

Structural elements



Perth, like all cities, is a multi-layered system of land use and activity networks. The physical form of a city is determined largely by the way in which these networks are planned and developed over time. In the case of Perth and Peel, land use and activity networks have been developed to reinforce a lineal pattern of growth focused primarily on the capital city.

To achieve the connected city scenario Directions 2031 proposes that new growth occur in a more balanced way around a diverse **activity centres network**, linked by a robust **movement network** and supported by a **green network** of parks, conservation and biodiversity areas.

Activity centres network

Activity centres are hubs that attract people for a variety of activities, such as shopping, working, studying and living. These areas consist of a concentration of commercial uses, combined with a varying proportion of other land uses. In some cases they may develop around a large facility, such as a university, rather than a commercial centre. The role and function of centres, and the diversity of activities within them will vary depending on their catchment; however, in general they will:

- provide services, employment and activities that are appropriate for and accessible to the communities they support;
- be integrated with and encourage the efficient operation of the transport network, with particular emphasis on promoting public transport, walking and cycling and reducing the number and length of trips;
- be designed based on transit oriented development principles;
- provide opportunities as places to live through higher density housing and the development of social and cultural networks;
- encourage the agglomeration of economic activity and cultivation of business synergies; and
- support the development of local identity and sense of place.



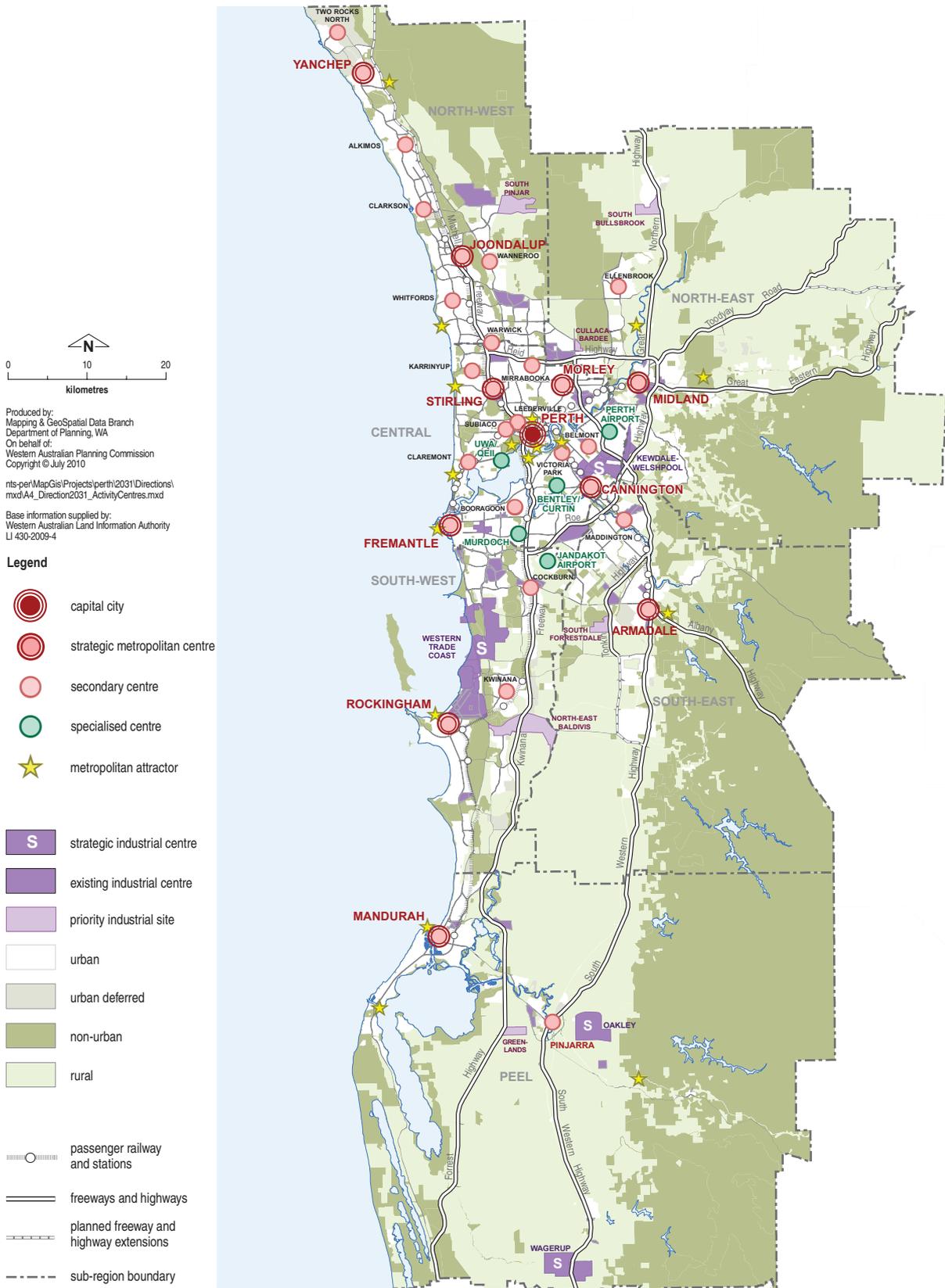


Figure 7: Activity centres

Activity centres hierarchy

<p>Capital city</p> <p>Includes Perth, West Perth, East Perth and Northbridge</p>	<p>Perth capital city is the largest of the activity centres, providing the most intensely concentrated development in the region. It has the greatest range of high order services and jobs and the largest commercial component of any activity centre. Although the capital city currently has a low residential population, it is becoming an increasingly popular location for housing development and residential living, further contributing to the diversity of the city.</p> <p>The capital city is, and will continue to be, the highest level of activity centre in the metropolitan Perth and Peel region. It is the main focus for civic, cultural, administrative, business, retail and tourism activity.</p> <p>The Department of Planning is currently developing a Capital City Planning Framework to guide development of the capital city and its immediate surrounds. When finalised, the planning framework will address the challenges of further development, especially residential intensification and movement within inner city communities. It will also identify opportunities to enhance and strengthen linkages between activity centres, their surrounding communities and places of significance.</p>
<p>Primary centres</p>	<p>Primary centres are critical to achieving long-term sub-regional employment objectives. They should house major institutions and become the preferred location for investment in high order public and employment generating infrastructure outside the central metropolitan sub-region.</p> <p>While there are currently no centres that perform a primary centre function, this classification is retained as an aspirational target. As the population grows towards a city of 3.5 million, existing major centres will clearly emerge to perform this role at some point in the future.</p> <p>To achieve this, existing centres must build on their existing assets and invest in the attributes that influence the locational decisions of these businesses, including accessibility, land availability, local amenity, communications and technology and the availability of skilled labour.</p>
<p>Strategic metropolitan centres</p> <p>Armadale, Cannington, Fremantle, Joondalup, Mandurah, Morley, Midland, Stirling, Rockingham and Yanchep*</p>	<p>Strategic metropolitan centres are multi-purpose centres that provide a mix of retail, office, community, entertainment, residential and employment activities, and are well serviced by high frequency public transport. The existing strategic metropolitan centres are spatially distributed throughout the metropolitan region and there is one proposed centre to service future population growth in the north-west corridor at Yanchep. The purpose of these centres is to provide a range of housing, services, facilities and activities necessary to support the communities within their catchments, thereby reducing the requirement for travel outside the catchment. This diversity will be a key component in developing the liveability of these centres.</p>
<p>Secondary centres</p> <p>Alkimos*, Belmont, Booragoon, Claremont, Cockburn, Clarkson, Ellenbrook, Karrinyup, Kwinana, Leederville, Maddington, Mirrabooka, Pinjarra, Subiaco, Two Rocks North*, Victoria Park, Wanneroo, Warwick and Whitfords</p>	<p>Secondary centres form the next tier of the activity centres hierarchy. They share similar characteristics with strategic metropolitan city centres but generally serve smaller catchments and offer a more limited range of services, facilities and employment opportunities. They are also more spatially dispersed and numerous, with 19 in total either existing or planned, perform an important role in the city's economy, and provide an essential service to their catchment populations.</p> <p>Secondary centres are important suburban centres that are generally based around retailers offering a range of convenience and comparison goods and services. They also include office, housing, community, recreational and in some cases entertainment. While many of these centres are retail dominated, some have emerged to be important mixed use and employment centres. Opportunities exist to encourage more mixed use development in appropriately located centres, especially if they are located on high frequency public transport routes.</p> <p>The continued development of this tier of centres is essential to supplement the network of strategic metropolitan centres, particularly in the outer sub-regions where the population densities are lower and people are more likely to rely on secondary centres.</p>

* emerging centre

District centres	<p>District town centres generally serve the main weekly household shopping, service and community needs of the district. They are predominantly retail focused but many also include a limited mix of other uses such as offices, medical and professional services, hospitality and entertainment and housing. Some also include or are associated with civic, community and recreation facilities.</p> <p>District centres have a greater focus on servicing the daily and weekly needs of residents. The composition and diversity of activity in a district centre varies throughout Perth and Peel according to the size and maturity of its catchment. However, their relatively smaller scale enables them to have a greater local community focus and provide services, facilities and employment opportunities that reflect the particular needs of their catchments. The continued development of this tier of centres is essential to ensure local communities have good access to a minimum range of services.</p>
Neighbourhood centres	<p>Neighbourhood centres provide for the main daily shopping needs of the community and typically include a supermarket grouped together with a small range of other uses and occasionally community facilities.</p>
Local centres	<p>There are a significant number of local centres spread throughout the metropolitan region. Local centres are small and usually consist of a corner deli and a newsagent. These centres provide for the incidental shopping needs of people within a walkable catchment area, and as such contribute to a decrease in daily car use and increase in the health of the community within the walkable catchment. They provide an important and highly accessible service to local communities and will continue to be promoted as part of the overall activity centres hierarchy</p>

Specialised centres

Specialised centres are places that have strong specialised roles based around major institutions or airports within the centre. These centres have features in common that complement, rather than compete with, the other activity centres in the hierarchy, and are therefore not included within the general commercial centre hierarchy.

Although most of the specialised functions of these centres take place within the institution or major public facilities located there, many nearby business and smaller institutions related to, or supportive of, the main institutions are also important contributors to these centres' specialised role.

The knowledge and logistical roles performed by these centres are some of the most important and high level in the metropolitan area. It is therefore important that the centres have a form that optimises a dynamic and robust mix of their big and smaller parts within places of overall high amenity. To achieve this, these centres should:

- provide adequate locations for business and smaller institutions related to the main institutions;
- have places for general commercial and community services to support its employees, students, visitors and residents; and
- provide places where interaction can occur between users of the centre, so that stronger links can be facilitated across a range of organisations and businesses in the centre.

Direction 2031 identifies Murdoch, Bentley/Curtin, Perth Airport, Jandakot Airport and the University of WA (UWA)/Queen Elizabeth II (QEII) medical centre in Nedlands, Crawley as specialised centres. Over time it is anticipated that other specialised centres will emerge by demonstrating these attributes, such as Edith Cowan University in Mount Lawley.

In addition, the need to evaluate the potential of additional airports to service the Perth and Peel metropolitan region will emerge, particularly as growth in WA's resources sector continues in the medium to

long term. Another general aviation airport may be required in the medium term as Jandakot Airport reaches full capacity.

Specialised centres	
Bentley / Curtin	Perth Airport
Murdoch	Jandakot Airport
UWA / QEII	

Strategic industrial centres

Directions 2031 recognises that not all industry is the same and has identified a hierarchy of industrial centres. Strategic industrial centres provide for the highest level of industrial activity throughout the metropolitan area, with a focus on heavy manufacturing, processing, fabrication and overseas export. The four strategic industrial centres are Western Trade Coast⁸, Oakley and Wagerup, which are important nodes of heavy manufacturing for overseas markets; and Kewdale/Welshpool which is significant because of its role in import and distribution networks throughout the state. A critical focus of Directions 2031 is to ensure that these centres are well serviced by road and rail transport infrastructure and appropriately located intermodal facilities, and that these centres are accessible to their skilled workforce.

Strategic industrial centres	
Western Trade Coast	Oakley (Alcoa)
Wagerup (Alcoa)	Kewdale / Welshpool

Existing industrial centres

Industrial centres which are not strategic in nature cater for a broad range of manufacturing, fabrication, processing, warehousing and bulk goods handling activities at one end of the scale and provide household needs at the other. Given the nature of their customer base and catchment, these industrial centres rely heavily on the efficient movement of goods and services throughout the metropolitan region. It is therefore important that there be a balanced distribution of industrial centres across the city to reduce freight handling and improve the provision of products and services to the broader community.

Existing industrial centres	
Bayswater/Bassendean	Osborne Park
Willetton	Canning Vale
Balcatta	Belmont
North Fremantle	Myaree
O'Connor	Neerabup
Wangara	Malaga
Viveash	Midvale
Hazelmere	South Guildford
Mundaring	Maddington/Kenwick
Kelmscott	Forrestdale
Armadale	North Coogee
Bibra Lake	Cockburn Central
Jandakot	Port Kennedy
Pinjarra	Greenfields
Oakley South	Holyoake
Waroona	Nambeelup

⁸ The Western Trade Coast includes the Kwinana Industrial Area Core, Latitude 32, Australian Maritime Complex and the Rockingham Industry Zone which includes East Rockingham.

Priority industrial sites

In the next 20 years industrial land supply will be met through the consolidation of existing industrial estates, extensions to existing estates and the creation of new priority industrial estates. The WAPC industrial land strategy has identified six priority industrial areas which are currently under investigation to determine their suitability for future industrial development: south Pinjar, south Bullsbrook town site, south Forrestdale, north-east Baldivis, Greenlands and Cullacabardee. These sites are identified in the outer metropolitan sub-regional strategy as they provide employment land to support economic growth and a balanced distribution of employment across the metropolitan Perth and Peel region.

If some of the priority industrial sites are not developed in the anticipated time frame, due to land constraints and other issues, unmet demand will be catered for by an adequate land bank of other sites that have been identified by the industrial land strategy and that will be monitored to ensure a continual supply of industrial land.

Priority industrial sites	
South Pinjar*	South Bullsbrook Townsite
South Forrestdale	North-east Baldivis
Cullacabardee	Greenlands

* Subject to investigation

Metropolitan attractors

Metropolitan attractors are generally places or tourist destinations that are highly valued and visited by local and regional residents alike. They are often key centres of employment, serving to stimulate the local economy. They may also function to protect biodiversity and parts of the green network.



Metropolitan attractors	
Burswood Casino	Perth Cultural Centre
Cottesloe Beach	Perth Hills
Fremantle Harbour	Rockingham Beach
Hillarys Boat Harbour	Scarborough Beach
Kings Park	Swan Valley
Mandurah Foreshore	Yanchep National Park
Perth Zoo	Peel - Harvey Estuary
Perth Waterfront	

Urban corridors

The Directions 2031 connected city scenario aims to optimise land use and transport linkages between centres and ensure that high frequency public transport routes are supported by a range of activities at centres as well as the land uses along corridors linking centres.

Key public transport corridors provide connections between activity centres and access to high quality public transport from adjacent suburbs. These corridors are not designed to be high-speed through traffic routes. In order to achieve the Directions 2031 infill housing targets, key public transport corridors provide significant opportunities to accommodate increased medium-rise higher density residential development in existing urban areas.

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 their functional role as part of the city's transport network⁹. Those roads with a predominant freight function are identified in the WAPC 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 focusing on environmental standards for abutting noise-sensitive development and protecting major freight corridors from incompatible urban encroachment.

⁹ Transforming Australian Cities for a More Financially Viable and Sustainable Future. City of Melbourne. July 2009

It follows that primary freight routes are generally unsuitable as urban corridors. In terms of non-residential development, urban corridors should be seen as a series of activity centre nodes of various scales along high-frequency public transport routes. Directions 2031 does not support the expansion or ribbon development of commercial activities beyond activity centre precincts, as it diminishes the viability of centres and has the potential to create access and traffic conflicts along the public transport corridor.

Movement network

The day-to-day functioning of a city is highly dependent on the effectiveness of its transport network. A significant amount of time, money and energy is consumed in the movement of people and goods around the city, so it is important that the movement network be as efficient as possible.

The high frequency public transport connections in Perth and Peel are an important component of both the movement and activity centres networks. Directions 2031 intends that these routes, with the exception of those located on high speed through traffic routes, will help to accommodate much of the region's medium-density residential infill needs while providing strong connections between centres. This network will need further strengthening in the future with the possible addition of new public transport connections as indicated in Figure 10: Conceptual future public transport connections.



Green network

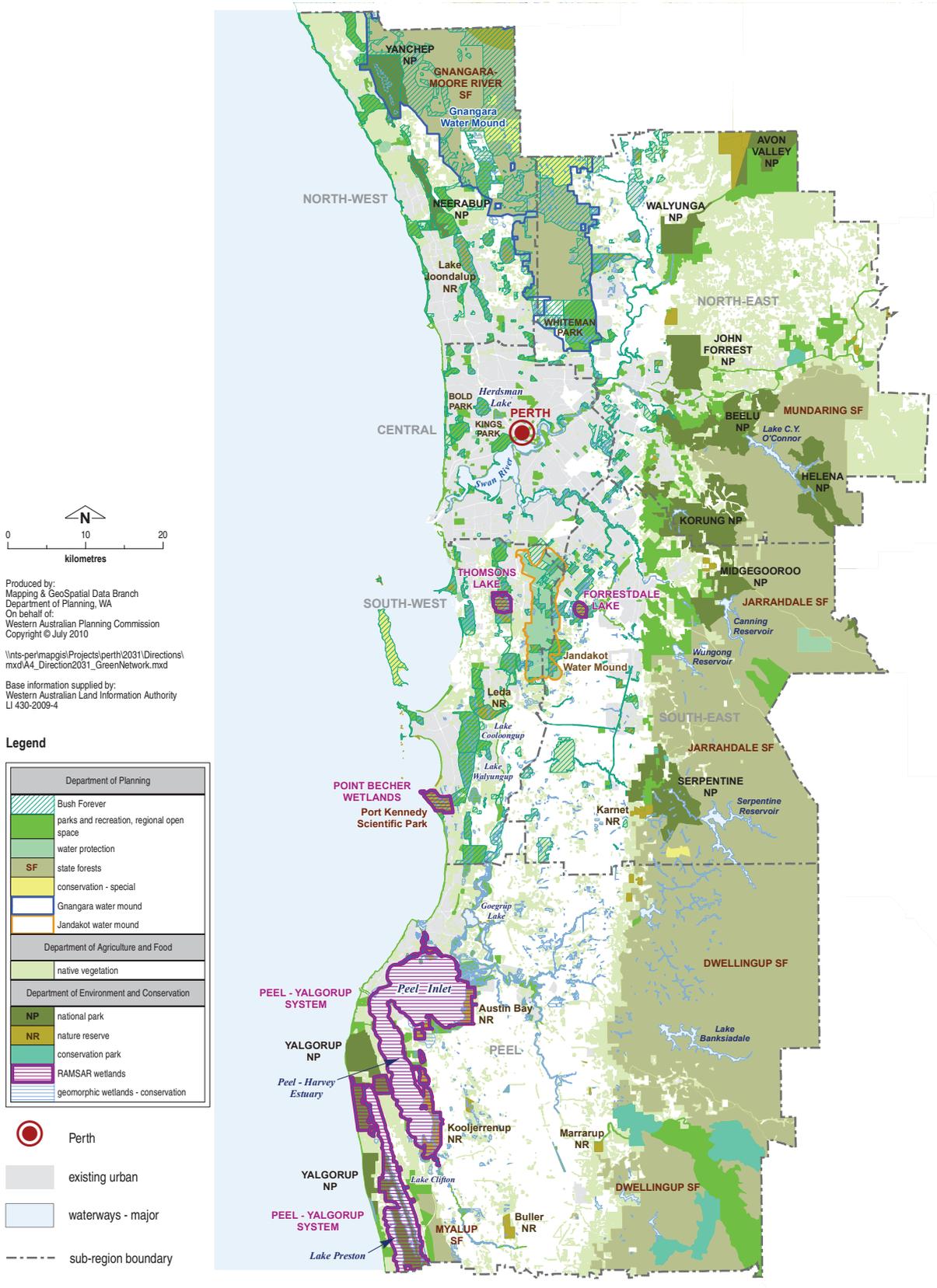
The Perth and Peel region is environmentally diverse, and careful planning has protected a series of high quality natural areas such as Kings Park, Bold Park, Whiteman Park and Yanchep National Park. Our rivers and beaches are publicly accessible and protected by reservation. Areas of significant landscape value, such as the Swan Valley and Darling Escarpment, are valued and there is a growing awareness of the importance of our wetlands to the overall health of our environment.

The extensive coastal and river system is one of the city's most valued features. The desire to live close to the beach and rivers can place increasing pressure on these environments if development is not appropriately planned. State planning policies will continue to preserve the qualities of these important areas.





Figure 8: Existing high frequency public transport network



Produced by:
Mapping & GeoSpatial Data Branch
Department of Planning, WA
On behalf of:
Western Australian Planning Commission
Copyright © July 2010

\\nts-per\mappgis\Projects\perth\2031\Directions\mxd\A4_Direction2031_GreenNetwork.mxd

Base information supplied by:
Western Australian Land Information Authority
LI 430-2009-4

Figure 9: Green network

Themes and strategies



In order to build on earlier planning frameworks, Directions 2031 is based on the values and consistent themes of the planning approaches of the past 50 years. Directions 2031 has identified five strategic themes and objectives to shape future urban growth in a way that captures the many and varied expectations we have of our city. Strategies have been developed to implement these themes and objectives.

A liveable city

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

Promote good urban design and development to enhance people's experience of the city

For places to be well used and appreciated they must be safe, comfortable, interesting and attractive. Good urban design can assist deliver these things, and promote a sense of community ownership and pride in public places. The urban design of places is vital to the life of a city and its people. Places that are easy to access and have high quality urban design are more enjoyable to the people who live, work and recreate in them. They also provide attractive places to visit and help to develop a sense of place in the community.

When greenfield sites are being developed, the quality of life of the community depends on not only the provision of infrastructure, but also the design of the community itself. It is vital that new communities be designed in a way that makes them accessible and easy to live in and that gives residents a sense of identity, pride and belonging.

Way forward

Directions 2031 reflects the principles and supports the ongoing implementation of the WAPC Liveable Neighbourhoods policy that promotes walkable neighbourhoods, compatible mixed use development, promotion of a sense of place and support for a variety of housing types.

Identify, protect and build our cultural identity, neighbourhood character and sense of place

Western Australians share a unique identity as residents of one of the most isolated regions in the world. That identity is expressed in our shared heritage and culture, and also in the way that our towns, suburbs and streets have developed over time. It is this shared perception of identity that differentiates Perth from other cities and that must be acknowledged by planners and developers as the city continues to grow.

The things that we value about our neighbourhood are often intangible. It may be the view down a certain street, the way children use the local park for games of football or the fact that we can walk to our local shops to buy milk and the paper. The use of place planning principles will be important to ensuring that neighbourhood character and values are not lost or unnecessarily compromised by new development; and, that planning for already established communities protects the unique character of those neighbourhoods and develops a sense of place and the feeling of belonging to a community.

People's feeling of belonging is influenced by not only the physical elements that give them a sense of place, but also cultural elements. Artistic and cultural endeavours are both an expression of cultural identity and a means of developing one. Increased participation in, and access to, the arts is vital in the development of our identity.

Way forward

The Perth waterfront project proposes a nationally significant centre of indigenous culture, art and learning. The Department of Planning is working closely with members of the Wadjuk and Nyoongar community and the South West Aboriginal Land and Sea Council to develop ideas for the centre.

Protect heritage places and values

Perth and Peel contain important places of both indigenous and European heritage. Many of these places are identified under Commonwealth, state and local government heritage instruments and have a significant role to play in maintaining the community's collective link to our cultural and natural environment.

However, as heritage values are dynamic and evolve over time, there is an ongoing need to be attentive to the way in which the community values places that provide a link to the past development and evolution of the region.

Way forward

Directions 2031:

- recognises the importance of heritage to a sense of place and as a link to our past;
- encourages the consideration of heritage values as part of redevelopment; and
- supports the continued identification and protection of heritage places into the future.

Improve community safety

Everybody has a right to expect that they will live in a safe community, with low levels of crime. The design of the built environment can have a significant effect on the safety of the people who live or pass through an area.

Way forward

Directions 2031 supports the ongoing implementation of the WAPC Designing Out Crime Planning Guidelines to raise awareness and aid the implementation of key community safety, security and crime prevention issues, designing out crime principles and solutions.

Design accessible, well-connected and sustainable urban communities that support and enable effective inclusion and participation in the community for all residents

People may have a disability at any age; however, the likelihood of having a disability increases as people get older. In Western Australia it is estimated that the total number of people who identify themselves as having a disability will increase by about 38 per cent to around 632,600 by 2023¹⁰.

Designing accessible, well-connected and sustainable urban communities is necessary to ensure people of all ages and abilities have access to affordable housing that meets their varied needs and are well supported by streamlined public transport. Access to a wide range of facilities, as well as opportunities for local employment, will allow people to contribute to and participate in community life.

Way forward

The planning system will continue to undertake policy development and implement reviews to improve regional, district and local environments by:

- extending planning initiatives that currently integrate town planning, housing and transport such as Liveable Neighbourhoods, the Model Scheme Text and Directions 2031;
- establishing, promoting and enforcing stronger town planning codes and zoning classifications including the Residential Design Codes (R-codes); and
- supporting the development of accessible communities and universally designed housing.

Provide quality passive and active public open space

Community health relies on the provision of appropriate public spaces for recreation. The cost of physical inactivity in Australia is estimated at about \$377 million a year for six diseases: coronary heart disease, type-2 diabetes, colon cancer, stroke, breast cancer and depressive disorders¹¹. This is considered a conservative estimate and it is likely that the true costs of inactivity are substantially higher than the estimated \$377 million. These costs are expected to increase exponentially by 2031 given the ageing population and upward trend in obesity, cardiovascular disease, diabetes and other chronic diseases. The built environment can have a significant impact on the level of physical activity in the community.

Way forward

Directions 2031 encourages local government to institute public open space strategies in order to:

- strategically guide the development of a system of diverse and well-distributed public open spaces;
- ensure adequate provision of regional and district active recreation sites;
- incorporate protection of the natural environment and water management concepts into the development of public open space; and
- encourage walking, cycling and sports as part of the overall community health picture.

¹⁰ Disability Services Commission, WA, *Count Me In*, page 27

¹¹ Stephenson J, Bauman A, Armstrong T, Smith B, Bellew B. (2000) *The cost of illness attributable to inactivity in Australia: a preliminary study*. Canberra: Commonwealth Department of Health and Aged Care and the Australian Sports Commission.

Plan for increased housing supply in response to changing population needs

Directions 2031 has developed a set of housing targets based on the WA Tomorrow forecast population growth and demographic change. Perpetuating existing density provisions of local planning schemes will not deliver the required increase in infill housing supply in the metropolitan central sub-region or the 50 per cent improvement in the average number of dwellings per gross hectare of greenfield development.

Way forward

Planning will need to:

- focus on targeted locations for future urban growth such as in and around retail and employment centres, transit oriented developments and high frequency public transport corridors; and
- apply higher R-codes in strategies and schemes within areas that have close proximity to educational institutions, community facilities and services such as hospitals, medical centres and libraries.

This should not be interpreted as a requirement for across-the-board increases in density throughout established suburbs.

Promote and increase housing diversity, adaptability, affordability and choice

In response to economic market conditions and changing demographics, future planning controls should facilitate a variety of housing types and sizes, provide housing choice in different locations and cater for a range of household incomes.

The benefits of providing affordable and diverse housing in activity centres include:

- increased dwelling densities in activity centres, particularly around public transport nodes, will relieve the pressure on urban fringe locations;
- higher densities and innovative dwelling designs will improve access to a variety of housing types, and potentially improve housing affordability;
- increased local catchment populations close to activity centres will increase the expenditure available to support businesses, which will in turn increase the level of amenity available to attract knowledge intensive and producer service businesses;
- increased residential populations and business activities will promote employment self-containment, which will reduce journey-to-work trip generation;
- increased public transport patronage will moderate growth in individual car use, while improving the viability of the public system and promoting network extensions and improvements in service frequency; and
- the introduction of resident populations in centres provides the opportunity for development of social and cultural networks, and the creation of local identity and sense of place.

Way forward

The new WAPC State Planning Policy 4.2 Activity Centres for Perth and Peel requires minimum residential densities to ensure that the benefits of providing affordable and diverse housing will be maximised in activity centres. The Department of Planning will work with local governments, the Department of Housing, non-profit housing organisations and developers to provide more affordable housing in redevelopment areas.

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

It is essential that the city grow in an effective and efficient manner. In order to manage and maintain urban expansion, there is a need to establish an urban expansion management program. This program will be responsible for ensuring an ongoing land supply pipeline of current urban and urban deferred zoned land and a buffer of urban expansion areas.

Way forward

In order to ensure a sufficient supply of undeveloped urban and urban deferred zoned land, the urban expansion management program will need to:

- identify land ahead of the rezoning process;
- stage the rezoning of that land in response to future growth trends;
- ensure that there is sufficient land available for development at all times, without the need for blanket rezonings;
- identify land for rezoning to take place at the appropriate time in the most suitable locations; and
- complement the urban development program which coordinates the planning and release of serviced land in response to population growth trends and emerging development and planning opportunities and barriers.

Promote higher densities in greenfield development

Density is a critical element of the metropolitan urban form and has a significant impact on the overall sustainability of the city. Higher densities increase the cost effectiveness of essential service infrastructure provision and improve the efficiency of the public transport system.

Way forward

While the majority of growth in the outer sub-regions is focused on greenfield development, the contribution of infill development and redevelopment is essential to create a connected city form. As the outer sub-regions mature, infill and redevelopment will become increasingly viable alternatives to new greenfield development, due to the increasingly constrained nature of non-urban areas.



A prosperous city

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

Provide a hierarchy of places and locations for a range of economic activities and employment across the Perth and Peel region

Continued prosperity is important for the wellbeing of a growing community; however, it is possible only if we are able to grow and expand our economic and employment base in line with expected increases in population.

Employment and access to jobs are important considerations for a growing city. At present the Perth city centre provides one in every six jobs throughout the metropolitan region. While the Perth city centre is expected to maintain a significant share of total jobs, it is evident that this employment imbalance is placing increasing pressure on our transport systems, leading to longer commuting times and increased congestion.

Way forward

Directions 2031 has identified a network of activity centres to complement the role of the Perth city centre and provide a greater distribution of jobs throughout the metropolitan region. This hierarchy and spatial distribution of centres will be the core focus of the growth over the next 20 to 25 years. The hierarchy builds on earlier centre classifications contained in the Corridor Plan and Metroplan. Directions 2031 also aims to provide a more balanced distribution of employment, services and amenity to the 60 per cent of the population who will live outside the central sub-region by 2031.

Plan for a diverse mix of services, facilities, activities, amenity and housing types in centres to facilitate economic development and employment

A key difference between Directions 2031 and earlier metropolitan spatial planning is the way in which activity centres are conceptualised. Previous plans and policies focused primarily on the retail function of centres; however, Directions 2031 recognises that the most successful centres are those that offer a diverse range of services, activities and amenity to their catchment populations. Perth, Fremantle and Subiaco are good examples of centres at different levels of the hierarchy that offer a diversity of activity and experiences and have become popular and distinctive destinations as a result.

Greater diversity in centres not only provides a more equitable distribution of services and facilities throughout the metropolitan region, it also has the potential to significantly reduce the number and length of trips by locating those activities closer to the people who want to access them. Not all activity centres in the hierarchy can or will achieve the desired levels of diversity; however, the intention is that the higher order centres will become more diverse over time through focused planning.



Way forward

- There needs to be strong focus on the potential employment and urban amenity functions of activity centres. While some activity centres are predominantly shopping centres for surrounding communities, many others have potential for economic diversification through new floor space to accommodate more businesses and services and higher density housing.
- Given the dominance of service industries, any new economic activity should be compatible with activity centre environments. Local governments should plan centres as mixed use precincts suitable for a range of businesses and local employment. Economically diverse and high-amenity environments offer better prospects to attract high-order jobs, such as business-to-business services, as distinct from population-driven jobs focused on providing consumer goods and household services.
- Major non-industrial activity centres need to play a greater role in providing for office and service sector employment growth and related facilities. Planning for activity centres should seek to capitalise on their various urban qualities and potential for development, urban renewal and employment generation. Policies should actively encourage mixed use environments through flexible zonings to accommodate small business and local employment.

Activity centres attract large volumes of people and it is important that they be integrated with the public transport system, particularly the larger centres. Planning for existing and potential activity centres into the future will have an increased focus on transport integration and transit oriented development, agglomeration of economic activities and mixed use development including higher density housing.

Increase the levels of employment self-sufficiency in sub-regional areas

Employment is a key driver of continued economic growth and prosperity. It underpins our collective standard of urban living and supports the provision of essential goods and services to the community. Perth city centre currently has the highest share of employment and is expected to maintain its dominance in the longer term.

Way forward

Directions 2031 aims to increase the diversity of employment opportunities outside the Perth city centre by encouraging businesses and jobs to shift to other centres in the upper levels of the hierarchy. This will encourage higher levels of employment self-sufficiency outside the capital, with significant benefits to be derived from the decentralisation of retail and employment. Benefits include reducing travel distance to work, reduced greenhouse gas production and petrol consumption, reductions in travel costs and travelling times; reducing road congestion; and increasing opportunities for non-car based commuting such as walking, cycling and public transport.



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

Directions 2031 recognises the importance of industrial centres and promotes the identification of suitably located and serviced land, as identified in the WAPC industrial land strategy, in order to meet the industrial and employment needs of a growing community.

Way forward

Land use planning has an important role in assisting employment growth through policies to facilitate the expansion of existing industry and commerce and the development of new businesses. Directions 2031 supports the facilitation and retention of employment land; therefore:

- Strategic plans and local planning schemes should seek to optimise the operation and economic functions and long-term employment potential of industrial zones.
- Local planning strategies and related strategic plans should factor in infrastructure sites and freight corridor needs, land use compatibility and buffer requirements as part of long-term planning for established industrial precincts.
- Existing industrial estates and associated buffers need to be protected from the increasing encroachment by inappropriate non-industrial uses and in some cases by residential encroachment.

The key focus of Directions 2031 is to ensure that these centres are well serviced by road and rail transport infrastructure and appropriately located intermodal facilities, as well as being accessible to a skilled workforce.

Way forward

Directions 2031 encourages a balanced distribution of well-serviced industrial centres across metropolitan Perth and Peel; therefore:

- Urban planning policies should acknowledge the role of major economic infrastructure such as ports and airports and regional transport connections.
- Planning schemes and development controls should recognise contemporary business and industry trends and innovations and provide for generic employment zones, in which mixed uses are allowed on the basis of compatibility and performance standards, rather than strict land use classes.
- It is necessary to plan for appropriate co-location of dwellings, employment and services and innovative mixed use planning to encourage a unique sense of place and attract highly skilled and creative people.
- Industrial centres need to be protected and their growth fostered due to their economic value and importance to the Perth metropolitan area and the state.
- The state and regional significance of some existing industrial zones in the Perth metropolitan central sub-region needs to be acknowledged in the wider planning framework, and their relocation proactively opposed.

Protect access to productive natural resources and agricultural land

Directions 2031 recognises the primacy of rural land and its contribution to the agricultural production required to meet the demand generated by the metropolitan population. Rural land should be protected until conversion to urban use is required and the extension of urban services is approved as part of the sequencing of development. It is also important to recognise the significance of locally based agricultural production. Market gardens in the north, east and south of the

metropolitan region provide an important food source for the growing population. Agricultural activity in the Swan Valley, particularly vineyards, also provides a valuable export and tourism resource.

The supply of basic raw materials in the metropolitan region is currently at risk. Existing sites that provide basic raw materials are in conflict with, and at risk from urban encroachment and are constrained by the presence of remnant vegetation. At the same time, excessive amounts of raw material are required to fill low lying areas of land that have been zoned for development. The Department of Planning will review State Planning Policy 2.4 Basic Raw Materials and prepare a basic raw materials strategy to address these issues. Risk management is also a very important consideration in dealing with natural resources, in particular bushfire protection. Although bushfire has been a natural part of our environment for thousands of years, it presents a major challenge to our community given the potential devastating loss of life, property and biodiversity.

Way forward

Directions 2031 will ensure that suitable land is identified to support the economic activity of the city and state, particularly for infrastructure provision and industrial development. In addition, the city cannot grow without access to basic raw materials for construction and production of goods. Directions 2031 will continue to protect these important assets.

Directions 2031 supports the development of contemporary policy responses to deal with the protection of important natural resources that are fundamental to supporting our local economy. In particular, urban development needs to be carefully considered where it may adversely impact on priority agricultural activity and essential basic raw materials.

Maintaining appropriate bushfire management plans and planning guidelines will help to minimise the risks associated with bushfire.

Promote and support tourism opportunities

There are a number of places in the metropolitan Perth and Peel region that are not recognised in the activity centres hierarchy as they do not have a diverse mix of uses. However, these centres draw visitors and therefore create transport, tourism and other planning needs. These places are generally tourist attractions, but are highly valued and visited by local and regional residents alike. Directions 2031 identifies these as metropolitan attractors, yet recognises that because of their highly differentiated needs they do not require the level of planning control exerted over activity centres. They are, however, often key centres of employment, serving to stimulate the local economy. They may also function to protect biodiversity and parts of the green network. Due to the attractiveness of these locations, they often provide opportunities for higher density living.

Way forward

Directions 2031 has identified a number of metropolitan attractors that are not recognised in the activity centres hierarchy, yet are places that attract visitors and warrant consideration in sub-regional strategies and structure plans. Metropolitan attractors should be included in any analysis of activity centres within the sub-regions due to the influence they have over the use of the movement and green networks and the impact of tourism on the local economy.



An accessible city

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

Connect communities with jobs and services

Since the 1950s Perth, like many cities shaped by significant postwar population growth, has been planned and developed in response to a preference for suburban living enabled by the emergence of the car as an affordable means of private transport. The underlying assumption has been that most daily trips to work, school, recreation and shopping will be made by car.

Given this historic pattern of development, it is likely that private vehicles will continue to be the predominant mode of transport for the foreseeable future, particularly for the movement of goods and freight, and the provision of everyday services to a growing community.

A key objective of Directions 2031 is to improve the relationship between communities and the activities, services and places of work that they access on a daily basis. The spatial distribution of growth in and around a network of mixed use, highly accessible activity centres will help to achieve this objective and deliver the associated benefits of reduced travel distance, reduced travel costs and reduced pressure on the city's transport networks.

Way forward

Directions 2031 supports initiatives which:

- ensure that the planning and growth of activity centres is supported by timely delivery of appropriate transport infrastructure;
- implement the activity centres planning program in partnership with local governments, communities and key service providers, to assist in the planning, development and prioritisation of centres and coordination of service and infrastructure delivery; and
- supports the principles of transit oriented development in the planning and re-planning of activity centres to achieve better integration of land use and transport services.

Government decisions to electrify the metropolitan rail system and invest in the northern and southern rail lines have delivered significant improvements in the quality and patronage of our public transport system, and have presented many opportunities to make more efficient use of land surrounding stations.

Examples such as the Subiaco redevelopment and the city rail project demonstrate the positive impact of integrating land use with public transport.

Improve the efficiency and effectiveness of public transport

The existing public transport system is designed primarily around the efficient movement of people to and from the capital city as the commercial centre of the metropolitan region. Continued growth of the city will necessitate the extension of these services to ensure residents in new growth areas also have access to high quality public transport infrastructure.

More than 350,000 trips are made daily on Perth's public transport system. While this is an important contribution to the movement network, particularly in a spatially dispersed and relatively low-density city, currently it represents 6 per cent of all daily transport trips, 9.2 per cent of peak hour trips and 17.5 per cent of peak hour distance travelled.

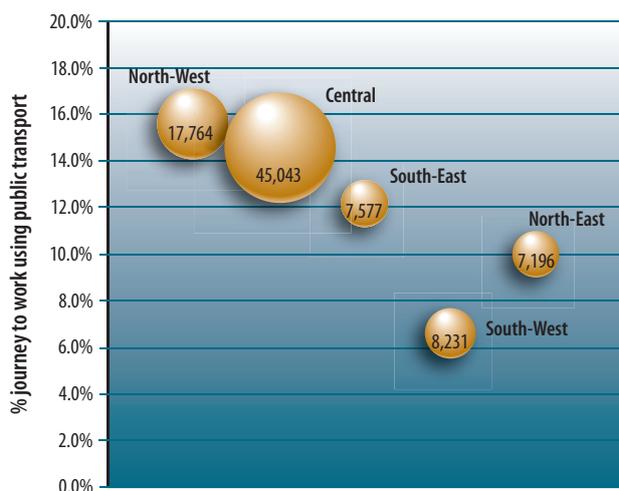


Figure 10: Journey to work data

Source: 2006 Census Data Journey to Work

There are significant sub-regional differences in the use of public transport for commuting to work, both in terms of the number of commuters who use public transport and the relative proportion of the total commuting public.

As would be expected, the central metropolitan sub-region has the highest number of public transport users, accounting for 14.6 per cent of all commuter journeys. Perhaps somewhat surprisingly, the north-west sub-region has the highest proportion of public transport commuters, with public transport accounting for 15.6 per cent of all commuter traffic. Although the south-west sub-region has the lowest proportion of public transport commuters, it should be noted that these figures were collected prior to the opening of the southern railway.

Way forward

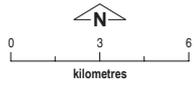
In recognition of the important role that public transport must play in shaping the future growth of the city and reducing dependence on the private car, the State Government has appointed an independent panel to provide advice on the preparation of a public transport plan for Perth. This plan will guide the next generation on investment in public transport infrastructure and identify opportunities to increase public transport use.

The proposed vision of the public transport network, when fully developed, will allow for a more effective means of travelling across and within suburbs, linking key activity centres and nodes, and significantly improving integration, efficiency and patronage. The network components of the 20-year public transport plan will feature rail and other rapid transit and high frequency bus services.

As residential densities in existing urban areas increase and centres outside the capital city begin to achieve a critical threshold of social and economic activity, there will be a need to re-balance the system to reduce growing levels of public transport congestion in central Perth, improve the efficiency of the existing network by promoting contra-flow passenger movement, and deliver a more effective public transport service to the emerging network of activity centres.

Way forward

Directions 2031 has identified conceptual future public transport connections required to support and service the activity centres network. These connections will be subject to further consideration and refinement as the public transport plan is developed. In addition, to maximise the effectiveness of the public transport network, it will be necessary to identify minimum residential densities around key transport nodes. It is expected that the level of these densities will be substantially higher than current levels.



Produced by:
Mapping & GeoSpatial Data Branch
Department of Planning, WA
On behalf of:
Western Australian Planning Commission
Copyright © July 2010

nts-per\mapps\Projects\perth\2031\Directions\mxd\A4_Direction2031_PossibleKeyTransport.mxd

Base information supplied by:
Western Australian Land Information Authority
LI 430-2009-4

Legend

- capital city
- strategic metropolitan centre
- secondary centre
- specialised centre
- metropolitan attractor
- possible key public transport connections
- strategic industrial centre
- existing industrial centre
- priority industrial site
- urban
- urban deferred
- non-urban
- rural
- passenger railway and stations
- freeways and highways
- planned freeway and highway extensions
- sub-region boundary

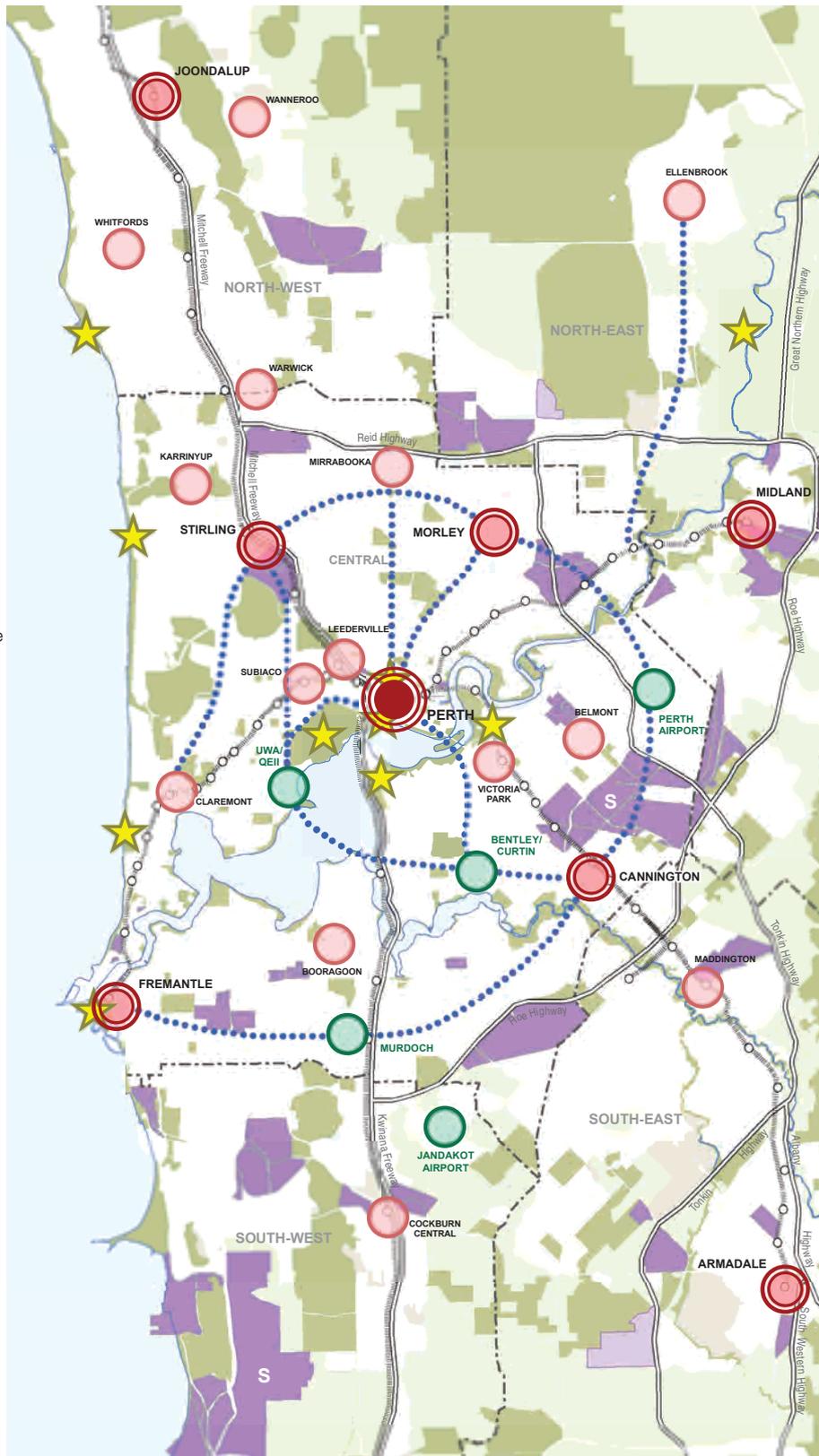


Figure 11: Possible key public transport connections

Encourage a shift to more sustainable transport modes

Peaking of world oil production may occur within the next 20 years. Urban form and infrastructure need to respond to this to enable people to have a more sustainable, less oil dependent lifestyle. Households on the urban fringe are highly car-dependent, contributing to increasing greenhouse gas emissions, traffic congestion and travel costs.

Whilst it is currently debatable whether the real cost of private car transport will increase due to higher energy costs, or decrease due to the wider availability of affordable technologies, such as electric cars, there are a number of traffic and transport, land use planning, community health and economic benefits associated with a shift away from private car travel. Directions 2031 emphasises the need to encourage alternatives to private car travel, particularly by improving the relationship between land use and public transport, encouraging changes in travel behaviour, and supporting the creation of neighbourhoods and activity centres that are based on walking, cycling and access to effective public transport services and facilities designed to meet the needs of cyclists, walkers and people with a disability.

An increasingly important consideration in the planning of new urban areas is the contribution that walking and cycling make to total transport. In 2006, walking and cycling represented 15.5 per cent or close to one million of the estimated 5.8 million person trips made per day throughout the region. If this current mode share is maintained, the number of trips by walking and cycling could increase to approximately 1.2 million per day by 2031. If recent trends in walking and cycling continue, the share of total trips would increase to 19 per cent by 2031, or close to 1.5 million of the estimated 7.7 million trips per day throughout the region.

Way forward

Directions 2031 recognises the importance of walking and cycling as not only the most sustainable form of transport, but also a major contributor to the health of our communities and for the contribution it can make to the overall travel picture as other parts of the movement network become more heavily congested.

Directions 2031 supports the promotion of the sustainable transport options including:

- **planning and design of activity centres around transit oriented development principles to promote public transport, walking and cycling as an alternative to private car use;**
- **continued reinforcement of Liveable Neighbourhoods design principles in new urban growth areas;**
- **finalising the review of and subsequently implementing the Perth bicycle network to build upon the current cycling infrastructure and policy development to support state and local government initiatives to increase cycling activity;**
- **the Western Australian trails strategy which promotes community connectivity and health;**
- **Walk WA: A Walking Strategy for Western Australia which takes a whole-of-government approach to support the development of accessible environments in which the decision to walk is easier;**
- **the State Government TravelSmart program which works with local government to help households make informed travel choices about how to get to places using their cars less and walking, cycling and using public transport more; and**
- **continued implementation of an accessible public transport system for people with disabilities which meets the access needs of the entire community.**

Maximise the efficiency of road infrastructure

Trips by private vehicle account for approximately 57 per cent, or 3.3 million of the estimated 5.8 million trips made per day throughout the region. If trends toward other forms of transport continue then the proportion of trips by private vehicle may reduce to approximately 50 per cent or 3.85 million of the estimated 7.7 million total trips per day by 2031. However, when coupled with anticipated increases in bus patronage, it is clear that the road system will continue to play a significant role in the movement network for the foreseeable future.

Significant improvements to and expansion of the road network in the Perth metropolitan area are planned and will be required in the future to meet the transport demands that will be generated by further expansion and development within the metropolitan area. Planned upgrades include six-lane freeways on Roe and Tonkin highways interspersed with four-lane highways and traffic signalised intersections.

There is also likely to be the need to plan for some new road infrastructure to ensure that adequate accessibility is provided and maintained across the metropolitan area. For example, the north-south East Wanneroo Link will be required to support additional development in the north-west sub-region.



Way forward

The State Government recognises that continued transport demand cannot be satisfied by simply building more roads, and it is investigating new approaches to improve the efficiency of the road network and to respond to the growing challenge of traffic congestion.

Main Roads WA is investigating and trialling congestion management approaches including real time road user information, incident management and ramp metering. Main Roads WA is also investing in a range of intelligent transport systems to deliver smoother running on our roads and freeways, improved road safety, transport cost savings and reduced greenhouse gas emissions. At the same time it must be recognised that there will still be a significant need for investment in road infrastructure.

Manage and reduce congestion

Since 1990, there has been an increase of almost 50 per cent in vehicle kilometres per day, with vehicles on Perth's roads now clocking up 25 million kilometres per weekday. The pressure that this places on the road system can be seen by the increasing level of congestion on the freeways and major arterial road network during peak periods.

Congestion is a significant economic cost. In 2008, the cost of Perth's congestion was estimated by the Bureau of Infrastructure Transport and Regional Economics to be nearly \$1 billion. By 2020, it projects that this cost will more than double to \$2.1 billion. Any steps taken that reduce congestion will have a significant positive impact on gross domestic product, while also delivering positive safety, environmental and social outcomes.

An effective public transport network that reduces the number of people driving, particularly during peak periods, can make a significant contribution to reducing traffic congestion. The provision of priority lanes to public transport balanced with the operations of the road network will result in quicker and more reliable travel times for public transport relative to other traffic.

When public transport provides a superior service in terms of travel time and reliability, together with adequate levels of passenger security and comfort, commuters are likely to change their mode of transport to public transport.

The rail system, by its very nature, has automatic priority. The challenge is to provide priority for major bus routes. This includes the provision of bus lanes and bus queue-jumps at traffic signals.

A transport system, land use pattern and urban design that are conducive to walking and cycling can also reap many benefits in terms of reduced traffic congestion. Walking is a particularly practical means for making short trips. If no commuters were walking or cycling, peak period congestion on Perth roads would be even more severe. This means that investment in walking and cycling facilities, together with promotion and education programs, has very worthwhile impacts on road congestion and environmental outcomes.

The Perth region is dominated by a capital city centre which provides nearly 110,000 jobs, or 18 per cent of the metropolitan region's employment. The focus on promoting mixed use activity centres throughout the region that provide both housing and employment opportunities will reduce the reliance on the capital city centre and potentially reduce the number of commuter trips. Where these activity centres are well serviced by public transport, the opportunity to promote public transport as the most effective form of transport for commuters is even greater.

Other opportunities to reduce peak period congestion include spreading the demand for peak period travel by enabling people to stagger their work times, influencing mode choice through managing parking availability and cost, and promoting opportunities to work from home. Opportunities and incentives for increasing car occupancy such as car pooling and priority or subsidised parking rates for high occupancy vehicles can also contribute to reducing the number of single occupant cars on the roads during peak periods.

Way forward

Managing and reducing congestion will require deployment of multiple strategies involving multiple modes and agencies, depending on the characteristics and performance of the local transport network.

Protect freight networks and the movement economy

Perth, perhaps more than other Australian cities due to its relative isolation and primary economy, depends heavily on the efficient movement of freight in and around the city, with significant volumes of container freight arriving at the Port of Fremantle Inner Harbour and via interstate rail transportation and moving to intermodal terminals in the Kewdale-Forrestfield area for local and intrastate distribution. Freight is also moved via Perth Airport to a lesser degree. As the city grows, the amount of freight to be transported and the increasing distances involved in distribution will place significant pressure on both road and rail transport infrastructure, road safety, pollution and amenity. Freight trucks, trains, ships and aircraft are becoming larger, heavier and longer and this has important implications for the movement network, in particular with respect to interfaces between different modes.

Most of our freight is transported within the metropolitan area by road because of the flexibility of door-to-door pick-up and delivery. While many of us associate freight transport with large trucks and semitrailers, in reality close to 70 per cent of freight is distributed throughout the city by light commercial vehicles. As a result, freight vehicles interact with general traffic on a daily basis.

Although historically a popular modal choice for moving bulk product and containers over long distances, rail is also increasingly being recognised as an alternative for shorter haul container freight movement from destinations within the metropolitan area to the Fremantle Inner Harbour, with benefits such as reducing congestion, amenity for residents and enhancing road safety. Currently, this occurs on a rail shuttle between intermodal terminals in Forrestfield and the inner harbour.