



# MUNDIJONG DISTRICT STRUCTURE PLAN



Shire of  
Serpentine  
Jarrahdale

MARCH 2025

Prepared by:



March 2025

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## LIST OF ABBREVIATIONS

ACP	Activity Centre Plan
BAL	Bushfire Attack Level
BMP	Bushfire Management Plan
CIDCP	Community Infrastructure Development Contributions Plan
CPTED	Crime Prevention Through Environmental Design
DIA	Development Investigation Area
DPLH	Department of Planning, Land and Heritage
DWMS	District Water Management Strategy
DWER	Department of Water and Environmental Regulation
ESC	Employment Self Containment
ESS	Employment Self Sufficiency
HFTC	High Frequency Transit Corridor
LPS	Local Planning Strategy
LPS3	Shire of Serpentine Jarrahdale Local Planning Scheme 3
LSP	Local Structure Plan
MRS	Metropolitan Region Scheme
MRWA	Main Roads Western Australia
POS	Public Open Space
PTA	Public Transport Authority
SPP	State Planning Policy
SPS	State Planning Strategy
TEC	Threatened Ecological Community
TOD	Transit Oriented Development
WAPC	Western Australian Planning Commission
WSUD	Water Sensitive Urban Design

# ENDORSEMENT PAGE

This District Structure Plan is prepared under the provisions of the Shire of Serpentine Jarrahdale Local Planning Scheme No. 3.

IT IS CERTIFIED THAT THIS DISTRICT STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

DATE

Signed for and on behalf of the Western Australian Planning Commission:

\_\_\_\_\_

An officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:

\_\_\_\_\_Witness

\_\_\_\_\_Date

\_\_\_\_\_Date of Expiry



TABLE OF AMENDMENTS

AMENDMENT NO.	SUMMARY OF THE AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY WAPC

TABLE OF DENSITY PLANS

DENSITY PLAN NO.	AREA OF DENSITY PLAN APPLICATION	DATE ENDORSED BY WAPC

## EXECUTIVE SUMMARY

Mundijong and the adjoining area of Whitby were rezoned for urban purposes under the Metropolitan Region Scheme in 2006. The original Mundijong/Whitby District Structure Plan was drafted through an Enquiry by Design exercise and approved in March 2011. Since then, however, a range of substantial regional and subregional planning and infrastructure changes have occurred, which claim the need for a review of the original District Structure Plan.

The Mundijong-Whitby District Structure Plan 2011 has now been revised to reflect changes in a number of State and local policies, and incorporates a significant number of strategic documents (most notably the South Metropolitan and Peel Sub-regional Framework) that have been produced since the District Structure Plan was first approved.

The Mundijong District Structure Plan consolidates the above mentioned planning documents and generally replaces them or reconfirms their relevance in the planning framework. A Development Contribution Scheme and Development Contribution Plan have been approved for the shared cost towards common infrastructure requirements. The document also refers to a Community Infrastructure Development Contribution Plan that provides for shared community infrastructure costs, which has also been approved. The Shire has worked very collaboratively in order to secure modern planning responses to the infrastructure coordination, and growth management pressures facing the area.

The Strategic Direction that has influenced the District Structure Plan is listed in Section 3.1. The actions that are required following on from the changes to the District Structure Plans are listed in the relevant tables.

The plan estimates a population of 58,000 people dependent upon the final distribution of densities and household sizes. It incorporates provisions for two new district centres, with the opportunity to ultimately link into the Perth urban rail network.

There is a general presumption against subdivision until appropriate local structure planning has been completed. Local structure planning will be required to deliver the vision and objectives for Mundijong/Whitby outlined within the District Structure Plan.

## STRUCTURE PLAN CONTENT

This structure plan comprises:

- + Part One – Implementation Section

Includes the Mundijong District Structure Plan map and planning provisions.

- + Part Two – Explanatory Section

Provides an overview of how the Mundijong District Structure Plan responds to the existing planning framework and local context. It identifies the layers which informed the preparation of the Mundijong District Structure Plan.

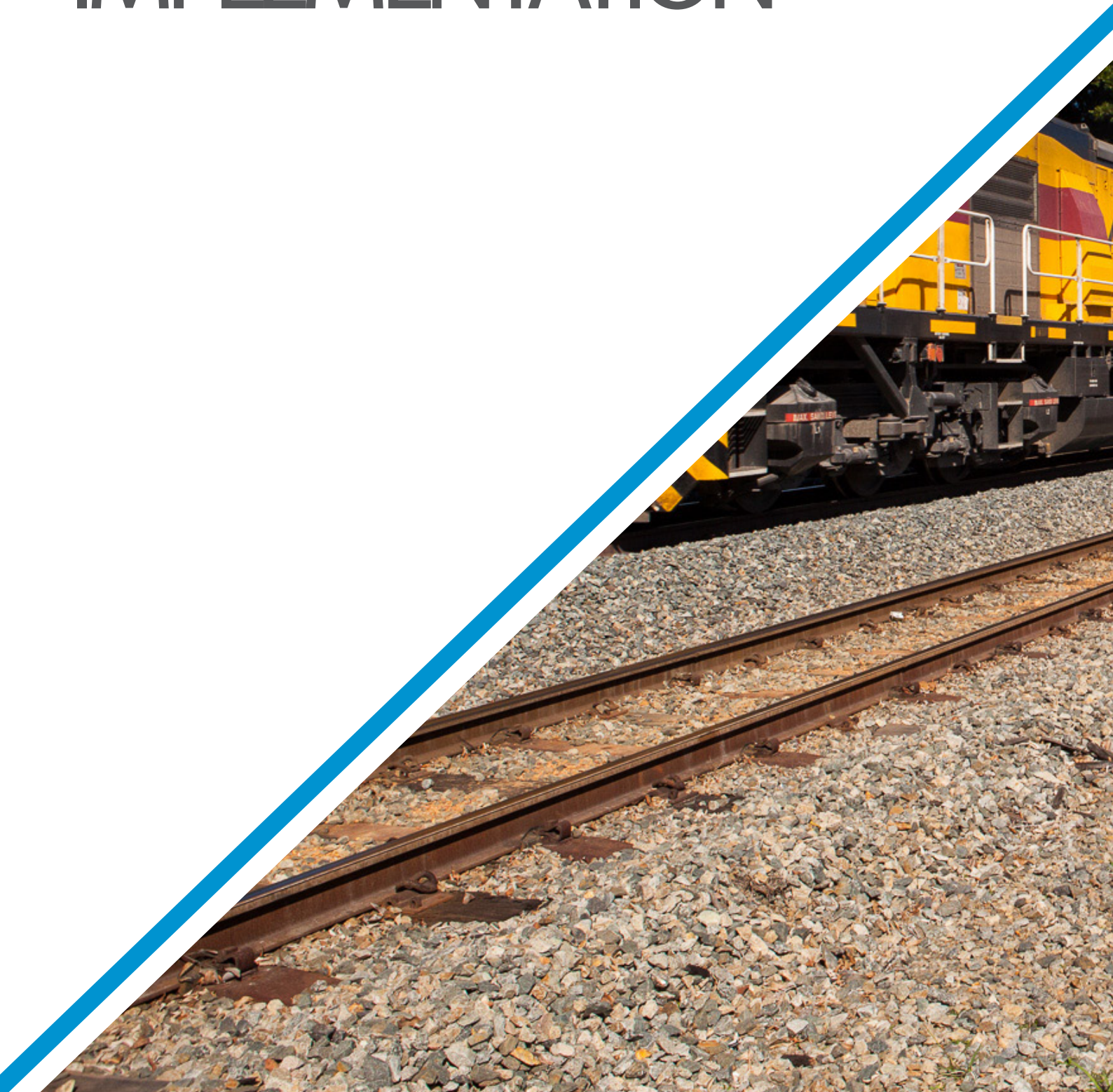


## SUMMARY TABLE

Item	Data	Structure Plan Reference
Total area covered by the structure plan	1,983 hectares	Section 1.2.2 'Area and Land Use'
Estimated number of dwellings	20,367 dwellings	Section 3.2.1 'Population and Density'
Estimated residential site density	15 dwellings per hectare	Section 3.2.1 'Population and Density'
Estimated population	Approximately 58,000 people	Section 3.2.1 'Population and Density'
Number of high schools	3	Section 3.5.1 'Education Facilities'
Number of primary schools	11	Section 3.5.1 'Education Facilities'
Estimated commercial floor space	104,949 m <sup>2</sup> net lettable area	Section 3.3.1 'Economy'
Estimated area and percentage of public open space	10% coverage	Section 3.5.2 'Public Open Space'
	198 hectares	Section 3.6 'Environment and Landscape'

# PART ONE

## IMPLEMENTATION













# 1.0 IMPLEMENTATION





## 1.1 Structure Plan Area

The Mundijong District Structure Plan shall apply to the land contained within the inner edge of the line denoting the structure plan boundary as shown on Figure 1.

## 1.2 Operation

Any Local Structure Plans adopted within the area of the District Structure Plan shall be subject to the provisions of the District Structure Plan.

The original Mundijong Whitby District Structure Plan was approved by the Western Australian Planning Commission in 2011, and was prepared to guide the preparation of more detailed Structure Plans, facilitating subdivision and development within the Mundijong area.

This updated District Structure Plan represents the latest set of amendments aimed at ensuring the planning framework remains modern and relevant, and particularly aims to ensure infrastructure is coordinated and scaled reflective of the patterns of density and development expected to take place.

## 1.3 Staging

Staging of the Mundijong District Structure Plan will be dependent on population based triggers, which will determine the need for essential infrastructure such as:

- + Provision of services infrastructure;
- + Provision of community infrastructure (e.g. schools); and
- + Construction/upgrading of roads.

All staging is considered as part of the operative developer contribution plans. The Mundijong District Structure Plan also specifically recognises that initial phases of development are likely to be influenced by the presence of the Freight Rail Line. It is a whole of government priority to relocate this freight rail to the west side of the Tonkin Highway, removing its severing impacts entirely from the town centre.

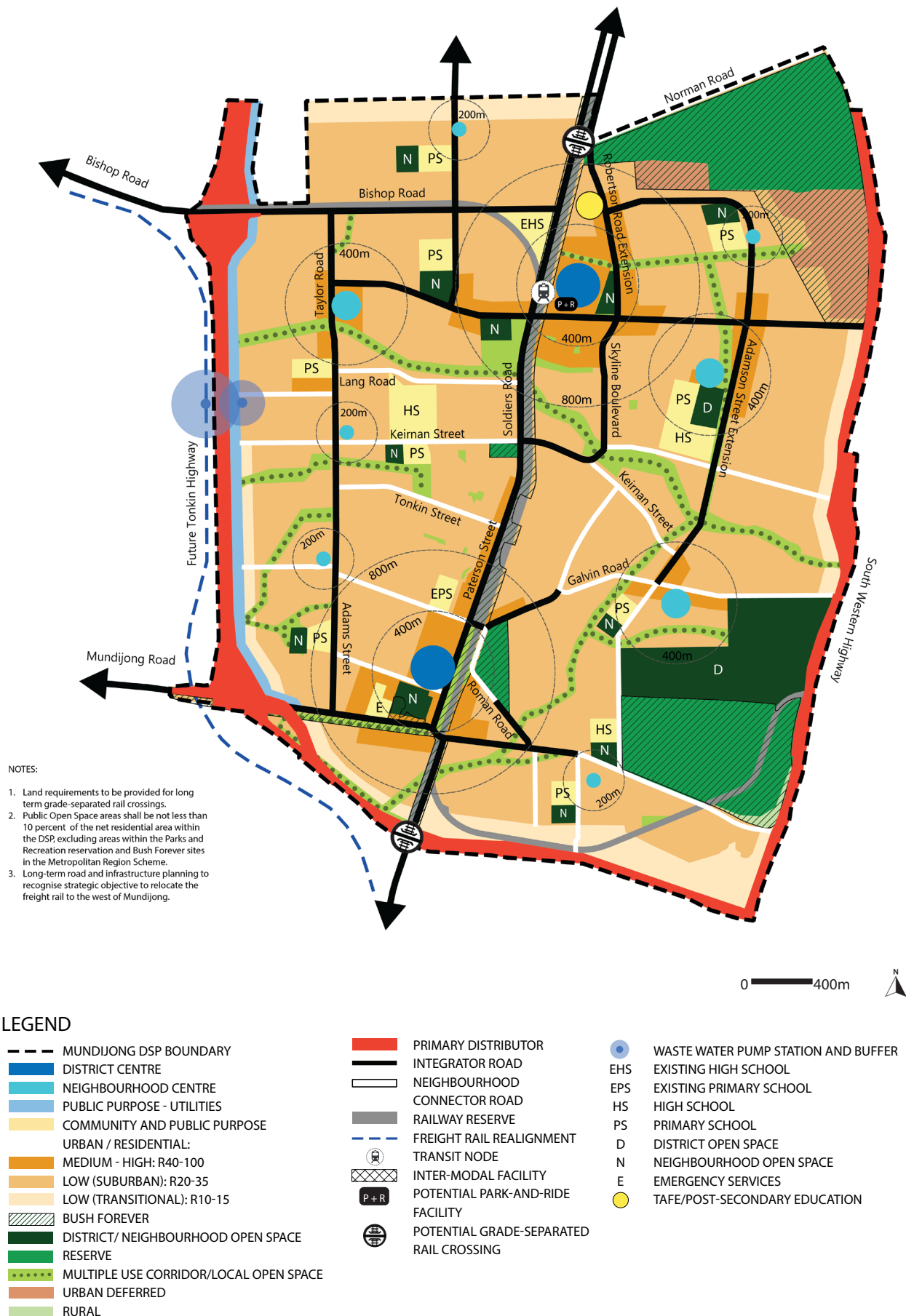
As staging is dependent on population based triggers, timing for the Mundijong District Structure Plan has not been identified. The Mundijong District Structure Plan does facilitate flexible approaches to development staging, and Local Structure Plans will be expected to demonstrate how flexibility still secures acceptable development outcomes. This is both from macro to micro perspectives.

## 1.4 Subdivision and Development Requirements

The land use arrangements, district level infrastructure and movement network illustrated in the Mundijong District Structure Plan will inform the Shire's response to requests for rezoning and more detailed Local Structure Plans (LSP) where these do not exist within the Mundijong District Structure Plan area. The layout illustrated on Figure 1 represents a high level structural response to key issues which may be subject to refinement at more detailed stages of planning, at the discretion of the local government. Subdivision and development will be determined in accordance with the applicable zoning, planning scheme provisions, the Mundijong District Structure Plan and an approved LSP.

The Mundijong District Structure Plan identifies structure plan areas that specify that a LSP shall be prepared and approved in accordance with the Deemed Provisions for that area. Subdivision and development shall generally not be supported prior to the preparation and approval of a LSP where land has been identified within a structure plan area under the Mundijong District Structure Plan.

Figure 1: Mundijong District Structure Plan



The local government may grant planning approval for a development or land use, or make recommendation to the Western Australian Planning Commission (WAPC) regarding a subdivision in the absence of a LSP where the local government considers the proposed development, land use or subdivision to be of a nature, which would not prejudice the preparation of a LSP.

Where land has not been identified within a structure plan area under the Mundijong District Structure Plan, subdivision and development must be in accordance with Part One and Part Two of the Mundijong District Structure Plan, including any specific requirements outlined under Section 1.7 of Part One of the Mundijong District Structure Plan.

## 1.5 General Provisions

The following provisions shall apply to all LSPs across the whole Mundijong District Structure Plan area:

- + LSPs prepared within the Mundijong District Structure Plan area should generally conform with the layout illustrated within the Mundijong District Structure Plan and be accompanied by:
  - A Local Water Management Strategy consistent with an approved District Water Management Strategy;
  - An Environmental Assessment Report;
  - A Bushfire Hazard Assessment and/or Bushfire Management Plan;
  - A Transport Impact Assessment
  - Landscape Design Guidelines that address measures to be adopted to implement both public and private landscaping that reflects the historic landscape character of Mundijong; and
  - Other submission requirements consistent with the Planning and Development (Local Planning Schemes) 2015 Schedule 2 – Deemed Provisions.
- + LSPs should establish objectives for built form and any design guidelines that are required to be established, typically as Local Planning Policies or Precinct Structure Plans that are required prior to applications for developments and/or subdivision.

The following provisions shall apply to all LSPs, local development plans, subdivisions and developments across the whole Mundijong District Structure Plan area:

- + Maximise connectivity for vehicular, pedestrian and cycling transport networks both internally and to the surrounding street network.
- + Provide for a diversity of land uses, lot sizes, and housing types.
- + Provide public spaces, community facilities and meeting points to create an active, vibrant and engaging place to live and work in accordance with the Shire's Community Infrastructure Plans.
- + Reduce reliance on vehicles by creating a pedestrian-oriented community and providing for alternative modes of transport.
- + Preserve the existing character of the structure plan area including its scenic values, views and landscapes.
- + Design buildings and dwellings with a high level of adaptability to suit different lifecycle stages/changing demographic needs.
- + Create a distinctive and responsive built form that enhances the sense of place, community identity and character of Mundijong and Whitby.
- + Infrastructure shall be provided in accordance with Liveable Neighbourhoods and any local planning policy that varies Liveable Neighbourhoods to respond to specific situations within the Shire.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.
- + Acknowledge and allow for appropriate interface with Bush Forever sites and other sites of environmental

significance.

- + Protect and enhance significant environmental areas and their buffers. Where development is proposed near wetlands, a Wetland Management Strategy is required at Local Structure Plan stage and a Wetland Management Plan is required at subdivision stage.
- + Maximise the efficient use and reuse of water by conserving water through efficiency and facilitating water reuse and fit-for-purpose use if proven to be feasible.
- + Reduce consumption of non-renewable resources via climate responsive design, efficient use of energy and water and increased use of renewable energy.
- + Planning and design to make allowance for adequate road and verge widths to accommodate the service alignments of a possible future dual water supply system and the property connections there from.
- + Provide “smart” mass public transport infrastructure to move people and goods both north and west.
- + Identify, protect and enhance Multiple Use Corridors and ensure water sensitive urban design elements are incorporated in stormwater management.
- + Respond to the Community vision contained in SJ2050 (Strategic Community Plan) with specific reference to the core values, vision outcomes and guiding aspirations contained there.
- + Such other information as may reasonably be required by the local government or the WAPC.

## 1.6 Local Structure Plans

A number of existing LSPs have been prepared and approved within the Mundijong District Structure Plan to provide more detailed planning and development guidance. These LSPs should be considered in conjunction with the Mundijong District Structure Plan, and when reviewed should be aligned to reflect the updated Mundijong District Structure Plan.

The Mundijong District Structure Plan contains distinct LSP Areas (Figure 2). Table 1 identifies the status of these LSP Areas, identifying LSPs that currently operate within the Mundijong District Structure Plan area from the time which the District Structure Plan was drafted and areas where no LSP exists.

Table 1: Mundijong Local Structure Plan Areas

LPS AREA	AREA DESCRIPTION	STATUS (Expiry Date)
Area A	Whitby Precinct A	Approved (19 October 2025)
	Whitby Activity Centre	Approved (30 July 2031)
Area B (1)	Keirnan Street Precinct B1	No LSP exists
Area B (2)	Keirnan Street Precinct B2	No LSP exists
Area B (3)	Keirnan Street Precinct B3	No LSP exists
Area B (4)	Keirnan Street Precinct B4	No LSP exists
Area C (1)	Watkins Road North Precinct C1	Draft
Area C (2)	Watkins Road North Precinct C2	Draft
Area C (3)	Watkins Road North Precinct C3	No LSP exists
Area D	Watkins Road South	No LSP exists
Area E (1)	Mundijong Precincts E1 & E2 Mundijong Precinct E1 Taylor Road and Adams Street, Mundijong	Draft Approved (19 October 2025)
Area E (2)	Mundijong Precincts E1 & E2 Mundijong Precinct E2 L50 Cockram Street and L119 Sparkman Road, Mundijong.	Draft Approved (19 October 2025)

Area E (3)	Mundijong West Precinct E3	No LSP exists
Area F (1)	Mundijong Town Centre Precinct F1	No LSP exists
Area F (2)	Mundijong Town Centre Precinct F2	No LSP exists
Area F (3)	Mundijong Town Centre Precinct F3	No LSP exists
Area F (4)	Mundijong Town Centre Precinct F4	No LSP exists
Area F (5)	Mundijong Town Centre Precinct F5	No LSP exists
Area F (6)	Mundijong Town Centre Precinct F6	Draft
Area F (7)	Mundijong Town Centre Precinct F7	No LSP exists
Area F (8)	Mundijong Town Centre Precinct F8	No LSP exists
Area G (1)	Mundijong North Precinct G1	Approved (2 May 2034)
Area G (2)	Keirnan Street (West) Precinct G2	Draft
Area G (3)	Mundijong North Precinct G3	No LSP exists
Area H (1)	Cardup South Precinct H1	Draft
Area H (2)	Cardup South Precinct H2	No LSP exists

Development of detailed LSPs must be in accordance with the relevant LSP Areas identified. There is a general presumption that no further subdivision shall proceed within LSP Areas unless subject to an approved LSP. For areas where a LSP does not exist or is yet to be approved, or where a LSP is considered to potentially require significant modification, the Mundijong District Structure Plan outlines specific matters required to be addressed in the preparation and/or modification of a LSP for that particular LSP Area.

The following sub-sections outline the matters to be addressed for LSP Areas where a LSP does not exist, is yet to be approved or may require significant modification applicable to individual areas .

#### 1.6.1 LSP AREA A - WHITBY

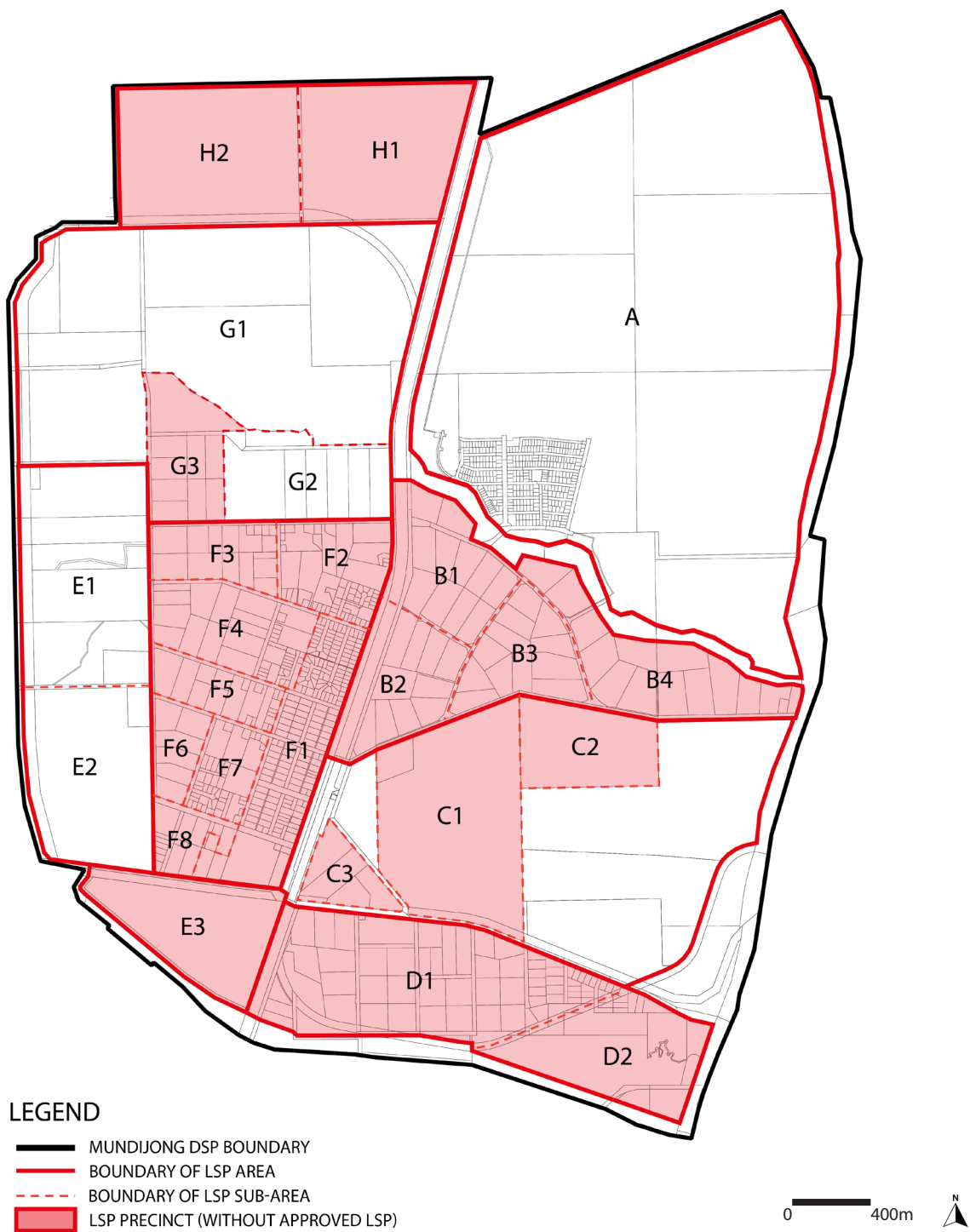
- + LSP Area A is bounded by South Western Highway in the east, Norman Road to the north, Soldiers Road to the west and Manjedal Brook to the south.
- + The Whitby Precinct A LSP has been approved. When the Whitby Precinct A LSP is revised for approval, the below key matters should be addressed.

##### Key matters to be addressed:

- + Subject to outcomes of METRONET investigations for extension of the Armadale rail line to Byford, development of a local bus service with regional connections and an interim transit hub in the main town centre.
- + Consideration of a potential future passenger rail station at the Whitby Activity Centre.
- + Consideration for a possible future park and ride facilities in association with a potential future station at the Whitby Activity Centre.
- + Incorporate the requirements of the district level east-west traffic movement across the LSP area as indicated within northern sector of the District Structure Plan.
- + Consideration and/or reconfiguration of the location of a future TAFE or similar site for post-secondary education in close proximity to the Whitby Activity Centre.
- + Crossing of the rail line to the west of the Whitby Activity Centre.
- + Access to South Western highway from Reilly road.
- + Integration of health facilities within the Whitby Activity Centre to support a local employment base which provides for locally available infrastructure and services.



Figure 2: Mundijong Local Structure Plan Areas



- + A foreshore management plan is required for the Manjedal Brook reserve between Paterson Street and South Western Highway (both sides) including actions, roles and responsibilities for implementation.
- + The identification of at least a 10 ha site, to the satisfaction of the Department of Education, for the purpose of a public high school in the location indicated within Precinct A within the District Structure Plan.
- + Integration of two sites for the purposes of public primary schools generally in the location indicated in the District Structure Plan. The final location of the primary school sites within a Local Structure Plan shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with the Shire and Department of Education.
- + Manjedal Brook and Cemetery Creek to be retained as natural waterways within the defined multiple use corridors.
- + Bushforever area 354 is to be delineated for bush forever open space and managed in accordance with the Whitby Local Structure Plan Integrated Landscape Management Strategy.
- + Protection and rehabilitation of the east-west creek line extending between Bush Forever Area 354 and Robertson Road through lots 23 and 26 is required.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.
- + Create a District Centre, a large Neighborhood Centre, and a small Neighbourhood Centre within LSP Area A, generally in accordance with the Activity Centres Background Paper;
- + Identification of net lettable floor area (retail and commercial, respectively), key elements (e.g., full-line supermarkets, Retail – DDS, Retail – specialty shops) and land requirements for the Whitby Activity Centre.
- + A review of the Activity Centre Plan for the activity centre at Whitby is to give regard to the Mundijong District Structure Plan Activity Centres Background Paper, and the objectives of State Planning Policy 4.2 – Activity Centres, including those relating to land use mix, cohesion, movement and access and urban form;
- + Consideration of noise mitigation measures in relation to the adjacent railway reserve located to the west of the Whitby LSP Area A, in accordance with State Planning Policy 5.4 Road and Rail Noise.

#### 1.6.2 LSP AREA B -KEIRNAN STREET

- + LSP Area B1 to B4 are bounded by South Western Highway to the east, Soldiers Road to the west, Evelyn and Galvin Roads to the south and Manjedal Brook to the north. They are broken up based on discrete planning precincts
- + A LSP shall be prepared for each sub-precinct.

##### Key matters to be addressed:

- + Link pathways onto the north-south principle shared path along Soldiers road which connects north to Byford and south the Serpentine.
- + Consider future road layout and connections with particular consideration to the intersections where Galvin Road meets Keirnan Street. The future intersections and road layouts to reflect the requirements and design outcomes as indicated in the District Structure Plan.
- + Preserve the existing rural, “leafy green” character of the structure plan area including its scenic values, views and landscapes.
- + Enhance the green network through the creation of multiple green linkages.
- + Protect and enhance wetlands, waterways and catchments through appropriate management of water quality and maintenance of hydrology as part of land use change and development.
- + Manjedal Brook and Cemetery Creek to be retained as natural waterways within the defined multiple use corridors.
- + LSP to define additional 50m MUC for overflow discharges from Manjedal Creek, preferably following existing flowpath and retaining fringing vegetation.

- + Retain and protect Bush Forever sites and rehabilitate nearby areas to establish fauna linkages.
- + Verify, retain and protect local natural areas.
- + A foreshore management plan is required for the Manjedal Brook reserve between Paterson Road and South Western Highway (both sides) including actions, roles and responsibilities for implementation.
- + Intergrate a site for the purpose of a public primary school generally in the location as indicated in the District Structure Plan. The final location of the primary school site within the a LSP shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with Shire and Department of Education.
- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for proposed development adjacent the existing rail reserve to the west and South Western Highway to the east.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.

### 1.6.3 LSP AREA C - WATKINS ROAD NORTH

- + LSP Area C is bounded by South Western Highway to the east, Evelyn and Galvin Roads to the north, Paterson Road to the west and Watkins Road to the south. It is broken up based on logical planning precincts.
- + A LSP shall be prepared for each sub-precinct.

#### Key matters to be addressed:

- + Integration of one site for the purposes of public primary school generally in the location indicated in the District Structure Plan. The final location of the primary school site within a LSP shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with the Shire and Department of Education, to the satisfaction of the Western Australian Planning Commission.
- + Integration of one site for the purposes of public high schools generally in the location indicated in the District Structure Plan. The final location of the high school site within a LSP shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with the Shire and Department of Education, to the satisfaction of the Western Australian Planning Commission.
- + Create a large Neighborhood Centre within LSP Area C, generally in accordance with the Activity Centres Background Paper.
- + Create a north-south road connection linking Keirnan Street to Watkins Road.
- + Reinforce pedestrian and cycle connections to the existing Mundijong Station.
- + Link pathways onto the north-south principle shared path along Soldiers road which connects north to Byford and south to Serpentine.
- + Undertake detailed floristic surveys around Threatened Ecological Communities (TECs) and for protected flora and fauna where any clearing of remnant vegetation is proposed.
- + Retain and protect Bush Forever sites and rehabilitate nearby areas to establish fauna linkages.
- + LSP to define additional 50m MUCs for Pruden Creek and overflow discharges from Manjedal Creek, preferably following existing flowpaths and retaining fringing vegetation. The MUCs will act as major ordering elements to movement throughout the precincts
- + Verify, retain and protect local natural areas.
- + Preserve fringing vegetation along roads, waterways and rail corridors.
- + Enhance the green network through the creation of multiple green linkages.
- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for proposed development adjacent the existing rail reserve to the west.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.

### 1.6.4 LSP AREA D - WATKINS ROAD SOUTH

- + LSP Area D is formed by the Tonkin Highway Reservation in the south, South Western Highway to the east, Watkins Road to the north and Wright Road to the west. It is broken up into logical planning units.
- + A LSP shall be prepared for each sub-precinct

Key matters to be addressed:

- + Reduce reliance on vehicles by creating a pedestrian-oriented community and providing for alternative modes of transport.
- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for proposed development adjacent the existing rail reserve to the west and Tonkin Highway reservation to the south
- + Enhance the green network through the creation of multiple green linkages.
- + Preserve fringing vegetation along roads, waterways and rail corridors.
- + Undertake an Aboriginal Heritage site survey, with any relevant applications under the Aboriginal Heritage Act being undertaken and approved prior to lodgement of a structure plan.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.
- + Create a small Neighbourhood Centre within LSP Area D, generally in accordance with the Activity Centres Background Paper.
- + Provision of a primary school at the approximate epicentre of this precinct with its location to be determined in accordance with Liveable Neighbourhoods Element 8 in consultation with the Department of Education to the satisfaction of the WAPC.
- + Pruden Creek to be retained as a natural waterway within defined multiple use corridor.
- + Drainage and water management considerations in relation to the creek that passes through the eastern portion of the precinct, including assessment of potential for inundation and establishment of a foreshore management plan.
- + Verify, retain and protect natural areas.
- + Bush fire hazard management.

#### 1.6.5 LSP AREA E - MUNDIJONG WEST

- + LSP Area E is bounded by Taylor Road, Adonis Street and Wright Road to the east, the Tonkin Highway reservation to the south and west, and Scott Road to the north.
- + LSPs have been prepared and approved by the Shire of Serpentine-Jarrahdale for Mundijong E1 and E2 precincts.
- + A LSP shall be prepared for the remaining Mundijong E3 precinct.

Key matters to be addressed:

- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for proposed development adjacent the future Tonkin Highway reservation to the west and south.
- + LSPs should confirm the extent of the proposed service corridor to the east of Tonkin Highway and pump station site. The pump station will require an odour buffer of at least 150m radius. This should preferably be co-located with POS and drainage areas.
- + Integration of one site for the purposes of a public primary school generally in the location indicated in the District Structure Plan. The final location of the primary school sites within a LSP shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with the Shire and Department of Education.
- + Enhance the green network through the creation of multiple green linkages.
- + Existing watercourses to be retained within defined multiple use corridors
- + Pruden Creek to be retained as a natural waterway within defined multiple use corridors. .
- + Preserve fringing vegetation along roads, waterways and rail corridors.

- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.
- + Create a small Neighbourhood Centre within LSP Area E, generally in accordance with the Activity Centres Background Paper;
- + The detailed position of the Mundijong South Entry/Exit road from the Primary Regional Road reservation is to be established and included in the LSP.

#### 1.6.6 LSP AREA F - MUNDIJONG TOWN CENTRE

- + LSP Area F is bounded by Paterson Street in the east, Keirnan Street to the north, Adonis Street and Taylor Road to the west and Mundijong Road to the south. It has been broken up into logical planning precincts
- + A LSP shall be prepared for each sub-precinct.

##### Key matters to be addressed:

- + Retention of the existing character of the town centre enhancing its sense of place, community and identity.
- + Create a strong local employment base which provides for locally available infrastructure and services.
- + Enhance the Civic (governance) precinct located within the existing Town Centre.
- + Protect the Emergency Services precinct located on Mundijong Road.
- + Support health facilities in Town Centre which are able to serve the ageing population.
- + Create a vibrant and attractive place that offers a range of lifestyle choices and a liveable environment, supporting a safe, healthy and active community.
- + Enhance the green network through the creation of multiple green linkages.
- + Detention storage to be provided to manage discharges from previously undeveloped lots an existing developed lots subdividing to achieve higher densities, to their predevelopment peak flow rates and replace lost floodplain storage.
- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for proposed development adjacent the existing rail reserve to the east.
- + Undertake an Aboriginal Heritage site survey, with any relevant applications under the Aboriginal Heritage Act being undertaken and approved prior to lodgement of a structure plan.
- + Prepare an Precinct Structure Plan for the Mundijong Town Centre, giving regard to the Mundijong District Structure Plan Activity Centres Background Paper, the objectives of State Planning Policy 4.2 – Activity Centres including those relating to land use mix, cohesion, movement and access and urban form, and giving consideration to the heritage values of the Mundijong Townsite;
- + Identify net lettable floor area (retail and commercial, respectively), key elements (e.g., full-line supermarkets, Retail – DDS, Retail – specialty shops) and land requirements for the Mundijong activity centre;
- + Inclusion of an additional Primary School within Precinct F, in a location to be determined in accordance with Liveable Neighbourhoods Element 8 and in consultation with the Department of Education.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.

#### 1.6.7 LSP AREA G - MUNDIJONG NORTH

- + LSP Area G is bounded by Soldiers Road to the east, Bishop Road to the north, the Tonkin Highway reservation to the west and Keirnan Street and Scott Road to the south.
- + A LSP shall be prepared for all or a portion of the precinct with the extent of the LSP to be determined in liaison with the Shire of Serpentine Jarrahdale.

##### Key matters to be addressed:

- + Identification of two sites for the purpose of public primary schools and one high school, generally in the location indicated in the District Structure Plan. The location of the primary school and high school sites within a LSP



shall be determined in accordance with Liveable Neighbourhoods Element 8 and in liaison with the Shire and Department of Education.

- + Create a small Neighbourhood Centre and a large Neighbourhood Centre within LSP Area G, generally in accordance with the Activity Centres Background Paper.
- + Create an east-west road connection from Taylor Road to Soldiers Road linking across Soldiers Road and the rail reserve to the Whitby District Centre.
- + Noise mitigation measures as required under appropriate policy requirements including SPP 5.4 are to be addressed for noise generated from the future Tonkin Highway Reservation to the west and the rail reservation to the east.
- + Protect and enhance wetlands, waterways and catchments through appropriate management of water quality and maintenance of hydrology as part of land use change and development.
- + Undertake an Aboriginal Heritage site survey, with any relevant applications under the Aboriginal Heritage Act being undertaken and approved prior to lodgment of a structure plan.
- + Undertake detailed floristic surveys around TECs and for protected flora and fauna where any clearing of remnant vegetation is proposed.
- + Retain and protect Bush Forever sites and rehabilitate nearby areas to establish fauna linkages
- + Detention storage to be provided to manage discharges to their predevelopment peak flow rates and replace lost floodplain storage.
- + Verify, retain and protect local natural areas.
- + Preserve fringing vegetation along roads, waterways and rail corridors.
- + Consideration for a third pipe system to promote waste water recycling within the District Structure Plan area.

#### 1.6.8 LSP AREA H - CARDUP SOUTH

- + LSP Area H is generally bounded by rural living land uses to the north, the Tonkin Highway extension to the west, Bishop Road to the south and Soldiers Road to the east. It is broken up into logical planning precincts
- + A LSP shall be prepared for each sub-precinct

##### Key matters to be addressed:

- + Provision of a centrally-located primary school in this precinct with its location to be determined in accordance with Liveable Neighbours Element 8 in consultation with the Department of Education to the satisfaction of the WAPC.
- + Allowance for any land requirements associated with a rail crossing / interchange.
- + Possible road widening requirements associated with Soldiers Road, Bishop Road and Bett Road.
- + Noise mitigation.
- + Bushfire hazard management.
- + Verify, retain and protect local natural areas.
- + Protect wetlands, watercourses and catchments.
- + Preserve fringing vegetation along roads and waterways.
- + Detention storage to be provided to manage discharges to their predevelopment peak flow rates and replace lost floodplain storage
- + Consideration of third pipe system.
- + Create a small Neighbourhood Centre within LSP Area H, generally in accordance with the Activity Centres Background Paper.

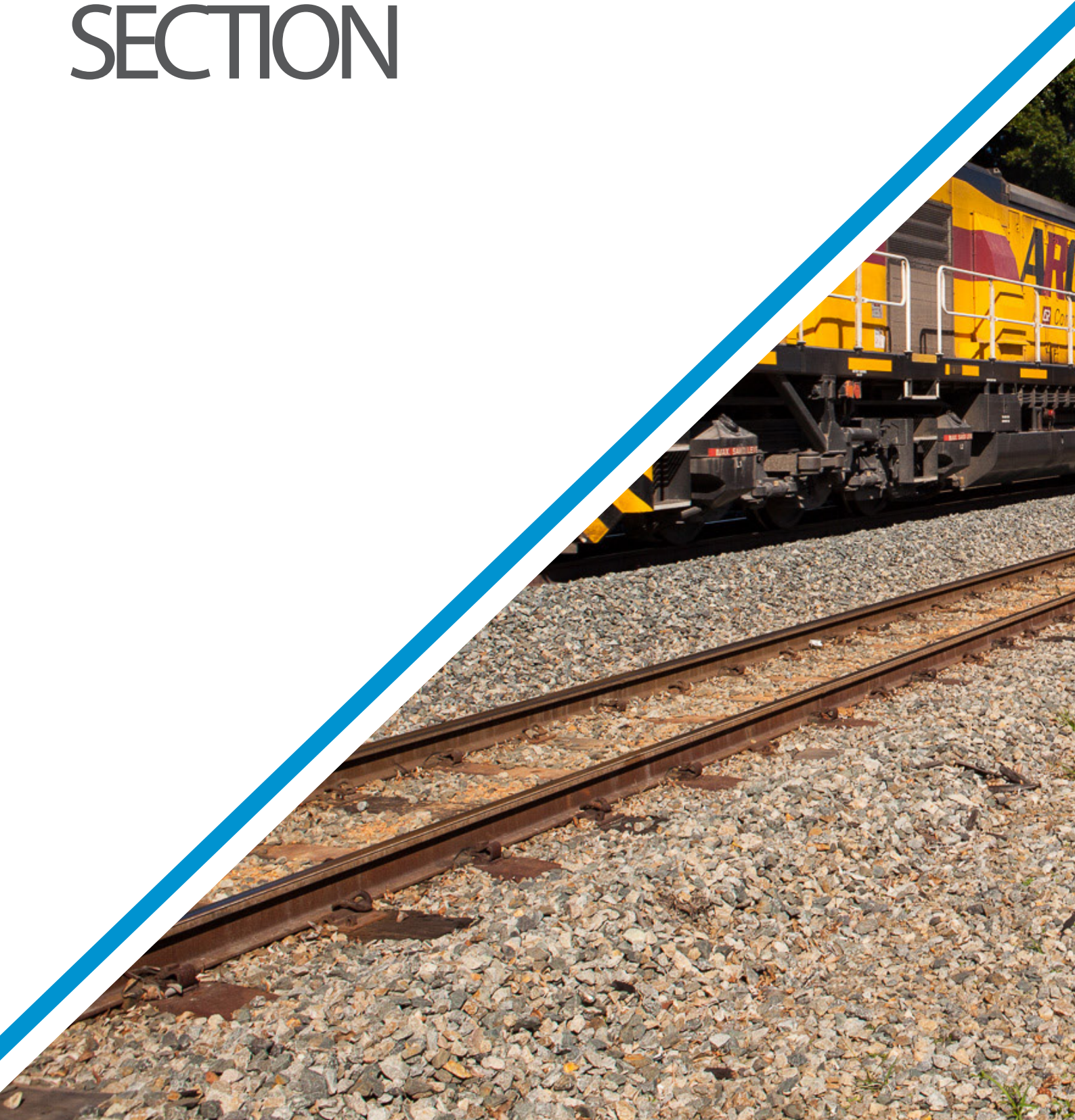
## 1.7 Other Requirements

All urban development within the Mundijong District Structure Plan area is / will be subject to:

- + The Mundijong Development Contribution Plan (being Development Contribution Area 3 (DCA3) within the current revision); and
- + The Community Infrastructure Development Contribution Plan (current revision).

# PART TWO

## EXPLANATORY SECTION













# 2.0 PLANNING BACKGROUND





## 2.1 Introduction and Purpose

### 2.1.1 INTRODUCTION

The original Mundijong Whitby District Structure Plan was prepared in 2011 to provide high-level strategic guidance on future planning and development in the Mundijong and Whitby localities. Since the preparation of this document, the Department of Planning, Lands and Heritage (DPLH) have released the final Perth and Peel@3.5 million strategic planning framework and the Shire has undergone a significant amount of change due to exponential population growth. The Perth and Peel@3.5 million strategic framework and associated South Metropolitan Sub-regional Planning Framework identified a number of significant planning initiatives and proposals in the region which have required consideration. In addition, the strategy also proposes that the Shire is projected to accommodate an additional 90,000 people (113,000 in total). SJ2050, the Shire's high-level strategic vision explored how best to distribute this population, it was determined that approximately 50,000 people would call the Mundijong Urban Cell (Mundijong and Whitby localities) home. This would result in a population more than 20 times larger than the existing population in Mundijong. Recently, with the expansion of the Mundijong cell to reach 58,000 residents.

The Shire has also progressed with the MRS amendment and development framework for the Mundijong Industrial Area to the west of the original district structure plan. This development framework is now sufficiently progressed to allow it to be incorporated into the Mundijong District Structure Plan and form an integrated residential/employment urban area.

The above has resulted in the need to revisit and update the Mundijong District Structure Plan to ensure it provides clear direction for the future planning and development of Mundijong and surrounds.

### 2.1.2 STRUCTURE PLAN PURPOSE

As illustrated on Figure 3 the Mundijong District Structure Plan has been prepared to align with both the State government and Shire's local planning frameworks, consolidating the numerous studies and investigations previously undertaken in the area. It has been prepared in collaboration with key stakeholders including relevant government agencies, major landholders and the community. As a broad district level planning instrument, its primary aim is to guide future planning and development in the Mundijong District Structure Plan area. This will include the broad disposition of land use, major roads, rail and other community infrastructure, district water management, and environmental protection for a population of 58,000 people. It is intended that the Mundijong District Structure Plan will form the general basis for subsequent preparation of LSPs on a precinct-basis as indicated in Part One.

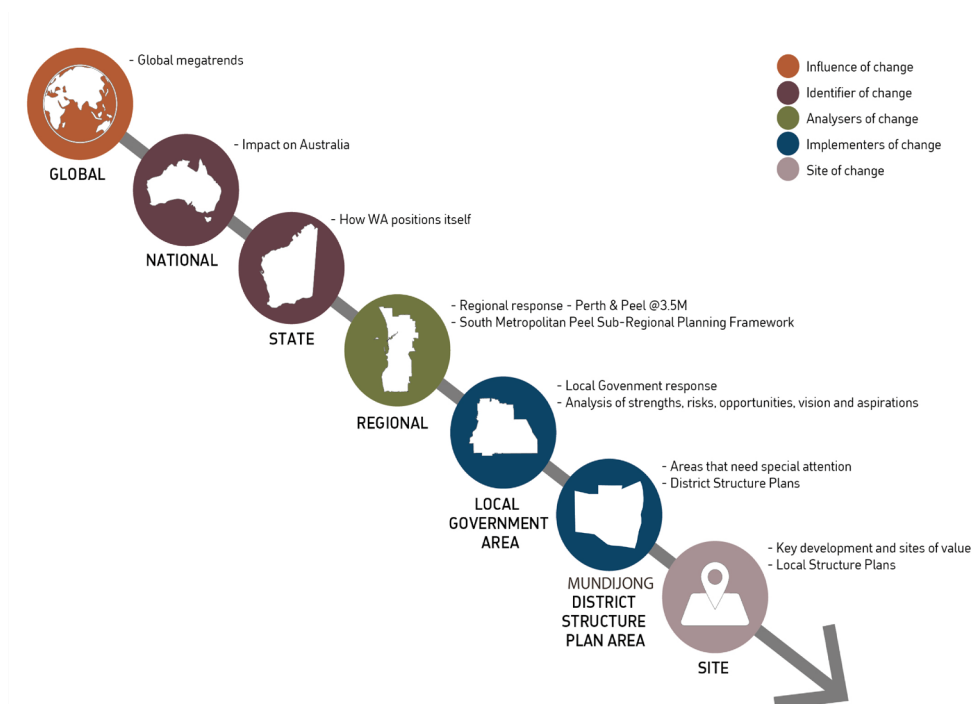


Figure 3: Shire of Serpentine Jarrahdale Planning Framework

### 1.1.3 VISION AND OBJECTIVES

The vision for the Mundijong District Structure Plan area has been framed by previous planning studies to accommodate future urban growth while maintaining the area's unique identity and lifestyle. This has been considered in concert with the outcomes of a comprehensive stakeholder engagement process undertaken as part of the preamble review of the existing Mundijong District Structure Plan, the culmination of which has been translated into a clear vision:

*"Mundijong will be a contemporary, connected place reflecting the community's rural character, 'green' values and vibrant village feel, building on the traditional town centre as the civic heart complemented by new sub-regional sports and recreational facilities to service the surrounding districts."*

This vision is further explored and expressed in a series of objectives, which identifies elements of importance to the community:

#### A Thriving Community of choice

- + To be a contemporary, connected place reflecting the community's rural character, 'green' values and village feel.
- + A new sub-regional hub of sporting and recreational facilities serving the community and surrounding district.
- + Create a vibrant and attractive place that offers a range of lifestyle choices and a liveable environment, supporting a safe, healthy and active community.

#### Vibrant and Connected District Centres

- + The traditional town centre of Mundijong is reinforced as the governance heart with its main street, train station and civic functions complementing the new Whitby town centre.
- + Create a strong local employment base which provides for locally available infrastructure and services.
- + Ensure as the Shire grows, strong governance will guide well designed growth that makes the most efficient use of existing and planned infrastructure and investment.

#### A Distinct Sense of Place and Identifiable Character

- + Create a distinctive and responsive built form that enhances the sense of place, community identity and character of Mundijong/Whitby.
- + A contemporary new District Centre that is well connected and reflective of the community's rural character, green values and vibrant village feel.

#### A Safe Pedestrian and Interconnected Transit Hub

- + Connecting many streets and pedestrian routes leading to a transit hub.
- + Reduce reliance on vehicles by creating a pedestrian-oriented community and providing for alternative transport modes.
- + Open space areas are provided with passive surveillance.
- + A street network and urban environment providing high levels of connectivity and legibility.

#### A Place that Celebrates its Environmental Assets

- + Preserve the existing rural, "leafy green" character of the structure plan area including its scenic values, views and landscapes.
- + Protect and enhance significant natural areas and their buffers, including those with ecological linkage values along railroads, roads and scenic highways.

#### A Water Sensitive Place

- + Maximise the efficient use and reuse of water by conserving water through efficiency and facilitating water reuse and fit-for-purpose use if proven to be feasible.
- + Protect and enhance wetlands, waterways and catchments through appropriate management of water quality and maintenance of hydrology as part of land use change and development.

#### An Innovation Hub

- + A local economy supported by the West Mundijong Industrial Precinct to encourage business expansion, job training and economic growth.
- + A regional magnet for a young and highly skilled workforce.
- + Reduce consumption of non-renewable resources via climate responsive design, efficient use of energy and water and increased use of renewable energy.

## 2.2 Land Description

### 2.2.1 LOCATION

The Mundijong District Structure Plan will apply to the area delineated on “Figure 4: Mundijong District Structure Plan Area” on page 32 which is to the south of the southern boundary of the Cardup Rural Living area, west of South-western highway, north of the Tonkin highway alignment and east of Kargotich road. The Mundijong District Structure Plan area includes the suburbs of Mundijong and Whitby, parts of Cardup and also includes the West Mundijong Industrial Area.

### 2.2.2 AREA AND LAND USE

The Mundijong District Structure Plan covers an area of approximately 1,983 hectares. Land within the DSP area is predominantly rural and rural-residential land uses with small village centre and a newly established residential development in Whitby.

Urban development is currently limited to the historical Mundijong Town Centre site which is located on Paterson Street, and in Whitby where new greenfield development is occurring. The Shire of Serpentine Jarrahdale Administration Offices are located in the Mundijong Town Centre, they are co-located with a number of community uses to form a consolidated civic precinct. The Mundijong Town Centre is surrounded by a rural hinterland which incorporates a number of agricultural uses and key environmental features including the Mandejal Brook and Watkins Road Nature Reserve and a significant bush forever reserve in the north-east. The West Mundijong Industrial Area to the east of the urban area will provide employment opportunities for the residents in Mundijong and the greater Serpentine Jarrahdale region.

### 2.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The Mundijong District Structure Plan applies to land under the jurisdiction of the Shire of Serpentine Jarrahdale. It includes a combination of State and local reserves, conservation areas and significant private landholdings (of varying sizes).

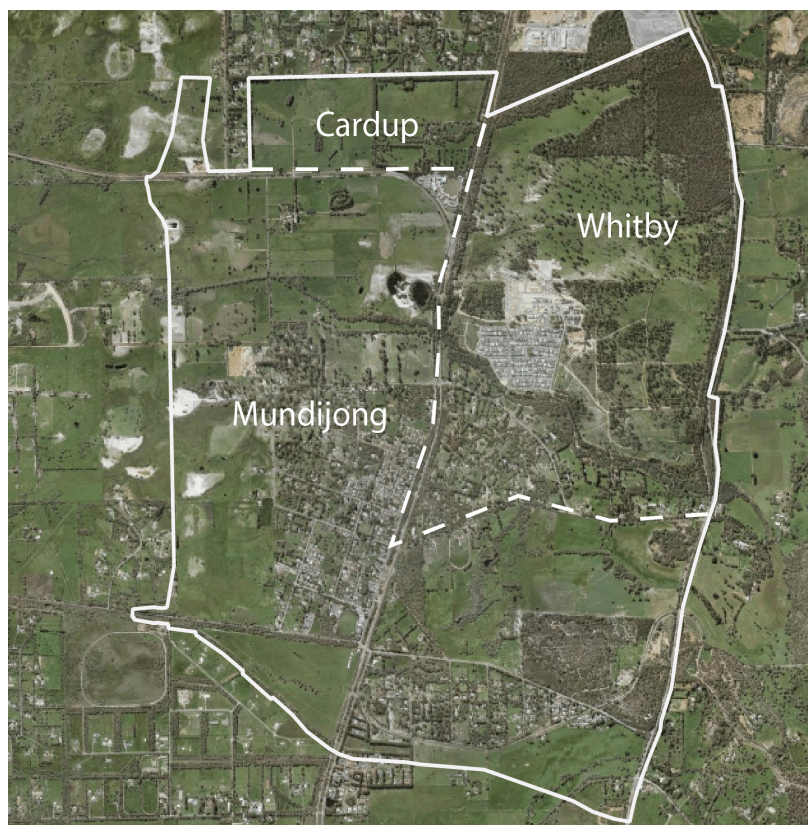


Figure 4: Mundijong District Structure Plan Area

Note: Not to scale



## 2.3 Planning Framework

### 2.3.1 ZONING AND RESERVATION

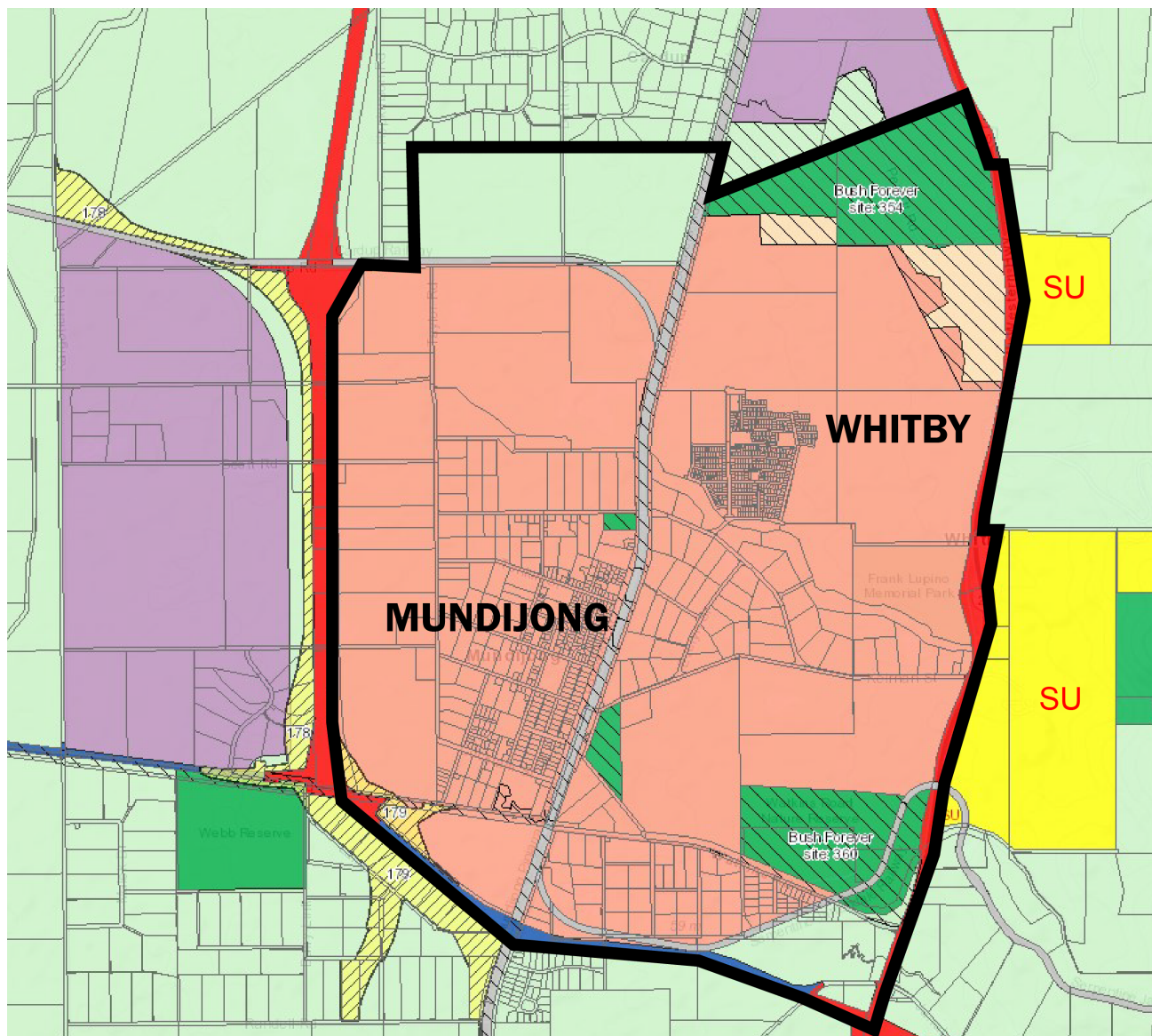
#### METROPOLITAN REGION SCHEME

The Mundijong District Structure Plan area is subject to various zones and reservations under the Metropolitan Region Scheme (MRS) including 'Parks and Recreation', 'Railways', 'State Forests', 'Public Purpose', 'Primary Regional Roads', 'Urban', 'Urban Deferred', 'Industrial', 'Rural', 'Bush Forever Area'. A MRS zoning map depicting the layout of these zones and reservations within the Mundijong District Structure Plan area is provided at Figure 5.

#### LOCAL PLANNING SCHEME 3

The Mundijong District Structure Plan has been prepared in alignment with the zones and requirements of the Shire of Serpentine Jarrahdale Local Planning Scheme No.3. Figure 6 demonstrates the Local Planning Scheme No.3 zones applicable to the District Structure Plan area.

Figure 5: Metropolitan Region Scheme Map Extract



### Legend

#### Reserved lands

- Parks and recreation
- Restricted public access
- Port installations
- Railways
- Civic and cultural
- State forests
- Waterways
- Water catchments

#### Reserved roads

- Primary regional roads
- Other regional roads

#### Public purpose reserves

- Public purposes - denoted as follows:
- SU Special uses

#### Zones

- Central city area
- Industrial
- Special industrial
- Private recreation
- Rural
- Rural - water protection
- Urban
- Urban deferred

- Planning Control Area

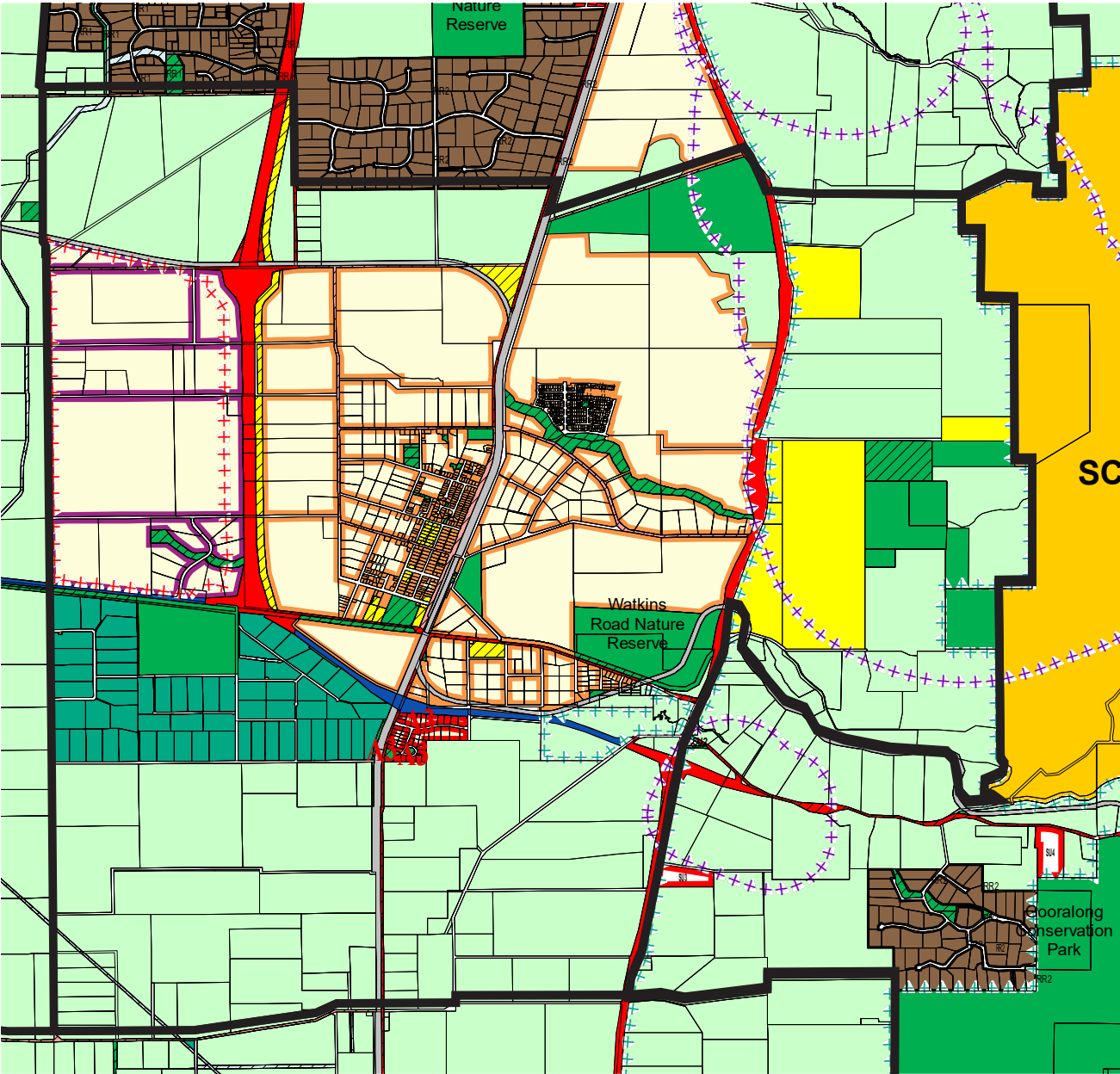
#### Notice of delegation

- Bush forever area

#### Redevelopment schemes

- Redevelopment scheme/act area
- Scheme Boundary

Figure 6: Local Planning Scheme No.3



LEGEND

REGION SCHEME RESERVES (MRS)

- Civic and Cultural
- Other Regional Roads
- Parks and Recreation
- R Parks and Recreation - restricted
- Port Installations
- Primary Regional Roads
- Railways
- State Forests
- Waterways
- Water Catchments
- Public Purposes
- CP Public Purposes - Car Park
- CG Public Purposes - Commonwealth Government
- HS Public Purposes - High School
- H Public Purposes - Hospital
- P Public Purposes - Prison
- SU Public Purposes - Special Uses
- SEC Public Purposes - State Energy Commission
- TS Public Purposes - Technical school
- U Public Purposes - University
- WSD Public Purposes - Water Authority of WA

LOCAL SCHEME RESERVES

(see scheme text for additional information)

- Civic and Community
- C Cultural Facilities
- SC Social Care Facilities
- District Distributor Road
- Drainage/Waterway
- Environmental Conservation
- Local Distributor Road
- Local Road
- Primary Distributor Road
- Public Open Space
- Public Purposes
- CE Cemetery
- E Education
- GS Government Services
- IS Infrastructure Services
- R Recreational
- Railways

LOCAL SCHEME ZONES

(see scheme text for additional information)

- DC District Centre
- Environmental Conservation
- Industrial Development
- LC Local Centre
- Mixed Use
- Residential
- Rural
- Rural Enterprise
- Rural Residential
- Rural Smallholdings
- Rural Townsite
- Service Commercial
- Special Residential
- Special Use
- Urban Development

OTHER CATEGORIES

(see scheme text for additional information)

- Scheme Area Boundary
- Local Government Boundary
- R20 R Codes
- A1 Additional Uses
- RR1 Rural Residential Area
- SU1 Special Use Area
- SCA1 Special Control Area - Heritage
- SCA2 Special Control Area - Environment
- SCA3 Special Control Area - Environment
- SCA4 Special Control Area - Develo
- SCA5 Special Control Area - Develo
- SCA6 Special Control Area - Develo
- SCA7 Special Control Area - Enviror
- SCA8 Special Control Area - Heritag
- SCA9 Special Control Area - Genera
- SCA10 Special Control Area - Genera

## 2.3.2 STATE AND REGIONAL PLANNING FRAMEWORK

### STATE PLANNING STRATEGY 2050

The State Planning Strategy (SPS) is the lead strategic planning document within Government. It acts as a guide and highlights principles, strategic goals and strategic directions that are important to future land-use planning and development in WA. The Mundijong District Structure Plan aligns with the SPS by addressing the priorities of Strategic Goal 2 - Strong and Resilient Regions, Strategic Goal 3 - Sustainable Communities, Strategic Goal 4 - Infrastructure Planning and Coordination, and Strategic Goal 5 - Conservation. These include:

#### Diversity

- + Embracing diverse economic and social opportunities;
- + Community-specific development, responsive to diverse needs, places and contexts;
- + Supporting economic diversity, innovation and resilience;
- + Understanding, maintaining and conserving biodiversity, landscapes and natural environments.

#### Liveability

- + Creating places where people want to live and work;
- + Communities with attractive, liveable environments;
- + Providing contemporary, effective, resource-efficient services;
- + Securing our natural environments and resources.

#### Connectedness

- + Building strong relationships and accessibility;
- + Providing natural and built connections within and between communities;
- + Linking regional economic opportunities to the movement of people, goods and services across the State;
- + Connecting ecosystems, people and natural resources.

#### Collaboration

- + Enabling collaborative advantages across and within regions;
- + Collaborative and inclusive planning;
- + Sharing new ideas and creating new business and lifestyle opportunities;
- + Realising opportunities through collaboration for environmental conservation and sustainable resource use.

### PERTH AND PEEL @3.5 MILLION / SOUTH METROPOLITAN PEEL SUB REGIONAL PLANNING FRAMEWORK

The Perth and Peel@3.5 million suite of strategic land use planning documents provide a framework for future growth in the Perth and Peel regions. The strategy recognises the benefits of a consolidated and connected city, utilising the region's previous historic patterns of urban growth. This strategy promotes more efficient use of land and infrastructure, and maintains a target of 47% of new lots by infill. It is divided into four sub-regional frameworks, which provide more detailed guidance on future land use and development for a city of 3.5 million people. The frameworks provide for different lifestyle choices, vibrant nodes for economic and social activity and a more sustainable urban transport network.

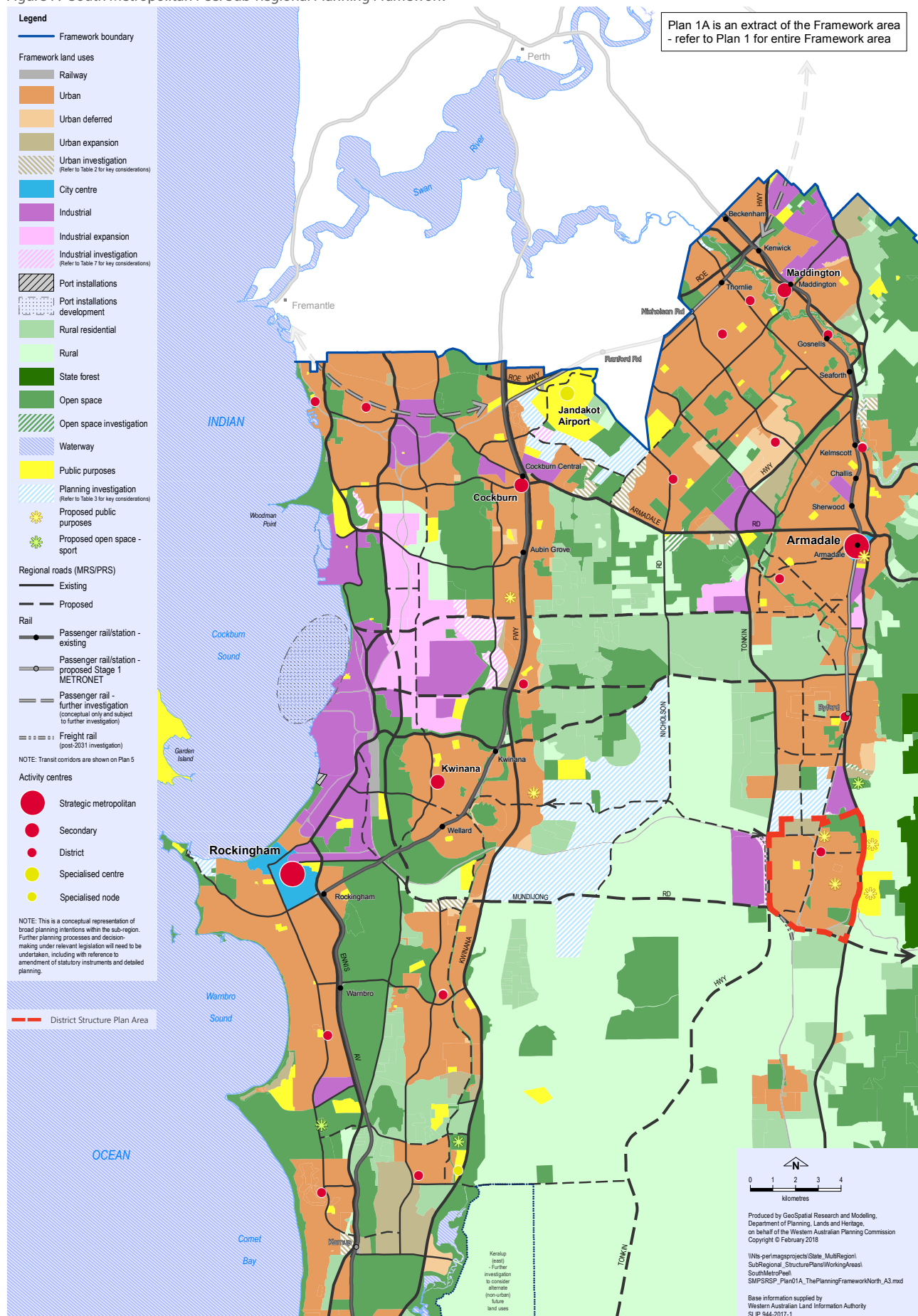
The Shire of Serpentine Jarrahdale is guided by the South Metropolitan Peel Sub-Regional Framework (Figure 7). The framework outlines that the Shire has an Urban Infill Dwelling target of 1,365 and a population target of 113,058 by the year 2050. The Mundijong District Structure Plan has been identified as a district centre within the framework. This gives the opportunity for the area to expand to help achieve these growth targets in a sustainable and coordinated manner. A significant number of the modifications that have been made to the Mundijong-Whitby DSP to get to the Mundijong District Structure Plan have resulted from this State framework.

### EPA GUIDELINES

The Environmental Protection Authority (EPA) Guidelines fall under the provisions of the Environmental Protection Act 1986 and help guide the Shire in how to undertake assessments of applications. The Mundijong District Structure Plan has been prepared taking into consideration the following applicable EPA guidelines:



Figure 7: South Metropolitan Peel Sub-Regional Planning Framework



- + EPB 20 – Protection of Naturally Vegetated Areas Through Planning and Development
- + GS 3 – Separation Distances Between Industrial and Sensitive Land Uses
- + GS 33 – Environmental Guidance for Planning and Development

## RESIDENTIAL DESIGN CODES

Residential Design Codes (R-Codes) seeks to control the design of most residential development throughout Western Australia. The R-Codes aim to address emerging design trends, promote sustainability, improve clarity and highlight assessment pathways to facilitate better outcomes for residents. The Codes are also used for the assessment of residential subdivision proposals. Whilst the R-Codes will be suitable for certain types of development within the Mundijong District Structure Plan area, there may be other locations that will require the preparation of Local Development Plans in order to vary requirements to suit local constraints for residential development.

## STATE PLANNING POLICIES (SPP)

### SPP 2.1 Peel Harvey Coastal Plain Catchment

This Policy applies to all residential, commercial, industrial, rural and recreation land uses, and public sector undertakings within that portion of the Catchment of the Peel-Harvey Estuarine System that lies on the Swan Coastal Plain of Western Australia and within which part of the Shire is situated. The objectives of the policy are to improve the social, economic, ecological, aesthetic, and recreational potential of the Peel-Harvey Coastal Plain Catchment, ensuring that changes to land uses within it are controlled so as to avoid and minimise environmental damage to the Peel-Harvey Estuarine system.

The policy area includes the Mundijong District Structure Plan area west of the Darling Scarp. When considering proposed development, including subdivision, the Shire must take into account land capability and suitability and specific management practices (such as effluent treatment, red mud amendment, revegetation, and stocking rates). Land used for intensive agriculture that is likely to drain towards the Peel-Harvey Estuarine System must be managed to reduce or eliminate nutrient export from the land. The retention and rehabilitation of existing remnant vegetation is also encouraged.

### SPP 2.4 Planning for Basic Raw Materials

SPP 2.4 Planning for Basic Raw Materials sets out the matters which are to be taken into account and given effect to by the Local Government and WAPC in considering zoning, subdivision and development applications for extractive industries. The key objectives of the policy are as follows:

- + Identify the location and extent of known basic raw material resources;
- + protect priority resource locations, key extraction areas and extraction areas from being developed for incompatible land uses which could limit future exploitation;
- + ensure that the use and development of land for the extraction of basic raw materials does not adversely affect the environment or amenity in the locality of the operation during or after extraction; and
- + provide a consistent planning approval process for extractive industry proposals including the early consideration of sequential land uses.

### SPP 2.8 Bushland Policy for the Perth Metropolitan Region

SPP 2.8 Bushland Policy for the Perth Metropolitan Region aims to ensure the bushland protection and management issues in the Perth Metropolitan Region are appropriately addressed and integrated with broader land use planning and decision making. Some significant areas are classed as Bush Forever, State Forest or native vegetation within the Mundijong District Structure Plan. Due to this, consideration has been given to the impact development within the Mundijong District Structure Plan may have on these bushland areas, especially Bush Forever sites. More detailed negotiation on any areas to be retained or removed will occur during the rezoning and local structure planning stages.

### SPP 3.0 Urban Growth and Settlement

SPP 3.0 Urban Growth and Settlement sets out the principles and considerations which apply to planning for urban growth and settlement in Western Australia. The Mundijong District Structure Plan has given consideration to key

objectives outlined in this policy including;

- + Creating sustainable communities;
- + Managing urban growth and settlements across Western Australia;
- + Managing urban growth in Metropolitan Perth;
- + Planning for liveable neighbourhoods;
- + Coordination of services and infrastructure; and
- + Managing rural residential growth.

#### SPP 3.4 Natural Hazards and Disasters

SPP 3.4 Natural Hazards and Disasters aims to mitigate the adverse effects of natural hazards and disasters. There are two main hazards which the Mundijong District Structure Plan needs to address to respond to this policy; Floods and Bushfires. Flood risk needs to be assessed due to there being some rivers and streams running through the Mundijong District Structure Plan. Local structure plans should, where necessary, be accompanied with a flood risk assessment report. Bush fires are also a significant hazard for the area as it is situated on the rural fringe with large amounts of bush land surrounding it. Local structure plans will need to be accompanied with bush fire risk assessments for all new development within the Mundijong District Structure Plan.

#### SPP 3.5 Historic Heritage Conservation

SPP 3.5 Historic Heritage Conservation sets out the principles for the conservation and protection of Western Australia's historic heritage. There are a number of heritage listed places within the Mundijong District Structure Plan which are planned to be maintained, upgraded or re-purposed to enable continued use of the heritage places within the Mundijong District Structure Plan. The areas around these heritage places are to be developed in a way that does not adversely affect the significance of the heritage place. These are to be detailed as part of any proposed LSP.

#### SPP 3.6 Infrastructure Contributions

SPP 3.6 Infrastructure Contributions aims to help guide local governments in setting up a cost sharing arrangement between developers/landowners through the use of Developer Contribution Plans. Development Contribution Plans are used for an appropriate cost sharing arrangement between developers towards common community and traditional infrastructure within the Mundijong District Structure Plan. These include but are not limited to; upgrading of roads that are considered to facilitate a district function from the expected increased population, raising the rail line currently running through the centre of town so it is no longer an at-grade crossing, as well as multi-purpose community club rooms and recreation facilities, including the provision of district open space.

#### SPP 3.7 Bushfire

SPP 3.7 Bushfire intends to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. Under the bushfire guidelines the Mundijong District Structure Plan is considered a strategic planning proposal, therefore a high level bushfire hazard level assessment ought to be undertaken. More detailed bushfire attack level (BAL) assessments will need to be conducted for future subdivisions and development applications.

#### SPP 4.1 Industrial Interface

The objectives of SPP 4.1 are:

- + To provide a consistent state-wide approach for the definition and securing of buffer areas around industry, infrastructure and some special uses.
- + To protect industry, infrastructure and special uses from the encroachment of incompatible land uses.
- + To provide for the safety and amenity of land uses surrounding industry, infrastructure and special uses.
- + To recognise the interests of existing landowners within buffer areas who may be affected by residual emissions and risks, as well as the interests, needs and economic benefits of existing industry and infrastructure which may be affected by encroaching incompatible land uses.

### SPP 4.2 Activity Centres

SPP 4.2 Activity Centres identifies the broad requirements for the planning and development of new and renewal of existing activity centres in the Perth and Peel regions. A primary objective of the policy is to increase the diversity and density of housing within and around activity centres to help improve land use efficiency, residential amenity, access to services, housing variety and centre vitality.

The Mundijong District Structure Plan identifies two district activity centres (Whitby Town Centre and Mundijong Town Centre), and eight neighbourhood centres. Through appropriate land use planning and transport integration the Mundijong District Structure Plan must enable a range of employment opportunities, access to retail and entertainment, housing diversity, and sufficient access to public transport.

Local Structure Plans and Precinct Structure Plans should be prepared in accordance with the objectives of State Planning Policy 4.2, to provide further guidance on key elements of activity centres required for the community. These include, but are not limited to, land use mix, cohesion, movement and access, urban form, and heritage.

### SPP 5.4 Road and Rail Noise

SPP 5.4 seeks to promote a system where sustainable land use and transport are mutually compatible. Specifically it sets out how amenity impacts such as transport noise, associated with high volume roads, rail lines and freight routes should be addressed through the planning system.

The objectives of this policy are to:

- + protect people from unreasonable levels of transport noise by establishing a standardised set of criteria to be used in the assessment of proposals;
- + protect major transport corridors and freight operations from incompatible urban encroachment;
- + encourage best-practice design and construction standards for new development proposals and new or redeveloped transport infrastructure proposals;
- + facilitate the development and operation of an efficient freight network; and
- + facilitate the strategic co-location of freight handling facilities.

The policy is applicable to the Mundijong District Structure Plan area due to the presence of South Western Highway which is a primary freight road, the SW freight rail which traverses through the centre of the town site, the presence of land within the SPP5.4 trigger distance for the proposed Tonkin Highway extension and future Mundijong Road alignment and, subject to implementation, the policy also applies in relation to the proposed freight rail realignment and possible intermodal transfer facility.

Typically the Shire's approach is to treat noise impacts at the source, therefore all development applications will be assessed for their potential impact on existing uses.

### SPP 7.0 Design of the Built Environment

Western Australia's SPP 7.0: Design of the Built Environment addresses the design quality of the built environment across all planning and development types, to deliver broad economic, environmental, social and cultural benefit. It also seeks to improve the consistency and rigour of design review and assessment processes across the State. The policy sets out the principles, processes and considerations which apply to the design of the built environment in Western Australia. It provides the overarching framework for those State Planning Policies that deal with design related issues, to be used in conjunction on specific development types relating to the design matters of a proposal.

As the Mundijong and Whitby Town Centres evolve, becoming an increasingly multifunctional mixed use environment, new development will need to respond to this policy to address the design quality of both the built environment and its public realm.

## DEVELOPMENT CONTROL POLICIES

### Development Control Policy 2.3 - Public Open Space in Residential Areas

This policy is to ensure that the provision of public open space allows for a reasonable distribution of land for active and



passive recreation in each locality. This policy sets out the WAPC objectives for public open space and the provision of land for community facilities in residential areas as follows:

- + Ensure that all residential development is complemented by adequate, well-located areas of public open space that will enhance the amenity of the development and provide for the recreational needs of local residents.
- + Protect and conserve the margins of wetlands, water-courses and the foreshores adjacent to residential development.

The Mundijong District Structure Plan is growing and is therefore likely to undergo significant residential development requiring public open space. Future planning and subdivision will need to have consideration for the policy measures in Development Control Policy 2.3. As the Mundijong District Structure Plan is a district level document, some of the policy measures do not specifically apply to the Mundijong District Structure Plan map.

#### Operational Policy 2.4 - Planning for School Sites

This policy contains the WAPC's general requirements for school and TAFE college sites in residential areas and recognises the need to consider any requirements for higher education facilities. It should be used during the preparation of designs for the subdivision of residential land at both the structure planning (district and local structure planning) and subdivision design stages. The objectives of the policy are to:

- + To make provision for school sites and other education facilities related to community needs.
- + To indicate school site requirements, specify criteria for selecting new sites, and
- + To establish guidelines for their design and location in new subdivisions.

The Mundijong District Structure Plan is an emerging area therefore a range of education facilities will be required to help provide equitable access to education for Shire residents. The provisions of this policy will inform preparation of the Mundijong District Structure Plan map which will identify the location for new education facilities in accordance with the following standards:

- + Primary Schools - one site for between 1,500 and 1,800 housing units for government schools;
- + Secondary Schools - one site for every four or five primary schools for government schools. While the basis for providing non-government schools will be different from government schools, their provision at the average ratio of one non-government to three government primary schools and one to two for secondary schools may be an appropriate basis for planning; and
- + For technical colleges there is a general correlation between population and the need for college sites. The general requirement is one site for every 60,000 to 70,000 population.

#### Government Sewerage Policy

The Government Sewerage Policy 2019 promotes reticulated sewerage as the best disposal method for sewerage. It requires all new subdivision and development to be connected to reticulated sewerage where available or considered necessary on health, environment or planning grounds. The Mundijong District Structure Plan has been prepared taking into account the requirements of the Policy.

#### Liveable Neighbourhoods

Liveable Neighbourhoods is a Western Australian Planning Commission operational policy that guides the structure planning and subdivision for greenfield and large brownfield (urban infill) sites. Liveable Neighbourhoods is an integral component of the state planning framework, delivering the objectives of the Perth and Peel@3.5million sub-regional frameworks and future sub-regional structure plans. It plays a key role within the state planning framework and in relation to the local planning framework including local planning strategies, local planning schemes and policies. The Mundijong District Structure Plan must meet the criteria of Liveable Neighbourhoods unless there is an approved local planning policy that varies some of the provisions.

## 2.3.3 LOCAL PLANNING FRAMEWORK

### SJ 2050 VISION

The Serpentine Jarrahdale 2050 Vision (SJ2050) process commenced in April 2016, in response to the draft 'Perth

and Peel@3.5 million' strategic plan released by the State Government in 2015. As mentioned above, the strategy estimated a population increase of approximately 100,000 in the Shire by 2050. SJ2050 was developed through extensive consultation and engagement with the local community and key stakeholders. The document identifies the core values and guiding aspirations of the Shire's community. SJ 2050 sets out a strategic growth framework that aims to accommodate rapid growth, without compromising the community's values and aspirations.

The SJ2050 spatial framework "Figure 8: SJ 2050 Spatial Framework" on page 44 identifies that the Mundijong will accommodate approximately 50,000 people, this significant growth resulted in the need to review and update the existing Mundijong District Structure Plan.

### SHIRE OF SERPENTINE JARRAHDALE LOCAL PLANNING STRATEGY

The Shire of Serpentine Jarrahdale Local Planning Strategy sets out long term planning direction and provides the rationale for the zones and other provisions of the Shire of Serpentine Jarrahdale Local Planning Scheme No.3. The Local Planning Strategy outlines the general aims and intentions for future long-term growth and change within the Shire of Serpentine Jarrahdale. A key component of the Strategy is the Strategic Plan, which includes land use categories that have been guided by the overall vision, principles and objectives of the Strategy.

The Local Planning Strategy aligns with SJ2050 by planning for a future Mundijong population of 50,000 people, to facilitate this growth the following objectives were developed (and have been considered in preparing the Mundijong District Structure Plan):

- + Achieve a diversity of housing types to provide choice, adaptability and to accommodate a range of incomes, households and life stages and to deliver housing product which will attract people to live in Mundijong Whitby;
- + Achieve distinctive urban precincts within Mundijong Whitby;
- + Integrate new housing and urban development with the older urban development patterns and housing as well as natural areas in a sensitive manner; and
- + Encourage urban development and housing to be environmentally sustainable and resource efficient.

These objectives are supported by a number of strategies and actions, some of which include:

- + Review the Mundijong District Structure Plan; and
- + Create a development contribution scheme and plan for Mundijong.

### DEVELOPMENT CONTRIBUTION PLANS

Three Development Contribution Arrangements (DCA) apply to the Mundijong District Structure Plan area, being West Mundijong Development Contribution Plan (DCA2), the Mundijong Development Contribution Plan (DCA3) and the Community Infrastructure DCP. These have been prepared to set out the infrastructure, land and other items for which development contributions are to be collected, as well as cost estimates, how land values are to be calculated and the methodology that will be used to calculate contributions for traditional infrastructure relating to land and infrastructure towards district roads, public open space and drainage.

The community infrastructure DCA applies to for the Mundijong precinct. The plan seeks collect contributions towards common community facilities, including sporting club rooms, recreation facilities and multi- purpose buildings.

### MUNDIJONG WHITBY DISTRICT STRUCTURE PLAN

The original Mundijong Whitby District Structure Plan was approved in 2011 and sought to guide development and subdivision of the Mundijong Whitby District Structure Plan area, setting the foundation for the initial growth and expansion of the townsite and surrounds. The Mundijong District Structure Plan reflects and builds upon the key objectives and principles of the original District Structure Plan in order to consolidate the work undertaken to date and to sustainably guide the future growth of Mundijong.

### LOCAL PLANNING POLICIES

In addition to the above, the Shire of Serpentine Jarrahdale administers a number of Local Planning Policies that have

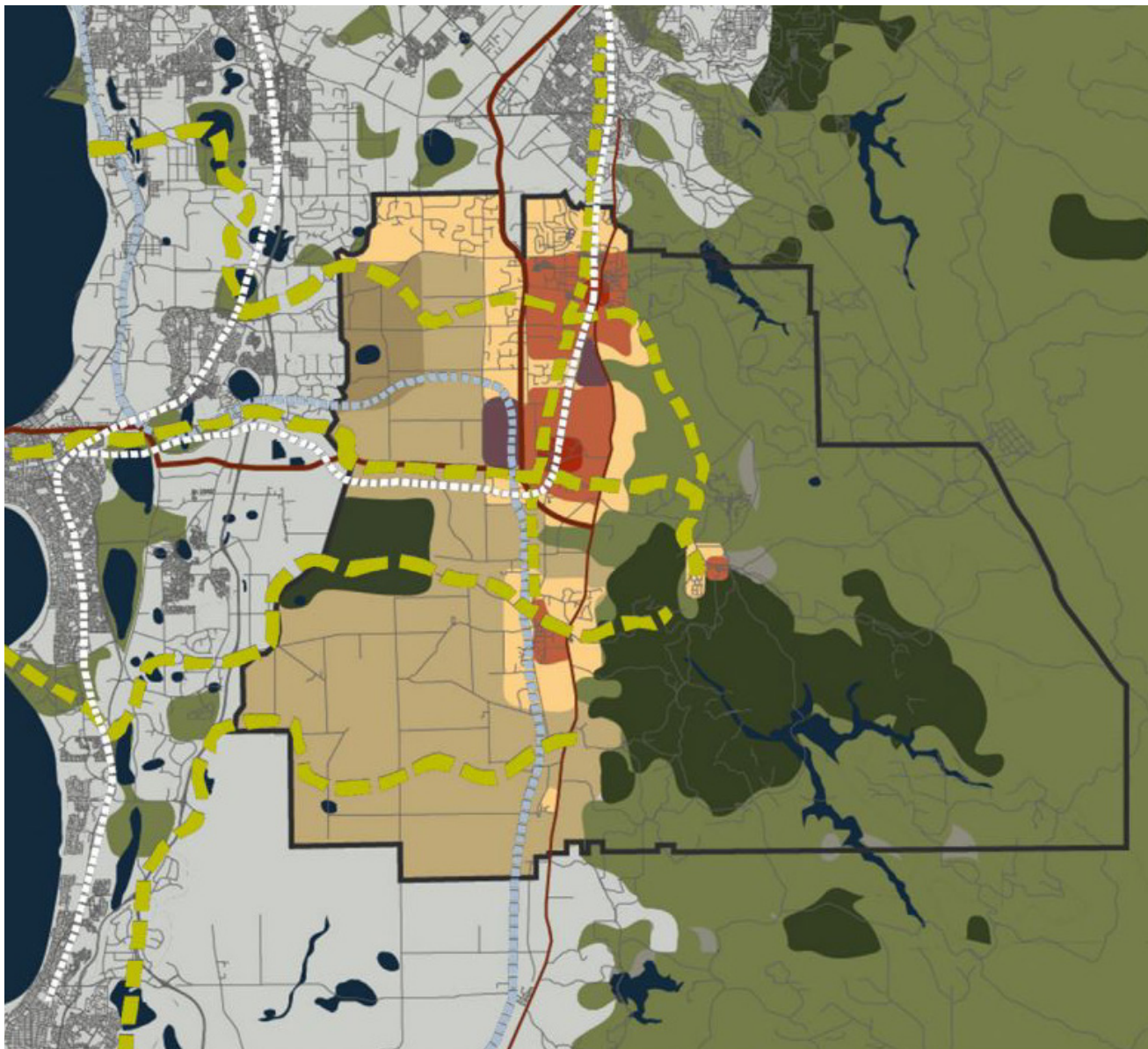
been taken into consideration in the preparation of the Mundijong District Structure Plan (Table 3). These include:

Table 2: Shire Local Planning Policies








OPERATIONAL	STATUS
+ LPP 1.1 - Development Assessment Unit	Approved
+ LPP 1.2 - Development Applications Information	Approved
+ LPP 1.3 - Amendments and Extensions to Existing Approvals	Approved
+ LPP 1.4 - Advertising Development Applications	Approved
+ LPP 1.5 - Exempt Developments	Approved
+ LPP 1.6 - Public Art for Major Developments	Approved
+ LPP 1.7 - Road Naming	Approved
+ LPP 1.8 - Cash-in-lieu for Parking	Approved
+ LPP 1.9 - Bonds and Bank Guarantees	Approved
+ LPP 24 – Designing Out Crime	Approved
+ LPP 40 – Local Development Plans	Approved
PLANNING FRAMEWORKS	STATUS
+ LPP 2.2 - Residential Development Standards (R25-R60) Policy	Approved
+ LPP 2.3 - Development Standards for Development Applications	Approved
+ LPP 2.4 - Water Sensitive Design	Approved
+ LPP 2.5 - Serpentine Jarrahdale Activity Centres	Approved
+ LPP 2.7 - Biodiversity Planning	Approved
+ LPP 2.8 - Public Open Space	Approved
+ LPP 2.9 - Environmentally Sustainable Design Considerations for Retail and Commercial Development	Approved
DESIGN GUIDELINES	STATUS
+ LPP 3.1 - McNeil Grove Design Guidelines	Approved
+ LPP 3.2 - Woodlot Subdivision Jarrahdale Design Guidelines	Approved
+ LPP 3.3 - Wellard and Richardson Street Serpentine Design Guidelines	Approved
+ LPP 3.4 – Paterson Street Design Guidelines	Approved
+ LPP 3.5 - Byford Town Centre Public Realm Guidelines	Approved
+ LPP 3.6 - The Glades Village Centre Guidelines	Approved
+ LPP 3.7 - George Street Design Guidelines	Approved
+ LPP 3.8 - Byford Town Centre Built Form Guidelines	Approved
+ LPP 3.9 - Subdivision and Development Fronting Historic Laneways within the Byford Old Quarter	Approved
+ LPP 51 - Oakford Rural Economic Living Area Planning Framework	Approved



Figure 8: SJ 2050 Spatial Framework



## LEGEND

- |   |   |   |  |
|---|---|---|--|
|  | <b>Urban Core</b><br>A mix of small-lot, single family homes, townhouses and mixed use buildings found in town centres and along the main transit corridor. |  | <b>Intensive Agriculture</b><br>Building on existing intensive agricultural use.                                     |
|  | <b>Medium Density</b><br>A mix of new investment in existing neighbourhoods and development of walkable neighbourhoods with a range of lot sizes.           |  | <b>Conservation Zone</b><br>Existing conservation zones.   |
|  | <b>Rural Fringe</b><br>Neighbourhoods of single-family homes on larger lots - supporting the local Equestrian industry.                                     |  | <b>Existing Forest / Parks</b><br>Nature and recreation areas.   |
|  | <b>Industrial</b><br>Industrial job growth.   |  | <b>Greenways</b><br>Network of ecological corridors linking with existing natural and recreation areas.              |
|  | <b>Farmland</b><br>Land utilised for agricultural use - supporting development of 'food bowl' value added industries.                                       |  | <b>Freight Rail Realignment</b><br>Proposed realignment of the freight railway.                                      |
|   |   |  | <b>Passenger Railway Extension</b><br>Extension of the passenger railway to Mundijong linking through to Rockingham. |
|   |   |  | <b>Shire Boundary</b>  |

LAND USE	STATUS
+ LPP 4.1 - Ancillary Dwelling	Approved
+ LPP 4.3 - Landscape Protection	Approved
+ LPP 4.4 - Dams and Lakes	Approved
+ LPP 4.5 - Short Stay and Temporary Accommodation	Approved
+ LPP 4.6 - Telecommunications Infrastructure	Approved
+ LPP 4.7 - Placement of Fill	Approved
+ LPP 4.8 - Land Sales Offices	Approved
+ LPP 4.9 - Fast Food Premises	Approved
+ LPP 4.10 - Extractive Industries	Approved
+ LPP 4.11 - Advertising	Approved
+ LPP 4.12 - Horticulture	Approved
+ LPP 4.14 - Rural Worker's Dwellings	Approved
+ LPP 4.15 - Bicycle Facilities	Approved
+ LPP 4.16 - Tree Retention and Planting	Approved
+ LPP 4.17 - Multiple Use Trails	Approved
+ LPP 4.19 - Outbuildings, Sheds, Garden Sheds and Sea Containers	Approved
+ LPP 4.20 - Licensed Premises (Liquor)	Approved
+ LPP 4.21 - Rural Short Stay Accommodation	Approved
+ LPP 4.23 - Serpentine Airfield Development Standards	Approved
+ LPP 4.24 - Child Minding Centres	Approved
+ LPP 4.25 - Uniform Fencing	Approved
+ LPP 4.26 - Development in the Rural Zone	Approved

The above policies do not conflict with the Mundijong District Structure Plan, however, they will require consideration in more detailed design and implementation planning processes to follow.

### 2.3.4 PRE-LODGEMENT CONSULTATION

Significant community and stakeholder engagement was undertaken to inform development of concept options and subsequently the development of the Mundijong District Structure Plan. Key stakeholders are defined as those with significant holdings or influence in the way that the Mundijong District Structure Plan area will develop.

In addition, there was a significant Shire-wide engagement process undertaken online which included nine individual surveys. The surveys were divided into specific themes to provide targeted engagement. These included themes which have informed the Mundijong District Structure Plan such as community facilities, transport, sport and recreation, environment, employment, and education and training.

A summary of community and stakeholder engagement is provided in Table 3.

Table 3: Pre-Lodgement Engagement Summary

AGENCY / GROUP	DATE	CONSULTED BY	METHOD OF ENGAGEMENT	SUMMARY OF OUTCOME
Shire of Serpentine Jarrahdale Internal Stakeholders - Local Development Strategy Champions	16/11/17 22/03/18	Hames Sharley	Workshops Emails	Input into concept plan and District Structure Plan
Shire Councillor's	4/12/2017 + 4/4/2018	Hames Sharley	Workshops	Input into concept plan
Woolworths	30/01/18	Shire Project Team Hames Sharley	Meeting	Input into concept plan
Public Transport Authority and METRONET	1/02/18 - Ongoing	Shire Project Team Hames Sharley	Meetings Emails	Input into Transport Assessment and concept plan
Department of Planning Lands & Heritage and Public Transport Authority	1/02/18 - Ongoing	Shire Project Team Hames Sharley	Meetings Phone / Emails	Input into Transport Assessment, District Structure Plan and Development Contribution Plan
West Mundijong Industrial Reference Group	7/02/18	Shire Project Team Hames Sharley SPP Consulting	Meetings	Input into Development Contribution Plan
Mundijong Industrial Reference Group	7/02/18	Shire Project Team Hames Sharley SPP Consulting	Meetings	Input into Development Contribution Plan
Golden Group	15/02/18	Shire Project Team Hames Sharley	Meeting Emails	Input into concept plan
Mundijong Community Workshop	17/02/18	Hames Sharley	Workshops	Input into concept plan
Coles	20/02/18	Shire Project Team Hames Sharley	Meeting	Input into concept plan
Mainroads WA	20/02/18	Shire Project Team Hames Sharley	Meetings Emails	Input into Transport Assessment
QUBE Property	21/02/18	Shire Project Team Hames Sharley	Meeting	Input into concept plan
LWP Property	21/02/18	Shire Project Team Hames Sharley	Meeting	Input into concept plan
PEET	2/03/18	Shire Project Team Hames Sharley	Meeting	Input into concept plan
Department of Water and Environmental Regulation	8/03/18	Shire Project Team Hames Sharley	Meeting Emails	Input into District Structure Plan
Department of Education	9/03/18	Shire Project Team Hames Sharley	Meeting Emails	Input into concept plan and District Structure Plan





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# 3.0

## CONTEXT ANALYSIS





## 3.1 Regional Context

The Mundijong District Structure Plan area forms the southern most urban area in the South Eastern corridor of the Perth Metropolitan Region, 40 km south-east of the Perth CBD (Figure 9).

While at the southern end of the South East metropolitan corridor, Mundijong/Whitby is geographically centrally located within the Shire of Serpentine Jarrahdale. The subject area is well connected to Perth (via Armadale) and Bunbury via the South Western Highway and again to Perth via Mundijong Road and the Kwinana Freeway. The Mundijong District Structure Plan area is also well connected to the Rockingham, Cockburn and Kwinana industrial areas to the west, via Mundijong Road.

The subject area is dissected by a major freight line. This freight line services the Alcoa and Boddington mining areas and connects to the Kwinana Strategic Industrial area and ultimately port facilities on the coast. Significant freight movements occur on a daily basis. Current land uses to the north, west and south are generally dominated by rural and/or associated agricultural pursuits. The Darling Scarp and State Forest to the east provide an alternative landscape background to the subject area and offer potential for tourism and alternative lifestyle experiences.

A number of major strategic initiatives are planned which further influence the regional context within which the Mundijong District Structure Plan exists..

The reservation of land immediately adjoining the subject area to the west for the purpose of extending the Tonkin Highway to the South Western Highway will place Mundijong at the junction of major regional highways. This will significantly improve regional transport links and more efficiently connect Mundijong/Whitby to the rest of the metropolitan area. This is under construction and is set for completion by circa 2028.

Figure 9: Regional Context



## 3.2 Local Context

### 3.2.1 LAND USE

Historically, the Mundijong District Structure Plan area has performed a dual role as the civic and governance heart of the Shire, and service centre for an extensive agricultural hinterland. Urban development has been limited to the Mundijong town centre and surrounds. However, growth pressures associated with population growth will change the existing landscape mainly due to the lack of available infrastructure.

The town centre is located 2 km west of South Western Highway and is focussed on the western side of the railway line on Paterson Street. The suburban scale and form of development extends to the main street and the stores and services are generally isolated developments with no unifying built form or contiguous verandahs. The extensive reserve along the eastern side of Paterson Street, bordering the railway line, is an important landscape element for the town centre. The suburban form of development and the dominant visual effect of mature trees throughout the township are the defining elements of the existing landscape character and built form. These characteristics are indicative of the Shire's rural setting and settlement pattern.

#### RESIDENTIAL

Mundijong is a relatively compact residential village with a modified grid street system, surrounded by farmland and green spaces. Figure 10 demonstrates that existing residential land is generally centred around the Mundijong townsite and decreases in density moving away from the town centre. Beyond the town centre, medium sized rural residential properties slowly give way to larger rural properties on the periphery. However, the impacts of population growth are becoming evident in the Mundijong District Structure Plan changing this historic settlement pattern. New residential development in the form of low density greenfield development has emerged in Whitby.

The Mundijong District Structure Plan aims to provide a high-level of residential diversity in order to deliver a contemporary village lifestyle in Mundijong and Whitby and to provide flexibility in meeting projected population opportunities. These types of development will greatly influence the Mundijong District Structure Plan and can broadly be arranged into three groups:

- + Medium/High (urban) density = R40 - R100 (25 units per hectare average);
- + Low (suburban) density = R20 - R35 (15 units per hectare average); and
- + Low (transitional lots) density = R10 - R15 (6 units per hectare average).

#### RURAL

The 'Rural' land use category provides for a full range of rural land uses, tourism opportunities and the preservation of the natural landscape. The Mundijong District Structure Plan area is comprised of a number rural land uses and large landholdings. These are located on the periphery of the Mundijong District Structure Plan where many of the existing undeveloped areas are located. The Shire considers it is important to maintain rural land in close proximity to Perth to accommodate various rural industries and food production activities for the growing population. However, whilst it is important that rural land is preserved for this purpose it is acknowledged some of this land is reserved for urban development under the MRS and will be repurposed. For purposes of the Mundijong District Structure Plan the following terminology is used:

- + Rural Residential = 1-4 hectares; and
- + Rural = larger than 4 hectares.

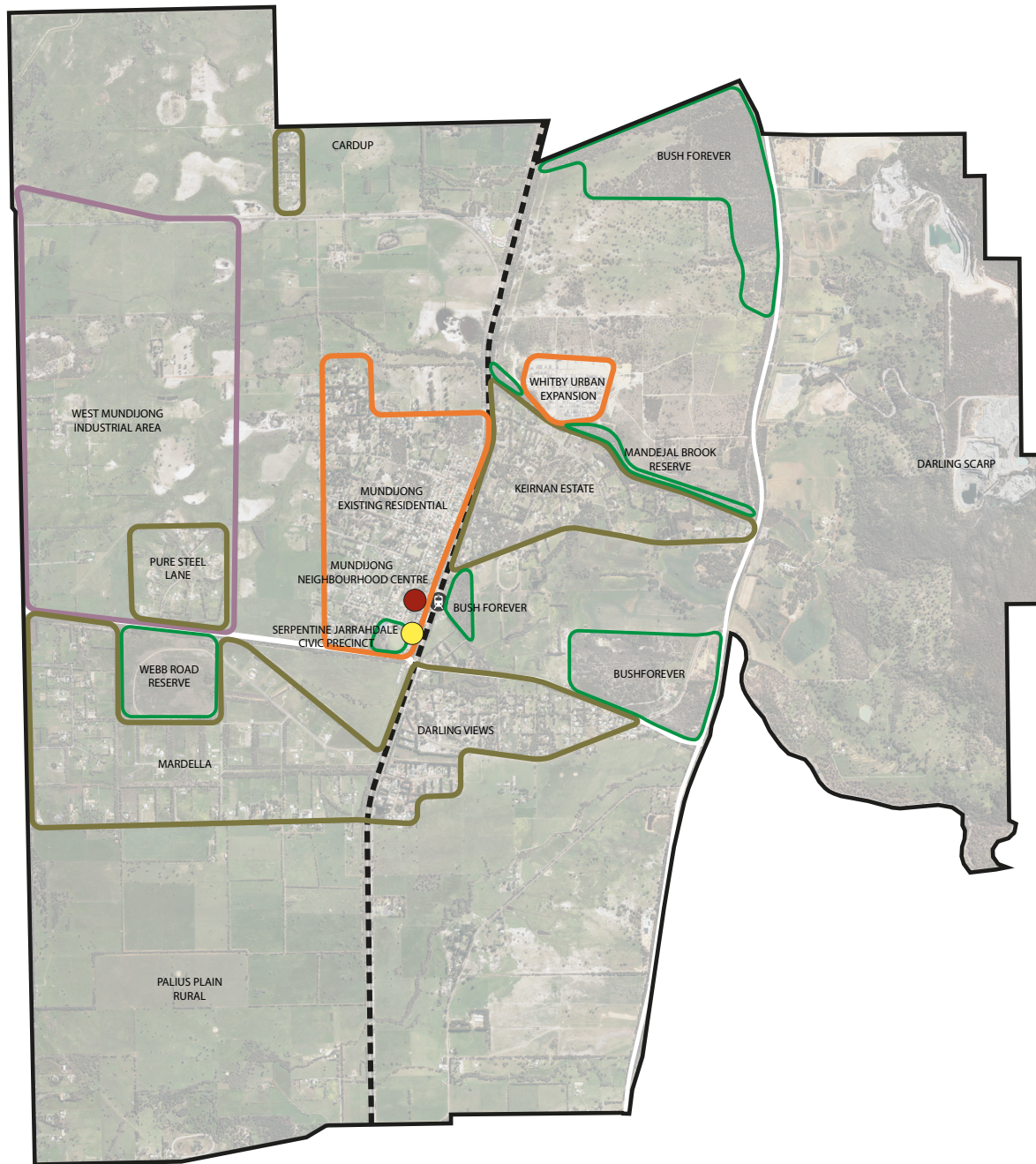
#### INDUSTRIAL

Whilst no industrial land uses are currently provided within the Mundijong District Structure Plan area there is a significant industrial area in West Mundijong (to be referred to as the West Mundijong Industrial Area). This land was recently rezoned under the Shires TPS2 to facilitate development and has also had an LSP approved. It is comprised of around 425 hectares and is intended to accommodate up to 880 industrial lots. This development will also include the realignment of the freight rail line, meaning that the area will be even better connected to the services required for effective business operations, especially in the logistics industry.



The West Mundijong Industrial precinct will facilitate future development and employment opportunities to benefit the wider south-eastern corridor of the metropolitan area, particularly the viability of the nearby Byford and Mundijong townsites. This area has also been identified as a potential intermodal facility site. The Department of Transport has advised that the feasibility of the proposed intermodal facility, and realignment of the freight line, will be the subject of more detailed assessment.

Figure 10: Existing Characteristics and Land Use



Mundijong Existing Land Use

Status : Preliminary (not to be used for feasibility purposes)  
Path : P143874 Development Strategies for Serpentine-Jarrahdale

Scale: 1:5,000 @ A1  
0 100 200 300 400  
© Hames Sharley



Project Number: 43874  
Drawing Number: A101  
Revision: A  
Date: 24/10/18

**Hames Sharley**

## LEGEND

- EXISTING URBAN AREA
- RURAL RESIDENTIAL TRANSITION
- MAIN PARKS AND RECREATION
- INDUSTRIAL

## 3.2.2 ECONOMY AND EMPLOYMENT

### EXISTING EMPLOYMENT AREAS

As an emerging area current employment opportunities in the Mundijong District Structure Plan area are limited. Existing employment areas are described below.

#### Activity Centres

The employment and activity within the DSP area is currently consolidated around the existing Mundijong Town Centre along Paterson Street. This existing centre provides a range of community and civic uses, including the Shire of Serpentine Jarrahdale Administration offices, a sporting reserve, a primary school, police station, and community resource centre. However, this centre provides limited retail and commercial floorspace, with 603m<sup>2</sup> of shop/retail, and 559m<sup>2</sup> of office/business floorspace. This floorspace currently consists of a small-scale supermarket inclusive of a deli and service station, a post office, café, and tavern. There are also two rural supply stores and one or two other smaller retail stores on the fringes of the town centre on Paterson Street and Watkins Road. The Activity Centre Background Paper identifies Mundijong as having a total floorspace gap of 3,763m<sup>2</sup> when compared to benchmark local government areas. Therefore, employment opportunities and retail and commercial activity within the Mundijong DSP area are currently limited, and there is a lack of floorspace attributed to activity centre uses. There is currently an under provision of retail and commercial services, as well as other population driven services such as entertainment, recreation, cultural, health, and community services.

#### Industrial

As mentioned in Section 2.2.1 there are currently no industrial land uses in the Mundijong District Structure Plan area meaning contributions to employment is limited. A significant industrial area is proposed in West Mundijong, the benefits of which are described further in Section 3.

### EMPLOYMENT SELF-SUFFICIENCY AND SELF CONTAINMENT

Employment self-containment (ESC) indicates the proportion of the labour force in an area that work in that same area. It indicates the level at which local jobs meet the needs of local residents and determines how many of the Mundijong District Structure Plan residents have to leave the area for their work. 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 is therefore desirable, as it reflects optimal matching between the employment skillset of an area's residents and the employment opportunities available for them locally.

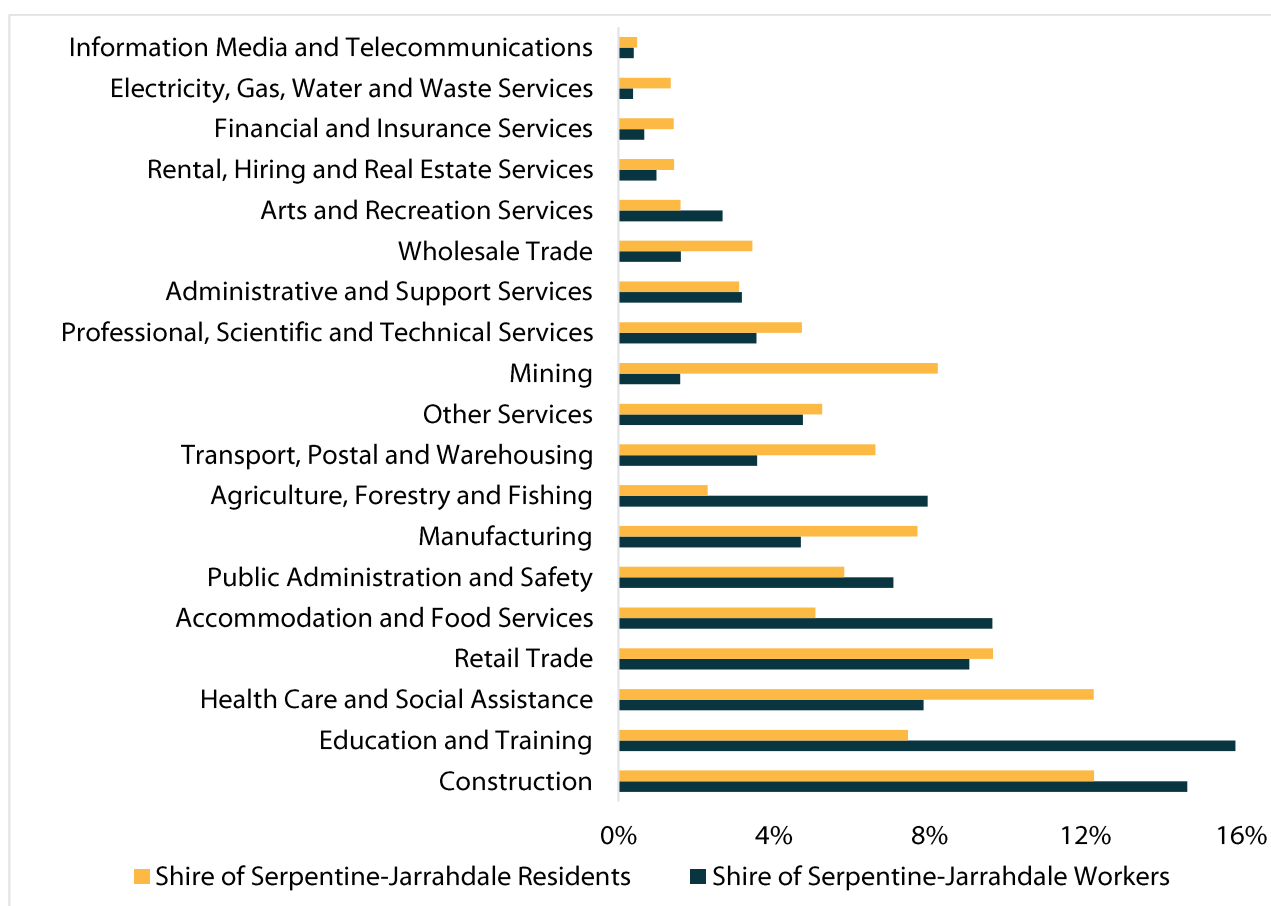
The Shire's current performance is illustrated in the figure below. The Shire currently has a low employment self sufficiency, of 40%. This is significantly lower than that of the sub-regional average of 60%, indicating that there are not enough jobs provided locally for residents, with the majority of the population travelling outside of the Shire for work. ESS levels for the Peel sector of the South Metropolitan Peel sub-region are projected to increase from 72% to 79%. Therefore, Mundijong should aim for an ESS target of 79%. The current ESS is a key priority to address through expanding enterprise and employment generating land in conjunction with urban development.

Some of the area's largest industries, such as Accommodation and Food Services, and Education and Training, exhibit average ESS scores while having much lower ESC scores. This indicates that despite there being an acceptable provision of these jobs, residents are travelling outside of the Shire for work in these industries. This is an issue which should be addressed through activity centre employment, as well as the development of identified future education infrastructure. Significant changes to the ESS are expected to occur due to the development of the adjacent West Mundijong Industrial Area.

To improve self sufficiency, the Shire needs to create additional local jobs. As one of the major growth centres in the Shire, it is important the Mundijong District Structure Plan contributes to this target because without additional local jobs, Mundijong and Whitby risk becoming dormitory suburbs which would create future issues around traffic congestion and numerous negative economic and community impacts. It is important that the Mundijong District Structure Plan facilitates employment growth by capitalising on the Shire's competitive advantages which include:

- + Significantly growing population and large surrounding workforce catchment;
- + Affordability of land and access to key transport links;
- + Emerging tourism industry; and
- + Ability to capitalise on existing agricultural and equine industries

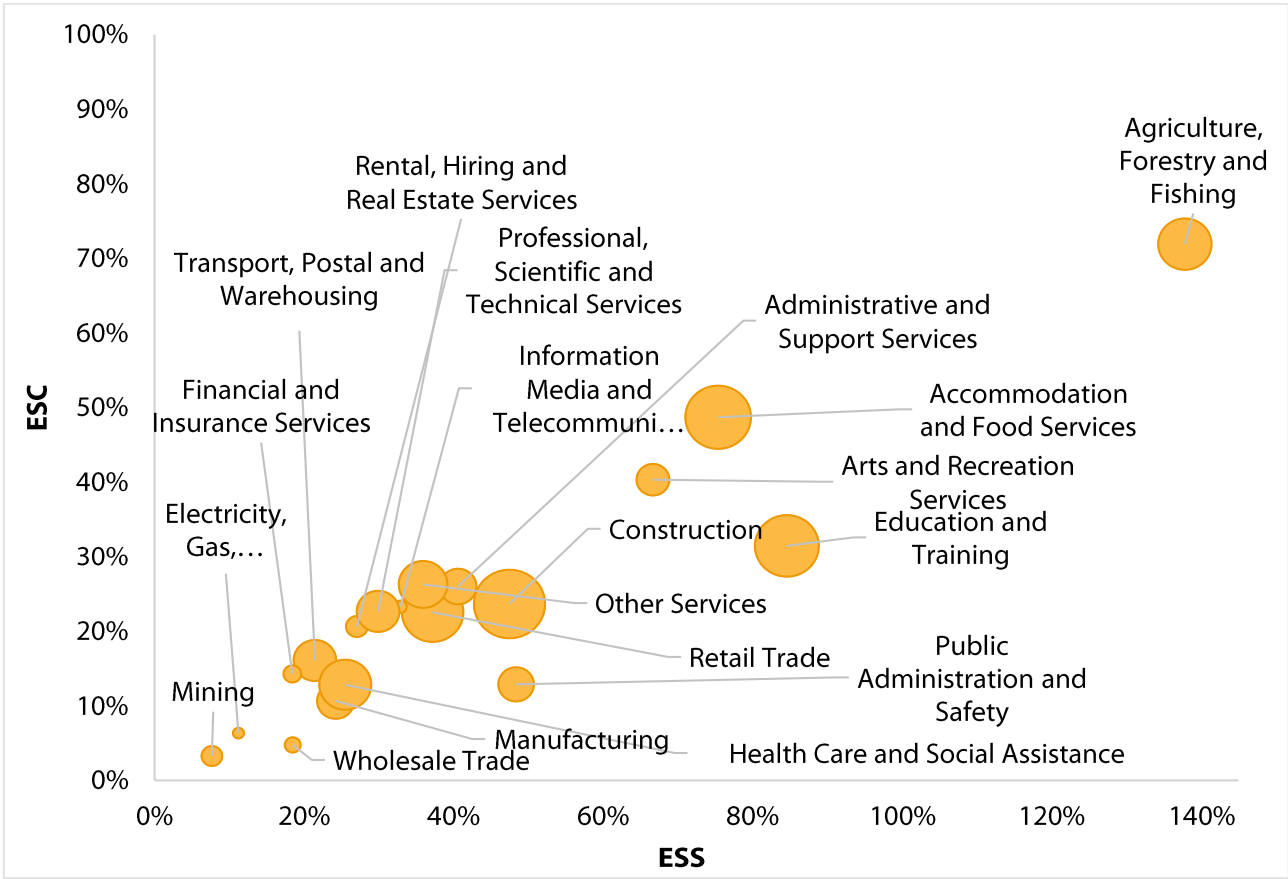
Figure 11: Serpentine-Jarrahdale (S) Industry of Employment



Source: ABS Census 2021



Figure 12: ESS and ESC of Serpentine-Jarrahdale (S) Industries



Source: ABS Census 2021

### 3.2.3 COMMUNITY AND SOCIAL INFRASTRUCTURE

#### COMMUNITY INFRASTRUCTURE

Community infrastructure is the term used to describe facilities which accommodate services that support, contribute and respond to the needs of people living, working and studying in an area. A recent audit of existing community infrastructure identified that whilst some facilities in the Mundijong District Structure Plan area provide a high quality service others are underutilised. The Shire's Community Infrastructure Implementation Plan (CIIP), outlines key facilities of priority within the Mundijong District Structure Plan area as well as responsibility for future provision to form part of the Developer Contribution Plan and the Shire's 10 year financial plan.

It is anticipated that a more equitable distribution of new community infrastructure will be required to cater for an increased population. The Mundijong District Structure Plan area can be characterised as having a relatively older demographic. However, new development is attracting younger families where the need to provide for children and youth activities will be critical. In the Mundijong District Structure Plan area there are a range of existing community infrastructure facilities which cater for local residents, these are identified in Table 4 and on Figure 13:

Table 4: Existing Community Infrastructure

EXISTING COMMUNITY INFRASTRUCTURE			
1	Serpentine Jarrahdale Grammar School	9	Shire Dog Pound
2	Hendley Park	10	Mundijong Public Library and Shire Administration Building
3	Serpentine Jarrahdale Men's Shed	11	Community Resource Centre
4	Mundijong Primary School	12	Mundijong Netball Courts, Atwell Pavilion, Mundijong Pavilion, Mundijong Cricket Nets
5	Mundijong Sale Yard	13	SES Building and Mundijong Fire Station
6	Mundijong Old Railway Station	14	Mundijong Landcare
7	Timber Goods Shed Historical Building	15	Shire Depot
8	Mundijong Neighbourhood Skate Park	16	The House

#### SPORT AND RECREATION

The Mundijong District Structure Plan area provides a range of existing sport and recreation facilities which cater for both passive and active recreation. However the age of this, and condition of associated assets, reveal they are not suitable to support future growth. The majority of active sport facilities are currently concentrated around Mundijong Oval. This precinct includes netball and tennis courts, a pavilion, and multi-purpose oval (cricket and football), all of which suffer from depreciation. Increased population growth will create the need for new facilities. As the Mundijong District Structure Plan area comes under greater pressure to accommodate a growing population (approximately 50,000 people by 2050) planning for additional facilities is required. The Mundijong District Structure Plan identifies the location of these proposed facilities, with the focus of this culminating in the Keirnan Park District Sporting Facility.

Due to the exponential growth forecast for Mundijong, further planning consideration should be given at the local structure planning stages for the proportions of active open space with a significant emphasis on open space capable of being used for sport and recreation.

#### EDUCATION AND TRAINING

The Mundijong District Structure Plan currently contains one public primary school (Mundijong Primary School) and one private high school (Serpentine Jarrahdale Grammar School). As with all community infrastructure in the region, it is anticipated that a significant increase in education infrastructure will be required.

- PARKS AND RECREATION
- SPORT
- EDUCATION
- TRAIL

Status : Preliminary (not to be used for feasibility purposes)  
Path : F:\43874 Development Strategies for Serpentine-Jurrahdale

North:  


**HAMES**  
**SHARLEY**



### 3.2.4 MOVEMENT AND ACCESS

#### ROAD NETWORK

##### Primary Distributors

From the regional and inter-regional grid of MRWA traffic routes, the data sees increasing volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads. Within the Mundijong District Structure Plan area, South Western Highway - is the only existing primary distributor road. South Western Highway is the primary north-south connector. It lies within the eastern portion of the Mundijong District Structure Plan area and provides connections between Bunbury and Armadale. It also connects Mundijong with other key townsites in the Shire such as Serpentine, Jarrahdale (via Jarrahdale Road) and Keysbrook.

In addition to the above, the Tonkin Highway extension will extend southward to provide a connection through to Mundijong Road and South Western Highway. This commences in 2025. In the longer term, further extension of Tonkin will connect to the Forrest Highway southwest of Pinjarra. Within the Mundijong District Structure Plan area, Main Roads WA proposes new intersection treatments on to Tonkin Highway at Bishop Road and Mundijong Road. The Primary Distributor network that includes South Western Highway, and future Tonkin Highway extension, is operated and maintained under the jurisdiction of Main Roads WA, the Shire manages the remaining local roads. Therefore, any proposals to alter or create new accesses to or from the Primary Distributors will require ongoing consultation with Main Roads WA.

##### Regional Distributors

Roads that are not Primary Distributors, but which link significant destinations, are designed for efficient movement of people and goods within and beyond regional areas. Regional distributors in the Mundijong District Structure Plan area include Mundijong Road / Watkins Road, which is the primary east-west connection through the Mundijong District Structure Plan area. These roads provide connections between the Kwinana Freeway and South Western Highway.

##### Local Distributors

The Mundijong District Structure Plan area also includes a number of key roads in the local movement network. These include:

- + Soldiers Road/Paterson Street - north-south connector adjacent to the railway line that provides a direct link to the Byford Town Centre;
- + Keirnan Street - east-west connector providing links between Soldiers Road and South Western Highway;
- + Kargotich Road - north-south connector providing links between Mundijong Road and Thomas Road.

#### FREIGHT

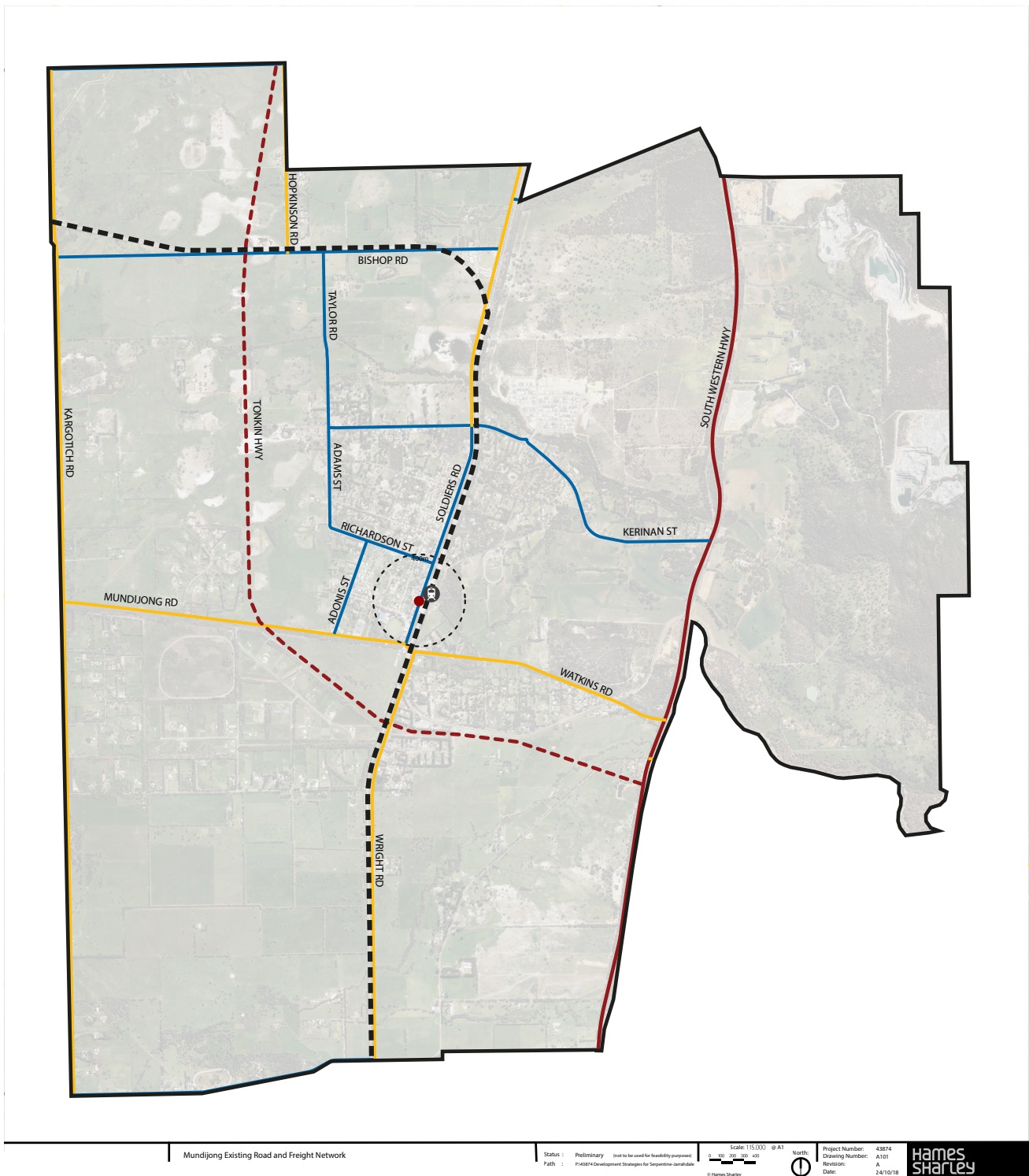
The freight network is critically important to the Western Australian economy. Where practicable, these transport corridors will need to be protected in the Mundijong District Structure Plan from the encroachment of sensitive and incompatible land uses. This is an important consideration when identifying locations for infill housing development. Similarly, the design, construction, upgrade and operation of this infrastructure within these corridors should seek to minimise impacts on surrounding land uses in accordance with SPP 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning.

Existing freight movement within the Mundijong District Structure Plan area includes both rail and road. The freight rail currently passes through the Mundijong Town Centre adjacent to Paterson Street. It connects to Kwinana. Freight movement via road is mainly accommodated along South Western Highway (north-south) and Mundijong Road (east-west).

#### PUBLIC TRANSPORT

A key component of providing effective transport connections within the Mundijong District Structure Plan area will involve improvements to the provision and frequency of public transport, as well as the adaptability of the network to achieve sustainable outcomes. Primarily, an improved public transport will be required to align with the needs of a growing population in the Mundijong District Structure Plan area, and to meet the need for connecting people to key employment nodes. Secondly, good public transport will be necessary to reduce congestion in the shorter term and increase road capacity for transport functions reliant on the regional road system, especially freight movement.

Figure 14: Existing Movement Network



## LEGEND

- PRIMARY DISTRIBUTOR
- REGIONAL DISTRIBUTOR
- LOCAL DISTRIBUTOR
- - - FUTURE PRIMARY DISTRIBUTOR
- - - FREIGHT RAIL
- NEIGHBOURHOOD CENTRE
- STATION

### Rail

TransWA currently provides rail access to the Mundijong District Structure Plan area via the Australind rail service (Perth-Bunbury). The train station is located in the Mundijong Town Centre on Paterson Street (Figure 12). A limited service is provided which includes a morning and evening service every day in both directions (four services total).

The proposed public transport network outlined in the South Metropolitan Peel Sub-regional Framework includes an integrated network of passenger rail lines and transit corridors. While Stage 1 of the METRONET passenger rail infrastructure includes the proposal to extend the Armadale rail line to Byford, further investigation are outlined for the longer term passenger rail infrastructure option to achieve better integration of the Australind service with the metropolitan passenger rail service between Perth and Mundijong, improving operational efficiency.

### Bus

Bus services within the Mundijong District Structure Plan area are currently limited to two services which connect to Armadale Train Station via South Western Highway. The existing bus routes include:

- + Bus route 252 which provides a connection to the Mundijong Town Centre with a terminus on Paterson Street adjacent to Mundijong Train Station; and
- + Bus routes 253 provides a connection to Jarrahdale.

The greatest transport challenge in the Mundijong District Structure Plan area is the lack of adequate public transport services to enable residents to access employment and education opportunities. The nearest commuter train station is in Armadale. However, the soon to be completed Byford Rail Station will transform accessibility to passenger rail into and out of the city centre. Bus services will be required and must be enhanced to connect the DSP area to Byford Station.

## ACTIVE TRANSPORT

The existing pedestrian and cycle network in the Mundijong District Structure Plan area is very limited due to the rural nature of the surrounding area. Active modes of transport such as walking and cycling are currently available for short distance journeys within the urban areas, however, there are several opportunities for network improvements to address existing issues of disconnected streets, lack of footpaths, unsafe routes and long distances.

Within the Mundijong District Structure Plan area the existing freight railway line and Manjedal Brook create physical barriers limiting active transport. This could be a major deterrent for residents to walk and cycle for local trips. New north-south and east-west roads for local traffic, buses, cyclists and pedestrians across these barriers would improve connectivity in the Mundijong District Structure Plan and should be explored. There is also opportunity to incorporate the central spine as part of a cycle and pedestrian network, connecting Mundijong to Byford in the north and Serpentine in the south. This can then be linked via district and neighbourhood roads and the Multiple Use Corridors (MUC) to establish a truly interconnected cycle and pedestrian network.

## 3.2.5 SERVICE INFRASTRUCTURE

### WATER SUPPLY

Water is currently supplied to Mundijong via an off-take from the Serpentine Trunk Main at Wright Road, approximately 5.5 km to the south of the town. The Water Corporation has progressively replaced sections of this distribution main to address water pressure problems in Mundijong. The medium term water scheme planning for Mundijong is to supply water from a new high level tank. The Sub-regional Planning Framework identifies conceptual water supply planning from the eastern Serpentine sector where major water storage reservoirs will be necessary in the escarpment near Byford Tank (Byford) and Mundijong Reservoir (Jarrahdale) to serve long-term urban development in these areas (WAPC, 2018).

The tank will supply southwards to Mundijong via large distribution mains to the proposed Mundijong Gravity zone. Some sections of the future distribution mains may need to be laid in stages as part of supply to Mundijong subdivisions as an interim solution while the area is still being supplied with water from the trunk main to the south. These mains would then later be used to supply water from the north through the ultimate scheme. As per the Sub-regional Planning Framework (WAPC, 2018), an indicative water main is planned to connect the Mundijong area with



Rockingham, known as the Mundijong-Tamworth Hill Trunk Main.

Water Corporation undertakes water services planning and allocates funds for infrastructure upgrades on the basis of land use planning information. Where a development proposal requires drinking water headworks infrastructure, for which the Water Corporation has not allocated funds to suit the developer's schedule, prefunding of the works may be necessary. Any works that may require water supply being modified must first consult with the Water Corporation and be to the satisfaction of the WAPC.

## WASTEWATER

Mundijong is situated within the Water Corp's Byford Wastewater Scheme Catchment Area. The Corporation's wastewater scheme planning for the catchment has required a range of major headworks items to be constructed.

A temporary private wastewater infrastructure and a pump station was installed to serve the Whitby development area for a short limited capacity. This capacity is soon to be reached. Land has been purchased in Scott Road, adjacent to the future Tonkin Highway extension to accommodate an additional wastewater pump station, as reflected on the Mundijong District Structure Plan map. This is in the final stages of approval for construction. As a first measure, wastewater will be pumped from Mundijong to Byford via a 'Type 90 Wastewater Pump Station (WWPS)', having a 20-30m radius odour buffer. The longer term solution will be for the site to accommodate a 'Type 350' WWPS, having a 50m radius odour buffer. According to Water Corporation, the ultimate designed facility is to accommodate a 'Type 1000' WWPS located on the western side of the Tonkin Highway reserve, which will collect wastewater via dual 600mm diameter wastewater pressure mains, pumping to the Woodman Point Waste Water Treatment Plant. This requires a 150m radius odour buffer.

Wastewater planning for Mundijong District Structure Plan area has been developed based on generalised land use, development and density/yield assumptions from previous iterations of the Mundijong-Whitby DSP. This identified the need for major gravity mains running east to west (downhill) through the development area and a large collector sewer along the western edge of the urban development area, accommodated within existing and future road reserves together with other domestic services. The width of road reserves and the size of these mains will need to be reviewed in more detail as more detailed structure planning progresses for the various precincts.

Of critical importance, is the infill sewer to service the 462 parcels of land that comprise the 179ha original townsite. Infill sewer will enable renewal and intensification of this area, accommodating 3,000 dwellings. An interim wastewater strategy for this area is to convey wastewater from Mundijong and Byford northwards by pressure mains to the Waterworks Rd Main pump station (at the corner of Tonkin Highway and Armadale Rd, Westfield) and then onwards to the Woodman Point WWTP. Initial sewer flows from developments in the Mundijong area is being pumped northwards through the Byford sub-catchment via the Byford pump station, subject to capacity limits.

## INTEGRATED WATER CYCLE MANAGEMENT

Investigations should be undertaken on the development of alternative sources of non-drinking water with the aim of utilising this technology, if found to be feasible in a timely manner, to the satisfaction of the WAPC. It should be clarified that, at the time of writing, the feasibility of the technology is not sufficiently proven for implementation.

An infill sewerage program is critically important, as mentioned above, to connect existing residences to the sewerage system with key benefits including: 1) The presence of a predictable sewerage base load from day one of operation provides an income from start up for the service provider; 2) The removal of septic tanks will positively contribute to the water quality of surface and groundwater systems in the Peel-Harvey catchment. 3) Regeneration and renewal of the Mundijong District Centre to grow new businesses and jobs.

Key considerations include:

- + Appropriately zoned and tenured land will be required to accommodate key infrastructure.
- + Identification and protection of corridors of land and/or easements throughout the Mundijong District Structure Plan area necessary to facilitate provision of main distribution pipes, local water networks and sewerage pump stations.
- + Planning conditions will need to facilitate collection of any headworks charges and prefunding of distribution

network by developers (if required).

- + Funding sources for infill sewer via State or Federal Government grants.

In June 2020 the Shire adopted the Shire of Serpentine Jarrahdale Integrated Water Management Strategy (IWMS) conducted through Wallbridge Gilbert Aztec to support the high level of growth and economic development within the Shire.

The water balance indicates that the Shire will be in water deficit by more than 1.3 GL/a by 2050 if no action to increase supply is taken. This poses a significant risk to provision of community amenity and health benefits. The Shire has developed this IWMS plan to help manage the risk and position the Shire to be proactive and prepared for opportunistic applications for investigation or capital works funding, should it come available.

The intended outcomes from the IWMS is to provide the Shire with water security and facilitate the economic development of the Shire via removal of barriers in the form of water sources as well as generate new business opportunities.

A forward program of works has been developed to further refine the options and costing. It is recommended that these works be implemented, in particular the flow and quality monitoring of climate dependent resources, to better understand concept viability and costs. This includes managed aquifer recharge, surface water, wastewater and demand forecasts

### 3.2.6 ENVIRONMENT AND LANDSCAPE

#### FLORA AND FAUNA

##### Biodiversity Assets

The Shire is located within the Kwongan ecoregion of the South West Australian Floristic Region, which is one of only twenty-five biodiversity hotspots in the world. The Shire is part of two of Western Australia's bioregions - the Northern Jarrah Forest subregion, which includes the plateau and Darling Scarp in the east of the Shire, and the flat low lying Swan Coastal Plain subregion in the west of the Shire. The Swan Coastal Plain Bioregion, which makes up most of the Mundijong District Structure Plan area, is dominated by woodlands of Banksia and Tuart on sandy soils, she-oak on outwash plains and paperbark in swampy areas.

A total of three Declared Rare Flora (DRF) and one Priority Flora species have been identified within the Mundijong District Structure Plan area (SMEC, 2009). These are scattered mainly along the Mundijong Road verge and designated Bush Forever sites.

Threatened Ecological Communities (TEC's) and their associated threat category are assessed by the Department of Environment and Conservation. TEC's are identified by the Floristic Community Type (FCT) classification which have been identified and classified based on species composition across the Swan Coastal Plain. TEC's are included with a number of other Biodiversity Features and their buffers in areas designated as "environmentally sensitive areas" (Figure 13) and are protected under the Environmental Protection Act, 1986 (WA). Scheduled TECs are also further protected at the Commonwealth level under the EPBC Act.

There are five State listed TEC's within the Mundijong District Structure Plan area, two of which are also protected under the EPBC Act. Where the TEC is a wetland, the buffer distance incorporates the minimum area to protect the wetland from developments with potential to impact hydrology.

##### Bush Forever

The majority of remnant vegetation and all TEC's in the Mundijong District Structure Plan area (Figure 15) are located in Bush Forever sites. Bush Forever sites are protected at the State level under the State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region. Remnant vegetation is generally restricted to Bush Forever sites 354, 350, 365, 362, 360 and 71. The vegetation condition for these sites is mostly good to excellent condition. Descriptions are provided below:

- + Bush Forever Sites 350 are representative of significant areas of remnant vegetation, recognised by the Shire

as the Soldiers Road Flora Road (Shire of Serpentine-Jarrahdale 1992, Keighery 1996c cited from WAPC, 2000). The vegetation condition along Soldiers Road is considered to be 50% excellent to very good and 50% good to completely degraded, with areas of localised disturbance.

- + Bush Forever Site 354 contains two TECs. The condition of the vegetation was found to be 90% excellent to very good and 10% good. The boundary of Bush Forever Site 354 has been successfully renegotiated with the WAPC by Urban Pacific. The parts of this site zoned Urban Deferred in the Metropolitan Region Scheme are to be ceded free of cost to the Crown at the time of subdivision and managed in accordance with the Whitby Local Structure Plan Integrated Landscape Management Strategy.
- + Bush Forever Site 360 contains plant communities representative of the eastern side of the Swan Coastal Plain that are considered to be regionally significant (WAPC, 2000), and four TECs. The vegetation condition of the site is considered to be 50% excellent to very good and 50% good to completely degraded, with areas of severe localized disturbance.
- + Bush Forever Site 362 contains plant communities representative of the eastern side of the Swan Coastal Plain (WAPC, 2000), and three TEC's. The condition of the vegetation has been found to be 90% very good to good and 10% degraded.

Any clearing proposed for an environmentally sensitive area (Figure 15) will need to be prepared under a specific permit and an environmental impact assessment (EIA) may be required (SMEC, 2009). Preparation of detailed LSP's within the Mundijong District Structure Plan area should give adequate consideration to contemporary mechanisms to retain and protect existing DRF, TECs, Conservation Category Wetlands and other environmental assets to the area, as well as achieving appropriate tree coverage. This will include the integration of mechanisms proposed within the Urban Forest Strategy currently being prepared by the Shire. This may consider the incorporation of trees into the Shires asset register through appropriate valuation.

#### Darling Scarp - Landscape Protection

One of the most outstanding landscape elements of the Shire and one which lends much to the character of both the rural and urban areas within the Mundijong District Structure Plan area, is the backdrop provided by the Darling Scarp. As encapsulated in the text of LPP 4.3 Landscape Protection Area Policy, every landscape has a different capacity to successfully absorb change such as new development including subdivision, infrastructure works and extractive industry, and some landscapes are more valued by the community and more sensitive to change than others.

LPP 4.3 targets areas of high landscape value and aims to maintain the integrity of significant landscape areas and features. In particular, such areas occur all along the escarpment between the railway line and the top of the escarpment in a line of sight (viewshed) from the South Western Highway and along some major watercourses. Preservation of these viewsheds will need to be considered for any future development within the Mundijong District Structure Plan area.

#### Areas of Natural Beauty

Within the Mundijong District Structure Plan, a number of areas of natural beauty are identified.

Significant Areas of Natural Beauty include:

- + The Manjedal Brook dissecting the Mundijong District Structure Plan east-west, north of Mundijong.
- + Significant permanent wetland located off Soldiers Road
- + The Vegetation off Mundijong road is the only fully connected east west connection left in the Swan Coastal Plain
- + Norman Road Bushland has many different vegetation types located within it.

Any future planning in or around these sites will need to take these sites into consideration.

#### Ecological (Green) Links

The natural environment within the Mundijong District Structure Plan area is a major asset to the Shire and the wider region providing an important habitat to sustain a unique ecosystem and support biodiversity. As illustrated in Figure 13, Ecological (Green) Linkages running east-west align themselves with the areas natural drainage and the north-south



corridor aligns itself with the railway line. Regional Ecological Linkages have been previously designated by the State Government as part of Bush Forever, Perth's Greenways and the System Six Study, and are now reflected in the Perth and Peel @3.5 million Sub-regional Planning Frameworks (WAPC, 2018), although it is noted that only those designated as Bush Forever have some protection for conservation purposes.

The proposed Ecological Linkages should not be confused with Multiple Use Corridors and Trails, which were not developed on ecological criteria and are not expected to achieve significant biodiversity conservation. However Multiple Use Corridors do form an important part of the ecology and environmental connections across the Shire.

Identification of Ecological Linkages is designed to protect existing natural areas that occur along the linkages, improve their resilience through management and revegetation of their buffers, and allow safe movement and growth of fauna and flora. It is noted, however, that many ecological linkages are associated with infrastructure corridors for roads, rail and drainage as illustrated in Figure 15, and are generally reserved for purposes other than conservation. Accordingly, many ecological corridors are often subject to disturbance (Essential Environmental, 2016).

Ecological links are important to facilitate fauna movement and species adaptation to changing climate and conditions. Where these linkages are associated with infrastructure corridors, consideration should be given to the achievement of multiple objectives including biodiversity conservation through, for example, modification to the reserve purpose. Where Ecological Linkages occur in LSP areas, a Vegetation Management Plan should be prepared to reduce the impacts of development by applying a series of management actions addressing the relevant environmental factors (SMEC, 2009).

#### Conservation Significant Fauna

The Swan Coastal Plain was once home to a great abundance and diversity of fauna, but habitat loss and alteration have severely reduced most populations. Surveys within the Mundijong District Structure Plan area have recorded a total of four native mammals and two introduced mammal species, six amphibians, 12 reptiles and 24 birds. Of these, five varieties of fauna are rare or likely to become extinct (SMEC, 2009).

One of the key species of focus of the Perth and Peel Green Growth Plan for 3.5 million is Carnaby's Black Cockatoo (*Calyptrorhynchus latirostris*), a species of Specially Protected Fauna known to feed, breed and roost in the Mundijong District Structure Plan area. They are a partially migratory species that breed in the wheatbelt in winter to mid-spring and wander in flocks to coastal areas for foraging in the non-breeding season. This bird species is listed as Critically Endangered under the Commonwealth EPBC Act and is now reliant on parkland areas in the Shire for feeding habitat. The main threats to the long-term survival of the species are loss of nesting hollows and food resources due to land clearing. Within the Mundijong District Structure Plan area, a number of hollows have been identified within Bush Forever zones illustrated in "Figure 15: Existing Environment" on page 66.

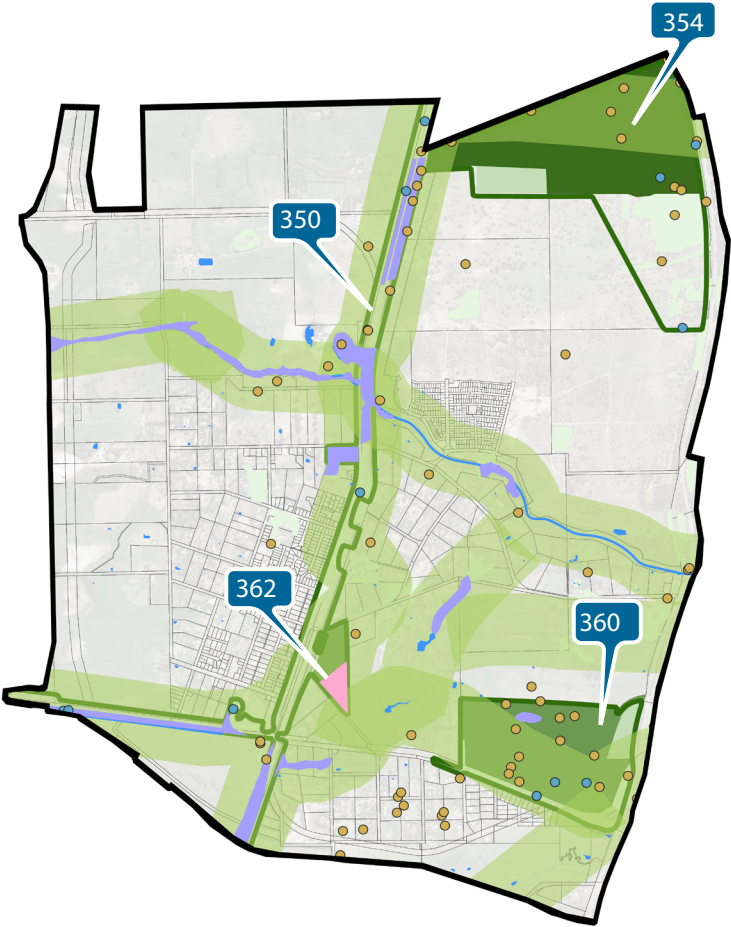
It is recommended that fauna management plans are prepared at the local structure planning stage to address the loss of habitat where native vegetation is to be cleared. The plan should include the requirements to minimise clearing, retain regional and local ecological linkages and the relocation of fauna where necessary (SMEC, 2009). Where possible, significant hollow-bearing trees located in cleared pasture land adjacent to remnant vegetation areas should be preserved to facilitate the movement of fauna across the landscape and provide breeding and shelter resources for significant protected species, such as the Black Cockatoos.

#### **BUSHFIRE HAZARD**

The majority of the Mundijong District Structure Plan area is identified as a 'Bush Fire Prone Area 2' under State Planning Policy 3.7 Bushfire. As such, a Bushfire Hazard Level (BHL) Assessment has been undertaken, in accordance with SPP3.7 and the Planning for Bushfire Guidelines.

The BHL Assessment indicates that future development within the Mundijong District Structure Plan area will result in the site being primarily subject to a Low or Moderate hazard level. The post-development BAL contour assessment highlights at a strategic level that future development areas will primarily be subject to BAL-29 or lower on development completion (with majority coverage of BAL-Low). This is primarily due to separations from existing hazards, the future clearing and/or modification of vegetation within future residential development areas and the containment of native vegetation within Multiple Use Corridor/green linkages, and Public Open Spaces.

Figure 15: Existing Environment



Mundijong Existing Environment

Status : Preliminary (not to be used for feasibility purposes)  
Path : P143074 Development Strategies for Serpentine-Jarrahdale

Scale: 1:50,000 @ A1  
0 100 200 300 400  
© Hames Sharley

North

Project Number: 43874  
Drawing Number: A101  
Revision: A  
Date: 24/10/18

Hames Sharley

LEGEND

- MUNDIJONG DSP BOUNDARY
- TEC BUFFER
- NATIVE VEGETATION
- PARKS AND RECREATION
- RESERVE
- GREEN LINKAGES
- WATER BODIES
- BUSH FOREVER
- CONSERVATION CATEGORY WETLANDS
- RESOURCE ENHANCEMENT WETLANDS

- TEC FLORA
- TEC FAUNA

The BHL Assessment has determined that the bushfire hazards and risks within and adjacent to the project area are manageable through the application of acceptable solutions outlined in SPP3.7 and the Planning for Bushfire Guidelines, which will be implemented as required throughout future planning stages. Bushfire Management Plans are to be prepared for local structure plan and subdivision applications. Likely measures for future planning include the provision of hazard separation through the placement of roads and / or managed local open space abutting areas of retained vegetation, and application of BAL construction standard requirements to lots in close proximity to areas of retained vegetation. Detailed assessments will be required as a routine component of the preparation of local structure plans.

Future local structure plan and subdivision stages will determine the exact sizing, locations, and landscape treatments of public open space. BMPs and Landscape Plans are required to be prepared alongside these future planning stages, determining the required vegetation treatments, vegetation classifications, and consequent bushfire risk. Where a POS containing a living stream or vegetated swale is proposed through future planning stages, the BMP must account for revegetation and landscaping treatments, and must demonstrate the associated bushfire hazard levels.

## LANDFORM AND SOILS

### Land Form

The topography of the Mundijong District Structure Plan area, as shown in Figure 14 at 5m contours, captures the unique topography and landform typical of the Shire with two distinct halves. To the west of the South Western Highway, the terrain is relatively low flat Palusplain (seasonally waterlogged land), typical of the Swan Coastal Plain, whilst the eastern portion is characterised by undulating ridge peaks and troughs of the landform of the Darling Plateau. At the junction of the two landforms, known as the Darling Scarp, the topography is steep, with an average gradient of five percent.

The topographic features of the Darling Plateau and Darling Scarp allow for substantial water bodies to form, such as the Serpentine, Pipehead and Wungong Dam, and are an important catchment for surface water runoff.

The Swan Coastal Plain has changed significantly, most importantly by draining of the extensive wetlands that once covered it for much of the year. Many of the drains intersect the groundwater, causing drawdown and reducing soil moisture content. The Palusplain soils within the Mundijong District Structure Plan area have been extensively cleared for agricultural.

### Acid Sulphate Soils

Acid sulphate soils in the Mundijong District Structure Plan are located to the west of the South Western Highway (Figure 14) they consist of moderate to low risk of actual acid sulfate soils or potential acid sulfate soils occurring generally at greater than 3 m depth. Low to no risk of actual acid sulfate soils or potential acid sulfate soils occurring generally at greater than 3 m depth can be found to the east of the South Western Highway in the Mundijong District Structure Plan area. The risk of acid sulfate soils being exposed to oxidation due to development in the Mundijong District Structure Plan area is considered low. As part of development requirements, new developments within the Mundijong District Structure Plan will need to introduce fill to a depth that is acceptable for residential construction as well as provide suitable flood clearance and adequate subsoil drainage. However, development techniques should be provided with any LSP, addressing potential risks to acid sulphate soils.

### Contaminated Sites

A significant portion of the Mundijong District Structure Plan is agricultural land, where a number of potential contamination commonly associated with rural activities have previously been identified, such as, arsenic-based sheep and cattle dips, landfill, spillages of hazardous chemicals and the storage of disused chemicals (SMEC, 2009). Given past and present use, it is unlikely that the potential sources of contamination detected would have resulted in significant soil or groundwater impacts. However, it is recommended that further investigations (including sampling) within the Mundijong District Structure Plan area be undertaken to confirm this in future development stages. Consideration should also be given to the remediation of contaminated sites as part of any future development.



### 3.2.7 NATURAL RESOURCES

#### WATER RESOURCES

Environmental impacts within the Shire affect significant water resources in the region with parts of the Peel Harvey Catchment and Jandakot Groundwater Mound located within the Shire. It is therefore crucial that the Shire's environmental values are preserved and that natural areas, areas of significant vegetation, wetlands and waterways are protected, preserved and enhanced as a central element of liveability and a defining characteristic of the Shire.

##### Surface Water

The most notable waterway within the Shire is the Serpentine River, which forms part of the Serpentine Dams (Serpentine Reservoir and Serpentine Pipehead Dam). The Serpentine River traverses the Shire south-east flowing through the western boundary of the Shire. The Serpentine main dam's capacity is one of the biggest dams supplying the Perth metropolitan area (Water Corporation, 2009).

As shown in figure 17 there are a number of watercourses and drains discharging through the study area, with the Manjedal Brook and Mardella Creek being the most significant. Natural watercourses in the study area typically drain in an east-west direction from the escarpment. Manjedal Brook enters the study area after traversing the South Western Highway and then draining in a west-north-westerly direction, skirting Mundijong townsite, and flowing parallel to Keirnan Street. Manjedal Brook is crossed by Robertson Road, the Southern Railway, Soldiers Road and finally Taylor Road before draining out of the study area at the Tonkin Highway Reserve. Mardella Creek also enters the study area via the South Western Highway and drains in a south westerly direction adjacent to Shanley Road before leaving the study area to the south.

Other minor watercourses draining through the site include:

- A small modified natural creek enters the study area at the South Western Highway south of Norman Road and flows through the Norman Road bushland before crossing Robertson Road, the Southern Railway, Soldiers Road and exits the study area at Hopkinson Road.
- Another highly modified creek/drain enters the study area at the South Western Highway south of Whitby Cemetery. This creek/drain discharges in a westerly direction through an incised channel before crossing Robertson Road, the Southern Railway, Soldiers Road and finally Taylor Road before draining out of the study area at the Tonkin Highway Reserve.
- A small creek enters the study area at the South Western Highway north of Pruden Road. The creek is poorly defined and meanders across rural land between Watkins Road and Evelyn St/ Galvin Road. This creek drains through two farm dams before crossing Roman Road, Watkins Road, Hicks Street, Wright Road, and the Southern Railway and ultimately turns northwards to form a more formalised rural drain alongside Webb Road before discharging into Mundijong Road drain.
- Several small rural drains are also present in the western portion of the study area, all draining in a westerly direction towards the Oaklands Main Drain which lies just outside the study area and drains southwards towards the Birrega Main Drain and Serpentine River.

Future urban development is likely to result in changes in surface and groundwater hydrology. This has the potential to pose a significant threat to local flora within the area. Many flora and vegetation communities are strongly influenced by water availability caused by modified water regimes and hydrological imbalances. Wetlands are particularly vulnerable to water regime changes as well as upland vegetation such as banksias which are sensitive to lowering ground water tables. No development should ideally occur within important wetlands, significant natural areas or wetland or significant natural area buffers. New subdivisions should ensure that lot boundaries do not intersect important wetlands, natural areas or their buffers and prospective purchasers of land containing an important wetland, natural areas or their buffers should be made aware of development restrictions through restrictive covenant, conservation covenant or reservation.

Where future subdivision has the potential to impact on streams such as Manjedal Brook, a foreshore management plan should be prepared by the subdivider for approval. All remnant vegetation, fringing vegetation and ecological linkages associated with the wetlands and water courses should be maintained. Access to wetlands should be controlled and/or restricted. The exact nature of these measures should be determined during Local Structure Plan

stage.

Discharge of stormwater may be permitted into a wetland if consideration has been given in the context of a water management plan. Water Management Strategies should be produced at the local structure plan stage to ensure that any existing inappropriate stormwater disposal to wetlands or water courses are replaced and that water management at the site is in accordance with relevant policies. Where development is proposed near a wetland, a wetland management plan should be prepared and include the following:

1. the wetland's buffer distance;
2. the proposed management of water within and in and out of the wetlands;
3. the management of groundwater and its recharge;
4. any approved groundwater abstraction allowances;
5. any required rehabilitation of the wetland(s);
6. site monitoring; and
7. the management of Acid Sulphate Soils (where applicable).

The District Water Management Strategy (DWMS) and any other subsequent, more detailed Local Water Management Strategies for the Mundijong area, including the Oaklands Branch Drain, are required to include a determination of hydraulic levels in the drain, overland flow requirements, finished site fill levels, and any additional land required to be set aside in the area to accommodate flooding.

Current watercourses are maintained or enhanced to living streams wherever possible. Surface water should not be put directly into any wetlands or water courses without treatment first. Fill brought in is designed for maximising phosphorous retention time. Drainage in most cases is designed to minimise risk of erosion and maximise infiltration while decreasing any water-logging or flooding impacts. Any development is to be designed so that suitable fill material and drainage can be provided.

#### Ground Water

The most significant groundwater resources underlie the Swan Coastal Plain portion of the Shire. This includes the superficial aquifer, which is unconfined and recharged by rainfall, and the deeper confined aquifers of the Leederville and Yarragadee. The Mundijong District Structure Plan area falls within the Serpentine Groundwater area of the northern Perth Basin and overlaps the Archaean terrain of the Yilgarn Shield. Generally within three metres of the surface in areas of sand, the groundwater quality is generally good but information on groundwater quality is limited (Essential Environmental, 2016). Groundwater flow was determined to generally be in a westward direction with some localised inflections towards Manjedal Brook.

Although groundwater allocation currently remains in most parts of the superficial aquifer, declining rainfall may result in reduced recharge and consequently availability in the future (Essential Environmental, 2016). Investigations should be undertaken on the development of alternative sources of non-drinking water with the aim of utilising this technology, if found to be feasible in a timely manner, to the satisfaction of the WAPC. It should be clarified that, at the time of writing, the feasibility of the technology is not sufficiently proven for implementation. The Shire's Integrated Water Management Strategy 2020 investigates water recycling and reuse, such as the reuse of fit-for-purpose water for irrigation of public open spaces, as a means to reduce demand and improve efficiency. These principles should be adopted for any future development within the Mundijong District Structure Plan area and investigations included in LSP proposals.

Groundwater levels can be reduced should garden bores be established. Draw-down of groundwater can cause serious detrimental effects, potentially resulting in the death of the groundwater-dependant vegetation. To ensure that future development within the Mundijong District Structure Plan area has a minimal impact on the groundwater-dependant ecosystems within and surrounding it, the following strategies should be implemented in collaboration with the Department of Water and Environmental Regulation:

- + Determine the acceptable level of groundwater abstraction and hence the number of bores permitted and their specified abstraction rate;
- + Design all new developments within the Mundijong District Structure Plan area to ensure maximum recharge of

Figure 16: Existing Landform and Soils

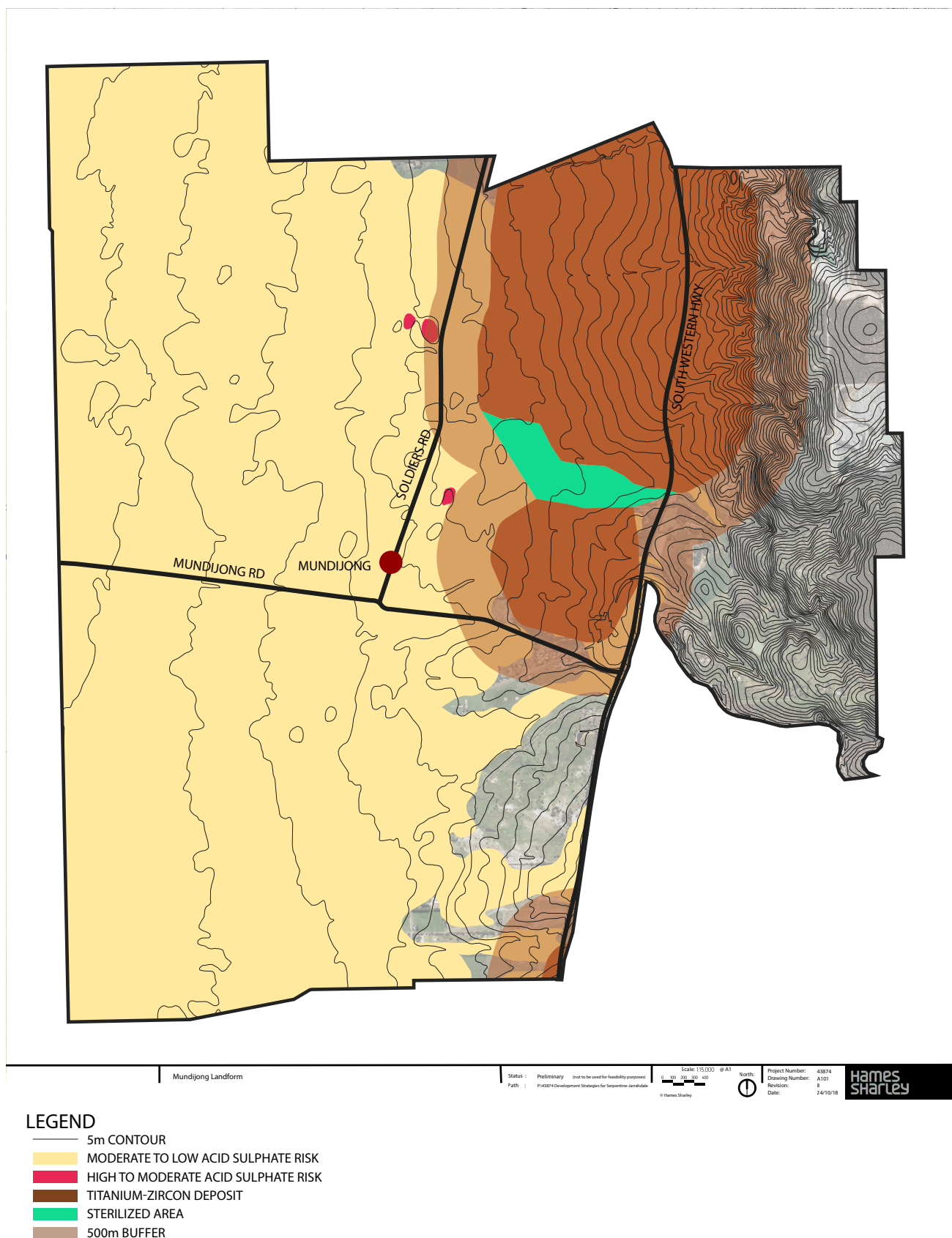




Figure 17: Surface water and water courses

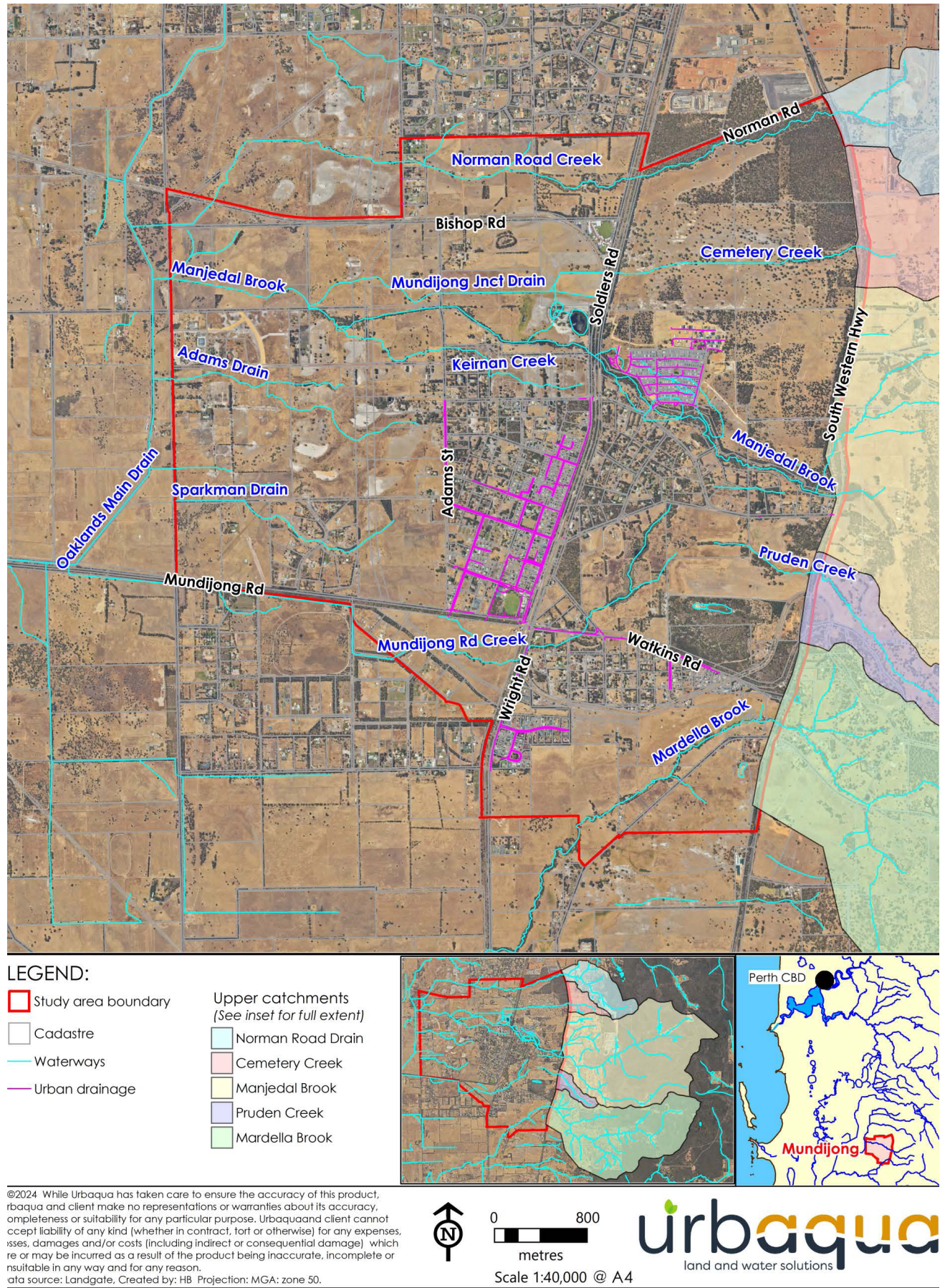
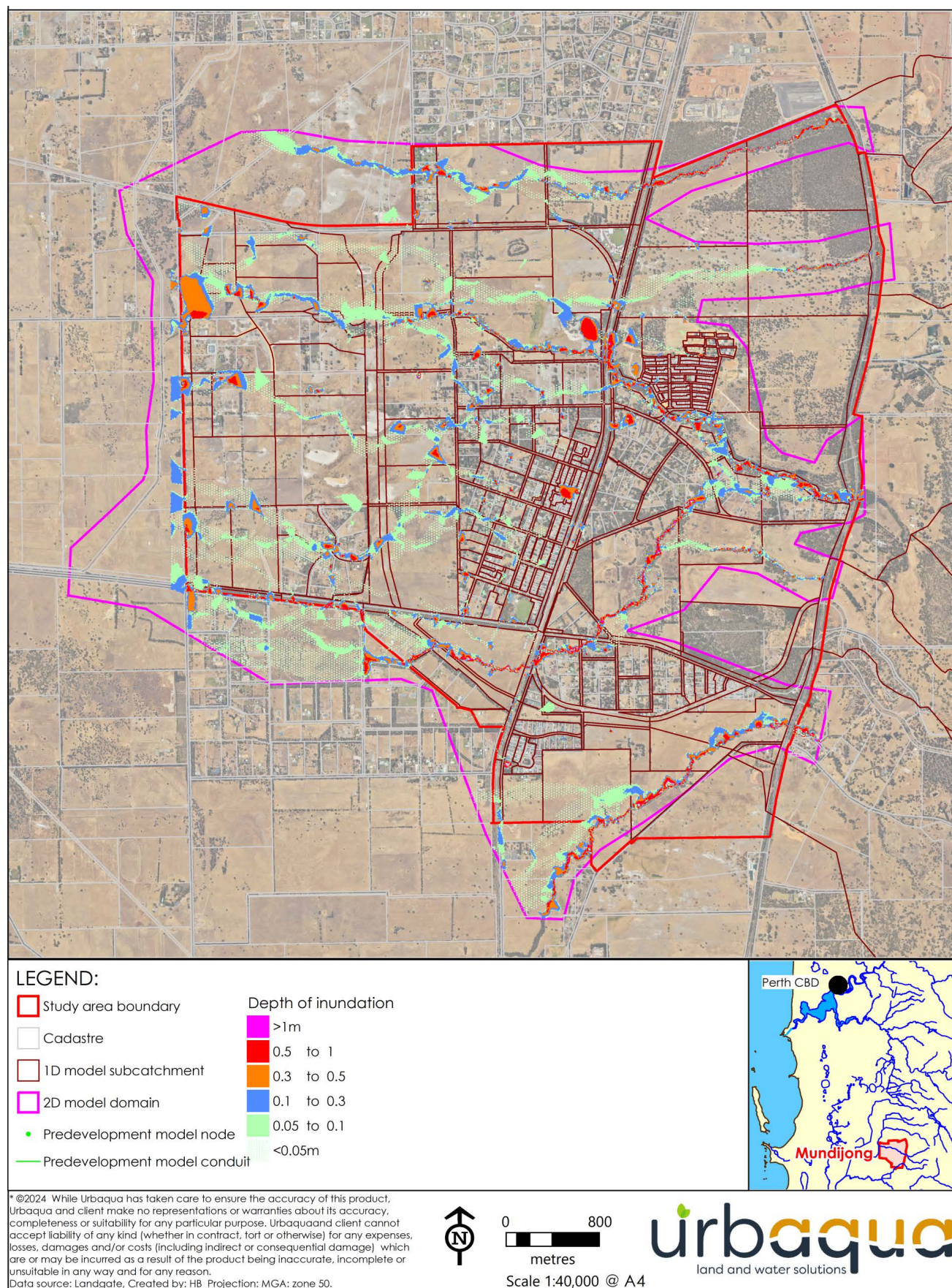




Figure 18: Pre-development extent and maximum depth of inundation/flooding





groundwater; and

- + Establish unit discharge that is representative of pre-development levels.

Clearing of land for agriculture and/or development may also result in threats to water quality, including exposure of acid sulphate soils, sediment and nutrient export and chemical pollutants. While the risk of acid sulphate soils being exposed is considered low in the Mundijong District Structure Plan area, new developments will need to introduce fill or alternative building practices including appropriate footing methods to a depth that is acceptable for residential construction, as well as provide suitable flood clearance and adequate subsoil drainage.

#### Flood Risk

The Serpentine Jarrahdale catchment provides around 15% of the annual surface inflow to the Peel-Harvey system. As illustrated in Figure 18, there are multiple streams that pass through the Mundijong District Structure Plan area, flowing down from the Darling Scarp across the Swan Coastal Plain. These waterways are a key natural attribute attracting residents to the area. However, there is an associated flood risk to development near any waterway.

The risk of flooding in urban areas should be managed through the application of State Planning Policy 2.9: Water Resources. The Shire may also need to review existing townsite drainage systems and ensure appropriate levels of service will be maintained as development occurs and water quality of stormwater is addressed.

#### BASIC RAW MATERIALS

Basic raw material resources occur within the Shire providing an important natural resource in close proximity to developing urban areas. It is important to identify the location of basic raw materials to ensure that these resources are protected and remain in non-urban zones. It is important for land use planning to consider environmental assets and natural resources at a strategic level to ensure that more detailed planning and development does not compromise the integrity of environmental systems and the accessibility of natural resources.

While The Department of Mines and Petroleum and Geological Survey of Western Australia currently identifies strategic resource occurring over most of the western portion of the Mundijong District Structure Plan, it should be noted that the potential extraction of this resource was considered as a part of the lifting of the 'Urban Deferred' zoning. Extraction of the sands is not economically viable, and is subject of considerable community opposition. The resource is not of sufficient importance to be included in WAPC's State Planning Policy 2.4 Basic Raw Materials. It was deemed that urban development should proceed as reflected through the lifting of the deferment.

For industries operating near other areas of the Mundijong District Structure Plan, specifically the north eastern portion, strong guidance should be provided for future rehabilitation and mine closure planning. Clearing of the land for resource extraction can result in a loss of biodiversity and can lead to erosion. Mining activities also impact on the visual landscape of the Shire and can result in off-site impacts on nearby land uses including dust, noise and light.

### 3.2.8 HERITAGE AND CULTURE

Heritage places, including places of natural heritage value, are important contributors not only to the Shire's visual character but also to its cultural identity and the local economy through a multitude of tourism opportunities. The Shire has a rich history and contains many places of cultural heritage value to both Aboriginal and non-Aboriginal people. Recognising, respecting and celebrating heritage is a way of adding meaning to place, helping people to connect to and value the places they occupy, and to learn from the past.

#### ABORIGINAL HERITAGE AND CULTURE

The original inhabitants of the Serpentine-Jarrahdale area are the Gnaala Karla Boodja Aboriginal people of the Noongar group of south-west Western Australia. The Gnaala Karla Boodja region encompasses the towns of Capel, Donnybrook, Balingup, Wickepin, Narrogin, Williams, Mundijong, Kwinana, Brookton, Pingelly, Wagin, Harvey, Collie, Pinjarra, Mandurah and Boddington (SWALSC, 2016, cited in Essential Environmental, 2016). McDonald & Thomson (2016, cited in Essential Environmental, 2016) state that the area around Mundijong, also located within Aboriginal country known as Beeliar, has ethnohistorical evidence showing that the rivers, creeks and wetlands in this region were intensively occupied, given the availability of fresh water and food resources. In particular, the alluvial plains and associated warran or native yam grounds and riparian resources such as Typha were of crucial economic importance



to Aboriginal people.

The Department of Aboriginal Affairs maintains a register of known Aboriginal sites, which records the places and objects of significance that the Aboriginal Heritage Act 1972 (WA) applies to. Under this Act, obligations exist precluding the interference with registered sites without prior clearance, and disturbance of any artefacts discovered which will need to be observed by any development within the Mundijong District Structure Plan.

Existing Aboriginal heritage sites within the Mundijong District Structure Plan are illustrated on Figure 15. The sites identified are concentrated along the western flank of the study area and have been the subject of numerous Department of Indigenous cultural heritage surveys and reports reviewed by SMEC, 2009.

A key recommendation provided by SMEC is that the Shire of Serpentine Jarrahdale consult with the South West Land and Sea Council (SWLASC) in relation to all matters pertaining to Aboriginal heritage sites identified should they be subject to disturbance as a result of future development within the Mundijong District Structure Plan area. The Perth Regional NRM (previously The Swan Catchment Council (SCC) ) has developed a 'one-stop shop' to help simplify the Aboriginal consultation process to ensure that all the requirements of a Section 18 Notice under the Aboriginal Heritage Act are met by the proponents. Such an approach will ensure that the proponent has consulted with the appropriate representatives of the relevant Aboriginal people and in turn, reduce the prospect of impediments that may slow the consultation process.

## NON-ABORIGINAL HERITAGE

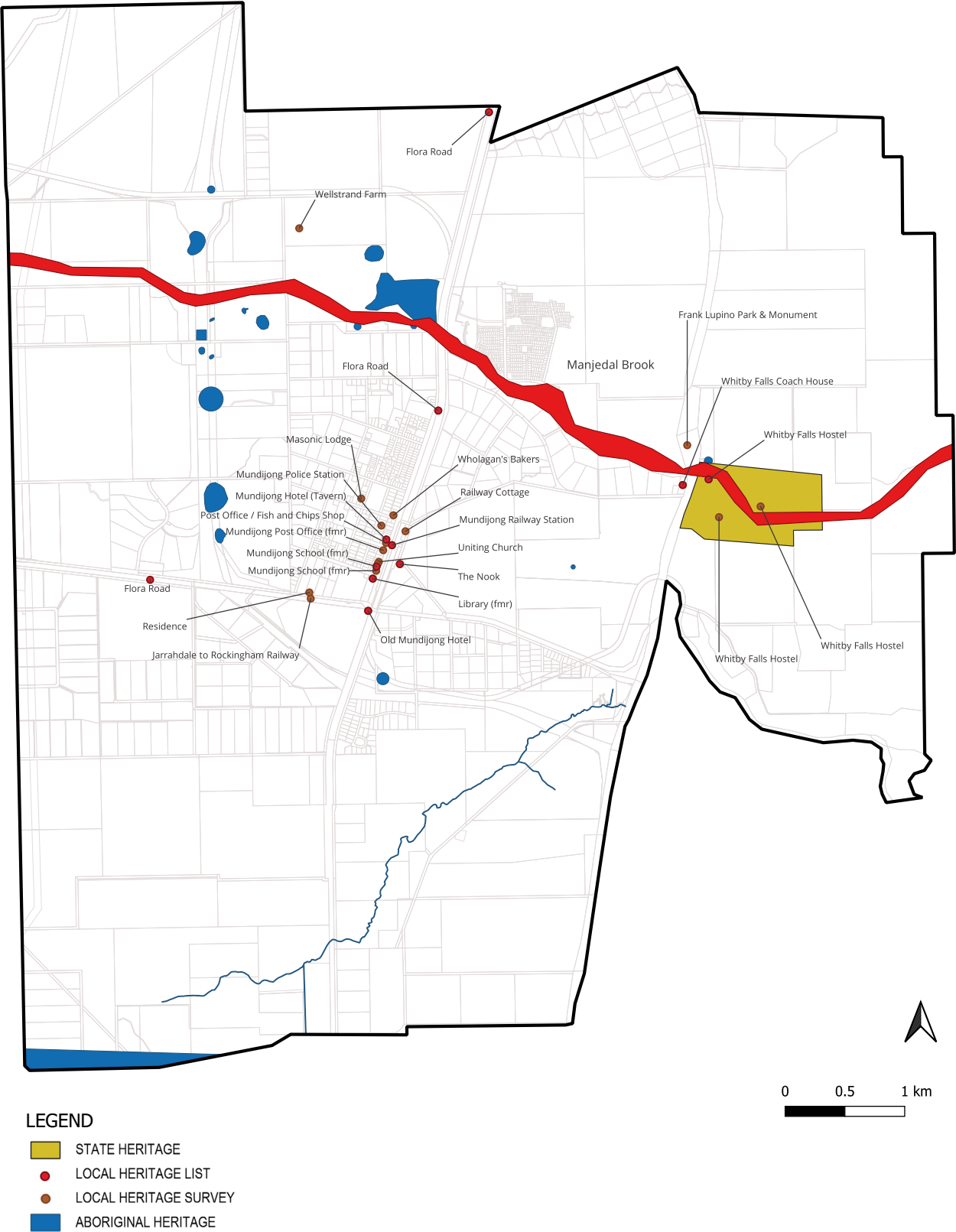
European settlement in the Shire of Serpentine-Jarrahdale dates from the 1830s, with land cleared and used primarily for farming and obtaining timber. The population was minimal until the late 1800s when many townships were established (including Mundijong), aided by the opening of timber mills in the 1870s and the construction of the South Western Railway from Perth to Bunbury in 1893, originally for timber transportation.

The Shire has established a local inventory (Municipal Inventory) within its district for the identification of, and protection measures for specific areas within the Mundijong District Structure Plan area. The State Register provides official recognition of a place's cultural heritage significance to Western Australia and assists the Heritage Council to identify, provide for, and encourage the conservation of heritage places. The State Register legally protects a site's significant cultural heritage from any changes. Any development proposals regarding a registered place must be referred to the Heritage Council for advice.

There are sixteen sites within the Mundijong District Structure Plan area that are listed on the Shire of Serpentine Jarrahdale's Local Heritage Survey. Eight of these sites are within the Heritage List under Shire of Serpentine Jarrahdale Local Planning Scheme No. 3, and as such are legally protected. These sites should be acknowledged as part of relevant Local Structure Planning (Figure 19).

While heritage is primarily managed through State and Commonwealth legislation, opportunities exist to protect and promote both Aboriginal and European cultural heritage through joint management arrangements with traditional owners and optimise opportunities for Indigenous training, employment and businesses.

Figure 19: Existing Heritage Places



### 3.3 Opportunities and Challenges

The analysis above has determined a number of opportunities and challenges for the Mundijong District Structure Plan area. These are summarised in Table 5 and on Figure 20, they will assist in shaping the framework for a revised Mundijong District Structure Plan.

Table 5: Summary of Mundijong Opportunities and Challenges

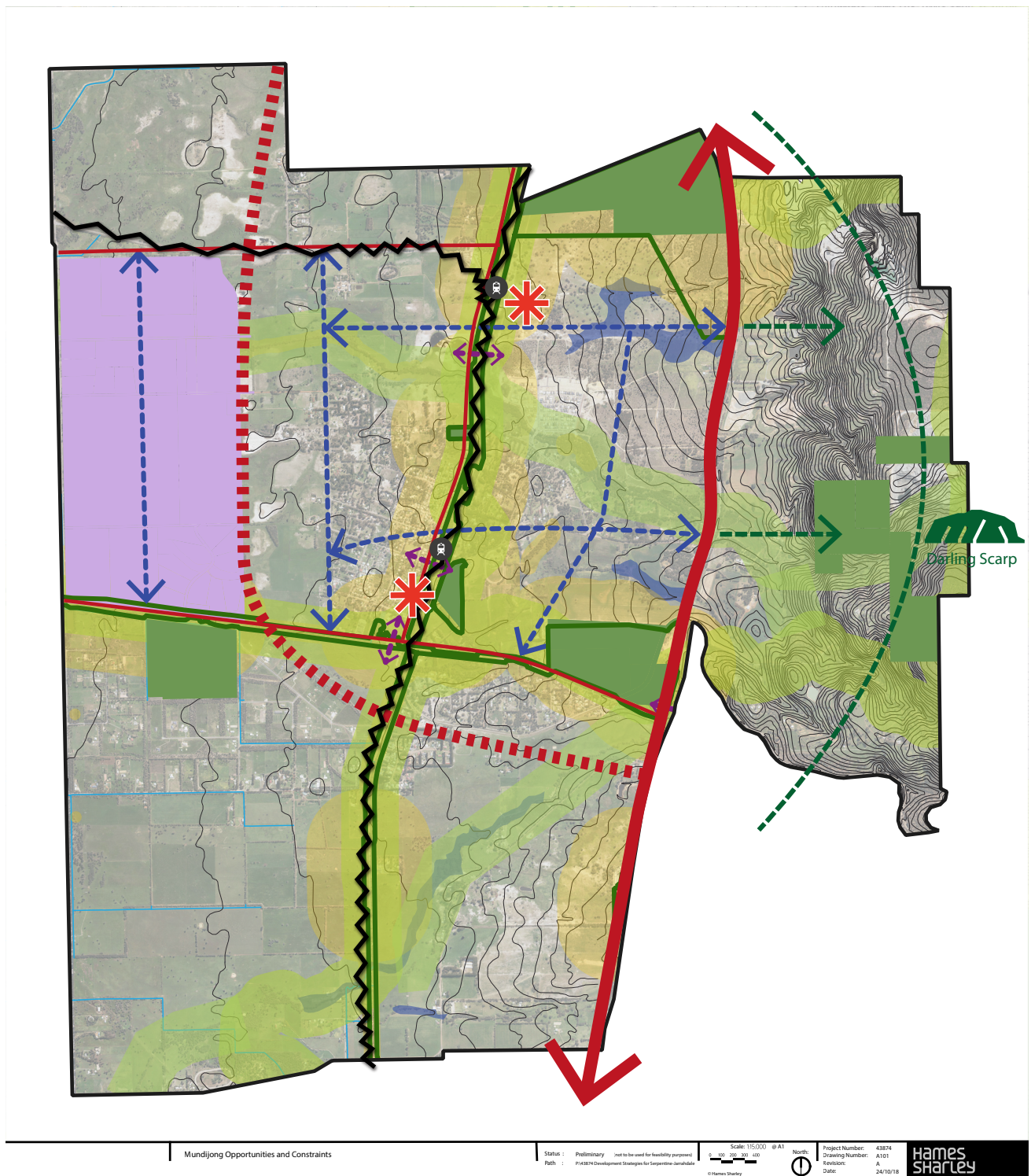
	OPPORTUNITIES	CHALLENGES
Consolidated Urban Form	<ul style="list-style-type: none"> <li>+ The opportunity to establish Whitby as a consolidated town centre focussed on key town centre functions and, if future decisions result in the extension of passenger rail south of Byford, the opportunity for this to become an exemplar of TOD development with improved access and integrated transportation and development outcomes.</li> <li>+ The opportunity to consolidate Mundijong as a traditional town centre focussed around civic functions and town centre activities enhanced by heritage values.</li> <li>+ Increased housing choice to provide living opportunities for a diverse community.</li> <li>+ Built form that responds to land form, ground water and local climate and maximises amenity through green infrastructure.</li> <li>+ Provision of equine and "rural enterprise" lifestyle lots that do not impact on productive farmland or areas of high biodiversity value.</li> <li>+ The majority of the area is owned by only a few large landowners.</li> </ul>	<ul style="list-style-type: none"> <li>+ Potential disconnection between urban areas in Mundijong and Whitby due to the rail line.</li> <li>+ Fragmented land ownership in precincts B, F and L.</li> <li>+ Lack of housing and lot diversity.</li> <li>+ Western edge of town requires access and amenity buffers from Tonkin Highway extension and Freight rail realignment.</li> <li>+ Overcoming perceptions that Mundijong town centre is a declining rural centre and not a desirable place to live.</li> </ul>
Economy and Employment	<ul style="list-style-type: none"> <li>+ West Mundijong Industrial Area developed to stimulate local economic activity and employment with proximity advantage to potential new outer harbour.</li> <li>+ Mundijong consolidated as a traditional town centre with a range of activities and employment opportunities including civic and commercial.</li> <li>+ Whitby developed as a contemporary retail activity centre serving a more diverse future population.</li> <li>+ Local food supply reduces transport needs, provides local employment and optimises closed-circuit practices including industrial ecology techniques.</li> <li>+ Eco-tourism celebrating the area's natural beauty and biodiversity. This may include accommodation, entertainment and artistic as well as adventure and recreational activities.</li> <li>+ Educational opportunities associated with practical and on-ground environmental learning.</li> </ul>	<ul style="list-style-type: none"> <li>+ Lack of critical mass of population and activity limiting provision of services and retail.</li> <li>+ Limited employment and training opportunities for young people, employment self-containment is especially poor due to these limited opportunities.</li> </ul>



	OPPORTUNITIES	CHALLENGES
Community and Social Infrastructure	<ul style="list-style-type: none"> <li>+ The potential to create a model town centre to embody the principles and objectives of SPP4.2 in conjunction with civic functions and heritage values that will contribute ambience and character to the DSP area while meeting community needs.</li> <li>+ Strategic planning framework in place for community infrastructure.</li> <li>+ Perception as a family friendly Shire.</li> <li>+ Land available to consolidate civic/governance precinct at Mundijong as strong community node.</li> <li>+ Consolidate sport and recreation at Keirnan Park with good linkages to Mundijong and Whitby town centres.</li> <li>+ Collocation of ovals and sporting areas with primary and high schools with opportunity for shared infrastructure and management arrangements.</li> <li>+ Access to employment opportunities, retail and services, both within the immediate area improved via the Perth-Armadale Rail Line extending to Byford. Also, further investigations of a rapid transit linkage to Whitby and Mundijong activity centres may be progressed in the future.</li> <li>+ Coordination of improved east-west links across rail line to improve permeability across Mundijong District Structure Plan area.</li> </ul>	<ul style="list-style-type: none"> <li>+ Increasing population and settlement which requires funding, planning and development of new communities and associated infrastructure.</li> <li>+ Limited provision of facilities for an ageing population, major gap in health and ancillary services.</li> <li>+ Limited provision of facilities for youth and young families.</li> <li>+ Significant barrier of rail line through the Mundijong District Structure Plan area limiting east west connectivity.</li> <li>+ Lack of public transport between activity centres and regional destinations.</li> <li>+ The frequency of TransWA Australind train service.</li> </ul>
Movement and Access	<ul style="list-style-type: none"> <li>+ Extension of Tonkin Highway will improve regional access and alleviate traffic pressures on South Western Highway. Will also enable establishment of intermodal hub at West Mundijong.</li> <li>+ Realignment of freight rail line reduces impacts and barrier effect of rail line.</li> <li>+ The potential for future extension of passenger rail south of Byford to be considered in the longer term.</li> <li>+ Improved connectivity along streets and greenways to promote active transport.</li> <li>+ Improved and potential rapid bus service along Soldiers Road and the current freight rail corridor and freight rail alignment linking centres within the Shire.</li> </ul>	<ul style="list-style-type: none"> <li>+ At this time, extension of passenger rail south of Byford is not under consideration.</li> <li>+ METRONET will require park and ride facilities with a significant land requirement at end-of-line train station.</li> <li>+ Rail alignment and geometry requires careful design to ensure least impact on the local environment and amenity.</li> <li>+ Road environments that do not provide safe and convenient active transport.</li> <li>+ East-west transport linkages to employment in the west are inadequate and require residents to use single person vehicles to get there.</li> <li>+ The widening of transport corridors are constrained by environmentally sensitive flora.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>+ Sustainable precinct- wide provision of services enabling disconnection of communities from centralised systems. This includes power, water, wastewater and non-drinking water.</li> <li>+ Decentralised waste-management strategies which optimise reuse and recycling of waste materials.</li> </ul>	<ul style="list-style-type: none"> <li>+ Groundwater in the Leederville aquifer is mostly allocated, with some remaining capacity within the superficial aquifer to supply groundwater for NDW.</li> <li>+ Lack of waste water provision.</li> <li>+ Funding constraints for infrastructure provision.</li> </ul>

	OPPORTUNITIES	CHALLENGES
Environment and Landscape	<ul style="list-style-type: none"> <li>+ The community's desire for a sustainable, connected and thriving community into the future supports many opportunities for environmental innovations.</li> <li>+ Reserves, areas of natural beauty and Bush Forever sites reinforce the area's distinctive visual character.</li> <li>+ Significant view corridors to the Darling Scarp reinforce the areas unique backdrop of natural beauty and its location in proximity to the region's national park and state forests.</li> <li>+ Consideration should be given to the prioritisation of protection of Local Natural Areas for incorporation into LPS 3.</li> <li>+ Natural drainage corridors provide for multi-use corridors to conserve existing vegetation, promote indigenous re-vegetation, providing recreational and active transport opportunities and surface drainage function.</li> </ul>	<ul style="list-style-type: none"> <li>+ Declining rainfall and rising temperatures have the potential to impact on the health of the environment and the community, as well increased maintenance costs for community infrastructure.</li> <li>+ Bush Forever sites, particularly along and east of rail line impacting on METRONET outcomes and consolidation of townsites.</li> <li>+ Flood risk associated with drains running across the Swan Coastal Plain.</li> <li>+ The majority of the area is located within a Bush Fire Prone Area of WA as designated by the Fire and Emergency Services (FES) Commissioner.</li> </ul>
Natural Resources	<ul style="list-style-type: none"> <li>+ Re-purpose of existing/proposed extractive industry sites and implement measures to ensure their rehabilitation upon closure.</li> </ul>	<ul style="list-style-type: none"> <li>+ Any further extraction of minerals and raw materials has the potential to impact on the health of the community and the environment through loss of vegetation, erosion, noise, dust and light.</li> <li>+ Visual impacts of extraction industries could limit tourism potential.</li> </ul>
Heritage and Culture	<ul style="list-style-type: none"> <li>+ Aboriginal Heritage Places, State Registered and Municipal Inventory Places and areas under an Assessment Program provide the opportunity to celebrate the areas natural heritage value, its cultural identity and build the local economy through unique tourism opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>+ Heritage and culture is shifting from a rural and country town community and settlement pattern to a more urban culture looking to establish a sustainable future.</li> </ul>

Figure 20: Mundijong Opportunities and Constraints









# 4.0 THE STRUCTURE PLAN



## 4.1 Strategic Intent

The Mundijong District Structure Plan map (Figure 21) has been prepared in response to the South Metropolitan Peel Sub-regional Framework and the Shire of Serpentine Jarrahdale Local Planning Strategy, and the key opportunities and challenges identified in Section 2.3. It seeks to consolidate all previous plans developed for the area to provide a new Mundijong District Structure Plan.

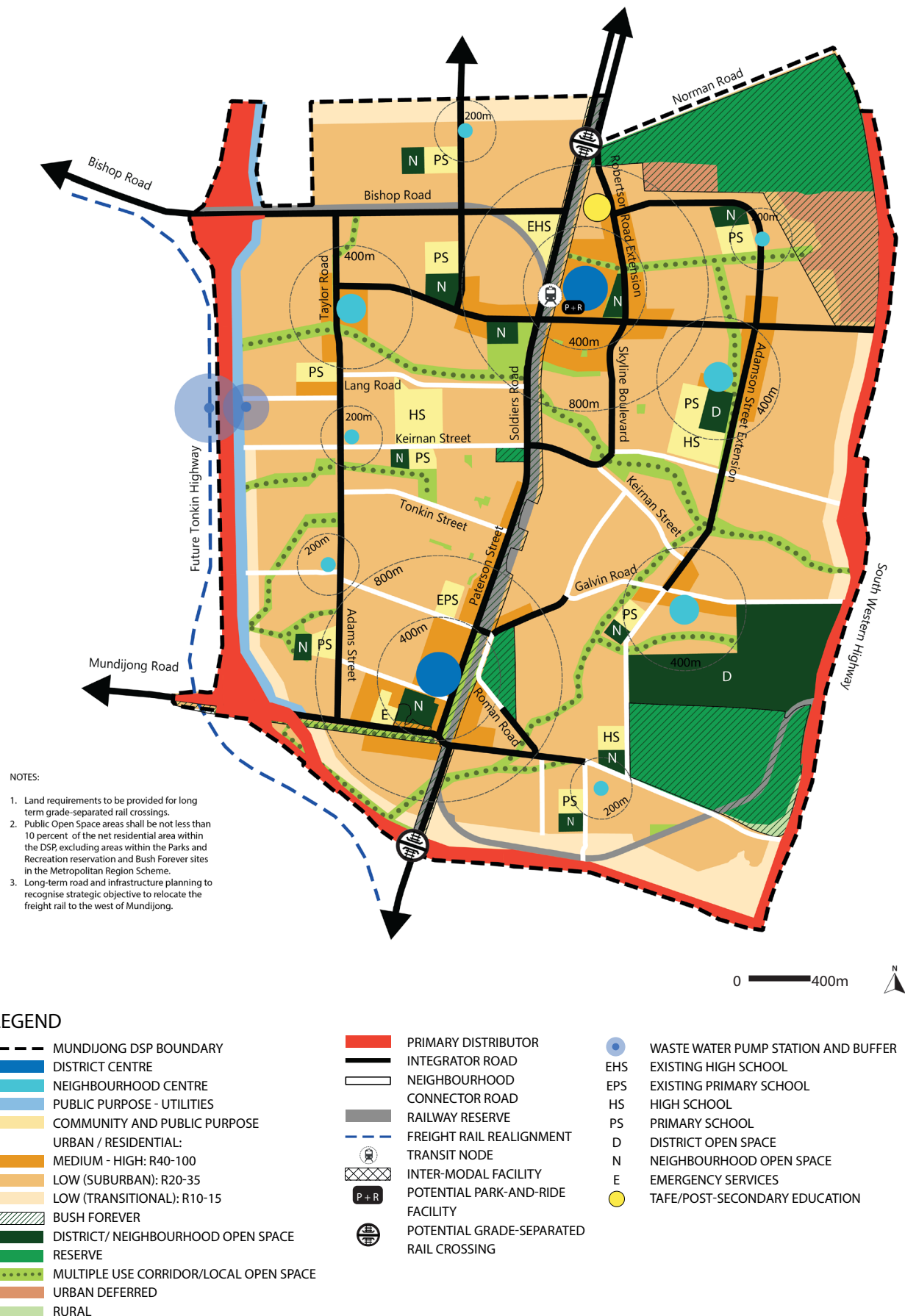
This will be achieved through the following key changes (from the 2011 Mundijong-Whitby District Structure Plan):

1. Consolidating previous plans for the area and improving the response to the State planning frameworks (most notably the South Metropolitan sub-regional framework), new State planning policies and local planning frameworks;
2. Providing more emphasis on the redevelopment around the Mundijong town centre for the civic function and expressly encouraging the establishment of two larger activity centres, one in Mundijong (civic/governance) and one in Whitby (retail);
3. Leverage off the Tonkin Highway extension by establishing an employment hub in the West Mundijong Industrial area;
4. Improved local distributor road network including realignment of future roads to improve connectivity to and within the Mundijong District Structure Plan area;
5. Identification of a transit node at the proposed Whitby activity centre for further investigation;
6. Incorporating the up-to-date configuration for the proposed freight rail realignment and Tonkin Highway/Mundijong Road intersection;
7. Residential density ranges included on the structure plan map;
8. Inclusion of two Urban Expansion areas identified in the South Metropolitan Peel Sub-regional Planning Framework;
9. Increased provision for education facilities;
10. Collocation of education and recreation facilities to make more efficient use of land and improve social cohesion in line with the Shire's approved community infrastructure strategies and plans;
11. Identification of locations for district and neighbourhood level public open space;
12. Relocation of the existing wastewater pump station (further south) and establishment of a new one between the West Mundijong industrial area and the Mundijong residential area close to Tonkin Highway;
13. More accurate delineation of multiple use corridors;
14. Relocation of the proposed neighbourhood centres and the provision of additional neighbourhood centres within the Mundijong District Structure Plan area, in response to the updated Activity Centre Background Paper.
15. Relocation of the possible future TAFE/Post-secondary Education site.

The following section provides additional detail and justification for the changes proposed above.



Figure 21: Mundijong District Structure Plan



## 4.2 Land Use and Activity

It is critical that planning for the predicted population growth of the Mundijong District Structure Plan area promotes urban consolidation by focussing development around the existing and future activity centre, providing efficient use of existing transport networks, service infrastructure, employment and key community/social infrastructure facilities. The Mundijong District Structure Plan seeks to optimise the use of land in close proximity to key public transport infrastructure to establish new nodes of activities, underpinned by high-quality built form and public spaces linked within a green network.

### 4.2.1 POPULATION AND DENSITY

SJ2050 and the Shire's Local Planning Strategy identify that the Mundijong District Structure Plan area will need to accommodate a population of approximately 58,000 people by 2050 to meet the Shire's long term growth targets. The Mundijong District Structure Plan boundary delineates a defined urban growth boundary (Figure 22) which seeks to limit expansion, enabling the preservation of the existing rural-residential character in the Mundijong District Structure Plan fringe.

The Mundijong District Structure Plan area is planned to accommodate an estimated population of 58,000 people. Approximately 20,367 dwellings would be required to achieve a population of 58,000. In calculating the estimated population the following methodology was applied to calculate the estimated dwelling/lot targets for each precinct:

1. A review of the estimated dwelling yields for areas covered by an approved LSP (Precinct A, part Precinct E).
2. The square metre (m<sup>2</sup>) estimates for broad hectare areas not yet subject to LSPs have been determined through identifying their total land area, deducting 40 percent of this land area (accounting for land required for public purposes such as roads, public open space and drainage) and multiplying by R25 to derive the potential lot yield.
3. The lot estimates for infill sites (Precincts B, D and F) not yet subject to LSPs were determined through manual calculations of the development potential of each landholding based on an R25 residential density of 350m<sup>2</sup>.
4. By adding the lot yields calculated in steps 1-3, the total estimated lot yield for the Mundijong District Structure Plan area was determined.

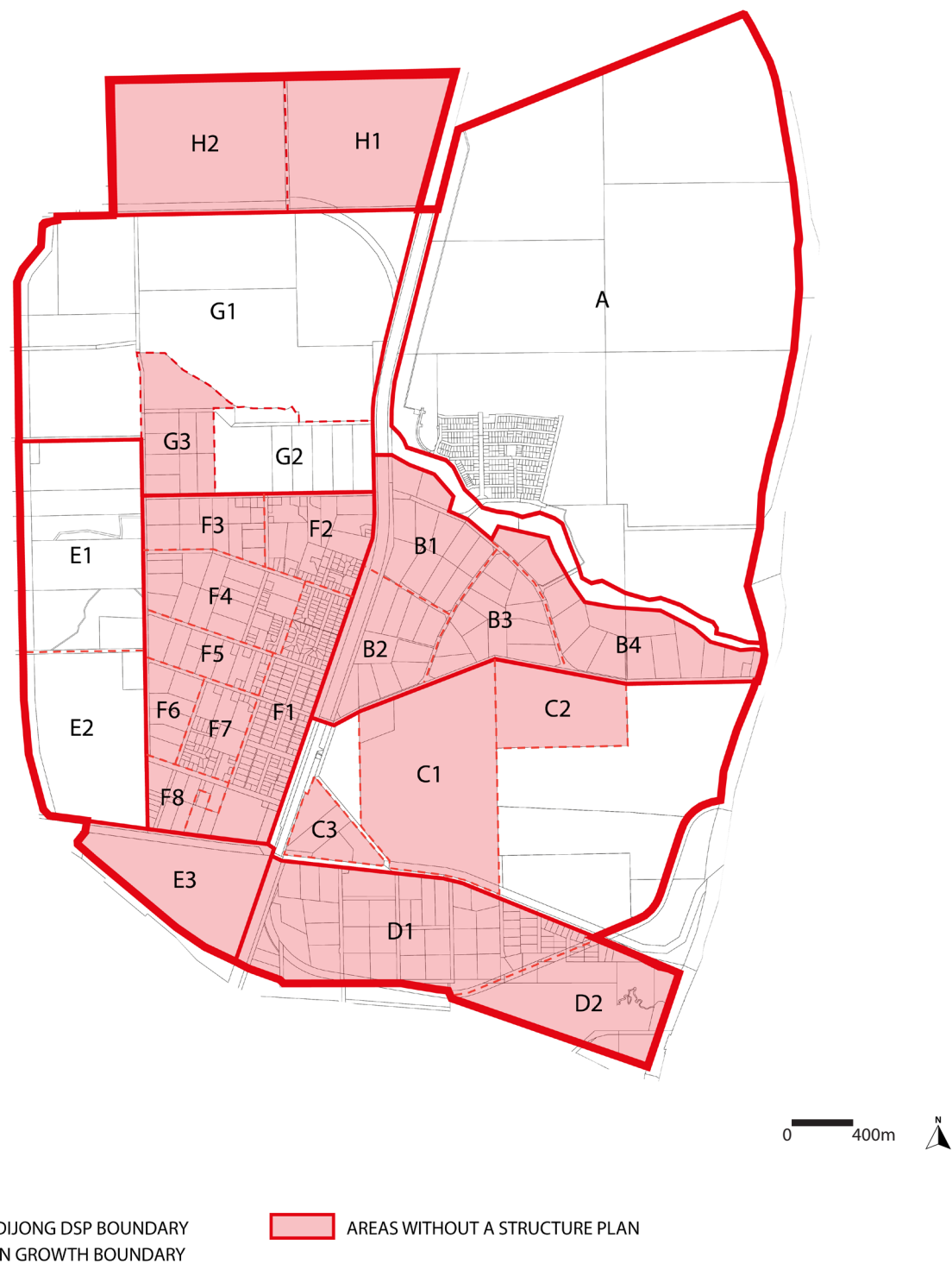
Table 6: Approximate Population and Dwelling Targets

STRUCTURE PLAN PRECINCT	ESTIMATED DWELLINGS	ESTIMATED POPULATION
A - Whitby	3,750	10,725
B - Keirnan Street	1,695	4,848
C - Watkins Road North	3,172	9,072
D - Watkins Road South	1,689	4,830
E - Mundijong West	1,835	5,248
F - Mundijong Town Centre	2,831	8,097
G - Mundijong North	3,175	9,081
H - Cardup South	2,220	6,349
<b>TOTAL</b>	<b>20,367</b>	<b>58,250</b>

Notes: Methodology applied a conservative estimate of R25. It is expected that more detailed estimates will be provided in the LSP stage which include a distribution of densities.

Table 6 identifies that the Mundijong District Structure Plan area has the capacity to accommodate approximately 58,000 residents. It is important that precincts without existing LSPs endeavour to meet the targets identified in Table 6 to align not only with State planning expectations for infrastructure provision but also with the Mundijong Development Contribution Plan. The Mundijong District Structure Plan shall achieve an overall density outcome consistent with the target of 15 dwellings per gross hectare of Urban zoned land.

Figure 22: Urban Growth Capacity





## 4.2.2 LAND USE

The Mundijong District Structure Plan identifies the broad land use zones to guide future development in the surrounding area. The proposed intent of the various zones/land uses is described below.

### ACTIVITY CENTRES

Mundijong's population is expected to grow to 58,000 by 2050, and Mundijong's population as a proportion of the Shire's population is forecasted to increase from 8% to 52% at full buildout. This shows the growing importance of Mundijong as a growth hub within the Shire, and the increasing demand for activity centres in Mundijong. This population growth will require the delivery of population-oriented goods and services, and employment opportunities. The activity centres are expected to be the primary locations for activity and medium-high density housing. The inclusion of the two Urban Expansion Areas is also a significant contributor to population growth within the DSP area, and activity centres have been identified within these new precincts, to service these areas.

The Activity Centre Background Paper recommends an activity centre hierarchy, identifying the location of ten future centres, their Net Lettable Area (retail and commercial), key elements, and land requirements. This hierarchy has been determined based on a needs assessment, incorporating population growth, floorspace gaps, gravity and viability modelling. This assessment considered the predicted population growth within each precinct, as well as the expected timeline for development, identifying priority areas, areas with strong growth, and areas with a progressed planning framework.

#### District Centre

The Mundijong District Structure Plan identifies two district centres, the Whitby District Centre and the Mundijong Town Centre. These district centres are expected to accommodate a finer grain urban form with a focus on medium-high density housing. These centres are expected to provide much of the retail and commercial development within the DSP area, however, the two centres will provide different roles.

The Whitby District Centre will be the primary location for retail activity, commercial, employment, and medium-high density housing. The Whitby District Centre is to be located within the northern portion of the DSP area, east of Soldiers Road. It will be the primary retail hub and act as a catalyst for a mix of uses and housing choice servicing an extensive catchment. The Whitby area is experiencing rapid growth, which will continue within the next decade, supporting a district centre next to the future train station and major transport route of Soldiers Road. An 800m catchment is identified for this district centre, however, it is expected that residents throughout the DSP area will travel to this centre for its goods and services. The district centre is intended to accommodate supermarkets, discount department stores, and speciality stores, providing strong retail and employment opportunities.

The Mundijong Town Centre has been classified as a district centre due to the range of uses provided and significant role the centre plays in the context of the Shire. The Mundijong Town Centre will accommodate strong retail and commercial uses, such as supermarkets and discount department stores. However, the town centre will continue to perform its role as the Shire's 'Civic and Governance Precinct', centred around the existing urban core on Paterson Street. This activity centre is expected to develop along this main street, accommodating the heritage and civic character of the area. The Mundijong Town Centre is expected to service much of the DSP area west of Soldiers Road, with an 800m catchment containing medium-high density housing. In the long-term the Mundijong District Centre may have capacity to expand its retail function further and become a TOD, however, this is dependent on the outcomes of METRONET.

An activity centre plan is required to be prepared in accordance with SPP4.2 for these two district centres, addressing matters such as use mix, cohesion, movement and access and urban form, and heritage. SPP4.2 recommends over 25 dwellings per hectare within a 400m catchment of a district centre, and over 35 dwellings per hectare within an 800m catchment where there is an existing or proposed train station

#### Neighbourhood Centre

Eight neighbourhood centres are identified within the Mundijong District Structure Plan. The role of these centres is to provide smaller scale goods and services to their immediate surroundings, accommodating for resident's daily shopping needs on a neighbourhood scale. These centres should create neighbourhoods within the DSP precincts,

fostering a sense of community and reducing isolation from retail, commercial and employment opportunities.

These eight neighbourhood centres have been classified as 'Neighbourhood Centre – Small' and 'Neighbourhood Centre – Large'. Small neighbourhood centres are expected to service a 200m walkability catchment, and align with the classification of 'Local Centre' under SPP4.2. Large neighbourhood centres are intended to service a 400m walkability catchment. These centres are located throughout the DSP area to appropriately service the LSP precincts, accommodating for the predicted residential development of these areas. The size and location of the centres are distributed to achieve a high level of walkability with SPP4.2 catchments as a guide. SPP4.2 recommends 25 dwellings per hectare within a 200m catchment of a Neighbourhood Centre.

#### Precinct Structure Plan Considerations for Activity Centres

Precinct Structure Plans should be prepared in accordance with the objectives of State Planning Policy 4.2, to provide further guidance on key elements of activity centres required for the community. These include, but are not limited to, land use mix, cohesion, movement and access, urban form, and 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 predominately 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, particular 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 are 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, and that new developments complement historic and place significant heritage developments that provide key character to the area
- + Identifying and preserving heritage sites in according with the Shire's Local Heritage Survey 2022-2027

Local Structure Plans should also account for additional principles of economic activation. Site suitability is a key aspect for the development of activity centres. Anchor developments with core tenants create opportunities for independent and boutique shops to operate and remain viable. When assessing new sites for consideration, both economic and planning considerations should be understood. Key economic and planning considerations for the

suitability of sites include:

#### 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

It is particularly important that the preparation of a Local Structure Plan over the Mundijong townsite considers the existing heritage values. This site has heritage character which should be maintained, while still allowing for the retail and commercial development needed to support the growing population. The LSP should ensure that the development of the townsite is reflected in the scale of development, particularly along Paterson Street where several places of historic and heritage significance provide key character to the area.

#### URBAN SETTLEMENT

As discussed in Section 3.2.1 the Mundijong District Structure Plan is expected to accommodate a population of up to 58,000 people. The Mundijong District Structure Plan map identifies an urban growth boundary which determines where residential development will be permitted. The purpose of the growth boundary is to ensure further encroachment into existing rural residential and rural land is prohibited to ensure that the existing rural character is preserved. However, the potential for realisation of higher densities should be explored in urban areas to ensure that a range of housing types from single bedroom to family households are provided. The adaptability of housing to accommodate ageing-in-place and universal access will also need to be addressed. Aged and dependent housing and 'lifestyle villages' may also have a place to cater for a wide variety of lifestyle preferences and price points.

Residential development in the Mundijong District Structure Plan area can be broadly classified into the following categories (similar to the residential component of the previous Mundijong-Whitby District Structure Plan):

##### Medium/High Density (Urban)

Medium/high densities will be based on density codes which range from R40-R100. Housing typologies in these areas should include dwelling types such as terraces (grouped dwellings) and apartments (multiple dwellings) provided in close proximity to amenity and public transport. This will provide residents with additional housing choice and diversity, promoting opportunities for ageing in place.

Medium/high density development will be limited to specific areas including in close proximity to activity centres and along district distributor roads and key public transport routes that lead to the district centres in Mundijong and Whitby. The final density range and distribution shall be determined through preparation of Local and Precinct Structure Plans. Residential densities should be guided by the requirements of SPP 4.2 Activity Centres.



### Low Density (Suburban)

Low density suburban development will be the most common type of development within the Mundijong District Structure Plan. Density will range from R20-R35 and single detached housing is likely to be the most common type of dwelling in the suburban setting.

LSPs should ensure equitable access to public open space, linear parks, community facilities, local centres and public transport routes. Residential development based upon the upper end of the density range should be provided around the proposed neighbourhood centres. The final density range and distribution shall be determined as part of Local Structure Planning.

### Low Density (Transitional)

Lower densities of R10-R15 may be considered in locations affected by transportation noise in the vicinity of primary regional roads such as South Western Highway and the Tonkin Highway extension. This is to ensure the aims of State Planning Policy 5.4 Road and Rail Noise can be achieved. Lower densities are also identified to provide a sensitive transition in residential density at the northern boundary of Lot 30 Soldiers Road, Cardup and at the northern and western boundaries of 103 Bishop Road, Cardup. This is to allow for a transition to the adjoining rural residential areas, subject to the provision of 15 dwellings per hectare across these two lots.

### Residential Density Targets

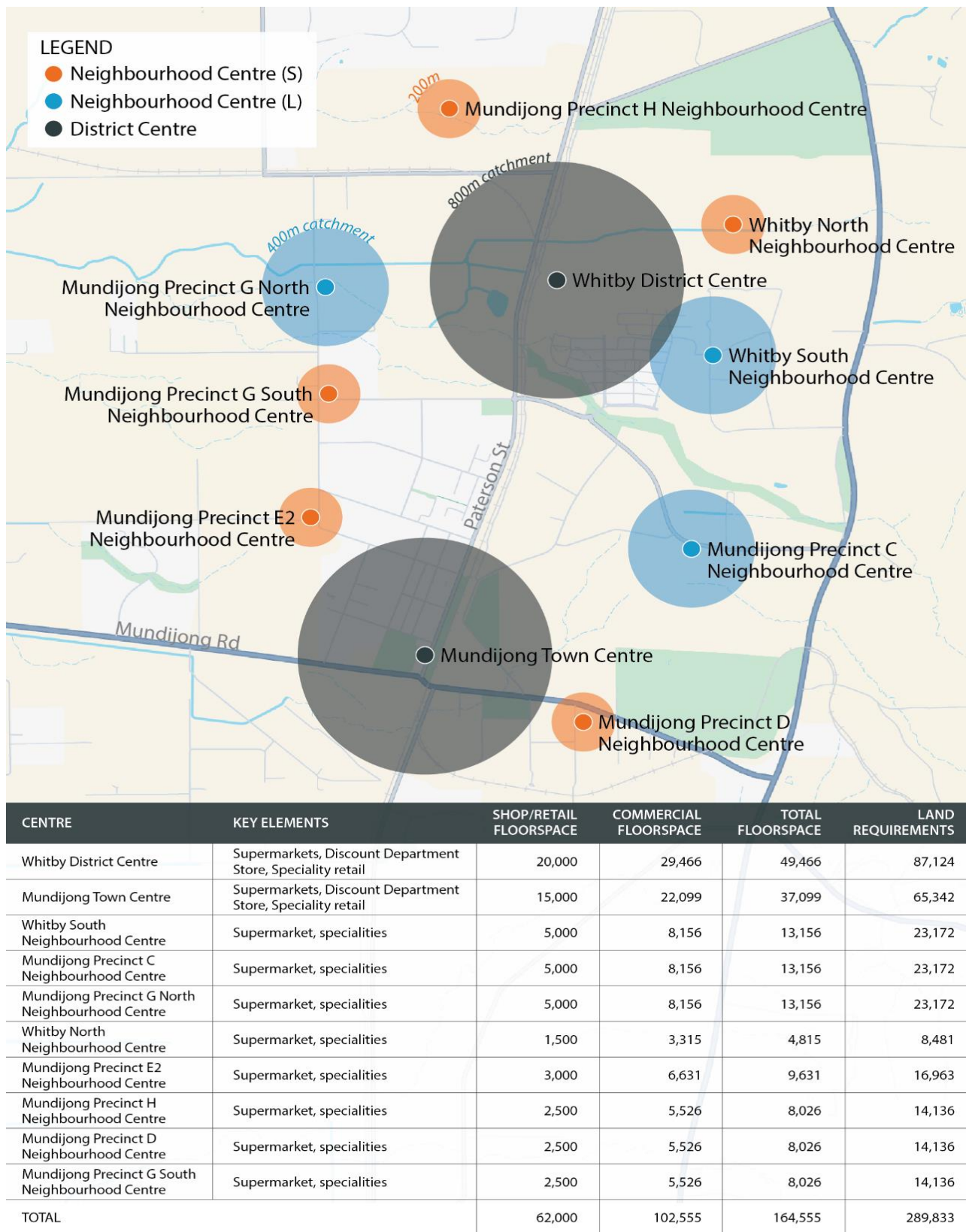
The Mundijong District Structure Plan shall achieve an overall density outcome consistent with the target of 15 dwellings per gross hectare of Urban zoned land. The total DSP area, excluding large existing Parks and Recreation reserves, was used to estimate the residential density of the DSP. To estimate the number of dwellings within the urban zoned land, a 40% deduction has been applied to account for a 20% allowance for roads; 15% allowance for POS, watercourses and remnant vegetation linkages; and 5% for other public uses.

The average residential densities for each density category was assumed as follows and the average number of dwellings per hectare accounts for the abovementioned 40% deduction.

- + Medium-High R40-100 (Urban) - R40 average has been assumed - 25 dwellings per hectare.
- + Low R20-35 (Suburban)- R25 average has been assumed - 15 dwellings per hectare.
- + Low R10-15 (Transitional) - R10 average has been assumed - 6 dwellings per hectare.

This methodology has applied a conservative approach which has demonstrated that the target of 15 dwellings per gross hectare of Urban zoned land can be achieved.

Figure 23: Activity Centre Hierarchy



Source: Pracsys 2024

## 4.3 Economy and Employment

### 4.3.1 ECONOMY

#### ACTIVITY CENTRES

As discussed in Section 3.2.2, the Mundijong District Structure Plan identifies a hierarchy of activity centres which will provide strategic locations for employment growth. The size and location of these activity centres have been determined through the Activity Centre Background Paper, for the equitable distribution of services for the growing population and to ensure economic growth.

Retail demand is expected to be a major driver of economic growth. Based on population projections, the Activity Centre's Strategy identifies that the Mundijong District Structure Plan is strategically placed to accommodate the most retail growth within the Shire because it is centrally located within the Shire, servicing a broader area than Byford. In addition, it is further away from major competitive centres to the north of the Shire's boundary (e.g. Armadale) meaning Mundijong has greater capacity to grow compared to Byford.

The Shire's activity centre strategy states that approximately 20-25% of the Mundijong District Structure Plans jobs should be located within the defined activity centres. It is expected that this growth would accommodate industries such as retail, professional services, and financial services, however, it should also provide opportunities for start-ups and small businesses to cluster and grow.

It is expected that the ten future activity centres will deliver a total of 3,600 new local jobs, with 62,000m<sup>2</sup> of total retail floorspace, and 102,555m<sup>2</sup> of total commercial floorspace. The Whitby District Centre is expected to accommodate the highest amount of floorspace, with 20,000m<sup>2</sup> for retail and 29,466m<sup>2</sup> for commercial. The Mundijong Town Centre is expected to accommodate 15,000m<sup>2</sup> of retail floorspace, and 22,099m<sup>2</sup> of commercial floorspace. These district centres are intended to provide large supermarkets, discount department stores, and retail, therefore providing much of the activity centre based employment within the DSP area.

The neighbourhood centres will provide a smaller retail and commercial floorspace, catering for the daily shopping needs for residents living within these LSP precincts. These centres will generate local employment opportunities.

A breakdown of the characteristics of each centre, including key elements, land requirements, and Net Lettable Area, is shown below:

Table 7: Activity Centre Characteristics

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



Table 8: Activity Centre Floorspace Projections

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

Table 9: Activity Centre Floorspace Projections

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

## WEST MUNDIJONG INDUSTRIAL AREA

Approximately 880 industrial lots are proposed in the Mundijong Industrial Area providing a significant opportunity to act as a catalyst for change generating a significant amount of jobs and sustained economic growth in close proximity to the Mundijong District Structure Plan area. The current West Mundijong Structure Plan provides for a general industrial core (279 ha) and supporting light industrial areas (135 ha) for precincts to the east and south. The light industrial areas also provide separation from the core area to adjoining residential areas to the east and south. Based upon previous work it is likely that the core may support the following forms of industry, subject to approvals:

- + Agribusiness, including abattoirs, food processing, canneries & breweries;
- + General industry, including manufacture / prefabrication of building products and materials;
- + Storage, warehousing, freight and logistics;
- + Heavy machinery servicing and sales; and
- + Transport and fuel depot.

To deliver the above, significant investment into transport infrastructure is required - namely the Tonkin Highway extension and freight rail realignment. These transport connections improve the viability of the industries mentioned above and would enable the establishment of a possible intermodal hub. Whilst the Shire is committed to industrial development at West Mundijong irrespective of a possible intermodal facility, the following benefits are acknowledged:

- + 45% cost savings on industrial land over other parts of Perth, greatly reducing investment costs;
- + Strong transport links via rail and road (offering access to major domestic and international markets with just one traffic light routing by the Tonkin Highway);
- + Available industrial land (and surrounding land for associated industrial uses);
- + Rapidly growing population that would double over the next decade and quadruple by 2050;
- + Labour pool of 270,000 potential workers (within a 30 minute drive); and
- + Strong inter-regional road linkages (north-south and east-west).

## EDUCATION AND HEALTH

As the local population continues to grow and evolve, providing access to a range of education and health related facilities locally in the Mundijong District Structure Plan area will become more important.

The Mundijong District Structure Plan proposes a number of new education facilities at all levels including primary, secondary, tertiary (both vocational and university). The establishment of a university campus in the eastern portion of the Mundijong District Structure Plan provides an opportunity to significantly boost the local economy through tangible (immediate jobs growth) and intangible (research and development into emerging industries generating future jobs growth). In addition, an ageing population will require investment into a range of aged care and retirement living villages to cater for people in all stages of life.

## AGRICULTURE

Whilst opportunities for employment in traditional agriculture are limited within the Mundijong District Structure Plan area, there are opportunities to leverage off existing agricultural cluster and supply chains. Some of these competitive advantages include:

- + Over 15,000 ha of existing agricultural growing areas in the Shire;
- + Strong transport links via rail and road (offering access to major domestic and international markets with just one traffic light routing by the Tonkin Highway);
- + Availability of water (annual average rainfall of 1 metre);
- + Availability of good soils for growing; and

+ Available land in West Mundijong.

## TOURISM

Tourism is an important component of the Shire's economy. It is an emerging industry and has the potential to create employment opportunities and supports additional recreation options for residents. Almost 200,000 people visit the Shire on an annual basis to enjoy its numerous natural attractions. The Shire also has access to a potential visitor market of 1.9 million people from the surrounding Perth Metropolitan region, which will continue to grow into the future.

The Mundijong District Structure Plan encourages the provision of amenities and facilities including accommodation, dining/entertainment facilities as well as recreation infrastructure, which are vital to supporting the visitor economy from "Sea to Tree". As high-amenity centres, the Whitby and Mundijong District Centres have the capability to be suitable locations for short-stay accommodation and entertainment for visitors.

### 4.3.2 EMPLOYMENT

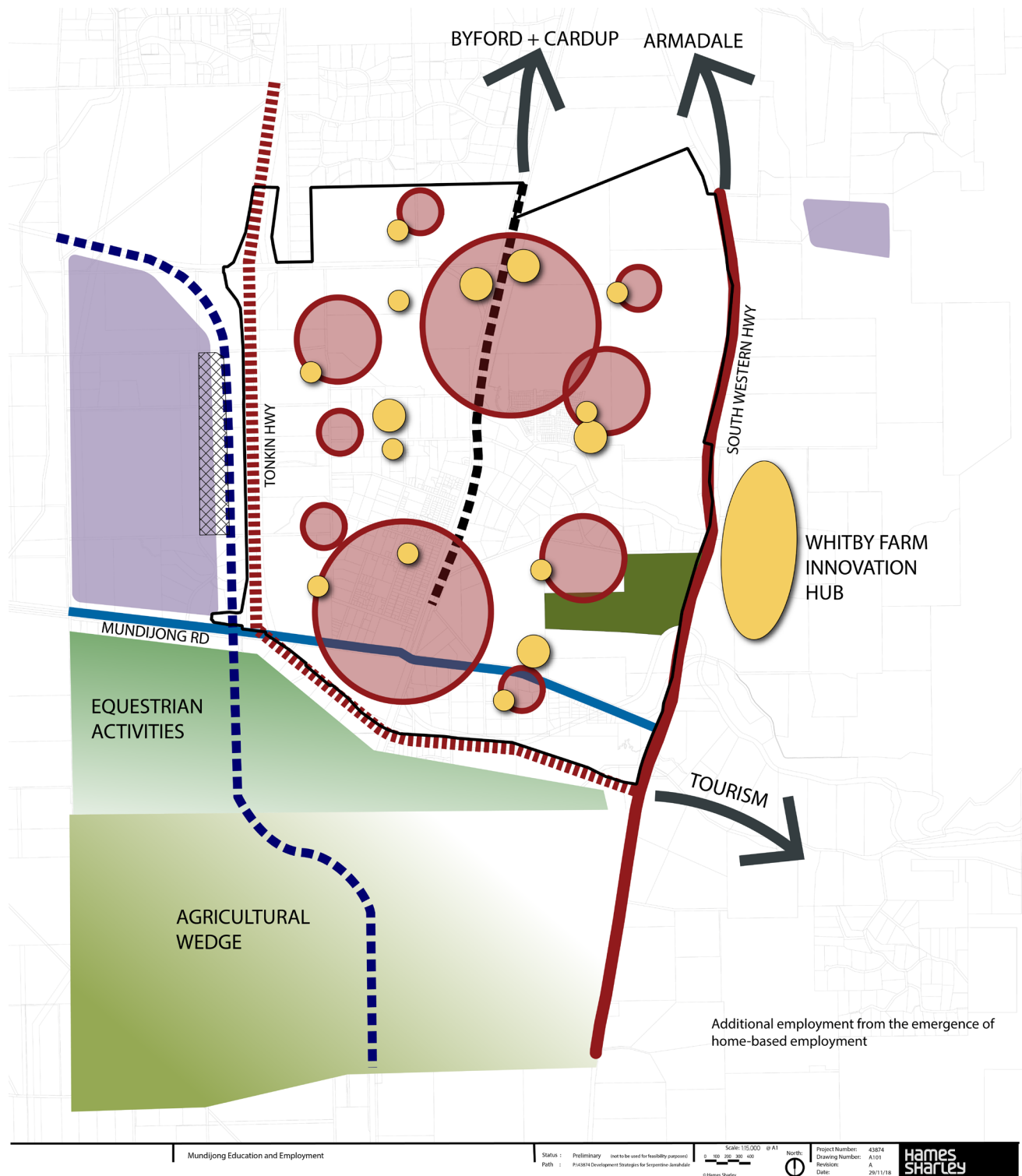
Currently, the estimated resident labour force in the Mundijong District Structure Plan area is 16,714 people. With a proposed population of up to 58,000 people, the resident labour force is expected to grow exponentially, increasing pressure on the need to provide a significant number of new jobs.

The Sub-regional framework identifies an employment self sufficiency (ESS) target of 61% for the eastern sector of the South Metropolitan Peel Sub-Region, and 79% for the Peel region. Based on population projections, an additional 27,400 more local jobs are required to meet a 79% ESS target.

It is expected that the activity centres will deliver approximately 3,600 new local jobs, through retail and commercial activity. As such, additional employment opportunities are required outside of the activity centres. Additional employment is expected to be achieved through homebased employment (11,700 jobs), identified future schools (1,580 jobs), identified future recreation facilities such as the district open space (510 jobs), and other export-oriented industries (9,800 jobs). The development of the West Mundijong Industrial Area is also expected to contribute to employment opportunities for residents within the DSP area. As it is acknowledged that not all jobs can be provided in the local area, there is also a focus to strengthen transport links particularly those running east-west. This would enable residents in the Mundijong District Structure Plan area to access major employment areas such as Armadale, Rockingham, and Kwinana.



Figure 24: Proposed Employment Generators



## LEGEND

- |  |                         |  |                                    |
|--|-------------------------|--|------------------------------------|
|  | INDUSTRIAL              |  | ACTIVITY CENTRES                   |
|  | AGRICULTURAL WEDGE      |  | EDUCATION                          |
|  | EQUESTRIAN ACTIVITIES   |  | POSSIBLE INTERMODAL FACILITY       |
|  | TONKIN HWY              |  | MAJOR DISTRICT RECREATION FACILITY |
|  | SOUTH WESTERN HWY       |  |                                    |
|  | SECONDARY REGIONAL ROAD |  |                                    |
|  | PASSENGER RAIL LINE     |  |                                    |
|  | FREIGHT RAIL LINE       |  |                                    |

## 4.4 Movement and Access

The Mundijong District Structure Plan seeks to facilitate an accessible, connected and safe movement network for all modes to service a full range of housing, employment, retail, recreational and community service opportunities. Transport and land use integration will ensure that increased density and activity is focused around an improved public transport network and that connectivity to strategic locations is enhanced. The future intent of the movement network in the Mundijong District Structure Plan area is described below.

To accommodate the anticipated population growth for the Mundijong area and to ensure efficiency of the movement system is not compromised, the Mundijong District Structure Plan recognises the need to integrate urban development and employment nodes with transport infrastructure and services. A challenge for the Mundijong District Structure Plan area is to ensure key roads are appropriately managed and upgraded over time to facilitate future transport efficiency. An effective and adaptable public transport network will be a key mechanism for achieving greater sustainability. This will be achieved through an integrated network of passenger rail lines and transit corridors.

### 4.4.1 PUBLIC TRANSPORT

A key component of providing effective transport connections involves improvements to the provision and frequency of public transport in the Mundijong District Structure Plan area. Improving east-west and north-south public transport connections in the Mundijong District Structure Plan area would significantly improve the public transport network enabling larger portions of the population, including those who do not drive, to access convenient travel options with reduced travel times and less traffic congestion and greenhouse gas emissions.

#### Rail

The Metronet Byford Station will be completed in the next couple of years as detailed planning is being finalised. As part of this process, the Mundijong District Structure Plan proposes the following:

- + Future-proofing the Mundijong-Whitby area by ensuring the capability to accommodate potential long term passenger rail extension from Byford to Whitby activity centre linking with efficient bus transport systems throughout the DSP area.
- + The Mundijong Road-Watkins Street crossing will remain at level crossing in its present location.
- + All existing at grade road crossing points are retained with a rail over road arrangement over Norman Road (option 2a)
- + Level crossings are expected at Keirnan Street, Paterson Street East to Galvin Road, and at the proposed East-West road (serving the proposed Whitby activity centre) and Evelyn-Richardson Street crossings, respectively; and
- + A long term grade-separated crossing is proposed to form part of the East- West road link serving the northern sector of the DSP area when funding considerations allow. This will provide the capability to adapt to the potential extension of passenger rail to Whitby, subject to future funding and other considerations making this possible.

#### Bus

While the passenger rail service to Mundijong is highly desirable it is a long-term proposition. In the short-medium term, High Frequency Transit Corridors will be required. Subject to the outcome of an associated business case, this may be a suitable staging option. High Frequency Transit Corridors will provide public transport connections between the Byford and Mundijong activity centres, population catchments, rail stations and local bus services. These connections will significantly improve the public transport network. The High Frequency Transit Corridors could be established along existing rail corridors; however, they are subject to further investigation with the Department of Transport in order to establish travel patterns. Consideration also needs to be given to the implications of future technological changes in transport including electric and autonomous vehicles, on- demand public transport, car sharing and other changes which could affect the demand for and/or the design of transport infrastructure. Whilst many changes cannot be foreseen, it is extremely important for strategic transport corridors (which are flexible and adaptable) to be established.



Figure 25: Proposed Movement Network - Public and Active Transport

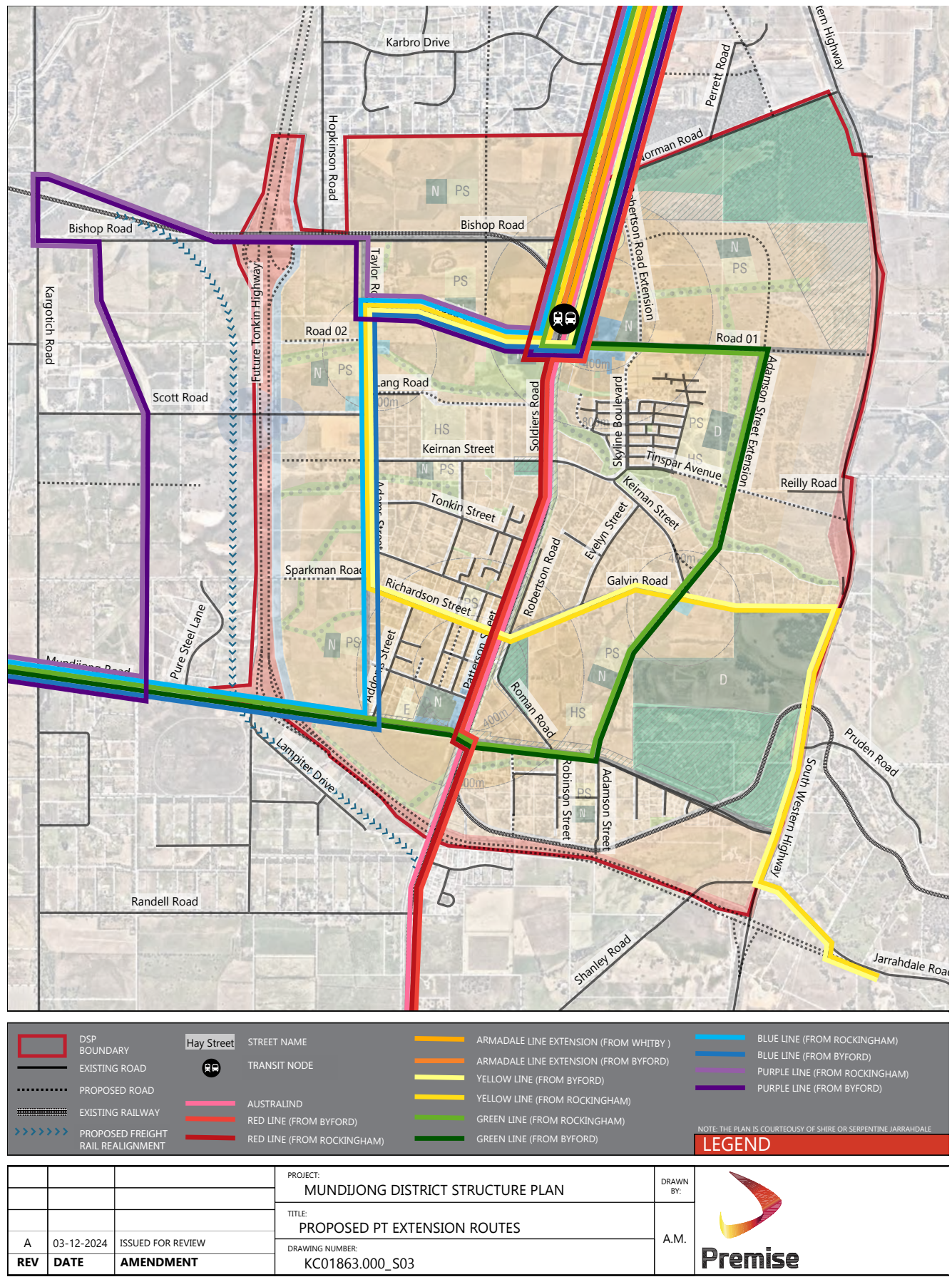
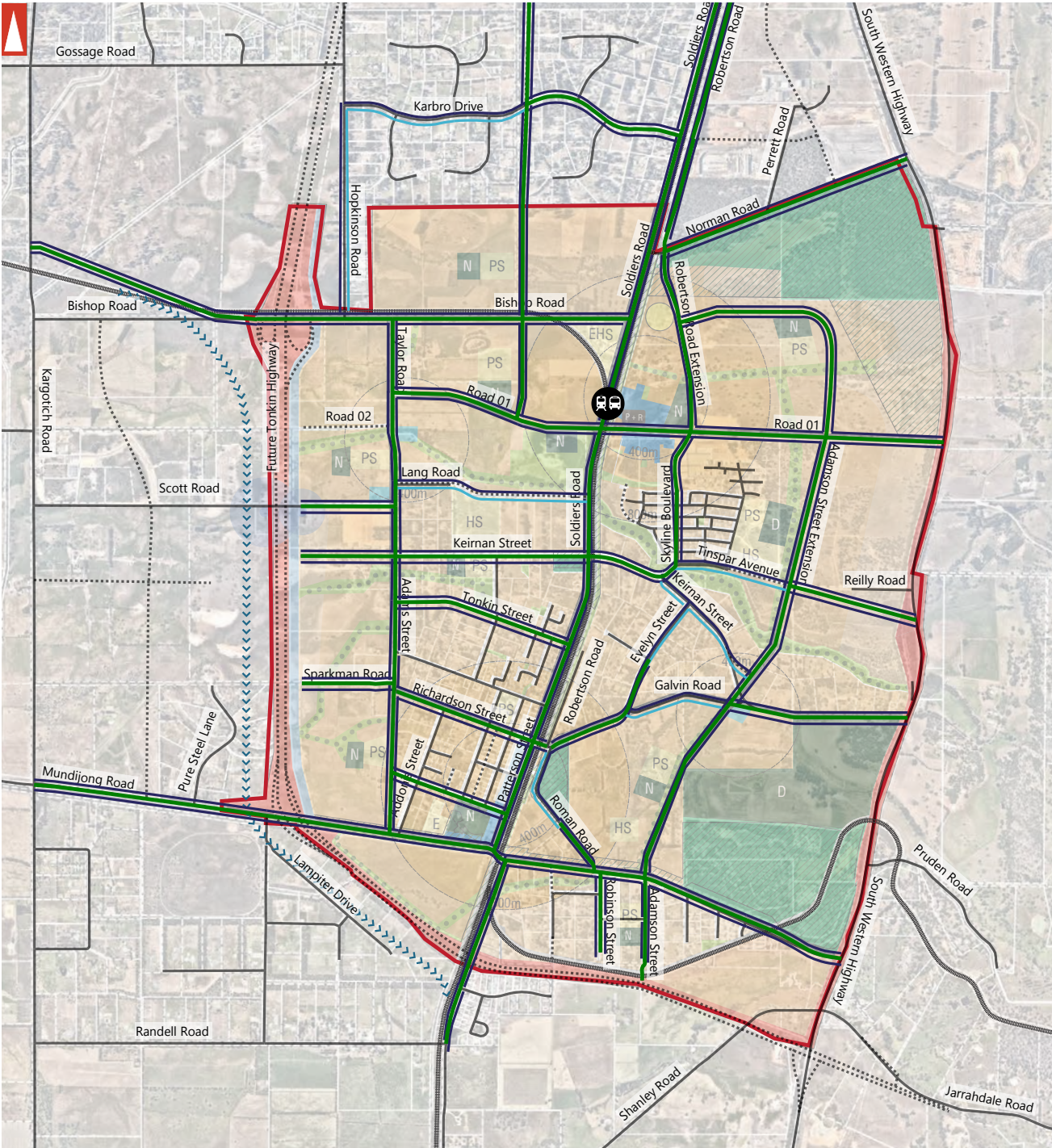




Figure 26: Proposed Movement Network - Principal Shared Paths



DSP BOUNDARY

EXISTING ROAD

PROPOSED ROAD

EXISTING RAILWAY

PROPOSED FREIGHT RAIL REALIGNMENT

Hay Street

STREET NAME

TRANSIT NODE

PEDESTRIAN PATH

ON STREET CYCLE LANES

SHARED PATH

NOTE: THE PLAN IS COURTESY OF SHIRE OF SERPENTINE JARRAHDALE

LEGEND

			PROJECT: MUNDIJONG DISTRICT STRUCTURE PLAN	DRAWN BY:	<div><div></div><div>A.M.</div><div>Premise</div></div>
			TITLE: PROPOSED PEDESTRIAN AND CYCLIST PATHS		
A	03-12-2024	ISSUED FOR REVIEW	DRAWING NUMBER: KC01863.000_S02		
REV	DATE	AMENDMENT			

## 4.4.2 ACTIVE TRANSPORT

Active modes of transport such as walking and cycling are supported for short distance journeys within urban areas in the Mundijong District Structure Plan. LSP's should support Healthy Active By Design Principles by ensuring that all urban areas provide safe, accessible and interconnected pedestrian and cycle links between residential areas and destinations such as activity centres, schools, public transport stops and parks. This will be essential in encouraging greater pedestrian and cycling activity in the Mundijong District Structure Plan area. Such modes of transport have many benefits including improved physical and mental health, activated streetscapes with a higher level of passive surveillance, reduced dependency on the automobile leading to less traffic congestion and greenhouse gas emissions and increased engagement within communities. Facilitating active modes of transport is also important for recreational purposes offering opportunities for jogging, dog walking, horse riding, bushwalking and off-road cycling.

Future detailed planning of the local road network will need to be designed to cater for local trips to support and encourage the use of local businesses and community services. The local road network will need to be easy to use and with direct, safe and well-lit routes to local bus stops and centres. Walking and cycling should be the primary choice for most activities.

## 4.4.3 ROAD NETWORK

The Mundijong District Structure Plan seeks to align with the South Metropolitan Peel Sub-regional Framework that identifies a number of upgrades to the future regional road network including new and upgraded primary distributor and integrator arterial roads (Figure 27). This includes the extension of Tonkin Highway (north-south) and upgrade of Mundijong Road (east-west) which provide vital linkages between the future Kwinana Outer Harbour and freight logistics centres in the region, inclusive of the Mundijong Industrial Precinct.

Good access to and from key distributor roads is an important focus of the Mundijong District Structure Plan and a major consideration for people moving to and within the Mundijong District Structure Plan. New or improved connections to South Western Highway, Tonkin Highway, and Mundijong Road are essential as seen in figure 27. The below table shows the proposed road classifications for the key links with the Mundijong DSP area. These road reservations are intended to accommodate the configuration required by Liveable Neighbourhoods 2009 by 2051 as set out within the Traffic Impact Assessment (Appendix 1).

Table 10: Proposed Road Classifications

Road Name	Road Classification	Note
Betts Road (N-S connection) - south of Karbro Dr	Integrator B	Does not exist
Betts Road (N-S connection) - north of Karbro Dr	Integrator A	Does not exist
Bishop Rd – west of Taylor Rd	Integrator B	~20m existing road reservation
Bishop Rd – Taylor Rd – Access Rd	Integrator B	~20m existing road reservation
Bishop Rd – Access Rd – Soldiers Rd	Integrator B	~20m existing road reservation
New E-W Connection – Taylor Rd – Betts Rd	Integrator B	Does not exist
New E-W Connection – Betts Rd – Soldiers Rd	Integrator A	Does not exist
New E-W Connection – Soldiers Rd – Skyline Blvd	Integrator A	Does not exist
New E-W Connection – Skyline Blvd - SWH	Integrator B	Does not exist
Taylor Rd – Bishop Rd – E-W	Integrator A	~20m existing road reservation
Taylor Rd – E-W connector – Keirnan St	Integrator B	~20m existing road reservation

Adams St - Keirnan St – Cockram St	Neighbourhood Connector A	~20m existing road reservation
Adams St – Cockram St – Mundijong Rd	Integrator B	Does not exist
Soldiers Rd – north of Karbro Dr	Neighbourhood Connector A	~20m existing road reservation
Soldiers Rd – Karbro Dr – Bishop Rd	Integrator B	~20m existing road reservation
Soldiers Rd – Bishop Rd – E-W connector	Neighbourhood Connector A	~20m existing road reservation
Soldiers Rd – E-W- Connect – Keirnan St	Integrator B	~20m existing road reservation
Paterson St –Keirnan St – Richardson St	Integrator B	~ 22m-40m existing road reservation
Paterson St – Richardson St – Whitby St	Neighbourhood Connector A	~ 30m-40m existing road reservation
Paterson St – Whitby St – Mundijong Rd	Integrator B	~ 30m-40m existing road reservation
Mundijong Rd -Watkins Rd west of Roman Rd	Integrator A	~ 20m-30m existing road reservation
Watkins Rd – Roman Rd-Cowen St	Integrator B	~20m existing road reservation
Watkins Rd – Cowen St - SWH	Neighbourhood Connector A	~20m existing road reservation
Wright Rd – south of Watkins Rd	Integrator B	~20m existing road reservation
Keirnan St – Taylor Rd – Soldiers Rd	Neighbourhood Connector A	~20m existing road reservation
Keirnan St – Soldiers Rd – Tinspar Ave	Integrator B	~24m existing road reservation
Keirnan St – Tinspar Ave – N-S Connector (east section)	Integrator B	~24m existing road reservation
Galvin Rd – Evelyn St - N-S Connector (east section)	Access Street	
Galvin Rd - N-S Connector (east section) -SWH	Neighbourhood Connector A	Does not exist
Evelyn St – Soldiers Rd – Galvin Rd	Integrator B	~25m existing road reservation
Evelyn St – Galvin Rd – Eileen Ave	Neighbourhood Connector A	~20m existing road reservation
Evelyn St – Eileen Ave – Keirnan St	Access Street	~20m existing road reservation
Robertson Rd – north of Norman Rd	Integrator B	
Skyline Boulevard – south of Norman Rd	Integrator B	Does not exist
N-S Connector (east section) - Skyline Blvd – Keirnan St	Integrator B	Does not exist
N-S Connector (east section) - Keirnan St – Watkins Rd	Neighbourhood Connector A	Does not exist
Norman Rd – Soldiers Rd – Access Rd	Neighbourhood Connector A	~20m existing road reservation
Norman Rd – Access Rd - SWH	Neighbourhood Connector A	~20m existing road reservation



Roman Rd – North of Watkins Rd	Integrator B	~20m existing road reservation
Reilly Rd - N-S Connector (east section) -SWH	Neighbourhood Connector A	~20m existing road reservation
Richardson St	Neighbourhood Connector A	~20m existing road reservation
Tonkin St	Neighbourhood Connector A	~20m existing road reservation
Cockram St	Neighbourhood Connector A	~30m existing road reservation

## TRANSPORT IMPACT ASSESSMENT

Premise have prepared a Transport Impact Assessment (TIA) (Appendix 1) to test the efficiency and performance of the proposed Mundijong District Structure Plan road network.

The proposed Mundijong District Structure Plan was modelled using Aimsun Next 2024 to assess its impact on the existing road network and identify necessary upgrades and new infrastructure to accommodate expected traffic. The modelling process followed Main Roads Western Australia (MRWA) Mesoscopic and Hybrid Modelling Guidelines and was peer-reviewed. The peer review was conducted by PTG Consulting on behalf of the Shire of Serpentine Jarrahdale. Based on information provided by the Shire, it was concluded that no fatal flaws were identified.

The assessment covers daily, AM, and PM peak traffic for the following years: 2021 (base year), 2031 (interim), and 2051 (final). The 2021 base model was selected as it aligns with the most recent Census data and is the only horizon year validated in the ROM model. Detailed methodology and assumptions are outlined in the Base and Options Modelling reports.

The key outcomes of the modelling process guide the proposed road classification and intersection configuration for the Mundijong District Structure Plan. Through the analysis of traffic generation and flow patterns in the base, interim, and final horizon years, the model identifies critical areas where road upgrades and new infrastructure are necessary. This includes determining appropriate road classifications to ensure efficient traffic movement, as well as defining intersection configurations and railway crossing treatments that can handle peak traffic volumes.

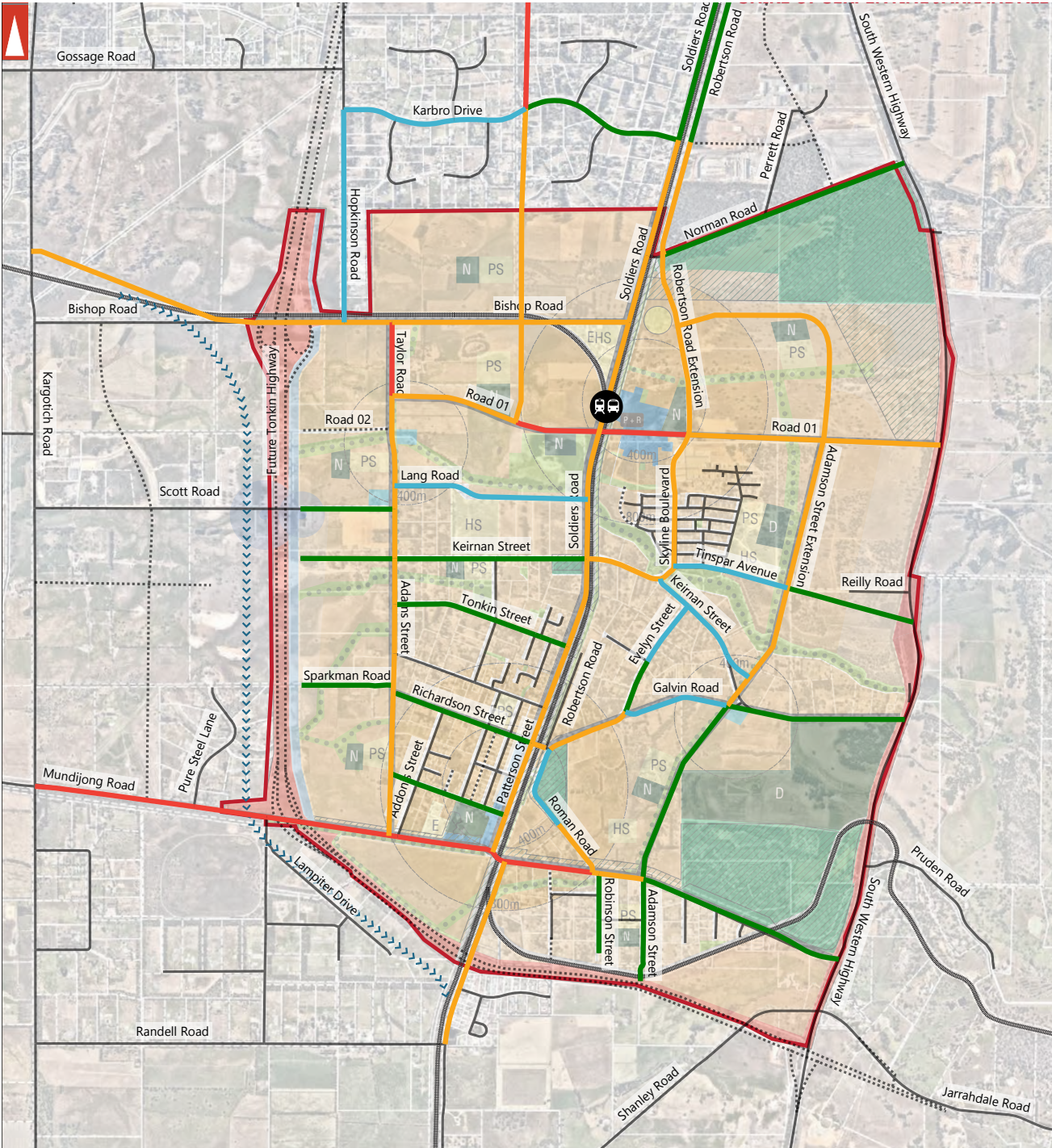
The Transport Impact Assessment does not prescribe road widening for Paterson Street/Soldiers Road, identifying these roads as a 30-40m wide Integrator B. These road reserves shall accommodate all functions envisaged by the DSP, including the protection of environmental values and Threatened Ecological Communities. The Integrator B road reserve identified by the TIA shall be reflected within future local structure planning.

### Operational Performance

Extensive upgrades to the road network will be required to support the development of the Mundijong DSP area. To ensure the network operates effectively by the design year 2051, the following intersection control measures are recommended as seen in figure 28.

Figure 28 identifies the results of intersection evaluation and control across the Mundijong area. Intersections have been classified into four categories which include Roundabouts, Signalised, Level Rail Crossings, Grade-Separated Rail Crossings and Giveaway/Yield/Stop controls. These measures aim to enhance traffic flow, improve safety, and accommodate anticipated growth, providing a robust foundation for the areas long-term transportation needs. The below table 8 shows the proposed intersection configuration. Further details on the intersection performance assessment are provided in Appendix 4 of the TIA.

Figure 27: Proposed Road Classifications and Hierarchy



DSP BOUNDARY

EXISTING ROAD

PROPOSED ROAD

EXISTING RAILWAY

PROPOSED FREIGHT RAIL REALIGNMENT

Hay Street

STREET NAME

TRANSIT NODE

INTEGRATOR A

INTEGRATOR B

NEIGHBOURHOOD CONNECTOR A

NEIGHBOURHOOD CONNECTOR B

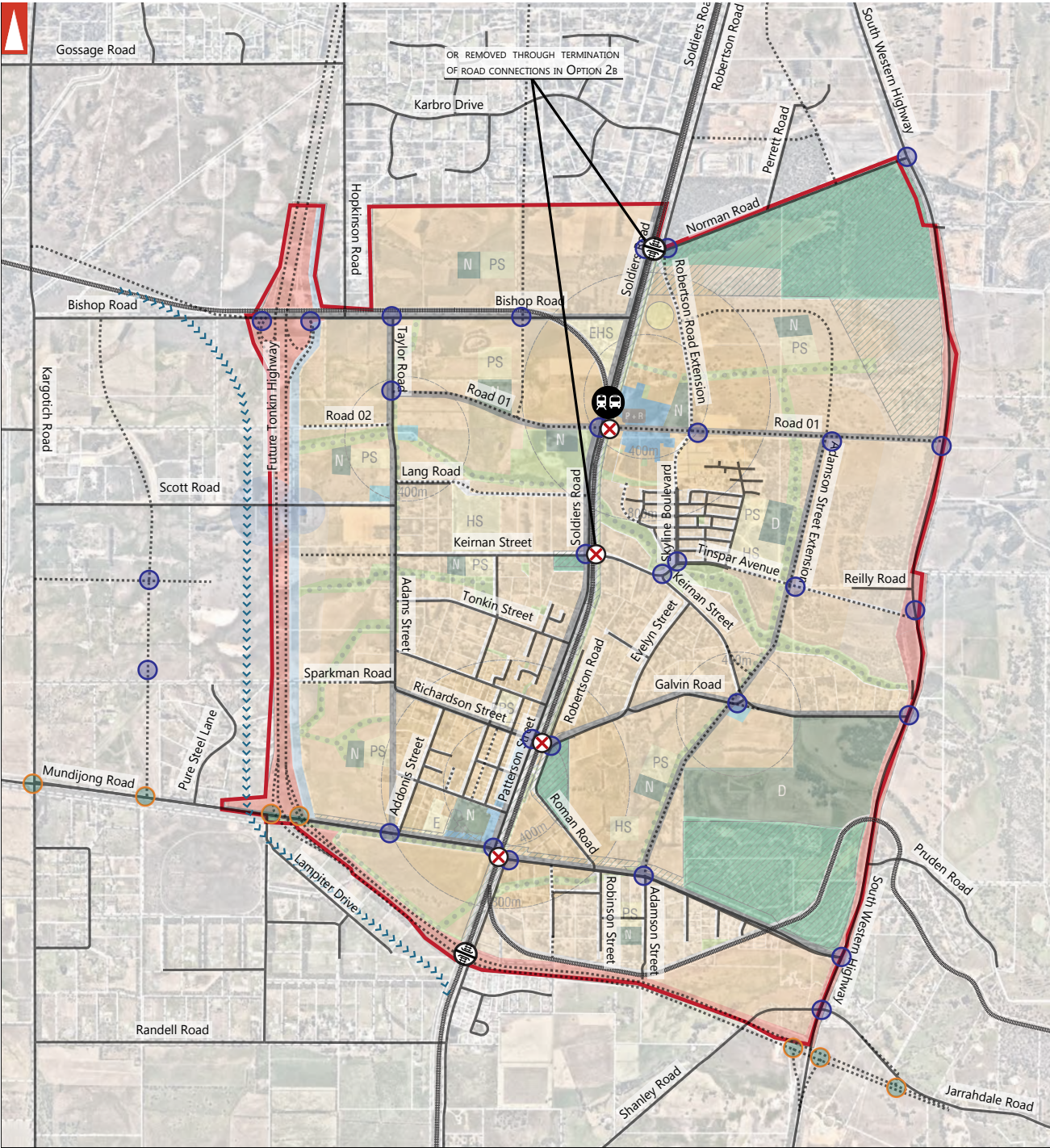
NOTE: THE PLAN IS COURTESY OF SHIRE OF SERPENTINE JARRAHDALE

LEGEND

			PROJECT: MUNDIJONG DISTRICT STRUCTURE PLAN	DRAWN BY:		
			TITLE: PROPOSED ROAD CLASSIFICATION	A.M.		
			DRAWING NUMBER: KC01863.000_S04			
A	20-12-2024	ISSUED FOR REVIEW				
REV	DATE	AMENDMENT				



Figure 28: Proposed Intersection Control



DSP BOUNDARY

EXISTING ROAD

PROPOSED ROAD

EXISTING RAILWAY

PROPOSED FREIGHT RAIL REALIGNMENT

Hay Street

TRANSIT NODE

ROUNDABOUT

GIVE WAY

STREET NAME

LEVEL RAIL CROSSING

GRADE SEPARATED RAIL CROSSING

NOTE: THE PLAN IS COURTESY OF SHIRE OF SERPENTINE JARRAHDALE

LEGEND


			PROJECT: MUNDIJONG DISTRICT STRUCTURE PLAN	DRAWN BY:	 <b>Premise</b>
			TITLE: PROPOSED INTERSECTION CONTROL	A.M.	
			DRAWING NUMBER: KC01863.000_S05		
A	03-12-2024	ISSUED FOR REVIEW			
REV	DATE	AMENDMENT			



Table 11: Proposed Road Intersection Control and Operation

Intersection control	Intersection name
Roundabout	<ul style="list-style-type: none"> <li>• Tonkin Highway on and off ramps to and from Bishop Road (MRWA)</li> <li>• Two roundabouts along the North-South spine road through West Mundijong Industrial Area Bishop Road &amp; Kargotich Road</li> <li>• Bishop Road &amp; Taylor Road</li> <li>• Bishop Road &amp; North-South spine road to the north towards Orton Road</li> <li>• Soldiers Road &amp; Norman Road</li> <li>• Norman Road &amp; Robertson Road</li> <li>• Norman Road &amp; South Western Highway</li> <li>• Taylor Road &amp; East-West spine road through the MDSP24 area</li> <li>• Soldiers Road &amp; East-West spine road through the MDSP24 area</li> <li>• Robertson Road &amp; East-West spine road through the MDSP24 area</li> <li>• East-West spine road through the MDSP24 area &amp; Adamson Street</li> <li>• East-West spine road through the MDSP24 area &amp; South Western Highway</li> <li>• Soldiers Road &amp; Keirnan Street</li> <li>• Keirnan Street &amp; Tinspar Avenue</li> <li>• Tinspar Avenue &amp; Skyline Boulevard</li> <li>• Tinspar Avenue &amp; Adamson Street</li> <li>• Tinspar Avenue &amp; South Western Highway (MRWA)</li> <li>• Galvin Road &amp; South Western Highway (MRWA)</li> <li>• Galvin Road &amp; Adamson Street</li> <li>• Mundijong Road &amp; Taylor Road</li> <li>• Mundijong Road &amp; Paterson Street</li> <li>• Watkins Road &amp; Adamson Street</li> <li>• Watkins Road &amp; South Western Highway (MRWA)</li> <li>• South Western Highway &amp; Shanley Road (MRWA)</li> </ul>
Signalised	<ul style="list-style-type: none"> <li>• Mundijong Road &amp; Kargotich Road</li> <li>• Mundijong Road &amp; North-South spine road through West Mundijong Industrial Area</li> <li>• Tonkin Highway on and off ramps to and from Mundijong Road</li> <li>• Tonkin Highway &amp; South Western Highway on and off ramp (MRWA)</li> <li>• Tonkin Highway &amp; Jarrahdale Road (MRWA)</li> </ul>
Level rail crossing	<ul style="list-style-type: none"> <li>• Watkins Road</li> <li>• Robertson Street</li> <li>• Keirnan Street (or removed through termination of road connections in Option 2b)</li> <li>• Norman Road (or removed through termination of road connections in Option 2b)</li> <li>• East-West spine road through the MDSP24 area</li> </ul>
Grade-separated rail crossing	<ul style="list-style-type: none"> <li>• Tonkin Highway (MRWA)</li> <li>• Norman Road (rail over road)</li> </ul>
Give way/Yield/Stop control	<ul style="list-style-type: none"> <li>• Intersection of minor roads and other intersection with no significant delays as indicated by traffic modelling</li> </ul>

#### 4.4.4 FREIGHT

Access to regional roads and the freight rail network provides opportunities for industries and businesses in the Mundijong District Structure Plan area to be well connected to markets and suppliers. Improved east-west road links are considered to be essential to support industry and provide access to major freight and logistics hubs such as Fremantle and Kwinana (to the west) and Welshpool/Kewdale, Perth Airport (to the north). The future freight rail network in the Mundijong District Structure Plan area is proposed to deviate to the West Mundijong Industrial Area on the western side of the Tonkin Highway extension. This realignment would offer the following benefits:

- + Remove a constraint (boundary, buffer, noise and vibration) to urban development in Mundijong;
- + Support the West Mundijong Industrial Area; and
- + Provide an opportunity for a possible intermodal facility in West Mundijong.

The combination of the freight rail realignment and Tonkin Highway extension provides opportunities to establish a possible Intermodal Freight Terminal in West Mundijong. Detailed design of the Tonkin highway, the freight rail realignment and Thomas Road widening will impact on the detail with regard to the infrastructure in the District Structure Plan.

## 4.5 Community and Social Infrastructure

The Mundijong District Structure Plan endeavours to provide residents with the opportunity to live balanced, active and healthy lifestyles. They will enjoy good access to health and recreation facilities that promote wellbeing and provide opportunities for both active and passive recreation. Community facilities within the Mundijong District Structure Plan area will have an important role in creating activated community hubs bringing together different groups and individuals. Community and social infrastructure required for the provision of health, education, sport and recreation services in the area will need to accommodate a growing and ageing population.

With regard to community facilities, the focus of the Mundijong District Structure Plan is to make the most efficient use of existing land and infrastructure. This includes the collocation of education and recreation facilities where possible with the intent of reducing traffic movements and establish a greater sense of social cohesion through consolidation of services and activity for nearby residents.

### 4.5.1 EDUCATION FACILITIES

The Mundijong District Structure Plan identifies new education facilities necessary to serve the proposed population. Education requirements in the Mundijong District Structure Plan area have been guided by relevant policy and the requirements of the Department for Education (DoE). The DoE has identified the provision for 11 public primary school sites and three public high school sites, in addition to the existing private high school, as necessary for the Mundijong District Structure Plan area.

The Mundijong District Structure Plan area has one existing primary school, which is to be included within the eleven required, and one existing private high school. The additional primary schools and the new high schools are conceptually shown on the Mundijong District Structure Plan to provide an indication of the expected distribution of school sites to meet catchment requirements across the whole Mundijong District Structure Plan area (Figure 29). However, final locations, the size, shape and dimensions of school sites will be confirmed as part of Local Structure Plans and should be determined in accordance with Liveable Neighbourhoods Element 8, and in liaison with the Department of Education.

During preparation of LSP's, proponents are encouraged to consider innovative approaches to integrate school sites and school activities with surrounding residential areas. Shared use of school facilities and/or provision of uses compatible with adjoining residential activities to encourage greater community use of school facilities either as part of educational facilities or an adjoining local node, is encouraged. Facilities including the provision of local convenience shopping or a local café/coffee shop should be investigated as part of local structure planning.

With regard to tertiary education, the Mundijong District Structure Plan identifies a possible future TAFE site for vocational studies, indicatively shown north of the Whitby District Centre. This site is retained in the DSP to provide flexibility to accommodate potential long term education needs, including the site's potential to accommodate future post-secondary education needs, while having regard for the proposed Byford TAFE. The DSP also identifies a future university campus (Murdoch University) at Whitby Falls Farm. The Murdoch University development at Whitby is intended to be a centre for teaching and research in veterinary and agricultural sciences, as well as other disciplines such as environmental science and conservation – all subjects that are admirably aligned to key strengths and characteristics of the Shire area.

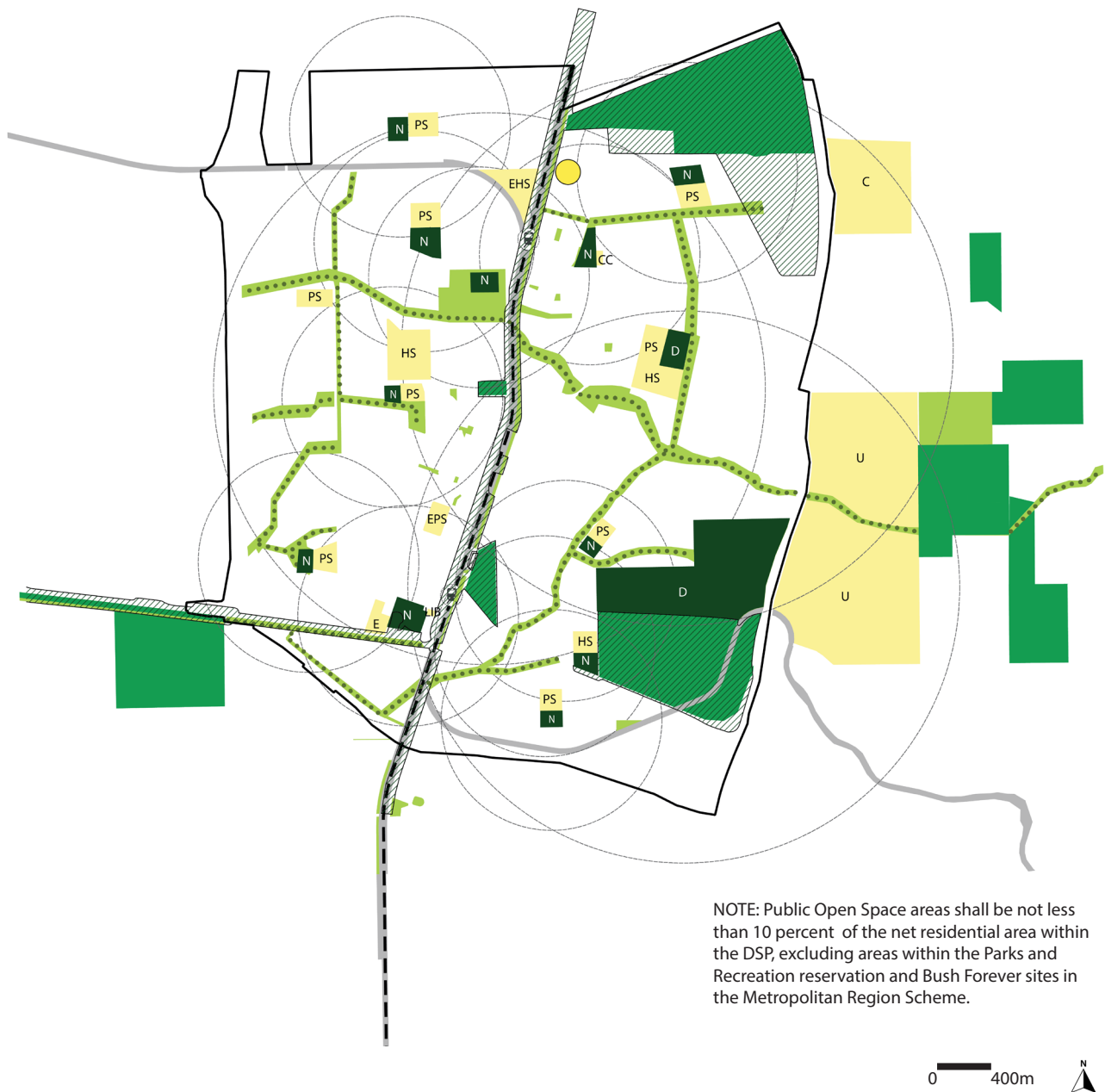
### 4.5.2 PUBLIC OPEN SPACE

The Mundijong District Structure Plan area incorporates a network of well-distributed and connected Public Open Space areas which include a combination of natural reserves, multiple use corridors, dedicated sport and recreation facilities and local parks providing opportunities for both informal and formal recreation.

The Mundijong District Structure Plan proposes to collocate nine new primary schools with neighbourhood level open space (provision for 1 oval) and three secondary schools with district level open space (provision for 2 ovals). The ovals at the schools should be at least 205m x 175m in extent with a 4 metre minimum run-off area surrounding. The Mundijong District Structure Plan also identifies a significant district open space area located on Keirnan Street. This facility will have more of a sub-regional focus compared to the other facilities. An overarching concept plan



Figure 29: Proposed Community Infrastructure and Open Space Network



## LEGEND

- BUSH FOREVER
- MULTIPLE USE CORRIDOR/LOCAL OPEN SPACE
- RESERVE
- DISTRICT/ NEIGHBOURHOOD OPEN SPACE
- COMMUNITY PURPOSE

- RAIL LINE
- TRANSIT NODE
- EHS EXISTING HIGH SCHOOL
- EPS EXISTING PRIMARY SCHOOL
- HS HIGH SCHOOL
- PS PRIMARY SCHOOL
- LIB LIBRARY

- D DISTRICT OPEN SPACE
- N NEIGHBOURHOOD OPEN SPACE
- E EMERGENCY SERVICES
- C CEMETERY
- U UNIVERSITY
- CC COMMUNITY CENTRE
- 800M/ 2KM CATCHMENT
- TAFE/POST-SECONDARY EDUCATION

proposes that the facilities will provide for three indoor basketball courts, nine tennis courts, fifteen netball courts, 4 soccer pitches, two diamond pitches, two full size football ovals, one multi use oval, three hockey pitches, one rugby pitch, parking areas, an aquatic centre and a BMX track. The site is strategically located in the centre of the Shire, allowing associated community infrastructure to form shire-wide facilities and the site to function as a recreation precinct for the whole Shire. The Community Infrastructure Development Contribution Plan provides further information in this regard.

### SIZE AND DISTRIBUTION OF PUBLIC OPEN SPACE

Figure 29 illustrates the location and distribution of open space throughout the Mundijong District Structure Plan area. The Mundijong District Structure Plan makes provision for a network of district and neighbourhood level open space areas. The respective sizes are in accordance with Liveable Neighbourhoods and Local Planning Policy 2.8 - Public Open Space Development, 3,000 sqm to 5,000 sqm or larger for neighbourhood and 2.5 ha to 7 ha for district. It is expected that smaller local parks will be provided for at the LSP stage.

For future development, a 10% Public Open Space contribution will be required. This is to be calculated on the basis of 10% of purely residential designated land use only. Deductions from the total site area to determine the gross subdivisible area include all non-residential land uses that do not generate the need for a contribution to Public Open Space, and for which a Public Open Space allowance has not been sought. The minimum 10 % requirement applies to all new development proposing three or more lots within the DSP area, excluding areas within the Parks and Recreation reservation and Bush Forever sites in the Metropolitan Region Scheme.

The 10 per cent Public Open Space requirement allows for the provision of a maximum of 2 per cent of restricted use Public Open Space as outlined within Liveable Neighbourhoods. Resource enhancement wetlands and buffers to environmentally sensitive areas are not deemed Public Open Space for 'recreation' purposes, however, in some cases it is acceptable for the land to be utilised and accessed by the community and therefore deemed to be 'restricted use'. These areas must have an approved management plan to manage impact and enhance the environmental values of the area. Areas of remnant vegetation are to be protected from subdivision and development and therefore may also be included within the 10% Public Open Space contribution.

Future Public Open Space should also consider effective integration and shared use agreements with new public and secondary school sites. The potential for shared use of open space with school sites will depend on agreement from the Department of Education. This process should also consider the requirement for more detailed planning for school sites to assist in identifying constraints that may affect the amount of useable land and, the best practice to ensure additional education requirements can be accommodated on these future sites.

Further planning consideration should be given at the local structure planning stages for the proportions of active open space with a significant emphasis on open space capable of being used for sport and recreation. The open space network should be configured to increase the proportion of open space capable of being used for sport in strategic locations.

## 4.6 Environment and Landscape

The natural areas and environmental quality of the Mundijong area enhances amenity and creates character within both urban and rural areas. It is important for this purpose to ensure that the natural environment is preserved and enhanced as a central element of liveability and a defining characteristic of the Mundijong District Structure Plan area. The challenge for the Mundijong District Structure Plan area will be to retain or create a 'sense of place' by maintaining key individual landscape characteristics and vistas in areas that will be subject to large-scale landscape change. Consideration must also be given to minimising the impact on existing natural waterway remnant vegetation within these ecological corridors.

### 4.6.1 MULTIPLE USE CORRIDORS

The Mundijong District Structure Plan area contains a number of important natural features including creeks and

drainage lines, which in accordance with the Shire's sustainability philosophies, are to be preserved as part of the planning and development of Mundijong. The main creek/drainage alignments are identified within the District Structure Plan as part of the linear park Multiple Use Corridors (MUC's).

The exact size and dimension of the MUC's are to be determined at LSP stage based upon the requirements of District and Local Water Management Strategies prepared in accordance with appropriate policy. Where land is to be accommodated within MUC's for Urban Water Management or vegetation/wetland preservation purposes this shall be provided in addition to the standard 10% public open space provision. Where land is included as part of a MUC for active or passive public open space purposes, then that area can be considered as part of the 10% public open space provision. A minimum of 10% of the developable area will be required to be provided and will be confirmed at LSP stage. This calculation should be included in the public open space schedule submitted with every LSP.

#### 4.6.2 PROTECTION OF NATURAL AREAS

Retaining and enhancing vegetation in the Mundijong location is critical to maintaining the desirability, amenity and sustainability of the district. The Mundijong District Structure Plan identifies locally significant natural areas that may be retained as part of local open space and dealt with through the LSP process. Throughout the Mundijong District Structure Plan area, there are several avenues of trees established along rural roads and driveways. Where possible, the LSP's should retain this vegetation and take the opportunity to do this in open space or within new road reserve verges.

Further, conservation corridors and multiple use corridors will enable district significant areas to be retained and enhanced. Where LSP's are affected by Bush Forever, conservation corridors or multiple use corridors, management plans will need to be prepared and implemented in order to provide for ongoing health and viability. The design of Local Structure Plans should demonstrate the preservation of as much locally significant and native vegetation within the urban fabric as possible.

### 4.7 Service Infrastructure

The Mundijong District Structure Plan bases its servicing requirements on the Mundijong District Structure Plan Infrastructure and Servicing Strategy 2025. This is complemented by the studies associated with the local structure plans for Mundijong Precincts A, E and G and further discussions with the State Servicing Agencies during the pre-consultation process.

As the development in the Mundijong District Structure Plan area generally is "greenfields" in nature, local structure planning should address the provision of electricity, water and wastewater. Perth is currently facing a land shortage. Mundijong is being connected to the metropolitan area by Tonkin Highway and the pressure for development of this portion of the south-eastern corridor is already significant. As such, the provision of essential services is crucial to facilitate urban development to meet the growing demand.

The Sub-regional Planning Framework identifies future conceptual water supply planning for the eastern sub-regional sector where major water storage reservoirs will be necessary in the escarpment near the Byford Tank (Byford) and Mundijong Reservoir (Jarrahdale) to serve long-term urban development in these areas (WAPC, 2018). Many areas of Mundijong, particularly to the east, are at or above 65m AHD. As such, these future urban areas are required to be serviced through a reservoir. The Shire is also committed to investigating alternative sources of water management and exploring options beyond business as usual.

The Mundijong District Structure Plan area falls within the Water Corporation area for the provision of reticulated water, within the long-term water supply planning for the Mundijong Gravity Water Supply Scheme. The main water supply to Mundijong is currently supplied off the Serpentine Trunk Main on Summerfield Road. In 2019 the Water Corporation completed the construction of a large (600mm diameter) distribution main along Paterson Street to augment supply for the growing Whitby subdivision, and for the anticipated growth in other parts of the Mundijong DSP area. There is now an established water connection to many areas of Mundijong, particularly the established residential areas and Whitby Estate. Future subdivisions will be required to extend water reticulation mains of adequate size (likely 250mm diameter) from the distribution main to the subdivision.



A Water Corporation reticulated sewerage connection is currently not available to the Mundijong District Structure Plan area. However, the DSP area is located within the Water Corporation's area for the future provision of reticulated sewerage, the Byford Sewer District. The upgrading and development of Water Corporation service infrastructure is essential to cater for the expected population of 58,000 people within the DSP area. The Mundijong DSP identifies a future wastewater pump station at Scott Road. The DSP and the Sub-Regional Planning Framework identify a future sewer pump station, and major trunk water and sewerage pressure mains to be constructed adjacent east of the future Tonkin Highway reserve, to service the Mundijong DSP area and the West Mundijong Industrial Area.

Water Corporation own a 60m wide corridor of land adjacent east of the future Tonkin Highway, for a long-term trunk main corridor, accommodating water and sewerage mains between the Scott Road pump station and the East Rockingham wastewater treatment plant. The delivery of reticulated sewerage services to the Mundijong DSP area depends on the delivery of this Water Corporation infrastructure.

Any future works relating to the modification of water supply, drainage and wastewater must first consult with the Water Corporation and be to the satisfaction of the WAPC.

## 4.8 Heritage and Culture

The character of a place is closely linked to its heritage and it is therefore crucial that elements of heritage, such as the built form, mature trees and local landscape are preserved and incorporated into any new development.

### 4.8.1 NON-ABORIGINAL HERITAGE

The Mundijong District Structure Plan area contains a number of non-aboriginal heritage places and landscapes that need to be preserved for future generations. Opportunities exist for the adaptive reuse of these heritage places, as well as the inclusion of underutilised spaces which can add to and benefit from existing heritage value and character within areas of new development.

In addition to designated heritage sites identified in "Figure 19: Existing Heritage Places" on page 75, the character of unique areas such as the Whitby Falls Farm and Manjedal Brook Reserve will need to be preserved as these areas reflect the rural character of the Mundijong District Structure Plan area. Preparation of local planning policies or design guidelines which provide statutory guidance are recommended.

### 4.8.2 ABORIGINAL HERITAGE

As discussed in section 2.2.8 of this report, the Department of Planning, Lands and Heritage (DPLH) has identified Aboriginal Heritage Places in the Mundijong District Structure Plan area. Prior to construction of individual developments, assessment should be undertaken by a qualified consultant to determine whether a more thorough Aboriginal Heritage investigation of the area needs to be undertaken for any specific location to identify unregistered sites.

Consideration should be given to compliance with the Aboriginal Heritage Act 1972 (as may be amended).









# 5.0 APPENDICES



## 5.1 References

- AEC Group, 2016. Socio-Economic Profile Shire of Serpentine Jarrahdale, Prepared for the Shire of Serpentine Jarrahdale, Mundijong.
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#### State Planning Policies

A full current list of State Planning Policies can be accessed via the Shire of Serpentine Jarrahdale website << <https://www.planning.wa.gov.au/state-planning-framework.aspx#State-Planning-Policies>>> (accessed 18 March 2018)

#### Local Structure Plans

A full current list of local structure plans can be accessed via the Shire of Serpentine Jarrahdale website << <http://www.sjshire.wa.gov.au/what-we-do/planning-and-building/structure-plans/>>> (accessed 15 November 2017)

## 5.2 Technical Appendices

The Mundijong District Structure Plan was prepared with reference to the following technical appendices (provided in separate attachments).

- + Appendix 1 - Mundijong DSP - Transport Impact Assessment, 2025
- + Appendix 2 - Mundijong DSP - District Water Management Strategy, 2025
- + Appendix 3 - Mundijong DSP - Activity Centres Background Paper, 2025
- + Appendix 4 - Mundijong DSP - Bushfire Hazard Level Assessment, 2025
- + Appendix 5 - Mundijong DSP - Infrastructure and Servicing Strategy, 2025
- + Appendix 6 - Mundijong DSP - Environmental Study