

APPENDIX 6

Land Economics Report (Pracsys)



Stockland

North-east Baldivis

Land Economics Report

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1 INTRODUCTION

This report has been developed to provide inputs into the planned North East Baldivis District Structure Plan (DSP). The inputs to the DSP include:

- Estimating the need for retail floorspace at the development
- Estimated employment from the construction and operation of population driven land uses.
- Estimate employment opportunities surrounding the North-east Baldivis development site currently, and in the future
- Employment generation within the North-east Baldivis development site, using traditional and curated development strategies and the implications on economic development outcomes over time.

These inputs:

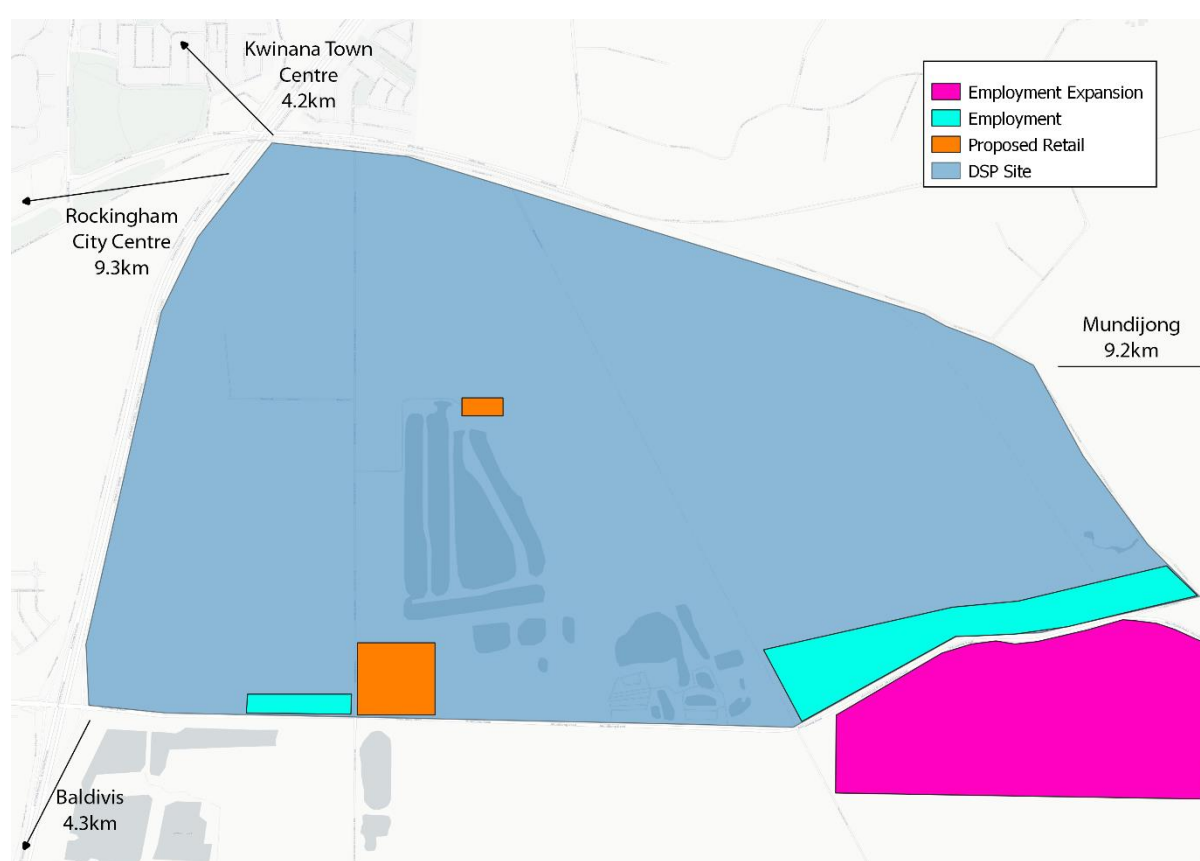
- Provide an understanding of supportable employment at the North-east Baldivis Site
- Provide an understanding of future employment around the North-east Baldivis Site
- Identify different development pathways to achieve employment opportunities on site
- Provide an understanding of the potential positive contribution to the City of Rockingham's economic base
- identify the level of retail floorspace required to support the household needs of new population.

2 RETAIL NEEDS ASSESSMENT

2.1 Development Context

Located in the South Metropolitan Sub-region of Perth, the site is in between the Kwinana and Baldivis Town Centres (approximately 4km from each), bordering the east side of Kwinana Freeway. The residential population of the surrounding area is expected to increase significantly, with the population of Baldivis alone set to almost double between 2021 to 2031. The City of Rockingham and City of Kwinana Local Government areas have both approved substantial developments, most notably in the corridor between Baldivis Road and Kwinana Freeway, adjacent to the DSP area.

Figure 1. Subject Site Context



Source: Google Maps 2022, Pracsys 2023

Proposed Development

The DSP is planned to include 6,000 residential dwellings and two activity centre sites have been identified to support the residential population. One site is planned to support a local centre and the other a neighbourhood centre (Figure 1). At an estimate of 3 persons per dwelling, the expected on site population is approximately 18,000 people.

Figure 2. Proposed Activity Nodes

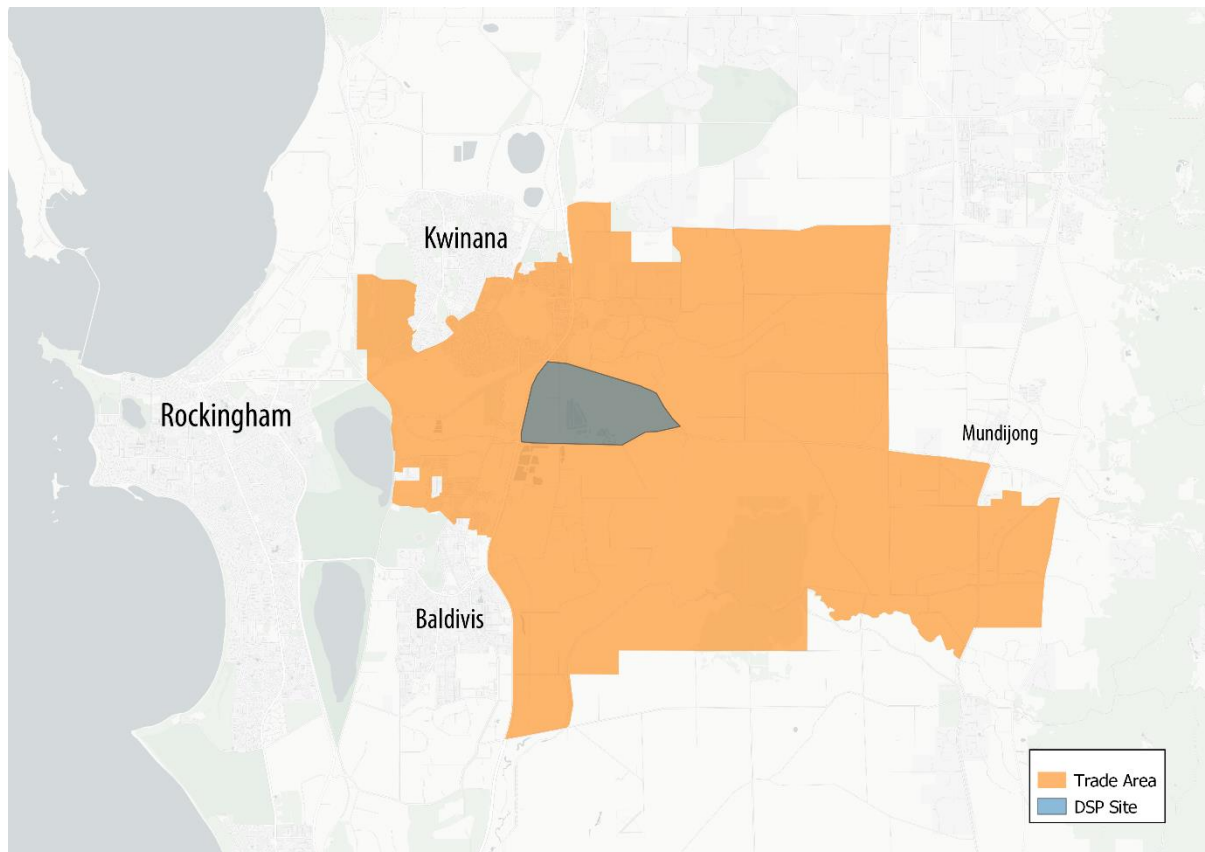
Node Type	Concept Plan Size (ha)
Local Centre (LSP 4)	2.0
Neighbourhood Centre (LSP 1)	7.0
Employment West (LSP 1)	4.0
Employment East (LSP 3)	17.4
Employment Expansion Area	361.7

Source: Stockland 2022

Trade Area Definition

A trade area is the spatial boundary from which an activity centre generates most of its customers. The trade area definition allows for the measurement of the number of potential customers, their demographics and expenditure potential, as well as an assessment of the competitive environment.

The neighbourhood centre being the larger of the two has been used to define the trade area. Draft SPP 4.2 states that neighbourhood centres provide for the day to day and some weekly needs of local communities, playing an important role in the activity centre hierarchy by providing walkable access to services and facilities for local communities. The modelled trade area of the prospective centre is comprised of a five-kilometre catchment area. The five-kilometre catchment is used in the gravity model and ensures that all centres which could reasonably influence the viability of the prospective centre are included in the needs assessment (Figure 3). All retail floorspace demand and supply within the trade area is included in the modelling.

Figure 3. Modelled Trade Area of Prospective Development¹


Source: Google Maps 2022, Pracsys 2022

The modelled trade area consists of primarily the Bertram and Wellard areas, while also including parts of Mundijong, Casuarina, Wandi and Baldvis. The supply catchment extends up to five kilometres from the centre and includes numerous local and neighbourhood centres, both established and planned, while also including the Baldvis and Kwinana Town Centres which are beyond the catchment but represent important retail centres in the region.

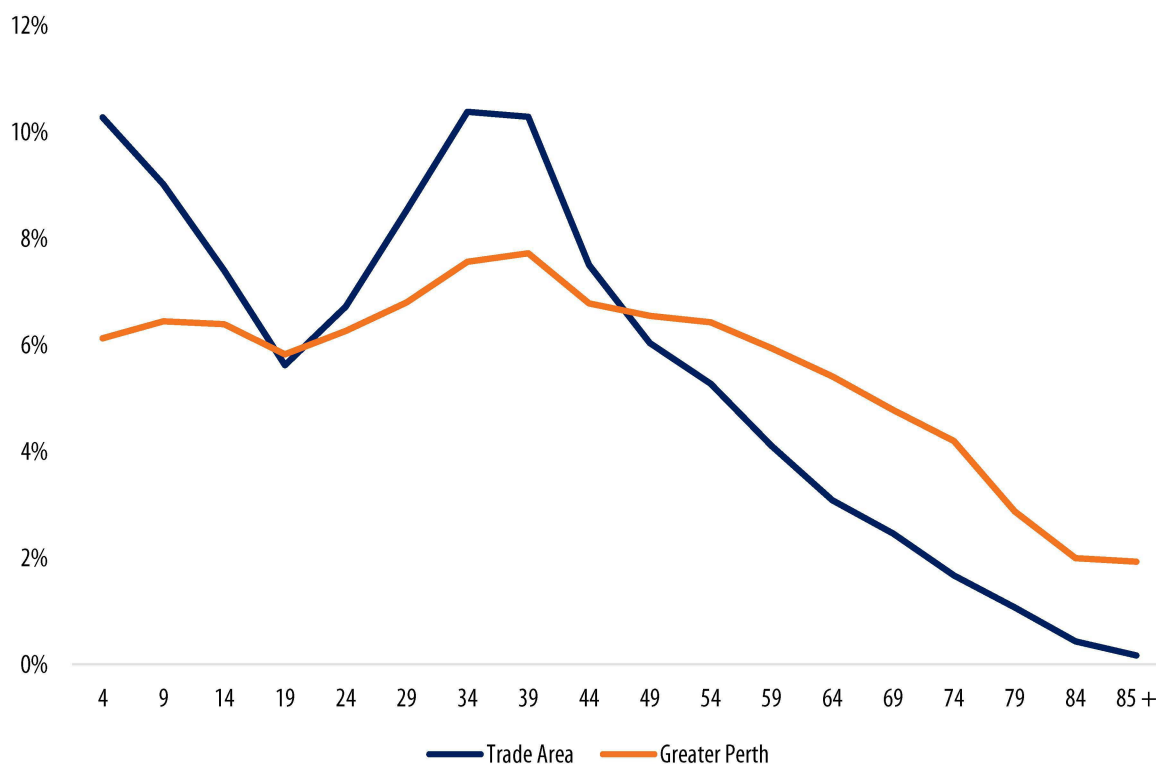
2.2 Retail Demand

Age Profile

The trade area exhibits a relatively different demographic profile to the Greater Perth benchmark (Figure 4). There are a higher proportion of 0–14-year-old children and adults aged 24-44, common for areas that have significant greenfield developments. A high proportion of young families with a concentration of work-age adults indicates will likely create additional demand for convenience retail (i.e. groceries) and other activity centre uses such as childcare.

¹ The trade area extends farther to the east due to the shape of ABS spatial areas. The inclusion of the Mundijong Shopping Centre accounts for any additional dwellings / expenditure.

Figure 4. Trade Area Demographic Profile



Source: ABS 2021, Pracsys 2022

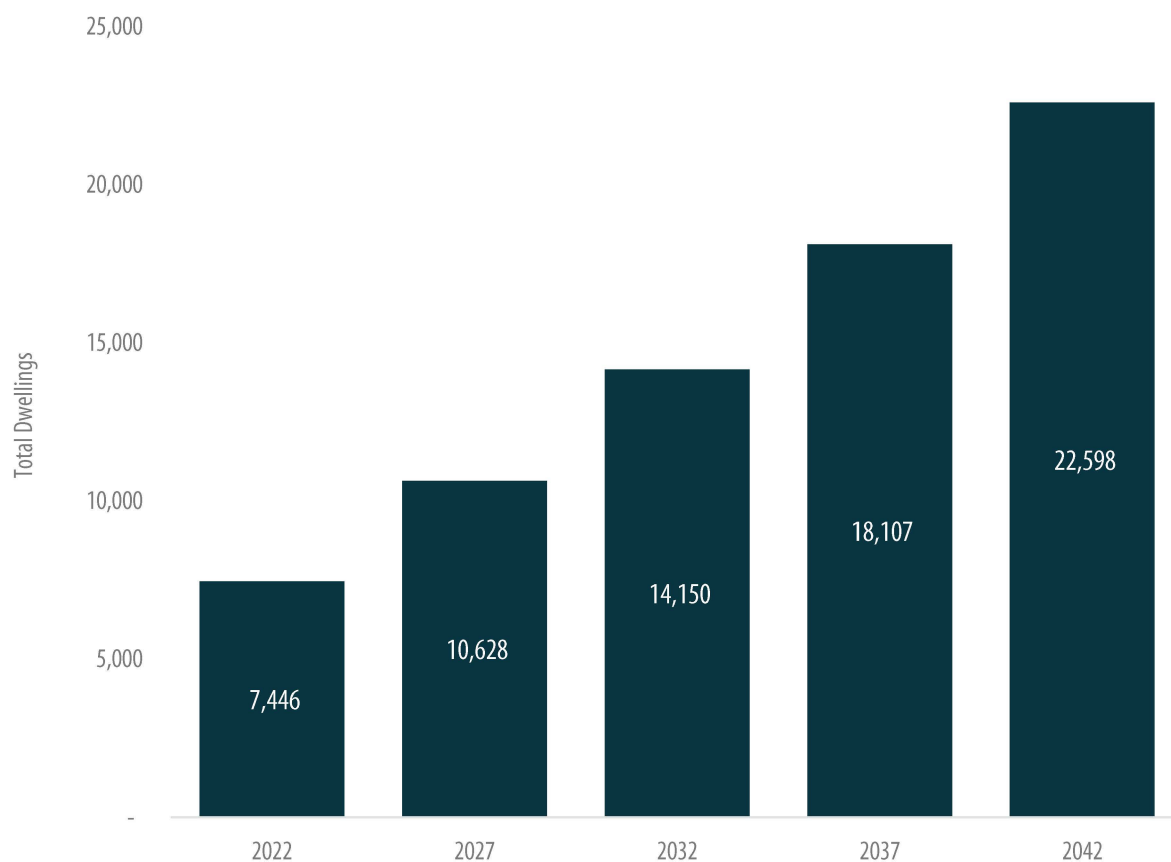
Trade Area Dwellings

The trade area of the proposed development is estimated to contain 7,446 dwellings in 2022 (Figure 5²). Based on dwelling growth forecasts, the number of dwellings in the trade area is expected to grow to 14,150 by 2032, reflecting a forecast increase in dwellings of 43 per cent. By 2037, the number of dwellings in the trade area is projected to reach 18,107, reflecting a 90 per cent increase from the current level. By 2042 the number of dwellings is predicted to triple, growing to 22,598 dwellings. This level of population growth will create significant demand for shop retail uses and will reduce the potential impact of new activity centres on the existing activity centre network.

² The ABS Census 2016 dwelling count by SA1 areas was used to estimate the 2016 number of dwellings in the catchment. WA Tomorrow population projections (median band) were used to forecast dwellings beyond 2016 (Department of Planning, Lands and Heritage 2018).



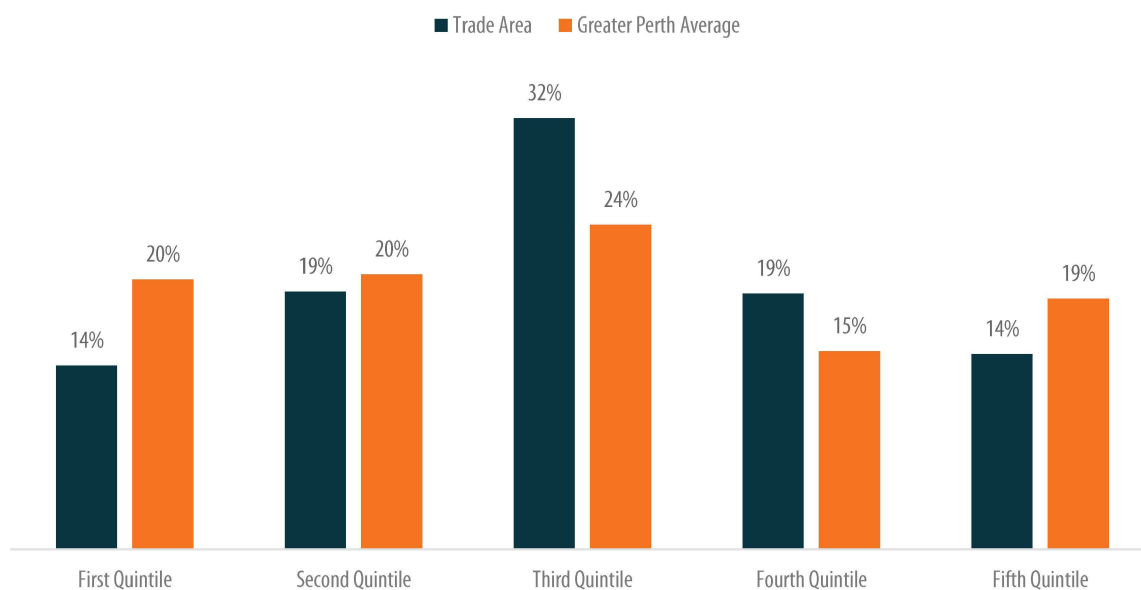
Figure 5. Trade Area Dwelling Growth Forecast



Source: ABS 2021, DPLH WA Tomorrow 2018, Pracsys 2022

Trade Area Income

Trade area income demographics play an important role in the success of retail developments, as the level of spending on retail goods and services is primarily determined by household income. Generally, lower income quintiles spend a higher proportion of their income on basic goods and services; upper income quintiles have more disposable income available to spend on non-essential retail items. ABS Census data has been used to assess the distribution of household income within the trade area (Figure 6). Figure 6. Trade Area Population Weekly Income Profile).

Figure 6. Trade Area Population Weekly Income Profile

ABS 2021, Pracsys 2022

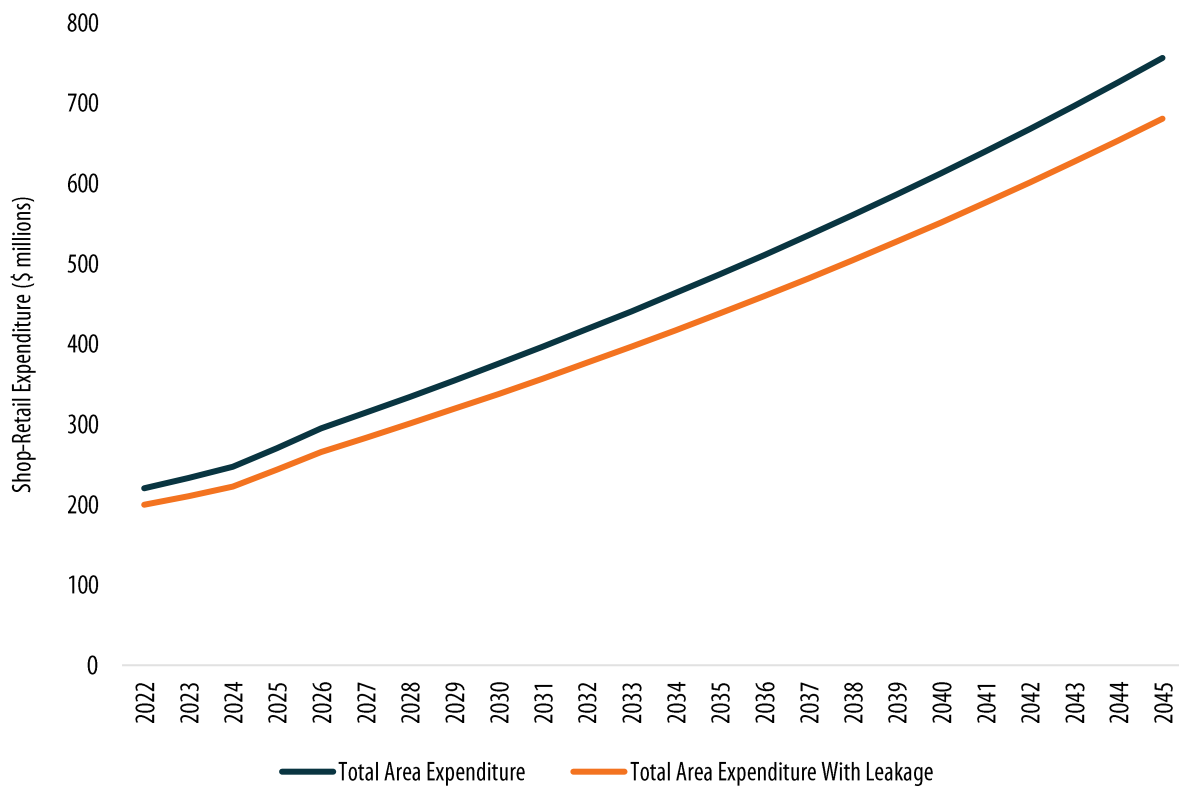
Incomes in the trade area deviate from the Greater Perth benchmark across the five quintiles, with the most significant difference being a lower proportion of households in the first quintile (14% versus 20%) and greater representation in the third quintile (32% versus 24%), and a higher proportion of households in the fourth quintile (19% versus 15%) and lower in the fifth quintile (14% vs 19%). Overall, the income breakdown indicates that residents of the Study Area have an average household income very close to that of the Greater Perth area, however the level of discretionary spending will likely be lower given the number of young families which may reduce the level of goods and service provisions that can be supported.

Retail Expenditure

ABS Household Expenditure Survey data was used to estimate the average spend per household by income quintile, from which the total expenditure pool of the catchment has been derived. The model combines propensity to spend on commodities based on household income quintiles to derive the total Shop/Retail expenditure in the area. Given projected household growth, Shop/Retail expenditure is estimated to increase from \$220 million in 2022 to \$418 million in 2032, reflecting growth of 90 per cent. By 2037, trade area shop-retail expenditure is predicted to reach \$577 million – an increase of 162 per cent from current levels. The significant increase in Trade Area expenditure reflects the immense growth in residential dwellings in the Trade Area. Some of this turnover is projected to be lost to online leakage; however, this is expected to be less prominent with respect to convenience retail than other types, such as comparison retailing. The effect of online leakage on the viability of the proposed development is expected to be minimal (Figure 7).



Figure 7. Trade Area Shop/Retail Expenditure Pool, 2022 to 2045



ABS Census 2021, Pracsys 2022

2.3 Retail Supply

Data Sources

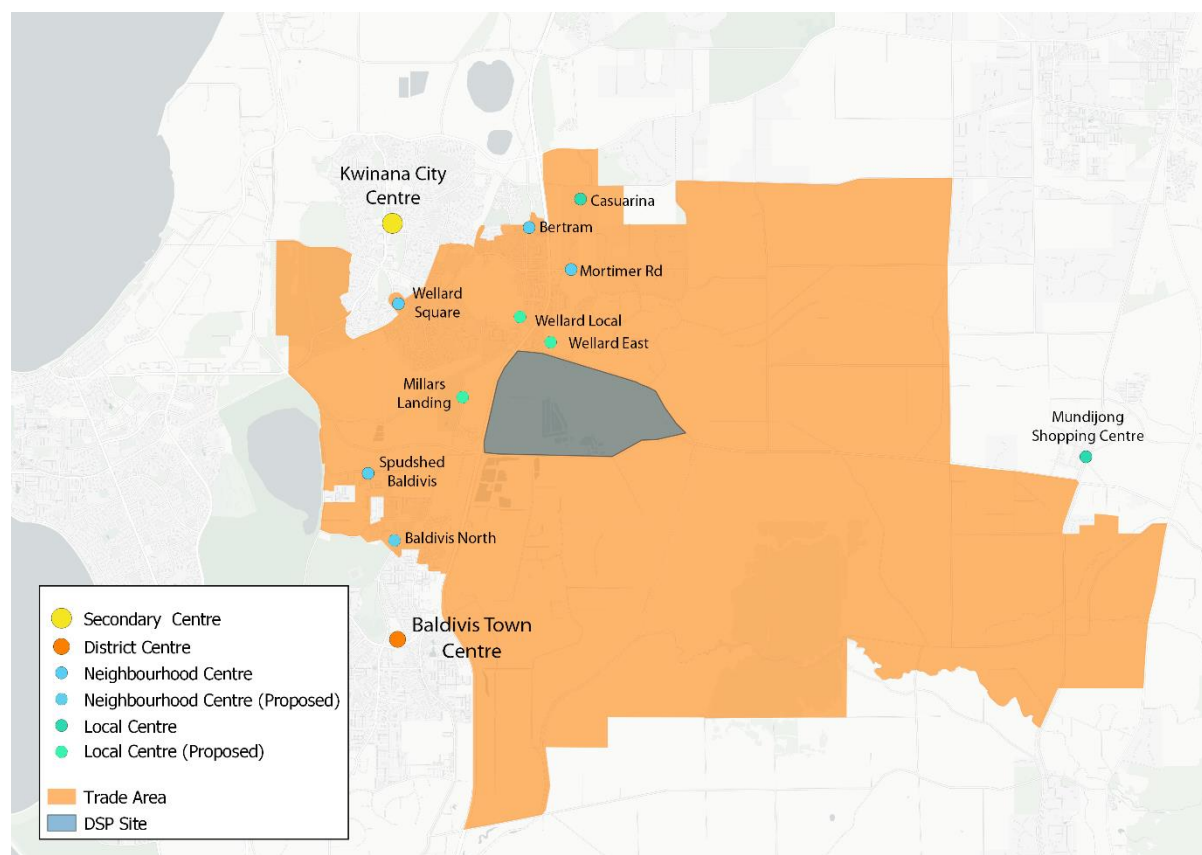
This section provides an overview of the competitive environment facing the proposed development. The local centre is likely to face less competition from surrounding centres than the neighbourhood centre.

Existing retail floorspace supply within the trade area has been derived through data from multiple sources, including:

- The Department of Planning Land Use Survey (2015/17)
- Property Council Shopping Centre Directory (2018)
- Secondary Research (various structure plans, property manager websites, etc.)

A total of 13 developments containing Shop/Retail floorspace within five kilometres of the proposed development were included in the analysis to ensure a comprehensive assessment of current retail supply. A selection of centres within the supply network are illustrated below (Figure 8. Trade Area Retail Current & Future Supply). Most centres within the 5km trade area are neighbourhood and local centres that provide for daily and weekly household shopping needs. As indicated above, the Kwinana City Centre (secondary centre) and Baldivis Town Centre (district centre) have been included in the analysis.

Figure 8. Trade Area Retail Current & Future Supply



Source: DPLH Land Use and Employment Survey 2015/17, Google Maps 2022, Pracsys 2022

The current Shop/Retail offering within the 5km trade area and surrounds has been estimated at 78,721m² in 2022 (Figure 8).

Figure 9. Trade Area Shop-Retail Floorspace Supply 2022

Centre	Shop-Retail Floorspace (m ²)
Baldvis Town Centre	29,435
Casuarina	896
Kwinana City Centre	26,421
Spudshed Baldvis	5,500
Wellard Square	6,500
Mundijong Shopping Centre	1,445
Total Floorspace	78,721

Source: DPLH Land Use and Employment Survey 2015/17

Expansion and Planned Developments

There has been an increase in the number and scale of planned retail expansions since the State government has relaxed its restrictions on retail floorspace development in 2010. A desktop analysis and review of planning documentation within the City of Rockingham and City of Kwinana was undertaken to identify any planned future Shop-Retail floorspace developments within the trade area and surrounds. This review identified four future retail developments in the region (Figure 10), Millars Landing, Wellard Local Centre, Wellard East and Mortimer Road all of which represent 10,576m² of floorspace by 2027. Accounting for the expansion of all centres current and future, in 2042 there is estimated to be an additional 76,315m² of retail floorspace in the trade area. Most of this expansion is expected to come from growth of the Baldivis Town Centre and Kwinana City Centre, in addition to the local and neighbourhood centre's that will continue to develop as residential development construction matures.

The additional floorspace in these centres is based on work that Pracsys has undertaken for the Cities of Rockingham and Kwinana; the specific centre sizes have not been published yet.

Figure 10. Future Trade Area Shop-Retail Floorspace Supply 2027-2042

Centre	2027 (m ²)	2032 (m ²)	2037 (m ²)	2042 (m ²)
Total Floorspace	102,281	116,657	136,558	156,739

Source: DPLH Land Use and Employment Survey 2015/17, Pracsys 2022

2.4 Needs Assessment

A needs assessment was undertaken to understand the demand for the proposed development. A needs assessment should consider the potential expenditure available to the proposed development from all relevant user groups when assessing the potential need for and viability of proposed uses. The needs assessment tests the quantum of retail that is viable at both sites over time.

Key Assumptions

- Residential development will begin development in 2025, with retail sites being established in the first year in the locations referenced in Section 2.1 Development Context
- 300 residential lots will be sold each year starting in 2025, assuming all 6,000 lots are sold by the end of 2045.
- The Local Centre (LC) can be developed up to 1,500m², and will be developed after the first stage of the Neighbourhood Centre (NC).
- The Stage 1 NC, developed in 2027, can reach up to 4,000m² in Shop/Retail floorspace
- The Stage 2 NC can reach up to 10,000m² in Shop/Retail floorspace and its viability is tested after the stage 1 is viable until 2042. Given its frontage on Mundijong Road and strategic importance to the Employment Strategy, the stage 2 Neighbourhood Centre is expected to be developed at the earliest viable timeframe to improve likelihood of success for the employment strategy.

- Population and spending growth as detailed in Section 2.2 Retail Demand
- The competitive environment is assumed to be as stated in Section 2.3 Retail Supply

Model Calibration

The gravity model estimates of centre turnovers were calibrated against known turnover data. Once a model has been calibrated using known inputs for a base year to match known data from the real world, the model can be reliably used to forecast retail demand.

Figure 11. Retail Centre Productivity Benchmarks

Centre	Turnover per annum (\$)	Notes
Kwinana City Centre	\$150 million	This was the turnover in 2015, it was escalated to \$2022 and increased to account for Shop/Retail uses in the wider City Centre. The total was then adjusted to account for the share of turnover that would come from the identified trade area.
Baldivis Town Centre	\$270 million	This was the turnover in 2022 (YoY September). The total was then adjusted to account for the share of turnover that would come from the identified trade area.

Sources: SCA Property Group 2015, Stockland 2022

Where published data was not available, a scan for outliers (centres where the gravity model may have distributed too much or too little expenditure) was undertaken. Turnover productivity levels were applied in these cases based on benchmarked productivity averages (Figure 12).

Figure 12. Productivity Benchmarks

Retail Category	Productivity (\$/m ²) ³
Take Home Food	10,749
Take Home Liquor	9,674
Dine Out Food	6,987
Clothing/Footwear	5,374
Convenience Retail	7,524
Bulky Goods Retail	5,912

Source: Colliers 2017, Pracsys 2022

Needs Assessment Results

The analysis uses a gravity model to allocate expenditure to the proposed development (see Appendix 1: Gravity Modelling Methodology). The resulting productivity is reflective of the proposed development's attractiveness within the Trade Area based on its size, distance from dwellings and locational factors affecting the proposed site. A benchmark for local and neighbourhood benchmark viability has been developed using the Property Council Shopping Centre Directory; a viable level of productivity for local and neighbourhood centres is above \$8,100m².⁵ This is compared to the gravity model results of the proposed centres to understand if a floorspace quantum is viable at a given time point.

The needs assessment has been conducted in 2027, 2032 & 2042 to allow sufficient residential development occur, generating retail demand at the subject site. Subsequent assessments have been made at points in-between to understand when centres achieve viability.

The results of the assessment show the following (Figure 13).

- Stage 1 NC of 4,000 m² will be viable in 2028, expected productivity of \$8,286m²
- Local Centre is viable at 1,500m² in 2029 at \$8,509 m²
- Stage 2 NC of 10,000 m² by 2034 at expected productivity of \$8,160m²

Figure 13. Proposed Development Productivity Estimates

Centre	Estimated Productivity - 2027 (\$/m ²)	Estimated Productivity - 2032 (\$/m ²)	Estimated Productivity - 2042 (\$/m ²)
Local Centre (LC)		8,510	9,192
Neighbourhood Centre (NC)	7,014	8,807 ⁶	11,579

Source: Pracsys 2023

Although the Stage 1 Neighbourhood Centre is not viable in the first year of its establishment, it is probable that there will be additional retail demand from the adjacent land use of the Trade and Port Innovation Hub. Derived from both the workers and business owners, and students that are expected to use those facilities. Additionally, there will be retail demand from workers active on site.

While the predicted turnover level in 2042 is higher than the identified viable benchmark level, it should be noted that there are likely to be other new centres that are proposed / developed (in addition to those that are planned for) that will absorb some of the turnover. This means that even with some unknown development, the proposed uses are likely to be viable. The provision of local and neighbourhood scale retail floorspace within a residential development aligns with draft SPP4.2 objectives of providing residential development within a walkable catchment of activity centre uses. It will also contribute to reduced

⁵ This would reflect a viable local centre with approximately 700m² Take Home Food (supermarket), 200m² Dining Out Food, and 600m² clothing/specialty retail. Should turnover levels be higher for a local centre, it would reflect the potential for a greater proportion of floorspace to be Take Home Food orientated

⁶ This productivity is based on the stage 1 NC



congestion as residents will only need to drive for some weekly and/or comparison-shopping requirements. This is particularly important given the separation of the development from most current activity centres with the Freeway to the east and the freight railway to the north.

3 CONSTRUCTION STAGE IMPACT

The construction impact of developing the Project has been assessed using ABS National Input-Output tables at an Input-Output Industry Group (IOIG) level.¹³ The methodology involves estimating the total direct and indirect employment and output arising from the Project.

3.1 Input-Output Tables Methodology

Input-Output tables provide information about supply and disposition of commodities in the Australian economy as well as the structure and inter-relationships between industries.¹⁴ The National Input-Output tables were used to derive total multipliers, which consider the total supply-chain of goods and services for the activity in question. Impact multipliers were calculated for employment and output. The obtained multipliers were then combined with annual construction expenditure data to estimate the direct and indirect economic effect of the Project on the economy. It is noted that this method has been applied for the quantification of indirect impacts only, as does not affect the Project BCR.

3.2 Assumptions and Limitations

The following assumptions and limitations apply to the model:

- Results of the model represent the gross impacts in the absence of capacity constraints
- National Input-Output table approximates the actual patterns of linkages between industries in the regional economy
- Analysis assumes that the industrial structure of the economy is fixed. Considering the scale of the Project, it is likely that this assumption stays true
- Estimates the employment impact based on the average output per Full Time Equivalent (FTE) employee. It is likely a significant component of the impact will result in an increase in the number of hours worked by existing employees, with some additional employment created

¹³ Industry grouping used by the ABS for constructing National Input-Output Tables

¹⁴ Master Reference 10: ABS, 1995, *Australian National Accounts: Introduction to Input-Output Multipliers, Information paper*

3.3 Construction Output Impact

The economic impact of constructing the 1,500 m² Local Centre, and 10,000 m² Neighbourhood Centre on the Wellard Site are based on the estimated construction costs of \$3.1 million and \$7.9 million respectively (total price excluding contingency).¹⁵ This expenditure was applied to the appropriate industry sector based on the breakdown of costs by construction activity (Figure 14 **Error! Reference source not found.**).

Figure 14. Construction Type and Corresponding Industry (Local and Neighbourhood Centre)

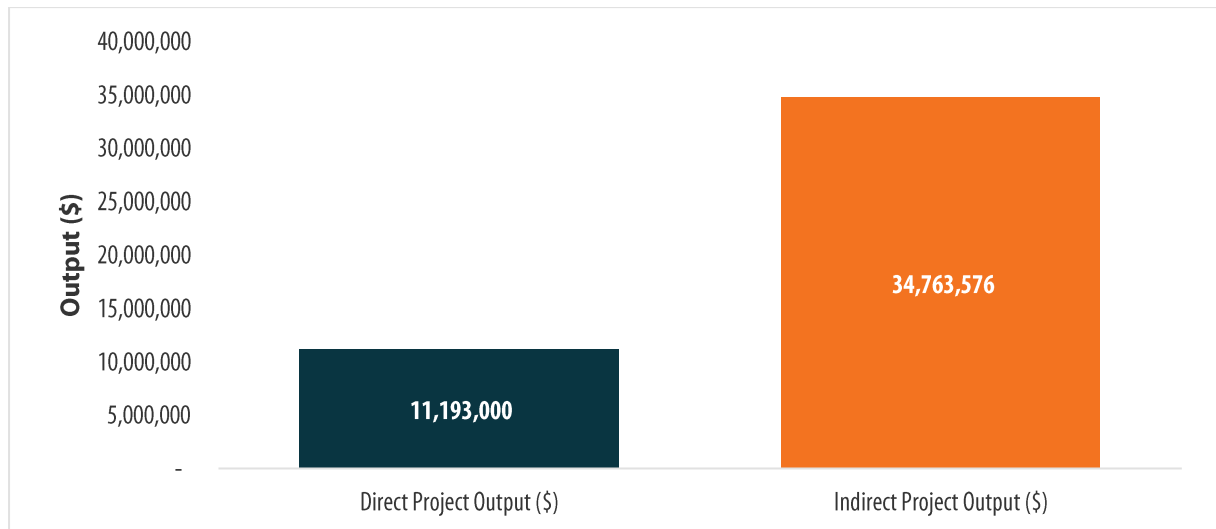
Construction Type	Industry
Preliminaries	Professional, Scientific & Technical Services
External Services	Heavy and Civil Engineering Construction
Substructure	Heavy and Civil Engineering Construction
Columns	Non-Residential Building Construction
Roof	Non-Residential Building Construction
External windows	Non-Residential Building Construction
Internal Walls	Non-Residential Building Construction
Internal Doors	Non-Residential Building Construction
Wall	Construction Services
Floor	Construction Services
Fitments	Construction Services
Mechanical	Construction Services
Ceiling	Construction Services
Plumbing	Construction Services
Fire	Construction Services
Electrical	Construction Services
Design Contingency	Professional, Scientific & Technical Services

Source: Pracsys 2023

The combined construction of these activity centre's will directly inject approximately \$11.1 million into the local economy. This construction expenditure will stimulate an additional \$34.7 million of output indirectly, generating a total output of \$ 46 million (Figure 15). This large multiplying effect on total output is indicative of the significant amount of industry-to-industry inputs within the construction sector e.g. purchasing of materials that must be manufactured within Australia.

¹⁵ Capital costs excluding contingency

Figure 15. Construction Output Impact

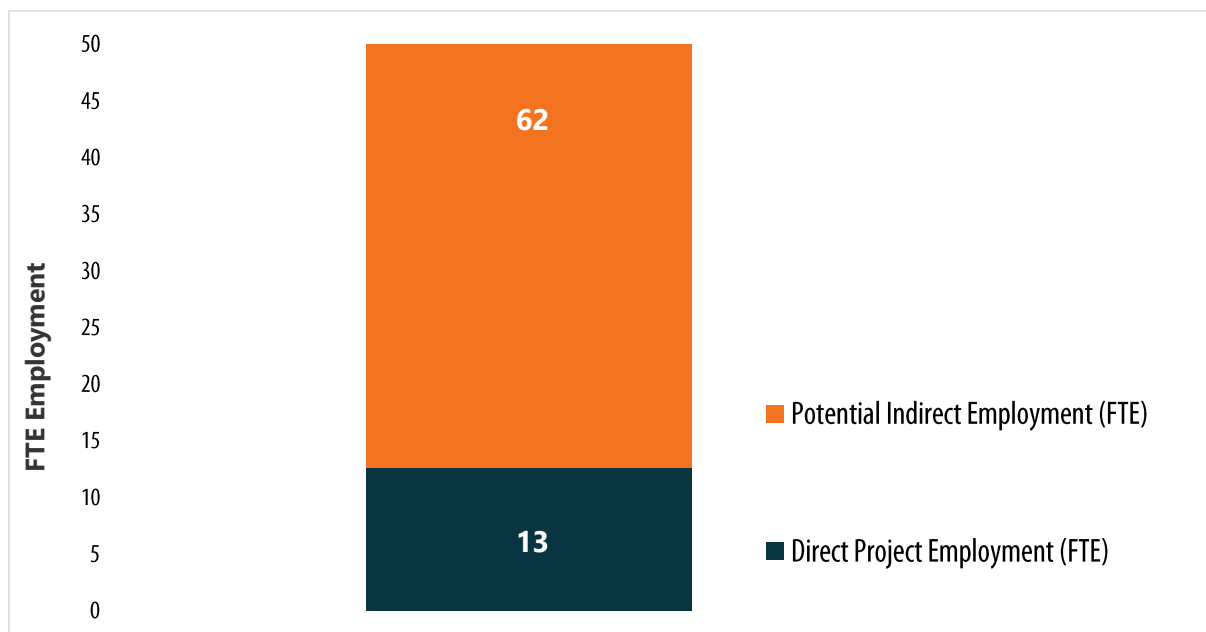


Source: Pracsys 2023

3.4 Construction Employment Impact

Employment generation associated with the Project has been estimated through national average output per Full-Time Equivalent (FTE) estimates in relevant industries (Figure 16).

Figure 16. Number of FTE Employees over Project Period



Source: ABS I-O Tables (2012-13); Pracsys 2023

The Project is expected to create 13 direct FTE employment opportunities in the local area during the construction period. The Project will also stimulate 62 indirect FTE employment opportunities in the broader economy, for a total impact of 75 FTE employment opportunities.

4 SURROUNDING AREA EMPLOYMENT CONTEXT

The current Precinct plan indicates a dwelling yield of 6,000, which would indicate an aspirational employment goal of around 12,000¹⁶ to satisfying the expected participating workforce of expected residents at the development. Although it would not be expected for all participating workforce to have their employment desires satisfied, it provides a lens to understand the need for employment at and around the development site. In this section, the existing and future employment context of the the South Metropolitan and Peel sub region (SMP) is considered. The South Metropolitan and Peel sub region (SMP) sub-region is home to a high proportion of specialised and heavy industrial areas within the Greater Perth region. Many of these industrial areas are set to expand or are yet to be developed, including the Indian Ocean Gateway in the Cities of Kwinana/Rockingham and Peel Business Park in the Shire of Murray.

4.1 Current Employment

In the Southwest Metro region, as of 2021 Census data, there were 209,573 jobs in any employment type. The top 5 Industries of employment, from largest to smallest, include the following.

Rank	Industry (Anzic Level 1)	Employment
1	Health Care and Social Assistance	31,281
2	Education and Training	21,023
3	Construction	19,522
4	Retail Trade	19,255
5	Professional, Scientific and Technical Services	15,637

Source: ABS 2021

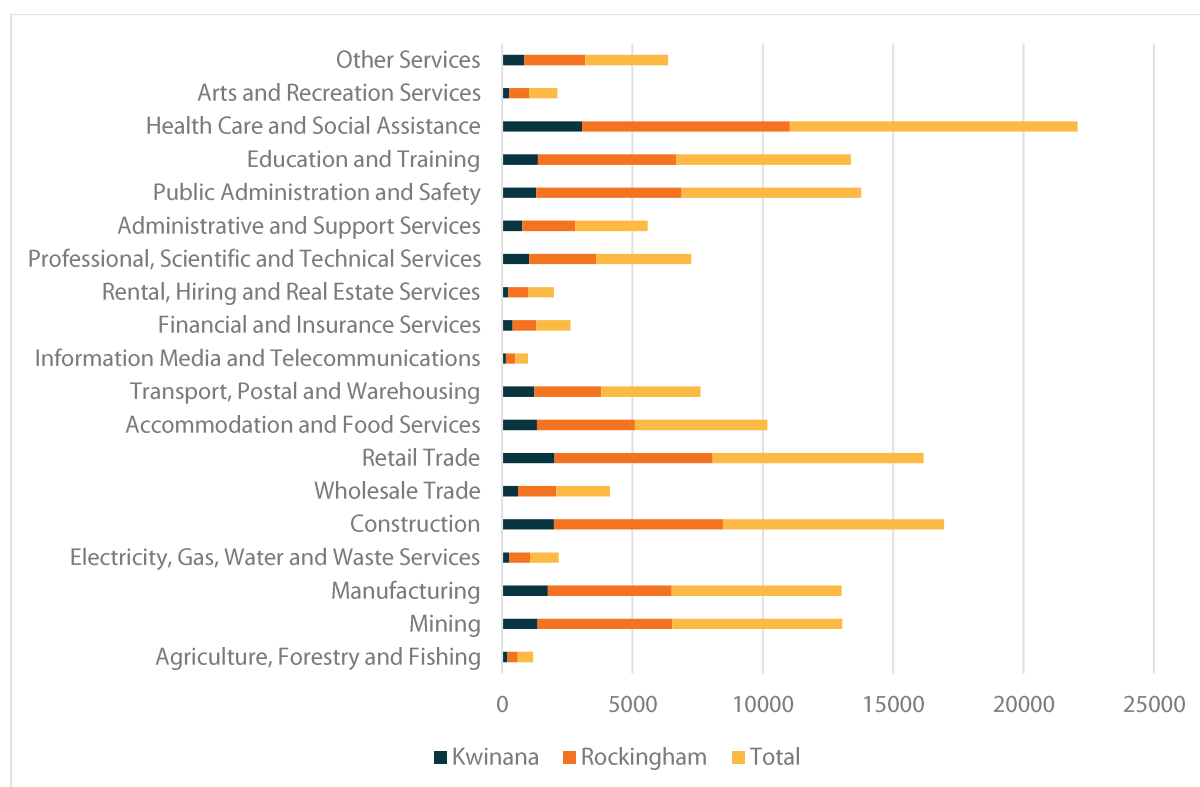
As a subsection of this region, there are 20,236 jobs in Kwinana and 80,308 in Rockingham, as defined by the statistical areas. The top 10 Industries of employment, from largest to smallest, include the following. A full breakdown of employment by industry can be found in Figure 17.

Rank	Industry (Anzic Level 1)	Employment
1	Health Care and Social Assistance	11,033
2	Construction	8,474
3	Retail Trade	8,081
4	Public Administration and Safety	6,886
5	Education and Training	6,690
6	Mining	6,527
7	Manufacturing	6,510
8	Accommodation and Food Services	5,090
9	Transport, Postal and Warehousing	3,802
10	Professional, Scientific and Technical Services	3,626

Source: ABS 2021

¹⁶ Based on a workforce participation rate of 68%, based on the 2021 ABS data for the South West Metro area

Figure 17. Rockingham and Kwinana Industry of Employment Breakdown (All Types)



Source: ABS 2021

4.2 Future Employment

The development of the North-East Baldvis site will situate people in close proximity to the Rockingham City Strategic Metropolitan Centre, in addition to significant new employment opportunities in industrial estates, including Global Advanced Industries Hub, Peel Business Park, and Mundijong Industrial Area and Intermodal Terminal. In summary, there is an expected 32,000 to 53,200 FTE jobs to be generated in the area within the next 10-20 years. This indicates that there will be substantial employment opportunities nearby for residents living at the North-East Baldvis site, outside of population driven uses within its own centre, and in surrounding centres.

Figure 18. Future Employment Opportunities

Strategic Employment Opportunity	Future Employment Opportunities (FTE)
Global Advanced Industries Hub	15,000
Mundijong Industrial Area and Intermodal Terminal	3,200
Peel Business Park	14,000 – 35,000
Total Employment Opportunities	32,200 – 53,200

Western Trade Coast

Currently the Western Trade Coast is an active industrial precinct covering 3,900 hectares from Munster to Rockingham. It consists of 4 key areas the Kwinana Industrial Area, Rockingham Industry Zone, Australian Marine Complex and Latitude 32. The Western Trade Coast has been outlined by the State government as a crucial aspect of its diversify WA strategy, become even more significant with the progress of Westport, the Government's future port located in Kwinana, and its role in unlocking further industrial development and technological innovation in the region.

Targeted Growth Industries include.

1. Renewable hydrogen
2. Future facing minerals processing.
3. Shipbuilding and sustainment

Although no recent employment projections have been published, the Western Trade Coast has already developed from 13,757¹⁷ direct FTE jobs in 2010/11 to 22,336 FTE in 2021/22¹⁸. Future employment figures based on Indian Ocean Gateway estimates which indicate potential direct employment of over 37,000, resulting in approximately 15,000 additional future employment opportunities.¹⁹

Peel Business Park has been identified as a future agri-precinct with significant employment that will provide essential food processing and manufacturing services for the Peel Food Zone. The employment ranges provided are from a Pracsys scenario assessment prepared as part of the Transform Peel Business case. The scenarios provide minimum and maximum employment ranges. This largely aligns with the current figure of 33,000 jobs provided by the Peel Development Commission for all Transform Peel project, large part of which is the Peel Business Park.²⁰

Mundijong Intermodal Terminal is set to be an industrial area with strategic access to both road and rail infrastructure, a key access point for resources from the south of the state. The employment estimate was derived using an employment to land ratio from a benchmarked industrial area that will have an intermodal terminal, which is mentioned in Perth and Peel Economic Development Strategy and infrastructure Plan 2050. The industrial area surrounding the terminal is estimated at 480 ha and the benchmarked ratio is approximately seven employees per hectare. This equates to an employment estimate of 3,200.²¹

¹⁷Page xi, https://kic.org.au/wp-content/uploads/2020/02/Western-Trade-Coast-Integrated-Assessment-Environmental-Social-and-Economic-Impact_RS_September-2014.pdf

¹⁸ Page 26-27, <https://www.wa.gov.au/government/publications/western-trade-coast-economic-review-of-the-region>

¹⁹ Current employment estimate 11,000, Western Trade Coast Industries Committee 2014, 'Integrated Assessment: Environmental, Social and Economic Impact'. Available at:

<https://www.landcorp.com.au/Documents/Projects/Industrial/Western%20Trade%20Coast/Western-Trade-Coast-Integrated-Assessment.pdf>

Future employment estimate 37,000, Indian Ocean Gateway 2015, 'Indian Ocean Gateway; The Benefits'. Available at: https://indianoceangateway.com.au/files/Indian_Ocean_Gateway_-_The_benefits.pdf

²⁰ Peel Development Commission 2016, Available at: <http://www.peel.wa.gov.au/game-changer-project-to-transform-peel/>. Supplemented by internal figures developed by Pracsys for the Transform Peel Business Cases.

²¹ 480 ha, Shire of Serpentine Jarrahdale 2015, Available at:

<http://www.sjshire.wa.gov.au/assets/Uploads/OCM/OCM-2015/OCM189.2.09.15.pdf>



4.3 Conclusion

A wide range of population-driven and strategic employment opportunities are in close proximity to the potential North-east Baldvis site would contribute to greater living affordability and livability for future residents.

Benchmark employment per ha based on Bullsbrook estimate, RDA Perth 2015. Available at: <https://www.rdaperth.org/wp-content/uploads/2015/08/DRIVING-CHANGE.pdf>

5 POPULATION DRIVEN EMPLOYMENT

To achieve the high-level of liveability residents will require access to shop-retail offerings and community infrastructure to support their health, transport, recreation and education needs. Given that the Site is still in a conceptual phase of development, the area has not been developed yet and accordingly, 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.

Higher levels of population are desirable to increase the viability of community infrastructure in the local area and to support new shop-retail offering as well as the existing Activity Centre Hierarchy (ACH) in the region. Based on the analysis conducted, it has been estimated that employment sources at the Site will generate 575 FTE population driven jobs (Figure 19).

Figure 19. Population Driven Employment Sources

Development	Land (ha)	Jobs Per Ha	Total Jobs
Primary School 1	3.5	19	67
Primary School 2	3.5	19	67
Primary School 3	3.5	19	67
Primary School 4	3.5	19	67
High School	10	16	157
Neighbourhood Centre	9.0	12	104
Local Centre	2	23	46
Total	35		575

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

6 ECONOMIC DEVELOPMENT AND EMPLOYMENT STRATEGY

Providing employment opportunities can be down beyond just population driven means, the City of Rockingham and Stockland should consider how the site can provide a mixture of other employment types, in addition to providing residential uses of the land. The following sections of this report document includes key economic and Industrial trends, State and Local Government policies and local context that should be considered to ensure an effective, sustainable, and enduring use of employment land that will be approved and support by government and community.

In short, The South Metro sub region has become, and will continue to develop, as an increasingly important strategic industrial hub for Perth and Western Australia. The increased oversight and efficient use of land enabled by the industry incubation development strategy will allow the City of Rockingham to retain land for future uses, while still allowing business to establish in the area that service both the residential and strategic needs of the surrounds.

6.1 Industrial Land Demand

In 2022 warehouse demand has increased dramatically across the Perth industrial market with vacancies falling to a new low of 0.2%²². Lead primarily by supply chain volatility forcing occupiers to hold more stock locally this trend has been reflected nationally with industry vacancy rates at 1.0%, down from 2.3%. Currently demand is still underpinned by the transport and logistics and retail trade sectors. The lack of leasing options has led to record levels of rental growth across the Perth market, with prime rents growing by 22.9% over the past year, well above the national average of 13.8% over the same period. The intense demand for industrial land reflects the ease to find tenants for their sites and indicates the financial benefits that may be derived from a successful land banking strategy.

6.2 Local Population Growth

Between 2016 and 2046, the population for the City of Rockingham is forecast to increase by 110,155 persons (85.40% growth), at an average annual change of 2.08%.²³

The growing population of Rockingham will require more trades businesses that service households these businesses will require grounds to operate, moreover as current businesses servicing households are transitioning out of WTC land.

²² <https://www.theindustrialist.com.au/news/2022/07/13/wa%E2%80%99s-industrial-market-tightest-australia-colliers/1657638352>

²³ <https://forecast.id.com.au/rockingham/population-summary#:~:text=Between%202016%20and%202046%2C%20the,average%20annual%20change%20of%202.08%25.>

6.3 South Metro Sub Region



As described in the Development WA: 10-Year Industrial Land Strategy, the South Metro Sub region is home to strategic conglomeration of the Kwinana and Rockingham SIA and the Australian Marine Complex, with the largely undeveloped Latitude 32 industrial estate expected to provide general industrial land to support existing developments. The development of Latitude 32 is being progressed by DevelopmentWA. The key issues in activating this area include fragmented land ownership, resource extraction and the need for road upgrades to link industrial land to the freight road network. Road upgrades identified as high-priority in the short and medium term include upgrades to the Russell Road and Rockingham Road intersection (to grade separated), Russell Road, Wattleup and Rowley Road, the transition of Anketell road as a primary freight route

and the planning and delivery of the North-South connector through Latitude 32. The Maddington Kenwick Strategic Employment Area has also been identified as a key industrial area. The development is currently being driven by the private sector, however key issues include land fragmentation, environmental constraints, finalisation of the development contribution plan, and trunk infrastructure, including sewer and road upgrades.

6.4 WTC

Currently the Western Trade Coast is an active industrial precinct covering 3,900 hectares from Munster to Rockingham. It consists of 4 key areas the Kwinana Industrial Area, Rockingham Industry Zone, Australian Marine Complex and Latitude 32. The Western Trade Coast has been outlined by the State government as a crucial aspect of its diversify WA strategy, become even more significant with the progress of Westport, the Government's future port located in Kwinana, and its role in unlocking further industrial development and technological innovation in the region. The total expected employment from transitioning industrial employment land uses is 467 in the short term and 423 in the medium term for a total transitioning employment of 890. Although the location of the DSP Area is advantageous to relocating WTC businesses due to its proximity to the freeway and coast and the lack of nearby employment land outside of the Strategic WTC Area it is unreasonable to assume that the entirety of this employment will move to the DSP Area. However, it provides evidence for unique demand for industrial employment land close to the WTC that can be catered for by the North-east Baldvis development site. For a full analysis of transitioning industrial demand, see Appendix 2.

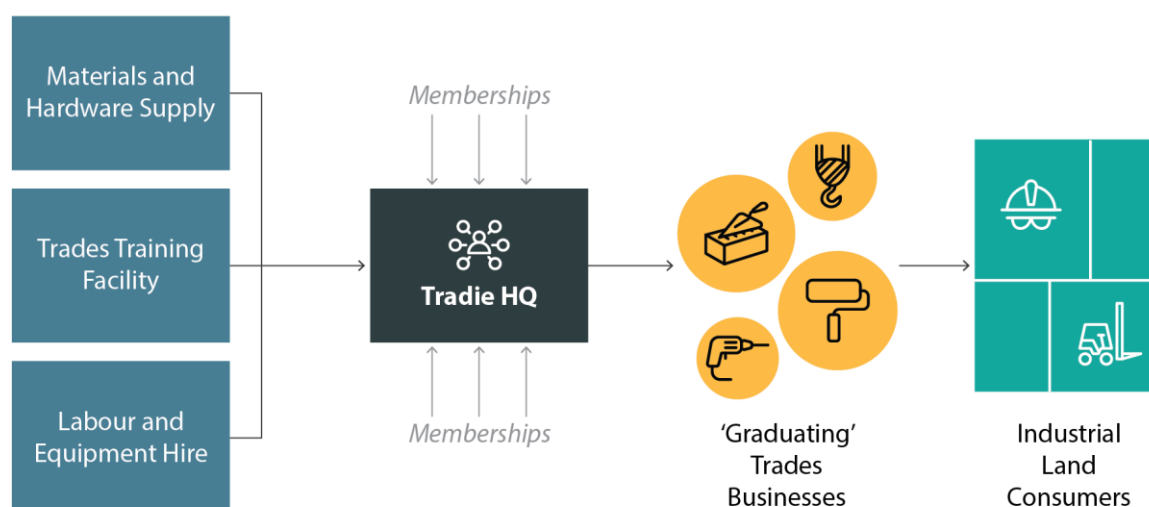
7 INDUSTRY INCUBATION DEVELOPMENT STRATEGY

At both state and local levels, there is a clear need for employment facilitation processes that attract businesses that serve customers in the south-west corridor (e.g. residential construction activity and port construction projects). There is also a need to grow businesses from within the future population of the region. With this in mind, Stockland proposes a model that achieves these goals with no loss in employment generated from employment land at the Wellard site. As a result of the analysis in section 6, Pracsys has proposed brief description of one potential strategy that utilizes all relevant contextual information. This strategy involves a land banking tactic, incorporated with the establishment of an Industry Incubator and Maritime Training Hub integrated alongside the Neighbourhood centre at the Wellard site allowing both household and industrial driven employment opportunities. A description of the delivery process for establishing the Industry Incubator and Maritime Training Hub has been provided below.

7.1 Tradesperson Incubator

The proposed industry incubation strategy involves partnering with a co-working and business incubator space provider, specifically for trade-based businesses. Stockland has achieved this and entering into agreements with Tradie HQ²⁴ to provide facilities and services on the Site. These facilities and services will support small trades businesses to transition from working from home to procuring a commercial property for growing businesses who have requirements beyond a 10m² office. By providing trades-specific features like storage, laydown areas and workshops, Tradie HQ members can move out of their home and maintain a clear distinction between work and home (Figure 20).

²⁴ <https://tradiehqwa.com.au/>

Figure 20. Trades Business Incubator Process

While the shared facilities model is vitally important for growing new trades businesses, the heart of the incubator model is the virtual network of thousands of trades businesses who benefit from:

- Knowledge sharing across all aspects of trades business establishment, operation and expansion
- Regular podcasts to educate and support growing trades businesses
- Formation of networks for bid for larger contracts than any one business could manage
- Sourcing apprentices and workers from local labour hire and training providers (Registered Training Organisations)
- Sourcing materials and supplies in bulk to save on input costs and centralise supply sources for efficiency and convenience

7.2 Maritime Training Hub

Benefitting from its proximity to Westport (WP) and the Western Trade Coast (WTC) this training hub would be well positioned to service a multitude of nearby education & training needs, relating to the Port's maritime and heavy industrial labour requirements, in addition to more population driven trades. Moreover, as Westport is still only in stage 3²⁵ of its strategy development Stockland would be well timed in proposing its development to support Westport's, potentially engaging with the Supply Chain Industry Reference Group²⁶.

The establishment and operation of Westport and the Western Trade Coast will involve workers with technical qualifications for offshore and onshore work to be initially trained and then maintain certain safety and skilled certificates over the course of their careers. Most of these certificate requirements are provided by TAFE so Stockland should consider attracting the establishment of TAFE centre, or an alternate private provider, in

²⁵ Stage 3 is "Business Case and definition design" which ends in 2024

²⁶ Group will be established to help coordinate industries

addition to implementation of a purpose-built maritime and simulation facility that will have complementary training services.

Figure 21: Digital Maritime Training Simulator

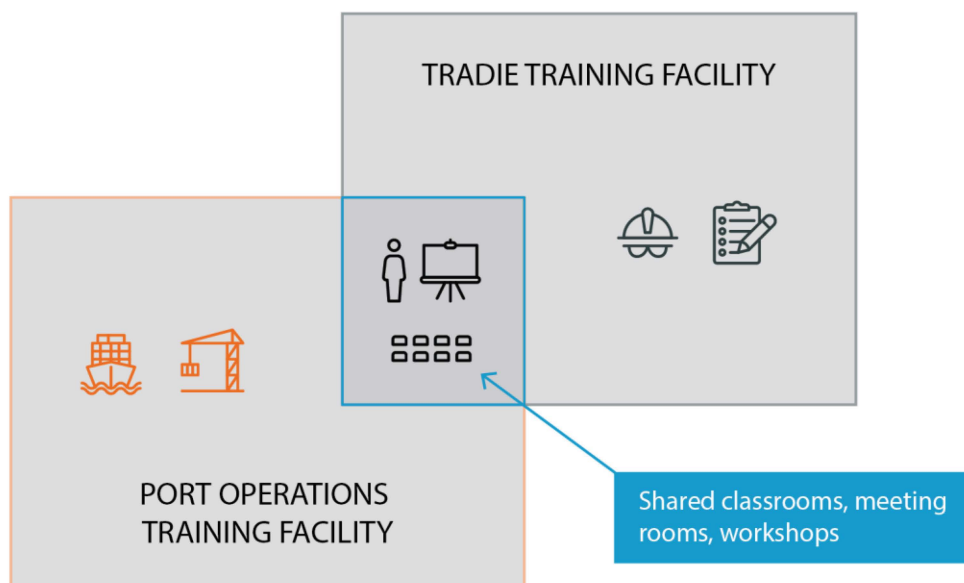


Source: Australian Maritime College, 2022

7.3 Trades and Port Industry Hub (TPIH)

Stockland has prepared a curated industry development plan incorporating the Tradie HQ, a port-specific and trades-specific training centre, with integrated wholesale and retail trades supply chains including construction materials, equipment hire, wholesale/retail hardware and tools. The centre includes the trades incubator and training facilities, incorporating shared offices, dedicated offices, shared reception, shared workshops, shared laydown and dedicated storage, classrooms and networking spaces, simulators with shared parking areas.

Figure 22. Trades and Port Operations Training Shared Infrastructure



The facilities will be located close to the Freeway interchange north of Mundijong Road, with excellent visibility and accessibility for members in all directions. The location is ideal because it is close to the residential development front at Wellard, which will provide 20 years of residential construction projects for the trades to service from the facility. There is also 20 years of port construction activity in the nearby Westport development, which will expose network members to long term construction contracts and offer a solid commercial base to expand their businesses. This is the heart of the industry development plan – a long term source of trades-based work that will attract and grow new businesses in the Wellard area. In short, this hub of education facilities, shared workspaces and construction and residential retail will not only provide employment opportunities on the development, but also generate new trades businesses to service residential and port needs and skilled workers to become part of these growing local businesses. A proposal for the Trades and Port section of this development is provided in Figure 23.



Figure 23. Trades and Port Industry Hub Site Map



8 ECONOMIC DEVELOPMENT SCENARIOS

8.1 Economic Conditions

Western Australia faces a unique economic landscape over the next five to ten years, including:

- Global demand for commodities driving strong export growth and huge investments in transport infrastructure.
- Labour shortages in key construction-related occupations and industries²⁷ including civil engineers, construction managers, fitters and machinists, electricians and mechanics.
- Housing shortages driven by land availability and material supply shortages and delays.

The City of Rockingham also faces challenges, such as:

- Strong future population growth (100,000 new residents by 2046) with low certainty around local employment opportunities
- Unbalanced rates base too reliant on low-margin residential rates with insufficient high-margin commercial/industrial rates revenue.
- A lack of high-quality industrial infrastructure
- Relatively low employment self sufficiency

8.2 Development Scenarios

Despite these constraints, the Wellard site can play an important role in facilitating industrial development that is expected with the South Metro region, by providing residential construction and port construction activities at the North-east development site, providing long-term support of port related supply chains and land for residential businesses simultaneously.

Business formation is a function of four factors of production – land, labour, capital and entrepreneurship. Although land obviously has fixed supply, capital (infrastructure) and labour are variable and must be organised by the fourth factor - entrepreneurship. Without entrepreneurship, the other factors come together in fragmented and even random ways – resulting in a disordered development outcome. This can be seen in many older mixed industrial zones – where a variety of unrelated industries co-locate just because land is available. There are seldom any supply chain relationships, sharing of labour inputs or upskilling and knowledge sharing between the businesses.

By contrast, where land, infrastructure (particularly transport) and labour are organised with specific supply chains in mind, agglomeration benefits result, so businesses are more efficient and profitable and therefore more likely to employ more workers. Such is the case at Westport, where investments in port-side load-in/load-out facilities, and landside intermodal terminals, plus road and rail upgrades provide opportunities

²⁷ National Skills Commission 2022 Skills Priority List

for orderly supply chain development. To best understand the benefits of Stockland playing a direct role in economic development in the Wellard site Pracsys undertook a scenario analysis of Wellard land consumption and associated employment generation.

Business-As-Usual Scenario

The business-as-usual (BAU) scenario considers the employment that can be generated through purely population driven uses. This includes the local centre, neighbourhood centre and the primary and high schools discussed in section 5.

Scenario 1 – All Industrial

Scenario 1 considers employment generated by the entire Wellard site being used for non-curated/ad-hoc employment land. This scenario is based upon the City of Rockingham’s previous planning and strategy for the area, which would involve the area becoming employment land without any oversight. BAU assumes that six hectares will be consumed each year, and that the ad-hoc nature of development will lead to eight jobs per hectare. This jobs per hectare was based upon LUES data, Gordon Road was used a benchmark (Figure Figure 25), scaled to allow for more realistic timeframe for land consumption. This Scenario will generate 2,816 jobs.

Scenario 2 - Curated Incubator Model (DSP Land Only)

Scenario 2 considers Stockland’s strategy of orderly development of the Trades and Port Industry Hub, assets that will attract businesses, growth the labour force in key industries and ensure superior economic outcomes for the City of Rockingham and the wider Westport landside operations. This curated incubator model is different to the traditional ‘zone it industrial and they will come’ planning approach that results in fragmented and inefficient spatial distribution of land uses. Coarse land use classifications cannot purposefully deliver logical supply chain agglomerations that benefit from proximity to each other. A curated approach is important because it can generate efficient industry agglomerations that yield higher employment densities, with more high-quality jobs delivered earlier in the development cycle.

In simple terms businesses

1. Business would initiate within the Tradesperson Incubator facilities within the TPIH
2. They will grow over time, as owners enhance their business management knowledge, develop better internal systems and build more clients
3. Once they have become a medium to large business they will “graduate”, meaning they will require more space to continue developing their business
4. Graduated Businesses will move into available employment land nearby, in this instance the employment land within LSP3

The curated approach is consistent with the City of Rockingham Economic Development Strategy 2020-2025, which commits to ‘shaping a robust and resilient economy that supports the growth and sustainability

of new and existing businesses, new and emerging industries and technologies, and creates a positive business environment whilst enhancing local lifestyle and providing a range of diverse employment opportunities.' One way to achieve these laudable goals is to partner with developers that understand and commit to long term employment outcomes and innovative development strategies.

Scenario 2 assumes that the total employment available for curated development on Stockland landholdings will be the 21.4 hectares of employment land, which if consumed at 1.75 hectares each year, will generate 685 jobs at 32 jobs per hectare and being fully consumed in 12 years. (Figure 14).

Scenario 3 - Curated Incubator Model (DSP Land plus Industrial Expansion Land)

Scenario 3 is similar to scenario 2, by includes an additional 361 hectares of additional industrial employment land South of Mundijong Rd, referenced as additional employment in Figure 1.

This land would be consumed with the same assumptions as scenario 2, with "graduating" businesses, locating to this land once LSP3 employment land is exhausted. Resulting in the generation of 11,552 additional jobs. A summary of these development scenario has been provided below (Figure 24)

Figure 24. Development Scenario Breakdowns

Scenario Comparison	BAU	Scenario 1	Scenario 2	Scenario 3
Number of Business Created or Attracted (per year)		6	10	10
Employees Per Graduated Business		4	10	10
Jobs per hectare		8	32	32
Land area for each Business (per Ha)		0.50	0.175	0.150
Total Available Industrial Area (Ha)		352	21	361
Annual employment land Consumption (Ha)		6.0	1.75	1.5
Total Jobs Generated		2,816	685	11,552
Population-driven Wellard Jobs	575		575	575
Grand Total	575	2,816	1,260	12,812

Source: Pracsys 2023

Benchmarks

The fundamental difference between the traditional approach to employment land development (scenario 1) and a curated incubation method (scenario 2 and 3) is that the entrepreneurial function keeps developing and 'graduating' businesses and skilled workers into the foreseeable future. The result is more efficient and orderly supply chains, more new business formation and ultimately more, better quality jobs. Gordon Road is an example of a less curated/ad hoc approach, while Osbourne Park shows the relative performance of a more effectively planned area with agglomerated businesses.

Figure 25. Benchmarks

Benchmark Industrial Area	Floorspace	Hectares	Employment	Floorspace per hectare	Floorspace per job	Jobs per Hectare
Bibra Lake	1,447,115	19	10,697	2,788	135	21
Mandurah (Gordon Road)	145,580	324	1,511	9	96	5
Osborne Park	1,330,693	261	19,092	5,098	70	73
Joondalup City Industrial	163,387	73	2,162	2,247	76	30
Average					94	32

Source: LUES 2015, Pracsys 2022

9 CONCLUSION

The DSP will provide significant rate revenue to the City of Rockingham. The potential rate revenue was quantified using benchmark analysis for residential and non-residential land. The DSP will generate approximately \$130 million in rate revenue at full development. Over 10% of this revenue will come from non-residential uses that generate more rate revenue than they do service expenses. This is a strategic advantage for the City, particularly given the zoning of the land as future urban.

The DSP is expected to be able to support the two proposed retail centres, and two industrial employment areas in the long term. The Neighbourhood centre is also viable at 4,000m² by 2038, and then at 10,00m² by 2034. The 1,500m² local centre is supportable by 2029 based on the assumed residential lot release of 300 dwellings per annum from 2025. This reflects the growing residential population and demand for daily and weekly shopping trips and a well-defined primary catchment that is bound by the Kwinana Fwy to the east and freight railway to the north. The provision of local and neighbourhood activity centre uses aligns with draft SPP4.2 objectives to provide residential development near activity centres. Construction driven employment of the local and neighbourhood centre is expected to total 75 full time equivalent jobs. The construction of these centres will directly inject \$11.1 million into the local economy and indirectly 34.7 million. Operational employment of population driven uses of the centre will also generate significant employment. Based on both retail centres, four primary schools and a high school the site would be expected to generate 575 FTE jobs.

Regarding surrounding area employment opportunities, there are 20,236 jobs in Kwinana and 80,308 in Rockingham, with the Health Care and Social Assistance, Construction and Retail Trade being the biggest local employing industries. Understanding projected employment, the development site is situated near the significant new employment opportunities in industrial estates, including Global Advanced Industries Hub, Peel Business Park, and Mundijong Industrial Area and Intermodal Terminal. In summary, there is an expected 32,000 to 53,200 FTE jobs to be generated in the area within the next 10-20 years. This shows there are a wide range of population-driven and strategic employment opportunities are in close proximity to the potential North-east Baldvis site would contribute to greater living affordability and livability for future residents.

At both state and local levels, there is a clear need for employment facilitation processes that attract businesses that serve customers in the south-west corridor (e.g. residential construction activity and port construction projects). There is also a need to grow businesses from within the future population of the region. To achieve, or even surpass, the expected employment outcomes for a development area of the proposed site size, an employment facilitation process is recommended. This process involves Stockland partnering with an incubator operator such as Tradie HQ, which provides facilities and services to support small trades businesses to transition from working from home to procuring a commercial property for growing businesses. Stockland is preparing a curated industry development plan incorporating the Tradie HQ



facility, a port-specific and trades-specific training centre, with integrated wholesale and retail trades supply chains including construction materials, equipment hire, wholesale/retail hardware and tools. The facilities will be located close to the Freeway interchange north of Mundijong Road with excellent visibility and accessibility for members in all directions. This is the heart of the industry development plan – a long term source of trades-based work that will attract and grow new businesses in the Wellard area. Businesses that graduate from this process will be able to move into the expansion to the east on Mundijong Rd and eventually the employment expansion area to the south of Mundijong Rd.

The proposed curated industry incubation strategy (scenario 2) involving Tradie HQ was compared against traditional development scenarios. Scenario takes full advantage the employment land available on site, while scenario 3 does this with the additional 361 hectares of employment land located south of Mundijong Road. Providing a convenient space for ‘graduating’ industrial businesses to expand from of the TPIH, resulting in effective land use expected at 32 jobs per hectare. Compared to scenario 1, the industrial only scenario which would only jobs at 8 jobs per hectare, the scenario 2 and 3 would result in a slower rate of land uptake and greater number of jobs being produced. This is a more efficient outcome because it consumes less land (leaving a reserve for future strategic industrial projects) and generates better industry development and employment outcomes in a more orderly manner.

10 APPENDIX 1: GRAVITY MODELLING

METHODOLOGY

Gravity models allow for the measurement of spatial interaction as a function of distance to determine the probability of a given customer shopping at a centre and provide an approximation of trade area and sales potential for a development. This modelling technique uses the distance between a household and each centre, and a measure of 'attractiveness' to define the probability model. The 'attractiveness' of a centre has been defined by total floorspace and the distance has been calculated by measuring straight-line distances between each centre and population. The gravity model probability formula is shown in Figure 16.

Figure 26. Gravity Model Probability Formula

$$P_{ij} = \frac{\frac{A_{jk}^a}{D_{ij}^\beta}}{\sum_{j=1}^m \frac{A_{jk}^a}{D_{ij}^\beta}}$$

P_{ij} = Probability of customer living/working in statistical area i shopping at complex j .
 A_i = Area of floorspace in centre, j in square metres, according to the type of supply, k .
 D_{ij} = Distance between statistical area of households, i and complex j .
 a = Area exponent
 β = Distance exponent
 k = Type of supply or expenditure, either Convenience or Comparison
 i = Statistical area ($i=1, \dots, n$)
 j = Complexes ($j=1, \dots, m$)

Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', *Appraisal Journal*, Vol 61, No 4, pp510; Pracsys (2020)

Figure 27. Gravity Model Demand Formula

$$D_{kj} = \sum_{i=1}^n (P_{ij} * E_i)$$

D_{kj} = Demand for retail category k, at centre j.
 E_i = Expenditure pool of statistical area i.

Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', *Appraisal Journal*, Vol 61, No 4, pp510; Pracsys (2020)

Figure 17 shows that the demand for retail category k³⁴, at centre j, is equal to the sum of the probabilities of customers living in statistical areas i to n, multiplied by the expenditure pool of statistical area i. In other words, the demand for retail is a function of the probability of customer from statistical areas attending the centre multiplied by the expenditure pool of that statistical area. The expenditure pool is derived through the population multiplied by its income distribution.

In its core form gravity modelling provides a clearer, reproducible outcome that can be easily assessed. However, it does not consider local factors, including:

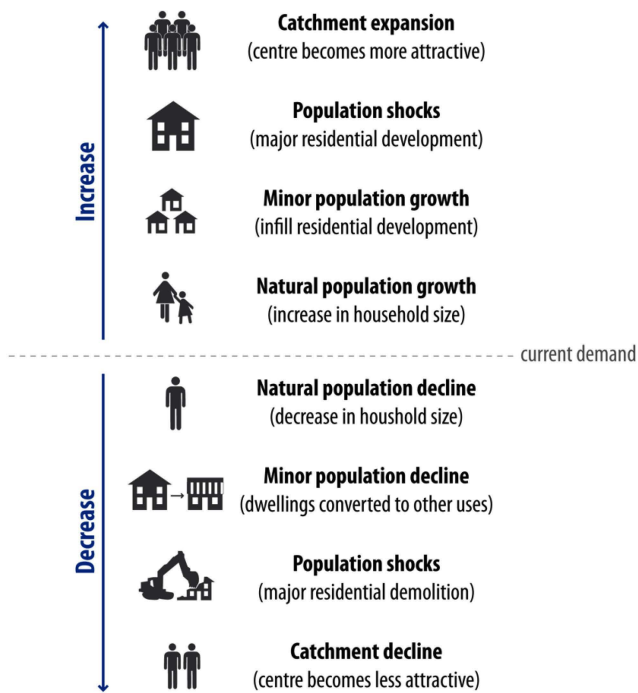
- The comparative value proposition of centres (e.g. the presence of an 'anchor' attractor that draws significant market share);
- The brand preference of users; or
- The efficiency of transport networks, as well as geographical barriers (e.g. in some cases it may be easier for customers to access a centre that lies physically further away).

Demand changes can result in increased or decreased expenditure. The potential causes of demand changes are shown in Figure 18. These largely show that an increasing population increases demand, and vice versa. There are significant amounts of commercial floorspace, especially office floorspace, flagged for the central sub-region of Perth and beyond. There will also be significant numbers of new dwellings provided across Perth. This increase in residents has the potential to boost demand for goods and services in the area.

Demand can also increase from rising incomes, or wealth, because people have more disposable income to spend on retail. Demand can also be increased by reducing leakage. Leakage for retail is largely caused by online retail, as well as travelling.

³⁴Retail categories are determined by their PLUC code and whether they are convenience or comparison goods. Convenience goods are day-to-day items such as groceries, pharmaceuticals and fast food. Comparison goods are items where consumers are willing to travel further distances, and are bought less frequently such as clothing, furniture, electronics, or other household items.

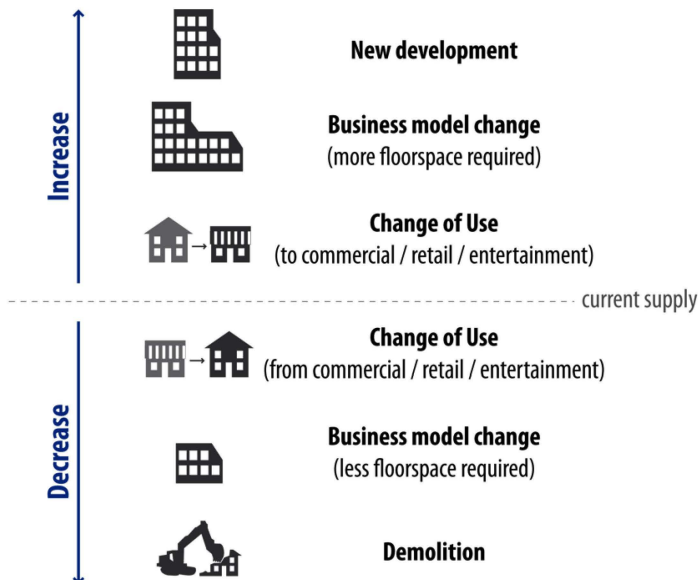
Figure 28. Drivers of Retail Floorspace Demand



Source: Pracsys 2020

Supply changes can result in increased or decreased retail floorspace. The potential causes of supply changes are shown in Figure 19.

Figure 29. Drivers of Retail Floorspace Supply



11 APPENDIX 2: WTC INDUSTRIAL LAND DEMAND



The Kwinana and Rockingham areas are home to a range of strategic and advanced industries, including existing critical minerals processing, chemical manufacturing, energy generation and most recently, large-scale ammonia and hydrogen production and export. Combined, the Kwinana and Rockingham areas contribute \$20 billion to the State’s total gross output and support more than 13,000 jobs. The Western Trade Coast will become even more significant with the progress of Westport, Western Australia’s new container port at Kwinana. Westport will unlock further industrial development, technology innovation and local jobs linked directly to our export markets.

The mainland uses at the WTC have been assessed based on their likely transition timing to provide an understanding of which types of uses may depart the WTC first. In the short term, land nearby to the Westport site will be the most valuable for port-related Strategic uses and the current businesses in this area will be the most likely to transition out of the WTC. While there is industrial land in the WTC available inland in the short-medium term, this land will likely be required for more Strategic and heavy industrial uses in the long-term as land demand increases and should be planned accordingly, encouraging light industrial businesses to instead locate at the DSP Area.

The WTC land in close proximity to the future port was analysed and the total area taken up by these “likely movers” was summed to determine the expected volume of transitional demand in the near future. Those uses that have the least friction to changing location and are likely to do so (i.e., a motor freight transport company who will be able to move its fleet, vs a nickel smelter cannot easily develop a new plant) are shown below ().

Figure 30. High-level Timing Considerations for Transition of Main Uses at WTC

Strategic Use	Order of Transition (1 soonest, 5 latest)
Chemical Fertilizers Manufacturing	No Transition Likely
Fabricated Structural Steel Manufacturing	5
Alumina Manufacturing	No Transition Likely
Cement Manufacturing	5
Ready Mixed Concrete Manufacturing	5
Manufacturing NEC	3
Grain Storage	No Transition Likely
Wool Scouring and Top Making	3
Petroleum Refining	No Transition Likely
Secondary Recovery and Alloying of Non-Ferrous Metals NEC	No Transition Likely
Materials Handling Equipment Manufacturing	3
Chemical Products Manufacturing NEC	No Transition Likely
Nickel Smelting Refining	No Transition Likely
Precision Engineered Products Manufacturing	4
Iron and Steel Basic Products Manufacturing	5
Other Motor Freight Transportation NEC	3
Fabricated Metal Products Manufacturing NEC	5
Inorganic Industrial Chemicals Manufacturing	No Transition Likely
Engineering Services	4
Iron and Steel Basic Products Manufacturing	5
Population Driven Use	Order of Transition (1 soonest,5 latest)
Building Construction - Industrial and Commercial	2
Other Warehousing and Storage NEC	2
Building Material Machinery and Equipment Wholesale/Warehousing	2
Paints Manufacturing	1

Strategic Use	Order of Transition (1 soonest, 5 latest)
Meat, Primary Processing	1
Manufacturing NEC (Under Storage/Distribution PLUC)	2
Agricultural/Horticultural Products Wholesale/Warehousing	1
Construction Trade Services NEC	1
Motor Vehicles (New And Used Cars) - Retail	1
Building Construction - General Contractor Services	1
Business and Professional Associations	1
Contract Sorting, Grading & Packaging Services (Fruit & Veg)	1

Source: DLPH 2016, Pracsys 2022

It is likely that population driven uses such as construction services, agricultural product wholesaling and vehicle retailing would transition out of the WTC in the short term, and strategic but non-port related uses would transition out in the medium-term. The total land area expected to transition out of the WTC in the short-term is 40.1 ha, and the total land area expected to transition out of the WTC in the medium-term is 32.0 ha (Figure 31).

Figure 31. Transition Demand

Short Term Transition	Hectares in Strategic Area	Floorspace (m ²) in Strategic Area
Building Construction - Industrial and Commercial	10.2	20,950
Other Warehousing and Storage NEC	9.6	9,930
Construction Trade Services NEC	9.6	1,300
Building Construction - General Contractor Services	5.8	1,040
Business and Professional Associations	2.0	2,500
Contract Sorting, Grading & Packaging Services (Fruit & Veg)	1.9	7,000
Paints Manufacturing	1.0	1,190
Total	40.1	43,910
Medium Term Transition	Hectares in Strategic Area	Floorspace (m ²) in Strategic Area
Cement Manufacturing	7.5	480
Ready Mixed Concrete Manufacturing	6.8	24,500
Other Motor Freight Transportation NEC	6.7	5,332
Engineering Services	6.6	5,965
Manufacturing NEC	4.4	3,500
Total	32.0	39,777

Source: DLPH 2016, Pracsys 2022

The expected transitional use floorspace demand was compared against an average floorspace per worker benchmark developed using LUES data for Bibra Lake, Gordon Road (Mandurah), Osborne Park, and Joondalup Industrial Area, to estimate the potential employment at the Precinct (Figure 32, Figure 33).

Figure 32. Floorspace per Worker

Benchmark Industrial Area	Floorspace m ²	Employment	Floorspace per Worker
Bibra Lake	1,447,115	10,697	135
Mandurah (Gordon Road)	145,580	1,511	96
Osborne Park	1,330,693	19,092	70
Joondalup City Industrial	163,387	2,162	76
Average			94

Source: LUES 2015, Pracsys 22

Figure 33. Transition Use Employment

Short Term Transition	M ² per worker	Employment
Building Construction - Industrial and Commercial	94	223
Other Warehousing and Storage NEC	94	106
Construction Trade Services NEC	94	14
Building Construction - General Contractor Services	94	11
Business and Professional Associations	94	27
Contract Sorting, Grading & Packaging Services (Fruit & Veg)	94	74
Paints Manufacturing	94	13
Subtotal		467
Medium Term Transition	M ² per worker	Employment
Cement Manufacturing	94	5
Ready Mixed Concrete Manufacturing	94	261
Other Motor Freight Transportation NEC	94	57
Engineering Services	94	63
Manufacturing NEC	94	37
Subtotal		423
Total		890

Source: LUES 2015, Pracsys 2022

The total expected employment from transitioning industrial land uses is 467 in the short term and 423 in the medium term for a total transitioning employment of 890. Although the location of the DSP Area is advantageous to relocating WTC businesses due to its close proximity to the freeway and coast and the lack of nearby industrial land outside of the Strategic WTC Area it is unreasonable to assume that the entirety of this employment will move to the DSP Area. However, even assuming that all 890 jobs move into the DSP area over the medium term, the employment generation is far from the benchmark employment goals for the development of 0.6 to 1.2 jobs per dwelling.