,910	2,003	2.50	533	0.94
5	116	C	KARRAKATTA	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
6	128	C	LOCH STREET	7 LOC	100	-	100	\$0.5	\$4,800	\$0.0	\$0	\$0.5	\$4,800	31	3.27	-	-
7	132	C	STEVES	7 LOC	1,500	125	1,625	\$5.6	\$3,708	\$0.7	\$5,627	\$6.3	\$3,856	370	4.05	124	1.01
8	133	C	PRINCESS ROAD	7 LOC	500	40	540	\$2.5	\$5,034	\$0.3	\$6,355	\$2.8	\$5,132	163	3.07	44	0.91
9	134	C	ASQUITH STREET	7 LOC	500	200	700	\$2.6	\$5,155	\$1.2	\$6,050	\$3.8	\$5,411	165	3.04	207	0.97
10	135	C	FLOREAT	7 LOC	150	-	150	\$0.8	\$5,414	\$0.0	\$0	\$0.8	\$5,414	53	2.82	-	-
11	136	C	NORTH ST WEST	7 LOC	230	-	230	\$1.2	\$5,073	\$0.0	\$0	\$1.2	\$5,073	71	3.22	-	-
12	137	C	CROYDEN ST	7 LOC	250	-	250	\$1.2	\$4,752	\$0.0	\$0	\$1.2	\$4,752	79	3.15	-	-
13	139	C	WARATAH AVE	7 LOC	630	100	730	\$3.4	\$5,433	\$0.6	\$6,248	\$4.0	\$5,545	210	3.00	105	0.95
14	10601	C	WEBSTER ST	7 LOC	150	-	150	\$0.9	\$5,718	\$0.0	\$0	\$0.9	\$5,718	57	2.62	-	-
15	10602	C	BRUCE ST	7 LOC	150	-	150	\$0.8	\$5,658	\$0.0	\$0	\$0.8	\$5,658	57	2.61	-	-
16	10603	C	BROWNS GARAGE	7 LOC	150	150	300	\$0.8	\$5,244	\$0.9	\$6,042	\$1.7	\$5,643	52	2.89	159	0.94
17	SP-01	C	SHENTON PK-01	7 LOC	3,000	-	3,000	\$14.4	\$4,802	\$0.0	\$0	\$14.4	\$4,802	942	3.18	-	-
18	112	C	ISO USES	8 OTH C	500	250	750	\$2.9	\$5,805	\$1.7	\$6,862	\$4.6	\$6,158	186	2.68	299	0.84
19	131	C	COUNCIL	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
20	12101	C	STIRLING HWY E	8 OTH C	7,500	9,000	16,500	\$44.1	\$5,886	\$59.3	\$6,590	\$103.5	\$6,270	2,827	2.65	10,210	0.88
21	35	I	CARRINGTON	9 IND	700	2,500	3,200	\$3.7	\$5,311	\$16.3	\$6,507	\$20.0	\$6,245	239	2.93	2,807	0.89
22	106	I	BEDBROOK	9 IND	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
23	120	C	CLAREMONT SC	4 SEC	45,000	4,500	49,500	\$314.1	\$6,980	\$29.3	\$6,521	\$343.4	\$6,938	19,580	2.30	4,971	0.91
24	123	C	SWANBOURNE	6 NHD	1,500	200	1,700	\$8.7	\$5,792	\$1.3	\$6,509	\$10.0	\$5,876	547	2.74	219	0.91
25	11501	C	CLAREMONT S1	7 LOC	150	-	150	\$0.7	\$4,723	\$0.0	\$0	\$0.7	\$4,723	44	3.41	-	-
26	11502	C	CLAREMONT S2	7 LOC	150	-	150	\$0.8	\$5,140	\$0.0	\$0	\$0.8	\$5,140	46	3.24	-	-
27	11503	C	CLAREMONT S3	7 LOC	150	-	150	\$0.7	\$4,950	\$0.0	\$0	\$0.7	\$4,950	45	3.36	-	-
28	11504	C	CLAREMONT S4	7 LOC	150	-	150	\$0.7	\$4,551	\$0.0	\$0	\$0.7	\$4,551	41	3.62	-	-
29	11505	C	CLAREMONT S5	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
30	11506	C	CLAREMONT S6	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
31	12201	C	CLAREMONT N1	7 LOC	650	248	898	\$3.0	\$4,596	\$1.6	\$6,449	\$4.6	\$5,107	190	3.42	275	0.90
32	12202	C	CLAREMONT N2	7 LOC	200	100	300	\$0.9	\$4,738	\$0.6	\$6,369	\$1.6	\$5,281	60	3.33	109	0.92
33	12203	C	CLAREMONT N3	7 LOC	120	40	160	\$0.6	\$4,638	\$0.3	\$6,404	\$0.8	\$5,079	35	3.42	44	0.91
34	12301	C	SHENTON RD	7 LOC	180	-	180	\$0.9	\$5,208	\$0.0	\$0	\$0.9	\$5,208	61	2.95	-	-
35	121	C	STIRLING HWY W	8 OTH C	10,000	9,000	19,000	\$53.5	\$5,351	\$59.2	\$6,579	\$112.7	\$5,933	3,311	3.02	10,041	0.90
36	33	I	CLAREMONT	9 IND	200	220	420	\$1.1	\$5,394	\$1.4	\$6,458	\$2.5	\$5,951	68	2.95	242	0.91
37	101	C	SUBIACO SC	4 SEC	65,000	7,000	72,000	\$446.1	\$6,863	\$51.1	\$7,300	\$497.2	\$6,905	28,695	2.27	8,865	0.79
38	102	C	SHENTON PARK	6 NHD	3,542	-	3,542	\$19.8	\$5,597	\$0.0	\$0	\$19.8	\$5,597	1,287	2.75	-	-
40	103	C	NICHOLSON RD	7 LOC	533	-	533	\$2.5	\$4,618	\$0.0	\$0	\$2.5	\$4,618	159	3.35	-	-
41	109	C	ONSLow ROAD	7 LOC	160	-	160	\$0.9	\$5,520	\$0.0	\$0	\$0.9	\$5,520	56	2.86	-	-
42	110	C	RAILWAY ROAD	7 LOC	192	-	192	\$1.0	\$5,140	\$0.0	\$0	\$1.0	\$5,140	64	3.02	-	-
43	113	C	CARDIGAN TERRACE	7 LOC	253	-	253	\$1.4	\$5,410	\$0.0	\$0	\$1.4	\$5,410	89	2.83	-	-
44	114	C	HOPETOUN TCE	7 LOC	595	-	595	\$2.9	\$4,851	\$0.0	\$0	\$2.9	\$4,851	185	3.22	-	-
45	166	C	ROSALIE STREET	7 LOC	565	-	565	\$2.4	\$4,212	\$0.0	\$0	\$2.4	\$4,212	155	3.65	-	-
46	111	C	TROY TERRACE	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
47	227	C	SALVADO RD2	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
48	24	I	JOLIMONT	9 IND	8,574	8,090	16,664	\$49.8	\$5,813	\$60.2	\$7,440	\$110.0	\$6,603	3,309	2.59	10,538	0.77

Dwelling Unit/ Population Projections... (NEDLANDS, CLAREMONT & SUBIACO)

Primary Study Area

Year	2011	2016	2021	2026	2031	2,036
Dwellings	20,990	23,025	24,720	26,385	27,890	28,839
Population	46,321	50,527	54,084	57,704	61,080	63,073

Data Sets (this sheet)

DW2031	SHP31	RET31
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Model Run Stats (this sheet)

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	110,000	\$760.2	\$6,910	48,275	2.28	1.80
District	-	\$0.0	\$0	-	-	-
N'hood	25,218	\$147.3	\$5,840	9,991	2.52	0.41
Local	11,358	\$53.9	\$4,748	3,481	3.26	0.19
Other Com	18,000	\$100.6	\$5,587	6,324	2.85	0.29
Industrial	9,474	\$54.6	\$5,767	3,616	2.62	0.16
Total SHP	174,050	\$1,116.5	\$6,415	71,687	2.43	2.85
crosscheck	OK	OK		OK		

Other Retail

Other Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita~
Regional	11,500	\$80.4	\$6,995	13,836	0.83	0.19
District	-	\$0.0	\$0	-	-	-
N'hood	2,375	\$14.9	\$6,284	2,606	0.91	0.04
Local	1,003	\$6.2	\$6,173	1,067	0.94	0.02
Other Com	18,250	\$120.2	\$6,589	20,550	0.89	0.30
Industrial	10,810	\$77.9	\$7,204	13,588	0.80	0.18
Total RET	43,938	\$299.7	\$6,820	51,648	0.85	0.72
crosscheck	OK	OK		OK		

TOTAL Retail

TOTAL Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Sqm/ Capita~	NOTE:
Regional	121,500	\$840.6	\$6,918	1.99	NOTE: Totalling of Person Equivalents for Total Retail is a double-count of population and therefore not valid.
District	-	\$0.0	\$0	-	
N'hood	27,593	\$162.2	\$5,878	0.45	
Local	12,361	\$60.1	\$4,863	0.20	
Other Com	36,250	\$220.8	\$6,091	0.59	
Industrial	20,284	\$132.5	\$6,533	0.33	
Total RET	217,988	\$1,416.2	\$6,497	3.57	
crosscheck	OK	OK			

* Derived from person equivalents attracted to centre
~ Derived from main study area population projection alone

NOTE:
Centre names are a combination of DoP Complex names, LGA local names, and SUP database reference names. They may or may not accord with their commercial trading names.

NOTE:
This page displays the calculations of a mathematical "Retail Floorspace Potential" model, which is used to estimate retail floorspace needs and impacts for urban planning purposes.
Various qualitative aspects of centres are not fully accounted for in the model, and the actual economic performance of a centre will not necessarily accord with its theoretical potential as calculated by the model.

District & Higher Only	110,000	11,500	121,500	\$760.2	\$6,910	\$80.4	\$6,995	\$840.6	\$6,918	48,275	2.28	13,836	0.83
TOTAL (This Page)	174,050	43,938	217,988	\$1,116.5	\$6,415	\$299.7	\$6,820	\$1,416.2	\$6,497	71,687	2.43	51,648	0.85

Lookup	ID	Type	Name	Hierarchy	SHP nla	RET nla	TOT nla	SHP-\$Mil	PerSqm	RET-\$Mil	PerSqm	TOT-\$Mil	PerSqm	SHP-Pers	Sqm/Cap*	RET-Pers	Sqm/Cap*
3	130	C	DALKEITH ROAD	6 NHD	6,000	600	6,600	\$39.4	\$6,560	\$3.9	\$6,582	\$43.3	\$6,562	2,609	2.30	692	0.87
1	107	C	COOPER ST	6 NHD	1,676	40	1,716	\$10.2	\$6,072	\$0.3	\$6,324	\$10.4	\$6,077	717	2.34	45	0.88
4	138	C	VILLAGE	6 NHD	2,500	635	3,135	\$15.9	\$6,365	\$3.9	\$6,151	\$19.8	\$6,322	985	2.54	661	0.96
2	108	C	HAMPDEN RD	6 NHD	5,000	500	5,500	\$27.7	\$5,545	\$3.2	\$6,368	\$30.9	\$5,619	2,094	2.39	575	0.87
39	106	C	BROADWAY	6 NHD	5,000	500	5,500	\$30.7	\$6,146	\$3.0	\$6,005	\$33.7	\$6,133	2,080	2.40	535	0.93
5	116	C	KARRAKATTA	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
6	128	C	LOCH STREET	7 LOC	100	-	100	\$0.5	\$4,971	\$0.0	\$0	\$0.5	\$4,971	32	3.16	-	-
7	132	C	STEVES	7 LOC	1,500	125	1,625	\$5.8	\$3,850	\$0.7	\$5,644	\$6.5	\$3,988	383	3.91	124	1.01
8	133	C	PRINCESS ROAD	7 LOC	500	40	540	\$2.6	\$5,281	\$0.3	\$6,382	\$2.9	\$5,362	170	2.93	44	0.91
9	134	C	ASQUITH STREET	7 LOC	500	200	700	\$2.6	\$5,185	\$1.2	\$6,014	\$3.8	\$5,422	165	3.03	206	0.97
10	135	C	FLOREAT	7 LOC	150	-	150	\$0.8	\$5,449	\$0.0	\$0	\$0.8	\$5,449	54	2.80	-	-
11	136	C	NORTH ST WEST	7 LOC	230	-	230	\$1.2	\$5,101	\$0.0	\$0	\$1.2	\$5,101	72	3.21	-	-
12	137	C	CROYDEN ST	7 LOC	250	-	250	\$1.2	\$4,847	\$0.0	\$0	\$1.2	\$4,847	81	3.09	-	-
13	139	C	WARATAH AVE	7 LOC	630	100	730	\$3.5	\$5,496	\$0.6	\$6,216	\$4.1	\$5,595	212	2.97	105	0.96
14	10601	C	WEBSTER ST	7 LOC	150	-	150	\$0.9	\$6,045	\$0.0	\$0	\$0.9	\$6,045	60	2.49	-	-
15	10602	C	BRUCE ST	7 LOC	150	-	150	\$0.9	\$5,967	\$0.0	\$0	\$0.9	\$5,967	60	2.48	-	-
16	10603	C	BROWNS GARAGE	7 LOC	150	150	300	\$0.8	\$5,504	\$0.9	\$6,072	\$1.7	\$5,788	54	2.76	160	0.94
17	SP-01	C	SHENTON PK-01	7 LOC	3,000	-	3,000	\$14.6	\$4,855	\$0.0	\$0	\$14.6	\$4,855	951	3.15	-	-
18	112	C	ISO USES	8 OTH C	-	250	250	\$0.0	\$0	\$1.7	\$6,857	\$1.7	\$6,857	-	-	299	0.84
19	131	C	COUNCIL	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
20	12101	C	STIRLING HWY E	8 OTH C	8,000	10,000	18,000	\$49.3	\$6,156	\$66.1	\$6,606	\$115.3	\$6,406	3,149	2.54	11,373	0.88
21	35	I	CARRINGTON	9 IND	700	2,500	3,200	\$3.9	\$5,506	\$16.3	\$6,513	\$20.1	\$6,292	248	2.83	2,810	0.89
22	106	I	BEDBROOK	9 IND	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
23	120	C	CLAREMONT SC	4 SEC	45,000	5,000	50,000	\$319.8	\$7,106	\$32.4	\$6,486	\$352.2	\$7,044	19,923	2.26	5,495	0.91
24	123	C	SWANBOURNE	6 NHD	1,500	200	1,700	\$8.8	\$5,855	\$1.3	\$6,457	\$10.1	\$5,926	553	2.71	218	0.92
25	11501	C	CLAREMONT S1	7 LOC	150	-	150	\$0.7	\$4,877	\$0.0	\$0	\$0.7	\$4,877	45	3.30	-	-
26	11502	C	CLAREMONT S2	7 LOC	150	-	150	\$0.8	\$5,261	\$0.0	\$0	\$0.8	\$5,261	47	3.17	-	-
27	11503	C	CLAREMONT S3	7 LOC	150	-	150	\$0.8	\$5,054	\$0.0	\$0	\$0.8	\$5,054	46	3.29	-	-
28	11504	C	CLAREMONT S4	7 LOC	150	-	150	\$0.7	\$4,637	\$0.0	\$0	\$0.7	\$4,637	42	3.55	-	-
29	11505	C	CLAREMONT S5	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
30	11506	C	CLAREMONT S6	7 LOC	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
31	12201	C	CLAREMONT N1	7 LOC	650	248	898	\$3.0	\$4,687	\$1.6	\$6,433	\$4.6	\$5,169	193	3.36	274	0.90
32	12202	C	CLAREMONT N2	7 LOC	200	100	300	\$1.0	\$4,807	\$0.6	\$6,340	\$1.6	\$5,318	61	3.29	108	0.92
33	12203	C	CLAREMONT N3	7 LOC	120	40	160	\$0.6	\$4,715	\$0.3	\$6,375	\$0.8	\$5,130	36	3.36	44	0.92
34	12301	C	SHENTON RD	7 LOC	180	-	180	\$1.0	\$5,279	\$0.0	\$0	\$1.0	\$5,279	62	2.91	-	-
35	121	C	STIRLING HWY W	8 OTH C	10,000	10,000	20,000	\$54.9	\$5,489	\$65.6	\$6,558	\$120.5	\$6,024	3,394	2.95	11,124	0.90
36	33	I	CLAREMONT	9 IND	200	220	420	\$1.1	\$5,495	\$1.4	\$6,431	\$2.5	\$5,985	69	2.90	241	0.91
37	101	C	SUBIACO SC	4 SEC	65,000	7,000	72,000	\$453.6	\$6,979	\$51.3	\$7,328	\$504.9	\$7,013	29,139	2.23	8,891	0.79
38	102	C	SHENTON PARK	6 NHD	3,542	-	3,542	\$20.1	\$5,685	\$0.0	\$0	\$20.1	\$5,685	1,306	2.71	-	-
40	103	C	NICHOLSON RD	7 LOC	533	-	533	\$2.5	\$4,675	\$0.0	\$0	\$2.5	\$4,675	161	3.31	-	-
41	109	C	ONSLow ROAD	7 LOC	160	-	160	\$0.9	\$5,608	\$0.0	\$0	\$0.9	\$5,608	57	2.82	-	-
42	110	C	RAILWAY ROAD	7 LOC	192	-	192	\$1.0	\$5,197	\$0.0	\$0	\$1.0	\$5,197	64	2.99	-	-
43	113	C	CARDIGAN TERRACE	7 LOC	253	-	253	\$1.4	\$5,465	\$0.0	\$0	\$1.4	\$5,465	90	2.80	-	-
44	114	C	HOPETOUN TCE	7 LOC	595	-	595	\$2.9	\$4,930	\$0.0	\$0	\$2.9	\$4,930	188	3.17	-	-
45	166	C	ROSALIE STREET	7 LOC	565	-	565	\$2.4	\$4,262	\$0.0	\$0	\$2.4	\$4,262	156	3.61	-	-
46	111	C	TROY TERRACE	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
47	227	C	SALVADO RD2	8 OTH C	-	-	-	\$0.0	\$0	\$0.0	\$0	\$0.0	\$0	-	-	-	-
48	24	I	JOLIMONT	9 IND	8,574	8,090	16,664	\$50.5	\$5,895	\$60.3	\$7,459	\$110.9	\$6,655	3,354	2.56	10,560	0.77

Dwelling Unit/ Population Projections... (NEDLANDS, CLAREMONT & SUBIACO)

Primary Study Area

Year	2011	2016	2021	2026	2031	2,036
Dwellings	20,990	23,025	24,720	26,385	27,890	28,839
Population	46,321	50,527	54,084	57,704	61,080	63,073

Data Sets (this sheet)
DW2036 SHP36 RET36

Model Run Stats (this sheet)

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita**
Regional	110,000	\$773.4	\$7,031	49,062	2.24	1.74
District	-	\$0.0	\$0	-	-	-
N'hood	25,218	\$152.8	\$6,060	10,343	2.44	0.40
Local	11,358	\$55.0	\$4,840	3,544	3.20	0.18
Other Com	18,000	\$104.1	\$5,786	6,543	2.75	0.29
Industrial	9,474	\$55.5	\$5,858	3,670	2.58	0.15
Total SHP	174,050	\$1,140.8	\$6,554	73,163	2.38	2.76
crosscheck	OK	OK		OK		

Other Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Person (Equiv.)	Sqm/ Capita*	Sqm/ Capita**
Regional	12,000	\$83.7	\$6,977	14,386	0.83	0.19
District	-	\$0.0	\$0	-	-	-
N'hood	2,475	\$15.6	\$6,297	2,725	0.91	0.04
Local	1,003	\$6.2	\$6,162	1,065	0.94	0.02
Other Com	20,250	\$133.4	\$6,586	22,796	0.89	0.32
Industrial	10,810	\$78.0	\$7,219	13,612	0.79	0.17
Total RET	46,538	\$316.9	\$6,809	54,584	0.85	0.74
crosscheck	OK	OK		OK		

TOTAL Retail

Shop/Retail	NLA (sqm)	\$million /annum	\$/sqm /annum	Sqm/ Capita**	NOTE:
Regional	122,000	\$857.1	\$7,025	1.93	NOTE: Totalling of Person Equivalents for Total Retail is a double-count of population and therefore not valid.
District	-	\$0.0	\$0	-	
N'hood	27,693	\$168.4	\$6,081	0.44	
Local	12,361	\$61.2	\$4,947	0.20	
Other Com	38,250	\$237.5	\$6,209	0.61	
Industrial	20,284	\$133.5	\$6,583	0.32	
Total RET	220,588	\$1,457.7	\$6,608	3.50	
crosscheck	OK	OK			

* Derived from person equivalents attracted to centre
~ Derived from main study area population projection alone

NOTE:
Centre names are a combination of DoP Complex names, LGA local names, and SUP database reference names. They may or may not accord with their commercial trading names.

NOTE:
This page displays the calculations of a mathematical "Retail Floorspace Potential" model, which is used to estimate retail floorspace needs and impacts for urban planning purposes.
Various qualitative aspects of centres are not fully accounted for in the model, and the actual economic performance of a centre will not necessarily accord with its theoretical potential as calculated by the model.

District & Higher Only	110,000	12,000	122,000	\$773.4	\$7,031	\$83.7	\$6,977	\$857.1	\$7,025	49,062	2.24	14,386	0.83
TOTAL (This Page)	174,050	46,538	220,588	\$1,140.8	\$6,554	\$316.9	\$6,809	\$1,457.7	\$6,608	73,163	2.38	54,584	0.85

APPENDIX D

Community Facilities Audit

Current Level of Service is based on a population of 20,500 at 2011

Projected Level of Service is based on a population of 26,500 at 2031

Facility Type	Guidelines	Facility	Current Level of Service	Projected Level of Service	Mapping Category
Play Group	1:4,000 – 6,000	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • Allen Park Playgroup Inc., Allen Park Pavilion, SWANBOURNE • Mt Claremont Kindy, 19 Haldane St, MT CLAREMONT • Kookaburra Montessori PG Inc., Nedlands Uniting Church, 237 Princess Rd, NEDLANDS • Nedlands PG, College Park Family Centre, 100 Princess Rd, NEDLANDS • Mt Claremont Play Group, Mt Claremont Community Centre, MT CLAREMONT • Mary Chester Club, 9 Bedbrook Pl, SHENTON PARK • Tiny Treasures Playgroup, Tresillian Community Centre, NEDLANDS <p>WIDER REGION</p> <ul style="list-style-type: none"> • Shenton Park Playgroup, 240 Onslow Rd, SHENTON PARK • Playgroup at St Philips, St Philips Anglican Church Hall, 240 Marmion St, COTTESLOE • Mosman Park Playgroup, Alf Adams Pavilion, MOSMAN PARK • Cottesloe PG Inc., 65 Eric St, COTTESLOE • Subiaco Playgroup, 430 Rokeby Rd, SUBIACO • Subiaco Church playgroup, 260 Bagot Rd, SUBIACO • Eileen Honner Playgroup Inc., 54 Pangbourne St, WEMBLEY • West Leederville Playgroup Inc., 104 Woolwich St, WEST LEEDERVILLE • Claremont Mothers Playgroup, Infant Health Centre, 288 Stirling Hwy, CLAREMONT 	<p>3 – 6 should be provided.</p> <p>Provision exceeds standard.</p>	<p>4 – 7 should be provided.</p> <p>Provision exceeds standard.</p>	Play group/space/ground
Play Spaces	<p>1:2000 Neighbourhood</p> <p>1:8,000 to 10,000 District</p> <p>1:50,000 Regional</p>	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • Allen Park, Kirkwood Rd, SWANBOURNE • Beaton Park, The Esplanade, DALKEITH • Beatrice Road Reserve, Cnr Beatrice Ave and Iris Ave, DALKEITH • Blain Park, Cnr Alexander Rd and Viking Rd, DALKEITH • Brockman Reserve, Cnr Brockman Ave and Wavell Rd, DALKEITH • Campsie Park, Campsie St, NEDLANDS • Carrington Park, Cnr Weld St and Carrington St, NEDLANDS • Charles Court Reserve, The Esplanade, NEDLANDS • College Park, Princess Rd, NEDLANDS 	<p>11 Neighbourhood, 2 – 3 District</p> <p>Provision exceeds standard.</p>	<p>13 Neighbourhood, 2 – 4 District</p> <p>Provision exceeds standard.</p>	

		<ul style="list-style-type: none"> • David Cruickshank Reserve, Cnr Jutland Parade and Wattle Ave, DALKEITH • Grainger Reserve, Grainger Dr, MT CLAREMONT • Hamilton Park, Hamilton Gardens, MT CLAREMONT • Harris Park, Saltspray Crt, SWANBOURNE • Hollywood Tennis Reserve, Smyth Rd, NEDLANDS • Jones Park, Jamieson St, Swanbourne • Karella Park, Cnr Smyth Rd and Karella St, NEDLANDS • Lawler Park, Draper St, FLOREAT • Leslie Graham Reserve, Cnr Bromilow Green and Camellia Ave, MT CLAREMONT • Leura Park, Leura St, NEDLANDS • Masons Gardens, Cnr Melvista Ave and Hackett Rd, NEDLANDS • Melvista Oval, Melvista Ave, NEDLANDS • Melvista Child Health Clinic, Melvista Ave, NEDLANDS • Mt Claremont Oval, Cnr Montgomery Dr and Alfred Rd, MT CLAREMONT • Mt Claremont Reserve, Community Centre Adderley St, MT CLAREMONT • New Court Gardens, New Court Green, MT CLAREMONT • Peace Memorial Rose Garden, Stirling Hwy, NEDLANDS • Pieira Park, Van Kleef Circuit, MT CLAREMONT • Pine Tree Park, Pine Tree Lane, MT CLAREMONT • Point Resolution, Cnr Jutland Pde and Victoria Ave, DALKEITH • St. Peters Square, Caladenia Parade, MT CLAREMONT • Swanbourne Beach, Cnr Marine Pde and Odern Cres, SWANBOURNE • Swanbourne Estate, Nidjalla Loop, SWANBOURE • Zamia St, Zamia Park, MT CLAREMONT 		
Specialty Park – All Abilities	Area specific. Integrated within District Park or above.	CITY OF NEDLANDS <ul style="list-style-type: none"> • Proposed All Abilities Play Space, Beaton Park, DALKEITH 	Proposed. Not provided.	To be completed prior to 2031. Provision exceeds standard.

Outside school hours care	1:4,000 – 6,000	CITY OF NEDLANDS <ul style="list-style-type: none"> • Rosalie OSHClub, SHENTON PARK • Jellybeans OSHC Mt Claremont, MT CLAREMONT • Mt Claremont Primary School OSHC, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • UWA Out of School Hours Care, CRAWLEY • Subiaco Children's Centre, SUBIACO • Humpty Dumpty Child Care Centre, SUBIACO • Great Beginnings Floreat, FLOREAT • Play's Kool Floreat Outside School Hours Care, FLOREAT • Catherine McAuley Family Centre, WEMBLEY • Freshwater Bay Primary School OSHC, CLAREMONT • Jellybeans OSHC, WEST LEEDERVILLE • Nido Early School, WEST LEEDERVILLE 	3 – 6 should be provided. Provision exceeds standard.	4 – 7 should be provided. Provision meets standard.	Child Care	
Child Care Centre (Long Day Care) 0-4 year olds	1:4,000 – 8,000	CITY OF NEDLANDS <ul style="list-style-type: none"> • Point Resolution Child Care Centre, 53 Jutland Pde, DALKEITH • Dalkeith Early Learning Centre, DALKEITH • Nedlands School of Early Learning, NEDLANDS • UWA Early Learning Centre, NEDLANDS • Kidz Galore (Nedlands) Child Care Centre, NEDLANDS • Jellybeans Child Care Swanbourne, SWANBOURNE • The Sunny Child Care Centre, Swanbourne, SWANBOURNE • Mulberry Tree Child Care Mount Claremont, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • Jellybeans Child Care Subiaco, SUBIACO • Tiny Beez Claremont, CLAREMONT • Catherine McAuley Family Centre, WEMBLEY • Jellybeans Child Care Wembley, WEMBLEY • Mulberry Tree Child Care Wembley, WEMBLEY • Care For Kids School of Early Learning, MOSMAN PARK • Cottesloe Child Care Centre Inc., COTTESLOE 	2 – 6 should be provided. Provision exceeds standard	3 – 7 should be provided. Provision exceeds standard.		
Occasional Care	1:12,000 – 15,000	Provided as part of Child Care Centre provisions.	1 - 2 should be provided. Provision exceeds standard.	1 - 3 should be provided. Provision exceeds standard.		

Multi-Agency Service Centre	Integrate within a multi-purpose facility.		No standard, but nonetheless: Not provided.	No standard, but nonetheless: Not provided.
Multi-functional Branch Library	1:30,000 –150:000 Regional 1:15,000 – 30,000 District 1:6,000 – 15,000 Neighbourhood	CITY OF NEDLANDS <ul style="list-style-type: none"> Nedlands Library, NEDLANDS Mt Claremont Library, MT CLAREMONT 	1 District required. Provision exceeds standard.	2 District required. Provision exceeds standard.
Neighbourhood Community Centre	1:5,000	CITY OF NEDLANDS <ul style="list-style-type: none"> Tresillian Arts Centre, 21 Tyrell St, NEDLANDS Dalkeith Hall, 97 Waratah Ave, DALKEITH Drabble House, 2 Webster St, NEDLANDS John Leckie Pavilion, Cnr Melvista Ave and Stone Rd, NEDLANDS Allen Park Pavilion, Wood St, SWANBOURNE Mt Claremont Community Centre, MT CLAREMONT 	4 should be provided. Provision exceeds standard.	5 – 6 should be provided. Provision meets standard.
District Community Centre	1:15,000 – 25,000	CITY OF NEDLANDS <ul style="list-style-type: none"> Mt Claremont Community Centre, Montgomery Ave, MT CLAREMONT 	1 – 2 should be provided. Provision meets standard.	1 – 2 should be provided. Provision meets standard.
Outdoor Meeting Place	Integrated within a District Centre	CITY OF NEDLANDS <ul style="list-style-type: none"> Charles Court Reserve, Esplanade, NEDLANDS Paul Hasluck Reserve, Esplanade, NEDLANDS Sunset Foreshore, Esplanade, NEDLANDS Beaton Park, Esplanade, NEDLANDS Melvista Oval, Melvista Ave, NEDLANDS College Park Upper Oval, Princess Rd, NEDLANDS College Park Lower Oval, Princess Rd, NEDLANDS Masons Gardens, Melvista Ave, NEDLANDS Peace Memorial Rose Gardens, Stirling Hwy, NEDLANDS Bishop Rd Reserve, Bishop Rd, DALKEITH David Cruickshank Reserve, Beatrice Rd, DALKEITH Point Resolution Reserve, Jutland Parade, DALKEITH Mt Claremont Oval, Alfred Rd, MOUNT CLAREMONT Allen Park Upper Oval, Kirkwood Rd, SWANBOURNE Allen Park Lower Oval, Kirkwood Rd, SWANBOURNE Lawler Park, Draper St, FLOREAT Highview Park Fields, Verdun St, NEDLANDS 	Meeting places listed are able to be hired from the City and integrated with District or Neighbourhood Parks. Provision exceeds standard.	Meeting places listed are able to be hired from the City and integrated with District or Neighbourhood Parks. Provision exceeds standard.

Community and Performing Arts	1:150 – 250,000 Regional 1:50-150,000 District	CITY OF NEDLANDS <ul style="list-style-type: none"> • Hackett Hall, Draper St, FLOREAT • Dalkeith Hall, 97 Waratah Ave, DALKEITH • Learn to Dance with West Coast Swing, 97 Waratah Ave, DALKEITH • Perth Morris Men, Seaward Guide Hall, Monash Ave, NEDLANDS • Opera in Co., 25 Leura St, NEDLANDS • Loreto Performing Arts Centre, Stanley St, NEDLANDS • John XXIII College, Mooro Drive, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • Ochre Contemporary Dance Company, 6 Broadway Rd, CRAWLEY • Subiaco Arts Centre, 180 Hamersley Rd, SUBIACO • Stage Door School of Performing Arts, Hamilton St, SUBIACO • Quarry Amphitheatre, Waldron Drive, CITY BEACH • John and Bernadette Taylor Ballet School, 38 Graylands Rd, CLAREMONT • West Coast Swing Perth- Dance Amanda, 327 Stirling Hwy, CLAREMONT • Alhambra Belly Dance Academy, 243 Stirling Hwy, CLAREMONT • Dance Classique WA, 8 Draper St, FLOREAT • WA Performance School, 3 Price St, SUBIACO • Silhouette Dance Studio, 159 Onslow Rd, SHENTON PARK • Daele Fraser Promotions, 243 Nicholson Rd, SHENTON PARK • The Actors' Hub Australia Pty Ltd, 180 Hamersley Rd, SUBIACO 	Not required. Multiple private operators and multiple facilities available in nearby areas. Provision exceeds standard.	Not required. Multiple private operators and multiple facilities available in nearby areas. Provision exceeds standard.
Theatre	1:250,000 Regional	CITY OF NEDLANDS <ul style="list-style-type: none"> • Hackett Hall, Draper St, FLOREAT • Dalkeith Hall, 97 Waratah Ave, DALKEITH WIDER REGION <ul style="list-style-type: none"> • Windsor Theatre, 98 Stirling Hwy, NEDLANDS • UWA Dolphin Theatre, 35 Stirling Hwy, CRAWLEY • UWA Masonic Hall, 35 Stirling Hwy, CRAWLEY • Theatre Gardens, SUBIACO • Subiaco Arts Centre, 180 Hamersley Rd, SUBIACO • The Regal Theatre, 474 Hay St, SUBIACO 	Not required. Multiple private operators and multiple facilities available in nearby areas. Provision meets standard.	Not required. Multiple private operators and multiple facilities available in nearby areas. Provision meets standard.
Amphitheatres	Integrated within a District Park	CITY OF NEDLANDS <ul style="list-style-type: none"> • Allen Park Hollow Amphitheatre, SWANBOURNE • Dot Bennett Park, NEDLANDS WIDER REGION <ul style="list-style-type: none"> • Saw Avenue Amphitheatre, May Drive & Saw Ave, Kings Park, PERTH • Quarry Amphitheatre, Waldron Drive, CITY BEACH 	7 identified District Parks within the City. Provision meets standard.	7 identified District Parks within the City. Provision meets standard.

Arts and Cultural Centre	1:50,000 to 150,000 Integrated within a District Centre	CITY OF NEDLANDS • Tresillian Arts Centre, 21 Tyrell St, NEDLANDS WIDER REGION • Lawrence Wilson Art Gallery, UWA, CRAWLEY	0 – 1 should be provided. Provision exceeds standard.	0 – 1 should be provided. Provision exceeds standard.	
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Skate Park	1:25,000-50,000 Regional 1:10,000 – 25,000 District 1:5,000-10,000 Neighbourhood	CITY OF NEDLANDS • Nedlands Skate park, The Esplanade, DALKEITH WIDER REGION • Claremont PCYC Skate Park, Cnr Lapsey Rd and Graylands Rd, CLAREMONT • Mosman Park Skate Park, TJ Perrot Reserve, Cnr McCable St and Palmeston St, MOSMAND PARK • Subiaco Skate Park, Market Square Garden Park, Haydn Button Drive, SUBIACO • Perry Lakes Skate Park, Alderbury St Reserve, FLOREAT	1 District facility and/or 2 neighbourhood facilities should be provided. Provision below standard.	2 District facilities and/or 2 neighbourhood facilities should be provided. Provision below standard.	Youth Facilities
BMX dirt track facility	1:10,000-30,000 District level facility	CITY OF NEDLANDS • College Park, Bostock Rd, NEDLANDS	1 should be provided. Provision meets standard.	1 should be provided. Provision meets standard.	
BMX facility (formal bitumen track)	1:50,000 plus Regional		Not required.	Not required.	
Youth Centre/Youth Space	1:20,000-30,000 – District level Co-located within a community centre – Neighbourhood	WIDER REGION • Subiaco Police and Community Youth Centre, 450 Rokeby Rd, SUBIACO • Foundation of Youth, 443B Cambridge St, FLOREAT	0 – 2 should be provided. Not provided.	0 – 2 should be provided. Not provided.	

Museums	1:250,000 Generally area/location specific	CITY OF NEDLANDS <ul style="list-style-type: none"> Local Studies Collection, Nedlands Library, NEDLANDS WIDER REGION <ul style="list-style-type: none"> Museum of Childhood (ECU), Bay Rd, CLAREMONT Freshwater Bay Museum, 66 Victoria Ave, CLAREMONT The Berndt Museum of Anthropology, UWA, CRAWLEY WA Medical Museum, Harvey House Railway Rd, SUBIACO 	Not required. Provision exceeds standard.	Not required. Provision exceeds standard.	Historic
Heritage facilities (trails, information, historic)	Area/location specific	CITY OF NEDLANDS <ul style="list-style-type: none"> WESROC Bush to Beach Trail (includes the following stops- Lake Jualbup, Shenton Bushland, Perry Lakes, Bold Park, Lake Claremont, Allen Park, Swanbourne Reserve, Grant Marine Park) NOT MAPPED Tawarri Lodge, Esplanade, DALKEITH Nedlands War Memorial, Birdwood Pde and Waratah Ave, DALKEITH Peace Memorial Rose Garden, NEDLANDS Nedlands Park Hotel, cnr The Avenue and Broadway, NEDLANDS Gallop House, Esplanade, DALKEITH Perth Flying Squadron Yacht Club, Esplanade, DALKEITH Nedlands Yacht Club, Esplanade, DALKEITH Swanbourne Hospital, Heritage Lane, SWANBOURNE Tom Collin's House, Kirkwood Rd, SWANBOURNE Karrakatta Cemetery, Railway Rd, KARRAKATTA The Captain Stirling Hotel, Stirling Hwy, NEDLANDS The Windsor Theatre, Stirling Hwy, NEDLANDS WIDER REGION <ul style="list-style-type: none"> UWA Campus, CRAWLEY Camel Lake Heritage Trail, Bold Park, FLOREAT Drabble House, Webster St, NEDLANDS 	Not specified. Multiple Heritage buildings and points of interest within the City. Provision meets standard.	Not specified. Multiple Heritage buildings and points of interest within the City. Provision meets standard.	
Permanent Moorings Water Infrastructure	Area/location specific.	CITY OF NEDLANDS <ul style="list-style-type: none"> Nedlands Yacht Club, NEDLANDS Royal Flying Squadron Yacht Club, DALKEITH WIDER REGION <ul style="list-style-type: none"> Royal Perth Yacht Club, Crawley Drive, CRAWLEY Royal Freshwater Bay Yacht Club, 1 Hobbs PI, PEPPERMINT GROVE Claremont Yacht Club, 4 Victoria Ave, CLAREMONT UWA Boat Shed, CRAWLEY 	Not specified. Provision exceeds standard.	Not specified. Provision exceeds standard.	Water Infrastructure

Indoor Sport and Recreation Centre	1:50,000 – 100,000	CITY OF NEDLANDS <ul style="list-style-type: none"> Selby Recreation Centre, 10 Selby St, SHENTON PARK Revolution Sports, Lemnos St, SHENTON PARK WIDER REGION <ul style="list-style-type: none"> Lords, 3 Price St, SUBIACO UWA Fitness & Recreation Centre, CRAWLEY 	0 – 1 should be provided. Provision exceeds standard.	0 – 1 should be provided. Provision exceeds standard.
Regional Sports Facility (including aquatics)	1:250,000	CITY OF NEDLANDS <ul style="list-style-type: none"> UWA Sports Park, MT CLAREMONT HBF Stadium, 100 Stephenson Ave, MT CLAREMONT WA Basketball Centre, 201 Underwood Ave, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> Claremont Aquatic Centre, 12 Davies Rd, CLAREMONT Matthews Netball Centre, cnr Salvado Rd and Selby St, WEMBLEY UWA Fitness and Recreation Centre, CRAWLEY 	Not required. Provision exceeds standard.	Not required. Provision exceeds standard.
Aerobics/Fitness/Gym (Local Government)	To be developed as an integral part of a district or regional leisure facility.	CITY OF NEDLANDS <ul style="list-style-type: none"> Lifestyle Personal Training, 160 Stirling Hwy, NEDLANDS Plus Fitness, 1/83 Stirling Hwy, NEDLANDS Southern CrossFit Nedlands, 29 Carrington St, NEDLANDS Revolution Fitness Shenton Park, 37 Lemnos St, SHENTON PARK Trench Health and Fitness, 17 Lemnos St, SHENTON PARK WIDER REGION <ul style="list-style-type: none"> UWA Fitness and Recreation Centre, CRAWLEY Lords, 3 Price St, SUBIACO Cooee CrossFit, Gorrie Ave, CLAREMONT Hurt Locker, 223B Stirling Hwy, CLAREMONT Essential Lifestyle Gym, 1 Bay Rd, CLAREMONT Gravity Running Perth, 78 Alderbury St, FLOREAT Goodlife Health Club Floreat, 5 Howtree Pl, FLOREAT The Palms Community Centre, cnr Nicholson Rd and Rokeby Rd, SUBIACO Aspire Fitness and Physiotherapy, Claremont Golf Course, Lapsley Rd, CLAREMONT 	Not provided by the City. Multiple private operators. Provision exceeds standard.	Not provided by the City. Multiple private operators. Provision exceeds standard.
Sports Space (to incorporate sports identified with asterisks below)	1:4,000 5,000	CITY OF NEDLANDS <ul style="list-style-type: none"> Allen Park, Kirkwood Rd, SWANBOURNE Charles Court Reserve, The Esplanade, NEDLANDS College Park, Princess & Bay Rd, DALKEITH David Cruikshank Reserve, Cnr Beatrice Rd and Victoria Ave Highview Park, Smyth Rd, NEDLANDS Melvista Oval, Melvista Ave, DALKEITH Mt Claremont Reserve, Montgomery Drive, MT CLAREMONT Nedlands Tennis Club, Bruce St, DALKEITH 	4 – 6 should be provided. Additional Sports spaces with private high school ovals, UWA facilities, HBF Stadium facilities	5 – 7 should be provided. Provision exceeds standard.

		<ul style="list-style-type: none"> • Nedlands Rugby Union Football Club, Charles Court Reserve, The Esplanade, NEDLANDS • Nedlands Croquet Club, Cnr Melvista Ave and Bruce St, NEDLANDS • Tennis Factory Nedlands, Tennis Coaching, College Park Princess road NEDLANDS • Dalkeith Nedlands Bowling Club, 55 Jutland Parade, DALKEITH • Western Suburbs Cricket Club, John Leckie Pavilion, College Park, NEDLANDS • Associates Rugby Union Football Club, Allen Park, SWANBOURNE • Allen Park Tennis Club, Allen Park, SWANBOURNE • Swanbourne Cricket Club, Allen Park, SWANBOURNE • Onslow Park Tennis Club, 85 Onslow Rd, SHENTON PARK • Hollywood Subiaco Bowling Club, 42 Smyth Rd, NEDLANDS • Sand Volley Australia, 42 Smyth Rd, NEDLANDS • HBF Stadium (Basketball Association, UWA Tennis Club, UWA Nedlands Football Club, UWA Hockey Club, West Coast Swimming Club, UWA Baseball & Softball Club, WA Athletics Stadium, Royal Life Saving Society) 	<p>also within the City.</p> <p>Plus surrounding Council areas also have a good supply of organised, active sports spaces.</p> <p>Provision exceeds standard.</p>	
AFL ovals*	3: 15,000 with at least one oval being capable for supporting a senior football game	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • Allen Park, Kirkwood Rd, SWANBOURNE (x2 ovals) • College Park, Princess & Bay Rd, DALKEITH • David Cruikshank Reserve, Cnr Beatrice Rd & Victoria Ave, DALKEITH • Melvista Oval, Melvista Ave, DALKEITH (juniors) • UWA Sports Park, MT CLAREMONT, WA 	<p>1 to senior standard, 5 total.</p> <p>Provision exceeds standard.</p>	<p>5 – 6 to be provided.</p> <p>Provision exceeds standard.</p>
Rugby Union/League*	Area/location specific. To be determined by local circumstances and demographic mix.	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • Allen Park, Kirkwood Rd, SWANBOURNE (Associates Rugby Union Football Club) • Charles Court Reserve, The Esplanade NEDLANDS (Nedlands Rugby Union Football Club) • Mt Claremont Oval, Montgomery Ave, MT CLAREMONT (Claremont Jets Gridiron League) • UWA Sports Park, MT CLAREMONT <p>WIDER REGION</p> <ul style="list-style-type: none"> • State Rugby Centre, 203 Underwood Ave, FLOREAT 	<p>3 provided by the City plus State/Regional facility in the area.</p> <p>Provision exceeds standard.</p>	<p>Provision exceeds standard.</p>
Diamond pitch sports*	1:8,000 – 10,000 youth 1:15,000 – 20,000 adult	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • College Park, Bostock Rd, NEDLANDS (youth) • UWA Sports Park, MT CLAREMONT (youth & adult) 	<p>2 – 3 Youth 1 – 2 Adult</p> <p>Provision meets standard.</p>	<p>2 – 4 Youth 1 – 2 Adult</p> <p>Provision meets standard.</p>
Soccer pitches*	1:3,000 to 4,000 depending on demographics	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> • Charles Court Reserve, The Esplanade, DALKEITH • College Park, Bostock Rd, NEDLANDS 	<p>5 – 7 to be provided.</p>	<p>6 – 9 to be provided.</p>

		<ul style="list-style-type: none"> • Mt Claremont Oval, Montgomery Ave and Alfred Rd, MT CLAREMONT • Hollywood Futsal Club, 56 Smyth Rd, NEDLANDS • McGillivray Oval, UWA Sports Complex, Brockway Rd, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • Rosalie Park, Onslow Rd, SHENTON PARK • Nash Field, Solomon St, MOSMAN PARK 	Provision exceeds standard.	Provision exceeds standard.
Cricket ovals*	1:8,000 – 10,000	CITY OF NEDLANDS <ul style="list-style-type: none"> • Allen Park, Kirkwood Rd and Clement St, SWANBOURNE • College Park, Melvista Ave, DALKEITH • David Cruickshank Cruickshank Reserve, DALKEITH • Charles Court Reserve, The Esplanade, NEDLANDS • Melvista Oval, DALKEITH 	2 – 3 to be provided. Provision exceeds standard.	2 – 4 to be provided. Provision exceeds standard.
Athletics (grass and synthetic)*	1:250,000 plus – Regional Level (synthetic). Grass provision – District level	CITY OF NEDLANDS <ul style="list-style-type: none"> • WA Athletics, Stephenson Ave MT CLAREMONT WA 	Not required. Major regional facility within the City. Provision exceeds standard.	Not required. Major regional facility within the City. Provision exceeds standard.
Hockey pitches (grass* and synthetic – water, sand based and alternatives)	1:75,000 for synthetic surface (WA Hockey Strategy) Grass provision to be area/location specific.	CITY OF NEDLANDS <ul style="list-style-type: none"> • Tregonning Field, Highview Park, Verdun St NEDLANDS (grass) • College Park, NEDLANDS (grass) • Melvista Oval, Melvista Ave NEDLANDS (grass) • UWA Hockey Club, UWA Sports Park, MT CLAREMONT (2 x synthetic) • Lemnos Field (Shenton), Stubbs Terrace, SHENTON PARK (1 x synthetic) • John XXIII College, John XXIII Ave, MT CLAREMONT (grass) WIDER REGION <ul style="list-style-type: none"> • Perry Lakes, Cnr Oceanic Drive and Alderbury St, FLOREAT (grass) • Pat Goodridge Hockey Centre, JOLIMONT (grass hockey) • Cresswell Park, Mitford St, SWANBOURNE (grass) 	0 – 1 synthetic to be provided. Provision exceeds standard.	0 – 1 synthetic to be provided. Provision exceeds standard.
Multi-use synthetic surfaces	Area/location specific.	CITY OF NEDLANDS <ul style="list-style-type: none"> • Hollywood Subiaco Bowling Club, NEDLANDS • Dalkeith Nedlands Bowling Club, DALKEITH • UWA Hockey Club, UWA Sports Park, MT CLAREMONT • Lemnos Field, Stubbs Terrace, SHENTON PARK WIDER REGION <ul style="list-style-type: none"> • Claremont Bowling and Recreation Club, CLAREMONT • Cambridge Bowling Club, FLOREAT 	No specific requirement. Provision exceeds standard.	No specific requirement. Provision exceeds standard.

Netball Courts	1:3,000 – 4,000 (outdoor) for training purposes. 16 outdoor courts minimum for an association – District/Sub- Regional Facility	CITY OF NEDLANDS <ul style="list-style-type: none"> • HBF Stadium, Stephenson Ave, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • UWA Fitness & Recreation Centre, CRAWLEY • Matthews Netball Centre, Selby St, WEMBLEY • Lords, 3 Price St, SUBIACO 	5 – 7 to be provided. Only provision through private. Provision exceeds standard.	6 – 9 to be provided. Provision exceeds standard.
Basketball courts (indoor and outdoor)	1:3,000 – 4,000 (outdoor) 4 plus indoor courts – Regional/Sub-regional	CITY OF NEDLANDS <ul style="list-style-type: none"> • WA Basketball Centre, Underwood Ave, MT CLAREMONT • HBF Stadium, Stephenson Ave, MT CLAREMONT WIDER REGION <ul style="list-style-type: none"> • Lords, 3 Price St, SUBIACO • Creswell Park, Mitford St, SWANBOURNE • UWA Fitness & Recreation Centre, CRAWLEY 	5 – 7 to be provided. Only provision through private. Provision exceeds standard.	6 – 9 to be provided. Provision exceeds standard.
Volleyball (indoor and outdoor – beach and traditional)	To be integrated with Basketball/ Netball centres.	CITY OF NEDLANDS <ul style="list-style-type: none"> • University Volleyball Club, UWA Sports Centre, HBF Stadium, MT CLAREMONT • SAND Sports Australia, 1 Verden St, NEDLANDS WIDER REGION <ul style="list-style-type: none"> • Lords, 3 Price St, SUBIACO 	Only provision through private. Provision exceeds standard.	Provision exceeds standard.
Lawn Bowls	1:25,000 to 50,000 – District	CITY OF NEDLANDS <ul style="list-style-type: none"> • Hollywood Reserve, Smyth Rd NEDLANDS • David Cruikshank Reserve, cnr Beatrice Rd & Victoria Ave, DALKEITH WIDER REGION <ul style="list-style-type: none"> • Claremont Park, 64 Bay View Terrace, CLAREMONT • Floreat Oval, 39 Chandler Ave, WEST FLOREAT 	0 – 1 to be provided. Provision exceeds standard.	0 – 2 to be provided. Provision exceeds standard.
Tennis (multi surface hard courts and grass)	8 court club facility minimum for a population of 15,000 16 court facility comprises a regional tennis centre which would cater for a 30-60,000 population	CITY OF NEDLANDS <ul style="list-style-type: none"> • Allen Park Oval, Kirkwood Rd, SWANBOURNE (11 courts) • David Cruikshank Reserve, cnr Beatrice Rd and Victoria Ave, DALKEITH (29 courts) • Melvista Oval, Melvista Ave, DALKEITH (26 courts) • College Park, Bostock Rd, NEDLANDS (3 courts) • Hollywood Tennis Court Reserve, Smyth Rd, NEDLANDS (2 courts) • Mt Claremont Reserve, Montgomery Ave, MT CLAREMONT (2 courts) • Lawler Park, cnr Draper St and Underwood Ave, FLOREAT (2 courts) 	1 – 2 club facilities to be provided. No requirement for regional facility. Provision exceeds standard.	1 – 2 club facilities to be provided. No requirement for regional facility. Provision exceeds standard.
Golf Course	1:30,000	CITY OF NEDLANDS <ul style="list-style-type: none"> • Nedlands Golf Club, Melvista Ave, DALKEITH (9 hole) • Cottesloe Golf Club Inc., Alfred Rd, MT CLAREMONT (18 hole) 	0 – 1 to be provided.	0 – 1 to be provided.

		<ul style="list-style-type: none"> WIDER REGION Lake Claremont Public Golf Course, Davies Rd, CLAREMONT (9 hole) 	Provision exceeds standard.	Provision exceeds standard.	
Local Government Aquatic Facilities Indoor/Outdoor	<p>1:150,000 (50m pool – competition standard) Regional</p> <p>1:75,000 (25m or 50m pool for recreational, club, water polo, diving and competitive swimming) District</p> <p>1:30,000 (25m and leisure pool) Neighbourhood</p>	<p>CITY OF NEDLANDS</p> <ul style="list-style-type: none"> West Coast Swimming Club, HBF Stadium, MT CLAREMONT <p>WIDER REGION</p> <ul style="list-style-type: none"> Bold Park Pool, FLOREAT Claremont Aquatic, CLAREMONT UWA Uniswim, Crawley Campus, CRAWLEY 	<p>0 – 1 to be provided. Neighbourhood</p> <p>Not provided by the City, but multiple provision in nearby areas.</p> <p>Provision exceeds standard.</p>	<p>0 – 1 to be provided. Neighbourhood</p> <p>Not required and existing provision adequate.</p> <p>Provision exceeds standard.</p>	

Cycling facility	Integrated with tracks and trails	Various shared paths and cycling tracks throughout the City.	No specified provision. Provision exceeds standard.	No specified provision. Provision exceeds standard.	Not mapped
Trails (walking, cycling and bridlepaths)	No established standard	CITY OF NEDLANDS <ul style="list-style-type: none"> Nedlands Foreshore walking trail (includes Charles Court Reserve and Esplanade DALKEITH) Dalkeith and Parks walking trail (includes College Park and Masons Gardens) DALKEITH Point Resolution walking trail (includes Point Resolution Reserve and David Cruickshank Reserve) DALKEITH Swanbourne and Allen Park walking trail (includes Swanbourne Oval) SWANBOURNE Mt Claremont walking trail (includes Cavendish Gardens to Alfred Rd) MT CLAREMONT Hollywood walking trail (includes Karrakatta Cemetery and Carrington St) NEDLANDS Whadjuk Trail network, NEDLANDS WIDER REGION <ul style="list-style-type: none"> Bold Park trails (provided by Botanic Gardens and Parks Authority) FLOREAT 	No specified provision. Provision exceeds standard.	No specified provision. Provision exceeds standard.	
Climbing walls/centres	Areas specific. Incorporate within recreation centres where possible.	CITY OF NEDLANDS <ul style="list-style-type: none"> Child Climbing walls available at Nedlands Toy Library (College Park, Bostock Rd NEDLANDS) 	No dedicated facility. Not provided.	No known proposals. Not provided.	
Off-road recreational motorsport	Area Specific. To balance reasonable demand with the need to protect the environment.	WIDER REGION <ul style="list-style-type: none"> UWA MotorSport Workshop, UWA Crawley Campus, CRAWLEY 	No specified standard. No identified need. Provision meets standard.	No specified standard. Provision meets standard.	
Parks	The provision of parks is covered in detail in the Recreation and Open Space Local Profile (section 9.6).				

