Shire of Serpentine-Jarrahdale

Mundijong District Structure Plan Activity Centres Background Paper

DECEMBER 2024

Document Control				
Document Version	Description	Prepared By	Approved By	Date Approved
v1.0	Initial Draft Report	Callum Shenton Jason Cook Ben Fahrner	Dawson Demassiet-Huning	13/09/2024
v2.0	Revised Draft Report	Ben Fahrner	Dawson Demassiet-Huning	24/10/2024
v3.0	Activity Centres Background Paper	Ben Fahrner	Ben Fahrner	14/11/2024
v4.0	Activity Centres Background Paper	Ben Fahrner	Ben Fahrner	20/11/2024
v5.0	Activity Centres Background Paper	Ben Fahrner Timothy Hodge Rebecca Spencer	Dawson Demassiet-Huning	19/12/2024

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1 EXECUTIVE SUMMARY

The Mundijong District Structure Plan (DSP) was approved by the Western Australian Planning Commission (WAPC) on 29 August 2023, subject to modifications. This Activity Centres Background Paper has been prepared to address Modification 74, which states:

"*The Activity Centre Background Paper being revised to address the requirements of the increased population to be accommodated by the DSP as modified by the above requirements. Among other things, this should –*

- *Identify locations for all activity centres and their type;*
- *Include examination of the possible need for additional neighbourhood centres consistent with Liveable Neighbourhoods and Draft SPP 4.2 including appropriate accessibility, walkable catchments and feasibility considerations; and*
- *Identify net lettable floor area (retail and commercial, respectively), key elements (such as full-line supermarkets, Retail – DDS, Retail -speciality shops) and land requirements for each activity centre*"

This analysis has been developed accordingly to provide a robust evidence-base to support the proposed activity centre hierarchy in the Mundijong District Structure Plan. The quantum and diversity of floorspace to meet demand in the DSP area were examined in accordance with the WAPC's State Planning Policy 4.2 – Activity Centres (SPP 4.2), Implementation Guidelines for a Needs Assessment.

The supportable levels of Shop-Retail floorspace that can be located at centres has been estimated using retail gravity modelling and benchmarked floorspace productivity estimates. This methodology ensures future floorspace estimates are supportable and will not impact the vitality of activity centres. The supportable level of Non-Shop-Retail floorspace has been estimated using floorspace per person provision ratio analysis. This method identifies current gaps that need to be addressed, then uses changes in retail floorspace to estimate increased demand for floorspace over the assessment period (refer to Section 7, Needs Assessment, for more detail).

The following acronyms are used throughout the document[1]:

- State Planning Policy – Activity Centres **(SPP4.2)**
- Western Australian Planning Commission's **(WAPC)**
- Employment Self-Sufficiency **(ESS)**
- Knowledge-Intensive Producer Services **(KIPS)**
- Land Use and Employment Survey **(LUES)**
- Department of Planning, Lands and Heritage **(DPLH)**
- Planning Land Use Categories **(PLUC)**
- WA Standard Land Use Categories **(WASLUC)**
- Shop-Retail **(SHP)**

[1] Refer to Appendix 3 for all acronym definitions

- Non Shop-Retail **(Non SHP)**

Shop-Retail (SHP) floorspace and employment refers to PLUC Shop/Retail. Non Shop-Retail (Non SHP) floorspace and employment refers to all other commercial PLUCs including Entertainment / Recreation / Culture, Health / Welfare / Community Services, Manufacturing / Processing / Fabrication, Office / Business, Primary / Rural, Residential, Other Retail, Service Industry, Storage / Distribution and Utilities / Communication. Further definitions and explanations can be found in Sections 10.1 and 10.2, PLUC Glossary and Other Terminology.

The following section summarises the proposed activity centre hierarchy including the projected floorspace and land requirements. A summary of all sections is subsequently provided to align the Background Report with the relevant modifications to the DSP.

1.1 Activity Centre Hierarchy

The assessment area informing the Background Paper applied a 10km catchment from the Mundijong Town Centre, appropriate for the proposed district centres that make up the highest order centres in the local activity centre hierarchy. Current floorspace estimates for the activity centres in this area were based on approved planning documents, data provided by the Shire of Serpentine-Jarrahdale, and DPLH Land Use and Employment Survey 2015.

Figure 1. Catchment Current Supply

Centre Name	Shop – Retail Floorspace (m^2)
Serpentine-Jarrahdale Isolated Uses	2,799
Serpentine	520
Atkins Street, Jarrahdale	62
Mundijong Town Centre	1,070
Glades Village Centre	4,500
Byford Town Centre	8,962
Lot 33 Hopkinson Road	1,500

Source: DPLH 2016

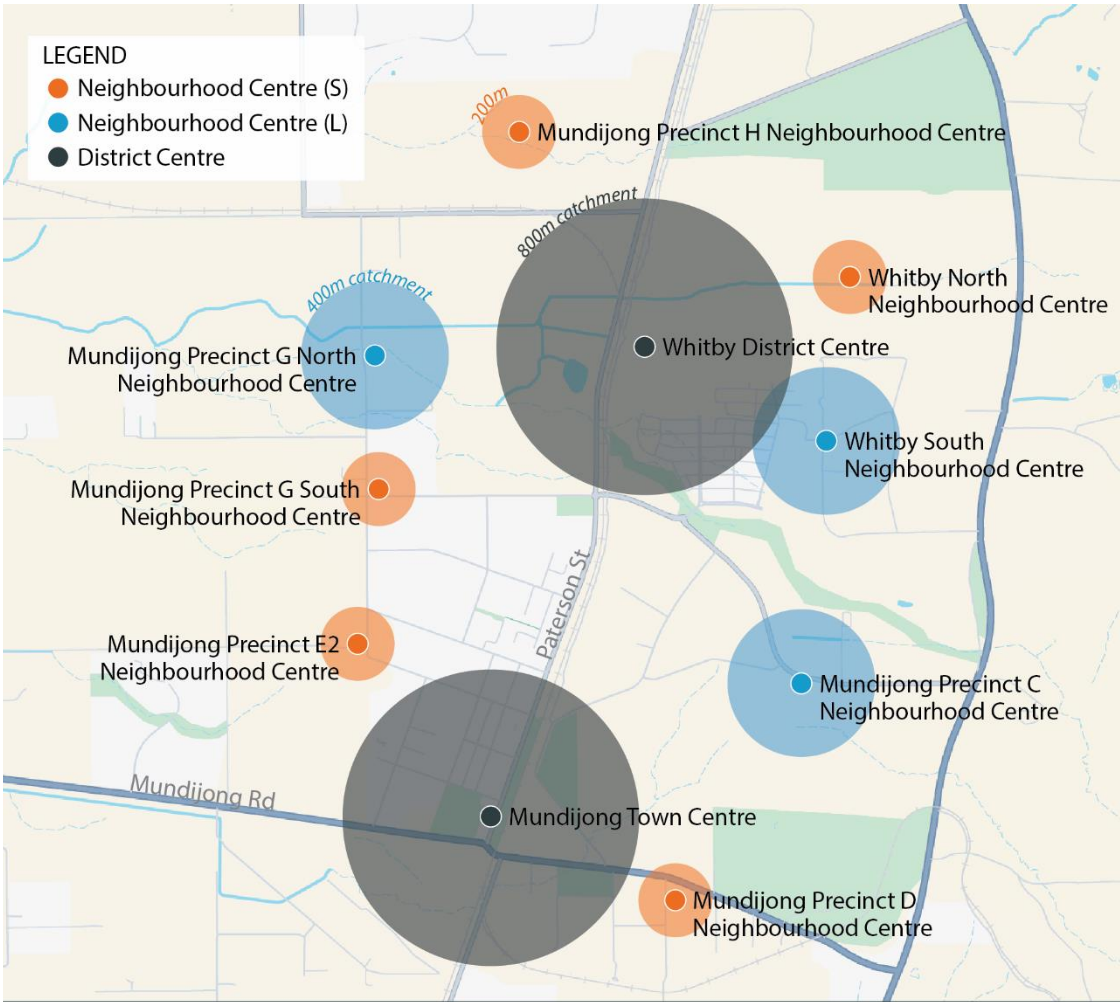
Shop-Retail and Non Shop-Retail floorspace estimates have been developed through a combination of:

- Floorspace Gap Analysis (Section 6, Floorspace Gap Analysis)
- Needs Assessment (Section 7, Needs Assessment)

The analyses were used to determine any potential gaps that currently exist across the study areas' activity centres and the demand for floorspace that could result due to population growth, accounting for competing centres in the assessment area.

An updated Activity Centre Hierarchy was determined based on the results of the Needs Assessment, which considered floorspace gaps, gravity modelling, viability, expected population growth and residential development. Section 7.3 Activity Centre Hierarchy Assessment provides further details regarding the process of determining floorspace values for the DSP's activity centres. The proposed activity centre hierarchy has been developed to address the planned 58,000 residential population in the Mundijong DSP. Total floorspace in the DSP area is estimated to be 164,555 at full build out with 10 activity centres (Figure 2)

Figure 2: Activity Centre Hierarchy



CENTRE	KEY ELEMENTS	SHOP/RETAIL FLOORSPACE	COMMERCIAL FLOORSPACE	TOTAL FLOORSPACE	LAND REQUIREMENTS
Whitby District Centre	Supermarkets, Discount Department Store, Speciality retail	20,000	29,466	49,466	87,124
Mundijong Town Centre	Supermarkets, Discount Department Store, Speciality retail	15,000	22,099	37,099	65,342
Whitby South Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Mundijong Precinct C Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Mundijong Precinct G North Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Whitby North Neighbourhood Centre	Supermarket, specialities	1,500	3,315	4,815	8,481
Mundijong Precinct E2 Neighbourhood Centre	Supermarket, specialities	3,000	6,631	9,631	16,963
Mundijong Precinct H Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
Mundijong Precinct D Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
Mundijong Precinct G South Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
TOTAL		62,000	102,555	164,555	289,833

Source: Pracsys 2024

Figure 3: Activity Centre Floorspace Projections (5-year Intervals)

Activity Centre		Whitby District Centre	Mundijong Town Centre	Whitby South Neighbourhood Centre	Mundijong Precinct C Neighbourhood Centre	Mundijong Precinct G North Neighbourhood Centre	Total
Designation		District	District	Neighbourhood (L)	Neighbourhood (L)	Neighbourhood (L)	All Centres
2029	Shop	10,000	1,070	-	-	-	11,070
	Non-Shop	14,733	1,576	-	-	-	16,309
	Total Floorspace	24,733	2,646	-	-	-	27,379
2034	Shop	10,000	7,500	-	-	2,500	25,000
	Non-Shop	14,733	11,050	-	-	4,078	40,912
	Total Floorspace	24,733	18,550	-	-	6,578	65,912
2039	Shop	20,000	7,500	5,000	-	2,500	42,000
	Non-Shop	29,466	11,050	8,156	-	4,078	68,221
	Total Floorspace	49,466	18,550	13,156	-	6,578	110,221
2044	Shop	20,000	15,000	5,000	2,500	5,000	57,000
	Non-Shop	29,466	22,099	8,156	4,078	8,156	92,952
	Total Floorspace	49,466	37,099	13,156	6,578	13,156	149,952
2049	Shop	20,000	15,000	5,000	5,000	5,000	62,000
	Non-Shop	29,466	22,099	8,156	8,156	8,156	102,555
	Total Floorspace	49,466	37,099	13,156	13,156	13,156	164,555
Fit Out Total Floorspace Requirement		49,466	37,099	13,156	13,156	13,156	164,555
Fit Out Total Land Requirement		87,124	65,342	23,172	23,172	23,172	289,833

Source: Pracsys 2024

Activity Centre		Mundijong Precinct H Neighbourhood Centre	Whitby North Neighbourhood Centre	Mundijong Precinct D Neighbourhood Centre	Mundijong Precinct E2 Neighbourhood Centre	Mundijong Precinct G South Neighbourhood Centre	Total
Designation		Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	All Centres
2029	Shop	-	-	-	-	-	11,070
	Non-Shop	-	-	-	-	-	16,309
	Total Land Requirement	-	-	-	-	-	27,379
2034	Shop	2,500	-	-	2,500	-	25,000
	Non-Shop	5,526	-	-	5,526	-	40,912
	Total Land Requirement	8,026	-	-	8,026	-	65,912
2039	Shop	2,500	1,500	-	3,000	-	42,000
	Non-Shop	5,526	3,315	-	6,631	-	68,221
	Total Land Requirement	8,026	4,815	-	9,631	-	110,221
2044	Shop	2,500	1,500	-	3,000	2,500	57,000
	Non-Shop	5,526	3,315	-	6,631	5,526	92,952
	Total Land Requirement	8,026	4,815	-	9,631	8,026	149,952
2049	Shop	2,500	1,500	2,500	3,000	2,500	62,000
	Non-Shop	5,526	3,315	5,526	6,631	5,526	102,555
	Total Land Requirement	8,026	4,815	8,026	9,631	8,026	164,555
Fit Out Total Floorspace Requirement		**8,026**	**4,815**	**8,026**	**9,631**	**8,026**	**164,555**
Fit Out Total Land Requirement		**14,136**	**8,481**	**14,136**	**16,963**	**14,136**	**289,833**

Source: Pracsys 2024

The total Shop/Retail floorspace for the catchment at full build out is 62,000 m^2, with a benchmarked 102,555 m^2 of non-Shop/Retail floorspace within activity centres.

1.2 Summary of Background Report Findings

The following table provides an overview of the report sections, their key findings and an alignment with the required modifications to the DSP.

Figure 4. Summary Alignment

Report Element	Key Findings and link to Modifications
Section 3: Demographic Analysis Section 4: Strategic Context Section 5: Retail Demand	These sections provide contextual information that was used to inform the modelling and activity centre composition. **Key Findings from the Demographic Analysis** • Population growth will be significant for the DSP area with an increase of approximately 56,000 persons; the current population is roughly 2,300. **Population growth is included in the modelling addressing Modification 6's requirement to account for urban density and the inclusion of Urban Expansion Areas.** • The current Employment Self-Sufficiency of the Shire is approximately 40%. This is significantly lower than the wider sub-Regional average of approximately 60%. **The sub-regional ESS target of 79% has been used to inform estimates of ESS contributions, addressing Modification 48.** **Strategic Context and Retail Trends** These sections are required to address SPP4.2 Implementation Guidelines and not specifically identified in the modifications.
Section 6: Floorspace Gap Analysis	This analysis identified current gaps in Shop Retail and Commercial floorspace. A current total floorspace gap of 2,749m^2 was estimated in comparison to benchmark local government areas, with the most significant PLUC gaps in Shop/Retail, Other Retail and Health/Welfare/Community Services uses. Detailed WASLUC level gaps were provided to inform potential uses relevant to the gap. **This task was not specified in the required modifications; however, it address requirements of SPP4.2 Implementation Guidelines.**

Report Element	Key Findings and link to Modifications
Section 7: Needs Assessment	The Needs Assessment considered the demand for Shop Retail and Commercial uses to determine the appropriate provision of activity centres including number, scale and distribution. **Key Findings** • In an iterative process with the Shire, a total of 2 district centres, three large neighbourhood centres and four small neighbourhood centres were identified as suitable to meeting the needs of current and future population. **This addresses Modification 74's requirement to identify centre locations, types, accessibility and walkability.** • Gravity modelling informed the scale of centre development with the Activity Centre Hierarchy supporting a total of 62,000m^2 of Shop Retail NLA and 102,555m^2 of Non-Shop Retail / Commercial NLA. **This addresses Modification 74's requirement to establish Net Lettable Area that is feasible.** • A breakdown of Shop Retail floorspace elements was provided including supermarket, Discount Department Store, specialty shops and food retail uses. **This addresses Modification 74's requirement to identify key shop retail elements.** • Land requirements were estimated for each activity centre with a total of 300,000m^2 required in the long term to support development. **This addresses Modification 74's stipulation to estimate land requirements.** • Employment generated by the proposed activity centre hierarchy was estimated by floorspace type. It is expected the centres will deliver approximately 3,600 jobs in the long term, contributing 13% of the employment required to achieve the sub-regional average ESS target of 79%. Additional employment provided through homebased employment, schools and recreational facilities was considered and a total of 9,700 additional jobs would need to be delivered through other employment sources

Report Element	Key Findings and link to Modifications
	to achieve the target. These additional jobs will most likely need to be provided through export-orientated industries relevant to employment land such as the West Mundijong Industrial Area. **The assessment addresses Modification 48.**
Section 8: Site Assessment Considerations	A set of criteria have been provided to assist the Shire in determining the appropriate locations for activity centres and other proposed uses, supported through further research and assessment. **Planning Criteria** • Land use mix • Cohesion • Movement and access • Urban form • Heritage **Economic Citeria** • Purpose of Place • Access – Arrival Points • Origins – Car Parking and Transport Nodes • Exposure – Pedestrian Movement • Destinations – Major attractions • Control – Strategic Sites **This relates to Modification 6's requirement to consider planning and heritage in future LSPs.** Over the course of the project there were questions of whether the current activity centre location in Mundijong Town Centre could support the full buildout of floorspace required to meet population need, an assessment specific to the Mundijong Town Centre against these criteria is provided.

Source: Pracsys 2024

2 INTRODUCTION

Mundijong is a locality in the Shire of Serpentine Jarrahdale, which is a high growth local government area, located in the southeast metropolitan area of Perth, Western Australia. The Mundijong District Structure Plan area is expected to accommodate 58,000 residents by 2050, with a growth rate of around 7,500 dwellings to be completed over the next 15 years. This represents an increase of over 50,000 residents over the defined period. This Activity Centre Background Paper has been developed to inform the activity centre requirements for the Mundijong DSP area to ensure high levels of access to goods, services and employment are available to the current and future population, in alignment with State Planning Policy 4.2.

This report includes:

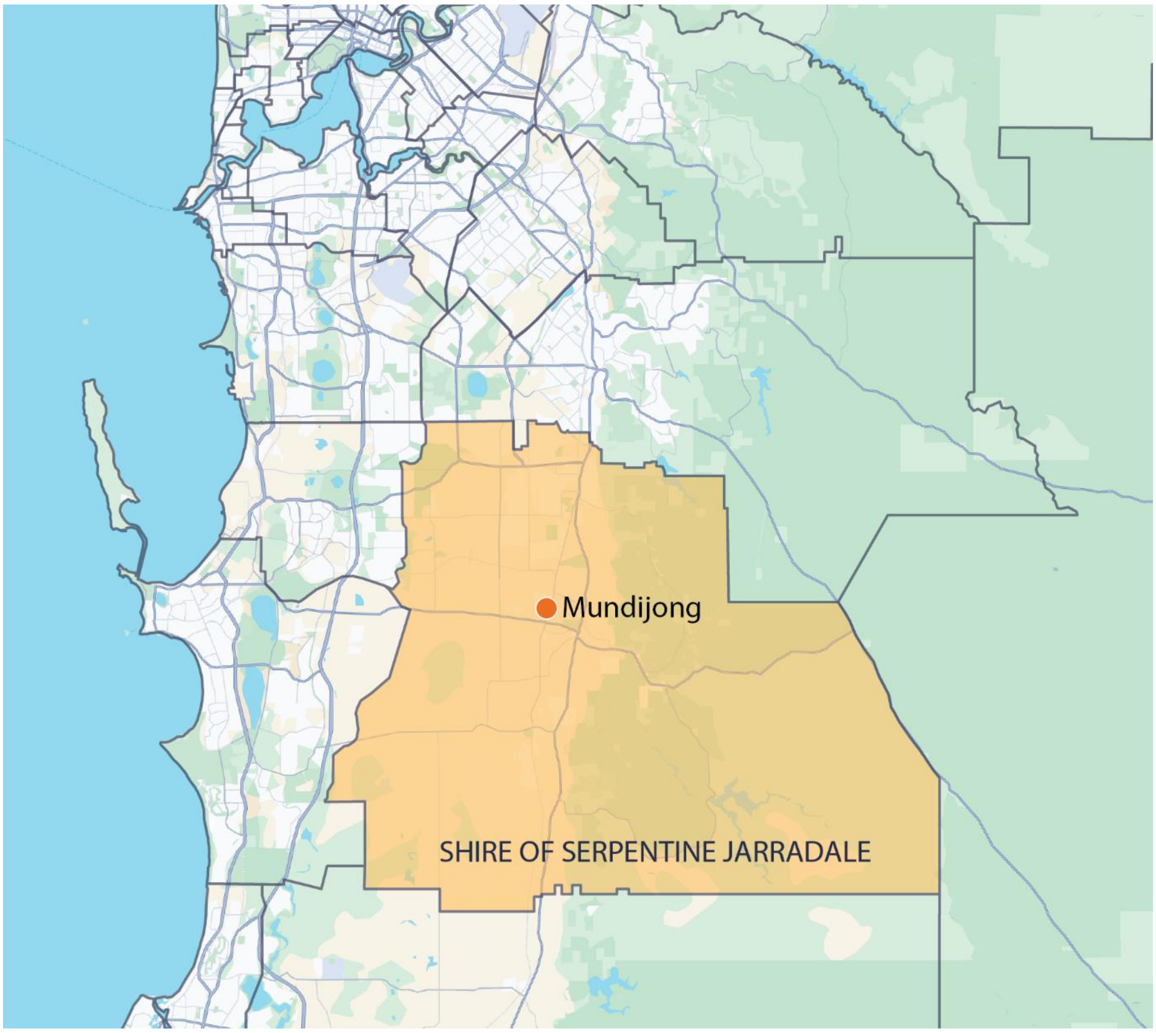
- An analysis of the Shire's demographic and economic context
- An analysis of demand for population goods and services
- Analysis of local and regional commercial drivers
- A strategic review of relevant local and state policies and frameworks
- A review of retail trends
- A benchmark gap analysis to inform activity centre floorspace opportunities
- A Needs Assessment to determine supportable retail and non-retail floorspace and employment based on expected population
- An activity centre hierarchy from 2024 to 2049
- Other employment land requirements to meet sub-regional employment targets

3 DEMOGRAPHIC ANALYSIS

Section Overview: This section provides an understanding of the current population and their characteristics. Population growth estimates are introduced and will inform demand projections directly relating to the required Modifications 6 and 74. Current, Economic Self-Sufficiency is assessed and sets a basis for comparison to address Modification 48.

Demographic analysis has been undertaken to better understand the current and forecasted demographic characteristic influence on demand for proposed Activity Centre uses in the Mundijong District Structure Plan Area (Mundijong DSP area). The Shire of Serpentine-Jarrahdale has been used for demographic analysis. This is based on the assumption that the Shire's overall demographic characteristics are better representative of the future population mix than the current demographic characteristics of the Mundijong DSP area. Where applicable, the of Serpentine-Jarrahdale has been benchmarked to the Greater Perth area.

Figure 5: Shire of Serpentine-Jarrahdale Context



Pracsys 2024

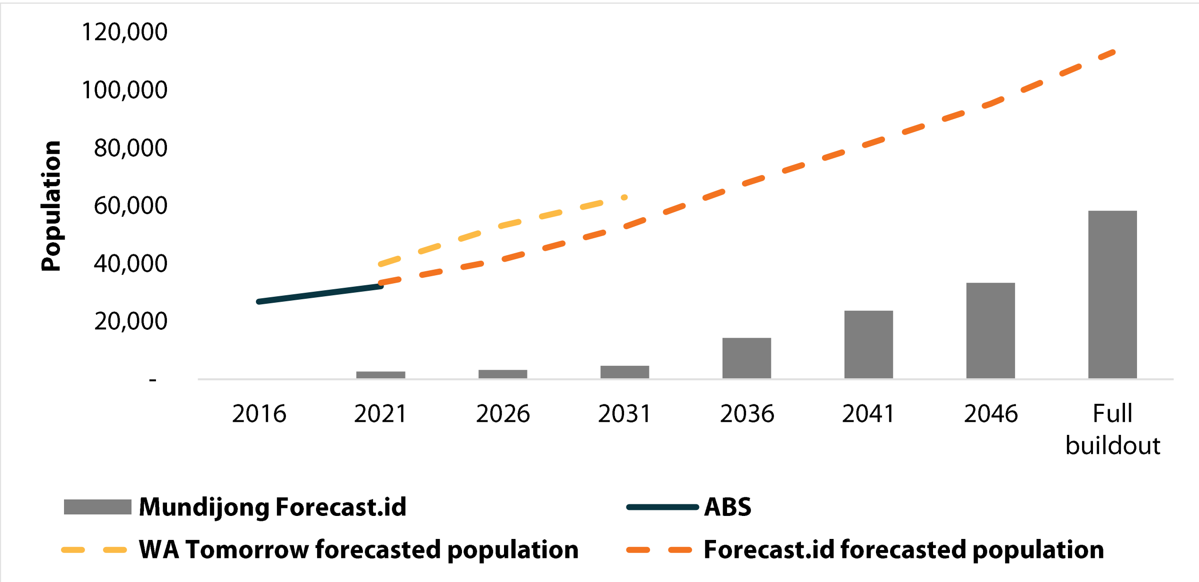
3.1 Population Growth

Population growth of the Shire of Serpentine-Jarrahdale and the Mundijong DSP Area have been analysed using WA Tomorrow forecast bands and Forecast.id for 2021 to 2031 and 2021 to 2046, respectively (Figure 6). South Metropolitan and Peel Sub-regional Planning Framework targets have been used to estimate full buildout. The population within the Shire was approximately 32,000 in 2021[2].

- Based on WA Tomorrow Band C forecasts, in 2031, the population in the Shire is projected to increase by 96%, to 63,000.
- Forecast.id (more conservatively) forecasts the population to increase by 64%, to 53,000 in 2031.

Forecast.id estimates extend to 2046 and project that the Shire's population will increase by another 81%, to 95,000. Forecast.id forecasts have been used to align closer to ABS Census 2021 data and because they extend to 2046, these estimates have been used for further analysis, as opposed to using WA Tomorrow forecasts, by extrapolating 2031 estimates to 2046.

Figure 6. Serpentine-Jarrahdale (S) and Mundijong Population Forecasts, 2021 to 2046

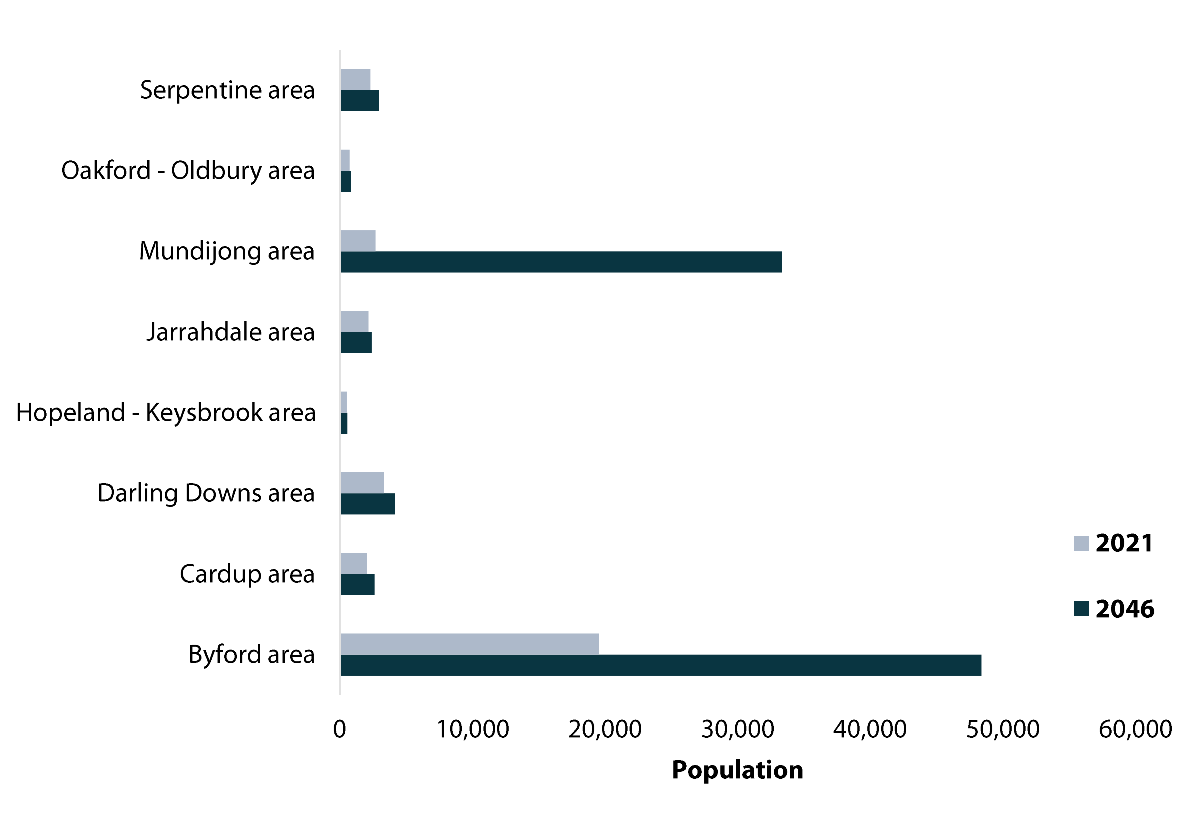


Source: ABS Census 2021, WA Tomorrow 2021, Forecast.id 2024

The Mundijong population as a proportion of the Shire's population is forecasted to increase from 8% to 35% between 2021 and 2046, and to 52% at full buildout. This shows the growing importance of Mundijong within the region and the increasing demand for more activity centres in Mundijong. Figure 7 illustrates the expected change in population within each of the Shire's localities between 2021 and 2046. The majority of the predicted expansion is concentrated in the Mundijong and Byford area, with the Mundijong population expected to increase by over 10 times.

[2] ABS Census 2021

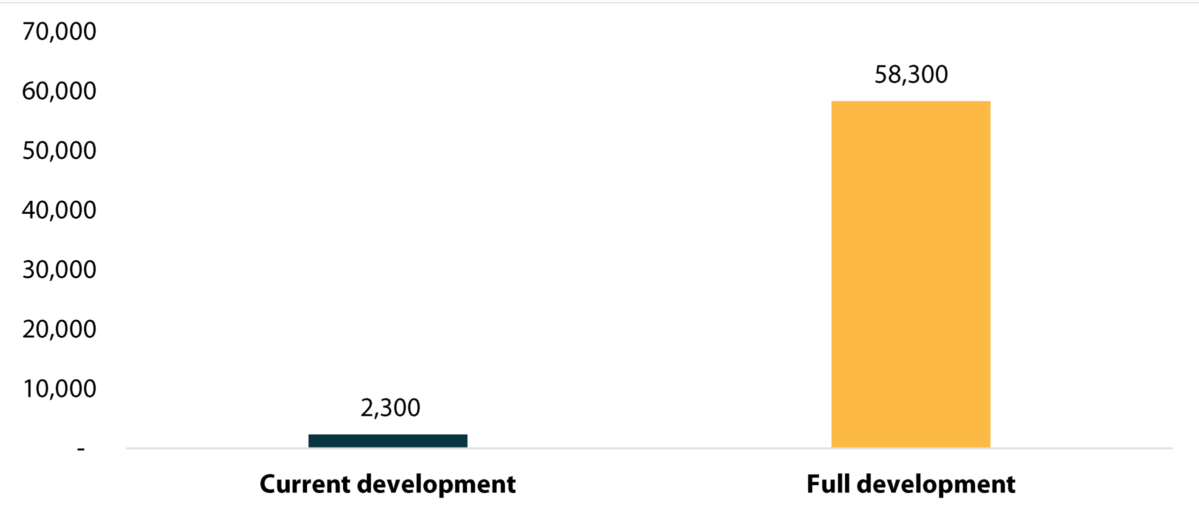
Figure 7. Population of Serpentine-Jarrahdale (S) Localities, 2021 to 2046



Source: Forecast.id 2024

The Mundijong District Structure Plan indicates the area will accommodate 58,300 residents (Figure 8). This projected population has been used for employment estimates in Section 3.11.

Figure 8. Projected Population of Mundijong, Current to Full Development



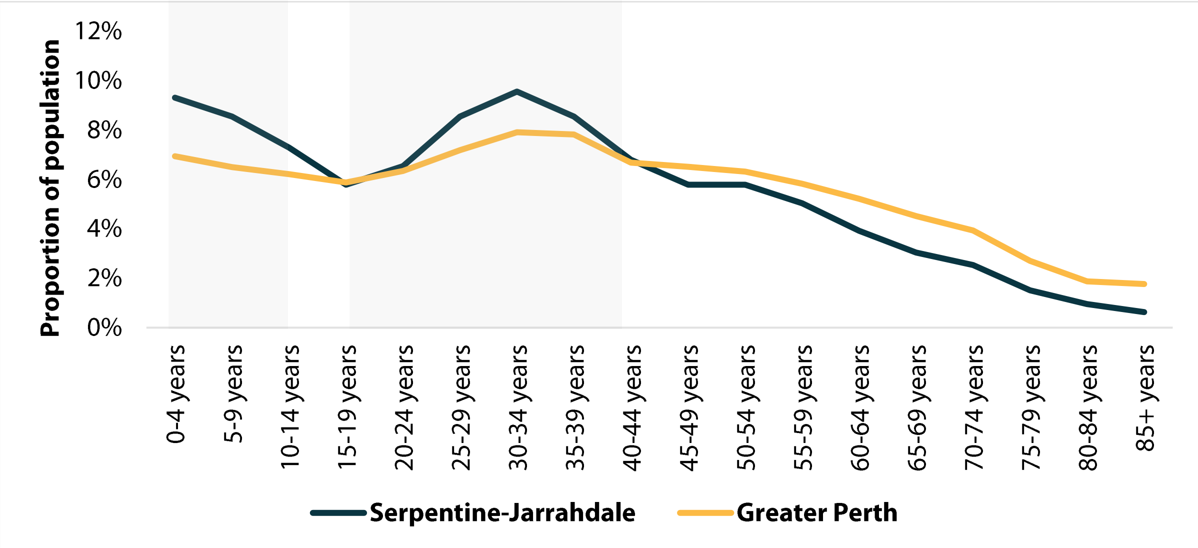
Source: ABS Census 2021, Mundijong District Structure Plan 2021

The significant expansion in the region's residential base will require substantial delivery of population-orientated goods and services, and employment opportunities.

3.2 Age Profile

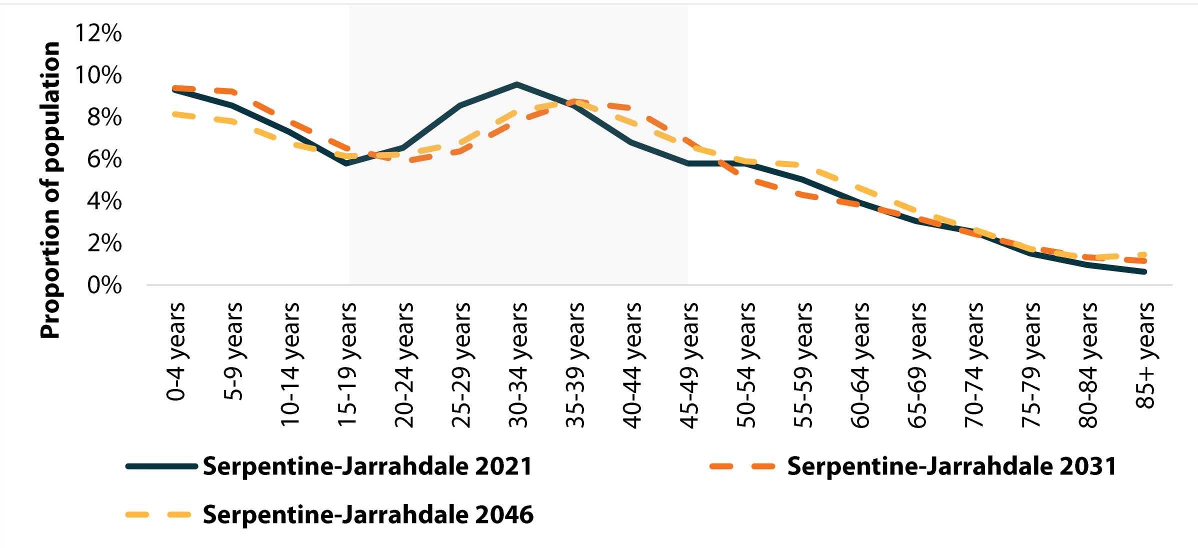
The age profile of Serpentine-Jarrahdale residents has been compared to the Greater Perth average. The age profile exhibits a higher number of young age groups (under 44 years-old) than older age groups: 70% and 60% of the population being younger than 45 years-old for Serpentine-Jarrahdale and Greater Perth, respectively (Figure 9). The difference is mostly concentrated in 0-9 and 25-39 year-olds and reflects the fact that Serpentine-Jarrahdale has younger and larger families, with the average family having 0.2 more children than the average family in Greater Perth[3].

Figure 9. Age Profile in Serpentine-Jarrahdale (S) with Greater Perth Benchmark



Source: ABS Census 2021

Figure 10. Serpentine-Jarrahdale (S) Future Age Profile (2031)



Source: ABS Census 2021, WA Tomorrow 2021

[3] ABS Census 2021

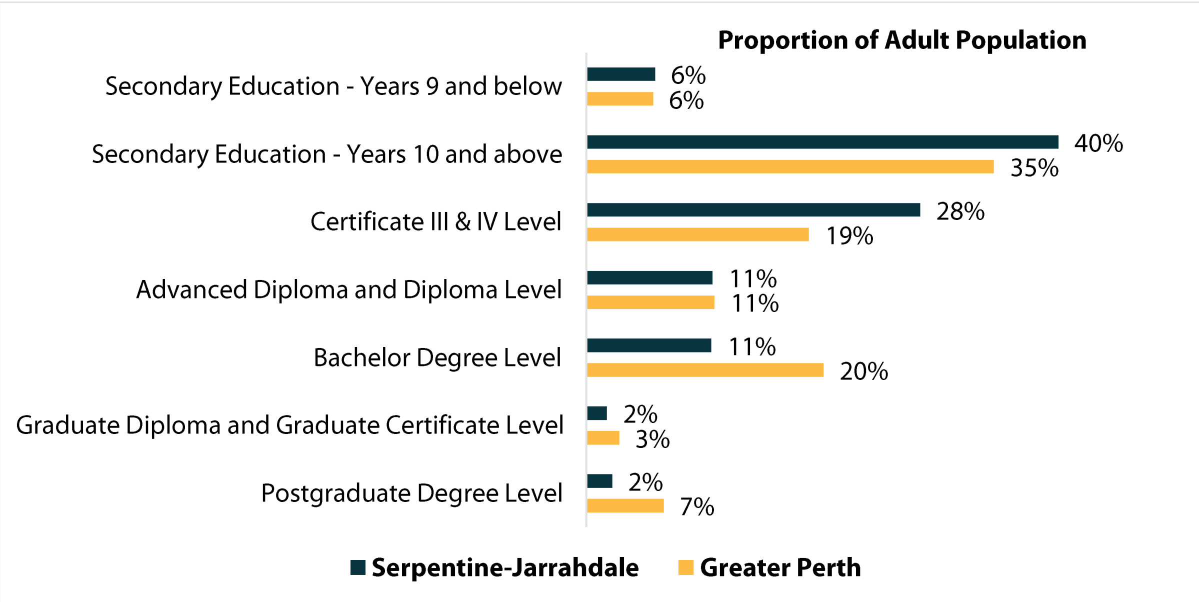
Figure 10 illustrates the expected change in the age profile of Serpentine-Jarrahdale between 2021 and 2046. It is expected that the Shire will age, with growth expected among 40-49 years old, and a reduction in 20–29-year-olds.

This demographic transition may represent the Shire progressing to later stages of the suburb life cycle. The suburb life cycle is a framework that proposes that new areas are typically first settled by young households, as is occurring in the Shire currently. As the suburb develops, two effects happen: those young households become older; and older households, relative to the first young households, are attracted to the suburb. They are attracted to the suburb due to the better amenities provided by the suburb, e.g., better and more schools, diversity of housing stock, and denser developments[4]. As the region becomes more developed, there is a higher concentration of older persons — as forecasted for the Shire. Despite the growth in 40-49 year olds, there is marginal growth in 50+ year olds, reflecting that mostly young families are expected to move into the area. This means that there will need to be significant amenity and services catered for young persons and young families in activity centres as they develop, with planned facilities for residential care as residents transition into older age groups to support aging in place.

3.3 Educational Attainment

The level of educational attainment for the Shire of Serpentine-Jarrahdale has been compared to the Greater Perth benchmark (Figure 11). Serpentine-Jarrahdale's residents are nearly 40% less likely to obtain a tertiary education than Greater Perth residents. Correspondingly, the Shire exhibits a higher concentration of Certificate III and IV attainment than the benchmark.

Figure 11. Educational Attainment in Serpentine-Jarrahdale (S) with Greater Perth Benchmark



Source: ABS Census 2021

[4] Forecast.id 2011, *A Tale of Two Suburbs – The concept of suburb lifecycles and how it can help us forecast possible futures*

The significant population at full development is likely to require additional education services to provide a greater diversity of educational opportunities. Vocational and potentially tertiary education services either within the DSP area or accessible from the DSP area should be investigated.

3.4 Labour Force Status

The Shire's labour force makes up 73% of the population against Greater Perth's 69% (Figure 12). On a more detailed level, the Shire's greater proportion of employed population is an outcome of more full-time workers (43%) compared to Greater Perth (39%).

Figure 12. Labour Force of Serpentine-Jarrahdale (S) with Greater Perth Benchmark

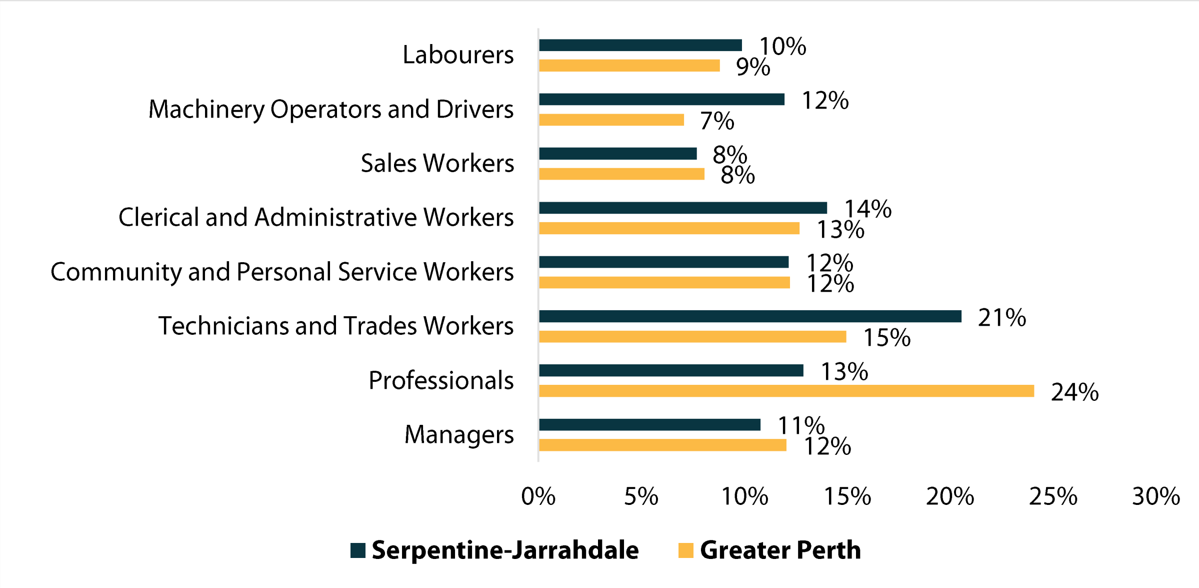
Status	Serpentine-Jarrahdale	Greater Perth
Employed	70% (16,056)	65%
Unemployed	3% (658)	4%
Labour Force	73% (16,714)	69%
Not in the Labour Force	27% (6,259)	31%

Source: ABS Census 2021

3.5 Occupation

Residents of Serpentine-Jarrahdale are more likely to work as Technicians and Trades Workers and Machinery Operators and Drivers than residents of Greater Perth. While Greater Perth exhibits a significantly higher concentration of Professionals than Serpentine-Jarrahdale. Figure 13 illustrates the distribution of occupations in Serpentine-Jarrahdale and Greater Perth. Future employment opportunities associated with the West Mundijong Industrial area align with these types of skills and may open opportunities for greater professional and manager positions.

Figure 13. Occupation of Employment for Residents of Serpentine-Jarrahdale (S) and Greater Perth

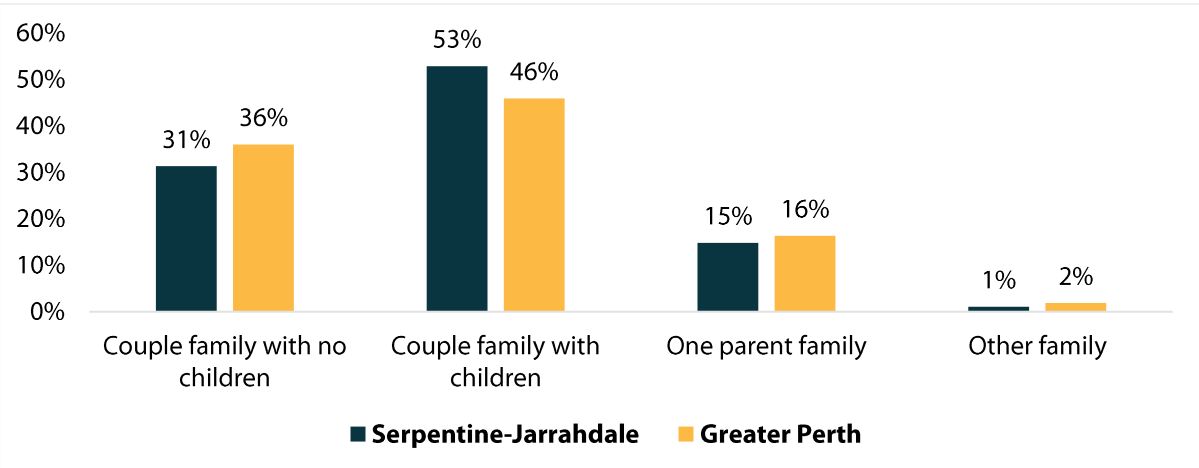


Source: ABS Census 2021

3.6 Family Composition

Serpentine-Jarrahdale's family composition has been compared to Greater Perth, using the 2021 ABS Census (Figure 14). The Shire's family composition profile indicates a higher proportion of families with children relative to Greater Perth (68% versus 62%). The difference is a result of the higher proportion of couple families with children in the Shire (53% versus 46%). The Shire's level of families with children both supports the analysis of the Shire's age profile and indicates that there may be a need for demographic-specific commercial uses, such as childcare. There will also need to be significant provision of primary and secondary education to meet the growing population. Co-locating these education services with activity centres is a significant opportunity to support activation of centres and multi-purpose trips that reduce private vehicle usage.

Figure 14. Family Composition of Serpentine-Jarrahdale (S), with Greater Perth Benchmark

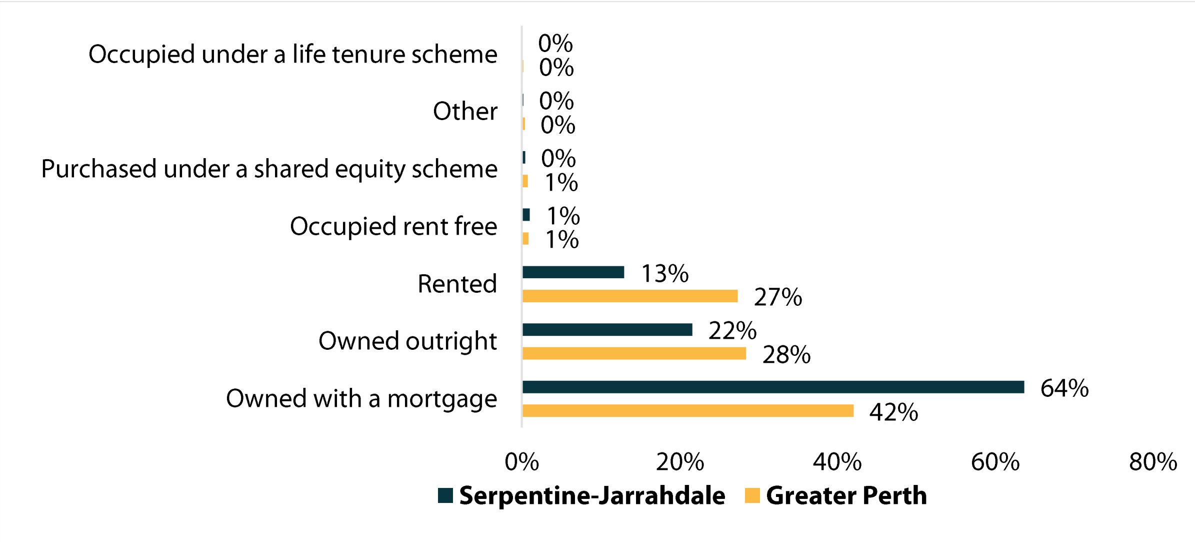


Source: ABS Census 2021

3.7 Household Type

Serpentine-Jarrahdale's household type has been compared against Greater Perth, using tenure data from the 2021 ABS Census (Figure 15). The Shire has a greater proportion of owned dwellings relative to Greater Perth (85% versus 70%). This is a result of 1.5 times more dwellings in Serpentine-Jarrahdale being owned with a mortgage than Greater Perth. The relatively low proportion of renters in the Shire (13% to 27%) would indicate the presence of low-density, separate housing that is affordable. Retaining affordability of housing as density increases will be critical to maintaining disposable income levels that support vibrant and viable activity centres.

Figure 15. Household Type of Serpentine-Jarrahdale (S), with Greater Perth Benchmark

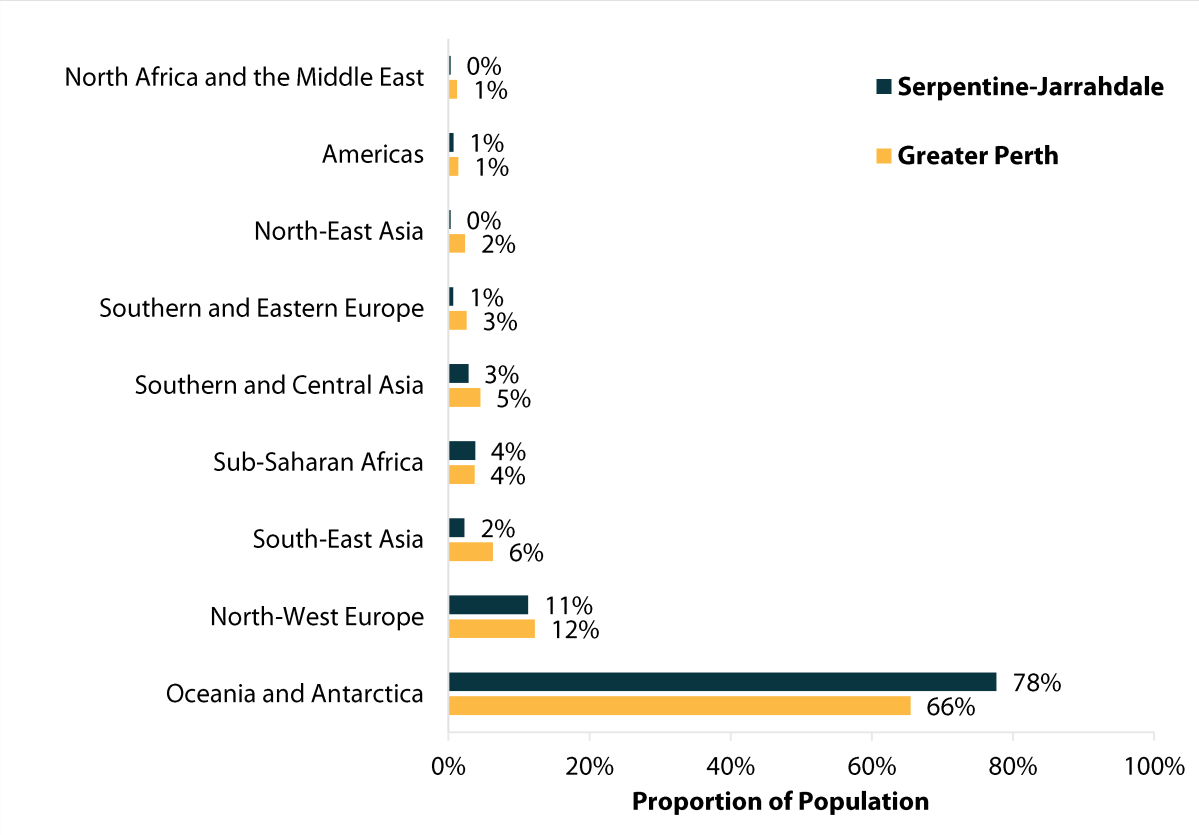


Source: ABS Census 2021

3.8 Cultural Diversity

The cultural diversity of the Shire has been compared against Greater Perth using country of birth data from the 2021 ABS Census (Figure 16). The Shire has a much higher proportion of persons born in Oceania and Antarctica compared to Greater Perth (78% vs 66%, respectively). All other places of birth for the Shire are lower compared to Greater Perth, with the exception of Sub-Saharan Africa and Americas being equal the Greater Perth rate. Therefore, the activity centres in the Shire may face greater demand for specific goods and community services catered to Australian-born persons' preferences.

Figure 16. Serpentine-Jarrahdale (S) and Greater Perth Country of Birth

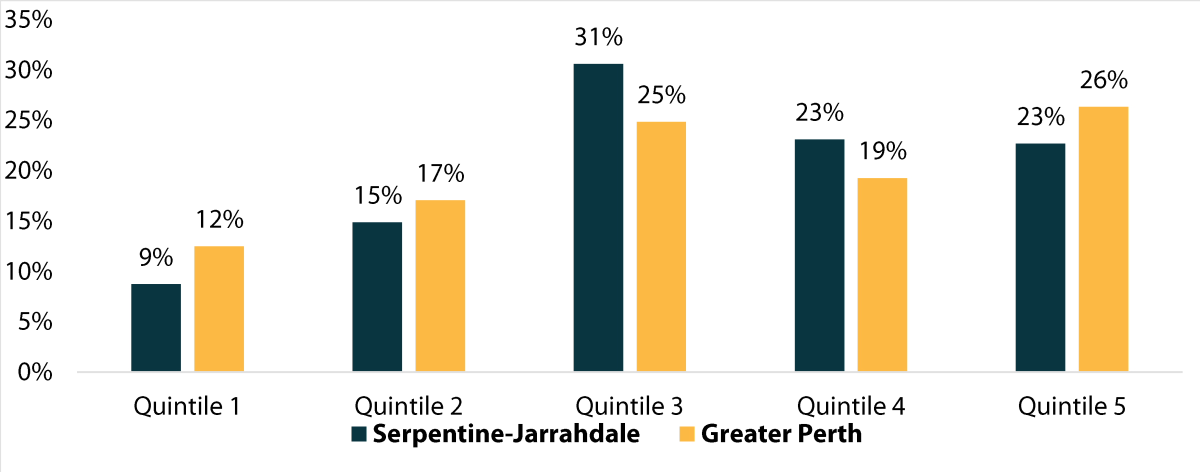


Source: ABS Census 2021

3.9 Income Profiles

The distribution of household income of Serpentine-Jarrahdale has been compared against Greater Perth, using income quintiles data from the 2021 ABS Census (Figure 17). The Shire exhibits a higher concentration of middle-income households than Greater Perth, while exhibiting a smaller concentration of lower- and high-income households This indicates that activity centres should focus on selling mid-priced products and services, with an emphasis on quality and affordability, targeting the young families forecasted to reside within the region.

Figure 17. Household Income Profile in Serpentine-Jarrahdale (S), with Greater Perth Benchmark

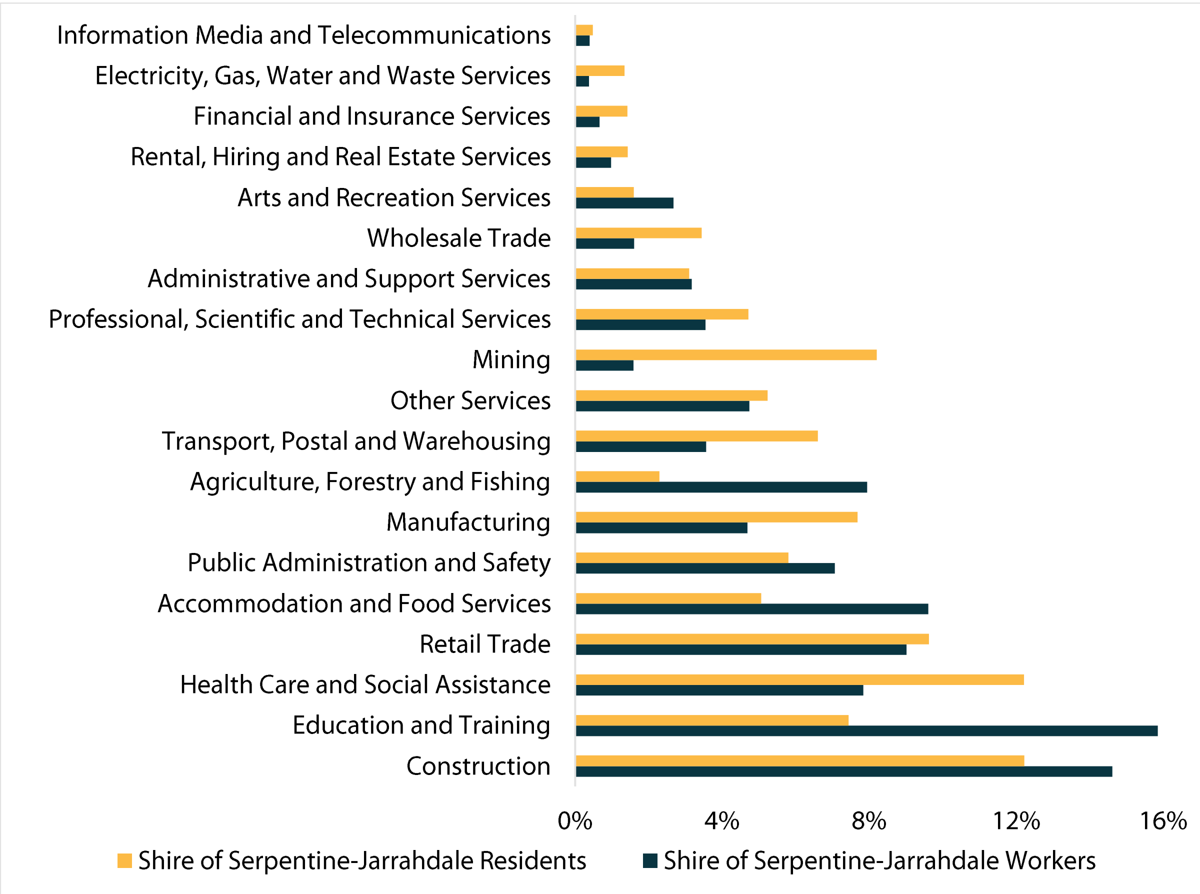


Source: ABS Census 2021

3.10 Industry of Employment

The industries in which residents of the Shire work in and the industries that hold the workers in the Shire were analysed (Figure 18).

Figure 18. Serpentine-Jarrahdale (S) Industry of Employment



Source: ABS Census 2021

Residents predominantly work in Construction (15%), Health Care and Social Assistance (12%), and Retail Trade (10%). Provision of population related goods and services through activity centres will likely align with the skillset of Shire residents and offered jobs of the new activity centres in the Shire. There will be the need for strategic employment (not population driven) to achieve sub-regional employment targets.

3.11 Employment Self-Sufficiency and Self-Containment

Employment self-sufficiency (ESS) reflects the ratio between the number of jobs available in a particular industry within a region and the number of people employed in that industry who live in the same region. It is a measure of the capacity for an economy to satisfy its industry composition with its own residents. A higher ratio (closer to 100%) is therefore desirable, as it reflects optimal matching between the employment skillset of an area's residents and the employment opportunities available to those residents locally. ESS levels in the South Metropolitan Peel sub-region are projected to increase from:[5]

- 65 per cent to 83 per cent in the South-Western sector[6]
- 45 per cent to 61 per cent in the South-Eastern sector[7]
- 72 per cent to 79 per cent in the Peel sector[8]

Employment self-containment (ESC) indicates the proportion of labour force in a geographic area work in that same area. It should be noted that ESC is primarily a Sub-Regional concept that should consider employment within an overall economy compared to the workforce living within that economy. Measurement of localised components (e.g. Mundijong) of a larger economy (South-West Sub-Region) does not consider the individual roles of the development within the greater Sub-Region and does not therefore fully assess the sustainability of employment in adjacent local areas.

Serpentine-Jarrahdale's current performance against ESS and ESC metrics is illustrated in Figure 19 below. This analysis indicates that some of the region's largest industries, such as Accommodation and Food Services and Education and Training, exhibit ESS scores consistent with the Peel region average while having much lower ESC scores; this indicates that despite a comparable provision of jobs in an industry, residents are travelling outside the Shire for work in that industry. Agriculture, Forestry and Fishing is an exception, having both high ESS and ESC scores. Across all industries, Serpentine-Jarrahdale currently has an ESS of 40% which is significantly lower than the Sub-Regional average of approximately 60%.[9] The discrepancy represents the distribution of employment land in the Sub-region that is generally strategically orientated and based on factors largely outside the control of Local Government. The Shire of Murray, for instance, has an ESS of over 80% due to the presence of mining and manufacturing associated with its natural resources. Significant

[5] The Department of Planning, Lands and Heritage, *South Metropolitan Sub-regional Planning Framework (2018)*

[6] The South-Western sector includes the following local governments: City of Cockburn, City of Fremantle, City of Kwinana, City of Melville, and City of Rockingham

[7] The South-Eastern sector includes the following local governments: City of Armadale, City of Belmont, Town of Victoria Park, City of Canning, City of Gosnells, Shire of Serpentine-Jarrahdale, and City of South Perth

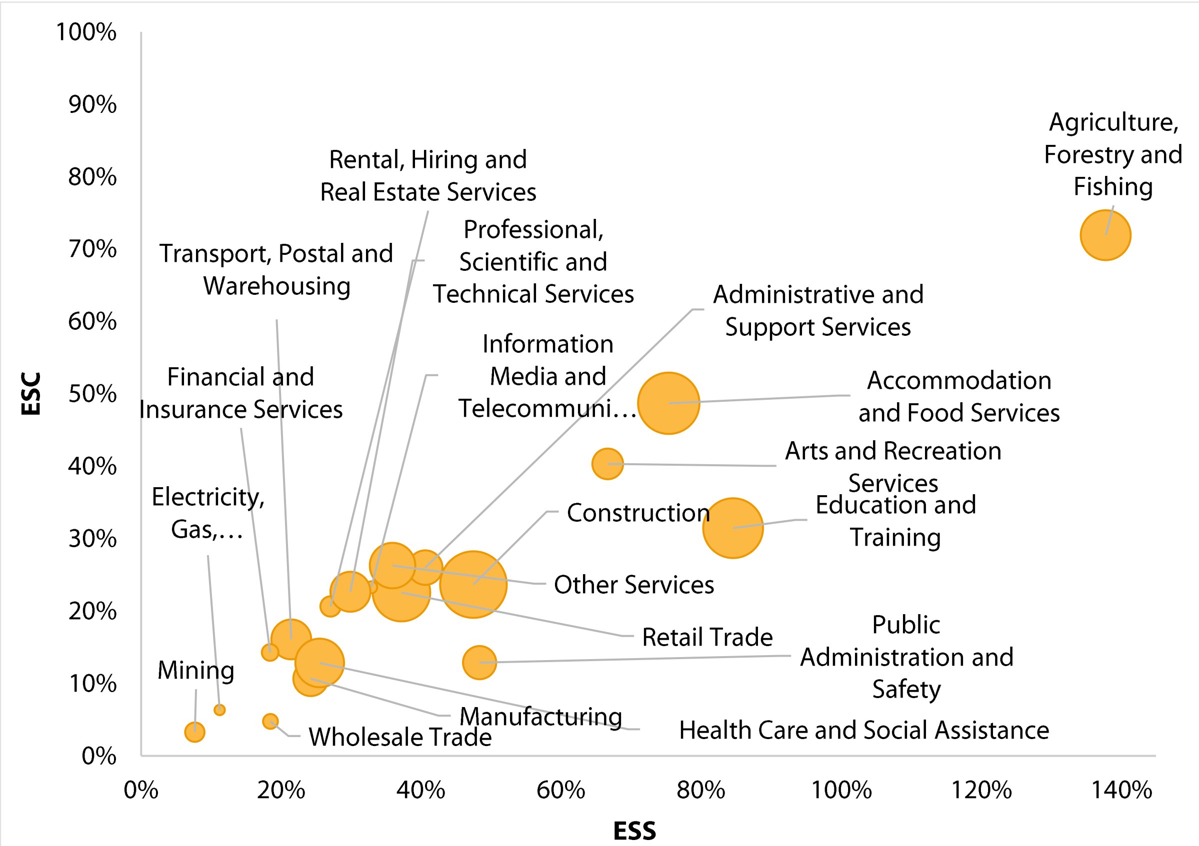
[8] The Peel Sector includes the following local governments: Shire of Boddington, Shire of Murray, Shire of Serpentine-Jarrahdale, Shire of Waroona, and City of Mandurah

[9] ABS Census 2021

changes to the ESS will be influenced predominantly development of major employment opportunities such as the West Mundijong Industrial Area. The sub-regional average ESS target of 79% will be used for assessment of the DSP area's employment as the area will have a high concentration of employment through activity centres, schools and recreational facilities, and it is located adjacent to the West Mundijong Industrial Area which will support employment in the wider area.

At full buildout, using the current labour force rate of 73%[10], the Shire will need to create approximately 27,400 more local jobs to reach the Peel's targeted ESS level of 79%.

Figure 19. ESS and ESC of Serpentine-Jarrahdale (S) Industries



Source: ABS Census 2021

[10] ABS Census 2021

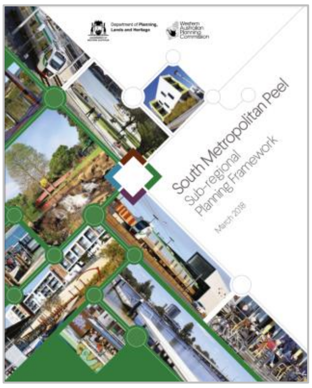
4 STRATEGIC CONTEXT

Section Overview: This section summarises the overarching objectives set out by the State and Local Planning Frameworks that should inform the Background report. This addresses requirements from SPP4.2 Implementation Guidelines for Needs Assessments.

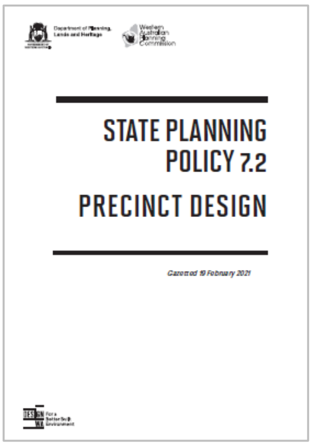
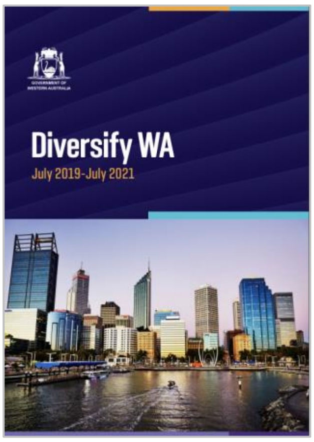
The State and Local planning frameworks and other contextual documentation was reviewed to identify relevant overarching objectives and to understand factors influencing future catchments and employment targets for activity centres.

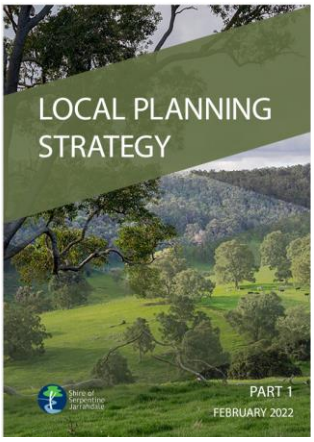
The following table summarises the key relevant planning and contextual documents and identifies critical aspects relevant to the Mundijong DSP area.

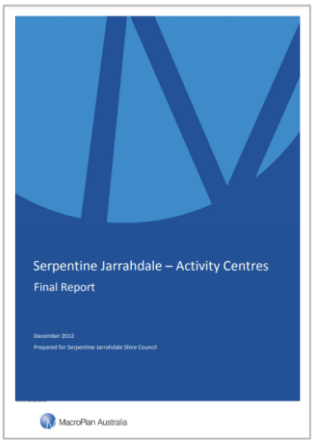
Figure 20. Strategic Alignment

Document	Summary	Directions Relevant to the DSP area
South Metropolitan Peel: Sub-Regional Planning Framework **Department of Planning, Lands and Heritage, 2018** 	South Metropolitan Peel is a land use planning and infrastructure framework, part of the Perth and Peel@3.5million document suite, for Western Australia at a population of 3.5 million. A core aim is to strengthen key activity centres and employment nodes to meet the future needs of industry, commerce and the community. This includes a focus on attracting strategic economic and employment land uses within the strategic metropolitan centres and key industrial centres, while maximising use of existing and proposed infrastructure.	• Future development can maximise existing infrastructure • Strengthen employment nodes to strengthen future, industry, commerce and community • Maintain and enhance employment self-sufficiency to reduce long and costly commutes and increase the economic sustainability of areas. • Leverage the opportunity to provide a mix of retail and entertainment uses to improve the liveability of the centre and attractiveness to visitors.
State Planning Policy 4.2 Activity Centres **Department of Planning, Lands and Heritage, 2023** 	Activity centres are multi-functional community focal points that vary in size and function. SPP 4.2 aims to develop activity centres which meet different levels of community need and enables employment goods and services to be accessed equitably and efficiently by the community. The density and diversity of housing in and around activity centres is maximised to improve land efficiency and housing variety.	• The activity centre network meets different levels of community need and enables employment, goods and services to be accessed efficiently and equitably by the community. • The primacy of activity centres is reinforced, and out-of-centre development that undermines the hierarchy

Document	Summary	Directions Relevant to the DSP area
	Development within activity centres aims to be well-designed, cohesive and functional and capitalises on the use of existing and planned infrastructure. Walking, cycling and public transport, to and between activity centres, should be maximised while private vehicle trips and dependence on parking is reduced. Identifies strategic, secondary, district, neighbourhood and local centres.	of activity centres is discouraged. • New activity centres or the expansion and consolidation of existing activity centres does not unreasonably undermine existing centres. • Sufficient development intensity and appropriate land use mix is provided, that supports the role and function of activity centres and facilitates a competitive retail and commercial market. • The density and diversity of housing in and around activity centres is maximised to improve land efficiency and housing variety and assist with delivering the objectives and outcomes of the strategic planning framework for the applicable region. • Development within activity centres is well-designed, cohesive and functional and that capitalises on the use of existing and planned infrastructure. • Access to and within activity centres by walking, cycling and public transport is maximised while private vehicle trips and dependence on parking is reduced. • Planning and development of activity centres balances the environmental, social and economic values of activity centres to provide a net positive benefit to local communities.

Document	Summary	Directions Relevant to the DSP area
State Planning Policy 7.2 Precinct Design **Department of Planning, Lands and Heritage, 2021**  	Precincts areas that require a higher level of planning and design focus due to their complexity. Precinct types include activity centres (as per SPP 4.2) station precincts, urban corridors, residential and/or mixed-use areas, and areas identified by the WAPC.	• SPP 7.2 aims to ensure that precinct planning, and design is undertaken in a co-ordinated manner to accommodate growth and delivery quality-built environment outcomes which provide social, economic and environmental benefits. • The policy recognises the need to design and plan for a broader range of precinct-based contexts and conditions, including activity centres, stations, urban corridors, and infill areas.
Diversify WA, 2019  	Diversify WA is an Economic Development Framework identifying avenues for economic growth and development throughout the State, with the aim of industry and market diversification.	The vision set out by Diversify WA is "a strong and diversified economy delivering secure, quality jobs through increased investment across a broad range of industries" There are a number of external focused sectors that have opportunities in the DSP area: • Tourism, events and creative industries • Primary industries • Manufacturing The Mundijong DSP area may have opportunities to contribute to the development objectives through enhancing their natural and cultural attractions and maintaining and building upon their agricultural infrastructure.

Document	Summary	Directions Relevant to the DSP area
Shire of Serpentine Jarrahdale Local Planning Strategy 2022  	The Local Planning Strategy is the coordinated strategic planning framework for the Shire's long-term vision, in alignment with State and regional planning frameworks to provide the basis for zoning, structure planning and land development. The Strategic objectives of the Strategy are: • Ensuring the character of the Shire is maintained • Consolidating the urban form • Delivering liveable communities • Investing in infrastructure and technology • Diversifying the regional economy and employment base • Preserving the natural environment	The Strategy outlines the following objectives for Mundijong: • Achieving housing diversity • Delivering distinctive urban precincts • Integrating new housing and development with older development in a sensitive manner • Encouraging urban development and housing to be environmentally sustainable and efficient For activity centres, the Strategy provides objectives as follows: • Provide equitable access to the goods and services required by the community • Deliver activated retail and commercial centres with community uses included • Create quality streetscapes and open spaces with high amenity and pedestrian access • Attract and grow investment and business opportunities
Shire of Serpentine Jarrahdale Council Plan 2023-2033  	Informed by community engagement, the document outlines the Shire's strategic priorities and aspirations. Three pillars were identified to meet the Shire's vision: • Thriving • Liveable • Connected The document emphasises the Shire's focus on community infrastructure, and development and urbanisation.	The following objectives and initiatives were identified within the document relevant to the DSP: • Increasing opportunities for local employment • Develop the Mundijong Precinct Structure Plan • Invest in facilities and amenities to meet current and future needs

Document	Summary	Directions Relevant to the DSP area
Serpentine Jarrahdale – Activity Centres, 2012 	The purpose of this document is to bring the Shire's activity centre planning in line with SPP4.2. Objectives of the framework are to determine the optimal activity centres network, advise upon sizing and timing of centres and delivery implementation of the developments.	Given the location of the Shire, the retention of jobs and retail expenditure is critical for the delivery of the Mundijong district centre. Recommended ways to achieve strong economic activation involves prioritising designing activity centres that attract customers, workers, and residents, and act as microcosms of activity.

Source: Pracsys, 2024

5 RETAIL TRENDS

Section Overview: This section summarises emerging and potential future trends that may influence the development of activity centres in the DSP. This addresses requirements of SPP4.2 Implementation Guidelines for a Needs Assessment.

The Mundijong DSP should encourage development within its activity centre(s) in line with current retail trends to maximise expenditure and overall demand. This being said, the Mundijong DSP'S main goal should be to address the policy outcomes specified in the SPP4.2., ensuring the establishment of a hierarchy of activity centres that promotes, employment, equitable access of goods and services and primacy of activity centres.

The identified trends highlight the fast-changing nature of retail that businesses need to adapt to. It is key to ensure that planning for activity centres allows for flexibility in uses and floorspace areas. The following trends are worth considering as activation and development opportunities arise (Figure 21)[11].

Figure 21. Retail Trends and Drivers

Trend	Description	Drivers
Conscious Retail	Conscious retail is increasingly keeping customers loyal to a brand /distributor.	Many consumers have made a lifestyle choice to have a smaller global footprint, support brands that provide better conditions for factory workers in developing countries or support local products. Consumers are often willing to pay a premium for these products.
Data Retail	'Big Data' is being used to continually monitor and respond to changing consumer desires, shortening the product cycle.	Collecting and analysing data on retail sales is being used to inform all parts of the retail sale process, from supply chain to understanding customer satisfaction with their purchase. Retailers who don't use data to inform their decisions are much less likely to understand their customer's preferences or forecast demand and may find it difficult to remain competitive with those who do.
International Retail	The last few years have seen an influx of international brands penetrating the Australian market.	An untapped Australian market and Australian's demanding goods they can see online but cannot purchase locally. Additionally, the ability to geoblock products and charge higher prices in the Australian market has driven demand.

[11] http://www.smartcompany.com.au/industries/retail/top-five-retail-trends-watch-2017/; https://www.rangeme.com/blog/6-trends-that-will-reinvent-retail-in-2017/; https://www.appearhere.co.uk/inspire/blog/the-retail-trends-with-staying-power; http://digitalmainstreet.ca/retail-trends-10-experts-share-their-predictions-for-2017/; https://www.vendhq.com/au/university/retail-trends-and-predictions-2017; https://www.digitalpulse.pwc.com.au/retail-trends-2017-paul-zahra/; https://www.forbes.com/sites/bernardmarr/2015/11/10/big-data-a-game-changer-in-the-retail-sector/#63dc4fbd9f37

Trend	Description	Drivers
Omnichannel Retail	Digital marketing has been used to keep customers loyal to a brand/distributor.	The emergence of digital marketing across a range of devices, platforms and applications have provided multiple channels for retailers to market their products. Physical stores need an online presence to be competitive, as a consumer may shop using both means at different times.
Mobile Devices	Accessing retail via mobile devices and integrating mobile devices.	Mobile devices are providing unprecedented 24/7 access to retail offerings.
Subscription retail	Subscription retail allows retailers to encourage increased loyalty and connection to their brand.	Retailers need a business model that 'locks in' customers to increase the threshold of switching brand
Fast Retail	Business models comprised of virtual stores accessible from anywhere with fast distribution networks.	Technology has enabled customers to decide when, how and where to go. Consumers are no longer beholden to opening times or physical geography, consumer desires rather than retailers are driving consumption.
Retailtainment	Entertainment as an integral part of the retail experience.	The popularity of online retail channels has resulted in physical retailers needing to provide a retail experience or social experience as a point of difference. Millennials integrate retail and entertainment as a single social experience.
Small Retail	Speciality shops and smaller floorplates are becoming more popular.	Smaller stores with more curated selections, and specialty shops with niche products and more knowledgeable staff are predicted to be more competitive than larger stores where products can be harder to find.
Personal Retail	Consumers are increasingly desiring products that can be personalised.	Consumers are going shopping with a strong idea of what they want, rather than shopping to see what is available and fits their needs. They want to find a product that reflects their personal brand and is tailored to their needs rather than generic and mass-produced.
Ethical Consumerism	Consumers are considering the ethical and environmental impact of their purchases; where the product was produced and if it reflects their values.	This has been driven by a range of factors such as COVID-19, social media raising awareness around working conditions and environmental impact, news, Oxfam and other organisations that rate brands.
E-commerce	The rise of online shopping coincides with a rise in e-commerce. Online shopping provides the ability of consumers to stay home, and e-commerce has revolutionised who can be a retailer.	This has been driven by fast-paced lives, the rise of social media, more people starting online businesses. Online shopping is what customers are doing, and e-commerce is what businesses are doing. This also means in-store shopping has to be enticing or convenient enough to attract consumers.

Trend	Description	Drivers
Buying Local	Supporting local businesses and individuals	Consumers are becoming increasingly willing to purchase from small businesses and locally. This has been accelerated through COVID-19 to support small, struggling businesses and due to a lack of imported goods.
Open Air Shopping Experiences	People are starting to prefer outdoor malls rather than enclosed malls.	People wanting to be in nature, prefer to walk between shops outside rather than in a shopping centre, however, the trade area pull is larger for indoors than outdoors
Circular Fashion	More consumers are turning to be a part of a circular economy model in which they consume and give away items in a more sustainable manner.	This has been driven by second-hand ecommerce like Etsy, people both buying and selling as individuals or small 'brands' and the growth of the sharing economy.
Authenticity	Customers are increasingly wanting to feel a personal connection with brands and are becoming more aware of manipulative advertisements.	Increased availability of information is making consumers more aware of marketing tactics. This is making consumers more inclined to purchase from brands/retailers they feel are authentic.
Virtual Reality	Retailers are increasingly looking to differentiate themselves through the integration of technology with the customer experience.	Augmented Reality (AR) and Virtual Reality (VR) technologies have had a significant impact on the retail sector. AR and VR provide immersive and engaging experiences for customers. This trend can reduce the footprint required of physical stores.

Source: Pracsys 2024

6 FLOORSPACE GAP ANALYSIS

Section Overview: The Gap Analysis provides an understanding of the current floorspace mix and areas gaps that should be addressed as the DSP area develops. These are not required modifications for the DSP but address SPP4.2 Needs Assessment requirements and inform the final Activity Centre Hierarchy estimates of net lettable area.

Floorspace gap analysis is a critical tool in urban planning that helps identify and address gaps in the supply and demand for floorspace within a given area. By comparing the current supply of floorspace to benchmark areas, gaps can be identified, and appropriate strategies can be developed to address them.

A floorspace gap analysis was undertaken to understand the current state of floorspace supply and demand applicable to the Shire of Serpentine Jarrahdale and Mundijong DSP area. Department of Planning, Lands and Heritage (DPLH) Planning Land Use Categories (PLUC) and WA Standard Land Use Categories (WASLUC) are used to assess floorspace gaps. Detailed definitions of PLUC are included in Appendix 10.1.

Concordance between PLUCs and Land Uses in the Shire's Local Planning Scheme No.3 is outlined in Figure 22.

Figure 22: PLUC and LPS3 Land Use Concordance

Planning Land Use Category	Local Planning Scheme No.3 Land Uses
RET – Other Retail	Bulky goods showroom, motor vehicle sales, art gallery, garden centre, trade supplies.
ENT – Entertainment/Recreation/Cultural	Community purpose, exhibition centre, cinema/theatre, amusement parlour, club premises, tourism development.
SER – Service Industry	Industry – service, service station, motor vehicle repair.
OFF – Office/Business	Office, home office.
VFA – Vacant Floor Area	N/A.
SHP – Shop/Retail	Shop, convenience store. Liquor store, taverns, small bar, restaurant/café, fast food outlet, lunch bar.
RES – Residential	Residential, grouped dwelling, independent living complex, hotel, motel, bed and breakfast, holiday accommodation, holiday house, residential aged care facility.
MAN – Manufacturing/Processing/Fabrication	Industry (light and service).
STO – Storage/Distribution	Warehouse/storage.
UTE – Utilities/Communications	Telecommunications infrastructure.
HEL – Health/Welfare/Community Services	Community purpose, civic use, consulting rooms, medical centre, hospital, place of worship, educational establishment, child care centre, family day care.

Source: Department of Planning, Lands and Heritage (2017), Shire of Serpentine Jarrahdale (2022)

Four benchmark Local Government Areas (LGA) have been used to identify gaps, the Cities of Armadale, Kalamunda, and Wanneroo, and the Shire of Murray. These areas have been chosen as they all:

- Are peripheral to the Greater Perth area
- Include a mix of urban, semi-rural, and rural areas, with some containing significant natural assets (e.g., national parks, reserves, and forests)
- Are poised and preparing for rapid population growth and urban expansion
- Share a relatively young population

Floorspace to population ratios (service ratios) are used to provide relative comparisons and quantify potential gaps. The gap analysis will consider broader floorspace demand using PLUC codes. This will include:

- A population-driven overview based on comparison of the benchmarked LGA's activity centres. Population-driven industries and jobs are those that share a positive relationship with the size of a population such as real estate, small-scale medical services and retail.
- With an understanding of gaps at a PLUC level, detailed WASLUC uses will be assessed to provide specific strengths and population-driven gaps. This will inform recommendations for land use mixes in the DSP area's centres.

6.1 Current Commercial Supply by PLUC

DPLH LUES 2015 data contains eleven commercial land uses categories. The combined floorspace of Other Retail and Shop-Retail accounts for approximately 33% of total floorspace within the Shire's activity centres (Figure 23). Mundijong DSP area's floorspace was calculated by taking the proportion of the area's current population to the Shire's and applying it to the Shire's floorspace demand and supply.

Figure 23. Shire of Serpentine Jarrahdale's and DSP Area's Floorspace by PLUC

PLUC	Shire of Serpentine Jarrahdale Total Floorspace (m^2)	Floorspace Applicable to DSP Area (m^2)
RET – Other Retail	4,103	296
ENT – Entertainment/Recreation/Cultural	3,966	286
SER – Service Industry	2,340	169
OFF – Office/Business	7,752	559
VFA – Vacant Floor Area	1,350	97
SHP – Shop/Retail	8,375	603
RES – Residential	2,701	195
MAN – Manufacturing/Processing/Fabrication	2,779	200
STO – Storage/Distribution	3,630	262

PLUC	Shire of Serpentine Jarrahdale Total Floorspace (m²)	Floorspace Applicable to DSP Area (m²)
UTE – Utilities/Communications	40	3
HEL – Health/Welfare/Community Services	1,115	80
Total	**38,151**	**2,749**

Source: DPLH LUES 2015

Types of floorspace the Shire and DSP area have a high concentration of in comparison to benchmark areas include:

- OFF – Office/Business
- ENT – Entertainment/Recreation/Cultural
- STO –Storage/Distribution

Floorspace where the Shire and DSP area seems to have a lower concentration in comparison to benchmark areas include:

- UTE – Utilities/Communications
- HEL – Health/Welfare/Community Services

6.2 Current Commercial PLUC Gaps

Population-level PLUC gaps have been estimated based on a comparison of the Shire's activity centre floorspace (commercial centres in the Land Use and Employment Survey) to activity centre floorspace in benchmark local government areas (Figure 24). Cells that are not highlighted represent an undersupply/gap in floorspace while those highlighted in yellow represent an oversupply.

Figure 24 Shire of Serpentine Jarrahdale's and DSP Area's Population-Driven PLUC Gaps

PLUC	Shire of Serpentine Jarrahdale Gap (m²)	Gap Applicable to DSP Area (m²)
RET – Other Retail	-4,468	-322
ENT – Entertainment/Recreation/Cultural	-3,754	-270
SER – Service Industry	-543	-39
OFF – Office/Business	-2,328	-168
VFA – Vacant Floor Area	-4,386	-316
SHP – Shop/Retail	-23,558	-1,697
RES – Residential	-4,467	-322
MAN – Manufacturing/Processing/Fabrication	1,144	82
STO – Storage/Distribution	-3,407	-245

PLUC	Shire of Serpentine Jarrahdale Gap (m^2)	Gap Applicable to DSP Area (m^2)
UTE – Utilities/Communications	-744	-54
HEL – Health/Welfare/Community Services	-5,476	-395
PRI – Primary-Rural	-237	-17
Total	**-52,225**	**-3,763**

Source: DPLH LUES 2015

Within the Shire's activity centres there are significant gaps in Shop/Retail and Other Retail which represents an under provision and an opportunity to expand local offering in commercial spaces. This is accompanied with an undersupply of Entertainment/Recreation/Cultural and Health/Welfare/Community Services, indicating a lack of population-driven services that could be developed adjacent to the retail commercial services. There is less Vacant Floor Area relative to the benchmark areas which indicates that the Shire has high performing activity centres and a need to develop more floorspace. The oversupply of Manufacturing/Processing/Fabrication is largely driven by the benchmarks to the cities of Wanneroo and Armadale, showing a difference in industrial uses that are not relevant to the purpose of the proposed centres.

6.3 Detailed Commercial WASLUC Gaps

Commercial WASLUC gaps have been identified to provide an understanding of the potential mix of uses that could eventuate as employment centres develop (Figure 25).

The WASLUC assessment has been used to identify significant and relevant:

- Local strengths
- Gaps in specific population-driven uses

Figure 25. Shire of Serpentine Jarrahdale Strengths, Strategic and Population Gaps

PLUC	Local Strengths	Population Gap
Office/Business	• General medical services	• Government services • Other medical specialist practices • Banking services and other business services • Professional services
Shop/Retail	• Liquor stores • Real estate services	• Supermarket and groceries • Department stores • Food bars, restaurants, cafes
Service Industry	• Building construction	• Motor vehicle services (e.g., repairs, detailing, window tinting)

PLUC	Local Strengths	Population Gap
Residential	• Caravan Parks	• Cluster housing • Retirement Homes • Motels/Motor inns
Manufacturing/Processing/Fabrication (relevant to West Mundijong – outside scope of analysis)	• Cheese manufacturing • Fabricated metal and fabrics manufacturing	• Oil and fats manufacturing
Storage/ Distribution (relevant to West Mundijong – outside scope of analysis)	• Metal and building materials storage	• Motor vehicles storage
Other Retail	• Equipment Hire • Hay, grain & feed Nurseries	• Hardware Stores • Fuel Retail Automotive parts
Health/Welfare/Community Services	• Veterinary services	• Childcare Centres • Primary and secondary schools
Entertainment/Recreation/Cultural	• Taverns • Cultural services (e.g., museums, art galleries)	• Recreational and leisure services (e.g., health clubs, swimming pools)

Source: DPLH Land Use and Employment Survey 2015

7 NEEDS ASSESSMENT

Section Overview: Each sub-section addresses a required modification for the DSP and has its own Overview.

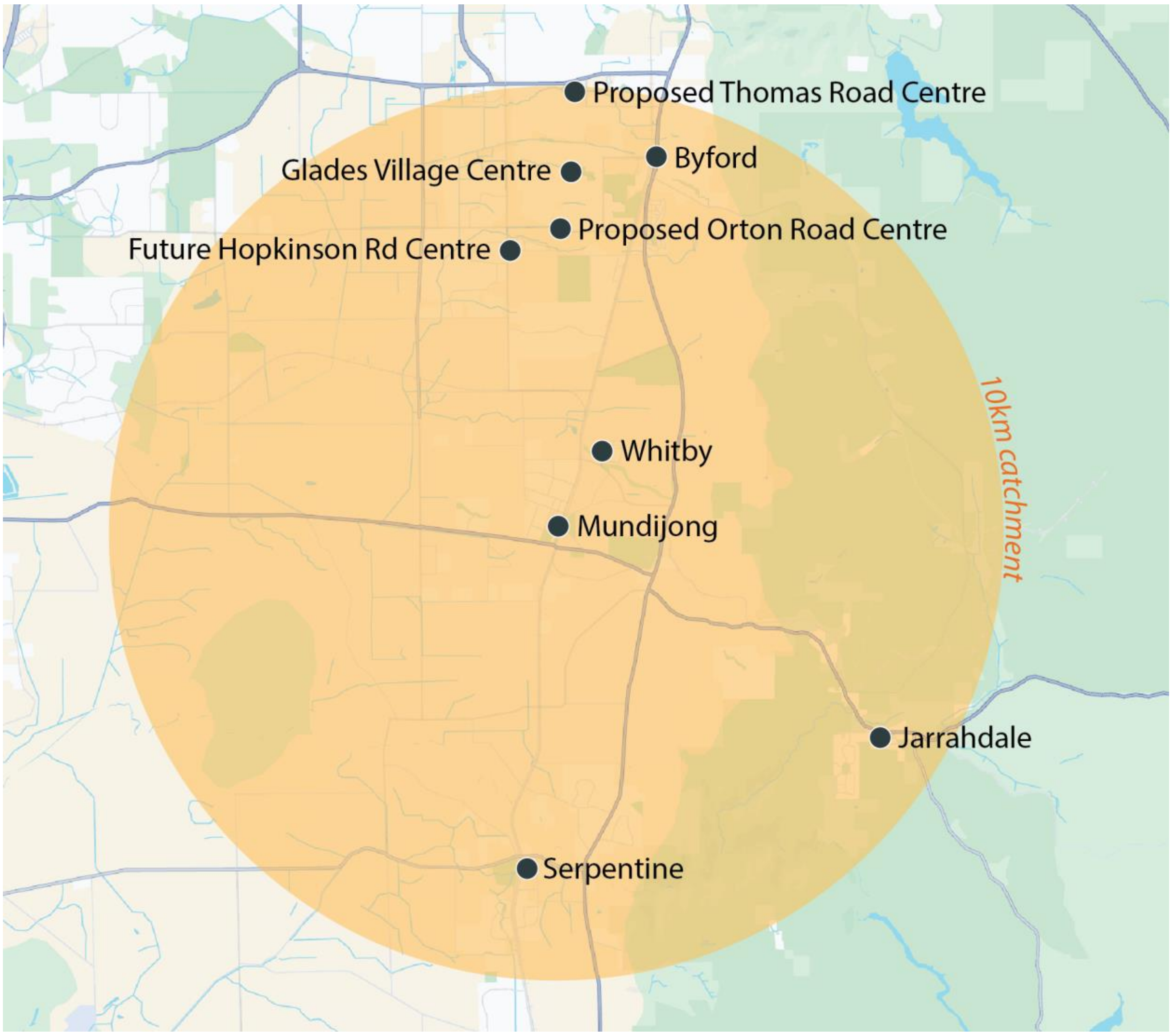
The Needs Assessment has projected the demand for Shop/Retail floorspace using gravity modelling. This incorporates current and known future supply with spatial data for demand based on household income and expenditure.

The Retail Gravity Model (also known as Huff's Gravity Model) is a modified version of Sir Issac Newton's Law of Gravitation. Retail gravity modelling incorporates the supply of retail in a location and the probability of a customer (demand) visiting a particular retail centre to determine the expected turnover of that centre. The model accounts for the distribution and attractiveness of competing centres to model actual customer behaviour. For instance, customers are willing to travel further to shop at larger centres as they can generally satisfy multiple needs in one trip. This increases the measure of attractiveness in the model, increasing the trade catchment area for that centre and the expected turnover.

Once the expenditure distribution of an area has been calculated, changes to population in the catchment area can be made to model the long-term viability of developments. This can include population growth and lot release, as well as any planned retail expansions or additional retail developments in the area. This comprehensive approach creates a distribution of expenditure over time that is fundamentally unbiased as it is based on mathematical rules.

The catchment, or trade area, is the spatial boundary from which commercial floorspace generates most of its customers and subsequently their expenditure. The trade area definition allows for the measurement of the number of potential customers, their expenditure potential, and an assessment of the competitive environment. The trade area for the Needs Assessment is 10km and was developed in consideration of the users and competitors of the proposed activity centres in the DSP including activity centres in Byford (Figure 26).

Figure 26. Trade Area for Modelling [12]



Source: Pracsys 2024

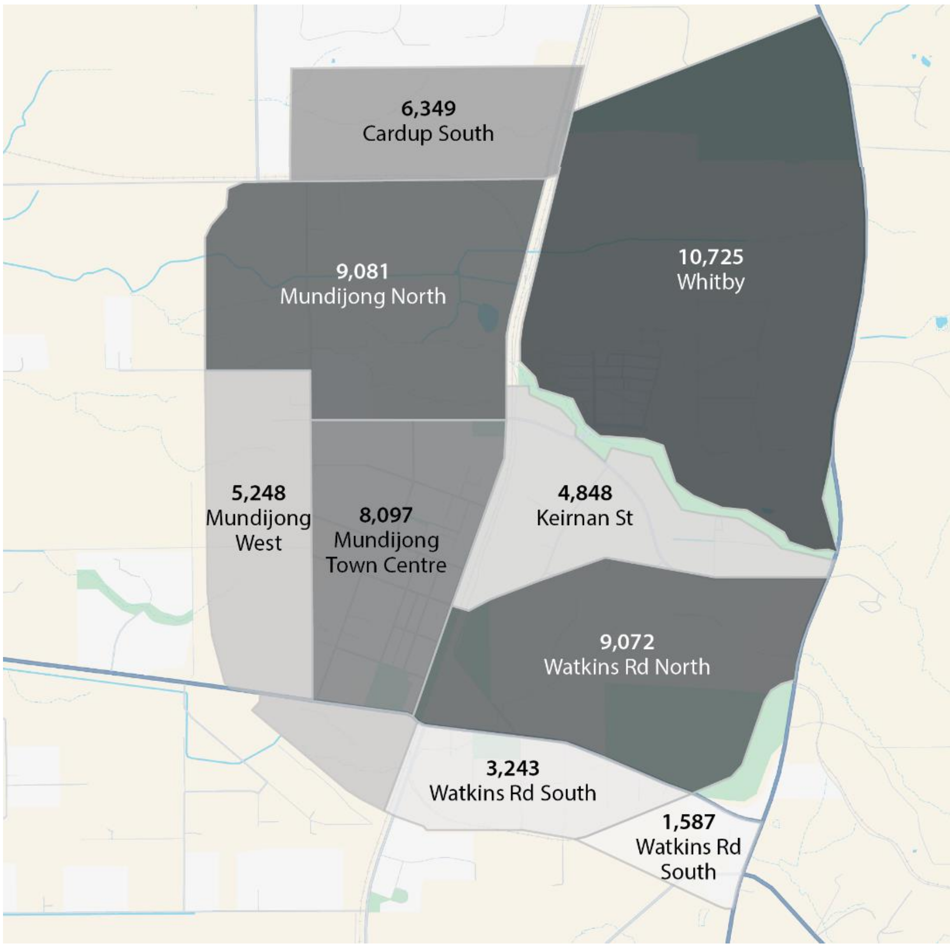
[12] The Future Hopkinson Centre is included in modelling. Proposed centres at Orton and Thomas Roads do not have a defined timeline and have been accounted for through unconstrained expansion of existing and approved centres in the Byford DSP area.

7.1 Demand Analysis

Section Overview: The demand analysis incorporates both the quantum of population projected for the DSP area and the spatial distribution of additional dwellings (based on the current understanding of development planning and opportunities). The results underpin the modelling, and their inclusion directly addresses Modification 6 for the DSP.

The demand analysis informs the expenditure component of the retail gravity model. Demand was determined by DPLH Western Australian Tomorrow (WA Tomorrow) population forecasts Band C and Mundijong DSP full buildout projections. At full buildout, the DSP area expects to have approximately 20,367 dwellings and 58,250 people by 2050 (Figure 27).

Figure 27. Heat Map of Future DSP Population



Source: QGIS 2024, Pracsys 2024, Shire of Serpentine-Jarrahdale 2018

Dwelling projections have been scheduled according to the expected timeline for development based on the Shire's input. Whitby is expected to develop as a priority around the District Centre, with Mundijong West and Mundijong Precinct H also experiencing strong growth with Local Structure Plans approved, approved with modifications and in progress. Watkins Rd South, Watkins Rd North and Keirnan Street are expected to develop later than other population areas.

Figure 28. Full Buildout Dwelling Projections

Structure Plan Precinct	Relevant Activity Centres	2024	2029	2034	2049	Full Buildout
Whitby	Whitby District Centre Whitby North Neighbourhood Centre Whitby South Neighbourhood Centre	395	906	2,107	3,647	3,750
Keirnan Street	Mundijong Precinct C Neighbourhood Centre	58	66	76	1,582	1,695
Watkins Road North	Mundijong Precinct C Neighbourhood Centre Mundijong Precinct D Neighbourhood Centre	81	94	108	2,961	3,172
Watkins Road South	Mundijong Precinct D Neighbourhood Centre Mundijong Town Centre	58	66	76	1,576	1,689
Mundijong West	Mundijong Precinct E2 Neighbourhood Centre Mundijong Precinct G South Neighbourhood Centre Mundijong Precinct G North Neighbourhood Centre Mundijong Town Centre	131	746	1,378	1,794	1,835
Mundijong Town Centre	Mundijong Town Centre Mundijong Precinct E2 Neighbourhood Centre Mundijong Precinct G South Neighbourhood Centre	276	317	611	2,689	2,831
Mundijong North	Mundijong Precinct G North Neighbourhood Centre Whitby District Centre Whitby North Neighbourhood Centre	53	61	1,588	3,175	3,175
Cardup South	Mundijong Precinct H North Neighbourhood Centre	193	222	1,110	2,220	2,220
Total		**1,246**	**2,479**	**7,054**	**19,645**	**20,367**

Source: Shire of Serpentine Jarrahdale 2021, 2024

The modelling has incorporated the planned residential development by area (Figure 28). This provides a spatial representation of demand for activity centre floorspace.

Based on the full build out dwelling projections, the centre hierarchy has been developed based on the expected population growth in each precinct of the District Structure Plan Area, Figure 29.

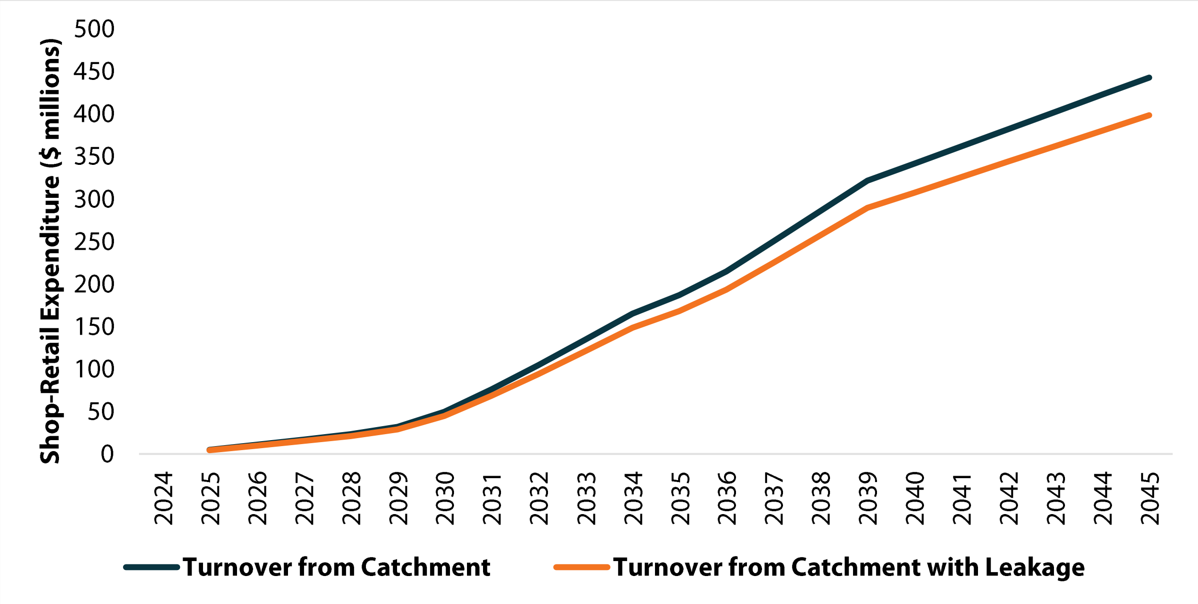
Figure 29: Centre Hierarchy Rationale

Activity Centre	Designation	Rationale
Whitby District Centre	District	Rapid growth in Whitby will occur in the next decade, supporting a district centre next to the future train station and main road. The district centre will be critical to support continued growth to the north west of the railway and in the wider District Structure Plan area.
Mundijong Town Centre	District	Existing retail centre for Mundijong town, expected to expand to support significant development to the north and west of existing townsite. Population growth is not expected in the short – medium term due to fragmented ownership.
Whitby South Neighbourhood Centre	Neighbourhood	Rapid population growth in the Whitby south precinct is expected, reaching 3,750 dwellings in the surrounding precinct at full buildout. Centre is strategically co-located with planned high school.
Mundijong Precinct C Neighbourhood Centre	Neighbourhood	At full buildout Precinct C is projected to hold 3,000 dwellings, separated from larger centres to the north and west by parkland and railway respectively. The centre is proximate to planned recreation uses.
Mundijong Precinct G North Neighbourhood Centre	Neighbourhood	Precinct G will accommodate 5,000 dwellings at full build out, separated from Whitby District centre by rail and providing important access to goods and services in the northwest of the DSP area.
Mundijong Precinct H Neighbourhood Centre	Local	Will provide access to daily shopping needs for the local population in the Cardup South Local Structure Plan area.
Whitby North Neighbourhood Centre	Local	Co-located with a future school site, providing equitable amenity through access to daily shopping needs following the district centre's development.
Mundijong Precinct D Neighbourhood Centre	Local	The area south of Mundijong road will accommodate 1,500 dwellings at full build out, separated by a major road from other centres.
Mundijong Precinct E2 Neighbourhood Centre	Local	This centre will service a development of 1,800 dwellings at full buildout and is critical to support short term residential development.
Mundijong Precinct G South Neighbourhood Centre	Local	Provides additional amenity and servicing for the catchment area between larger centres to the North and South. Located proximate to a primary school.

Source: Pracsys 2024

Figure 30 summarises the total shop-retail expenditure for the DSP area and demonstrates the significant growth in expenditure over time.

Figure 30: Expenditure Summary



Source: ABS Census 2021, ABS HHES Survey 2017/2018, Shire of Serpentine-Jarrahdale 2024

The expenditure supported by the identified population growth informs the distribution and scale of floorspace required at activity centres over time.

7.2 Supply Analysis

Section Overview: The supply analysis identifies the current Net Lettable Area (NLA) of shop retail and non-shop retail uses in the DSP area. Competing centres are considered in modelling to ensure the activity centre hierarchy is maintained. The supply estimates contribute directly to addressing Modification 74 for the DSP.

Supply analysis provides the current activity centre hierarchy shop retail floorspace by activity centre. This section provides an overview of the activity centre environment within the trade area and Shire of Serpentine-Jarrahdale and floorspace values for the activity centres themselves. Existing retail floorspace supply within the trade area has been derived through data from multiple sources, including:

- The Department of Planning Land Use and Employment Survey (LUES) 2015/17
- Secondary Research (various structure plans, property manager websites, etc.)

A catchment of 10km was applied to the analysis in line with district centres being the highest order centre proposed as part of the DSP.

There is one planned centre in the catchment outside of the DSP area: the Hopkinson Road Centre.

Figure 31. Existing Supply in Catchment

Centre Name	Shop – Retail Floorspace (m^2)
Serpentine-Jarrahdale Isolated Uses	2,799
Serpentine	520
Atkins Street, Jarrahdale	62
Mundijong Town Centre	1,070
Glades Village Centre	4,500
Byford Town Centre	8,962
Lot 33 Hopkinson Road	1,500

Source: DPLH 2016

With limited centres in the catchment, a method has been developed to account for leakage outside the catchment. The ESS target for the sub-region provides an understanding of employment leakage to other areas and has been used to estimate a net loss of expenditure to other centres in addition to online leakage. There are two future centres in the Byford DSP (Orton Rd and Thomas Rd) that are not yet progressed. The potential demand associated with these centres has been accounted for by allowing current and approved Byford DSP centres to expand unrestrained overtime.

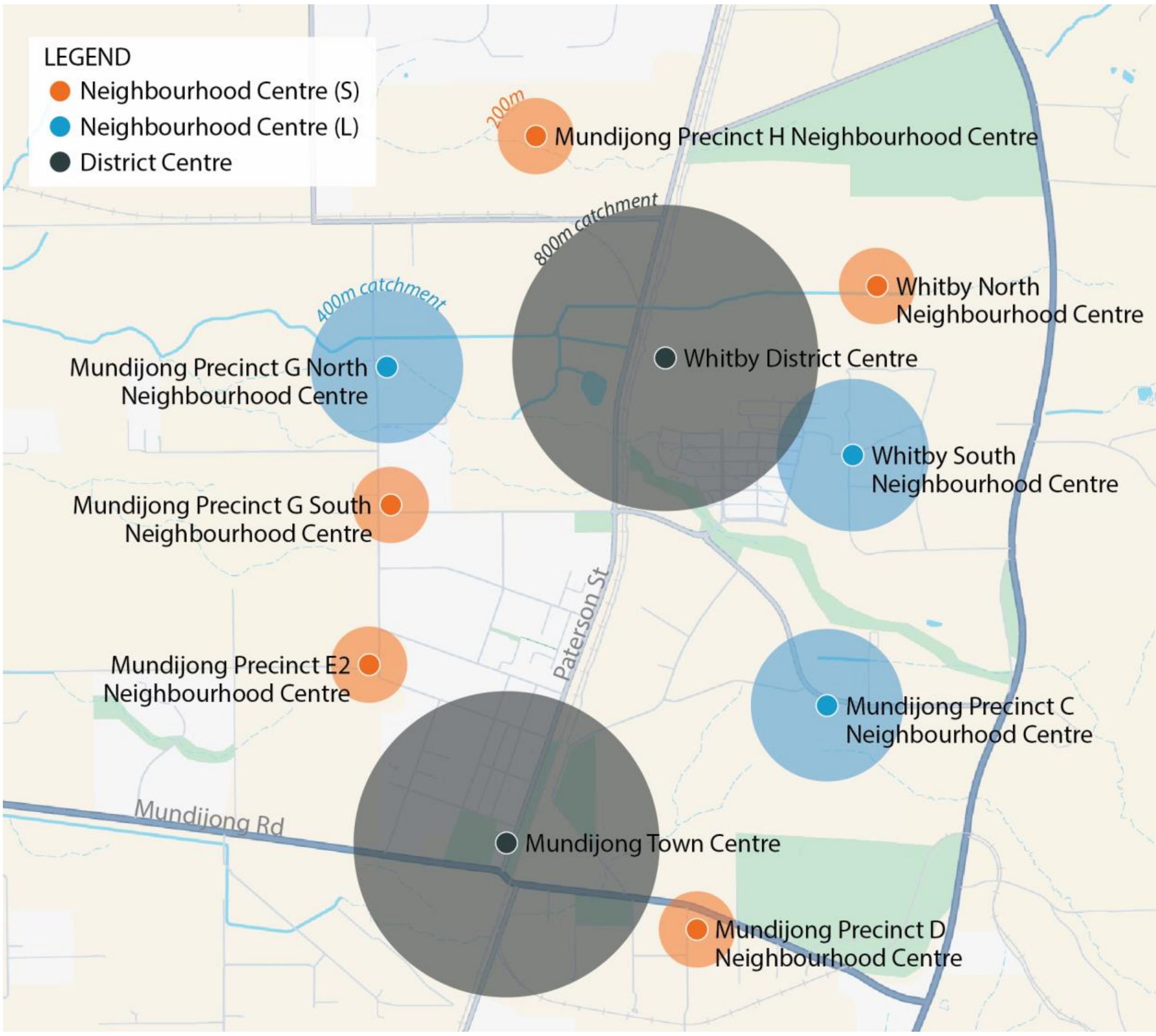
7.3 Activity Centre Hierarchy Assessment

Section Overview: The Activity Centre Assessment uses gravity modelling to determine the supportable floorspace NLA across the model catchment area. This ensures an objective method of allocating floorspace to proposed activity centres that accounts for the quantum and location of demand (where people live), and the scale and distribution of current and proposed activity centres. The results from this analysis provide a viable and sustainable Activity Centre Hierarchy for inclusion in the DSP and directly address the requirements of Modification 74.

The gravity model accounted for ten centres that have been identified through engagement with the Shire as suited to meeting the long-term needs of the DSP population. Mundijong Town Centre is the only existing activity centre (Figure 32). Neighbourhood Centre (S) fall under SPP4.2's definition of a Local Centre while Neighbourhood Centre (L) can be considered a Neighbourhood Centre under SPP 4.2. The location and classification of centres was undertaken through an iterative process with the Shire and informed by modelling. Figure 32 shows the location of centres with their walkable catchments as per SPP4.2 and their centre classification. Walkability and accessibility are key considerations when assessing the location and classification.

The development of current and future residential precincts within the DSP area was used as a guide for activity centre hierarchy development. The aim was to ensure that all areas are serviced by centres of the appropriate size, consistent with Liveable Neighbourhoods. Activity centres were distributed to achieve a high level of walkability with SPP4.2 walkability catchments as a guide. The number and scale of centres has been developed to provide a level of floorspace that supports appropriate accessibility while being viable and supporting sufficient activation to have vibrant activity centres.

Figure 32. Mundijong Activity Centres



Source: Pracsys 2024

The Needs Assessment determines if the development or expansion of an existing and proposed activity centre is viable based on turnover over relative to activity centre benchmarks (Figure 33).

Figure 33. Benchmark Activity Centre Productivity Level

Centre Type	Turnover Productivity ($/m²)
District	$ 9,241
Neighbourhood (L)	$ 9,018
Neighbourhood (S)	$ 9,018

Source: Property Council 2021, RBA 2024

The following table depicts the hypothetical supply that was modelled between 2024 and 2050. Cells highlighted in yellow depict where an expansion or development of a centre resulted in a level of turnover slightly below the benchmarks. Cells highlighted in green depict where developments or expansions achieve the identified productivity levels (Figure 34).

Figure 34. Shop-Retail Floorspace Timing and Viability (m^2)

Activity Centre	2024	2029	2034	2039	2044	2049
Whitby South Neighbourhood Centre	0	0	0	5000	5000	5000
Mundijong Precinct C Neighbourhood Centre	0	0	0	0	2500	5000
Mundijong Precinct G North Neighbourhood Centre	0	0	2500	2500	5000	5000
Mundijong Precinct H Neighbourhood Centre	0	0	2500	2500	2500	2500
Whitby North Neighbourhood Centre	0	0	0	1500	1500	1500
Mundijong Precinct D Neighbourhood Centre	0	0	0	0	0	2500
Mundijong Precinct E2 Neighbourhood Centre	0	0	2500	3000	3000	3000
Mundijong Precinct G South Neighbourhood Centre	0	0	0	0	2500	2500
Whitby District Centre	0	10000	10000	20000	20000	20000
Mundijong Town Centre	1070	1070	7500	7500	15000	15000
Total	**1,070**	**11,070**	**25,000**	**42,000**	**57,000**	**62,000**

Source: Pracsys 2024

The Needs Assessment indicates that the timing of expansions and developments for the proposed activity centres are largely supportable with the following exceptions noted:

- Mundijong Precinct C Neighbourhood Centre is slightly below the turnover benchmark upon establishment in 2044, as population growth in the surrounding precinct is expected to occur slowly. Upon expansion in 2049 and at full buildout the centre is viable, therefore it is seen as suitable for a smaller offering to be allowed in the 2039 to 2044 period.
- Whitby North Neighbourhood Centre is below the turnover benchmark upon establishment in 2039 but is located adjacent to a future school site and as such is expected to be a valuable centre. The development of Whitby North should be managed according to the establishment of this school and population growth in the surrounding area, so as to ensure viability on establishment. There are no concerns over long term viability.
- The Whitby District Centre on establishment is slightly below the turnover benchmark for a District Centre at 10,000 m^2 but shows strong viability as surrounding estates continue to grow in population. The need to allow behaviours to establish to support the centres uptake as new residents locate in the DSP area justify its development in the 2024 – 2029 timeframe.

- Mundijong Precinct E2 Neighbourhood Centre upon establishment competes with Mundijong Town Centre, which is expected to expand on a similar timeframe. Both are important to support fast growing populations. It is also important to ensure that the high order Mundijong Town Centre is expanded at a time point that allows consumer behaviour to establish itself as residents locate in the DSP area; for this reason, the expansion of the Town Centre has been maintained in the 2029 – 2034 period.

Commercial Floorspace

Non-shop retail floorspace represents commercial floorspace and incorporates the gaps identified in Section 6, Floorspace Gap Analysis, with growth in floorspace aligned to Shop-Retail projections. This ensures that the growth accounts for the spatial distribution of demand and supply. The Shire's current highest order centres (Byford and Mundijong) have been used to estimate the non-retail share of total floorspace that can be attributed to new and expanded centres (Figure 35). These have been sensed check against centres in other LGAs to ensure they provide a reasonable approximation to inform the PSP.

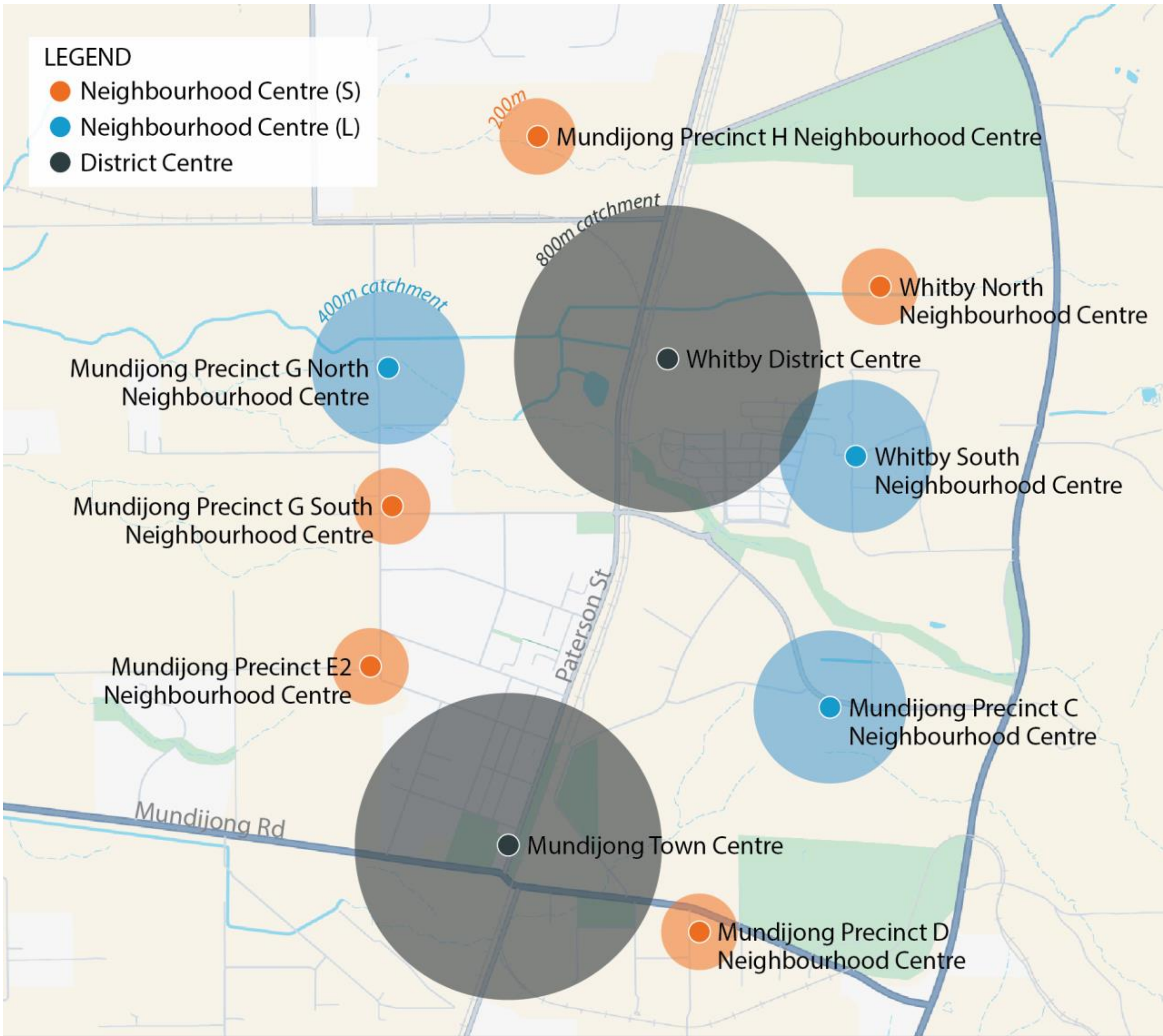
Figure 35: Distribution of Floorspace by Centre Type

Centre Type	Proportion of Shop Floorspace	Proportion of Non-Shop Floorspace
District	41%	59%
Neighbourhood (L)	39%	61%
Neighbourhood (S)	32%	68%

Source: Department of Planning, Lands and Heritage 2017, Pracsys 2024

Figure 36 provides a summary of the activity centre hierarchy including key requirements of Modification 74 (Land Requirement has been included for completeness, see Section 7.5 for further information). Figure 37 provides a summary of the Activity Centre Hierarchy for the DSP area, with the supportable Shop/Retail and non-Shop/Retail floorspace over time for each centre (Non-SHP represents commercial floorspace).

Figure 36: Activity Centre Hierarchy Summary



CENTRE	KEY ELEMENTS	SHOP/RETAIL FLOORSPACE	COMMERCIAL FLOORSPACE	TOTAL FLOORSPACE	LAND REQUIREMENTS
Whitby District Centre	Supermarkets, Discount Department Store, Speciality retail	20,000	29,466	49,466	87,124
Mundijong Town Centre	Supermarkets, Discount Department Store, Speciality retail	15,000	22,099	37,099	65,342
Whitby South Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Mundijong Precinct C Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Mundijong Precinct G North Neighbourhood Centre	Supermarket, specialities	5,000	8,156	13,156	23,172
Whitby North Neighbourhood Centre	Supermarket, specialities	1,500	3,315	4,815	8,481
Mundijong Precinct E2 Neighbourhood Centre	Supermarket, specialities	3,000	6,631	9,631	16,963
Mundijong Precinct H Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
Mundijong Precinct D Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
Mundijong Precinct G South Neighbourhood Centre	Supermarket, specialities	2,500	5,526	8,026	14,136
TOTAL		62,000	102,555	164,555	289,833

Source: Pracsys 2024 (note: a breakdown of Key Element NLA is provided in section 7.4)

Figure 37: Activity Centre Floorspace Projections (5-year Intervals)

Activity Centre		Whitby District Centre	Mundijong Town Centre	Whitby South Neighbourhood Centre	Mundijong Precinct C Neighbourhood Centre	Mundijong Precinct G North Neighbourhood Centre	Total
Designation		District	District	Neighbourhood (L)	Neighbourhood (L)	Neighbourhood (L)	All Centres
2029	Shop	10,000	1,070	-	-	-	11,070
	Non-Shop	14,733	1,576	-	-	-	16,309
	Total Floorspace	24,733	2,646	-	-	-	27,379
2034	Shop	10,000	7,500	-	-	2,500	25,000
	Non-Shop	14,733	11,050	-	-	4,078	40,912
	Total Floorspace	24,733	18,550	-	-	6,578	65,912
2039	Shop	20,000	7,500	5,000	-	2,500	42,000
	Non-Shop	29,466	11,050	8,156	-	4,078	68,221
	Total Floorspace	49,466	18,550	13,156	-	6,578	110,221
2044	Shop	20,000	15,000	5,000	2,500	5,000	57,000
	Non-Shop	29,466	22,099	8,156	4,078	8,156	92,952
	Total Floorspace	49,466	37,099	13,156	6,578	13,156	149,952
2049	Shop	20,000	15,000	5,000	5,000	5,000	62,000
	Non-Shop	29,466	22,099	8,156	8,156	8,156	102,555
	Total Floorspace	49,466	37,099	13,156	13,156	13,156	164,555
Fit Out Total Floorspace Requirement		49,466	37,099	13,156	13,156	13,156	164,555
Fit Out Total Land Requirement		87,124	65,342	23,172	23,172	23,172	289,833

Source: Pracsys 2024

	Activity Centre	Mundijong Precinct H Neighbourhood Centre	Whitby North Neighbourhood Centre	Mundijong Precinct D Neighbourhood Centre	Mundijong Precinct E2 Neighbourhood Centre	Mundijong Precinct G South Neighbourhood Centre	Total
	Designation	Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	Neighbourhood (S)	All Centres
2029	Shop	-	-	-	-	-	11,070
	Non-Shop	-	-	-	-	-	16,309
	Total Land Requirement	-	-	-	-	-	27,379
2034	Shop	2,500	-	-	2,500	-	25,000
	Non-Shop	5,526	-	-	5,526	-	40,912
	Total Land Requirement	8,026	-	-	8,026	-	65,912
2039	Shop	2,500	1,500	-	3,000	-	42,000
	Non-Shop	5,526	3,315	-	6,631	-	68,221
	Total Land Requirement	8,026	4,815	-	9,631	-	110,221
2044	Shop	2,500	1,500	-	3,000	2,500	57,000
	Non-Shop	5,526	3,315	-	6,631	5,526	92,952
	Total Land Requirement	8,026	4,815	-	9,631	8,026	149,952
2049	Shop	2,500	1,500	2,500	3,000	2,500	62,000
	Non-Shop	5,526	3,315	5,526	6,631	5,526	102,555
	Total Land Requirement	8,026	4,815	8,026	9,631	8,026	164,555
Fit Out Total Floorspace Requirement		8,026	4,815	8,026	9,631	8,026	164,555
Fit Out Total Land Requirement		14,136	8,481	14,136	16,963	14,136	289,833

Source: Pracsys 2024

The total Shop/Retail floorspace for the catchment at full build out is 62,000 m^2, with a benchmarked 102,555 m^2 of non-Shop/Retail floorspace within activity centres.

7.4 Shop-Retail Floorspace Mix

Section Overview: This section provides an understanding of the shop retail uses, particularly supermarket and discount department store anchor tenants that are appropriate for the proposed centres, by classification. This directly addresses Modification 6.

WASLUC data from the benchmarks in the Floorspace Gap Analysis was used to develop a mix of shop-retail uses expected across the activity centre hierarchy, based on benchmark locations.

Figure 38: Floorspace Provision per Person

Floorspace Type	Floorspace per person (m^2)
Supermarkets & Grocers	0.34
Department Stores	0.18
Restaurants, Cafes & Take-Away Food	0.21
Specialty Retail & Other Retail Types	0.33

Source: Department of Planning, Lands and Heritage 2017, Pracsys 2024

The floorspace provision ratio for each WASLUC was applied to the DSP population to estimate the mix of floorspace by category. Average supermarket and discount department store sizes by centre type were identified using real shopping centre data to inform the number of tenancies across the network. The following breakdown between main uses has been estimated and used to estimate the number of anchor tenancies where relevant.

Figure 39: Expected Floorspace Uses within Activity Centres in DSP Area

<table>
<tr><th>Floorspace Type</th><th>Floorspace Volume (m^2)</th><th>Tenancies</th><th>NLA Per Tenancy</th></tr>
<tr><td>Supermarkets & Grocers</td><td>19,872</td><td>District Centre:
• 2
Neighbourhood (Large):
• 3
Neighbourhood (Small):
• 5</td><td>District Centre:
• Large: 3,500m^2
• Small: 1,430m^2
Neighbourhood (Large)
• 2,560m^2
Neighbourhood (Small)
• 1,120m^2</td></tr>
<tr><td>Discount Department Stores</td><td>10,576</td><td>District:
• 2</td><td>District
• 6,400m^2</td></tr>
<tr><td>Restaurants, Cafes & Take-Away Food</td><td>12,434</td><td>N/A</td><td rowspan="2">Require a mix of sizes that will be based on local demand</td></tr>
<tr><td>Specialty Retail & Other Retail Types</td><td>19,118</td><td>N/A</td></tr>
</table>

Source: Department of Planning, Lands and Heritage 2017, Pracsys 2024

Figure 40: NLA by Floorspace Type

Activity Centre	Designation	Supermarkets & Grocers	Department Stores	Restaurants, Cafes & Take-Away Food	Specialty Retail & Other Retail Types	Total Shop/Retail Floorspace	Commercial Floorspace	Total Floorspace
Whitby District Centre	District	4,930	6,400	4,011	6,167	20,000	29,466	49,466
Mundijong Town Centre	District	4,930	6,400	3,008	4,625	15,000	22,099	37,099
Whitby South Neighbourhood Centre	Neighbourhood (L)	2,560	-	1,003	1,542	5,000	8,156	13,156
Mundijong Precinct C Neighbourhood Centre	Neighbourhood (L)	2,560	-	1,003	1,542	5,000	8,156	13,156
Mundijong Precinct G North Neighbourhood Centre	Neighbourhood (L)	2,560	-	1,003	1,542	5,000	8,156	13,156
Mundijong Precinct H Neighbourhood Centre	Neighbourhood (S)	1,120	-	501	771	2,500	5,526	8,026
Whitby North Neighbourhood Centre	Neighbourhood (S)	1,120	-	301	463	1,500	3,315	4,815
Mundijong Precinct D Neighbourhood Centre	Neighbourhood (S)	1,120	-	501	771	2,500	5,526	8,026
Mundijong Precinct E2 Neighbourhood Centre	Neighbourhood (S)	1,120	-	602	925	3,000	6,631	9,631
Mundijong Precinct G South Neighbourhood Centre	Neighbourhood (S)	1,120	-	501	771	2,500	5,526	8,026
Total	**DSP Area**	**23,140**	**12,800**	**12,434**	**19,118**	**62,000**	**102,555**	**164,555**

Source: Pracsys 2024

Total Shop/Retail floorspace is slightly different to the sum of detailed floorspace elements as estimates for the size of supermarkets and DDSs were taken from a set of actual stores and will vary based on the requirements of the DSP population as it develops.

7.5 Activity Centre Land Requirements

Section Overview: This section provides an understanding of the land requirements for expanding and future centres. This directly addresses Modifications 6 and 74.

The land area required for each centre will vary according to local planning and community need. The SPP 4.2 Implementation guidelines provide the indicative land area required for each centre type, Figure 41.

Figure 41: Indicative Land Area Requirements

Centre	Indicative land area (m^2)
District	30,000 – 120,000
Neighbourhood	7,500 – 30,000
Local	Up to 4,000

Source: WAPC (2022)

The Byford Town Centre has been used to estimate the required land area for centres. The relevant structure plan allows for 15,500 m^2 of Net Lettable Area with 2.73 ha of land area, a ratio of 1.76. This ratio has been applied to the modelled floorspace to estimate required land area, Figure 42.

Figure 42: Land Requirements

Centre	Land Requirements (m^2)
Whitby District Centre	87,124
Mundijong Town Centre	65,342
Whitby South Neighbourhood Centre	23,172
Mundijong Precinct C Neighbourhood Centre	23,172
Mundijong Precinct G North Neighbourhood Centre	23,172
Mundijong Precinct H Neighbourhood Centre	14,136
Whitby North Neighbourhood Centre	8,481
Mundijong Precinct D Neighbourhood Centre	14,136
Mundijong Precinct E2 Neighbourhood Centre	16,963
Mundijong Precinct G South Neighbourhood Centre	14,136
Total Land Requirement	**289,833**

Source: Pracsys 2024

7.6 Strategic Employment Analysis

Section Overview: This section estimates the employment associated with the activity centre hierarchy and the contribution of the employment to the sub-regional ESS target. Homebased employment, and employment related to planned schools and recreation facilities is also assessed. This addresses Modification 48, specifically.

The Shire's Activity Centre Hierarchy will only support a component of the employment required to meet the sub-regional ESS target for the growing residential population. The sub-regional average ESS target of 79% has been used to assess the employment contribution of the DSP's activity centre hierarchy (see Section 3.11). The total required employment will be supported through activity centres, homebased employment and other commercial centres and uses.

Land Use and Employment Survey Data for Byford and Mundijong centres has been used to determine the likely employment supported within the DSP area, using historical data on the relationship between employment and floorspace. Byford was used as a benchmark for future centres, to represent the intensification of employment and activity in these centres as development occurs. The floorspace per full-time-equivalent employee for Shop Retail and Non-Shop Retail employment is summarised in (Figure 43).

Figure 43: Activity Centre Employment to Floorspace Ratio

Employment Category	Floorspace (m^2) per Full-Time Employee
Shop Retail Employment (FTE)	38
Other Activity Centre Employment (FTE)	52

Source: Department of Planning, Lands and Heritage (2017), Pracsys 2024

The employment supported in each activity centre based on floorspace ratios has been forecasted to 2049 and summarised by floorspace type (Figure 44)

Figure 44: Activity Centre Employment Supported

Employment Category	2024	2029	2034	2039	2044	2049
Shop Retail Employment (FTE)	18	292	659	1,108	1,503	1,635
Non-Shop Retail Employment (FTE)	32	313	786	1,311	1,786	1,970
Contribution to ESS Targets	0.2%	2.2%	5.3%	8.8%	12.0%	13.1%

Source: Pracsys 2024

Upon full build out, the proposed centres will contribute approximately 13.1% of total employment required to meet the ESS target. The Shire of Serpentine-Jarrahdale will require an additional 23,619 employment opportunities outside of Activity Centres in the DSP catchment in order to achieve the Peel employment self-sufficiency target of 79% by full buildout.

The potential jobs provided through homebased employment, schools and proposed recreation facilities have been considered (Figure 45).

Figure 45. Additional Employment Sources

Employment Source	Jobs	Description
Homebased employment	11,700	Working from home has become more predominant since the COVID-19 pandemic. Current trends are moving towards hybrid workplace arrangements. Given the current push towards reintegrating workers into the workplace, pre-COVID-19 home-based employment statistics have been used to estimate non-employment land jobs in the DSP area. Homebased employment is estimated to be 46.5% of total employment, assuming it remains constant to population as population grows.[13]
Schools	1,580	This represents the expected employment from schools should the DSP area achieve the same ratio of employment to population as Greater Perth.
Recreation	510	This represents the expected employment from art and recreation facilities should the DSP area achieve the same ratio of employment to population as Greater Perth.
Remainder	9,800	Jobs that need to be delivered through other employment opportunities. These will most likely need to come from export-orientated industries (mining, manufacturing, etc.)

Source: ABS Census 2021, Leighton J 2003

An additional 9,800 jobs are required to achieve the identified ESS target. Key employment centres including the West Mundijong Industrial area, surrounding agricultural land will be integral to achieving the target.

[13] This has been calculated by comparing all employment, on employment land, in the DPLH Land Use and Employment Survey with ABC Census Place of Work data. It has been corroborated by a study, which identified that over 50% of business in Australia are homebased, Leighton J 2003, Home Based Business in Australia: A Review of the Literature.

8 SITE ASSESSMENT CONSIDERATIONS

8.1 Local Structure Plan Site Consideration Criteria

A District Structure Plan (DSP) identifies and addresses potential flaws within a proposed development area whilst outlining the key structural components. These components typically include major road networks, open spaces, commercial and industrial zones, and environmental considerations. DSP's serve as a foundation for zoning and guide the preparation of more detailed planning through local structure planning (LSP).

At a DSP level, local structure planning is undertaken in accordance with the WA Planning Manual for Guidance on Structure Plans as well as the objectives of SPP 4.2 to provide further guidance on key elements of activity centres for the community. These include but are not necessarily limited to:

- Land use mix
- Cohesion
- Movement and access
- Urban form
- Heritage

Land Use Mix

- Ensure a diversity of land uses which are compatible with a range of uses such as residential, commercial, industrial, and public/community spaces
- Promote a balanced distribution of amenities and services to avoid predominantly single purpose outcomes, helping create a self-sufficient area and reduce reliance on external zones

Cohesion

- Integrate land use and other key provisions of infrastructure to create continuity and attractive transitional spaces
- Promote consistent design principles and landscaping to enhance the visual and functional unity of the locality, particularly key urban corridors with a priority on pedestrian movements

Movement and Access

- Ensuring safe and efficient transport networks for various modes of transport such as pedestrians, cyclists, private vehicles, and public transport
- Ensuring key intersections and other aspects of the transportation network and well considered to minimise congestion

Urban Form

- Establishing a cohesive urban character utilising key aspects of the locality and controlling development through design guidelines and other planning mechanisms such as Local Development Plans
- Provide opportunities for public spaces and green infrastructure to enhance liveability and other environmental aspects contributing to the amenity and built form of the area
- Ensuring that new development complements key landmarks of the locality, paying respect to the history, character and other heritage requirements

Heritage

Ensuring local heritage is protected and promoted should be a remain a key priority for future structure planning, including:

- Identifying and preserving heritage sites in accordance with the Shire's Local Heritage Survey 2022-2027
- Ensuring new developments complement historic and place significant heritage developments that provide key character to the area

These key elements can be used to consider future potential locations based on planning considerations to ensure the most suitable sites are selected.

Additional Considerations for Economic Activation

Site suitability is a key aspect for any development, especially for future retail and/or commercial due to the anchors these create, with the core tenants often allowing opportunities for independent and boutique shops to operate and remain commercially viable. When assessing new sites for consideration, both economic and planning considerations must be understood and rated against the objectives for the development. Key considerations for economic and planning suitability of sites are detailed below:

Economic

- Purpose of Place, the role of the Centre based on its size and classification
- Access, how centres are accessed by users (the arrival points)
- Origins, nodes from which pedestrian movements begins, including car parking and transport nodes
- Exposure, Active Frontages that are exposed to high levels of pedestrian traffic
- Destinations, areas that attract high concentrations of customers/people
- Control, locations that could be considered as future destinations and/or suitable sites for anchor tenants (i.e. supermarkets). Tenure control is a significant advantage for overall development success

Planning

- Land suitably zoned for commercial or retail activities, with opportunities for future mixed-use, community facilities and other residential development adjacent or in close proximity
- Connectivity for public transport, private modes of transport, parking facilities and walkability

- Consolidated, large land parcels with minimal sensitive land uses in close proximity that may be adversely affected due to increased traffic, noise, and other freight movements associated with centres such as stock deliveries and waste collection
- Permissibility under the local and State planning framework

8.2 Mundijong Town Centre Site Assessment

Modelling has considered the required floorspace for the Mundijong Town Centre, the exact location of the floorspace within the Town Centre will be determined by further analysis. The Shire is undertaking analysis of sites that could support the district centre, considering the current location of commercial, community and civic activities; the size of potential developable locations; land tenure; and environmental factors / other planning considerations. The Mundijong Town Centre site has heritage character that should be maintained, while allowing for the retail and commercial development needed to support the growing population.

Planning Overview

The identified objectives should be applied to the Mundijong Town Centre site, with some considerations as follows.

Land Use Mix

- Ensure the location can accommodate a wide range of uses aligned with a district centre, including residential, commercial, community and potentially civic uses.
- Select a site that can accommodate a variety of uses that promote multi-purpose visits. This is particularly relevant to ensuring the Town Centre can meet its role as a district centre

Cohesion

- Ensure the future centre is well integrated with established infrastructure, residential areas and commercial areas
- Promote consistent design principles and landscaping to enhance the visual and functional unity of the locality, particularly key urban corridors with a priority on pedestrian movements

Movement and Access

- Ensure the Mundijong Townsite is easily accessible based on current infrastructure and is aligned with future road, pedestrian and public transport opportunities, particularly the potential train station
- Ensure key intersections and other aspects of the transportation network are well considered to minimise congestion

Urban Form

- The site needs to support a cohesive urban character, particularly as the Town Centre transitions from low to medium / high density
- Provide opportunities for public spaces and green infrastructure to enhance liveability and other environmental aspects contributing to the amenity and built form of the area
- Ensuring that new development complements key landmarks of the Town Centre, paying respect to the history, character and other heritage requirements

Heritage

Ensuring local heritage is protected and promoted should be a remain a key priority for future structure planning within the Mundijong Townsite.

- Identifying and preserving heritage sites in accordance with the Shire's Local Heritage Survey 2022-2027
- Ensuring development within the Mundijong Townsite is reflected in the scale of previous development and planning, particularly along Paterson Street where several historic and place significant heritage developments provide key character to the area

Economic Activation Assessment

Principles of economic activation are key to the development of vibrant and viable activity centres. Pracsys uses Six Principles of Economic Activation to assess the relative performance of centres from an economic perspective. This includes how key anchors such as supermarkets drive pedestrian traffic (activation), how businesses can benefit from this pedestrian traffic, and suitable locations for less high traffic uses such as other retail. A summary of six principles has been included that can be applied by the Shire when considering the suitability of potential developments options (Figure 46).

Figure 46. Summary of the Six Principles of Economic Activation

Activation Principle	Summary	Considerations for Mundijong Town Centre
1. Purpose of Place	**The role of the Centre based on its size and classification:** • Addresses the question – what does this place represent to its target user population (residents, workers, visitors)? This should link to the SPP4.2 identified roles of centre classifications.	When assessing sites, the Shire should ensure that the location will enable the centre to achieve its purpose as a District Centre as described by SPP4.2.
2. Access – Arrival Points	**This refers to how centres are accessed by users (the arrival points):** • Decisions about access begin 5km from the place	The Shire should consider how a potential site will be accessed including whether the location promotes multiple access methods (i.e. public transport, walking,

Activation Principle	Summary	Considerations for Mundijong Town Centre
	• Transport networks should be planned to travel through centres (not bypass them) – ensure the design funnels people and traffic into the core • Pedestrian congestion and a mix of transport nodes is beneficial to activation • It is better to arrive at the ''front door' of the place, not around the back or in the side	driving, etc.) and the ease with which access is available.

3. Origins – Car Parking and Transport Nodes	**Origins are nodes from which pedestrian movements begins:**
	• Parking, multi-storey development and transport nodes are the drivers of pedestrian movement
	• Strategic distribution of car parks and transport nodes will optimise pedestrian movement
	    o Location is more important than numbers
	    o Space the origins around the periphery of centre
	    o Street parking is important (for commercial areas)
	    o Apply use fees to ensure turnover of parking but not so much that consumers do not park at all
	    o Relax time limits in appropriate areas to ensure customers have time to undertake shopping trip relevant to proximate uses
		The Shire should ensure future potential public transport origins (bus and train) are considered when assessing sites. It should also consider how the location will enable pedestrian movements that support current and future retail and non-retail uses. The point is to have origins that are convenient to multi-purpose visits on foot, maximising commercial opportunities and reducing the need for consumers to travel by car between multiple locations.

4. Exposure – Pedestrian Movement	**Exposure indicates Active Frontages that are exposed to high levels of pedestrian traffic:** • Economic activation is driven by the frequency and concentration of transactions • Channel movements and concentrate transactions by pushing people past as many shop windows as possible • Rents and sales are directly related to pedestrian traffic (e.g. a butcher will pay higher rent to be at supermarket entry) • Minimise possible routes from origin to destination points (e.g. car park to main attraction) as architectural "permeability" is	The Shire should ensure that the location has clear opportunities to activate street frontages. This generally occurs between origins and destinations (i.e. between a train station and a supermarket) and two destinations (i.e. discount department store and supermarket). The location needs to support activation of current and future businesses. Pedestrian movement is the most important type of activation; slow vehicle movements can be used to increase the sense of

Activation Principle	Summary	Considerations for Mundijong Town Centre
	not always a good thing for business viability	activation and improve the vibrancy of a place, where appropriate.

5. Destinations – Major attractions	**Destinations are areas that attract high concentrations of customers/people:**
	• Identify main destination – what will bring users into the core?
	• Assess user behaviour
	  o Number of visits
	  o Timing of visits (time of day, seasonality)
	• Give major destinations special treatment
	  o Understand what they need
	  o Build centre around them
	• Amplify the impact of attractions by creating support amenity and infrastructure to maximise frequency, length of stay and expenditure
		The Shire should ensure that a future location acts strategically with current destinations. Depending on the location, different current locations may be strategic; a combination of destinations that support multi-purpose visits should be prioritised.

6. Control – Strategic Sites	**Key Sites are locations that could be considered as future destinations and/or suitable sites for anchor tenants (i.e. supermarkets). Tenure control is a significant advantage for overall development success** • Tenure control is vital for overall development success – determine which sites (supporting what uses) must stay in public ownership • Identify active frontages and take control of key sites or implement appropriate planning measures (i.e. a set of preferred uses for a site) • Corner sites drive uses on either side (more appropriate for high turnover uses such as a café where there is high pedestrian traffic) • Not all areas in a place need to be active – be selective	The Shire should consider the ease with which a site can be developed. It should also consider key locations in and adjacent to a site that might be strategic and their ease of development to key uses (i.e. can a corner lot on what would be a highly activated street front be developed for shop retail uses).

Source: Pracsys 2024

9 CONCLUSION

This Activity Centres Background paper provides the Shire of Serpentine-Jarrahdale with an evidence-based guide to support the ongoing development of its activity centres within the Mundijong-Whity District Structure plan area. The paper can be used as a basis for planning and distribution of retail and non-retail floorspace across existing and future activity centres within the DSP area. It also considers employment within activity centres and their contribution to meeting ESS targets for the Shire. Demand profiling considered the factors affecting the provision of goods and services within the DSP area's activity centres, and the timing and expected scale of population growth and infill development.

Floorspace gaps were identified based on benchmark Local Government Areas to understand how the diversity of centres could be improved at a high level (Planning Use Category Level) and more in-depth level (Western Australian Standard Land Use Classification Level).

Gravity modelling was used to assess the quantum and distribution of shop-retail floorspace based on expected productivity levels. The quantum of non-retail floorspace was based on identified gaps and population growth and was distributed with the findings of the retail gravity model.

The Shire should follow the SPP 4.2 guidelines to implement the information provided by the Activity Centres Background paper.

The WAPC tasks set out for modifying the DSP have been addressed throughout the Activity Centres Background paper, please see Appendix 10.3 for a summary of how these have been actioned and incorporated.

10 APPENDICES

10.1 Appendix1: PLUC Glossary

SHP – Shop/Retail

Any activity which involves the sale of goods from a shop located separate to, and/or in, a shopping centre other than those included in Other Retail.

RET – Other Retail

Many of these activities are not normally accommodated in a shopping centre. By virtue of their scale and special nature the goods of these activities separate them from the Shop/Retail category (for example car sales yard or carpet showroom).

OFF – Office/Business

Administrative, clerical, professional and medical offices are activities which do not necessarily require the land area/floor space or exposure of other land uses. Although offices require building and parking facilities, these needs are quite distinct from those of commercial uses and service industries.

HEL – Health/Welfare/Community Services

Government, government-subsidised and non-government activities that provide the community with a specific service, including hospitals, schools, personal services and religious activities.

ENT – Entertainment/Recreation/Cultural

Activities which provide entertainment, recreation and culture for the community and which occur in buildings and/or on land, such as passive and active sports venues, museums, amusements and gambling services.

RES – Residential

Includes all types of residential land use ranging from single housing to nursing homes for the aged, residential hotels, motels, other holiday housing, institutions and religious housing.

MAN – Manufacturing/Processing/Fabrication

This category includes land use activities involving the manufacture, processing and fabrication of all general goods. Both the scale and associated environmental impact of these activities separate them from other land use categories.

STO – Storage/Distribution

Any land use activity which involves the storage, warehousing or wholesaling of goods usually conducted from large structures, or involving large bulk goods, but does not include activities that attract the general retail trade activities.

SER – Service Industry

This category includes service industries offering a range of services. The scale and environmental impact of such activities require their separation from other land uses. These services include film processing, cleaning, motor vehicle and other repair services, and other servicing activities, including some construction activities.

UTE – Utilities/Communications

All forms of local, state, national and international communication, transportation and other utilities (for example, electricity, gas, water, sewerage, roads, parking and other transport or communications related activities) covering the public and private sectors.

VFA – Vacant Floor Area

This category accounts for vacant floor areas of buildings, including both non-residential and residential.

PRI – Primary-Rural

Land use activities which usually involve the use of large areas of land, including mining, agriculture, fishing and nature conservation. The function of many of these activities is to make use of, or extract from, the land in its natural state. Since such activities are the first step in the production process, they are quite distinct from the other categories.

VFA – Vacant Floor Area

This category accounts for vacant floor areas of buildings, including both non-residential and residential

10.2 Appendix 2: Other Terminology

Service ratio

Service ratios generally use population as a base to compare a measure across areas while account for their differences in size. Floorspace-to-population ratios (service ratios) are used to provide relative comparisons of floorspace by accounting for the size of an LGA's population.

Labour force

The labour force refers to those employed or actively seeking employment. In this case, the labour force for the Shire of Serpentine-Jarrahdale includes not only residents to the Local Government Area but also those employed in the Shire who are from other LGAs.

Resident workers

Resident workers refer to those employed are employed in the same area that they live. In this case, resident workers are those who work in the Shire of Serpentine-Jarrahdale and resident in the Shire. The other proportion of employment are those who work in the Shire but do not resident in the Shire.

Floorspace gap

A floorspace gap refers to the undersupply of floorspace relative to benchmarks.

Non Shop-Retail (Non SHP)

Non Shop-Retail refers to all commercial floorspace and employment that is not PLUC Shop/Retail floorspace or employment this includes MAN, OFF, PRI, STO, RET, SER, ENT & RES PLUCs.

10.3 Confirmation of WAPC Modifications

The following table summarises the tasks set out by the WAPC for modifying the DSP and confirms their status and the relevant section of the document.

Figure 47. Modifications and Relevant Sections

Modification	Confirmation of SPC Schedule of Modifications	Actioned
6	(a) Section 3.1 of the ACBP details the increased population from the augmentation of residential densities and increased Urban areas as detailed in Figure 6. (b) Section 7.4 provides an understanding of the shop retail uses, particularly supermarket and discount department store anchor tenants that are appropriate for the proposed centres, by classification. (c) Section 8.3 of the ACBP details Local Structure Plans and their role within the broader DSP locality.	✓
11	(a) Figure 2 of the ACBP includes the Activity Centre Hierarchy which includes two plus indicative District Centres. (b) Figure 30 identifies three large neighbourhood centres which are 5,000m^2 in size and located in three locations known as Mundijong Precinct H, Mundijong Precinct C, and Whitby South. These were determined through discussions with the Shire.	✓
39	(a) Figure 38 of the ACBP identifies the NLA, key elements, and land requirements for the Whitby South (large) and Whitby North (small) neighbourhood centre. (b) Consideration for a future review has been addressed within the ACBP through the use of retail gravity modelling and benchmarked floorspace productivity estimates. The methodology undertaken considers future floorspace estimates are supportable and will not impact the vitality of activity centres for the DSP.	✓

Modification	Confirmation of SPC Schedule of Modifications	Actioned
	(c) Section 4 of the ACBP summarises the overarching objectives set out by the State Planning Frameworks, including SPP 4.2, which references land use mix, cohesion, movement, access, and urban form.	
41	Reference to the creation of a neighbourhood centre pending revision of the ACBP has been removed from the document.	✓
44	Acknowledged	✓
48	(a) Census 2021 data has been used to inform the ACBP (Section 3.11, Employment Self-Sufficiency and Self-Containment). (b) A revised assessment has been undertaken accounting for Modification 74 requirements, increased schools, recreation facilities and home-based work (Section 7.6, Strategic Employment Analysis).	✓
55	Acknowledged	✓
74	The ACBP has been addressed and includes: • Locations for all activity centres and their types, Section 7.3 Activity Centre Hierarchy Assessment • Need for additional neighbourhood centres considering walkability and feasibility, Section 7.3 Activity Centre Hierarchy Assessment • Net lettable floor area and key elements, Section 7.4 Shop-Retail Floorspace Mix • Land requirements for each activity centre, Section 7.5 Activity Centre Land Requirements	✓

Source: WAPC 2024, Pracsys 2024