



ACUMEN

CARABOODA URBAN PRECINCT DISTRICT STRUCTURE PLAN

Document Control				
Document Version	Description	Prepared By	Approved By	Date Approved
v 1.1	Draft – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	28/02/2023
v 1.2	Draft – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	15/03/2023
v 1.3	Final – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	28/06/2023
v 1.4	Final – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	21/11/2023
v 2.0	Final – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	27/11/2023
v 3.0	Final – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	05/12/2023
v 4.0	Final – Report	Ervin Sehovic, Michael Chappell	Michael Chappell	06/12/2023
v 5.0	Final – Report	Jason Cook	Michael Chappell	10/01/2025
v 6.0	Final – Report	Jason Cook	Jason Cook	03/02/2025
v 7.0	Updated Final – Report	Jason Cook	Jason Cook	26/09/2025
v 8.0	Updated Final – Report	Dawson D-Huning	Dawson D-Huning	21/07/2026

Disclaimer

This report has been prepared for **Acumen**. The information contained in this document has been prepared with care by the authors and includes information from apparently reliable secondary data sources which the authors have relied on for completeness and accuracy. However, the authors do not guarantee the information, nor is it intended to form part of any contract. Accordingly, all interested parties should make their own inquiries to verify the information and it is the responsibility of interested parties to satisfy themselves in all respects.



This document is only for the use of the party to whom it is addressed and the authors disclaim any responsibility to any third party acting upon or using the whole or part of its contents.

CONTENTS

1	Executive Summary	6
1.1	Proposed Development.....	6
1.2	Local Employment Targets	7
1.3	Population-Driven Employment Summary.....	8
1.4	Strategic Employment Summary.....	9
1.5	Additional Economic and Social Benefits.....	10
1.6	Landowner Infrastructure Agreement.....	10
2	Planning Context	12
2.1	Site Location.....	12
2.2	State Strategies	13
2.3	Regional and Local Strategies.....	15
3	Economic Assessment	17
3.1	ESS and Strategic Employment.....	17
3.2	Key Assumptions	19
3.3	Employment Estimates and Targets.....	20
4	Population-Driven Employment.....	22
4.1	Summary	22
4.2	Activity Centre Floorspace	23
4.3	Education.....	25
4.4	Community Infrastructure.....	26
4.5	Aged Care	27
4.6	Childcare.....	28
4.7	Medical Centre	29
4.8	Out-of-Centre Employment.....	29



5	Strategic Employment.....	31
5.1	Summary	31
5.2	Employment Node Profiles	33

1 EXECUTIVE SUMMARY

This economic and social assessment has been prepared for Acumen to provide a rationale to support the ultimate objective of rezoning of the Carabooda site to Urban under the Metropolitan Region Scheme (MRS) and Urban within the City of Wanneroo Local Planning Scheme.

1.1 Proposed Development

Preliminary concept plans for the Carabooda Site (the Site) have identified primary and high schools, a District Activity Centre, a Neighbourhood Activity Centre, two Local Activity Centres and a significant amount of public social infrastructure and public open space, whilst preserving the vibrant natural landscape of the Site.

The plans have also identified the potential to develop approximately 9,221 residential lots and dwellings. Ratios from the City of Wanneroo have been applied to total dwellings to identify the potential population of Carabooda (Figure 1).

Figure 1. Estimated Lots, Dwellings and Population

Components	Quantum
Total Lots	9,221
Total Dwellings	9,221
Total Population	25,358

Source: Acumen 2023, ABS 2022, Pracsys 2023

The 25,358 residents at the Carabooda Site will generate a labour force of 13,453 people. Approximately 58% of the future labour force will work in population-driven industries (Figure 2). The remaining 42% of the labour force is assumed to demand strategic job opportunities.

Figure 2. Population-Driven and Strategic Job Demand

Indicator	Labour Force	Proportion (%)
Workers in Population-Driven Industries	7,861	58%
Workers in Strategic Industries	5,592	42%
Total	13,453	100%

Source: ABS Census 2022, Pracsys 2023

Pracsys' analysis has indicated this development will create population-driven employment opportunities at the Site and for the City of Wanneroo. The development would also provide the

workforce of nearby existing and potential future strategic employment zones a vibrant and well provided place of residence.

1.2 Local Employment Targets

The North-West Sub-Region has an employment self-sufficiency (ESS)¹ target of 59.5% for 2050, above the level estimated in 2011 of 49.2%². To increase the level of ESS in the area, the North-West Sub-Region needs to accurately plan the distribution of future population in proximity to strategic employment centres, such as the existing Yanchep Strategic Centre, Joondalup Strategic Centre and any potential future strategic zones.

The City of Wanneroo's Economic Development Strategy 2022 – 2032 sets out an ESS target of 60% by 2031. This target applies to the combined Cities of Wanneroo and Joondalup, and not to the City of Wanneroo alone. This is marginally greater than the 59.5% ESS target established by the North-West Sub-regional Planning Framework. For the purpose of this analysis, an ESS target of 60% has been assumed for the proposed Carabooda Site development (Figure 3).

Figure 3. Carabooda Local Employment Targets (60% ESS)

Indicator	Labour Force	ESS Target (%)	Local Job Target
Population-Driven	7,861	60%	4,717
Strategic	5,592		3,427
Total	13,453		8,144

Source: City of Wanneroo 2022, Pracsys 2023

This target can be considered ambitious for Carabooda as the Site's capacity to deliver 8,144 local employment opportunities is limited by a range of factors including the extent of infrastructure provision, private investment, comparative advantage and more.

It is common for residential greenfield developments to lack the infrastructure and strategic industry required to employ its local labour force. The outcome is a higher proportion of residents that travel outside the local area to secure high productivity jobs. The State planning framework accounts for this by establishing strategic employment nodes in the Sub-Region such as Yanchep and Joondalup. These centres provide more job opportunities than those required by the local labour force and support the population of less-strategic areas such as Carabooda.

¹ ESS represents the ratio of local jobs to residents and an increase demonstrates that employment growth is outpacing labour force growth in the area

² Department of Planning, Lands and Heritage, 2018, [https://www.wa.gov.au/system/files/2021-05/FUT-PP-Perth and Peel Sub Region March2018 v2.pdf](https://www.wa.gov.au/system/files/2021-05/FUT-PP-Perth%20and%20Peel%20Sub%20Region%20March2018%20v2.pdf)

1.3 Population-Driven Employment Summary

A reasonably level of community and commercial provision has been estimated at a high-level to estimate the extent of population-driven employment opportunities available to local residents. Across the identified sources, Carabooda is estimated to generate 4,037 local job opportunities (Figure 4).

Figure 4. Local Population-Driven Employment Summary

Employment Source	Local Population-Driven Opportunities
Activity Centres	2,099
Aged Care	199
Libraries	34
Schools	788
Medical Centres	22
Recreation Facilities	172
Home-Based Businesses	314
Small Commercial	284
Child Care	124
Total	4,037
Target (60% ESS)	4,717
Shortfall	680

Source: Department of Planning, Lands and Heritage 2018, ABS 2022, Pracsys 2023

This estimation generates a shortfall of 680 jobs relative to the 60% ESS target for population-driven jobs at the Site. Given that the analysis conducted utilised conservative benchmarks and forecasts, the number of local jobs will likely grow over time.

1.4 Strategic Employment Summary

A high-level benchmarking analysis identifies that Carabooda is not expected to generate significant strategic employment opportunities within the Site itself (Figure 5). This generates a shortfall of 3,427 jobs relative to the 60% ESS target for strategic jobs at the Site. As outlined in Section 3.1, ESS and Strategic Employment, Carabooda's capacity to deliver strategic employment opportunities is limited by the planning framework and provision of infrastructure.

Figure 5. Strategic Employment Target / Shortfall

Measure	Strategic Jobs
Target (60% ESS)	3,427
Shortfall	3,427

Source: Pracsys 2023

Yanchep and Joondalup are identified as key strategic centres in the North West Sub-Region, together with the Wangara and Neerabup Industrial Areas, and account for less strategic developments such as Carabooda and other new developments. The analysis estimated that residents of Carabooda will have access to 2,210 strategic opportunities in the Sub-Region (Figure 6).

Figure 6. Strategic Employment Summary

Source	Strategic Job Opportunities
Yanchep	330
Alkimos	220
Neerabup	570
Future Inter-modal Hub	280
Other Nodes	810
Total	2,210

Source: Pracsys 2023

There is a shortfall to the local strategic job target when accounting for sub-regional sources. The shortfall will likely dissipate as existing strategic sources expand, and further strategic opportunities arise in the North West Sub-Region.

The employment estimates above should also account for the loss of existing rural and agricultural employment within the DSP area as land transitions to urban development (refer Section 3.4, Rural and Agricultural Employment Impacts).

1.5 Additional Economic and Social Benefits

Rezoning and developing the Site is associated with a number of desirable liveability and economic outcomes. Social and Economic benefits that are associated with the rezoning of the Site to Urban include:

- Proximity and access to existing and future strategic employment zones for future residents reducing vehicle travel time and vehicle operating costs
- Improved housing accessibility and affordability resulting from the supply of land in the North-West Sub-Region
- Proximity and access to future transport and rail access links
- Increased retail expenditure in the City of Wanneroo supporting the existing Activity Centre Hierarchy
- Improved access to TAFE and other vocational education due to the Site's proximity to both Yanchep and Joondalup

1.6 Landowner Infrastructure Agreement

The scale of land development proposed in the Carabooda Urban Precinct, covered in this District Structure Plan for residential housing (approx. 9,200 lots) requires a strategic plan for provision of services infrastructure and social infrastructure to support the new community.

Service infrastructure, both new and upgrades to existing, will potentially include:

- Widening and upgrade of Karaborup Road between Wanneroo Road and Gibbs Road, to connect to new McLennan Drive
- Construction of McLennan Drive between Karaborup Road and Godel Road
- New major connector roads running north south in the DSP area
- Extensions and upgrades to Kiln Road.
- Upgrades to existing pavements and configuration of Gibbs Road and Karaborup Road (north of McLennan Drive) to urban standard
- Wesco Road and Nowergup Road upgrades to urban standards.
- Provision of upgraded power infrastructure, including provision of land for a future sub-station
- Provision of water services upgrades including pressure relief valves and connections with existing major water tank
- Negotiations with Water Corporation for provision of pre-funded sewer pump stations and pressure mains to return to existing sewer outfalls

- Other trunk main extensions and upgrades as provided for in detailed engineering planning phase of the project.

These services costs will be allocated within subsequent Local Structure Plan areas, but there will need to be a level of co-ordination of service infrastructure upgrades and sharing of major roads that will be allocated on a whole of DSP basis.

It is anticipated that sharing of costs will be allocated on an equitable sharing of costs basis by allocation of cost sharing based on net zoned urban land per owner divided by overall urban zoned land area.

Community and Social Infrastructure planning will also be included in the overall Carabooda DSP and will potentially include opportunities for Local Government lead outcomes including:

- Local Health clinics
- Civic spaces for local recreation and performing arts
- Library and community meeting rooms

In provisioning these social and community assets within Carabooda DSP, consideration needs to be given to the level of Regional and District level facilities that are being planned in nearby locations such as Alkimos, to avoid duplication of assets. The costs will be allocated on an equitable cost share basis, per hectare of urban zoned land per owner, divided into the total urban zoned land for the DSP.

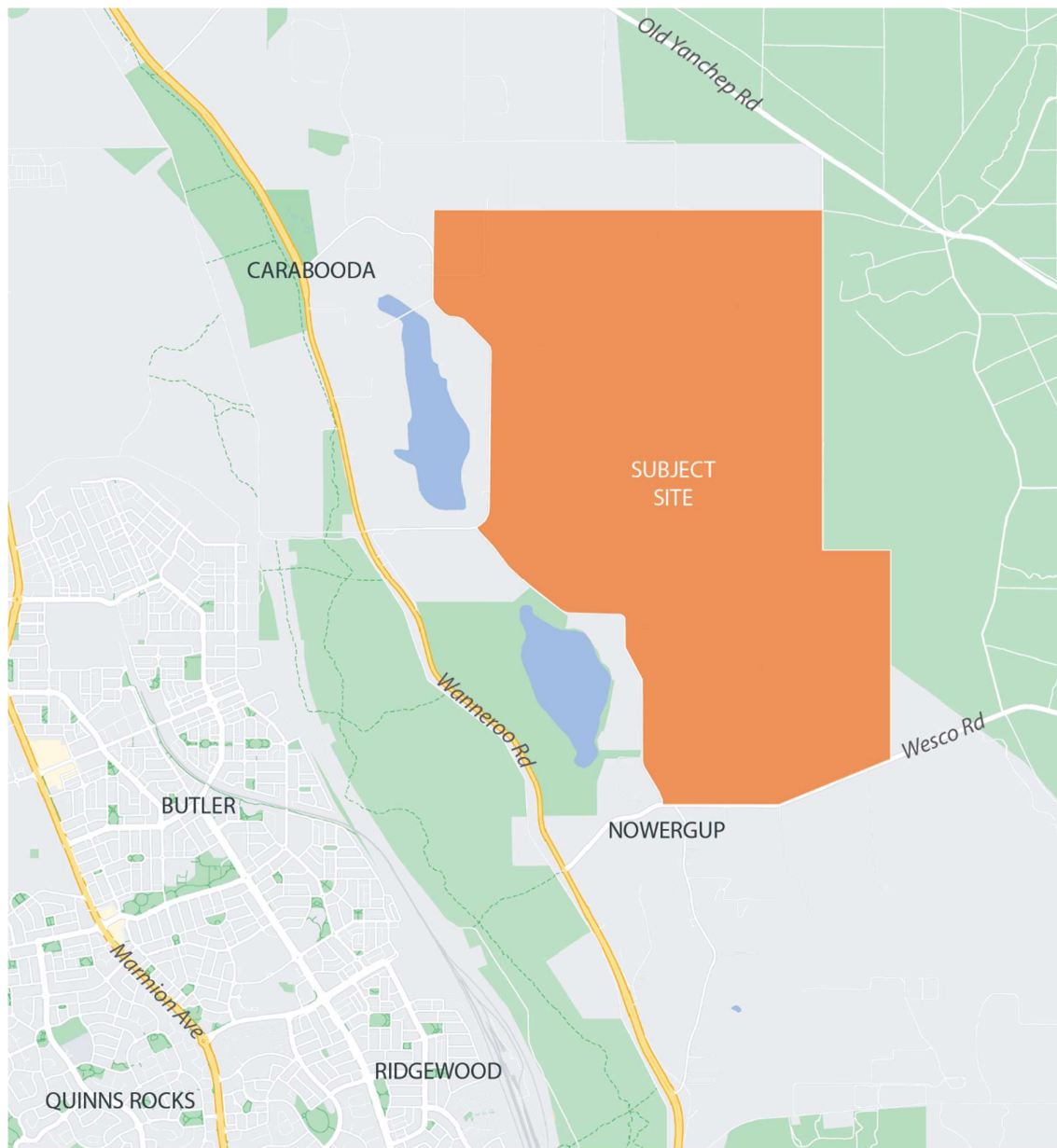
There are two methods by which infrastructure cost sharing can be managed and administered, by a private landowner's agreement, or a Development Contribution Plan administered by the City of Wanneroo. As the DSP progresses with phases of planning approvals, a decision as to which scheme of administration will be made, or potentially a hybrid of the two processes. Please carefully note, no landowner will be liable for any contributions until such time as they decide to develop their landholding. Otherwise, no commitment is made upon individual landowners unless they decide to proceed with development at some future stage.

2 PLANNING CONTEXT

2.1 Site Location

The Site is in Carabooda, proximate to Wanneroo Road to the West, Wesco Road to the South and Old Yanchep Road to the East (Figure 7).

Figure 7. Subject Site Location – Indicative Urban



Source: CLE Town Planning + Design 2023, Pracsys 2023

The majority of the Site's land is currently zoned Rural. Established residential areas of Alkimos and Butler are in close proximity to the west of the Site, while Eglinton and Yanchep are to Site's west and north-west, respectively.

2.2 State Strategies

The table below show the strategic alignment of the area development to the key State policies and strategies:

Policy and Description	Relevant Objectives / Focus Areas	Project Alignment
Perth and Peel at 3.5m (2021)³		
A spatial framework and strategic plan establishing the vision for future growth of the metropolitan Perth and Peel region.	This plan has five strategic themes for development in Perth and Peel: ○ A liveable City ○ A prosperous City ○ An accessible City ○ A sustainable City ○ A responsible City	• Rezoning the Site to Urban will help to create a liveable area that will provide quality open space and will ensure urban expansion happens in the most suitable area • Rezoning the Site to Urban will retain employment in the City of Wanneroo and will have a diverse mix of facilities and infrastructure • Rezoning the Site to Urban will ensure an accessible development, connecting the community with jobs and services, maximising the use of road infrastructure. • Rezoning the Site to Urban will be sustainable, preserving the vibrant natural landscape currently and enhancing the public open space network • Rezoning the Site to Urban will maximise social infrastructure use in the City of Wanneroo, allowing for the strategic expansion of the urban area

³ Department of Planning, 2010, https://www.dplh.wa.gov.au/getmedia/3060b8c7-b9ed-4113-abee-8a9c5ac0240d/FUT-plan_directions2031_Part1

Policy and Description	Relevant Objectives / Focus Areas	Project Alignment
Diversify WA (2019)⁴		
Diversify WA is an Economic Development Framework identifying avenues for economic growth and development throughout the State	• Developing a strong economy • Developing a resilient economy • Creating secure and quality jobs	• Rezoning the Site to Urban will assist in creating a strong economy in the City of Wanneroo. It will support shop/retail floorspace and community infrastructure. • Rezoning the Site to Urban will provide the existing and potential future strategic workforce (such as tourism) in the North-West Sub-Region a well provided for place of residence, helping to create a resilient and diversified economy

⁴ Government of Western Australia, 2019, https://www.wa.gov.au/sites/default/files/2019-07/DiversifyWA_0.pdf

2.3 Regional and Local Strategies

The table below show the strategic alignment of the area development to the key regional and local policies and strategies:

Policy and Description	Relevant Objectives / Focus Areas	Project Alignment
North-West Sub-Regional Planning Framework (2018)⁵		
- Part of the Perth and Peel @3.5 million suite of land use planning and infrastructure frameworks - Provides an overview of the long-term goals for land use and infrastructure to guide future growth across the North-West Sub-Region	- Target ESS of 59.5% in the North-West Sub-Region - Achieve a consolidated urban form and development - Provide transport linkages that connect people with key centres of activity and employment, and access to areas beyond the Perth and Peel regions - Facilitate increasing the number of people living close to where they work with the identification of suitable sites for employment, with a focus on attracting strategic economic and employment land use to the sub-region	- This project will support existing strategic industries at the Yanchep Strategic Centre and any potential future strategic zones in proximity to the site, contributing to the sub-region goal of achieving its 2050 ESS target - The site is located in proximity to a number of proposed road transport and rail upgrades, providing the potential residents with the ability to connect to the existing Activity Centre Hierarchy, other employment nodes and education facilities
City of Wanneroo's Economic Development Strategy 2022 - 2032 ⁶		
The City of Wanneroo's Economic Development Strategy 2022 - 2032 is a key document setting the City's intentions for the next 10 years in relation to supporting and enabling the local economy	- Enable businesses to provide diverse and quality local job opportunities - Facilitate the delivery of sustainable economic growth - Enhance social and environmental outcomes for intergenerational equity	- The development of the Site will provide residents access to a range of diverse employment opportunities locally and within the City of Wanneroo - The development of the Site and the associated population will allow for an increased level of disposable income in the City of Wanneroo, supporting a vibrant and sustainable local economy - The development of the site and the proposed associated

⁵ Department of Planning, Lands and Heritage, 2018, https://www.wa.gov.au/system/files/2021-05/FUT-PP-North-West_Sub_Region_March2018.pdf

⁶ City of Wanneroo, 2022, https://www.wanneroo.wa.gov.au/downloads/file/4537/economic_development_strategy_-_2022_to_2032



Policy and Description	Relevant Objectives / Focus Areas	Project Alignment
		infrastructure will provide a high level of social amenity while maintain the existing vibrant natural landscape to be enjoyed by generations present and those to come

3 ECONOMIC ASSESSMENT

This section details key assumptions around estimating the extent and composition of Carabooda's future labour force and job opportunities associated with the transition to an Urban zoning.

3.1 ESS and Strategic Employment

Employment self-sufficiency (ESS) is the ratio of local jobs to the local labour force and is commonly a measure of local economic performance. In new outer suburban areas, ESS will be relatively low (<70%) as there are fewer jobs than workers while in inner areas ESS is generally high (>100%) as there are more jobs than workers to fill them.

The planning frameworks make the provision of employment opportunities within a reasonable distance from home a priority to reduce the time it takes to travel to work. This promotes environmental and social sustainability and enhances the economic sustainability of outer suburban areas.

The jobs for which people travel the greatest distances are often those that pay the most, or in economics terms, the high productivity jobs. These are referred to as strategic jobs. Strategic jobs are associated with export or high knowledge industries such industries tend to agglomerate around transport and commercial infrastructure such as airports, ports, universities and cities.

Residential greenfield developments such as Carabooda lack the infrastructure and strategic industry required to employ its local labour force. One solution is to formulate a long-term strategy of public infrastructure investment to attract and generate strategic industries. Another strategy is to enhance high-speed public transport to move large volumes of workers to and from their homes to places of strategic industries employment.

If strategic infrastructure does not exist in a region, a higher proportion of residents must travel to secure high productivity jobs. Perth's North West Sub-Region has comparatively little access to strategic infrastructure and therefore few high productivity jobs. However, the State planning framework accounts for this by establishing strategic employment nodes in the Sub-Region such as Yanchep and Joondalup, and industrial areas such as Wangara and Neerabup. These centres provide more job opportunities than those required by its local labour force and support the labour force of less-strategic areas such as Carabooda.

The following sub-sections identify ESS targets for the Site and estimate the extent of local employment opportunities required to support Carabooda's estimated labour force. Later sections develop an

estimate of local employment opportunities against the targets with consideration of Carabooda's role and infrastructure provision.

North West Sub-Region and City of Wanneroo Targets

The North West Sub-Region contains the Local Governments Areas (LGA) of the City of Wanneroo and the City of Joondalup. The North West Sub-Regional Planning Framework sets out a target of a 59.5% ESS by 2050 (Figure 8).

Figure 8. North West Sub Region Employment Self-Sufficiency 2011-2050

Indicator	2011	2050	Total Change	Total % Change
Population	322,490	740,330	417,840	129.6%
Labour Force	163,640	376,390	212,750	130.0%
Jobs	80,570	224,130	143,560	178.2%
Employment Self-Sufficiency	49.2%	59.5%	10.3%	-

Source: Department of Planning, Lands and Heritage 2018

The City of Wanneroo (City) is one of the fastest growing LGAs in Western Australia and is forecast to soon be the largest LGA by population in the State. This places a strategic responsibility on the City to contribute to the North West Sub-Region achieving its 2050 ESS targets.

As detailed in the North West Sub-Regional Planning Framework, the North West Sub-Region is expected to accommodate an additional 417,840 persons between 2011 to 2050, increasing the total number of people in the area from 322,490 to 740,330. Based on the ratio of population to employment in 2050, the North West Sub-Region should be aiming to create an additional 143,560 jobs between 2011-2050 to achieve its ESS target.

As part of the City of Wanneroo's Economic Development Strategy 2022 – 2032, the City sets out a more ambitious ESS target of 60% by 2031. This target applies to the combined Cities of Wanneroo and Joondalup, and not to the City of Wanneroo alone. For the purpose of this analysis, an ESS target of 60% has been assumed for the proposed Carabooda Site development.

Employment Quality

To assess the proportion of jobs in the area that will likely be population-driven versus strategic, the analysis identifies the drivers of employment quality.

Employment quality is a key indicator of the strength of a local economy. The term employment quality refers to the ability of one job to generate other jobs and have positive multiplier effects on the

economy. Employment can broadly be understood in terms of knowledge requirements and industry uses. It is measured by assessing occupation and industry of employment data. The breakdown of population-driven versus strategic industries is as follows:

Population-Driven Industries (service local population):

- **Consumer Services:** Basic business-to-consumer activity (for example, retail trade)
- **Knowledge Intensive Consumer Services (KICS):** Business-to-consumer activity with high knowledge requirements (for example, medical services)
- **Producer Services:** Basic business-to-business activity (for example, printing services)

Strategic Industries:

- **Knowledge Intensive Producer Services (KIPS):** Business-to-business activity with high knowledge requirements (for example, architectural services)
- **Export:** Direct export-related activity (for example, agriculture or mining)
- Service population-driven and strategic industries
- **Producer Services:** Basic business-to-business activity (for example, printing services)

Producer services are both population-driven and strategic. The share of Producer Services that are estimated to be in Strategic Industries in the analysis is assumed to be equal to the ratio of Strategic versus Population-Driven employment without Producer Services being included.

KIPS, Export and a portion of Producer Services employment are collectively referred to as strategic employment. Strategic employment is termed so as it does not rely on a local population catchment and is sustained by income sources outside of the local economy. Strategic employment is desirable as it is less prone to automation and is associated with higher levels of education, qualification and income.

3.2 Key Assumptions

The proposed Site is expected to accommodate approximately 9,221 dwellings and 25,358 residents, assisting the City of Wanneroo in meeting its population targets (Figure 9).

Figure 9. Carabooda Estimated Lots, Dwellings and Population

Components	Quantum and Ratio
Total Lots	9,221
Dwellings per Lot	1
Total Dwellings	9,221
People per Dwelling	2.8
Total Population	25,358

Source: Acumen 2023, ABS 2022, Pracsys 2023

The 25,358 residents at the Carabooda Site will generate a labour force of 13,453 people based on the current labour force participation rate for the City of Wanneroo of 53% from the ABS 2021 Census⁷. A portion of this potential workforce will be population-driven (service the population that will live in the area), and the remainder of the workforce will be employed in strategic industries.

3.3 Employment Estimates and Targets

The average ratio of population to population-driven jobs for Greater Perth (0.31) has been applied to the population of Carabooda to inform an estimate of the extent of the local labour force that will demand population-driven and strategic employment opportunities. Approximately 58% of the total labour force in Carabooda will demand population-driven jobs (Figure 10). The remaining 42% of the labour force is assumed to demand strategic job opportunities.

Figure 10. Carabooda Population-Driven and Strategic Job Demand

Indicator	Labour Force	Proportion (%)
Workers in Population-Driven Industries	7,861	58%
Workers in Strategic Industries	5,592	42%
Total	13,453	100%

Source: ABS Census 2022, Pracsys 2023

Carabooda is expected to provide local employment opportunities to ensure that a portion of the labour force both lives and works in the District Structure Plan area. This is reflected in an Employment Self-Sufficiency target of 60% (applying to the combined Cities of Wanneroo and Joondalup) outlined in the City of Wanneroo's Economic Development Strategy 2022 – 2032 (see Section 3.1, ESS and Strategic Employment for more detail).

Figure 11. Carabooda Local Employment Targets (60% ESS)

Indicator	Labour Force	ESS Target (%)	Local Job Target
Population-Driven	7,861	60%	4,717
Strategic	5,592		3,427
Total	13,453		8,144

Source: City of Wanneroo 2022, Pracsys 2023

⁷ ABS, 2022, <https://www.abs.gov.au/census/find-census-data/quickstats/2021/LGA58760>

Carabooda's capacity to deliver 8,144 local employment opportunities is limited by a range of factors including the extent of infrastructure provision, private investment, comparative advantage and more. The following sections estimate the quantum of local employment opportunities that could reasonably be provided at the Site based on planned population and strategic infrastructure provision.

3.4 Rural and Agricultural Employment Impacts

The majority of the DSP area is currently zoned Rural and supports existing rural land uses, including horticulture and other agricultural activities that form part of the broader Carabooda–Nowergup rural precinct.

Employment within the project area (bounded by Carabooda Road to the north, Nowergup Road to the south, Karoborup Road to the west and Wandoo Road to the east) was estimated by apportioning 2021 Census place-of-work employment for Destination Zone 512560001 (937 jobs), which extends substantially beyond the project area. Rather than assuming uniform employment density, employment in each ABS industry was allocated according to the location of identified establishments and land uses (using Google Maps).

Employment attributed to the project area reflects the establishments and land uses observable within it, including nursery production, turf growing, a share of the locality's outdoor vegetable growing and associated support services, limestone product manufacturing and quarrying, and minor service activities.

The estimated current employment in the project area is approximately 100-150 jobs. The loss of these jobs is likely to result in a transfer of employment to somewhere else in WA. It has been conservatively assumed that the transfer of these jobs to other locations results directly in an additional 72 jobs to meet ESS requirements (in alignment with the ESS target of 60%). These additional jobs are assumed to be strategic employment opportunities and have accordingly been added to the strategic component of the local job target.

Opportunities to mitigate these losses should also be considered, including the staging of development to allow agricultural operations to continue in the interim, and the potential for relocation or intensification of horticultural activity in the surrounding rural area.

4 POPULATION-DRIVEN EMPLOYMENT

To achieve the high-level of liveability residents will require access to retail offerings and community infrastructure to support their retail, health, transport, recreation and education needs. Given that the Site is still in a conceptual phase of development, the majority of the community infrastructure needed to support the area is yet to be determined or developed. Community infrastructure should be tailored to support the expected local population at the Site.

4.1 Summary

A reasonably level of community and commercial provision has been estimated at a high-level to estimate the extent of population-driven employment opportunities available to local residents. Across the identified sources, Carabooda is estimated to generate 4,037 local job opportunities (Figure 12). This estimation generates a shortfall of 680 jobs relative to the 60% ESS target for population-driven jobs at the Site. Given that the analysis conducted utilised conservative benchmarks and forecasts, the number of local population-driven employment opportunities will likely grow over time.

Figure 12. Local Population-Driven Employment Summary

Employment Source	Local Population-Driven Opportunities
Activity Centres	2,099
Aged Care	199
Libraries	34
Schools	788
Medical Centres	22
Recreation Facilities	172
Home-Based Businesses	314
Small Commercial	284
Child Care	124
Total	4,037
Target (60% ESS)	4,717
Shortfall	680

Source: Department of Planning, Lands and Heritage 2018, ABS 2022, Pracsys 2023

A breakdown on each population-driven employment source is outlined in the following sub-sections.

4.2 Activity Centre Floorspace

Access to floorspace associated with these uses is required to service the general day-to-day Shop-Retail needs of the local resident population at the Site.

To estimate the required Shop-Retail floorspace associated with the proposed resident population at the Site, Land Use Survey (LUES) data from the Department of Planning, Lands and Heritage (DPLH) has been used to determine an appropriate per person Shop-Retail floorspace service ratio. The Shop-Retail floorspace service ratio for the City of Wanneroo was used as a benchmark to determine the minimum required Shop-Retail floorspace for the Site (Figure 13).

Figure 13. Shop-Retail Floorspace for Site

Area	Shop-Retail Service Ratio (m ² per person of population)	Carabooda Site Population	Shop-Retail Floorspace Required (m ²)
City of Wanneroo	0.83	27,894	23,152
Greater Perth Area	1.6		44,630
Carabooda Site Target	1.32		36,819

Source: DPLH 2018, Pracsys 2023

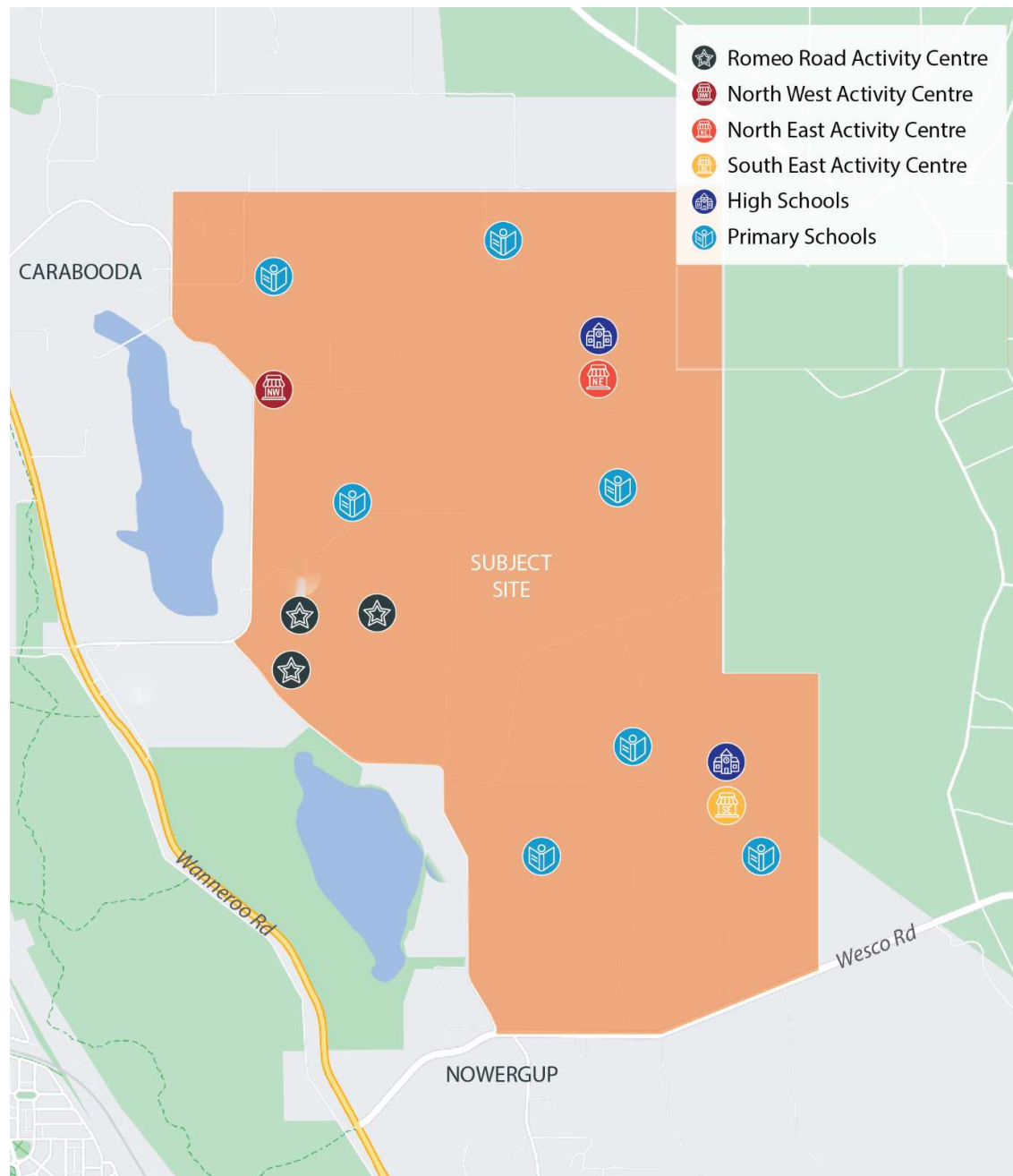
The Shop-Retail service ratio of 0.83m² per person of population is a conservative estimate, significantly below the Greater Perth Shop-Retail service ratio is 1.6m² per person of population. The Carabooda Site will ensure that the local population is serviced with a higher level of Shop-Retail amenity by providing 1.32m² of Shop-Retail floorspace per person.

Determining the relevant distribution of Shop-Retail floorspace across the Site is important. Associated floorspace needs to contribute to meeting the needs of the local resident population while not impacting the existing ACH network. With the Yanchep Strategic Centre in close proximity and a number of secondary centres including Alkimos, Wanneroo, Clarkson, and Two Rocks North also close by it has been determined that activity centres should be at District classification or below.

Benchmarking was undertaken to determine the appropriate level of floorspace and associated employment at a District, Neighbourhood and Local Activity Centre level. Benchmarked centres were chosen based on their location (North-West Sub-Region) and their relative offerings. Based on the benchmarking conducted and with consideration of the required Shop-Retail floorspace at the Site, it has been proposed that one District Activity Centre (Romeo Road Activity Centre), one Neighbourhood

Activity Centre (North East Activity) and two Local Activity Centres (North West and South East Activity Centres) be located at the Site (Figure 14 & Figure 15).

Figure 14. Site Map⁸



Source: CLE Town Planning + Design 2023, Pracsys 2026

⁸ Please see the body of the District Structure Plan for an official site map.

Figure 15. Proposed Activity Centre Hierarchy for the Site

Proposed Activity Centre Classification	Location
District	Romeo Road
Neighbourhood	North East of Site
Local	North West of Site
Local	South East of Site

Source: Pracsys 2023

It should be noted that other floorspace uses including Office and Entertainment will be located at each of the identified activity centres. Population-driven employment associated with each activity centre has been estimated based on the same benchmarking mentioned above. It has been estimated that at full build out a total of 2,099 full-time equivalent (FTE) positions will be available across all floorspace uses at the Site's four activity centres.

4.3 Education

To provide the educational needs of children at the Site, a number of educational institutions will be required. The Western Australian Planning Commission sets out a provision for public primary and secondary schools based on the number of dwellings in a locality (Figure 16).⁹

Figure 16. Schools Provision Guidelines

School Classification	Provision Guideline
Primary	1 Primary School for every 1,500 Dwellings
Secondary	1 Secondary School for every 4 to 5 Public Primary Schools

Source: WAPC 2022

Based on the provision guidelines, it has been estimated that seven primary schools and two high schools will be required to service the school aged population at full build out of the Site. Benchmarking was undertaken using LUES data to determine the average number of FTE employees required at both a public primary and secondary school (Figure 17). It has been estimated that 788 population-driven FTE positions will be available at Site's primary and secondary schools once full build out has occurred.

⁹ Western Australian Planning Commission, 2022, <https://www.wa.gov.au/system/files/2022-12/OP-2.4-Planning-for-school-sites.pdf>

Figure 17. Schools Population-Driven Employment

School Classification	Employment Per School (FTE)	Number of Schools	Total Employment Estimate (FTE)
Primary	80	7	560
Secondary	114	2	228
Total		9	788

Source: WAPC 2022

4.4 Community Infrastructure

To support the development of community infrastructure, the relevant population catchment for each centre should aim to meet or exceed population guidelines for community infrastructure. The City of Wanneroo has created guidelines for the number of persons required to support the development of specific community facilities (Figure 18).¹⁰ The provision of a wide range of community infrastructure will improve amenity for residents and will encourage persons and businesses to the Site.

Figure 18. Community Facilities Population Guidelines

Facility	Activity Centre Classification	Population Guidelines
Public Open Space (Active)	District Centre	1:25,000
Indoor Recreation Centre	District Centre	1:30,000
Community Centre	District Centre	1:35,000
Library	District Centre	1:35,000
Community Centre	Local Centre	1:7,500
Public Open Space (Active)	Local Centre	1:7,000

Source: DPLH 2018, Pracsys 2023

The co-location of community facilities is a growing trend across the Greater Perth area, with community centres often co-located at a corresponding public open space and/or indoor recreation centre. Co-location helps to support a greater sense of community while also improving the viability of organised sporting entities. The WAPC also promotes the co-location of primary and secondary schools with other community services.¹¹

¹⁰ City of Wanneroo, 2020, https://www.wanneroo.wa.gov.au/download/downloads/id/3981/north_coast_growth_corridor_community_facilities_plan.pdf

¹¹ Western Australian Planning Commission, 2022, <https://www.wa.gov.au/system/files/2022-12/OP-2.4-Planning-for-school-sites.pdf>

Based on the population estimate of 27,894 persons for the Site, a number of community facilities have been identified for inclusion at the Site (Figure 19).

Figure 19. Community Facilities Proposed for Carabooda Site

Facility	Classification	Facility Count on Site
Public Open Space (Active)	District	1
Community Centre	District (smaller)	1
Library	District (smaller)	1
Community Centre	Local	2
Public Open Space (Active)	Local	2
Library (attached to primary/ secondary school)	Local	9

Source: Pracsys 2023

Benchmarking was undertaken using LUES data to determine an employment provision per square metre of floorspace for each community facility type. This analysis has been adapted from and built on from similar work conducted for the ongoing East Wanneroo Developer Contribution Plan.

Total population-driven employment for all the Site's community facilities infrastructure has been estimated at 172 FTE positions.

4.5 Aged Care

Aged care places have been estimated using aged care participation rate data from the Australian Institute of Health and Welfare for the North Metropolitan Aged Care Planning Region as a proxy. Population forecasts have been estimated using DLHS's WA Tomorrow Forecasts.^{12, 13} Based on the analysis conducted, it has been estimated that a total of 119 aged care beds will be required to service the forecast population at full build out of the site (Figure 20).

Figure 20. Aged Care Beds Required

Age Bracket	0–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85–89	90–94	95–99	100+	Total
Total Places Required	0	0	0	1	5	10	12	38	59	50	21	1	119

Source: DPLH 2022, Australian Institute of Health and Welfare for 2022, Pracsys 2023

¹² DPLH, 2022, <https://www.wa.gov.au/government/document-collections/western-australia-tomorrow-population-forecasts>

¹³ Note: Population Forecasts have been estimated using BAND C for the City of Wanneroo. Forecasts have been used a proxy for the Site and age distributions applied to the total expected population at full build out. WA Tomorrow only forecasts to 2031, forecasts have been extrapolated linearly to 2058.

Pracsys has previously been engaged by the City of Melville to conduct an economic impact assessment for an aged care facility. Utilising this existing work, it has been estimated that to provide care for the 119 estimated aged care beds at the Site, 119 FTE positions are required.

4.6 Childcare

Childcare places have been estimated by utilising participation rate by age data from the ABS Childhood Education and Care Survey for WA (Figure 21).

Figure 21. WA Childcare Participation Rate (%) by Age

Age	0	1	2	3	4	5	6	7	8	9	10	11	12
Formal Childcare Participation Rate (%)	9%	30%	42%	42%	32%	20%	16%	16%	16%	7%	7%	7%	7%

Source: ABS 2018¹⁴

To determine the Site's estimated population by age at full build out the City of Joondalup's population forecasts age ratios were used as a proxy due to a lack of publicly available data for the City of Wanneroo. Single year age forecasts for the Site were calculated, providing estimates of childcare places required for each age (Figure 22). It has been estimated that 795 childcare places will be required at the Site at full build out.

Figure 22. Childcare Places by Age at Carabooda Site

Age	0	1	2	3	4	5	6	7	8	9	10	11	12
Estimated Childcare Places	24	84	130	137	98	61	57	51	56	25	24	24	25

Source: Forecast.id 2022, ABS 2018, Pracsys 2023

The Australian Children's Education & Care Quality Authority (ACECQA) has published data on educator to child provision ratios specific to WA. Applying these ratios to the forecasted childcare places at the Site identifies the required workforce to deliver the required childcare for the Site (Figure 23).

¹⁴ ABS, 2018, <https://www.abs.gov.au/statistics/people/education/childhood-education-and-care-australia/latest-release>

Figure 23. Childcare Employment Estimates

Age	0	1	2	3	4	5	6	7	8	9	10	11	12
Estimated Childcare Places	24	84	130	137	98	61	57	51	56	25	24	24	25
ACECQA Educator to Child Provision Ratio	0.25	0.25	0.2	0.1	0.1	0.1	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Employment Required (FTE)	6	21	32	27	10	6	5	4	5	2	2	2	2

Source: ACECQA 2022, Forecast.id 2022, ABS 2018, Pracsys 2023

Based on the analysis conducted, it has been estimated that 124 FTE positions are required to service the childcare need of the Site's forecasted population.

4.7 Medical Centre

Medical Centre floorspace estimates and associated employment has been estimated using benchmarked LUES floorspace data for medical centre uses in the City of Wanneroo. This analysis yielded a of 0.02 m² per-person floorspace service ratio for medical centre floorspace uses (Figure 24).

Figure 24. Benchmarked Local Government Areas for Medical Centre Floorspace

Benchmarked LGA	Benchmarked Health Specific Floorspace Service Ratio (m ² per person)
City of Wanneroo	0.02 m ²

Source: DPLH 2018, Pracsys 2023

It has been estimated that a minimum of 558m² of medical centre floorspace will be required to service the general medical needs of the estimated population at the Site. Based on benchmarking for medical centre floorspace and employment estimates in the North-West Sub-Region, this quantum of general medical centre floorspace is estimated to employ 22 FTE positions. The medical centre would be appropriate located as part of the higher order activity centre.

4.8 Out-of-Centre Employment

Out-of-centre employment can be categorised as people who are generally employed in Shop-Retail at a location outside of an Activity Centre (i.e. a petrol station, standalone corner store or café, etc.) or

those who may own and operated a home-based business which services the needs of the population (i.e. plumber, electrician, other trades, etc.).

Shop-Retail Employment

To estimate the number of people in out-of-centre Shop-Retail employment activity centres classified as 'Isolated Uses' by LUES were used as a proxy. For accuracy and consistency, benchmarked centres were located in the North-West Sub-Region. Total employment in these various 'Isolated Uses' activity centres were applied to the total employment for all activity centres in the same region to determine an employment appropriate ratio (Figure 25).

Figure 25. Out-of-Centre Shop-Retail Employment

Out-of-Centre Employment Ratio to Total Employment (%)	Estimated Out-of-Centre Employment at the Carabooda Site (FTE)
2.1%	284

Source: DPLH 2018, Pracsys 2023

It is estimated that a total of 284 FTE jobs will be available in out-of-centre Shop-Retail floorspace uses at the Site.

Home-Based Businesses

To determine the number of home-based businesses at the Site, ABS 2021 Census data for businesses who employ no people has been used as a proxy.¹⁵ The proportion of non-employing businesses in the City of Wanneroo to the City of Wanneroo's total population was calculated. This ratio was applied to the Site's estimated population to estimate the number of home-based population-driven jobs at the Site (Figure 26).

Figure 26. Home-Based Population-Driven Employment

Proportion of Non-Employing Businesses to Population – City of Wanneroo (%)	Estimated Population-Driven Employment at the Site (FTE)	Estimated Home-Based Population-Driven Employment (FTE)
4%	7,861	314

Source: ABS 2022, Pracsys 2023

Based on the analysis conducted, it has been estimated that home-based businesses will account for 314 population-driven FTE positions at the Site.

¹⁵ ABS, 2022, <https://www.abs.gov.au/statistics/microdata-tablebuilder/tablebuilder>

5 STRATEGIC EMPLOYMENT

5.1 Summary

A high-level benchmarking analysis identifies that Carabooda is not expected to generate significant strategic employment opportunities within the Site itself (Figure 27). This generates a shortfall of 3,427 jobs relative to the 60% ESS target for strategic jobs at the Site. As outlined in Section 3.1, ESS and Strategic Employment, Carabooda's capacity to deliver strategic employment opportunities is limited by the planning framework and provision of infrastructure.

Figure 27. Strategic Employment Target / Shortfall

Measure	Strategic Jobs
Target (60% ESS)	3,427
Shortfall	3,427

Source: Pracsys 2023

Yanchep and Joondalup are identified as key strategic centres in the North West Sub-Region, and account for less strategic centres such as Carabooda and other new developments. The analysis estimated that residents of Carabooda will have access to 2,210 strategic opportunities in the Sub-Region (Figure 28).

Figure 28. In-Region Strategic Employment Opportunities

Source	Strategic Job Opportunities
Yanchep	330
Alkimos	220
Neerabup	570
Future Inter-modal Hub	280
Other Nodes	810
Total	2,210

Source: Pracsys 2023

Strategic employment available to future residents was based on the distribution of jobs at relevant employment centres and the number of strategic opportunities required to meet the Carabooda population. Employment targets for Yanchep and Alkimos were drawn from the Sub-regional planning frameworks; Neerabup employment was identified from public estimates¹⁶; Bullsbrook Intermodal

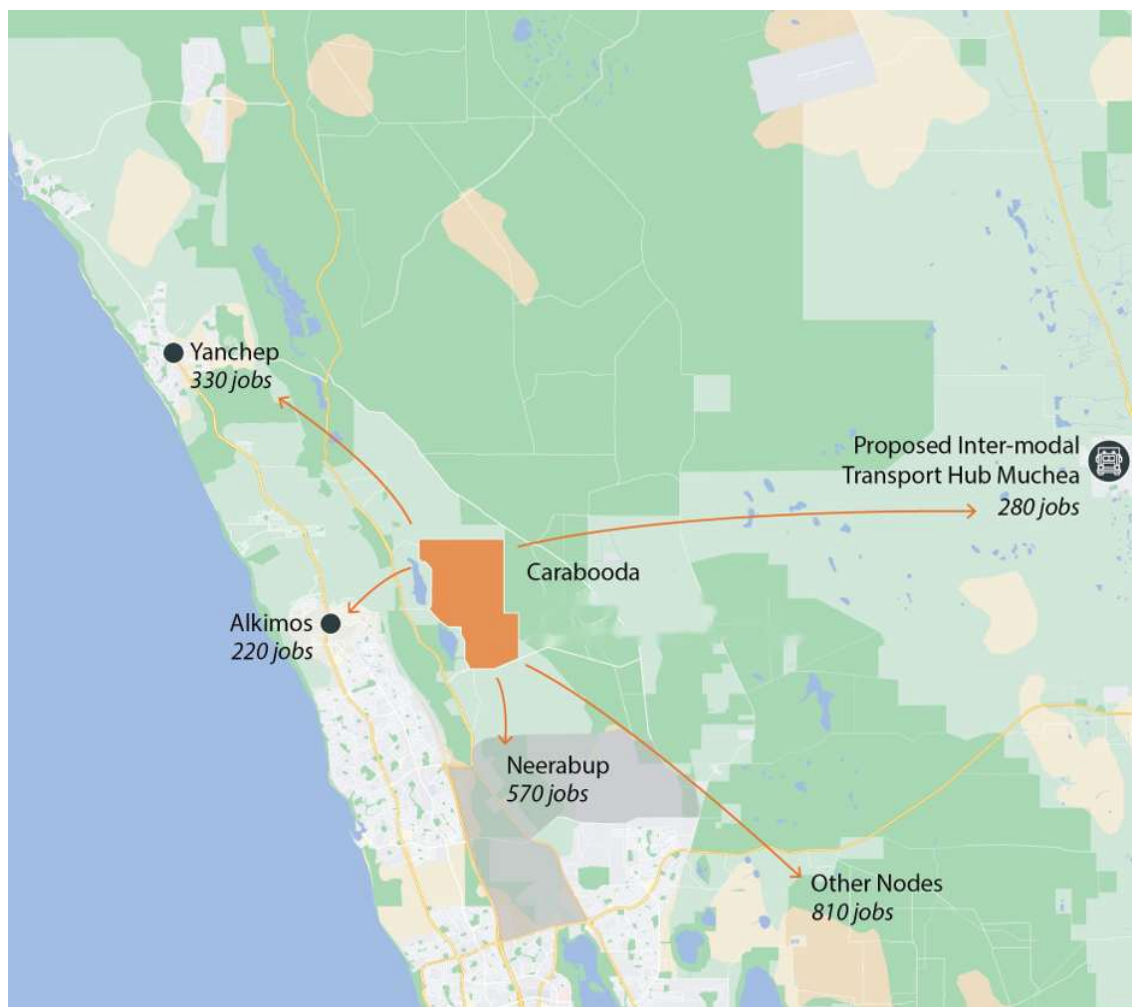
¹⁶ *Innovative one key to Neerabup jobs*, Yanchep News Online, 2018

Terminal Employment was based on work Pracsys did for the City of Swan (Confidential), and other employment nodes were based on high level assumptions of employment based on population growth and current employment centre jobs.

The number of strategic employment jobs required by the Carabooda population was then applied to the distribution of employment to provide a high level estimate of the strategic jobs accessed at each location by future Carabooda residents.

There is a shortfall to the local strategic job target when accounting for sub-regional sources. The shortfall will likely dissipate as existing strategic sources expand, and further strategic opportunities arise in the North West Sub-Region.

Figure 29. Strategic Employment Locations and Estimated Jobs Available to Residents of Carabooda



Source: Pracsys 2023

5.2 Employment Node Profiles

Yanchep Strategic Centre

Yanchep is the nominated Strategic Centre for the northern end of the North-West Sub-Region. The centre's role is to provide a full range of economic and community services necessary for the communities in their catchments and the wider region. Servicing a future regional population of 300,000 to 400,000 residents, Yanchep is intended to provide health, community and social services and opportunities for business agglomeration.

Yanchep Strategic Centre is planned to support approximately 8,280 jobs in the sub-regional planning framework. Based on this concentration of employment, it is estimated that approximately 330 strategic jobs would be filled by Carabooda residents in the long term. This is supported by the notion that as the region's population increases over time an increased provision for services delivered at a Strategic Centre will also rise, supporting the growth of the Yanchep Strategic Centre as a whole. It is expected that a proportion of the workforce associated with the growing Yanchep Strategic Centre will reside within Carabooda given its close proximity.

Alkimos Secondary Centre

Alkimos is an existing Secondary Centre in the North-West Sub-Region. Its purpose shares similar characteristics to that of a Secondary Centres but serve smaller catchments, typically up to 150,000 residents. Given the regions strong population growth forecasts, it is expected that the Alkimos Secondary Centre will grow to accommodate a higher level of strategic employment over time.

Alkimos Secondary Centre is planned to support approximately 5,770 jobs in the sub-regional planning framework. Based on this concentration of employment, it is estimated that approximately 220 strategic jobs would be filled by Carabooda residents in the long term. This result makes sense because Alkimos is in very close proximity to Carabooda, providing residents of Carabooda with strategic employment opportunities at the growing Centre.

Neerabup Industrial Area

The Neerabup Industrial Area (NIA) has been a key strategic priority for the City of Wanneroo for a number of years. The City of Wanneroo and WA State Government own a majority of the land at the NIA, with the site poised to provide long-term economic growth opportunities through job creation. The NIA's site is proximate to existing and proposed major road connections, resulting in a well-position to host an extensive number of strategic and export-oriented enterprises employing thousands of people.

Neerabup industrial area has a notional employment estimate of 20,000 jobs. Based on this concentration of employment it is estimated that 570 strategic jobs would be filled by Carabooda residents in the long term, given the Site's close proximity the NIA.

Future Inter-modal Hubs

A long-term plan that will see the Muchea Industrial Park transform into a strategic industrial hub, generating thousands of jobs over coming years, has been given the green light. Located in the Shire of Chittering and only about 50 kilometres north-east of the Perth CBD, the park is situated at the junction of key arterial roads, connecting it to both the metropolitan area and the State's mining and agricultural districts. The Bullsbrook SIA will form a critical link with Muchea. This precinct is located in Bullsbrook along Northlink Hwy, and will provide the key inter-modal terminal connecting freight and road transport with extensive industrial uses.

Businesses based in these Hubs will benefit from direct access to Western Australia's triple road-train network, creating the capability to service and link the capital's ports and freight networks with the State's North and Mid-West regions. Their locations, and their ability to support heavy vehicle access, means they are well-positioned to suit a range of enterprises, including freight, logistics and agribusiness. Muchea and the Bullsbrook SIA are expected to support up to 40,000 jobs; it was assumed a quarter of these would be relevant to the residents of Carabooda. This results in an estimated 280 Carabooda residents filling strategic jobs between these strategic industrial areas.

Tourism

Carabooda is located along Wanneroo Road, providing access to Indian Ocean Drive to the North. This route is prominent for Grey Nomad's passing through the region on their travels.

The Rural Way proposed by the City of Wanneroo would see a tourist drive on Wanneroo Road, Gibbs Road, Karoborup Road, Carabooda Road and Old Yanchep Road and the lakes system, both in Nowergup Lake and Yanchep Park. The Rural Way is focussed on preserving and protecting the rural character of the region; supporting continuous development of agriculture, economic growth and appropriate tourism services; and promoting the marketing and development of partnerships within the community and tourism.

The Rural Way will connect natural and heritage attractions on the east side of Wanneroo Road. With a network of driving, walking and cycling trails, the Rural Way would offer several styles of accommodation, natural products including local produce, wineries, distilleries, arts and family-based

attractions and activities. The Carabooda Site is positioned well to capture a sizeable proportion of potential visitors to and along the Rural Way.