

10. South-east sub-region



The ABS estimated resident population in the south-east sub-region is approximately 178,700 people. The south-east sub-region comprises the City of Gosnells, City of Armadale and Shire of Serpentine Jarrahdale local government areas.

City of Gosnells

The ABS 2009 estimated resident population in the City of Gosnells local government area is approximately 104,000 people. The area is largely urbanised with the majority of growth occurring in the south-western areas of Southern River, Maddington, Forrestdale, Brookdale and Wungong.

City of Armadale

The ABS 2009 estimated resident population in the City of Armadale local government area is approximately 58,200 people. Urbanisation in this area is influenced

by its proximity to the Darling Range. Similar to the City of Gosnells, the majority of growth is occurring in the south-western areas of Southern River, Forrestdale, Brookdale and Wungong.

Shire of Serpentine Jarrahdale

The ABS 2009 estimated resident population in the Shire of Serpentine Jarrahdale local government area is approximately 16,500 residents. The shire is largely rural with mainly low-density residential urban development spread throughout the area. Byford and Mundijong are the two district centres in the area.



Strategic metropolitan centre	Secondary centre	District centre
Armadale	Maddington	Byford Forrest Lakes Gosnells Kelmscott Wungong* Mundijong Thornlie North Forrestdale (Newhaven)*

* denotes emerging centre

Figure 44: Hierarchy of activity centres within the south-east sub-region

10.1 Population and household characteristics

The south-east region comprises a higher proportion of young families compared to the Perth metropolitan area as a whole, with higher proportions of the population aged under 15 years. Apart from the City of Gosnells, the sub-region has a lower proportion of its population in the 15–30 year old age group. The Shire of Serpentine Jarrahdale exhibits higher proportions of its population aged under 15 years and in the 30–64 years age range, and a far lower proportion of young adults aged 15–30 years old, which differs significantly from the rest of the sub-region. All local government areas report similar proportions of aged residents, slightly lower when compared to the rest of the Perth metropolitan area.

On a metropolitan level, the outer sub-regions, at 89 per cent, have a higher percentage of single houses, than the metropolitan average of 77 per cent. Dwelling trends in the period from 1996 to 2006 have shown a two per cent increase in the number of separate houses across the entire metropolitan areas and a one per cent decrease in the total number of semi-detached, row or terrace housing and town houses.

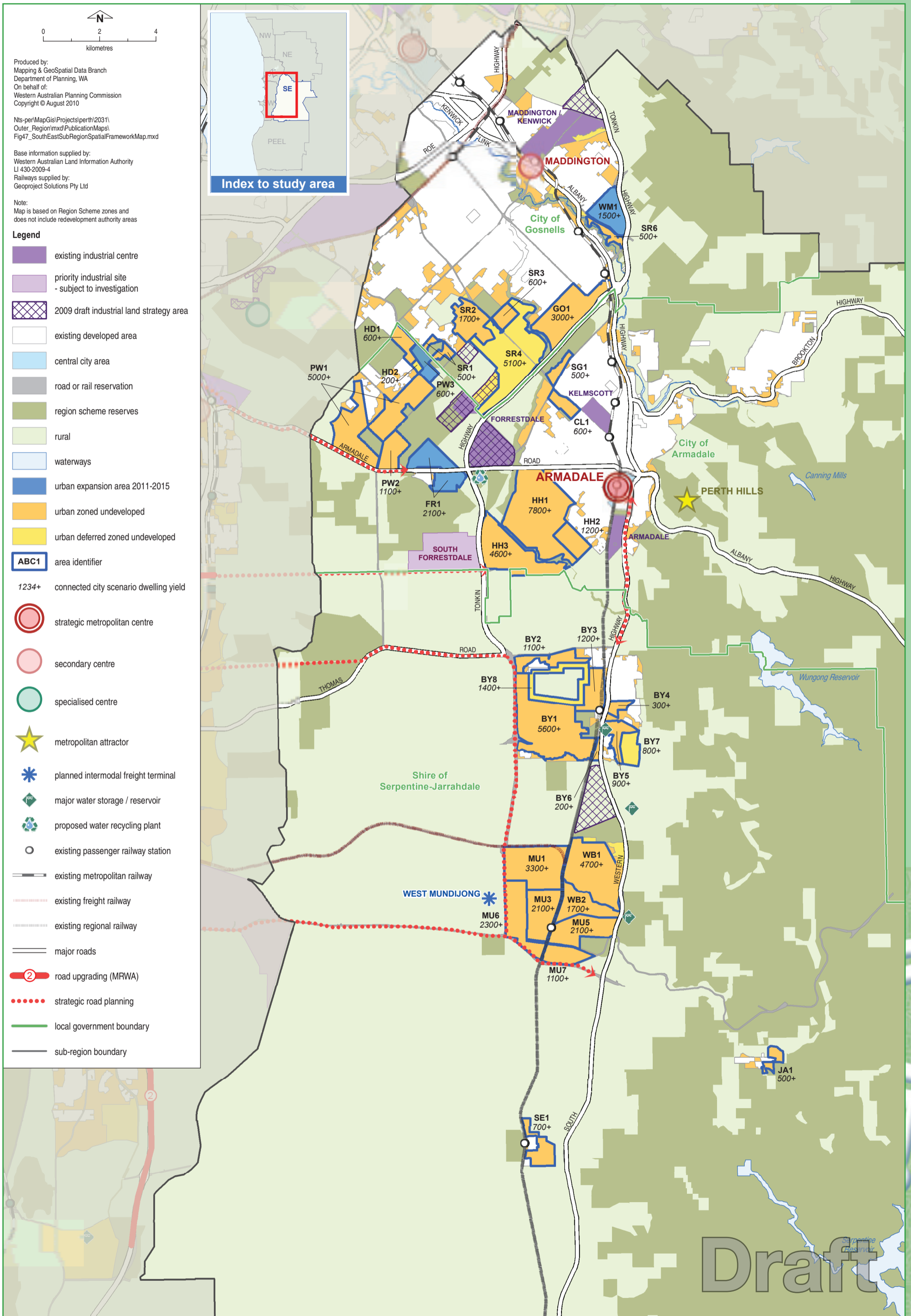
Like the north-east region, the south-east region contains a high proportion of separate houses as the predominant form of housing (91 per cent) with the remaining nine per cent being grouped or multiple dwellings, semi-detached, row or terrace housing and town houses. This is consistent with the form of subdivision and development that has characterised these sub-regions.

The average household size has decreased over the period 2001–2006 from 2.81 persons to 2.75 persons and by 2031 it is forecast that the average household size will have dropped markedly to 2.21 persons. The trend toward declining average household size is due to a number of factors, including the increasing number of people choosing to live alone, declining fertility rate and an increase in single parent families. Other factors contributing to these changes are the ageing population combined with the longer life expectancy of women over men.

10.2 Activity centres

The strategic metropolitan centre in the sub-region is Armadale. In addition to its commercial function, Armadale also provides a range of facilities and services including local government administration offices, government and institutional facilities, major transport infrastructure, regionally significant open spaces and

Figure 45: South-east sub-region spatial framework map



Draft

Metropolitan attractor	Description
Perth Hills	The Perth Hills run through the north-east and south-east subregions. The hills are largely natural areas with many reserves, cycle trails and part of the Bibbulman Track.

Figure 46: Metropolitan attractors in the south-east sub-region

recreational areas, and a cultural and heritage precinct. The continued effort to improve the amenity of the city centre and capitalise on the area's distinctive cultural and locational attributes will be critical to attracting new business and employment to the area and improving employment self-sufficiency (see Figure 44).

the Swan Coastal Plain and the Perth hills offers a unique and attractive urban lifestyle. The sub-region also includes the Champion Lakes international rowing facility in Armadale (see Figure 46).

10.3 Metropolitan attractors

Directions 2031 identified metropolitan attractors as places that attract tourists and are highly valued by local and regional residents. They are often key centres of employment, serving to stimulate the economy.

Directions 2031 identifies the Perth Hills as a metropolitan attractor. The Perth Hills contain many reserves that provide for cycling and internationally significant walking/hiking trails. The interface between

10.4 Future growth areas

Approximately 5,400 hectares of greenfields land is currently identified for development in the south-east sub-region. This land comprises approximately 5,000 hectares of existing undeveloped urban and urban deferred zoned land not yet developed and approximately 400 hectares of rural land as indicated in the draft urban expansion plan (see Figure 47).

Local government area	Land in undeveloped urban zoned areas	Land in undeveloped urban deferred zoned areas	Rural land in the process of region scheme rezoning	Urban expansion areas 2011-2015	Urban investigation areas 2011-2020	Total
Armadale	1,500 ha	-	-	300 ha	-	1,800 ha
Gosnells	400 ha	400 ha	-	100 ha	-	900 ha
Serpentine-Jarrahdale	2,500 ha	200 ha	-	-	-	2,700 ha
Total	4,400 ha	600 ha	-	400 ha	-	5,400 ha

Figure 47: Estimated greenfields land for development in the south-east sub-region

(numbers rounded to the nearest hundred)

10.4.1 Planned urban growth areas

In Figure 45 the following areas are identified to accommodate growth in the sub-region, through the development of land currently zoned urban and urban deferred.

Byford: the Byford District Structure Plan has identified growth capacity for a future population, which is anticipated to be sufficient to accommodate demand beyond 2031.

Southern River/Forrestdale District Structure Plan: includes the localities of Southern River in the City of Gosnells, and Forrestdale, Brookdale and Wungong in the City of Armadale. Local structure planning is underway and it is estimated that the area will ultimately support a population of 56,000 new residents.

Mundijong: the town of Mundijong is experiencing significant development pressure. Structure planning for the area is underway and has identified capacity to accommodate 30,000 residents over the long term. It is expected that development in Mundijong will follow Byford and is therefore, considered a medium to long term growth opportunity for beyond 2031.

The urban zoned areas of Armadale, Brookdale and Wungong and the urban deferred zoned areas of Harrisdale and Southern River are also expected to be developed within the next 20 years.

Armadale Redevelopment Authority Area: The Armadale Redevelopment Authority area is estimated to yield between 14,000 and 17,000 dwellings when fully developed over the next 15 to 20 years. The resulting development is likely to house a population approaching 45,000 residents. The 1,500 hectares Wungong Urban Water area is the most significant project in terms of the future growth of Armadale. Associated with this development are a business park of 330 hectares and other smaller projects in the City Centre helping to provide a stronger employment base.

10.4.2 Draft urban expansion plan

This sub-regional strategy has indicated urban expansion areas and investigation areas that could potentially be recommended to undergo statutory rezoning processes in the short to medium term of one to ten years (see Figure 45).

West Martin, Piara Waters North and Forrestdale East, which cover a combined area of approximately 400 hectares are indicated as urban expansion areas in the draft urban expansion plan, based on structure planning that is close to finalisation.

10.5 Estimated dwelling supply

The estimates of future dwelling supply in the south-east sub-region indicate the range of additional housing that could be delivered through existing urban and urban deferred zoned land and the urban expansion and investigation areas over the next 25 years. The potential dwelling yield is expected to range from approximately 62,000 dwellings under the business as usual scenario to 87,000 dwellings under the connected city scenario (see Figure 48).

See Appendix 4 for a detailed breakdown of the estimated dwelling supply of known areas within each local government area.

10.6 Economic development and employment growth

10.6.1 Distribution of employment by industry sector

The main employment industry sectors in the south-east sub-region are manufacturing, retail and health care and social services. Serpentine Jarrahdale has a significantly higher percentage employment in agriculture and construction (see Figure 49).

Local government area	Development type	Estimated dwelling supply	
		Business as usual low density	Connected city medium density
Armadale	Greenfields	17,400	24,300
	Infill/redevelopment	7,200	8,500
	Sub-total	24,600	32,800
Gosnells	Greenfields	8,500	12,900
	Infill/redevelopment	8,700	10,200
	Sub-total	17,200	23,100
Serpentine Jarrahdale	Greenfields	19,900	30,000
	Infill/redevelopment	700	800
	Sub-total	20,600	30,800
South-east	Greenfields	45,800	67,200
	Infill/redevelopment	16,600	19,500
	Total	62,400	86,700

Figure 48: Estimated dwelling supply from infill and greenfields development in the south-east sub-region
(numbers rounded to the nearest ten)

10.6.2 Employment self-sufficiency targets

Perth's employment is concentrated in the inner and middle suburbs while population growth continues to occur in the outer suburbs. The outer sub-regions comprise 51 per cent of the employed residents but only 30 per cent of the jobs. Locally available employment is essential to creating self-contained and vibrant communities with diverse employment choices as well as reduces the need for long journeys to work and alleviating pressure on the transport system.

Employment self-sufficiency is the number of jobs within a defined area as a proportion of the labour force of that area. Therefore, a 75 per cent employment self-sufficiency rate for an area means that there are 75 jobs located in that area for every 100 residents living there, that work or are actively seeking employment.

Employment self-sufficiency in the south-east sub-region is currently 42 per cent. To achieve the Directions 2031 employment self-sufficiency target of 55 per cent, an estimated 32,000 to 48,000 additional jobs will need to be provided in the sub-region over the next 25 years (see Figure 50).

The Directions 2031 employment self-sufficiency target should guide the extent of commercial and retail development, activity centres and the provision of adequate industrial and employment land in the south-east sub-region.

10.6.3 Industrial and employment land

The draft Industrial Land Strategy (WAPC 2009) audited known existing, planned or anticipated industrial developments that are to be released between 2009 and 2025. Four strategic industrial centres were identified as key industrial nodes in the Perth metropolitan and Peel regions. In addition, six

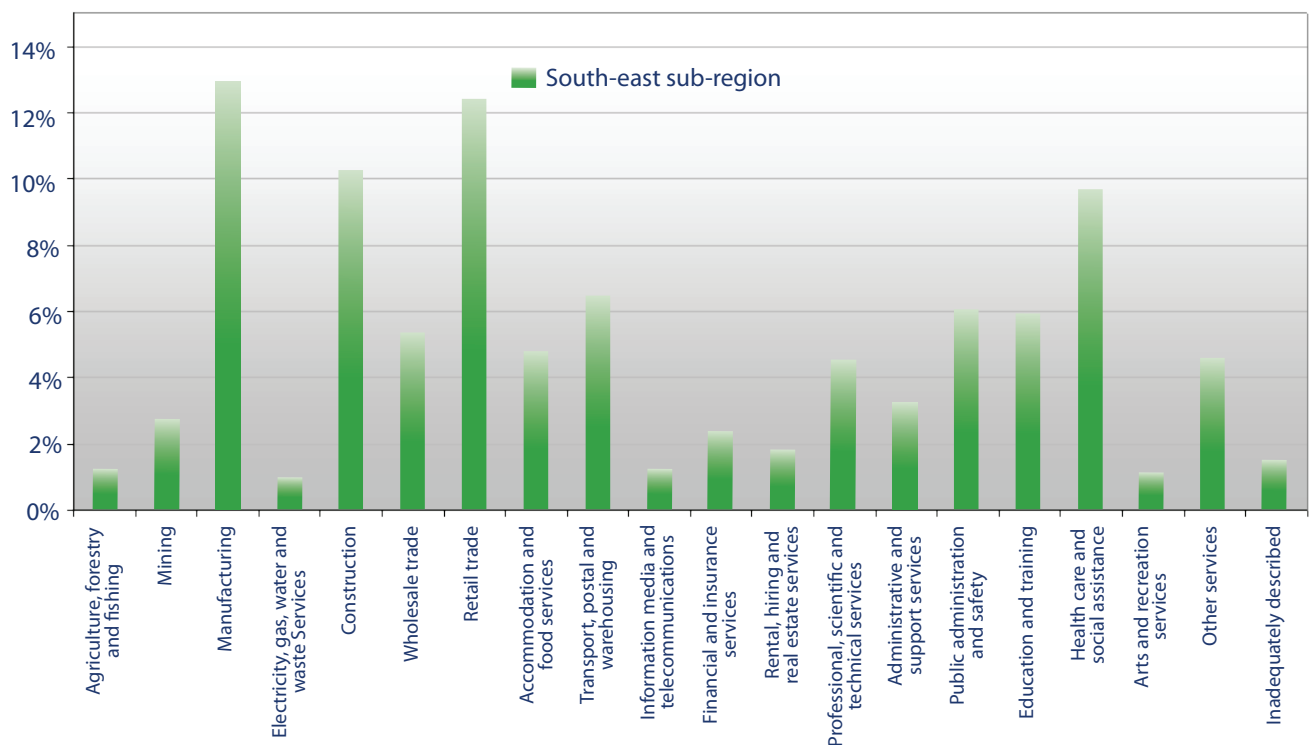


Figure 49: Industry of employment in the south-east sub-region
(Source: 2006 ABS Census of Population and Housing)

	Directions 2031 (20 year horizon)	Business as usual (25 year horizon)	Connected city (25 year horizon)
Additional dwellings	35,000	64,700	86,800
Employment			
Additional labour force at 1.3 working people per household	46,000	84,000	113,000
Additional local jobs to achieve 55% employment self-sufficiency	11,100*	32,000	48,000

* The ABS 2009 estimated resident population is used as base data for the recalculation of the Directions 2031 employment self-sufficiency target.

Figure 50: Employment self-sufficiency for the south-east sub-region

priority industrial sites (for investigation) and another 20 possible future industrial sites were identified as potential areas for future rezoning. These priority and possible future industrial sites provide a land bank for industrial land supply over the short to medium term (see Figure 51).

Maddington-Kenwick and Forrestdale: The existing Maddington-Kenwick and Forrestdale regional industrial centres will be developed progressively to cater for a range of manufacturing, processing, warehousing and bulk goods handling activities. These centres are well-connected to intermodal freight facilities at Welshpool-Kewdale industrial centre and are ideally located to develop synergies with major export-oriented industrial centres at Kwinana and Hope Valley-Wattleup. Extensions to several other existing industrial areas are planned and South Forrestdale is identified as a priority industrial area for investigation.

The draft Industrial Land Strategy (WAPC 2009) identifies West Mundijong as a future industrial site with the potential to become a strategically important intermodal node, given its proximity to the intersection point of the rail system and the primary road network.

Note: All future industrial areas will be subject to investigation to evaluate their suitability and ensure that any environmental impacts can be appropriately managed.

Way forward

In response to strategic employment and economic issues, the Department of Planning, in partnership with local government will develop a Perth metropolitan and Peel region economic development and employment strategy which will include addressing issues specific to the sub-region such as:

- facilitating major revitalisation initiatives such as *Armadale Alive*;
- capitalising on existing assets such as Champion Lakes;
- diversifying local employment opportunities;
- investment in industrial and employment land; and
- facilitating economic development opportunities such as attracting business investment.

Existing industrial stock			Future industrial land		
Strategic industrial centre	Industrial centre	Current industrial land release areas	Extension industrial site	Priority industrial area (subject to investigation)	Possible future industrial site
-	Armadale Forrestdale Kelmscott Maddington-Kenwick	Forrestdale Furley Road Ranford Road Cardup (Sotico Mill)	Orange Grove Furley Road Ranford Road Canning Vale	South Forrestdale	Cardup (Sotico Mill) Brookdale Maddington Kenwick Strategic Employment Area West Mundijong

Figure 51: Industrial land distribution in the south-east sub-region
(Source: Draft Industrial Land Strategy, WAPC 2009)

10.7 Planned and required infrastructure

10.7.1 Water

Initial consultation with the Water Corporation has identified the current status of water infrastructure projects in the sub-region as set out in Figure 52.

10.7.2 Energy

Network capacity mapping tool

Additional energy infrastructure will be required to service the growing population. Western Power and the Department of Planning, through the Urban Development Program, have initiated a project to develop a geospatial tool to show electricity capacity

and utilisation as a result of land/building development and the future planned capacity of electricity infrastructure. This network capacity mapping tool will identify areas of underutilised capacity as well as areas where network upgrades are a priority to service future growth. It is anticipated that this tool will be available online through the Shared Land Information Platform (SLIP) planning portal (www.landgate.wa.gov.au).

10.7.3 Public transport network

The long term vision of the proposed public transport network includes extension of the Armadale passenger railway line to Byford and Mundijong; and, extension of the Thornlie line to link with the Mandurah line with a major interchange in the vicinity of Ranford Road and a station to serve the growth in the Jandakot Airport precinct.

Facility	Status
Metropolitan water storage	
Byford high level tank	2012-13
Byford gravity zone tank	2018-20
Mundijong Reservoir Stage 1	2017-19
Forrestfield Reservoir	2018-20
Potential water recycling plants (WRP)	
Westfield WRP	Subject to local treated waste water reuse demand. eg. from industry/horticulture and overall feasibility
Jandakot groundwater expansion	Potential water trading

Figure 52: Water infrastructure projects in the south-east sub-region
(Source: Water Corporation, 2009)

10.7.4 Road network

Figure 53 shows proposed, completed or strategic road planning projects in progress, which have been identified from initial consultations with Main Roads WA, local government authorities and other agencies.

10.7.5 Freight network

The freight network and existing and planned intermodal freight terminals are indicated in Figure 45.

The identification and development of new urban growth areas along key public transport routes or urban corridors will require clear principles and guidelines derived from analysis of the functional role of these routes as part of the city's transport network. Those roads with a predominant freight function are identified in *State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning*. This policy aims to ensure that the land use and transport functions of roads are mutually compatible by focussing on environmental standards for abutting noise-sensitive development and protecting major freight corridors from incompatible urban encroachment.

Intermodal terminals represent strategically situated points in the transport distribution network that enable freight to be transferred from road to rail and visa versa. Their location and efficiency significantly affects the entire intermodal freight transport chain. It is also possible that inland facilities can act as staging points for containers moving by rail to and from sea ports. In the future it will be advantageous to maximise the use of rail transport, particularly in urban areas where congestion and fuel pricing can work against road transport.

An investigation of the suitability of an intermodal freight terminal at West Mundijong, as a strategically important industrial site, will be required. The potential realignment of the Kwinana–South West freight rail line that runs along the eastern boundary of the proposed West Mundijong strategic industrial area presents the opportunity to develop an intermodal terminal in this area. The West Mundijong site has the potential to become a strategically important intermodal node given its proximity to the intersection point of the rail system and the primary road network.

Road/route	Project
Recently completed projects by Main Roads WA (2009)	
Armadale Road	Increased urban development in the North Forrestdale area and general growth in regional traffic are increasing the need to upgrade Armadale Road to a four-lane standard along its entire length. The section between Tapper Road (just east of Kwinana Freeway) and Anstey Road (just east of Nicholson Road) is still only a two-lane road and will be upgraded to a four-lane standard.
Tonkin Highway	Tonkin Highway currently only extends as far south as Thomas Road in Byford and it is anticipated to extend Tonkin Highway to access South-western Highway near Mundijong as traffic increases on the existing South-western Highway between Byford and Mundijong.
South-western Highway	The existing South-western Highway, south of Armadale quickly reverts back to a two-lane road and urban development in the Byford area will result in increased traffic volumes on the highway between Armadale and Byford, such that there will be a need to upgrade the highway from two to four lanes. This is likely to occur after the extension of Tonkin Highway to Mundijong
Strategic road planning	
Tonkin Highway	This is the major north southern route through the area and there are still many traffic signalised intersections that will ultimately need to be grade separated. The extent and rate of these traffic increases will largely be dictated by urban development in both the Byford and Mundijong areas.
East-west routes	There are no primary regional road routes south of Armadale Road until Pinjarra Road. Further development in the Kwinana Industrial area including the Outer Harbour, James Point Port and the Latitude 32 area will increase the need to provide good east-west road connections into this area. Proposed routes include Rowley Road; Anketell Road and Mundijong Road.
Albany Highway	In the Gosnells area there are plans for the development of an alternative route to the east of the Gosnells main town area. This route is known as the Mills-Ferres Road link and it will reduce the level of through traffic going through the built up main street area.
Armadale road level crossing	Future planning provides for the future grade separation of railway level crossing in the Armadale city area and pressure will increase to remove the level crossing as traffic delays and safety concerns increase.
Nicholson Road	Nicholson Road is an important north-south route in the south-east area. It is an important freight route that provides access between the Canningvale area and areas further south but will also play an important role in providing access to new urban areas.
Southern Link Road	The potential to provide a road link from the Mundijong area across to Albany and Brookton Highway will be investigated. This route would avoid the need for large heavy vehicles to traverse the Darling Scarp through more built up urban areas and provide a high standard connection for freight vehicles from rural areas to the southern end of Tonkin Highway.
Other Regional Roads	Nicholson Road, Ranford Road, Southern River Road and Garner Street require upgrading.

Figure 53: Strategic road planning in the south-east sub-region



10.7.6 Social infrastructure

Growth in the sub-region will require significant investment in social infrastructure. These requirements will need to be developed by considering the estimated range of dwelling yields; WAPC Liveable Neighbourhoods policy standards; consultation with the relevant service providers and local government authorities and existing levels of social infrastructure provision.

10.8 Sub-regional planning actions

Key planning actions in the south-east sub-region are outlined in Figure 54.

Local government area	Action	Stakeholder
City of Gosnells	Prepare a local structure plan for Southern River area 3, informed by the Outer Metropolitan and Peel Sub-regional Urban Growth Management Strategy final report.	City of Gosnells Department of Planning
City of Armadale	Finalise Developer Contribution Scheme to facilitate provision of infrastructure necessary to enable the Wungong Urban Water Masterplan	City of Armadale Armadale Redevelopment Authority Water Corporation
Shire of Serpentine Jarrahdale	Finalise district structure planning process to form the framework for future local structure planning in Mundijong and Whitby.	Shire of Serpentine Jarrahdale Department of Planning Department of Water Department of Environment and Conservation

Figure 54: Planning actions required in the south-east sub-region

11. South-west sub-region



The ABS 2009 estimated resident population in the south-west sub-region is approximately 217,000 people. The sub-region comprises the City of Cockburn, Town of Kwinana and City of Rockingham local government areas.

City of Cockburn

The ABS 2009 estimated resident population in the City of Cockburn local government area is approximately 88,700 people. Cockburn is characterised by medium-density housing and has experienced a high level of growth. The area is well-connected with the Perth metropolitan central sub-region by the public transport and road network. The land use in the area is fairly diverse, with a strong industrial base supporting the residential population. It is expected that the industrial areas will expand in the medium-term future.

Town of Kwinana

The ABS 2009 estimated resident population in the Town of Kwinana local government area is approximately 28,000 residents. The area consists of medium-density residential development and has experienced significant urban growth. The area has diverse land uses and includes strategic industrial precincts which are expected to be expanded in the medium term.

City of Rockingham

The ABS 2009 estimated resident population in the City of Rockingham has an existing population of approximately 100,200 people. The area west of the Kwinana Freeway is defined by predominantly low-density residential development and is a mature urban area with limited capacity for greenfields growth. On the other hand, the area to the east of the Kwinana Freeway has significant tracts of rural land that have the potential to absorb a lot of future urban growth. Rockingham is a strategic metropolitan centre of mixed-use activity and provides a full range of services, facilities and activities.



Strategic metropolitan centre	Specialised Centre	Secondary centre	District centre
Rockingham	Jandakot airport	Cockburn Kwinana	Baldivis Cockburn Coast* Karnup* Secret Harbour Spearwood Warnbro Wandi*

* denotes emerging centre

Figure 55: Hierarchy of activity centres within the south-west sub region

11.1 Population and household characteristics

The age profile of the south-west sub-regions indicates that there are a higher proportion of young families (children under 15 years and parents aged 25-40 years) compared to the rest of the Perth metropolitan area. There are correspondingly fewer older adults aged 40–65 years old in all of the local government areas of the south-west. Each local government area is experiencing a general aging of the population similar to the entire metropolitan area. Like the other outer metropolitan sub-regions, the south-west appears to have lower proportions of young adults, indicating that many in this age group live outside the sub-region.

On a metropolitan level, the outer sub-regions, at 89 per cent, have a higher percentage of single houses than the metropolitan average of 77 per cent. Dwelling trends in the period from 1996 to 2006 have shown a two per cent increase in the number of separate houses across the entire metropolitan area and a one per cent decrease in the total number of semi-detached, row or terrace housing and town houses.

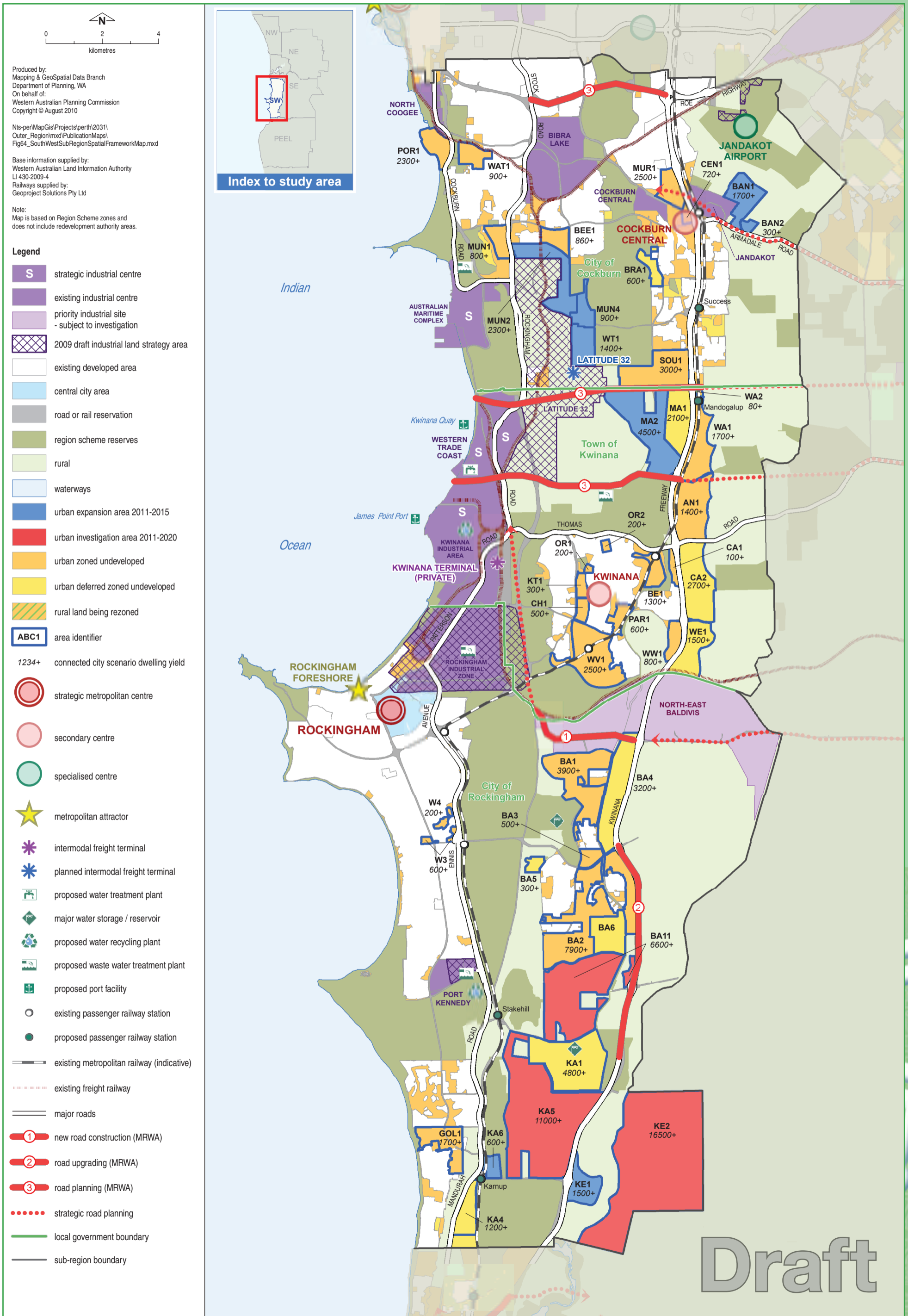
Eighty six per cent of residents in the south-west sub-region live in separate houses, which is slightly lower than the northern and south-east sub regions. The remaining 14 per cent live in grouped or multiple dwellings.

The average household occupancy in the south-west sub-region decreased from 2.63 persons in 2001 to 2.54 persons in 2006 and this decrease is forecast to continue to 2031 and beyond, as predicted for the Perth metropolitan area as a whole. The trend toward declining average household size is due to a number of factors including the increasing number of people choosing to live alone, declining fertility rate, and an increase in single parent families. Other factors contributing to these changes are the ageing population combined with the longer life expectancy of women over men.

11.2 Activity centres

Rockingham is the strategic metropolitan centre in the south-west sub-region. Rockingham city centre provides a full range of services, facilities and activities necessary to support the communities within its catchment (see Figure 55).

Figure 56: South-west sub-region spatial framework map



Metropolitan attractor	Description
City of Rockingham: Rockingham Beach	The Rockingham city centre and beach district centres are established activity centres that have been planned to accommodate the majority of retail, commercial, hospitality and higher- density residential development.

Figure 57: Metropolitan attractors in the south-west sub-region

11.3 Metropolitan attractors

Directions 2031 identified metropolitan attractors as places that attract tourists and are highly valued by local and regional residents. They are often key centres of employment, serving to stimulate the economy (see Figure 57).

11.4 Future growth areas

There are approximately 8,700 hectares of land potentially available for greenfields development within the south-west sub-region, of which the majority is in Kwinana and Rockingham. This land comprises approximately 4,600 hectares of existing urban zoned and urban deferred zoned land yet to be developed and approximately 4,100 hectares of land identified in the draft urban expansion plan (see Figure 58).

11.4.1 Planned urban growth areas

In Figure 56 the following areas are identified to accommodate growth in the sub-region over the next 20 years, through the development of land currently zoned urban and urban deferred.

Cockburn Coast: is a significant urban regeneration project located south of Fremantle and overlooking the Indian Ocean. The project will involve the remediation and redevelopment of approximately 120 hectares of former industrial land as a new oceanside community with an estimated population of 10,800. In conjunction with the cities of Cockburn and Fremantle, LandCorp and other stakeholders, the Department has initiated an MRS amendment to rezone the industrial land to urban deferred and is working towards establishing an appropriate statutory framework under the local planning schemes to provide for local structure planning and development in accordance with the intent of the district structure plan.

Local government area	Land in undeveloped urban zoned areas	Land in undeveloped urban deferred zoned areas	Urban expansion areas 2011-2015	Urban investigation areas 2011-2020	Total
Cockburn	800 ha	100 ha	500 ha	-	1,400 ha
Kwinana	1,100 ha	700 ha	400 ha	-	2,200 ha
Rockingham	800 ha	1,100 ha	100 ha	3,100 ha	5,100 ha
Total	2,700 ha	1,900 ha	1,000 ha	3,100 ha	8,700 ha

Figure 58: Estimated greenfields land available for development in the south-west sub-region (numbers rounded to the nearest hundred)

Port Coogee: a major redevelopment of former industrial land into a marina-based residential community fronting Cockburn Sound. When complete, Port Coogee is expected to accommodate 2,300 new dwellings and a population of more than 5,000 people.

South Baldivis: is indicated as an investigation area on the draft urban expansion plan and the rezoning potential is subject to the resolution of engineering and environmental constraints.

Banjup: A decision on whether Banjup can be developed can only be made once the likely impact of development on the Jandakot groundwater water resource has been determined.

11.4.2 Draft urban expansion plan

This sub-regional strategy has indicated urban expansion areas and investigation areas that could potentially be recommended to undergo statutory rezoning processes in the short to medium term of one to ten years (see Figure 56).

Several of the urban expansion areas indicated in the draft urban expansion plan are constrained as a result of the review of the Kwinana Air Quality Buffer and the need to protect the Jandakot water mound.

Mandogalup: An area situated west of the freeway/ railway line between Rowley Road to the north and Anketell Road to the south, has potential for urban development subject to resolution of Alcoa industrial buffer issues. The western portion of Mandogalup is indicated as an urban expansion area, subject to the successful resolution of air quality concerns as a result of the review of the Kwinana Air Quality Buffer.

Munster: is indicated as an urban expansion area in the draft urban expansion plan. Its development potential will be subject to the successful resolution of air quality concerns as a result of the review of the Kwinana Air Quality Buffer.

Karnup: The future of the southern Karnup area is likely to be influenced by transit oriented development plans for the Karnup station at the intersection of Mandurah and Paganoni Roads.

Keralup: The western portion of Keralup is included as urban expansion area, while the remaining area of this major planning initiative by the Department of Housing is indicated as an urban investigation area.

11.5 Estimated dwelling supply

The estimated dwelling supply for the south-west region is based on currently identified infill opportunities, existing urban and urban deferred zoned land and the urban expansion and investigation areas. The potential dwelling yield is expected to range from approximately 87,000 dwellings under the business as usual scenario up to 120,000 dwellings under the connected city scenario (see Figure 59).

See Appendix 5 for a detailed breakdown of the estimated dwelling supply of known areas within each local government area.

11.6 Economic development and employment growth

11.6.1 Distribution of employment by industry sector

The main sectors of industry providing employment in the south-west sub-region are manufacturing, retail and the education, health and the public administration service sector (see Figure 60).

Local government area	Development type	Estimated dwelling supply	
		Business as usual low density	Connected city medium density
Cockburn	Greenfields	12,870	18,280
	Infill/redevelopment	9,300	11,100
	sub-total	22,170	29,380
Kwinana	Greenfields	15,150	20,480
	Infill/redevelopment	700	800
	sub-total	15,850	21,280
Rockingham	Greenfields	41,800	60,500
	Infill/redevelopment	7,400	8,600
	sub-total	49,200	69,100
South-west	Greenfields	69,820	99,260
	Infill/redevelopment	17,400	20,500
	Total	87,220	119,760

Figure 59: Estimated dwelling supply as a result of infill and greenfields development in the south-west sub-region
(numbers rounded to the nearest ten)

11.6.2

Employment targets and employment self-sufficiency

Perth's employment is concentrated in the inner and middle suburbs while population growth continues to occur in the outer suburbs. The outer sub-regions comprise 51 per cent of the employed residents but only 30 per cent of the jobs. Locally available employment is essential to creating self-contained and vibrant communities with diverse employment choices as well as reducing the need for long journeys to work and alleviating pressure on the transport system.

Employment self-sufficiency in the south-west sub-region is currently 60 per cent. To achieve the Directions 2031 employment self-sufficiency target of 70 per cent, an estimated 87,000 to 113,000 additional jobs will need to be provided in the sub-region over the next 25 years (see Figure 61).

Note: All future industrial areas will be subject to future investigation to evaluate their suitability and ensure that any environmental impacts can be appropriately managed.

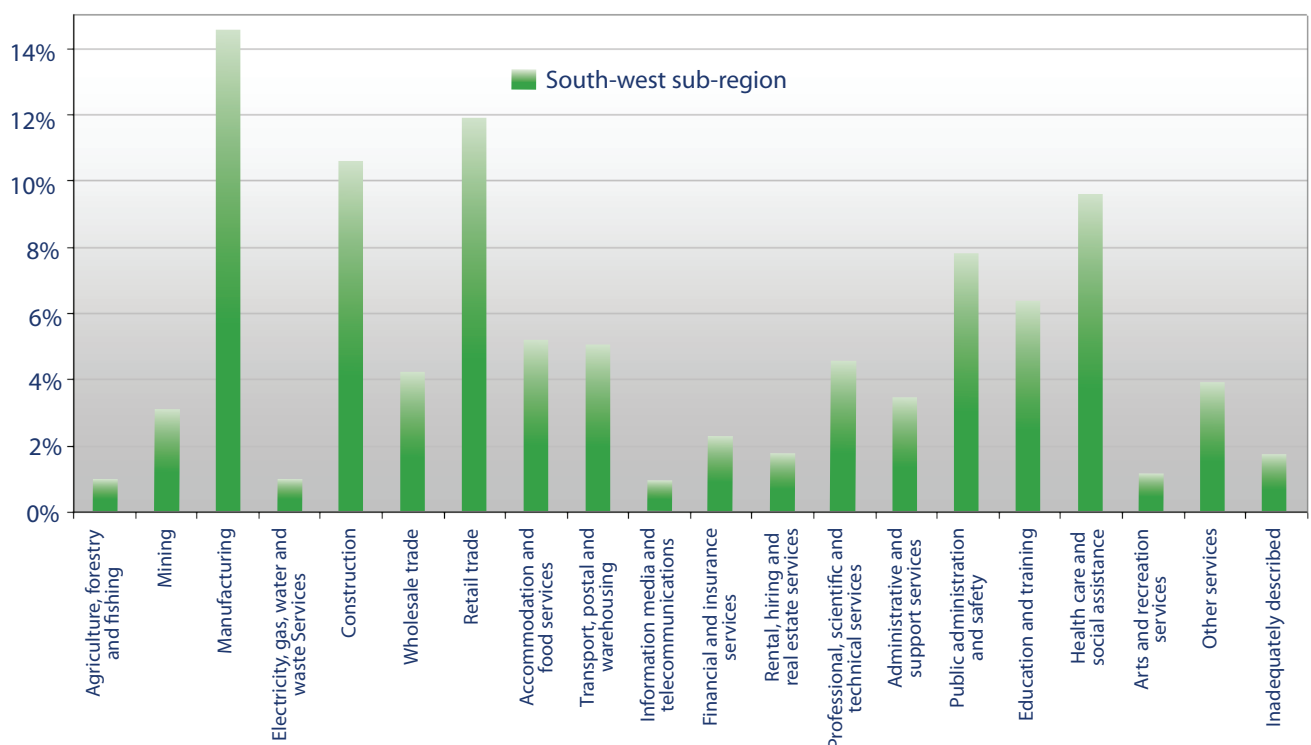


Figure 60: Industry of employment in the south-west sub-region

(Source: 2006 ABS Census of Population and Housing)

	Directions 2031 (20 year horizon)	Business as usual (25 year horizon)	Connected city (25 year horizon)
Additional dwellings	41,000	91,530	119,760
Employment			
Additional labour force at 1.3 working people per household	53,000	119,000	156,000
Additional local jobs to achieve 70% employment self-sufficiency	41,300*	87,000	113,000

The ABS 2009 estimate residential population is used as base data for the recalculation of the Directions 2031 employment self-sufficiency target

Figure 61: Employment self-sufficiency in the south-west sub-region

11.6.3 Industrial and employment land

The draft Industrial Land Strategy (WAPC 2009) audited known existing, planned or anticipated industrial developments that are to be released between 2009 and 2025. Four strategic industrial centres were identified as key industrial nodes in the Perth metropolitan and Peel regions. In addition, six priority industrial sites (for investigation) and another 20 possible future industrial sites were identified as potential areas for future rezoning. These priority and possible future industrial sites provide a land bank for industrial land supply over the short to medium term (see Figure 62).

Western Trade Coast: The Western Trade Coast strategic industrial centre will continue to be a major focus of metropolitan and State industrial activity, with a focus on heavy manufacturing, processing, fabrication and export. It comprises the Kwinana Industrial Area core, Latitude 32 and the Rockingham industry zone, which includes East Rockingham, and the Australian Marine Complex at Henderson. These industrial centres make an important contribution to meeting the short, medium and long term market demand for industrial land in metropolitan Perth and will generate significant employment opportunities for the south-west sub-region.

Cockburn Sound: The planned outer harbour in Cockburn Sound will provide a regional hub for the continued growth of national and international trade.

Bibra Lake and East Rockingham: Bibra Lake in Cockburn and the East Rockingham industrial area will continue to be significant areas of employment and contributors to the production of industrial output.

The draft Industrial Land Strategy (WAPC 2009) identifies the need for the expansion of the Hope Valley Industrial Area (Latitude 32); north-east Baldivis as a priority industrial area for investigation and possible future industrial sites.

Latitude 32: encompasses some 1400 hectares and is expected to generate approximately 10,000 jobs over the medium to long term. Latitude 32 will integrate with the Kwinana Industrial Area, the Australian Marine Complex at Henderson, the East Rockingham Industrial Park and the planned new Outer Harbour project to provide a regional hub for the continued growth of national and international trade. An inter-modal transport terminal will form part of the development and will facilitate the effective and efficient movement and storage of freight.

Existing industrial stock			Future industrial land		
Strategic industrial centre	Industrial centre	Current industrial land release areas	Extension industrial site	Priority industrial area (subject to investigation)	Possible future industrial site
Western Trade Coast	Bibra Lake Cockburn Central Jandakot North Coogee Port Kennedy	Hope Valley Wattleup redevelopment area East Rockingham Industrial Park Jandakot Airport Port Kennedy business enterprise zone	Hope Valley extension	North-east Baldivis	Hope Valley Postans Karnup Jandakot

Figure 62: Industrial land distribution in the south-west sub-region

(Source: Draft Industrial Land Strategy, WAPC 2009)

New port development: Fremantle Inner harbour is expected to reach capacity in container traffic by 2015. In order to continue to meet the long-term future needs of the metropolitan region for containerised import and export freight demands, new gateways will need to be identified. In 2009, the State Government established the Fremantle Port Optimum Planning Group which has identified future strategies for ports in the Fremantle-Cockburn Sound areas for future consideration.

Jandakot Airport: Directions 2031 identifies Jandakot Airport as a specialised centre in recognition of the strategic significance of its aviation functions as well as its operations and associated land uses that contribute to local employment and the economic development of the State.

Note: All future industrial areas will be subject to investigation to evaluate their suitability and ensure that any environmental impacts can be appropriately managed.

Way forward

In response to strategic employment and economic issues the Department of Planning, in partnership with local government, will develop a metropolitan and Peel region economic development and employment strategy which will include addressing issues specific to the south-west sub-region such as:

- increasing the supply of industrial land to meet future demand; and
- finalising the Western Trade Coast economic development strategy.

Facility	Status
Metropolitan waste water treatment plants (WWTP)	
Woodman Point WWTP	Ongoing upgrades and expansions planned 2010-2020
Kwinana WWTP	Recently expanded with odour control works planned 2014-15
East Rockingham WWTP	Land purchased and first 40ML/day module planned for construction by 2015
Ocean outfall duplication	2014-2016
Metropolitan water storage	
Karnup Reservoir	Planned for construction after 2020
Potential water recycling plants (WRP)	
Port Kennedy WRP	Subject to local treated waste water re-use demand from industry/horticulture and feasibility
Jandakot groundwater expansion	Potential water trading

Figure 63: Water infrastructure projects in the south-west sub-region

(Source: Water Corporation, 2009)

11.7 Planned and required infrastructure

11.7.1 Water

Initial consultation with the Water Corporation has identified the current status of water infrastructure projects in the sub-region as set out in Figure 63.

11.7.2 Energy

Network capacity mapping tool

Additional energy infrastructure will be required to service the growing population. Western Power and the Department of Planning, through the Urban Development Program, have initiated a project to develop a geospatial tool to show electricity capacity and utilisation as a result of land/building development and the future planned capacity of electricity infrastructure. This network capacity mapping tool will identify areas of underutilised capacity as well as areas where network upgrades are a priority to service future growth. It is anticipated that this tool will be available online through the Shared Land Information Platform (SLIP) planning portal (www.landgate.wa.gov.au).

Road/route	Project
Recently completed projects by Main Roads WA (2009)	
Roe Highway	Roe Highway Stage 7 comprised the design and construction of 4.5 kilometres of dual carriageway to improve road safety, reduce freight transport costs and enhance community amenities and access between Midland, Kenwick and Kwinana.
Kwinana Freeway/Forrest Highway	The Kwinana Freeway/Forrest Highway, formerly known as the New Perth-Bunbury Highway project involved the construction of a 70.5 kilometre four-lane dual carriageway from the previous southern end of the Kwinana Freeway at Safety Bay Road to join the Old Coast Road near Lake Clifton. This road is a safe and free-flowing route for regional traffic and long-distance haulage traffic away from built-up areas and relieves pressure and congestion on the existing coastal route through Mandurah and the South Western Highway.
Main Roads WA projects in progress or funded (2009)	
Roe Highway	The proposed Roe Highway extension between the Kwinana Freeway and Stock Road is a critical link in the metropolitan road network. It will enable Stock Road, which is planned as a future freeway, to be connected to the remainder of the Perth freeway network. This is an important link as it will enable freight vehicles to travel to and from the Kwinana Industrial area and other developments in the area to the metropolitan area on a high standard free-flowing network that will significantly improve transport efficiencies and safety.
High Street	High Street road improvements.
Kwinana Freeway	Kwinana Freeway has been constructed as a four-lane freeway to Leach Highway, but will require progressive upgrading to six-lanes from Leach Highway to Roe Highway as traffic volumes increase due to future development. Even with this improvement it is anticipated that sections of the Kwinana Freeway will still experience congestion and delays.
Mundijong Road	The extension of the western portion of Mundijong Road is required to provide a high standard connection to the Kwinana Freeway.
Outer Harbour access routes	An upgrade is required of the Outer Harbour access routes.
Strategic road planning	
Armadale Road	Dualling of Armadale Road from Anstey Road to Tapper Road is required.
Stock Road/ Fremantle Rockingham Central Access Highway	The Stock Road/Fremantle Rockingham Central Access Highway route provides a strong north-south connection along the coast from Fremantle to Rockingham. It is planned to freeway standard and its role will be enhanced with the proposed Roe Highway extension.
East-west sub-regional links	Similar to the northern sub-regions, there is a lack of east-west routes to provide access to future developments in the south along the coast. It will be necessary to upgrade and extend Rowley Road, Anketell Road and Mundijong Road to function as east-west sub-regional links.
North Lake Road	The extension of North Lake Road and the associated freeway bridge is required to improve access and connectivity between the developments on either side of the road.

Figure 64: Strategic road planning in the south-west sub-region

11.7.3

Public transport network

The conceptual future public transport plan makes provision for new passenger railway stations and interchange facilities at Success/ Mandogalup and Karnup on the Mandurah line. Rapid transit services are also likely to be warranted from Rockingham railway station through Rockingham city centre to Baldivis. It is likely that leading up to 2031 a rapid transit facility may be developed from Fremantle to Cockburn Central via Cockburn Coast; as well as a bus rapid transit facility from Fremantle to Rockingham via Latitude 32 and Kwinana.

11.7.4

Road network

Figure 64 shows proposed, completed or strategic road planning projects in progress, which have been identified from initial consultations with Main Roads WA, local government authorities and other agencies.

Way forward

This audit of projects and other essential service infrastructure projects will be monitored, reviewed and updated as part of ongoing consultations between the Department of Planning, local government and State government infrastructure agencies and public utilities.

11.7.5

Freight network

The freight network and existing and planned intermodal freight terminals are indicated in Figure 64.

The identification and development of new urban growth areas along key public transport routes or urban corridors will require clear principles and guidelines derived from analysis of the functional role of these routes as part of the city's transport network. Those roads with a predominant freight function are identified in *State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning*. This policy aims to ensure that the land use and transport functions of roads are mutually compatible by focussing on environmental standards for abutting noise-sensitive development and protecting major freight corridors from incompatible urban encroachment.

Intermodal terminals represent strategically situated points in the transport distribution network that enable freight to be transferred from road to rail and visa versa. Their location and efficiency significantly affects the entire intermodal freight transport chain. It is also possible that inland facilities can act as staging points for containers moving by rail to and from sea ports. In the future it will be advantageous to maximise the use of rail transport, particularly in urban areas where congestion and fuel pricing can work against road transport. An investigation of the suitability of an intermodal freight terminal at Latitude 32, as strategically important industrial sites, will be required.

11.7.6

Social infrastructure

Growth in the sub-region will require significant investment in social infrastructure. These requirements will need to be developed by considering the estimated range of dwelling yields; WAPC Liveable Neighbourhoods policy standards; consultation with the relevant service providers and local government authorities and existing levels of social infrastructure provision.

11.8 Sub-regional planning actions

Key planning actions in the south-west sub-region are outlined in Figure 65.

Local government area	Action	Stakeholder
City of Cockburn Town of Kwinana Town of Armadale Shire of Serpentine Jarrahdale	Review Statement of Planning Policy 2.3 Jandakot Groundwater Protection Policy.	Local government authorities Department of Water WAPC Department of Planning
Town of Kwinana City of Rockingham Shire of Murray City of Mandurah City of Armadale Shire of Serpentine Jarrahdale Shire of Waroona	Finalise South Metropolitan and Peel Transport Study to determine the preferred transport network to support future growth.	Local government authorities Department of Planning Department of Transport Department of Environment and Conservation Public Transport Authority
Town of Kwinana City of Rockingham Shire of Murray City of Mandurah City of Armadale Shire of Serpentine Jarrahdale Shire of Waroona	Finalise environmental, transport, and economic development studies; and initiate and progress an amendment to the Metropolitan Region Scheme as key elements of the Keralup project.	Local government authorities WAPC Department of Planning Department of Housing Department of Environment and Conservation
City of Cockburn Town of Kwinana City of Rockingham	Finalise the Southern Metropolitan and Peel Sub-regional Structure Plan, informed by the Outer Metropolitan Perth and Peel Sub-regional Strategy.	Local government authorities WAPC Department of Planning

Figure 65: Planning actions required in the south-west sub-region

12. Peel sub-region



The ABS 2009 estimated resident population in the Peel sub-region is approximately 86,800 people. The sub-region comprises the City of Mandurah, Shire of Murray and Shire of Waroona local government areas.

City of Mandurah

The ABS 2009 estimated resident population in the City of Mandurah local government area is approximately 68,300 people. The area is largely characterised by low to medium density residential development with increasing densities in the central city area. Although traditionally viewed as a holiday town, Mandurah is becoming increasingly integrated with metropolitan Perth due to improved transport connections and ongoing population growth in both the Perth and Peel regions.

Shire of Murray

The ABS 2009 estimated resident population in the Shire of Murray local government area is approximately 14,800 people. Murray is characterised by low density residential development in the larger centres and significant rural residential development. Much of the shire has a rural character and is experiencing increasing development pressure.

Shire of Waroona

The ABS 2009 estimated resident population in the Shire of Waroona local government area is approximately 3,800 people. Most of the shire is rural based with rural smallholdings prevalent in Lake Clifton, Waroona and Hamel. The area is significantly removed from the Perth metropolitan area and has experienced minimal growth pressure at this time.



Strategic metropolitan centre	Secondary centre	District centre
Mandurah	Pinjarra	Falcon Halls Head Lakelands Waroona Ravenswood (Riverfront)*

* denotes emerging centre

Figure 66: Hierarchy of activity centres within the Peel sub-region

12.1 Population and household characteristics

The Peel sub-region deviates significantly from other outer metropolitan Perth sub-regions in that there are a significantly lower proportion of residents aged 15 to 40 years and a far greater proportion of residents aged over 55 years. This reflects its status as a preferred retirement destination, attracting residents from other parts of Perth and regional areas of Western Australia. An aging population will require locations to provide specialised facilities such as hospitals and medical centres as well as increased diversity in existing residential areas in order to allow the ageing population sufficient opportunity to change their lifestyle within their existing communities.

On a metropolitan level, the outer sub-regions, at 89 per cent, have a higher percentage of single houses, than the metropolitan average of 77 per cent. Dwelling trends in the period from 1996 to 2006 have shown a two per cent increase in the number of separate houses across the entire metropolitan areas and a one per cent decrease in the total number of semi-detached, row or terrace housing and town houses.

A lower proportion of Peel residents (82 per cent) live in separate houses, compared to the other outer sub-regions. The remaining 18 per cent live in group or multiple dwellings, semi-detached, row or terrace

housing and town houses and this is likely to reflect the smaller dwelling needs of its older/retiree resident population.

Peel was the only sub-region to record a slight increase in average household size of 2.19 persons to 2.30 persons over the period 2001-2006. It is forecast that the household size will continue to rise slightly over the next five years but will decrease thereafter, albeit at a much slower rate than the other sub-regions of outer metropolitan Perth.

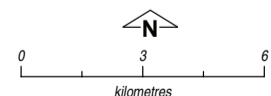
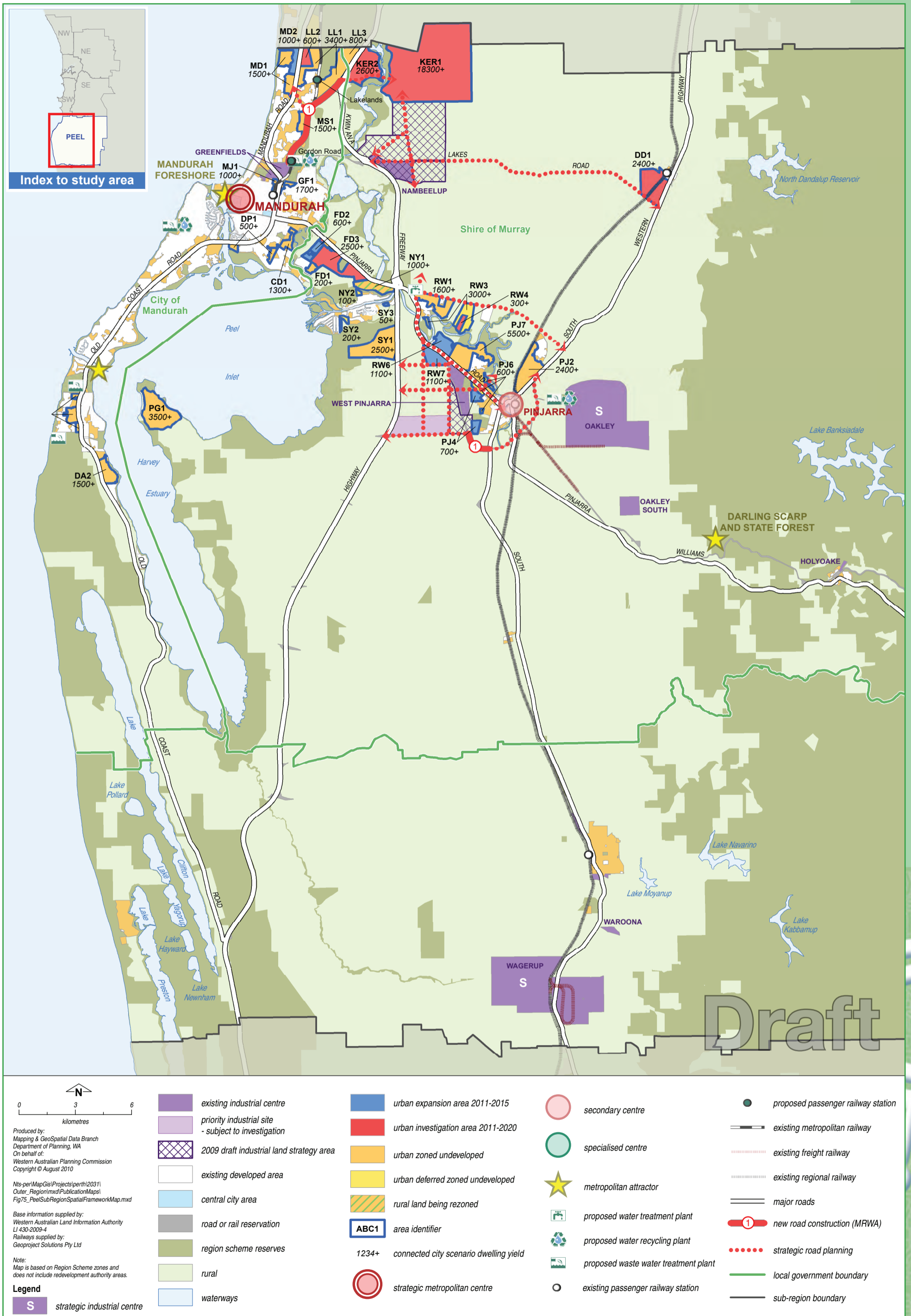
12.2 Activity centres

Mandurah is the strategic metropolitan centre of the sub-region and provides convenience and comparison retail, community and health services, and professional and business services for a large catchment population. Mandurah city centre will continue to be the primary focus for commercial and social activity in the sub-region (see Figure 66).

12.3 Metropolitan attractors

Directions 2031 identified metropolitan attractors as places that attract tourists and are highly valued by local and regional residents. They are often key centres of employment, serving to stimulate the economy.

Figure 67: Peel sub-region spatial framework map



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Mapping & GeoSpatial Data Branch
Department of Planning, WA
On behalf of:
Western Australian Planning Commission
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Fig75_PeelSubRegionSpatialFrameworkMap.mxd

Base information supplied by:
Western Australian Land Information Authority
LI 430-2009-4
Railways supplied by:
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Note:
Map is based on Region Scheme zones and
does not include redevelopment authority areas.

Legend

- S strategic industrial centre

- existing industrial centre
- priority industrial site - subject to investigation
- 2009 draft industrial land strategy area
- existing developed area
- central city area
- road or rail reservation
- region scheme reserves
- rural
- waterways
- urban expansion area 2011-2015
- urban investigation area 2011-2020
- urban zoned undeveloped
- urban deferred zoned undeveloped
- rural land being rezoned
- ABC1 area identifier
- 1234+ connected city scenario dwelling yield
- strategic metropolitan centre
- secondary centre
- specialised centre
- metropolitan attractor
- proposed water treatment plant
- proposed water recycling plant
- proposed waste water treatment plant
- existing passenger railway station
- existing metropolitan railway
- existing freight railway
- existing regional railway
- major roads
- new road construction (MRWA)
- strategic road planning
- local government boundary
- sub-region boundary
- proposed passenger railway station

Metropolitan attractor	Description
City of Mandurah: Mandurah Foreshore	The City of Mandurah is located in an area with natural values that attract the tourism trade and retirement demographics. These values include the beaches, waterways and national parks that provide the basis for a range of recreation and leisure activities as well as retail and commercial opportunities.
Peel Harvey Estuary	The Peel Harvey Estuary lies within the City of Mandurah and Shire of Murray. The estuary is home to abundant marine wildlife including the Blue Swimmer crab and is also a significant base for migratory waterbirds.
Perth Hills	The Perth Hills run through the north-east, south-east and Peel sub-regions. The hills are largely natural areas, with many reserves, cycle trails, and includes parts of the Bibbulmun Track.

Figure 68: Metropolitan attractors in the Peel sub-region

Directions 2031 identifies the Mandurah Foreshore and the marina as a metropolitan attractor. The recreation opportunities of the Peel-Harvey waterways and foreshores, as well as those of the Darling Scarp and its forest environment, are significant assets in the sub-region (see Figure 68) and similarly recognised as metropolitan attractors.

hectares of existing urban and urban deferred zoned land not yet developed, and approximately 400 hectares of urban expansion areas and approximately 2,400 hectares of investigation areas (see Figure 69).

12.4 Future growth areas

Approximately 4,900 hectares of greenfields land is currently identified for development in the Peel sub-region. This land comprises approximately 2,100

12.4.1 Planned urban growth areas

The following areas are identified to accommodate growth in the sub-region over the next 20 years, through the development of land currently zoned urban and urban deferred and infill redevelopment projects.

City of Mandurah: The inner Mandurah Precinct plan proposes a significant infill/redevelopment project and increased residential density and diversity in the city centre.

Local government area	Land in undeveloped urban zoned areas	Land in undeveloped urban deferred zoned areas	Rural land in the process of region scheme rezoning	Urban expansion areas 2011-2015	Urban investigation areas 2011-2020	Total
Mandurah	700 ha	-	-	100 ha	100 ha	900 ha
Murray	1,200 ha	100 ha	100 ha	300 ha	2,300 ha	4,000 ha
Total	1,900 ha	100 ha	100 ha	400 ha	2,400 ha	4,900 ha

Figure 69: Estimated greenfields land available for development in the Peel sub-region
(numbers rounded to the nearest hundred)

Shire of Murray: An increase in the rate of development on existing urban zoned land at South Yunderup, Ravenswood and Pinjarra may occur now that the Forrest Highway is completed. More substantial levels of development however, are expected in these areas once the availability of suitable land in coastal areas decreases.

North Yunderup: North Yunderup is included as rural land to be rezoned.

12.4.2 Draft urban expansion plan

This sub-regional strategy has indicated urban expansion areas and investigation areas, which could potentially be recommended to undergo statutory rezoning processes in the short to medium - term of one to ten years (see Figure 67).

Furnissdale: is indicated as an urban investigation area on the draft urban expansion plan. Subject to the outcome of investigations, this area may provide for up to 5,000 additional dwellings, thereby increasing the range of housing opportunities in the vicinity of Mandurah.

Keralup, North Ravenswood, West Pinjarra and Nirimba: Keralup is indicated as an urban investigation area on the draft urban expansion plan, while the rest of the potential areas will be investigated for longer term development or protection, beyond 2031. The extent of possible urban development will depend on the ability to provide a suitable regional road network and the outcomes of the Department of Water's Drainage and Water Management Plan due for completion in 2010. This process may raise feasibility issues relating to development in the eastern Peel region.

North Dandalup, Preston Beach and Waroona: investigations for a North Dandalup townsite are underway which may provide for up to 2,000 additional dwellings. North Dandalup is indicated as an urban investigation area on the draft urban expansion plan. At Preston Beach, a proposed townsite strategy is under preparation and should be released for public comment in 2010. In March 2009, the WAPC endorsed the Shire of Waroona Local Planning Strategy, which incorporates proposals for urban expansion to the north of the townsite.

Some consolidation is proposed around existing urban areas in Madora Bay, Pinjarra, Yunderup, and South Ravenswood and they are indicated as urban expansion areas, while areas around Lakelands are identified as urban investigation areas on the draft urban expansion plan.

12.5 Estimated dwelling supply

The estimated dwelling supply for the Peel region is based on currently identified infill opportunities, existing urban and urban deferred zoned land and urban expansion and investigation areas. The potential dwelling yield is expected to range from approximately 64,000 dwellings under the business as usual scenario to almost 86,000 dwellings under the connected city scenario (see Figure 70).

See Appendix 6 for a detailed breakdown of the estimated dwelling supply of known areas within each local government area.

12.6 Economic development and employment growth

12.6.1 Distribution of employment by industry sector

The main industry sectors providing employment in the Peel sub-region are manufacturing, construction and retail trade and the health and education service sector (see Figure 71).

12.6.2 Employment self-sufficiency targets

Perth's employment is concentrated in the inner and middle suburbs while population growth continues to occur in the outer suburbs. The outer sub-regions comprise 51 per cent of the employed residents

Local government area	Development type	Estimated dwelling supply	
		Business as usual low density	Connected city medium density
Mandurah	Greenfields	9,500	14,600
	Infill/redevelopment	13,700	16,000
	sub-total	23,200	30,600
Murray	Greenfields	37,580	51,050
	Infill/redevelopment	3,600	4,200
	sub-total	41,180	55,250
Peel	Greenfields	47,080	65,650
	Infill/redevelopment	17,300	20,200
	Total	64,380	85,850

Figure 70: Estimated dwelling supply as a result of infill and greenfield development in the Peel sub-region (numbers rounded to the nearest ten)

but only 30 per cent of the jobs. Locally available employment is essential to creating self-contained and vibrant communities with diverse employment choices. It also reduces the need for long journeys to work and alleviate pressure on the transport system.

Employment self-sufficiency in the Peel sub-region is currently 71 per cent. To achieve the Directions 2031 employment self-sufficiency target of 80 per cent, between 36,000 and 56,000 additional jobs will need to be provided in the sub-region over the next 25 years (see Figure 72).

Way forward

Local governments in the Peel region are working with the Peel Development Commission to formulate an economic development strategy. In addition to provision for employment self-sufficiency, a key objective of this strategy is to diversify business and employment opportunities. These business and employment needs will also need to be reflected in structure planning for the region.

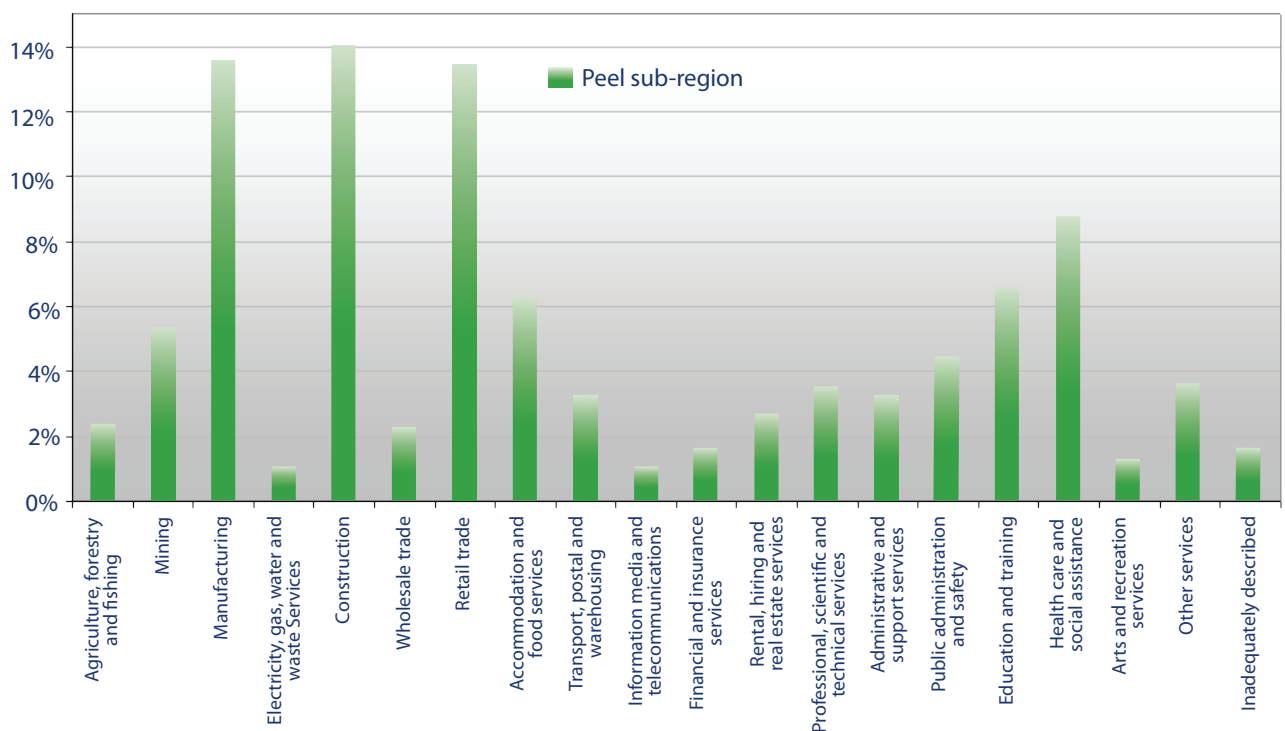


Figure 71: Distribution of employment by industry sector in the Peel sub-region

(Source: 2006 ABS Census of Population and Housing)

	Directions 2031 (20 year horizon)	Business as usual (25 year horizon)	Connected city (25 year horizon)
Additional dwellings	26,000	65,980	85,850
Employment			
Additional labour force at 1.3 working people per household	34,000	86,000	112,000
Additional local jobs to achieve 80% employment self-sufficiency	-5,600*	36,000	56,000

The ABS 2009 estimate residential population is used as base data for the recalculation of the Directions 2031 employment self-sufficiency target

Figure 72: Employment self-sufficiency in the Peel sub-region

12.6.3 Industrial and employment land

The draft Industrial Land Strategy (WAPC 2009) audited known existing, planned or anticipated industrial developments that are to be released between 2009 and 2025. Four strategic industrial centres were identified as key industrial nodes in the Perth metropolitan and Peel regions. In addition, six priority industrial sites (for investigation) and another 20 possible future industrial sites were identified as potential areas for future rezoning. These priority and possible future industrial sites provide a land bank for industrial land supply over the short to medium term (see Figure 73).

Oakley and Wagerup strategic industrial centres are a critical component in the future development of the Peel sub-region. These mineral processing enterprises generate substantial export revenue, provide significant employment and business agglomeration opportunities, and support research and development.

Nambeelup: currently being planned as a regional industrial centre and is to be primarily focused on providing industrial products and services to the Peel sub-region.

West Pinjarra: The southward expansion of the existing West Pinjarra industrial area is currently being investigated.

Greenlands: currently being investigated as a potential regional industrial centre and is included as a priority industrial site in the draft Industrial Land Strategy (WAPC 2009).

Note: All future industrial areas will be subject to future investigation to evaluate their suitability and ensure that any environmental impacts can be appropriately managed.

Way forward

In response to strategic employment and economic issues the Department of Planning, in partnership with local government, will develop a metropolitan Perth and Peel region economic development and employment strategy to address:

- diversifying and attracting strategic employment opportunities in the Peel sub-region;
- anchor employment generators; and
- diversifying the economic development.

Existing industrial stock			Future industrial land		
Strategic industrial centre	Industrial centre	Current industrial land release area	Extension industrial site	Priority industrial area (subject to investigation)	Possible future industrial sites
Oakley (Alcoa) Wagerup (Alcoa)	Greenfields Holyoake Nambeelup Oakley South West Pinjarra Waroona	Nambeelup West Pinjarra Extension	Nambeelup Extension West Pinjarra	Greenlands	Waroona

Figure 73: Industrial land distribution in the Peel sub-region

(Source: Draft Industrial Land Strategy, WAPC 2009)

12.7 Planned and required infrastructure

12.7.1 Water

The greater Mandurah wastewater catchment currently comprises treatment plants at Gordon Road, Halls Head, Caddadup and Pinjarra. These plants are nearing their current maximum operating capacities and the forecast rapid population growth in this catchment will need to be met by increased treatment and conveyance capacity. The Water Corporation is undertaking a review of wastewater planning for the greater Mandurah area catchment and will consider various options to 2060, including expansion of existing plants, consolidation all four plants into one new, large treatment plant; or a combination of these two solutions.

Initial consultation with the Water Corporation has identified the current status of water infrastructure projects in the sub-region as set out in Figure 74.

12.7.2 Energy

Network capacity mapping tool

Additional energy infrastructure will be required to service the growing population. Western Power and the Department of Planning, through the Urban Development Program, have initiated a project to develop a geospatial tool to show electricity capacity and utilisation as a result of land/building development and the future planned capacity of electricity infrastructure. This network capacity mapping tool will identify areas of underutilised capacity as well as areas where network upgrades are a priority to service future growth. It is anticipated that this tool will be available online through the Shared Land Information Platform (SLIP) planning portal (www.landgate.wa.gov.au).

Facility	Status
Metropolitan waste water treatment plants (WWTP)	
Gordon Road WWTP	Existing with planned extension
Pinjarra WWTP	Existing with planned extension
Halls Road WWTP	Existing with planned extension
Tim's Thicket WWTP	Potential new WWTP
Caddadup WWTP	Existing with planned extension
Metropolitan water treatment plants (WTP)	
Ravenswood WTP	Existing
Pinjarra WTP	Existing
Preston Beach WTP	Existing
East Ravenswood WTP	Planned
Potential water recycling plants (WRP)	
Gordon Road WRP	Planned subject to reuse demand and feasibility

Figure 74: Water infrastructure projects in the Peel sub-region

(Source: Water Corporation, 2009)

12.7.3 Public transport network

A rapid transit service is likely to be warranted from Karnup railway station to Keralup, Nambeelup, Lakelands and Mandurah railway station to Mandurah City Centre may require rapid transit services.

12.7.4 Road network

Figure 75 shows proposed, completed or strategic road planning projects in progress, which have been identified from initial consultations with Main Roads WA, local government authorities and other agencies.

12.7.5 Freight network

The freight network and existing and planned intermodal freight terminals are indicated in Figure 67.

The identification and development of new urban growth areas along key public transport routes or urban corridors will require clear principles and guidelines derived from analysis of the functional role of these routes as part of the city's transport network. Those roads with a predominant freight function are identified in . This policy aims to ensure that the land use and transport functions of roads are mutually compatible by focussing on environmental standards for abutting noise-sensitive development and protecting major freight corridors from incompatible urban encroachment.

Road/route	Project
Recently completed projects by Main Roads WA (2009)	
Kwinana Freeway/ Forrest Highway	The Kwinana Freeway/Forrest Highway, formerly known as the New Perth Bunbury Highway project, involved the construction of a 70.5 kilometre four-lane dual carriageway from the southern end of the Kwinana Freeway at Safety Bay Road to join the Old Coast Road near Lake Clifton. This road is a safe and free flowing route for regional traffic and long distance haulage traffic away from built-up areas and relieves pressure and congestion on the existing route through Mandurah.
Main Roads WA projects in progress or funded (2009)	
Mandjoogoordap Road	The construction of the entrance road to Mandurah (Mandjoogoordap Road) from the Kwinana Freeway/Forest Highway at Lyon Road.
Strategic road planning	
Lakes Road	The existing Other Regional Roads reservation under the Peel Region Scheme, is being reviewed to provide for possible widening between Mandurah entrance road and the Kwinana Freeway. The Other Regional Roads reservation may also be extended to include the section between the freeway and North Dandalup.
Greenlands Road	The western portion of this road is to be upgraded to a primary regional road, and is an important direct east-west link between the South Western Highway and the Forrest Highway. It is important that the regional transport function of this route is protected.
Pinjarra Eastern Bypass	A revised alignment at the southern end is currently under consideration.
Pinjarra Western Bypass	Upgrade of Pinjarra Western Bypass between Greenlands Road and South-western Highway is required.
	Realignment of Pinjarra Western Bypass is required between Greenlands and Beacham/Pinjarra Road.
Old Mandurah Traffic Bridge	Replacement or refurbishment of Old Mandurah Traffic Bridge is required.
Mandurah Road	Automatic lane switching may be required on the Mandurah Traffic Bridge.
Regional road network	The Kwinana Freeway/Forrest Highway caters for longer distance regional traffic rather than local traffic. Any closer development adjacent to the Kwinana Freeway/Forrest Highway must have an efficient local and district level transport network that provides suitable access without requiring the use of the highway for local/district travel. A regional road network study is required to maintain this function as an inter-regional transport corridor. There needs to be a robust local and regional road network to maintain through traffic on the Kwinana Freeway/Forrest Highway, which will be part of the revision of the Southern Metropolitan and Peel Sub-regional Structure Plan.
Tonkin Highway	Constructed as a four-lane controlled access road to Thomas Road. There is a road reservation from Thomas Road to Mundijong Road at which point it is planned that Tonkin Highway will then link into the South-western Highway. Options for the extension of the Tonkin Highway require investigation.
South Western Highway	This route provides an important regional function and carries a significant number of heavy vehicles. Any future development along the South Western Highway will need to be carefully planned and managed to ensure that it does not compromise the regional transport function of this route. In the future, there may be a need to plan for some deviations around some built areas.

Figure 75: Strategic road planning in the Peel sub-region (continued overleaf)

Road/route	Project
Strategic road planning	
Mandurah Road	This existing road provides an important regional function separate from the function of the Kwinana Freeway/Forrest Highway and will continue to carry significant volumes of regional and district traffic. It is required to protect the regional transport function of this route.
Pinjarra Road	The Other Regional Road reserve of the Pinjarra Road section in Mandurah is being reviewed to provide for upgrading.
	The width of the existing Primary Regional Road reservation of the Pinjarra Road is being reviewed to ensure sufficient capacity for long term transportation and servicing. It is important that the regional transport function of this route is protected, particularly between Mandurah Road and South Yunderup Road.
	It is necessary to protect the option for realignment of Pinjarra Road, east of the planned Ravenswood District Activity Centre, to form part of a north-south road corridor to serve future urban uses including the activity centre and related development.

Figure 75: Strategic road planning in the Peel sub-region

Intermodal terminals represent strategically situated points in the transport distribution network that enable freight to be transferred from road to rail and visa versa. Their location and efficiency significantly affects the entire intermodal freight transport chain. It is also possible that inland facilities can act as staging points for containers moving by rail to and from sea ports. In the future it will be advantageous to maximise the use of rail transport, particularly in urban areas where congestion can work against road transport.

12.7.6 Social infrastructure

Growth in the sub-region will require significant investment in social infrastructure. These requirements will need to be developed by considering the estimated range of dwelling yields; WAPC Liveable Neighbourhoods policy standards; consultation with the relevant service providers and local government authorities and existing levels of social infrastructure provision.

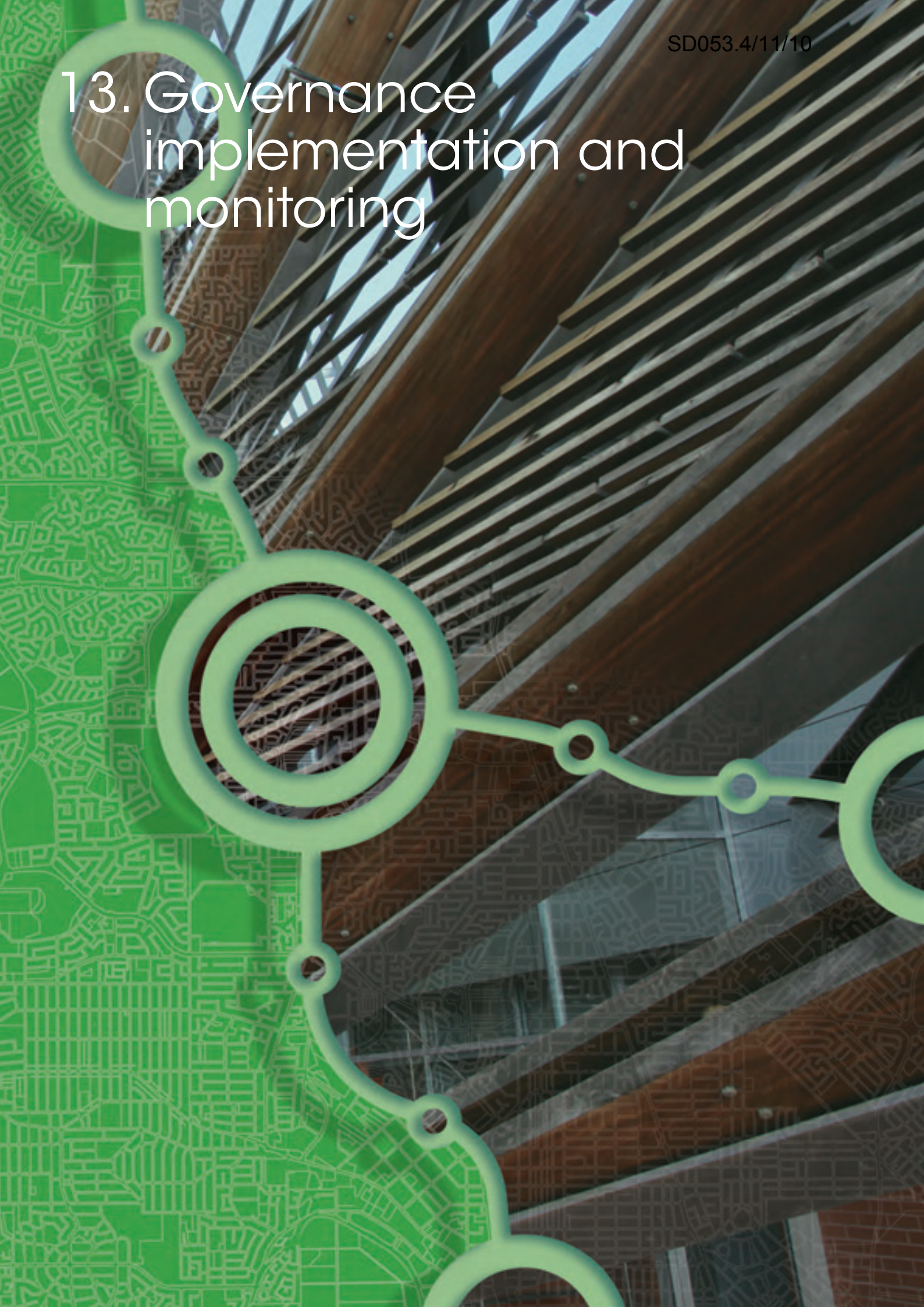
12.8 Sub-regional planning actions

Planning actions required in the Peel sub-region are outlined in Figure 76.

Local government area	Action	Stakeholders
City of Mandurah Shire of Murray	Prepare a revised long term Southern Metropolitan and Peel Sub-regional Structure Plan, informed by the Outer Metropolitan Perth and Peel Sub-regional Strategy final report.	City of Mandurah Shire of Murray Shire of Waroona WAPC Department of Planning Department of Water Department of Environment and Conservation Public Transport Authority Main Roads WA Water Corporation
City of Mandurah	Finalise Mandurah City Centre Precinct Plan Finalise Mandurah Junction Precinct Plan LandCorp has developed a transit oriented development plan for this precinct. It is expected that Council will approve the plan for advertising early 2010.	City of Mandurah Department of Planning City of Mandurah Department of Planning LandCorp WAPC
Shire of Murray	Finalise Furnissdale Structure Plan.	Shire of Murray WAPC Department of Planning
	Finalise North Dandalup town site Structure Plan.	Shire of Murray WAPC Department of Planning

Figure 76: Planning actions required in the Peel sub-region

13. Governance implementation and monitoring



13.1 Implementation

In order to achieve the objectives of Directions 2031 a strategic action plan for implementation has been developed that identifies delivery timeframes of key actions grouped according to the five Directions 2031 themes.

The implementation plan is focussed on the following nine strategies to meet land supply, housing and employment needs:

Liveable

1. Plan for increased housing supply in response to changing population needs.
2. Promote and increase housing diversity, adaptability, affordability and choice.
3. Ensure urban expansion occurs in a timely manner in the most suitable locations.
4. Promote higher densities in greenfield development.

Prosperous

5. Facilitate and retain employment land to support economic growth and a balanced distribution of employment across the metropolitan Perth and Peel regions.

Accessible

6. Plan and develop for transit oriented developments mixed use and medium-rise higher density housing development.

Sustainable

7. Protect our natural and built environments and scarce resources; respond to social change and optimise the land use and transport conditions that create vibrant, accessible, healthy and adaptable communities.

Responsible

8. Maximise essential urban infrastructure efficiency and equity, and develop a coordinated approach to infrastructure and land use planning and development.
9. Engage with the development industry, State government agencies, local government and the community to implement the Strategy

It is intended that the most appropriate actions will be implemented through adoption in local planning strategies, schemes and centre plans for which the Department of Planning exercises statutory control, as approved by the Minister for Planning on the advice of the WAPC.

The strategic action plan identifies state government agencies, local government authorities and other stakeholders that will lead or partner the delivery of the currently identified initiatives which will be commenced or completed as part of an ongoing program across four time frames.

- short-term of 1 to 2 years;
- medium-term of 3 to 5 years; and,
- long term of 6 or more years.

Monitoring

The Outer Metropolitan Perth and Peel Sub-regional Urban Growth Management Strategy will require continuous monitoring, review and updating in order to respond to changes in population growth and other demand factors.

13.2

Urban Development Program

The Department of Planning's Urban Development Program will serve as an evaluation tool to measure the delivery of the key aims of Directions 2031 and the sub-regional strategies.

The program aims to deliver:

- a more effective use of urban land;
- better staging of development; and
- prioritisation of infrastructure spending to support priority urban development.

The Department of Planning, through the urban growth monitor, will provide regular tracking and monitoring of development in Western Australia's most urbanised areas including:

- urban zoned land supply;
- consumption of urban zoned land;
- subdivision activity;
- selected MRS amendments and their status;
- vacant lot stock; and
- strategic planning in progress.

The delivery of the Urban Development Program through the WAPC's Infrastructure Coordinating Committee is under way and is intended to be substantially completed by the end of 2010.



14. The Strategy



14.1 Liveable

Living in or visiting our city should be a safe, comfortable and enjoyable experience

STRATEGY 1		Plan for increased housing supply in response to changing population needs.		
Actions	Lead agency	Partners	Timeframe	
1.1 Provide certainty about the location of future housing by ensuring that the housing component of local planning strategies supports the realisation of the optimal dwelling capacity in greenfields and infill development	Department of Planning WAPC Local government authorities	-	Short term (ongoing)	
1.2 Apply higher densities through local planning strategies and schemes within areas that have close proximity to: <ul style="list-style-type: none"> • high-frequency public transport nodes such as rail stations and bus interchanges; • high-frequency public transport corridors; • retail and employment centres; • public open space, foreshores, parks and areas with potential for high quality views; • educational institutions; and • community and recreational facilities and services such as hospitals, medical centres and libraries. 	Local government authorities	WAPC	Short term (ongoing)	
1.3 Consider a State Government funding support program to assist in the development of joint ventures and pilot projects which demonstrate best practice in urban infill.	WAPC	Local government authorities	Medium term	
1.4 Ensure that local planning strategies and schemes consider and allocate sufficient zoned land to provide for the increasing demand for aged care accommodation.	WAPC	Local government authorities	Short term	
1.5 Identify suitable partnerships to facilitate the provision of residential aged care services.	Local government authorities WAPC State Government	Property Council of Australia Urban Development Institute of Australia	Short term (ongoing)	

STRATEGY 2**Promote and increase housing diversity, adaptability, affordability and choice.**

Actions	Lead agency	Partners	Timeframe
2.1 Ensure that the proposed R-Code densities and provisions in local planning strategies and schemes facilitate a sufficient mix of housing types and sizes.	Local government authorities Department of Planning WAPC		Short term (ongoing)
2.2 Apply the Multi Unit Housing Code to facilitate increased housing diversity and mixed use development in activity centres and other suitable locations.	WAPC	Local government authorities	Short term (ongoing)
2.3 Promote the use of density bonuses on corner lots, subject to design guidelines, to ensure preservation of local amenity and an appropriate streetscape.	WAPC	Local government authorities	Short term (ongoing)
2.4 Consider a range of housing types and sizes in all major housing developments/redevelopments, including State Government projects.	Local government authorities State Government WAPC	Industry	Short term (ongoing)
2.5 Promote flexible building designs capable of conversion to dual or multiple occupancy.	Local government authorities Housing Industry Association Property Council of Australia	Department of Planning WAPC	Short term (ongoing)
2.6 Consider amending the R-Codes to remove the occupancy restriction applying to non-family members living in ancillary accommodation.	Department of Planning WAPC	Local government authorities	Short term (ongoing)
2.7 Identify further incentives for single bedroom and aged or dependent person dwellings and other forms of ancillary accommodation.	Department of Planning WAPC		Short term (ongoing)
2.8 Introduce incentives such as: a. diversity bonuses to increase provision of affordable housing; or, b. density bonuses to promote higher density developments that include diverse and affordable forms of housing, and which meet performance criteria.	Department of Planning Redevelopment Authorities WAPC		Short term (ongoing)

STRATEGY 3

Ensure urban expansion occurs in a timely manner in the most suitable locations.

Actions	Lead agency	Partners	Timeframe
3.1 Introduce an urban expansion management program for identifying future urban expansion areas and ensure a sufficient supply of land.	Department of Planning WAPC	Local government authorities State Government land use planning Development agencies Service providers Public utilities	Short term (ongoing)
3.2 Investigate policy constraints to potential development of urban expansion areas. The development of some urban expansion areas will be subject to planning policies requiring resolution. Policy implications must be clarified and recommendations made about the suitability of these areas for development.	Department of Planning WAPC	Local government authorities State Government agencies	Short term (no later than 2013)
3.3 Undertake detailed constraints analysis of identified urban expansion areas and make recommendations to inform possible future statutory processes.	Department of Planning WAPC	Local government authorities State Government agencies	Short term (no later than 2013)
3.4 Monitor, review and update the urban expansion plan at least every five years to: <ul style="list-style-type: none"> • ensure a sufficient land supply; • update data used to map opportunities and constraints to future urban expansion; • identify the most appropriate land for urban expansion; and • determine estimated range of dwelling supply. 	Department of Planning WAPC	State Government agencies. Public utilities Local government authorities	Ongoing
3.5 Consult with redevelopment authorities to identify planned urban growth areas and urban expansion areas in urban expansion plans.	Department of Planning Redevelopment authorities	WAPC	Short term (ongoing)
3.6 Following endorsement of the urban expansion plan, review planning studies and structure planning to update information on the development potential of areas indicated in the urban expansion plan.	Local government authorities Department of Planning WAPC		Short term (ongoing)

STRATEGY 4		Promote higher densities in greenfields development.		
Actions	Lead agency	Partners	Timeframe	
4.1 Promote Liveable Neighbourhood policy standard densities of 15 dwellings per gross urban zoned hectare for new development to achieve the Directions 2031 target for greenfields development.	Department of Planning	State Government infrastructure providers Land use planning and development agencies Public utilities Redevelopment authorities	Ongoing	
4.2 Ensure local planning strategies promote increasing densities in appropriate locations for greenfields development.	Department of Planning	WAPC	Ongoing	
4.3 Promote and encourage the development of infrastructure to accommodate residential densities of at least 15 dwellings per gross urban zoned hectare.	Department of Planning WAPC (Infrastructure Coordinating Committee)	State government infrastructure agencies Public utilities Local government authorities	Ongoing	

14.2 Prosperous

Our success as a global city will depend on building on our current prosperity.

STRATEGY 5		Facilitate and retain employment land to support economic growth and a balanced distribution of employment across the metropolitan Perth and Peel region.		
Actions	Lead agency	Partners	Timeframe	
5.1 Develop an economic development and employment strategy to support urban growth and facilitate increased employment self-sufficiency in each sub-region.	Department of Planning WAPC	Local government authorities	Short term (ongoing)	
5.2 Develop a planning response to optimise the employment potential of existing industrial-zoned land and ensure local planning strategies protect them from incompatible land use.	Department of Planning Local government authorities WAPC	LandCorp	Short term (ongoing)	
5.3 Ensure local planning strategies provide a flexible land use framework to cater for new industrial services and employment uses consistent with WAPC sub-regional employment self-sufficiency targets.	Department of Planning Local government authorities WAPC		Short term (ongoing)	
5.4 Ensure activity centres are planned for mixed use and provide for a wider range of employment opportunities including office-based jobs.	WAPC Department of Planning	Local government authorities	Short term (ongoing)	
5.5 Update guidelines for preparing local commercial strategies for activity centres to provide guidance on determining current supply of retail and commercial floor space; and developing minimum floor space targets based on employment self-sufficiency targets by local government area.	Department of Planning WAPC	Local government authorities	Short term (ongoing)	

STRATEGY 5

Facilitate and retain employment land to support economic growth and a balanced distribution of employment across the metropolitan Perth and Peel region.

Actions	Lead agency	Partners	Timeframe
<p>5.6 Ensure local planning strategies address regional policy requirements by:</p> <ul style="list-style-type: none"> • responding to employment trends, optimising economic opportunities and overcoming constraints to investment; • broadly distributing anticipated employment growth between major and minor urban activity centres, commercial areas, industrial-zoned land, specialised centres and other public purpose institutions; and • recognising the potential for home-based businesses to facilitate more local jobs; and review policies that might constrain their establishment. 	Local government authorities	Department of Planning WAPC	Short to medium term
<p>5.7 Ensure local planning strategies consider the regeneration of existing centres and suburbs to maintain or revitalise their amenity, attractiveness and social and cultural vitality.</p>	Local government authorities	Department of Planning WAPC	Short term (ongoing)

14.3 Accessible

People should be easily able to meet their education, employment, recreation, service and consumer needs within a reasonable distance of their home

STRATEGY 6		Plan and develop transit oriented developments to accommodate mixed use and medium rise higher density housing.		
Actions	Lead agency	Partners	Timeframe	
6.1 Encourage planning initiatives to facilitate the provision of more housing within transit oriented developments and key public transport corridors.	Department of Planning Local government authorities Redevelopment authorities WAPC	Public Transport Authority LandCorp	Short term (ongoing)	
6.2 Foster State and local government partnerships that undertake planning initiatives that facilitate transit oriented developments and increased housing in key public transport corridors.	Department of Planning WAPC	Local government authorities Public Transport Authority Redevelopment authorities LandCorp	Short term (ongoing)	
6.3 Prepare activity centre plans, urban design frameworks and implementation strategies based on transit oriented development principles.	Local government authorities	Department of Planning WAPC Public Transport Authority	Immediate (ongoing)	

14.4 Sustainable

We should grow within the constraints placed on us by the environment we live in

STRATEGY 7	Protect our natural and built environments and scarce resources; respond to social change and optimise the land use and transport conditions that create vibrant, accessible, healthy and adaptable communities.
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Actions	Lead agency	Partners	Timeframe
7.1 Evaluate the level of land use and transport integration by monitoring new housing supply in the walkable catchments of train stations and other high-frequency public transport routes.	Department of Planning Department of Transport WAPC	Public Transport Authority Local government authorities	Ongoing (Each Census)
7.2 Use best practice urban design to encourage physical activity, provide universal access to buildings and public spaces, and apply Crime Prevention Through Environmental Design principles to improve community safety.	Local government authorities	Department of Planning WAPC	Short term (ongoing)
7.3 Develop and improve metropolitan opportunities and constraints analysis methodology for identifying potential urban expansion areas.	Department of Planning	Local government authorities	Short term (ongoing)
7.4 Develop performance indicators for endorsement by the WAPC to be used to assess new applications for rezoning of rural land to urban or urban deferred.	Department of Planning WAPC		Short term (ongoing)

14.5 Responsible

We have a responsibility to manage urban growth and make the most efficient use of available land and infrastructure

STRATEGY 8		Maximise essential urban service infrastructure efficiency; and, develop a coordinated approach to infrastructure and land use planning and development.		
Actions	Lead agency	Partners	Timeframe	
8.1 Develop an urban expansion essential service infrastructure strategy including social service infrastructure to inform medium to long term sub-regional land use planning and infrastructure coordination.	Department of Planning WAPC	Local government authorities State government service agencies and public utilities	Short term (ongoing)	
8.2 Monitor land supply annually including actual average densities achieved in Greenfields developments.	Department of Planning Redevelopment authorities		Ongoing	
8.3 Review and monitor infrastructure capacity for areas subject to increased residential development such as transit oriented developments and key public transport corridors, activity centres and key development precincts and update infrastructure coordination and land use plans accordingly.	Department of Planning WAPC	Department of Water Department of Transport Local government authorities Public Transport Authority Western Power Water Corporation	Underway (ongoing)	
8.4 Engage State infrastructure, land development agencies, public utilities and local government authorities in an ongoing planning collaborative to develop infrastructure staging plans to support urban expansion and to align infrastructure plans and budgets with sub-regional growth areas.	Department of Planning WAPC (Infrastructure Co-ordinating Committee)	Whole-of-Government	Short term (ongoing)	
8.5 Review population growth forecasts and update sub-regional strategies and urban expansion plans.	Department of Planning WAPC	State Government Interdepartmental Forecasting Committee	Short term (ongoing)	

STRATEGY 8

Maximise essential urban service infrastructure efficiency; and, develop a coordinated approach to infrastructure and landuse planning and development.

Actions	Lead agency	Partners	Timeframe
<p>8.6 Establish an Alliance Working Group of key organisations and individuals to develop a Vision for Perth project that will be collaboratively implemented across government agencies and private organisations by undertaking the following key tasks:</p> <ul style="list-style-type: none"> a. Formation of a vision statement and implementation plan based on a collective review of various stakeholder initiatives, strategies and plans that contemplate the future vision of Perth and Peel. b. Development of a public discussion paper in the issues and options for the future development of Perth and Peel to accommodate 3.5 million people. c. Advising and assisting with engagement of the community in a dialogue process on the Vision for Perth project. 	<p>Department of Planning WAPC</p>	<p>Committee for Perth Alliance Group</p>	<p>Short term (ongoing)</p>

STRATEGY 9

Engage with the development industry, State government agencies, local government and the community to implement the Strategy.

Actions	Lead agency	Partners	Timeframe
<p>9.1 Collaborate and develop partnerships between the public, private and community sectors to deliver a range housing solutions to meet the affordable housing challenge.</p>	<p>Department of Planning WAPC</p>	<p>Local government authorities Department of Housing Urban Development Institute of Australia (WA) Real Estate Institute of WA Property Council of Australia (WA)</p>	<p>Short term (ongoing)</p>
<p>9.2 Foster links between State planning, housing and development agencies to pursue actions to increase the supply of diverse and affordable housing products identified in the State Affordable Housing Strategy which includes actions to:</p> <ul style="list-style-type: none"> Promote the identification of surplus State land and assessing its potential for higher density housing; and Encourage State agencies to consider development projects that result in a range of housing forms and land tenure options. 	<p>Department of Treasury and Finance Property Asset Clearing House</p>	<p>Whole of Government</p>	<p>Short term (ongoing)</p>
<p>9.3 Create, and enable mechanisms to support and manage the urban expansion management program</p>	<p>Department of Planning WAPC</p>		<p>Short term (ongoing)</p>
<p>9.4 Formalise a reporting mechanism to monitor and evaluate the success of the urban expansion management program.</p>	<p>Department of Planning WAPC</p>		<p>Annually</p>

15. Appendices



Appendix 1

North-west sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city
North-west sub-region	Joondalup	BU1	Burns Beach	900	1,400
		Total Greenfields		900	1,400
		RD_JD	Joondalup Redevelopment	9,300	10,900
		RD_TA1	Tapping-Ashby Redevelopment	1,600	1,800
		Total infill/redevelopment		10,900	12,700
		Total Joondalup dwelling supply		11,800	14,100
	Wanneroo	AL1	Alkimos	18,000	22,000
		BA1	Banksia Grove	2,500	3,800
		BJ1	Butler-Jindalee	11,000	15,000
		EW1	East Wanneroo	6,800	10,200
		EW2	East Wanneroo North	5,300	8,000
		EW3	East Wanneroo south-east	2,700	4,100
		LA1	East Landsdale	1,700	2,600
		TA1	Tamala Park	500	800
		TA2	Tamala Park	1,100	1,700
		TW1	Two Rocks	6,000	8,000
		TW2	Two Rocks	7,500	9,500
		YA1	Two Rocks-Yanchep	22,000	26,000
		YA3	Yanchep	13,000	16,000
		YA2	Yanchep	12,000	14,000
		Total Greenfields		110,100	141,700
		RD_HO1	Hocking-Pearsall redevelopment	5,100	6,000
		RD_ME1	Merriwa	300	300
		RD_QR1	Quinns Rock	300	300
		RD_WA1	Wanneroo redevelopment	4,300	5,000
		Total infill/redevelopment		10,000	11,600
		Total Wanneroo dwelling supply		120,100	153,300
Total north-west greenfields				111,000	143,100
Total north-west infill/redevelopment				20,900	24,300
Total north-west dwelling supply				131,900	167,400

Note: Mapping only shows greenfields and no infill/redevelopment

Appendix 2

North-east sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city
North-east sub-region	Kalamunda	FO2	North Berkshire Cell U7	800	1,200
		ML2	Maida Vale South	1,300	2,000
		WT1	Wattle Grove urban area U9	800	1,200
		Total Greenfields		2,900	4,400
		RD_FO3	Forrestfield	4,500	5,300
		RD_HW2	High Wycombe upcoding	2,700	3,200
		RD_KA1	Kalamunda town centre	1,000	1,200
		Total infill/redevelopment		8,200	9,700
		Total Kalamunda dwelling supply		11,100	14,100
	Mundaring	HE1	Helena Valley	200	300
		HE2	Helena Valley	200	300
		HE3	Bellevue	200	300
		PA1	Parkerville North	560	700
		SA2	Sawyers Valley North	20	20
		ST1	Stoneville North	1,320	1,650
		WO1	Woorooloo town site	50	80
		Total Greenfields		2,550	3,350
		CH2	Chidlow	120	140
		CH4	Chidlow eco-village	70	80
		CT1	Chidlow North East	20	20
		MO3	Mount Helena	120	140
		RD_CH3	Chidlow town site	20	30
		RD_DA1	Darlington town site	30	40
		RD_GL1	Glen Forrest town site	20	30
		RD_GR2	Greenmount South	430	500
		RD_HV1	Helena Valley North	50	50
RD_MC1		Mahogany Creek	90	100	
RD_MD2		Mundaring town site	90	100	
RD_MV3		Midvale	170	200	
RD_SW1	Swan View West	120	140		

	LGA	Area number	Area name	Business as usual	Connected city
	North-east sub-region	Mundaring	RD_SW2	Swan View South	40
RD_SW4			Swanview East	10	10
Total infill/redevelopment			1,400	1,620	
Total Mundaring dwelling supply			3,950	4,970	
Swan		AL2	Albion	4,500	5,600
		AL3	West Swan West	1,400	1,800
		AL4	West Swan East	2,200	2,800
		AL5	Caversham	1,800	2,200
		AV1	Aveley	3,000	3,700
		BL1	Bullsbrook North	200	300
		BU2	Bullsbrook South	800	1,200
		BU3	Bullsbrook North Expansion	600	900
		BU4	Bullsbrook South Expansion	1,100	1,700
		EL1	Ellenbrook	3,000	3,800
		EL2	Ellenbrook town centre	1,300	1,600
		GI1	Gidgegannup town site	1,200	1,500
		HA3	Bushmead	400	600
		JB1	Jane Brook	200	200
		JB2	Jane Brook	200	200
		MV1	West Stratton	600	900
		MV2	Stratt- Lot 6 Talbot Road	200	300
		SO1	South Guildford	100	200
		SO2	South Guildford	400	600
	UP1	Upper Swan	700	1,100	
VI1	The Vines	100	200		
VV1	Middle Swan	200	300		
Total Greenfields		24,200	31,700		

Appendix 2

North-east sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city
North-east sub-region	Swan	RD_GU1	Guildford – Transit oriented development	70	80
		RD_HA2	Hazlemere residential precinct	670	790
		RD_KI1	Kiara	160	190
		RD_MD1	Midland City Centre – including Redevelopment Authority Area and Midland Oval	2,300	2,700
		RD_SW3	Swan View	40	50
		Total infill/redevelopment		3,240	3,810
		Total Swan dwelling supply		27,440	35,510
Total north-east greenfields				29,650	39,450
Total north-east infill/redevelopment				12,840	15,130
Total north-east dwelling supply				42,490	54,580

Note: Mapping only shows greenfields and no infill/redevelopment

Appendix 3

South-east sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city	
South-east sub-region	Armadale	CL1	Champions Lake	400	600	
		FR1	Forrestdale East	1,400	2,100	
		HD1	Harrisdale	400	600	
		HD2	Harrisdale	100	200	
		HH1	Haynes / Hilbert	6,000	7,800	
		HH2	Hilbert	900	1,200	
		HH3	Hilbert	3,500	4,600	
		PW1	Piara Waters / Harrisdale	3,300	5,000	
		PW2	Piara Waters	700	1,100	
		PW3	Piara Waters North	400	600	
		SG1	Seville Grove	300	500	
		Total Greenfields			17,400	24,300
		RD_AR	Armadale redevelopment		7,200	8,500
		Total infill/redevelopment			7,200	8,500
		Total Armadale dwelling supply			24,600	32,800
		Gosnells	GO1	Gosnells	2,000	3,000
	SR1		Southern River	300	500	
	SR2		Southern River	1,100	1,700	
	SR3		Southern River	400	600	
	SR4		Southern River	3,400	5,100	
	SR6		Southern River	300	500	
	WM1		West Martin	1,000	1,500	
	Total Greenfields			8,500	12,900	
RD_GO	Gosnells redevelopment			8,700	10,200	
Total infill/redevelopment				8,700	10,200	
Total Gosnells dwelling supply			17,200	23,100		

Appendix 3

South-east sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city		
South-east sub-region	Serpentine Jarrahdale	BY1	Byford	3,700	5,600		
		BY2	Byford	700	1,100		
		BY3	Byford	800	1,200		
		BY4	Byford	200	300		
		BY5	Byford	600	900		
		BY6	Byford	100	200		
		BY7	Byford	500	800		
		BY8	Byford	900	1,400		
		JA1	Jarrahdale	300	500		
		MU1	Mundijong town	2,400	3,300		
		MU3	Mundijong Town	1,400	2,100		
		MU5	Mundijong Town	1,400	2,100		
		MU6	Mundijong Town	1,500	2,300		
		MU7	Mundijong Town	700	1,100		
		SE1	Serpentine	700	700		
		WB1	Whitby	3,100	4,700		
		WB2	Whitby	1,100	1,700		
		Total Greenfields				19,900	30,000
		RD_SJ	Serpentine Jarrahdale redevelopment		700	800	
		Total infill/redevelopment				700	800
Total Serpentine Jarrahdale dwelling supply				20,600	30,800		
Total south-east greenfields				45,800	67,200		
Total south east infill/redevelopment				16,600	19,500		
Total south-east dwelling supply				62,400	86,700		

Note: Mapping only shows greenfields and no infill/redevelopment

Appendix 4

South-west sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city	
South-west sub-region	Cockburn	BAN1	Banjup Quarry	1,100	1,700	
		BAN2	Banjup	200	300	
		BEE1	Beeliar	690	860	
		BRA1	Branch Circus	400	600	
		CEN1	Cockburn Central	580	720	
		MUN1	Munster	500	800	
		MUN2	Munster North	1,500	2,300	
		MUN4	Munster South	600	900	
		MUR1	Muriel Court	2,000	2,500	
		POR1	Port Coogee	1,800	2,300	
		SOU1	Southern Suburbs	2,000	3,000	
		WAT1	Watsons	600	900	
		WT1	Wattleup	900	1,400	
		Total Greenfields			12,870	18,280
		RD_COC1	Cockburn Coast	4,100	4,900	
		RD_COO1	Coolbellup	700	900	
		RD_HAM1	Hamilton Hill	1,300	1,500	
		RD_PHO1	Phoenix Central	3,200	3,800	
		Total infill/redevelopment			9,300	11,100
		Total Cockburn dwelling supply			22,170	29,380
	Kwinana	AN1	Anketell	1,100	1,400	
		BE1	Bertram North	1,000	1,300	
		CA1	Casuarina	100	100	
		CA2	Casuarina	2,200	2,700	
		CH1	Challenger	300	500	
		KT1	Kwinana town centre	200	300	
		MA1	Mandogalup East	1,400	2,100	
MA2		Mandogalup West	3,000	4,500		
OR1		Orelia North	100	200		
OR2		Orelia South	100	200		

Appendix 4

South-west sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city	
South-west sub-region	Kwinana	PAR1	Parmelia	400	600	
		WA1	Wandi	1,400	1,700	
		WA2	Wandi	50	80	
		WE1	Wellard East	1,200	1,500	
		WV1	Wellard Village	2,000	2,500	
		WW1	Wellard West	600	800	
		Total Greenfields			15,150	20,480
		RD_KW	Kwinana redevelopment	700	800	
		Total infill/redevelopment			700	800
		Total Kwinana dwelling supply			15,850	21,280
	Rockingham	BA1	Baldivis North	3,100	3,900	
		BA11	Baldivis South	4,400	6,600	
		BA2	Baldivis South	6,300	7,900	
		BA3	Baldivis town centre	300	500	
		BA4	Baldivis North	2,100	3,200	
		BA5	Baldivis South	200	300	
		GOL1	Golden Bay	1,100	1,700	
		KA1	Karnup	3,200	4,800	
		KA4	Karnup	800	1,200	
		KA5	Karnup	7,300	11,000	
KA6		Karnup South West	400	600		
KE1		Keralup	1,000	1,500		
KE2		Keralup East	11,000	16,500		
W3		Harrington Waters	500	600		
W4		Waikiki	100	200		
Total Greenfields			41,800	60,500		

South-west sub-region	LGA	Area number	Area name	Business as usual	Connected city	
	Rockingham	RD_KB1	Kennedy Bay	600	700	
		RD_R	Rockingham Redevelopment	1,100	1,300	
		RD_RO1	Rockingham City Centre	4,300	5,000	
		RD_SE1	Secret Harbour	800	900	
		RD_SI1	Singleton	500	500	
		RD_WA1	Waikiki	100	200	
		Total infill/redevelopment			7,400	8,600
		Total Rockingham dwelling supply			49,200	69,100
Total south-west greenfields				69,820	99,260	
Total south-west infill/redevelopment				17,400	20,500	
Total south-west dwelling supply				87,220	119,760	

Note: Mapping only shows greenfields and no infill/redevelopment

Appendix 5

Peel-west sub-region estimated dwelling yield

	LGA	Area number	Area name	Business as usual	Connected city	
Peel sub-region	Mandurah	CD1	Coodanup	1,000	1,300	
		DA1	Dawesville	400	600	
		DA2	Dawesville	1,000	1,500	
		DP1	Dudley Park	200	500	
		GF1	Greenfields	1,000	1,700	
		LL1	Lakelands	2,200	3,400	
		LL2	Lakelands	300	600	
		MD1	Madora Bay	1,000	1,500	
		MD2	Madora Bay	500	1,000	
		MJ1	Mandurah Junction	900	1,000	
		MS1	Meadow Springs	1,000	1,500	
		Total Greenfields			9,500	14,600
		RD_MA10	Erskine	600	700	
		RD_MA11	Falcon	300	400	
		RD_MA6	Inner Mandurah	11,800	13,800	
		RD_MA9	Halls Head	1,000	1,100	
	Total infill/redevelopment			13,700	16,000	
	Total Mandurah dwelling supply			23,200	30,600	
	Murray	DD1	North Dandalup	2,000	2,400	
		FD1	Furnissdale	100	200	
FD2		Furnissdale South	400	600		
FD3		Furnissdale	2,000	2,500		
KER1		Keralup South	12,200	18,300		
KER2		Keralup	1,700	2,600		
LL3		Lakelands	500	800		
NY1		North Yunderup	800	1,000		
NY2		North Yunderup	50	100		
PG1		Point Grey	3,000	3,500		
PJ2		Pinjarra	1,500	2,400		
PJ2		Pinjarra	1,500	2,400		

	LGA	Area number	Area name	Business as usual	Connected city	
Peel sub-region	Murray	PJ4	Pinjarra town site	500	700	
		PJ6	Pinjarra	400	600	
		PJ7	Pinjarra	5,000	5,500	
		RW1	Ravenswood	1,200	1,600	
		RW3	Ravenswood	2,500	3,000	
		RW4	Ravenswood East	200	300	
		RW6	Ravenswood South	700	1,100	
		RW7	Ravenswood South	700	1,100	
		SY1	South Yunderup	2,000	2,500	
		SY2	South Yunderup	100	200	
		SY3	South Yunderup	30	50	
		Total Greenfields			37,580	51,050
		RD_PJ1	Pinjarra		3,600	4,200
		Total infill/redevelopment			3,600	4,200
		Total Murray dwelling supply			41,180	55,250
Total Peel greenfields				47,080	65,650	
Total Peel infill/redevelopment				17,300	20,200	
Total Peel dwelling supply				64,380	85,850	

Note: Mapping only shows greenfields and no infill/redevelopment

Outer Metropolitan Perth and Peel Sub-regional Strategy draft report

directions2031 and beyond

Public submission form

Closing date for submissions is 5pm Monday 29th November 2010

The Western Australian Planning Commission is seeking public comment on the Outer Metropolitan Perth and Peel sub-regional strategy draft report. All comments received will be considered by the WAPC before the final document is released.

All submissions will be treated in the strictest confidence.

When making a submission, it is very helpful to:

- clearly state your opinion and the reasons for your opinion;
- if possible, outline alternatives or solutions to your area of interest;
- if possible, include the section or page number which relates to your area of interest; and
- provide any additional information to support your comments.

If you prefer to make a comment in an alternative format, please remember to include the relevant details as outlined on the submission form.

The closing date for submissions is 5pm Monday 29th November 2010.

If you would like more information on making a submission, please contact:

Project Officer

Outer Metropolitan Perth and Peel Sub-regional Strategy draft report

Tel: 08 9264 7777

Fax: 08 9264 7566

Email: corporate@planning.wa.gov.au

Web: www.planning.wa.gov.au

Submissions can be made either electronically or written submissions can be forwarded to:

Outer Metropolitan Perth and Peel sub-regional strategy draft report
Western Australian Planning Commission
Albert Facey House
469 Wellington Street
Perth Western Australia 6000

We look forward to receiving your submission

Name:

Organisation (if relevant):

Address:

Interest: (eg local resident, business operator, local government, industry body)
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I/we would like to make the following comments on the Outer Metropolitan Perth and Peel sub-regional strategy draft report and would like them to be considered in the preparation of the final document.

Comments:

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