



**STATE
PLANNING
COMMISSION**



**INTEGRATED
MOVEMENT
SYSTEMS
BACKGROUND PAPER**

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PURPOSE OF THIS BACKGROUND PAPER

This document is the State Planning Commission's *Integrated Movement Systems Background Paper* developed, a technical report supporting the *Integrated Movement Systems Policy Discussion Paper*, which aims to:

- provoke thought and discussion about how current policy supports South Australia's planning goals in relation to the integration of our land use and transport systems
- identify existing policies that can be transitioned into the first iteration of the Planning and Design Code (the Code) and those policy areas that will require more significant reform over time.

This paper provides background to these issues through the lens of the following policy themes:

1. Aligning South Australia's growth with transport infrastructure
2. Capitalising on strategic transport infrastructure (including corridors and facilities)
3. Sustainable mobility, car parking and the impacts of technology.

This paper provides a summary of the investigations undertaken on behalf of the Commission to date which:

- highlight trends influencing decisions about transport and movement systems that may require a planning policy response
- identify gaps or deficiencies in existing policy that need to be addressed to ensure alignment with state strategic directions
- identify opportunities to transition and consolidate existing policy
- highlight investigations and research to be undertaken to inform proposed policy directions
- recommend policy directions for the Code, including the identification of where existing policy should be transitioned and where further investigations are necessary..

The *Integrated Movement Systems Policy Discussion Paper* and this background paper are closely aligned with the Commission's ongoing *Sustainable mobility, car parking and the impact of technology* Policy Conversation Area.

This paper is intended to be read in conjunction with the *Integrated Movement Systems Policy Discussion Paper* available at: <https://www.saplanningportal.sa.gov.au/>



PART 1: WHY ARE INTEGRATED MOVEMENT SYSTEMS IMPORTANT?

Movement systems encompass the diversity of methods used to move people and goods around our cities, regions and across our borders. From freight delivery to international trade, leisure travel and commuting, our movement networks and systems influence the lives of all South Australians every day.

The effective integration of the land use planning system with South Australia's movement systems and networks will:

- deliver complementary land use outcomes and transport systems integration
- achieve optimal land use and development outcomes with regard to the role and function of all transport modes
- provide for an interface between land uses and transport corridors which improves the functioning of both.

Implementing successful integrated movement systems requires a planning system that encourages and enables appropriate development in the right locations. These locations must be serviceable by a variety of quality transport options and facilities and be supported by an ongoing commitment to transport investment.

It is also important to acknowledge that the planning system plays an important, but limited, role in the achievement of more integrated movement systems.

The structure of our planning system means that development policies and tools influence built-form outcomes on a 'point-in-time' basis (associated with a development application). This means that policy has a gradual effect in changing in the built form of an area over time. It is therefore critical that planning system tools such as Regional Plans, State Planning Policies and other 'levers' outside of the planning system are also utilised to ensure strategic directions are achieved.

Tensions which can arise between the 'link' function of transport infrastructure and the neighbourhood or 'place' function of adjoining areas require careful management, and the planning system has a particularly important role to play in achieving this.





Benefits of integration

To ensure South Australia's ongoing liveability and productivity, our transport infrastructure must be designed to support the development of our urban and regional areas.

The performance of our transport networks and systems is closely related to patterns of development, particularly in urban areas where land use mix has a strong influence on movement patterns (such as commuting), supply chain efficiency and network demand (for example peak hours and congestion).

Development that is integrated with transport supports economic productivity, network efficiency and safety, improves the quality and sense of place, and supports:

- Economic competitiveness
- Liveability, wellbeing and inclusion
- Balancing access with activity
- Reduction of our carbon footprint
- Better harnessing of technology.

Successfully integrated movement systems help people move safely, efficiently and to more places; help provide an improved return on public investment in transport infrastructure; and encourage growth in private sector investment.





Economic competitiveness

Our major transport networks provide fundamental linkages to support business activity, employment, trade and economic growth. It is therefore vital that land for strategic transport corridors is identified and protected, especially for regional development and city-shaping infrastructure investments. Failure to do so can lead to the fragmentation of labour markets, diluting the scale efficiencies of metropolitan areas in matching skills to industry requirements.

The design and location of transport infrastructure can also be a key driver of growth by making places more accessible and open for investment. Integrated planning helps ensure the consequences of investment are positive and lead to better outcomes overall.

Whether moved by road, rail, air or sea, our freight networks provide South Australian businesses and industry with gateways to local and global markets. It is critical that this access continues and is improved where needed, particularly for those industries growing in value such as advanced manufacturing, biomedical science, clean technology and premium food and wine.

Throughout the world, regions compete with each other in their ability to provide quality of life for their residents and visitors. In particular, creating great places to live is a recognised prerequisite for prosperous economies where capital and workers are highly mobile. Regions and cities that are easy to move around and enjoyable to live in attract jobs and investment. South Australia is uniquely positioned to be able to integrate infrastructure carefully which will help us capitalise on our natural advantages and attract and retain workers and industries.



Figure 1: The benefits which can be realised through improved integration.



“With proper and considered planning, innovative infrastructure and transport solutions that meet the needs of industry, communities and individuals will have the opportunity to flourish and continue South Australia’s reputation of leading change and entrepreneurship¹.”

Each m² allocated to cars generates \$6 per hr and each m² allocated to bicycles generates \$31 per hr.

Liveable healthy cities are now the real competitive edge for attracting capital for knowledge-based industries and retaining a young and talented workforce.

Running one less car in a household over 25 years would repay a \$300,000 home loan in 12 years not 25 years, saving \$245,000.

South Australia currently experiences an average of between 3,000 – 3,800 net interstate population losses each year, with a substantial proportion aged between 20 and 38 years old.

The median one-way commute time to work in Adelaide is 21.8 minutes.

While this is less than other major cities it is still a significant amount of time spent travelling.



Figure 2: Median commute times for selected Australian cities. Source: ipData



Liveability, wellbeing and inclusion

The integration of movement systems with urban form has positive effects on health and wellbeing, housing mix and affordability.

For example, the design of many cities and towns limits opportunities for incidental physical activity (activity that can be built into daily routines such as walking or cycling for transport to work or the local shops) and has contributed to an over reliance on cars as a primary mode of transport, even for very short trips¹.

People living in mixed-use, higher density neighbourhoods walk more than people living in low density neighbourhoods and are less likely to chronic health problems such as obesity (Figure 4). Density underpins the creation of walkable neighbourhoods by bringing destinations closer together and providing a customer base to ensure that local shops, services and public transport are viable.

Successful integration, together with an improved mix of transport choices can also help reduce transport-based greenhouse gas emissions, urban sprawl and the need to increase road capacity; while supporting land use patterns that promote active travel, social interaction, economic activity and community connectedness.

The interface between busy movement corridors and residential neighbourhoods must however be carefully managed to avoid health impacts through exposure to emissions, noise and vibration.

Box 1: Movement and change – key influencers of South Australia's growth

Changes to our growth patterns have tended to be driven by mobility and advances in technology. Early planning in South Australia began by encouraging a range of land uses close to fixed line transport. With the rapidly increasing ownership of private vehicles and changing demographics, the population became more dispersed and land uses separated to deal with amenity impacts and externalities.

However, new technologies, a desire for managed growth, environmental sustainability, increased traffic volumes and community health needs are leading to a desire for mixed land uses close to public transport, reduced reliance on private vehicles and a more walkable urban form.



King William Street west side looking south from Grenfell / Currie Street intersection circa 1910.
Source: City of Adelaide archives



Figure 3: Linkages between travel behaviour and social wellbeing. Source: Frank L, et al. Obesity Relationships with Community Design, Physical Activity and Time Spent in Cars. *American Journal of Preventive Medicine*. 2004;27(2):87-96. Reproduced with permission from <http://healthyactivebydesign.com.au/design-features/housing-diversity>. © 2017 National Heart Foundation of Australia.

People living in low-density car-dependent neighbourhoods engage in less physical activity (including reduced walking and active travel) and increased sedentary behaviours, such as sitting in the car, both of which contribute to the prevalence of obesity and chronic diseases.

Research for metropolitan Adelaide has estimated that by the year 2030, the shifting of 40% of vehicles travelled to active transport would prevent 13 deaths annually through improved air quality and 508 deaths due to physical activity. A saving of 954,503 tons of CO² emissions annually would also be achieved.

Doubling residential density across a metropolitan area might lower household vehicle miles travelled by about 5 to 12%, and perhaps by as much as 25%, if coupled by higher employment concentrations, significant public transit improvements, mixed land uses, and other supportive demand management measures.



Balance access with activity

Streets constitute a significant proportion of public space (often up to 50% of a city's land area²), with most buildings and urban activities sharing an interface or fronting on to them. There is now increasing recognition of the importance of better balancing access with activity in streets (see Box 2 for further details). Urban streets in particular contribute in many ways to the economic, environmental and social functioning of cities and perform a role as important public places.

To optimise walking, streets need to be places for people to gather and linger: destinations in their own right. Especially in higher density neighbourhoods, streets become increasingly important as public spaces for social and commercial activity and are a crucial component in supporting walking. However, conventional streets commonly favour and prioritise the movement of vehicles. To support walking, the role of the street must be reconsidered as a place to be somewhere, not just to get somewhere.

Integrated Movement Systems take this 'Link and Place' methodology into account and this will be an important consideration of our new planning system.

Refer also to the 'People and Neighbourhoods' and 'Design in the Planning System' Discussion Papers.

“Now more than ever streets play an integral role in sustainable urban life, supporting our social needs and reflecting cultural shifts.

Historically, streets have focussed on motor vehicle movement and access with no or little further consideration. As society evolves, our living patterns and societal demands change along with the way we think.

Streets are fast becoming multi-purpose, multi-use spaces that serve as part of the open space network and destinations in their own right. They have become places for people to experience, providing multi-modal network connectivity and encourage communities to connect with each other and their surrounds.

In many instances walking and cycling networks can overlap to utilise crossing points, rest areas and established routes; access transport and places of interest; and improve vibrancy.”

Source: City of Unley Walking and Cycling Plan, 2016 (prepared by InfraPlan 2015).



Box 2: What is 'Link and Place'?

The 30-Year Plan for Greater Adelaide seeks to increase the number of neighbourhoods, main streets and activity centres where place is given a greater priority than vehicle movement by adopting a 'Link and Place' approach. Link and Place is a useful conceptual tool for use across both metropolitan and regional contexts.

Urban streets provide the setting for a wide range of activities that fall into two broad types: 'Links' (corridors) and 'Places'. These terms recognise both the need to move through a street, and the need to use a street as a destination in its own right.

From a functional perspective:

- successful 'Links' are fast, efficient and minimise travel time
- successful 'Places' encourage us to linger, stay and extend our time in an area.

Establishing the right balance between these two functions is essential in any street design project. The Link and Place approach advocates that both these functions should be given equal consideration, with the balance guided by the street's role within a wider street network hierarchy.

As a generalisation, most moving through needs are met within a carriageway, while place needs are met within pedestrian footpaths.



Figure 4: Examples of a 'Link' corridor and a 'Place'. Source: DPTI

Reduction of our carbon footprint

South Australia can greatly benefit from an efficient transport system which provides people with greater transport choices. Moving towards an integrated transport system can support active and attractive land use patterns, help reduce greenhouse gas emissions by reducing vehicle miles travelled, reduce land consumption and the need to continue building road capacity.

Shaping the pattern of development and influencing the location, scale, density, design and mix of land uses, will help to reduce the need to travel. It can also ensure transport infrastructure is utilised to its full potential, thereby allowing our cities and regions to grow more sustainably and intelligently.



Better harnessing of technology

A smart city is a place where public infrastructure, data technology and the internet work together to improve the quality of life of residents, visitors and workers.

One emerging trend across Australia is that fewer young people are obtaining a driver's licence, citing cost and lack of interest in driving³. While this trend is slowly emerging, it suggests that accessing information from our personal devices is influencing our mobility options as car-share, ride-share and bike-share services provide on-demand transport. This will play a valuable role in reducing private vehicle dependence.

There are also existing and emerging technologies that require responsive planning policies to be fully realised. Autonomous vehicles and smart parking are new technologies that are likely to significantly influence the future transport and land use requirements of our cities.

The nature of employment is also undergoing a transformation—not only in what we do, but where and how we do it. Similarly, a more flexible and adaptable approach to the work environment is changing the relationship of some job sectors with the traditional 'office' environment, with workers, particularly professionals, making choices about where they work.

Core trends influencing change

There are a number of trends that will inform the development of a more integrated movement system. The following list is not exhaustive, but provides context for why integrated movement systems are important. The new planning system will need to be responsive to these trends.

Global trends

A series of significant global 'mega trends' is causing fundamental shifts which will continue to influence the way we live, work and move. Trends most likely to influence the movement system and development patterns in South Australia are explored below⁴.

Greater urbanisation

People are continuing to move to cities to pursue employment opportunities, improved lifestyles and education.

South Australia has a highly urbanised population, with demand for services and infrastructure likely to continue rising, especially in Greater Adelaide and large regional cities and centres.

Ageing population

The changing needs of older age groups influence employment patterns and increase the demand for accessible, safe and reliable public transport.

South Australia's population profile is the second oldest in Australia, with the increasing share of the population aged over 65 years set to fundamentally influence mobility preferences in the next 30 years⁵.

Proliferation of emerging technologies and disruption

Continued and accelerating advances in technology will transform employment patterns, movement systems, social behaviours and challenge existing industries.



South Australia's mobility and movement networks will be required to adapt and respond to the emerging challenges and opportunities posed by new technologies, especially with regard to on-demand networks, sharing technologies and automation.

Increased efficiency of supply and value chains

Global trade in information and services will continue to grow while automated technology is likely to make some jobs obsolete. Supply chains will become more efficient as demand increases and businesses achieve improved economies of scale.

South Australia's supply chains and movement networks will require optimisation to enable upscaling of exports to international markets. The growing importance of major movement corridors and facilities will necessitate their ongoing protection from competing land uses.

Climate change and increased environmental awareness

An increased awareness of environmental impacts and climate change will result in strengthening of policies supporting sustainable movement and production.

Movement networks and systems in South Australia will transition to a low-carbon and low-emissions base as regulations tighten and consumers exercise their preference for emerging, affordable travel options.

Local trends, demographics and development patterns

The role and function of South Australia's inner urban areas, outer urban areas, towns and regions are unique, changing in different ways and at different rates, as are the ways we live, move and connect within them.

A highly urbanised population

84% of the state's population lives in Greater Adelaide in a low-density settlement pattern (Box 3).

Recent trends have seen greater demands for urban infill housing in the inner and middle ring suburbs (Figure 6), which will continue into the future as people seek housing close to their jobs and services.

The speed of transition to alternative forms of transport will be influenced by the take up of mixed use and higher density development within the suburbs.



Figure 5: Residential Infill Ratio: 30-Year Plan for Greater Adelaide - 2017 Update

Low population growth in regions and consolidation of growth in townships

South Australia's regional areas have low population densities but continue to be essential industry and employment areas.

Larger towns and regional centres provide a wide range of services and facilities and are generally sufficient for most of the community's needs.

Good multi-modal transport options in these towns are required to support a variety of lifestyles.

Smaller townships rely on the larger towns and regional centres for a variety of their needs. Safe and efficient connections are therefore essential for these smaller towns to survive.

Increasing congestion leading to growth in demand for more travel choices

Australian cities are characterised by worsening traffic congestion, however investments and technology advancements are broadening our mobility options. Emerging modes of private transport, such as ride sharing, on-demand services and share bikes are surging in popularity.

Nationwide traffic congestion costs are predicted to increase to between \$27.7 and \$37.3 billion to 2030⁶. Adelaide's average traffic delay per hour driven in peak periods was 28 minutes in 2013, or 73 hours per year (for people those with an average commute)⁷.

One in three Adelaide homes is located within 400 metres of a frequently serviced public transport stop. This compares to one in five homes nationally. Despite this, approximately 8.7% of people in Adelaide use public transport to commute, compared to 22.7% in Sydney, 15.5% in Melbourne, 11.4% in Brisbane and 10.2% in Perth⁸.

There is increasing awareness of the benefits of public transport, walking and cycling as alternatives to private vehicle transport.

There will be many opportunities in Adelaide to increase cycling and walking uptake as three-quarters of daily trips are predicted to be short journeys of three to six kilometres⁹.



High private car use

In 2013, Adelaide had the highest number of people using their private vehicle to travel to work (84%) and the second lowest proportion of people walking to work (2.9%) in Australia (ABS).

In addition, as seen in Figure 7, the Adelaide CBD featured the highest percentage of daily car commuters of Australian mainland capital cities (54.4%) in 2011, significantly higher than that of the Melbourne CBD (30.6%) and more than three times that of the Sydney CBD (17.4%)¹⁰.

However, the average Adelaide household owns 1.7 cars, among the lowest average of all Australian capital cities¹¹.

With a typical medium-sized car having an average annual running cost in the range of \$8,990 to \$15,260 per year¹², transport costs in Australia are the third highest household expense (after rent and food)¹³.

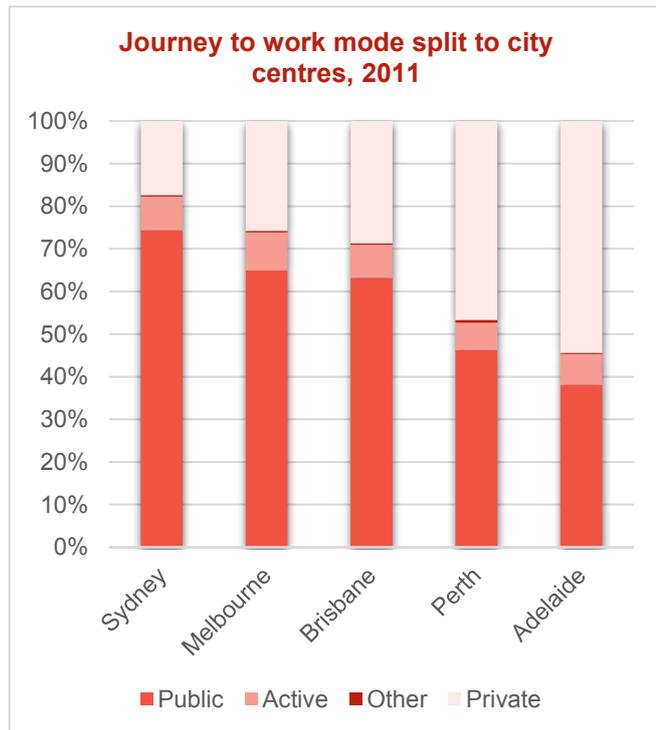


Figure 6: Journey to work mode split to city centres, 2011. Source: Charting Transport 2013

On average, the price of car parking in Adelaide is significantly cheaper than in most other major capital cities in Australia (Figure 8)¹⁴.

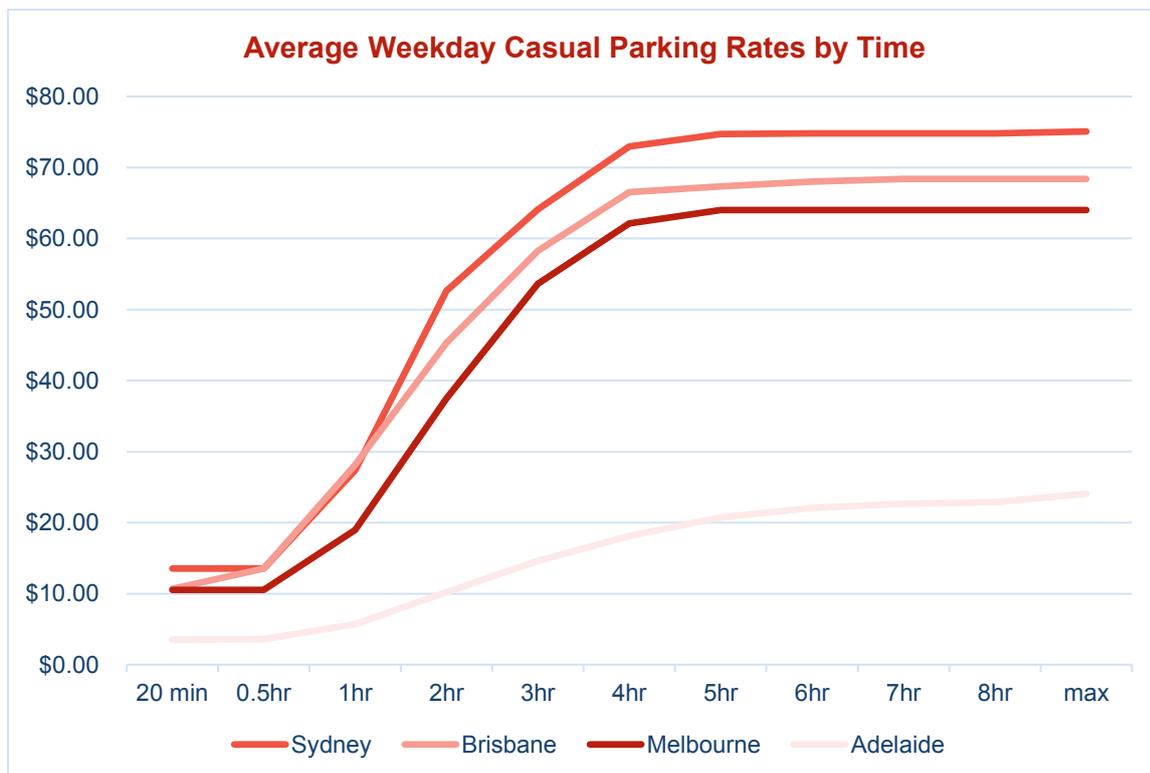


Figure 7: Average Weekday Casual Parking Rates by Time. Source: RACQ, 2014



Market dynamics and development economics

The successful implementation of contemporary planning policies is often influenced by market preferences and development-related economic considerations.

Around Adelaide in particular, recent development examples have revealed an emerging range of market dynamics that require careful policy consideration to ensure that future development outcomes – especially regarding to matters of design – remain consistent with both strategic intent and community expectations.

Perceived market expectations for private, secure, undercover car parking has resulted in higher parking provision in areas with good access to public transport (e.g. in the CBD or Bowden), regardless of prescribed minimum parking rates. In certain examples, the resultant proliferation of driveways and garaging negatively impacts the quality of the public realm and the function of streets. Given the small scale and incremental form of this development, cumulative effects can be more difficult to manage than in master planned areas.



The high cost of constructing basement parking for apartments or higher-density developments also appears to drive a preference for podium or under-croft parking, which can result in additional building bulk and height, challenging planning objectives for high-quality, active frontages.

These experiences identify the importance of policies which consider the cumulative effects of local circumstances in order to balance strategic intent, commercial considerations, and community expectations.



Box 3: The transport challenge of a spread-out city

The Greater Adelaide area is home to 1.3 million people and has a footprint more than double the size of Greater London, which is home to 8.7 million people (Figure 9).

This creates a significant challenge as our low population density means there are fewer people in any given area to support local services (Figure 10).

Where we live, work, shop and conduct many of our daily activities can often be located some distance apart.

To help contain our urban sprawl and increase the use of public transport, *The 30-Year Plan for Greater Adelaide* aims for 85 % of all new housing in metropolitan Adelaide to be built in established urban areas by 2045, and 60 % of all new housing to be located within close proximity to current and proposed fixed line (train, tram, O-Bahn) and high frequency bus routes, also by 2045.

Inner and middle Adelaide will experience a significant proportion of this growth, which will help to make our transport system more effective.



Figure 8: A comparison of the relative size of the metropolitan areas of Greater Adelaide and Greater London. Source: DPTI

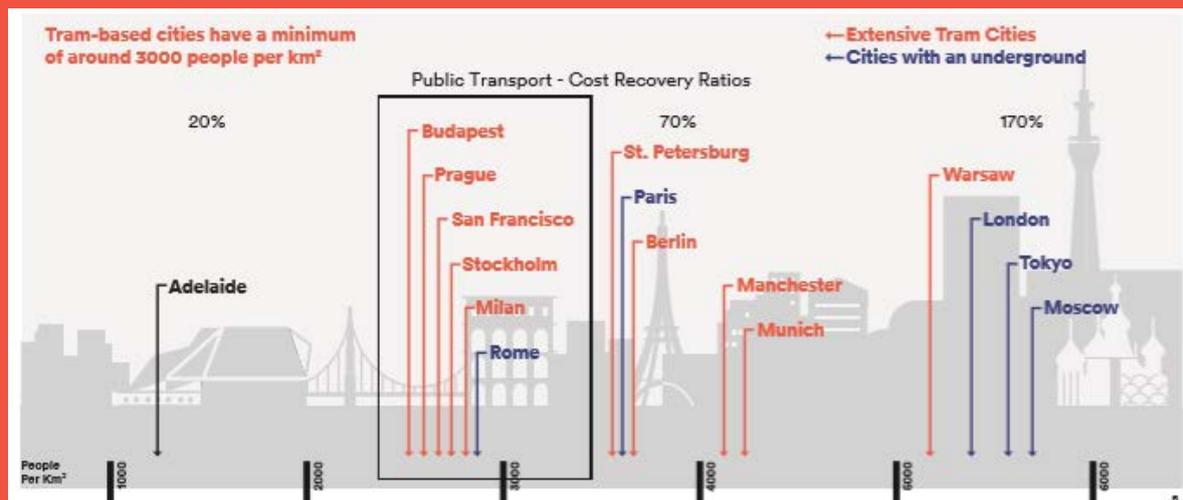


Figure 9: Relative population densities of major cities (people/km²). Source: DPTI



PART 2: RELEVANT POLICY CONTEXT

The existing policy environment in South Australia will provide the foundation for drafting the Code. Policy intended to be transitioned to the Code has been reviewed to identify strengths and limitations. The review has also identified opportunities for policy consolidation, where policy gaps exist and has highlighted new and emerging matters for consideration. The review has also taken account of policy within Development Plans and the South Australian Planning Policy Library (SAPPL).

In preparing information for this paper, the following policy documents were considered.

Strategic Directions

State Planning Policies

The State Planning Policies (SPPs) outline the high-level planning priorities for the state and enable the new system to robustly respond to current and future opportunities and challenges.

In drafting the Code, the Commission must ensure the policies developed align with the direction set out in the relevant SPPs. With regard to Integrated Movement Systems these are:

- Integrated Planning
- Strategic Transport Infrastructure.

See Appendix 6 for further detail of these policies.

Regional Plans

As with the SPPs, the directions set out in Regional Plans provide the strategic foundation for the Code. Given they are yet to be proclaimed under the new Act, the current regional volumes of the *Planning Strategy for South Australia* will serve as the state's interim Regional Plans. It is important to note that where there is conflict between a Regional Plan (Planning Strategy) and the SPPs, the SPPs prevail.

The 30-Year Plan for Greater Adelaide – 2017 Update

Home to approximately 84% of South Australia's population, Greater Adelaide includes a diverse array of movement and freight networks connecting the South Australian economy to major regional centres, national markets and international trade destinations.

First released in 2010 and updated in 2017, *The 30-Year Plan for Greater Adelaide* (The Plan) (Figure 11) is the state government's strategic land use plan for the Greater Adelaide region. The Plan sets out future directions for growth, with an emphasis on providing more affordable living choices, healthy neighbourhoods, improved utilisation of infrastructure, enhanced liveability and a more compact, sustainable urban form.

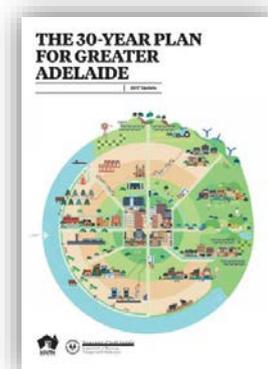


Figure 10: The 30 Year Plan for Greater Adelaide.
Source: DPTI



The Plan includes a number of specific policy themes of relevance to the integration of movement systems:

- Transit corridors, growth areas and activity centres
- Housing mix, affordability and competitiveness
- Health, wellbeing and inclusion
- The economy and jobs
- Transport
- Infrastructure.

Implementation of the strategic directions of the Plan is guided by six headline targets, the following four of which are directly relevant to the achievement of better integrated movement systems:



Target 1 Containing our urban footprint and protecting our resources:

- 1.1 85% of all new housing in metropolitan Adelaide will be built in established urban areas by 2045
- 1.2 90% of all new housing in the Outer Greater Adelaide will be built in established townships and designated urban development areas by 2045



Target 2 More ways to get around: 60% of all new housing in metropolitan Adelaide is built within close proximity to current and proposed fixed line (rail/tram/O-Bahn) and high frequency bus routes by 2045.



Target 3 Getting Active: Increase the share of work trips made by active transport modes by residents of Inner, Middle and Outer Adelaide by 30% by 2045)



Target 4 Walkable Neighbourhoods: (Increase the percentage of residents living in walkable neighbourhoods in Inner, Middle and Outer Metropolitan Adelaide by 25% by 2045)

See Appendix 7 for further detail of the Plan's actions and policies.



Regional Planning Strategies

The other seven volumes of the *Planning Strategy* (known as Regional Plans) (Figure 12) contain land use planning goals and objectives for the rest of South Australia. The majority of these plans are due for review and will likely be replaced by Regional Plans prepared in partnership between the State Planning Commission and Joint Planning Boards.

Many of the Regional Plans share a number of similarly worded planning principles regarding strategic infrastructure, particularly with regard to the protection of the facilities and corridors which form the backbone of regional freight; tourism; and movement networks.

Relevant policies for plans covering the Eyre and Western, Far North, Kangaroo Island, Limestone Coast, Mid North, Murray and Mallee, and Yorke Peninsula regions are located in Appendix 8.

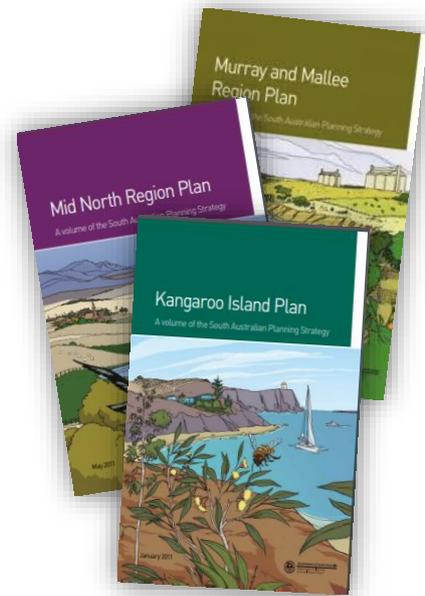


Figure 11: Region Plans for the Murray and Mallee, Mid North and Kangaroo Island.

Other government strategies

The Integrated Transport and Land Use Plan

Released in 2015, *The Integrated Transport and Land Use Plan* (ITLUP) (Figure 13) sets out a program of major transport infrastructure investment required to support the state’s growth and productivity over the short, medium and long term.

Transport and land use planning policies included in the Plan may be reviewed by DPTI to reflect current government policy.

For further details about the Plan’s key challenges, policies and priorities, refer to Appendix 9.

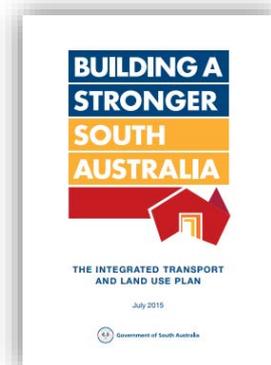


Figure 12: The Integrated Transport and Land Use Plan. Source: DPTI

Planning Policy

The South Australian Planning Policy Library

The state's current planning policies are contained in the South Australian Planning Policy Library (SAPPL) (Figure 14). The Library encourages best practice policy application and a consistent Development Plan format across the state. The SAPPL will form the starting point in transitioning to the Code.

For a copy of the South Australian Planning Library visit:
www.sa.gov.au/topics/planning-and-property/land-and-property-development/planning-professionals/south-australia-s-planning-policies

The SAPPL already features many of the tools needed to transition integrated movement systems into the Code. However, attention needs to be given to how we can further promote integrated movement systems, test how robust the existing policies are, and assess whether they are appropriate for use in the future.

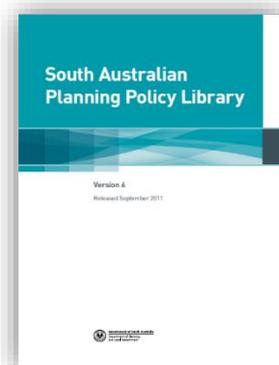


Figure 13: SAPPL Version 6. Source: DPTI



General Section

The SAPPL General Section contains policies that apply across the state and broadly relate to 'how' a development should occur as opposed to 'what' can occur in an area.

Transport and access issues are located throughout the range of development issues addressed in the General Section. For example, '**Building near Airfields**' and '**Centres and Retail Development**' both reference transport issues that may need to be considered when assessing land use applications.

This discussion paper focuses primarily on the '**Transportation and Access**' **General Section module** which addresses movement systems, cycling and walking, access and vehicle parking.

Zone Section

The following SAPPL zones focus on delivering or integrating transport and movement routes:

- **Airfield Zone** (primarily seeks to accommodate aircraft operations and aviation-related development)
- **Bulk Handling Zone** (envisages bulk handling and storage facilities, road transport terminals and value-adding industries)
- **Residential High Density Zone** (integrates high density dwellings with public transport nodes)
- **Residential Regeneration Zone** (promotes the regeneration of poor quality housing stock and underutilised land to achieve better use of existing infrastructure)
- **Urban Core Zone** (promotes mixed land uses in close proximity to a high frequency public transport corridor)
- **Urban Corridor Zone** (supports primarily medium to high density residential land uses oriented towards a high frequency public transport corridor)
- **Intermodal Policy Area of the Urban Employment Zone** (enables service movement of freight with 24-hour operation)
- **Waterfront Industry Policy Area of the Urban Employment Zone** (envisages harbour facilities, port-related industry, ship building and related support industries).

Overlays and Spatial Maps

The SAPPL Zone section contains the following overlays relevant to delivering or integrating transport and movement routes:

- **Strategic transport routes**
- **Noise and air emissions** (covered in the *Natural Resources and Environment Policy Discussion Paper*).

The spatial maps illustrate major transport routes with some Development Plans also including Concept Plans which indicate the future location of new roadways and pedestrian and cycling linkages.



Development Plan Reviews

Along with a number of relevant SAPPL policy modules, Development Plans also contain valuable policy. There are also a number of small variations to SAPPL policy relating to transport and movement systems in Development Plans across South Australia.

To achieve the required level of policy consistency sought across the state through the Code, these variations need to be understood and common ground negotiated. In partnership with councils and other government agencies, the Department of Planning, Transport and Infrastructure conducted an audit of the SAPPL and Development Plans on behalf of the Commission to gather an understanding of these variations, including their strengths and weaknesses.

Some of the common issues raised through these reviews included the need to:

- maintain a highly accessible city centre
- introduce design criteria relating to the location of bike storage and end-of-journey facilities
- develop mapping and associated policy to consider future road widening and tram line locations
- refine airport policy as it relates to development guidelines near navigational airspace, based on each aerodrome's requirements
- address emerging land uses associated with airports and the lack of policy relating to allied land uses to support airport operations (for example training centres)
- develop policy that differentiates between aircraft types and their impacts (for example, at RAAF Edinburgh and Parafield airports)
- review car parking rates to ensure a more consistent approach state-wide. This should be done via case by case assessments.
- review car parking funds in light of the *Planning, Development and Infrastructure Act 2016*.





PART 3: MAJOR POLICY THEMES FOR OUR NEW SYSTEM

The principles of integrated movement systems are well reflected in strategic planning documents such as the draft State Planning Policies, *The 30-Year Plan for Greater Adelaide* and the SAPPL, however, it is still a relatively new concept in terms of planning and development history in South Australia. There are areas in planning policy where we can (and need) to do better to deliver integrated movement systems.

Based on the outcomes of the investigation and research phase, we have identified areas of common interest and grouped issues related to each other into three major policy themes for further, more detailed consideration (Figure 15).

These major policy themes are:

1. Aligning South Australia's growth with transport infrastructure.
2. Capitalising on strategic transport infrastructure.
3. Sustainable mobility, car parking and the impacts of technology.

The following information is provided under each of these themes:

- Existing planning policy.
- Key issues, challenges and opportunities.
- Other relevant planning system tools and levers.

Recommendations

Based on the review of the current policy environment and key trends, the accompanying *Integrated Movement Systems Discussion Paper* provides a series of policy transition and reform recommendations for the Planning and Design Code under each of the key themes.

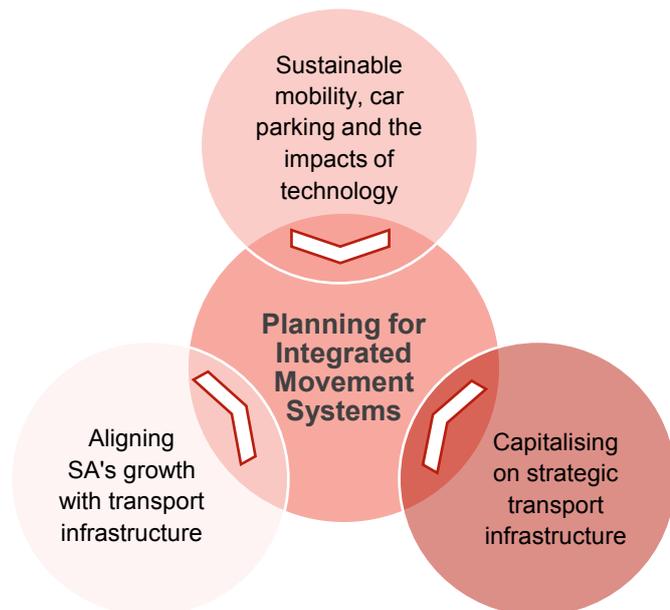


Figure 14: The links between planning policy and improved integration



1. Aligning South Australia's growth with transport infrastructure

The coordination of development with the provision of efficient transport networks is a fundamental element of all modern urban areas, both in metropolitan and regional township contexts (Figure 16).

Due to the expensive nature of constructing new transport infrastructure, governments at all levels are seeking to maximise the value of existing infrastructure networks and create liveable and affordable communities. This may include initiatives to expand capacity, improve regularity of public transport services.

The draft *State Planning Policy 1: Integrated Planning* emphasises the principles of integrated movement on a state-wide basis by encouraging zoning for higher development activity in areas close to a wide variety of transport options, particularly quality public transport (see Appendix 6 for related draft SPP policies).

Across metropolitan and urban areas of South Australia, this means that policy encouraging the development of land at higher densities for a wider mix of activities should be strategically located in areas close to a wide variety of transport options, particularly quality public transport. Areas rich in these attributes most commonly occur along high frequency transport corridors and in or near regional centres.

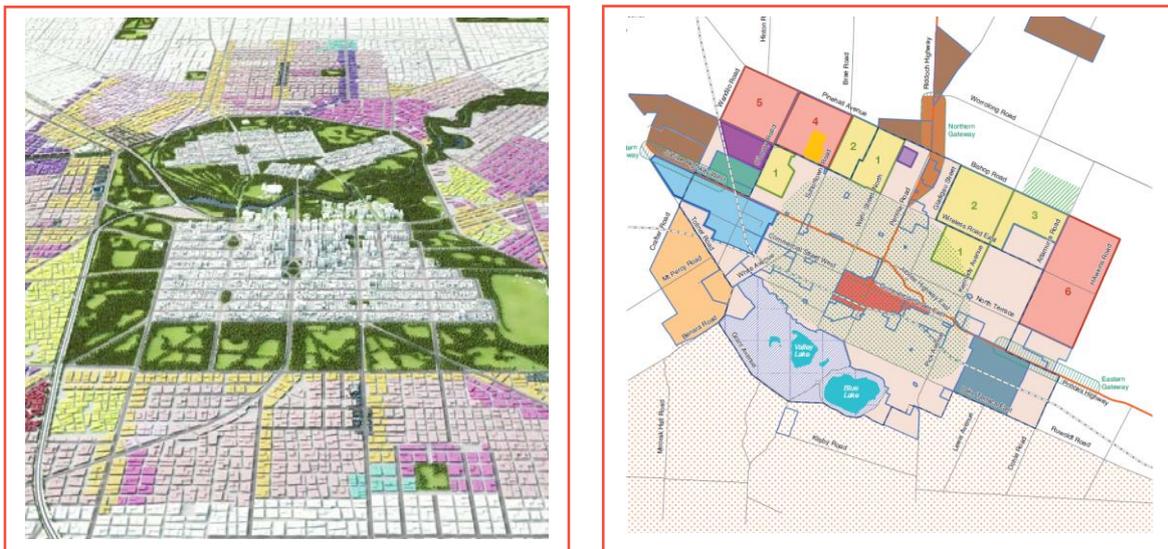


Figure 15: Differences between metropolitan and regional contexts. Source: DPTI

The 30-Year Plan contains targets, policies and actions that seek a more compact urban form through locating more development close to strategic activity centres, transit corridors and public transport. See Box 4 for a more detailed account of the relationship between land uses and transport.

In regional areas, current volumes of the Planning Strategy consistently encourage a broader mix of higher density residential and commercial land in close proximity to or within well-served regional centres. These locations tend to be the best serviced by a variety of transport modes, mixed uses and complementary social services.

Where greenfield or broad-hectare growth of regional centres is being proposed, most Regional Plan policies encourage the clustering of development to maximise the efficiency of existing services, while discouraging 'strip' development, such as along the coastline or arterial roads at the fringe of townships.



Aligning South Australia’s growth with transport infrastructure

The development of land use policies will need to be integrated with the service hierarchy of the public transport system, particularly with high-frequency ‘backbone’ services in metropolitan Adelaide, such as city tram services, electrified train services, potential electric bus corridors, a potential O-Bahn extension, and regional public transport services.

While service provision is a key contributor to patronage growth, proximity and accessibility to services through effective land use planning is also crucial.

Land use policy will need to be integrated with high capacity traffic and freight corridors, particularly for industry sectors that rely on effective, timely and preferably unfettered access to freight movement networks.

Box 4: Mutual support - how land uses and public transport are related

Providing for transport choice is important. As our state grows there will be increasing and often competing demands for land and, in particular, road space. In urban areas where this space is limited, public transport is vastly more efficient at moving people and reduces pressure on road widening to deal with increased traffic volumes. With the competition for land, widening roads is not always an available option.

As with all states of Australia, travel in South Australia is dominated by private motor vehicle travel, with only 6% of Greater Adelaide’s motorised transport undertaken by public transport¹⁵. However, factors such as increasing urban congestion, the changing nature of employment and an older age profile are placing increased pressures on our road networks, health and household budgets.

To offset these impacts and encourage greater use of public transport, it is important that services are integrated with land use planning and matched with projected demand to ensure communities receive regular, reliable levels of service.

The increased use of public transport can be enhanced through a more compact urban form, mixed land uses and increased population and employment densities in appropriate locations.

Planning for increased densities must be done in conjunction with public transport planning. This will ensure growth is focussed in areas where transport service frequencies and capacities can be increased to accommodate growth without compromising quality of life or losing the attractiveness of the services.

Focussed capital investment into transport services is a complementary lever (outside of the planning system) which can also lead to a more efficient and urban form, reduce traffic congestion and contribute to the growing market demand for residential development. This is as relevant to regional centres as it is to inner metropolitan and city areas.

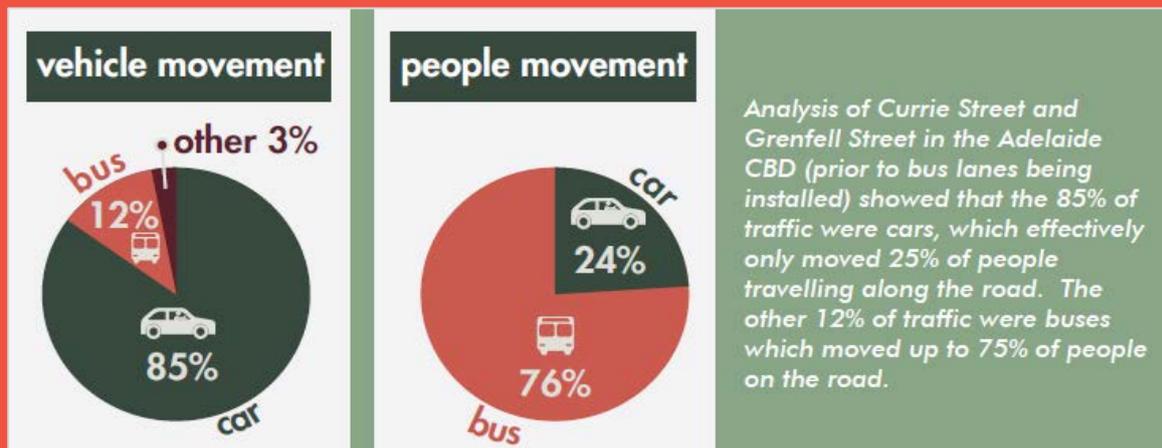


Figure 16: Exploring ways of using our road space more efficiently. Source: DPTI



Existing policy

The SAPPL includes specific zones (including Urban Corridor Zones, Urban Core Zones, Residential High Density Zones and Mixed Use Zones) which encourage land use outcomes incorporating integrated movement principles. These encourage development intensification along higher frequency public transport routes.

The SAPPL also includes minimum net residential site densities for at least four zone types, with higher minimums encouraged where appropriate, in the Suburban Neighbourhood Zone, Urban Core Zone, Urban Corridor Zone and Suburban Activity Node Zones. The application of minimum site densities helps to support a walkable environment and the increased use of public transport.

The introduction of these zones commenced in 2012/13, with policy encouraging increased urban densities, mixed land uses and growth located close to public transport. The spatial application of these zones (to date) has been driven by the targets and policies of *The 30-Year Plan* (Box 5).

Several Development Plans also apply minimum net residential densities in certain zones, as well as minimum building storeys within concept plans.

Centres Zones, and in particular the Regional Centre Zone which is adopted by many regional councils, support medium to high density residential development in conjunction with centre-type facilities.

Best practice can be achieved when:

- key land uses are located within walking distance of each other (for example shops, libraries, childcare centres, cinemas and bus interchanges)
- the highest densities of housing and employment appropriate to an area are located within walking distance of stations/stops
- uses are mixed either vertically within the same building or horizontally on adjacent sites
- functional requirements such as servicing; impacts such as sound and odours; and identity in the layout and design of horizontally and vertically mixed uses, are considered
- pedestrian and bicycle access is safe, direct and comfortable
- plans and regulations encourage home businesses and workplaces.

Key issues, challenges and opportunities

Policies that support better land use and transport integration

Most relevant SAPPL policy tends to protect the movement function of infrastructure, corridors and transport functions, which can lead to interface issues with adjacent land uses.

Opportunity therefore exists for policy to better reflect strategic intent. For example:

- A Principle of Development Control within the Transportation and Access Policy currently states that *'Development should be integrated with existing transport networks, particularly major rail, road and public transport corridorsand designed to minimise its potential impact on the functional performance of the transport network'*.
- This could be reworded to read *'Development should be integrated with existing transport networks, particularly major rail, road and public transport corridors....., and designed to be integrated with and appropriately utilise the transport network'*.



The conversion of the SAPPL and Development Plans also provides an opportunity to consolidate the existing policies regarding minimum net residential densities and consider additional opportunities to include these in other zones, where appropriate.

Spatial application of zones

Some infrastructure, corridors and transport services which are currently underutilised could benefit from a more integrated planning approach, by for example, policy that actively promotes development opportunities within close proximity.

Zones encouraging land uses which support the principles of integrated movement (such as those discussed above) are not well represented in current Development Plans and make up only a small percentage of zoned land, particularly in regional areas. This needs to be addressed.

Adequate consideration should also be given to areas where these zones may be expanded to in the future. Action 2 of The 30-Year Plan refers to the fact that the application of zones such as Urban Corridor Zones can be expanded through local area planning for strategic transit corridors, train stations, activity centres and growth areas.





Box 5: Making use of zoning and density to support integration

Transit-supportive zoning regulations:

- encourage and direct development that supports public transport
- reinforce the use of public transportation by locating higher-density mixed-use development, including employment-oriented businesses and higher density residential uses, adjacent to transit stops
- provide an alternative to traditional development by emphasising mixed-use development that is pedestrian friendly
- encourage infill and redevelopment along transit corridors in existing neighbourhoods
- provide a mix of housing types, costs and densities.

Density guidelines from *The 30-Year Plan*:

- Walking catchments to fixed line transit stations should generally be within 800m, and within 400m to high frequency bus stops.
- Catchments of individual centres may vary depending on specific local context such as the geography and the diversity of services available.
- Gross densities within these catchments should look to increase in these locations to an average of 35 dwellings per hectare over the life of this Update, with net densities in the medium to high density range.
- Individual catchments may vary in their scope and density and their spatial application will be informed by local area planning.

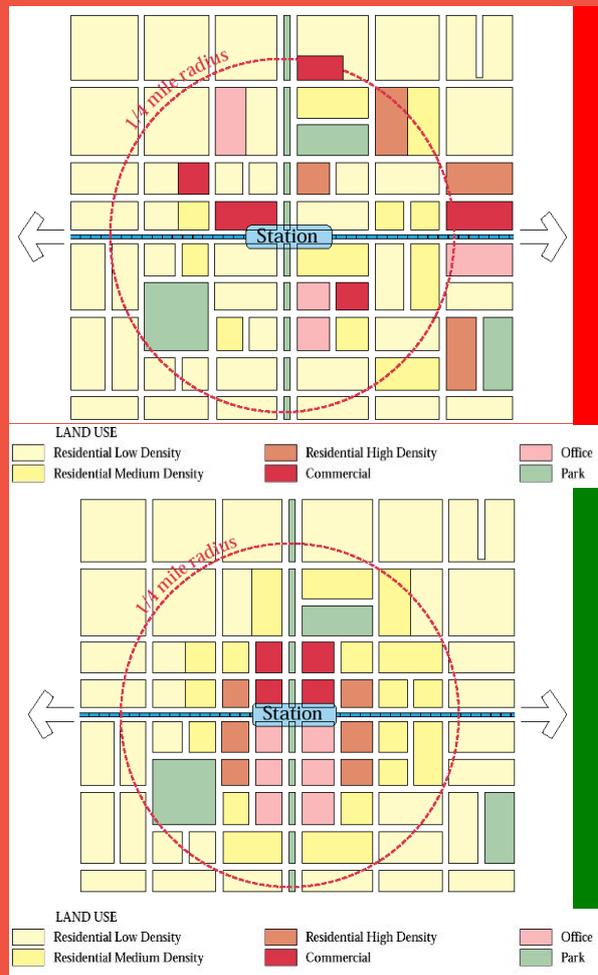


Figure 17: Re-aligning land uses to better support public transport. Source: InfraPlan

For a further example of how similar principles may apply to employment or industrial areas, see Appendix 10.

Other planning system tools and levers

Structure planning

Undertake structure planning for strategic transit corridors, train stations, activity centres and growth areas as part of future regional plans¹⁶.

Better integration of zoning with transport capital works projects

Better integrate transport and land-use planning by strategically considering land use development opportunities from the infrastructure investment stage¹⁷ (i.e. when major transport capital works are proposed).



2. Capitalising on strategic transport infrastructure

South Australia's strategic transport facilities and networks are major pieces of public infrastructure which connect people with places and products with markets.

While local streets, greenways and neighbourhood connections can also be utilised as valuable and sometimes pleasant extensions of the public realm, major transport corridors and facilities serve a primary purpose as transport linkages and gateways of strategic economic importance.

Such is the importance of these functions to the ongoing prosperity of South Australia that our planning policies must protect these transport corridors and facilities from incompatible development to ensure their ongoing, efficient operation.

Examples of such facilities include major airports (including flightpaths), sea ports, intermodal or bulk handling facilities, mass transit corridors and strategic freight routes.

Many of our major corridors and facilities have been operating in areas of the state which have been developed for a long period of time or where existing interfaces require sensitive and ongoing management. To reflect these situations, it is important that, where possible, planning policy is implemented which seeks to minimise interface impacts by balancing the ongoing rights of existing land uses with the operation of strategic transport infrastructure.

This section covers the current and future policy considerations for:

- Strategic transport facilities
- Strategic transport corridors.





2.1 Strategic transport facilities

Transport facilities such as intermodals, air and sea ports, continue to serve vitally important transport functions which contribute to the ongoing economic, employment and social imperatives of South Australia.

It is vital that our most significant transport facilities are strategically planned for to ensure their core economic functions (including quality of life) are protected and their supply chains enhanced as they diversify, consolidate and/or expand operations. The identification and protection of strategic sites that operate as transport facilities is critical to accommodate economic growth in metropolitan Adelaide and other key locations throughout the state.

South Australia has a number of significant public, private and military airports. Greater Adelaide features three major airports consisting of the general aviation and training airports at Adelaide and Parafield and the military airport serving the Royal Australian Air Force Base at Edinburgh. These facilities lie adjacent to a wide range and intensity of land uses, where interfaces must be carefully managed.

Seaports are also key drivers of economic growth, facilitating the movement of people, goods and services and attracting long term investment for South Australia. They contribute to employment opportunities and are critical gateways for tourism, mining and agricultural industries, particularly in the regions.

Intermodal facilities provide an interface between road, rail, sea and air freight modes and are a key part of any efficient supply chain. By providing the opportunity to transfer goods between long-haul regional movements and the 'first/last mile' journey in and around urban centres, intermodal facilities allow the quick transfer of items from one mode to another without the need for unpacking and repacking the goods.

It is important that transport facilities are not perceived to be operating in isolation. Economic advantages can also be gained with the co-location of complementary land use activities in proximity to transport centres. It is also vital to recognise that facilities are heavily reliant upon the support of their local communities to thrive.

Capitalising on strategic transport infrastructure

- Strategic transport infrastructure is typically a focus of investment into the transport system, to provide efficient, safe and sustainable movement of people and goods.
- Land use policies should protect and support the reinforcement of strategic transport infrastructure functionality that is already in place and planned for the future.
- With good planning, major corridors such as rail spines and freight networks can also cater for brand new opportunities for urban renewal and changing industrial and commercial sectors.
- Transport investment and services can, in return, be targeted to stimulate private sector urban renewal and industrial development projects.



Existing policy

Airports

The current SAPPL contains policies and a General Section on Building near airfields. It also has an Airfield Zone which is applied to all relevant airports across South Australia. This zone primarily seeks to accommodate aircraft operations and aviation-related development.

Ports

Port facilities around South Australia currently operate within either the Bulk Handling or Industry Zones. SAPPL also provides the following policy area but there has been limited application of it in Development Plans to date:

- **Waterfront Industry Policy Area** of the **Urban Employment Zone** (envisages harbour facilities, port-related industry, ship building and related support industries).

Intermodals

Intermodal sites in South Australia usually operate within a Bulk Handling Zone or Industry Zone. The SAPPL also has the following policy area available but there has been limited application of it in Development Plans to date:

- **Intermodal Policy Area** of the **Urban Employment Zone** (service movement of freight with 24-hour operation).

Key issues, challenges and opportunities

A key issue relevant to all strategic transport facilities is the need to protect both their on-going operation and future expansion potential.

Airports

The application of planning policy for areas surrounding airports varies considerably across South Australia and a key challenge for the future will be centred on achieving improved consistency of the spatial application of planning policies and ensure they align with federal government guidelines on airport safety and operation.

It is important that the ongoing operations of our airport facilities are protected. Careful management must be given in areas with sensitive interfaces and incompatible land use encroachment.

The National Airports Safeguarding Framework (NASF) will be an important tool in shaping future planning policy for strategic airport facilities in South Australia, especially for areas surrounding Adelaide Airport, Parafield Airport and the Edinburgh Royal Australian Air Force Base. Councils in northern Adelaide have recently been working to update requirements in Development Plans to respond to the changing use of aircraft at the RAAF base.

South Australia's regional airports would also benefit from a future planning policy environment which applies consistent protection from incompatible land uses and the improved management of development near Public Safety Zones (PSZ). The State Planning Commission will consider the guidelines in the context of what it means for South Australia.

Drafting of the Code will also need to consider planning policies unique to other airports/airfields currently listed in individual Development Plans, and where appropriate reflect these in the Code.

It is understood that a significant issue for council areas with airports is the need for additional requirements for insulation and glazing to address noise impacts and the unanticipated costs to property owners. There are a number of mechanisms outside of planning policy (and thus the Code)



which influence noise mitigation requirements (for example Minister's Specifications) and as such, planning policy may not be the best solution to this issue. The new SA Planning Portal may however provide opportunities here, for example by enabling users to click on a property and be given information on building/mitigation strategies.

Ports and Intermodals

Protecting ports from encroachment by incompatible land uses is becoming increasingly important to ensure their current operations and critical transport links are maintained and to allow for their expansion.

With the changing nature of the ways freight is moved (for example containerisation and automation) there is also an opportunity to review planning policy in relation to the operation of intermodal facilities and freight transport hubs.

Other planning system tools and levers

Referrals

Ensure that all appropriate referrals continue to be in place.

Regional Plans

Future regional plans should consider the importance of port facilities and protect their ongoing important economic function.





2.2 Strategic transport corridors

South Australia's major transport corridors, especially main roads are the primary movement network of the state, providing all users with the vital access arteries required to efficiently move goods, people and critical services.

Typically, corridors are comprised of three elements: land uses, the transport (movement) corridor itself and the public realm (any associated footpath, kerb or interface with adjoining land uses; refer Figure 19 below).

South Australia's major corridors provide for a range of transport modes, most commonly vehicles and trucks (roads); freight rail and grade separated public transport (busways, trains and trams); and cycling and walking. Moving into a new planning system, there is a need to ensure that land uses are appropriately supported by transport options, and that our transport corridors remain efficient.

It is also important to acknowledge that many of South Australia's major movement corridors (especially roads) cater for a variety of roles and functions along their length, especially routes traversing rural, suburban, urban and city-centre environments (Figure 20). Commonly referred to as a 'Link and Place' approach, modern land use policy should appropriately reflect these differences, allowing for a nuanced approach to the use of land alongside corridors.

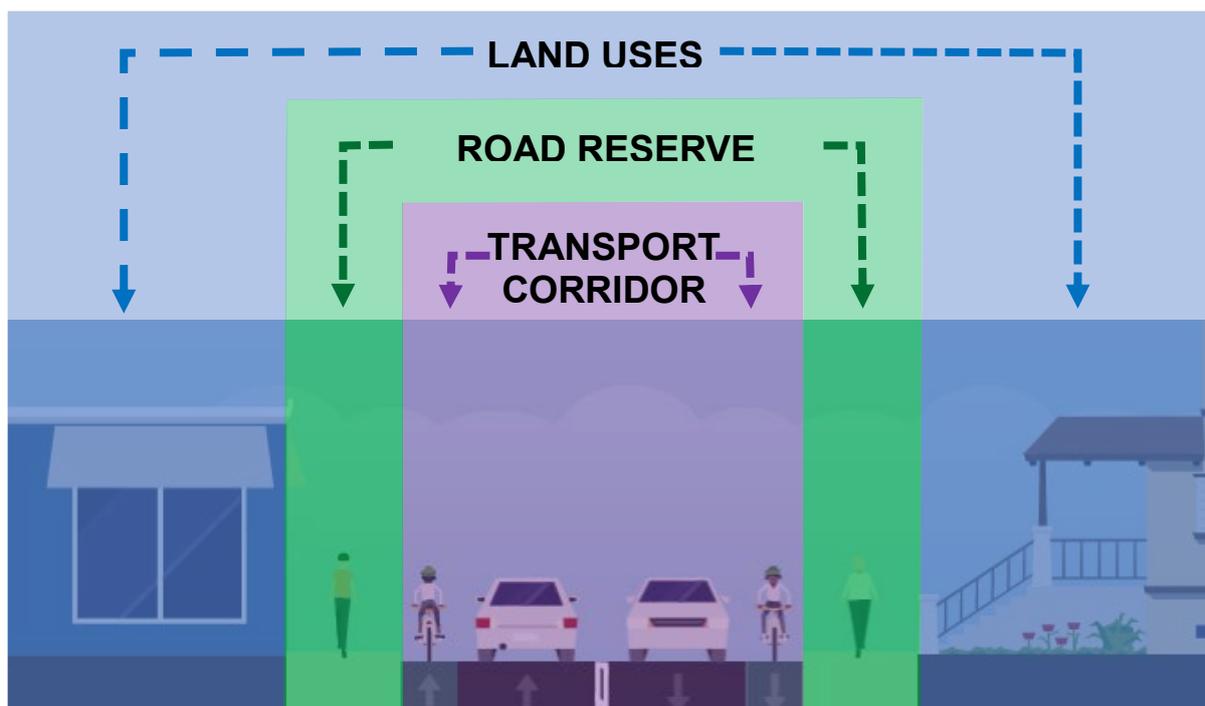


Figure 18: Typical cross section of a road-based transport corridor. Source: InfraPlan

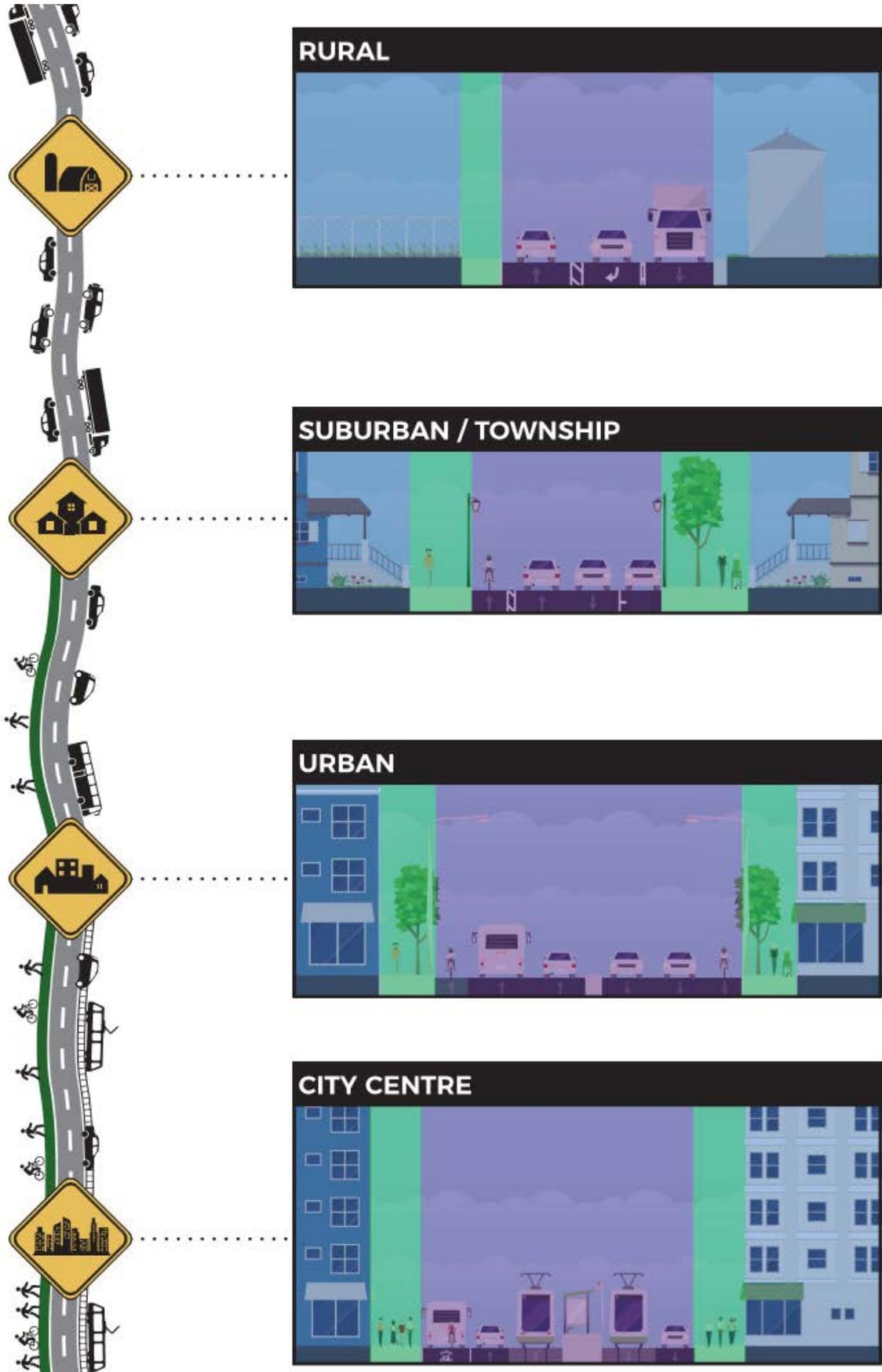


Figure 19: Corridors and urban environments vary along their length. Source: InfraPlan



Existing policy

The SAPPL Transportation and Access Module contains policy supporting a comprehensive and integrated transport network system.

The SAPPL also includes provision for 'Strategic Transport Routes Overlay'. The purpose of the overlay is to distinguish between strategic routes and other transport routes along corridors. Specific policies about protecting the importance of the road as a strategic transport route have been included in the overlay. This ensures that new developments along these corridors complement the strategic transport function, for example through limiting access points (see example in Appendix 4).

All Development Plans contain maps which illustrate the location of arterial roads, however they do not always distinguish between state and local government-maintained roads.

The Noise and Air Emissions Overlay is included in the SAPPL to protect noise and air sensitive land uses. (Refer to the *Natural Resources and Environment Policy Discussion Paper*).

Key issues, challenges and opportunities

The 'Transit corridors, growth areas and activity centres' policy theme of The 30 Year Plan identifies the significant role transit corridors have in the development of our cities.

Despite the strategic direction of corridors playing an important role in the future growth of our cities and urban areas, some current policies in the SAPPL may be incompatible with this intent. For example, the General Section on Centres and Retail Development in the SAPPL stipulates that:

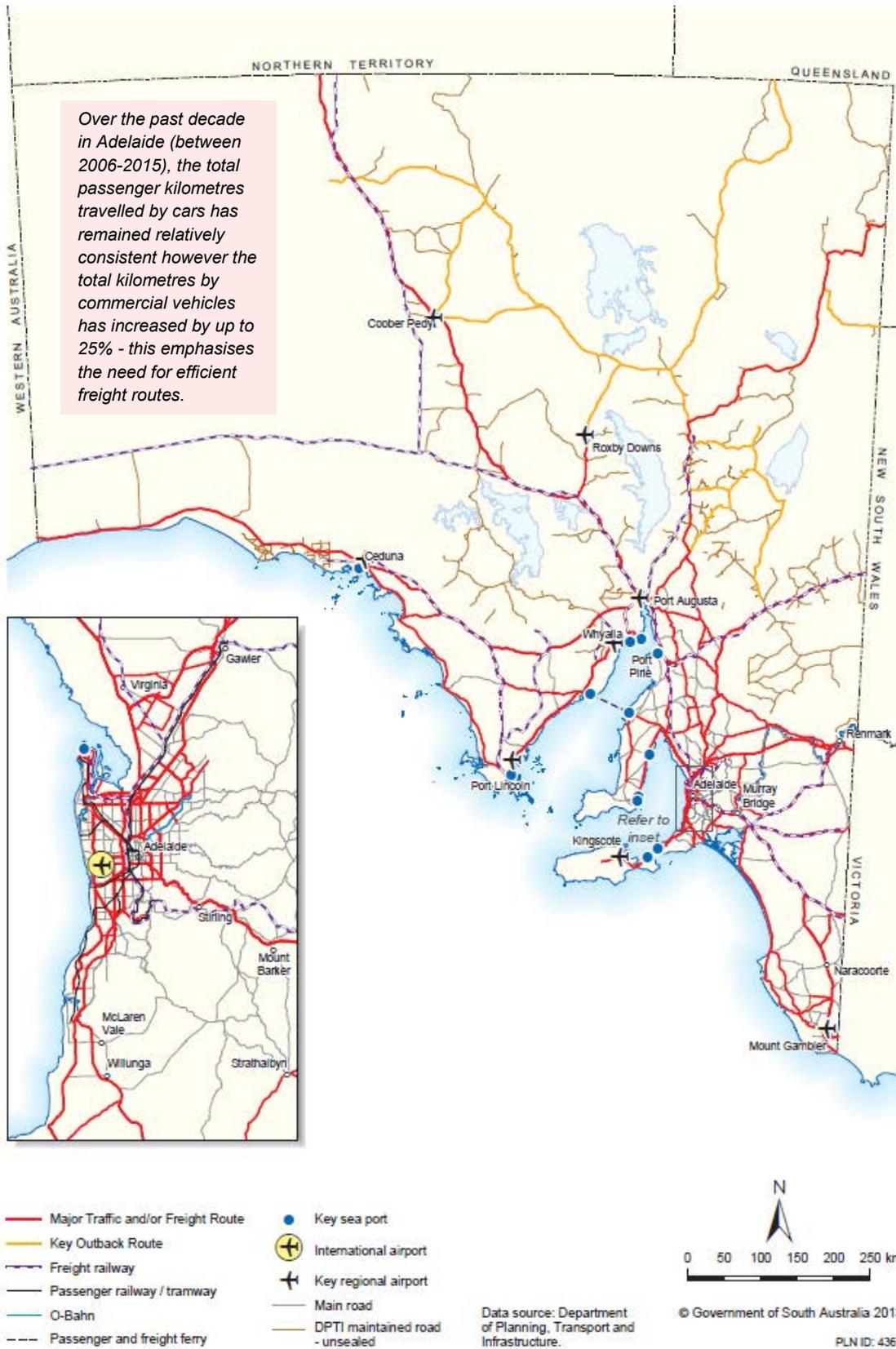
"Centres should develop on one side of an arterial road or in one quadrant of an arterial road intersection." – SAPPL v6

This may limit the potential to achieve appropriately integrated development which ideally activates both sides of a corridor. While the operation of a corridor is important, the potential to have activated and liveable spaces along some corridors should be a principal consideration in dense urban areas. Similarly, while road corridors through some regional activity centres or retail spaces are likely to carry higher freight volumes, the value of activated and liveable spaces remains an important consideration.

While some transport corridors are appropriate for greater density of certain land uses, such as residential and retail intensification along public transport routes, there are also routes which may require some protection from incompatible development (see Box 6).

The key function of freight corridors is to cater for the safe and efficient movement of freight however, they also cater for a broad range of other vehicle movements. These routes need to provide travel efficiency and reliability of travel times throughout the day for heavy vehicles and need to protect the adjacent land uses from adverse impacts (such as safety, noise and vibration). The drafting of the Code may provide the opportunity to incorporate or define a freight route network (or hierarchy) as a spatial policy layer and apply policy specific to these issues (as shown in Figure 21).

Currently DPTI is reviewing its Metropolitan Adelaide Road Widening Plan (MARWP) to ensure that it is up-to-date. The Code also provides an opportunity to spatially represent this plan.



South Australia's Transport Network

Figure 20: South Australia's Transport Network. Source: DPTI



Box 6: Planning for the protection of Melbourne's Eastlink corridor

Land for a road corridor in Melbourne's eastern suburbs was identified and zoned for future transport uses in previous metropolitan plans (*A plan for Melbourne's growth areas* (2005), *Melbourne 2030* (2002)).

This land was protected as urban development moved outwards and the corridor is now located in the centre of one of the most productive parts of Melbourne.

It was not until 2008 that the Eastlink motorway was opened.

Due to the foresight in protecting the land the new road was developed within the existing urban fabric with minimal disruption to the region.



Figure 21
Melbourne's
Scoresby (later
Eastlink) corridor.
Source: Melbourne
2030 Plan

Other planning system tools and levers

Referrals

Ensure that all appropriate referrals continue to be in place.



3. Sustainable mobility, car parking and the impact of technology

Enabling more people to adopt cycling and walking for commuting and other transport purposes – as distinct from purely recreational reasons – is an important objective in the achievement of better integrated land use planning and movement systems. Effective implementation can result in increased mode choice, healthier lifestyles, and safer local streets and neighbourhoods (Figure 23).

Another increasing influence on our travel behaviour is the growing use of ride-sharing and on-demand transport services; electric vehicles; power-assisted bicycles; and emerging technologies such as driverless cars. A reduced reliance on private vehicles could change the requirements for car parking into the future. This may shape our city by reducing the need for expansive ground level car parks which use up valuable land. It is important for the Code to ensure that policies are flexible to respond to this opportunity.

This section focuses on the following policy areas for a more detailed examination of the issues and potential solutions:

- walking, cycling and other non-motorised transport
- car parking and emerging mobility technology.



Figure 22: Elements contributing to a healthy neighbourhood. Source: DPTI

Sustainable mobility, car parking and the impact of technology

- The effective integration of modes such as cycling, walking and public transport with supporting station/stop and end of trip facilities and potential ‘Mobility as a Service’ opportunities are examples of initiatives that will help to encourage sustainable modes of transport.
- Land use policies guiding urban development should enable services, mobility and access principles to facilitate the uptake of sustainable transport.
- Appropriate car parking rates and technology can help to encourage sustainable mobility and less car-dependent development along key public transport routes.
- Effective support for sustainable transport modes can improve the connectivity of communities (especially for people who cannot drive or do not have access to a car); promote healthier and more liveable neighbourhoods (creating a greater sense of community and more opportunities for social interaction); and encourage the development of more homes and businesses along major routes).



3.1 Walking, cycling and other non-motorised transport

Walking and cycling are vital mobility options, particularly in cities, neighbourhoods and regional centres.

It is expected that cycling, walking and other modes of active travel will have an increased role in mobility as metropolitan areas and centres across Greater Adelaide move to a more compact urban form (as evidenced in Targets 3 and 4 of *The 30 Year Plan for Greater Adelaide*).

It is important that, where possible the planning system contains policies that promote walking and cycling as the preferred travel options, to ensure travel mode shift and improved community health outcomes.

As more jobs, services and community infrastructure are located close to where people live (or more people live where jobs and services already exist) the required travel distance for some purposes lessens. In partnership with other factors affecting walkability (Figure 24), this means that walking and cycling become more popular, viable transport modes. There will be many opportunities to increase cycling and walking uptake in the future as three quarters of daily trips are predicted to be short journeys of three to six kilometres¹⁸.

Pedestrian and cycle routes in regional and rural towns are also important transport options for residents and visitors and need to be planned for and maintained. These networks must ensure that walking and/or cycling are safe possibilities for everyone, no matter age, confidence level or ability.

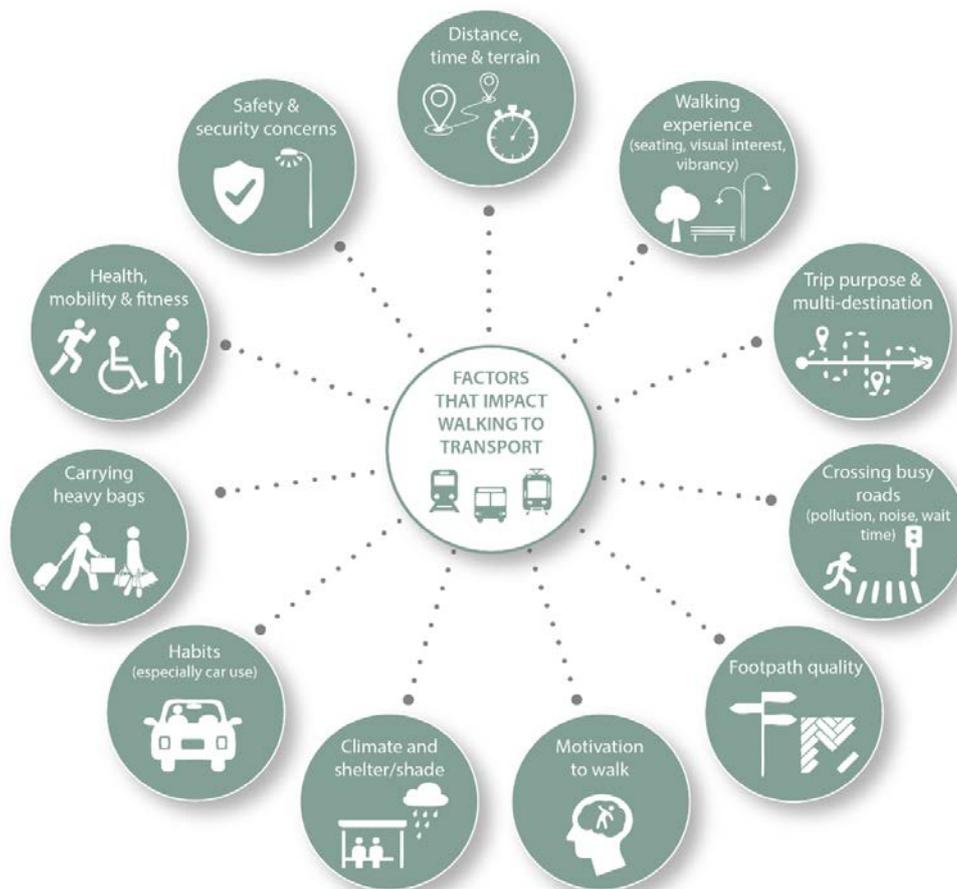


Figure 23: Factors that impact walking to transport. Source: InfraPlan



*'Pedestrian activity is a most basic and fundamental human activity. It promotes health and wellbeing, and social interaction. It increases vibrancy for places and communities, and is an environmentally friendly way to travel.'*¹

Existing policy

The SAPPL policies currently include Principles of Development Control guiding improved walking and cycling links, including bicycle parking rates (see Appendix 3). The general sections on transportation and access include the following policies:

- *Development should ensure that a permeable street and path network is established that encourages walking and cycling through the provision of safe, convenient and attractive routes with connections to adjoining streets, paths, open spaces, schools, pedestrian crossing points on arterial roads, public and community transport stops and activity centres.*
- *On-site secure bicycle parking facilities should be:*
 - *located in a prominent place*
 - *located at ground floor level*
 - *located undercover*
 - *located where surveillance is possible*
 - *well-lit and well signed*
 - *close to well used entrances*
 - *accessible by cycling along a safe, well-lit route.*
- *Pedestrian and cycling facilities and networks should be designed and provided in accordance with relevant provisions of the Australian Standards and Austroads Guides.*

While the wording of these principles differs across Development Plans, their basic intent is similar.

A small number of Development Plans contain policy that encourages development to protect and provide linkages to designated cycling routes. This is to ensure that new development considers and supports bicycle infrastructure where possible. This usually involves including a non-spatial reference to designated bicycle routes within their general policies or zones. However, the majority don't use a spatial map. Therefore, there is an opportunity to include this in the Code.

Key issues, challenges and opportunities

Evidence from interstate and overseas shows that the ongoing improvement of walking and cycling infrastructure delivers a wide range of community, economic and environmental benefits.

For example, the following interventions can result in positive economic outcomes:

- widening footpaths, creating permanent plazas and introducing zebra crossings can reduce property vacancies in surrounding commercial areas by 49%
- replacing car parking spaces or curb side lanes with 'parklets' can increase sales of adjacent businesses by 14%
- installing bike lanes along major shopping streets can reduce commercial vacancies by as much as 47%.



- installing protected bike lanes along major shopping streets can increase retail sales by 49% and can reduce commercial vacancies in surrounding areas by as much as 47%¹⁹.

The Code provides an opportunity to assess what else should be done to embed walking and cycling into the form of South Australia's urban centres with reference to policy differentiation between urban and regional areas. It is considered likely that most of the walking and cycling components of the SAPPL will be translated into the Code.

Design standards

To increase the emphasis on design in the planning system, the Act enables the Commission to prepare design standards relating to the public realm and infrastructure. This is an important innovation and represents the first time a system-wide approach to public realm design has been provided for in planning legislation. A quality streetscape is a key ingredient to creating a more walking and cycling friendly environment (see Adelaide Design Manual example in Box 7, below).

This will ensure that developers and the community share consistent expectations regarding the design of infrastructure and the public realm. It will also assist with the integration of development between private land and the public realm.

Best practice can be achieved when:

- local street and footpath networks provide a choice of routes and are easily understood
- routes from houses to local facilities, such as shops, schools and bus stops, are direct and pleasant, avoiding steep slopes, and enjoying good lighting and passive surveillance
- every development has convenient and prominent pedestrian entrances, in terms of design, signage, lighting and gradient
- expanses of ground level blank walls along street frontages, and large driveways and entrances to car parks, are avoided
- a feeling of security is assisted by buildings and spaces with active uses, such as cafes and front verandahs oriented to the street
- an established Austroads standard is upheld in the planning, design, location and construction of bicycle facilities, i.e. the cycle network, cycle parking in public spaces and end-of-trip facilities in private developments
- suitable facilities including storage, shower and changing facilities are provided at work and other end-of-trip locations
- bicycle storage is conveniently located close to building entries and at ground level in multi-storey buildings.

Other planning system tools and levers

Design Standards

Use as tools to facilitate walking and cycling friendly environments.



Box 7: The Adelaide Design Manual

The Adelaide Design Manual (ADM) is led by the City of Adelaide and is jointly funded by the council and the Department of Planning, Transport and Infrastructure’s *Places for People* Grants program.

Adelaide is knitted together through a vast network of streets, public spaces, public squares and transit areas which play an important part of where we live, work and play. The ADM provides design guidance for these places within the City of Adelaide and was created to ensure consistency and standardisation for projects of all scales and as a key reference for all public, private and community projects.

In addition to extensive research and best practice analysis, the ADM leveraged off of council’s work in *Smart Move: The City of Adelaide Transport Strategy 2012-2022* to classify the streets as either a ‘Link’ or ‘Place’ in order to determine a suite of design standards for each street typology. The street typologies reflect their movement function and as their role as places for city life.



In a complex capital city environment, the ADM provides city stakeholders with clear strategic and technical guidance to ensure coordination of decisions that affect the design of the city. The guidelines will be embedded into the Code to inform high quality approaches to public space design.

Source: City of Adelaide, 2018 - Content used with permission



3.2 Car parking and emerging mobility technology

Policies around car parking will continue to evolve as we grow our understanding of integrated movement, parking supply and demand.

Parking policy will continue to advance, especially as new technologies such as ride sharing, autonomous vehicles and peer-to-peer parking applications emerge. These changes are set to have a transformative effect on cities, transport behaviour and urban life, and planning policy in South Australia must be flexible enough to adapt to them.

The influences and policy outcomes from parking can be complicated for planners, communities and businesses, therefore parking in metropolitan Adelaide has been the subject of more thorough investigations (see Box 8, below). Investigations include reviewing the real value of parking space, its influence on integrated movement systems, and whether using public and private space for the storage of private vehicles is the best planning outcome we can achieve (Box 9).

The investigations included public consultation (through an online survey on *YourSAy*), focus groups and a Car Parking Summit involving councils, thought leaders and industry bodies.

Existing policy

There is considerable variation in off-street parking rates across Development Plans. In some cases, it is possible to have different on-site parking requirements for the same land use in different local council areas in generally the same location.

Variation in off-street parking rates exists not only across South Australian councils, but also varies significantly from interstate and international jurisdictions. It is important to note that generally parking rates in other jurisdictions are lower than what is currently applied in South Australia.

Further analysis is required to better understand the car parking rates that ought to apply to land uses in both metropolitan and regional South Australia. The Commission is committed to exploring car parking issues and their relationship to land use planning, both in terms of transitioning to the Code, as well as in regard to future policy reform.

To encourage infill development near transport corridors and activity centres, the SAPPL comprises several zones that councils have been encouraged to adopt through current Development Plan Amendment processes. These zones aim to facilitate viable access to a selection of transport modes and high public realm standards thereby offering a wider choice of transport for residents. Consequently, off-street car parking rates for land uses in these zones are reduced.

The SAPPL contains a sample table for Off-Street Vehicle Parking Requirements for Mixed-Use and Corridor Zones (Appendix 1). The application of these rates reflects a key principle of the integration of transport and land uses, namely to promote development that reduces overall transport demand and encourages the uptake of more sustainable transport modes such as walking, cycling and public transport.

The SAPPL also provides that the adoption of the rates be optional and '*may be varied based on supporting investigations*'. In the Urban Corridor Zone, there are car parking dispensations available where certain criteria are satisfied, e.g. for development within 200m of high frequency public transport, student accommodation and/or mixed use.

A number of councils in metropolitan Adelaide have Car Parking Funds where applicants can choose to make a payment in lieu of the required on-site car parking provision. This is a matter requiring further consideration in terms of how car parking rates are applied to development, how amounts are determined and received, and how those funds are spent and apportioned in areas within a council to improve traffic and car parking outcomes.



Box 8: A review of the Metropolitan Adelaide Car Parking Summit

On 6 April 2018, the State Planning Commission hosted a car parking summit at the Adelaide Convention Centre as part of the *Sustainable mobility, car parking and the impact of technology* Policy Conversation Area. Approximately 60 representatives were in attendance from a range of industry groups, government agencies and metropolitan Adelaide councils.

Informed by presentations from interstate and local policy experts, focus groups and a survey which received 840 public responses through the state government's yourSAy consultation hub, the summit explored some of the most commonly reported issues and opportunities faced by local residents, councils and businesses across Adelaide.

Key issues raised included:

- urban infill leading to increased demand for, and scarcity of, car parking
- excessive parking on local streets creating problems for access and movement
- on-street parking overflow impacts from nearby interchanges and attractions
- cultural and behavioural impacts
- a lack of viable alternative transit options.

In response to these issues, summit attendees discussed a series of innovative opportunities and potential responses, with those able to be explored through the planning system potentially including:

- unbundling housing from car parking and providing alternatives such as parking locations close by, particularly in higher density areas
- considering whether policy in relation to enclosed garages that encourage on-street car parking should be reviewed
- moving away from minimum car parking rates and starting to consider maximums.

Many of the solutions offered, such demand management, education, infrastructure and enforcement, cut across a variety of policy areas and will be passed on to the appropriate agencies and relevant councils for action.

Key outcomes from the summit were used to inform this paper.

For further detail on the outcomes of the car parking summit, the Commission has released a 'what we have heard' summary report, which can be located at the SA Planning Portal via <https://www.saplanningportal.sa.gov.au/>.



Figure 24: Steven Burgess addresses Car Parking Summit



Box 9: Parking in Adelaide: Why we should care more

A thought leadership piece by Steven Burgess, MRCagney

Adelaide - It's a car yard?

Spaces per 100 CBD workers (2015)

Sydney	12.2
Melbourne	14.2
Perth	17.6
Brisbane	21.8
Adelaide	25.2

This is a sad state of affairs. Nobody wants to be last in this statistic - it's a key measure of prosperity. Too many car parks - too much money and land wasted!

Join the race to the top

Some cities in Australia are becoming very expensive to live in. People are looking for alternatives, particularly our young creatives and our down sizing baby boomers. The '\$2 shop approach however, 'come to our city, it's cheaper and you can still drive' may not be the best one. The smaller capital cities and regional cities are not in a race to the bottom. They are in a race to the top! Come to our city, it's vibrant, resilient, creative and unique. It's about place and experience. An oversupply of road space and car park space puts you on the wrong path. Value place over movement, people over machines.



City of Unley, swapping parking for place in a race to the top

Image: Jensen Plus

City shape

The shape of cities has a big impact on CBD vitality and performance. Parking in-turn has a big influence on city shape through its interaction with travel choice and also how land is developed. If your city is growing through low density detached houses, it creates a large demand for single occupancy car travel and of course a demand for parking somewhere. This is a large expense that modern cities can't afford. Compact, mixed-use, vibrant people-based urban growth reduces traffic demand, reduces parking demand and we can use more space for things we like.

Adelaide is making it hard for itself

Parking supply attracts car trips. *Method of Travel to Work (2016)*



Those cities with more active transport and public transport will inevitably be more prosperous.

What to do?

Economically and socially everyone knows we need less parking. But how do we get there without causing too much of a jolt in the way the city is currently functioning? What have other successful capital cities done?

- Toronto** - all growth delivered through infill development
- Auckland** - no minimum parking rate
- Portland** - more mixed use development supported by transit
- Melbourne** - increasing walkability in CBD
- Adelaide** - Do something. Get the attention of the world - win the race to the top....



Key issues, challenges and opportunities

Car parking rates

One approach to consider for the Code would be to apply a selection of standardised parking rates across the state. This would present a challenge for planning policy, especially given the variation in applying parking rates in Development Plans.

The drafting of 'base-rates' for specified land uses, which allow for conditional and geographical discounts, is a possible approach. Base rates can reflect what is currently in the SAPPL and some Development Plans, with variations taken into consideration given the unique characteristics of different areas. Calculating differential rates can be based on land use mix, integration with public transport, or distance from activity centres or the CBD. Appendix 2 provides a sample of discounts that are contained in the SAPPL for Mixed Use and Corridor Zones, as well as other samples for consideration.

While different geographical areas will have different discount conditions, it is important to acknowledge that regional and rural centres could have different opportunities for what can be achieved from parking reductions. This is due to a number of factors including (but not limited to) fewer opportunities for public transport integration and longer average travel distances. This can be accounted for in the base parking rates and the application of fewer discounting factors.

The SAPPL (and other literature) also stipulate a 'maximum accumulated' discount of 30%. However, if a development meets discount conditions that exceed this it may be appropriate to consider a higher accumulated maximum allowance to incentivise development in appropriate areas.

Emerging technologies

A growing range of technologies are rapidly changing the way we plan for the movement of people and goods. Recent examples include the global rollout of ridesharing platform Uber, the appearance of share bikes and the mobility revolutions occurring through the growing use of food delivery services and cashless payment platforms.

Automated vehicles in particular could have a significant impact on parking policy and parking requirements, possibly resulting in reduced parking demand and parking requirements over time. Smart parking technologies may also have a significant role to play in helping to manage the impacts of vehicle movement and noise.

Additionally, advances in information and communication technologies have led to a decrease in the number of people needing to travel for work. In response, planning controls have provided more allowances for home-based businesses and it is expected there will be an increase in the number of mixed-use precincts that will further reduce the separation between employment and residential uses. This will create more places where people can live, work and play without having to commute or travel as far to access services and amenities.

Our planning system needs to contain a policy framework that is flexible enough to facilitate the adoption of beneficial services or technologies while providing the appropriate measures to ensure the amenity of local communities is protected.



Design and appearance

The Office for Design and Architecture has conducted a review of recent development applications that were presented in Design Review. These projects were a representative cross section of the application of current design-focused policy. This review found that there are opportunities to improve planning and design outcomes for car parking, including:

- improved ground floor frontage activation
- reduced impacts of vehicle access and movement on the public realm.

Box 10: Reinforcing the importance of design

The 30-Year Plan for Greater Adelaide contains a number of targets, policies and actions which seek to enable the unlocking of investment opportunities, an increased diversity of housing, improved efficiency of our transport networks and leveraging of policy to enable a larger number of people to enjoy the benefits offered by inner-city living.

In 2013, a series of zoning changes were introduced across inner metropolitan council areas to encourage a mix of medium to high density homes, offices and shops along a series of main roads with good access to frequent public transport and other services close to the City of Adelaide.

Since the introduction of the Urban Corridor Zone into Development Plans, approximately 125 development applications, \$738 million in investments and 2700 new dwellings have been assessed, approved or constructed in the zone (as of May 2017).

Whilst the introduction of the Zone has been successful in encouraging development along main roads (particularly in Prospect), there were a number of development examples which demonstrated that design and public realm interface outcomes needed to be enhanced.

Building on this experience, a follow-up series of zoning policy changes were made in 2017 to provide improvements to the consideration of urban context in the assessment process. These changes strengthened the requirement for design attention to ground level street activation and to improve the performance of aspects of new developments (such as car parking, waste management and landscaping) at the interface with established areas.

Our new system provides the opportunity for instruments such as The Planning and Design Code to contain policy for medium to higher density areas which encourages design responses that are more cognisant of context, development economics and community expectations.

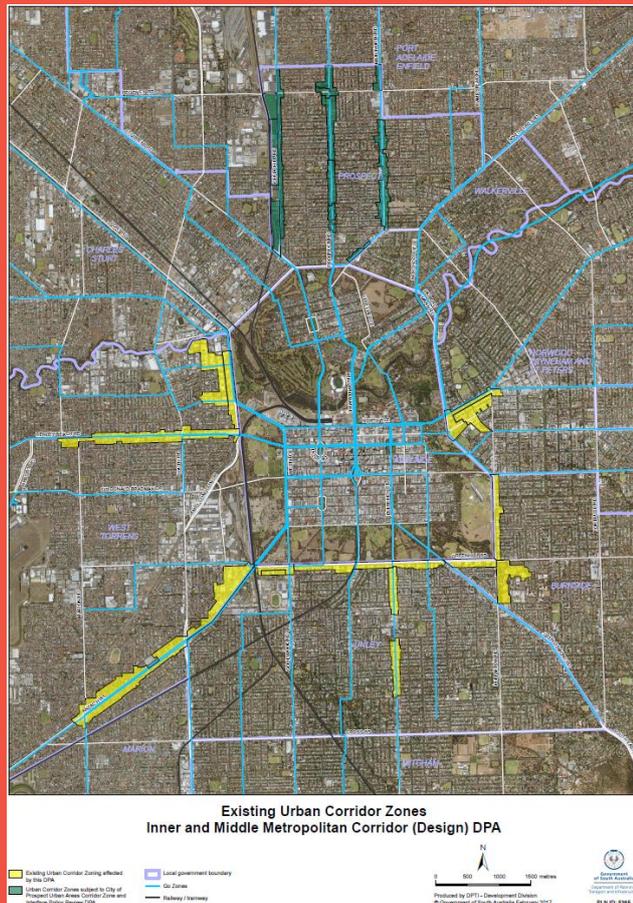


Figure 25: Urban Corridor Zones in council areas adjacent to the City of Adelaide. Source: DPTI



Car parking funds and offset schemes

Transitional provisions will migrate existing car-parking funds that will in future be included under the new off-set schemes. These new schemes will replace the ability to establish a car-parking fund under the current Act with a wider scheme of off-sets enabling monetary or in-kind contributions to be made to a variety of community benefits.

Best practice can be achieved when:

- parking policies and codes are part of, and consistent with, broader transport and land use strategies and plans
- parking rates are not determined by land use floor areas alone
- variable parking requirements and charges are applied, depending on public transport and active transport accessibility
- flexibility to account for changes in future conditions is provided
- the type and number of parking spaces are appropriate to the land use
- parking requirements are reduced in concentrated activity centres with good public transport access
- shared parking is encouraged for land uses with staggered peak periods of demand (for example offices and restaurants)
- parking is placed at the rear of buildings or inside activity centres
- parking for people with disabilities is provided adjacent to key facilities
- vehicular access across footpaths to parking areas and entries to underground car parks do not reduce bus accessibility or pedestrian accessibility or amenity
- parking incentives, such as cheaper rates or reserved spaces, are provided for high-occupancy vehicles, including car pools and community buses.

Other planning system tools and levers

Car parking funds

- Changing to off-set schemes under the new Act
- Note: transitional provisions have been introduced to give effect to this change.



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GLOSSARY

Active Transport	Active transport can be defined as walking, cycling, skating and skateboarding. Public transport may also be included but only if the mode of transport to the bus, train or tram was not a private motor vehicle.
Activity centres	Activity centres are concentrations of business, administrative, civic, retail, residential, entertainment, employment, research, education and community land uses. The purpose of activity centres is to cluster commercial and employment activity to improve accessibility, productivity and the efficient use of infrastructure.
Broadhectare (Greenfield)	<p>Includes vacant or underutilised land parcels greater than 4,000m² which are located in residential and mixed use zones and include both infill and fringe/township locations.</p> <p>This also includes the future urban supply of broadhectare land (i.e. land that is designated for future urban growth but has yet to be rezoned for that purpose).</p>
Concept Plan	<p>A Concept Plan is an early spatial expression of the desired land use and design aspirations for a defined project area and are usually limited in scope to the planning of a discrete development or infrastructure project.</p> <p>Master Plans or Structure Plans may provide guidance and context to the preparation of Concept Plans, which allow for a more detailed analysis of land use, built form, infrastructure and design informed by the broad direction of higher level plans.</p>
Density	<p>Density is a measure of the population (persons) or the number of dwelling units (du) in a given area (usually hectares).</p> <ul style="list-style-type: none"> • Low density = fewer than 35 dwelling units per hectare (du/ha) • Medium density = 35-70 du/ha • High density = more than 70 du/ha
Design Standards	<p>To increase the emphasis on design in the planning system, the <i>Planning, Development and Infrastructure Act 2016</i> enables the State Planning Commission (see definition below) to prepare design standards relating to the public realm and infrastructure.</p> <p>This is an important innovation and represents the first time a system-wide approach to public realm design has been provided for in planning legislation.</p> <p>Design standards:</p> <ul style="list-style-type: none"> • specify design principles and standards • provide design guidance in relation to infrastructure and public realm
Development Plan	<p>Development Plans seek to promote the provisions of the Planning Strategy and include planning or development objectives or principles. They are currently the principal documents in South Australia used to assess development.</p> <p>At present, every Local Government Area has a Development Plan, however these documents will transfer into one Planning and Design Code for the State under the new legislation.</p>



Freight Corridors	Transport corridors (usually either road or rail), which have a primary functional role in the movement of freight.
Greater Adelaide	<p>The Greater Adelaide planning region covers an area of 9000 square kilometres and extends from Victor Harbor in the south to Kapunda in the north and from Gulf St Vincent in the west to Murray Bridge in the east.</p> <p>The region includes 27 Local Government Areas (Adelaide Plains, Light, Barossa, Gawler, Playford, Salisbury, Tea Tree Gully, Adelaide Hills, Mount Barker, Campbelltown, Port Adelaide Enfield, Charles Sturt, Prospect, West Torrens, Walkerville, Adelaide, Norwood Payneham & St Peters, Unley, Burnside, Holdfast Bay, Mitcham, Marion, Onkaparinga, Yankalilla, Victor Harbor, Alexandrina and Murray Bridge).</p>
Greenways	<p>Corridors designed to support active transport modes that link open spaces across the Greater Adelaide region.</p> <p>Greenways promote healthy lifestyles by providing safer opportunities for walking and cycling and via reductions in motor vehicle carbon emissions. Modern greenways may exhibit the use of indigenous plantings and Water Sensitive Urban Design techniques to enhance biodiversity.</p>
Healthy neighbourhoods	Healthy neighbourhoods are places within urban environments where people can live, learn, work and play. They offer a wide range of services that can easily reached on foot or by bicycle, including schools, health care services, shops, quality open space and public transport. They also provide streets and public spaces which are safe and support a diversity of public life, biodiversity and physical activity.
Infill	Infill is the rededication of land in an urban environment to new construction. Infill may also be used in reference to new construction in an urban area on any undeveloped land that is not on the urban fringe.
Integrated movement systems	<p>A principle which seeks to deliver better land use and transport outcomes.</p> <p>In practice, integrated movement systems deliver land use outcomes and transport systems which complement each other, by:</p> <ul style="list-style-type: none"> • Achieving optimal land use and development outcomes with regard to the role and function of all transport modes • Achieving optimal transport outcomes modes with regard to how they support land uses • Delivering a design interface between land uses and transport corridors which improve the function of both.
Land Use and Transport Corridor Elements	<p>Land Use:</p> <ul style="list-style-type: none"> • The function applied to land, such as defined areas for living, working, education, recreation and conservation <p>Transport Corridor:</p> <ul style="list-style-type: none"> • A conduit for movement and access <p>Road reserve:</p> <ul style="list-style-type: none"> • The interface between a transport corridor and adjacent land uses, and often a functional active transport corridor of itself.
Link and Place	<p>An approach to planning and designing urban streets recognising that they have both 'link' and 'place' functions.</p> <ul style="list-style-type: none"> • As a 'link', a street is used for movement and designed for users to pass through as quickly and conveniently as possible. • As a 'place', the street is a destination in its own right where people are encouraged to spend time taking part in activities.



Local Area Planning	A process which will spatially identify and reflect the policies and actions of the relevant Regional Plan (or volume of the Planning Strategy in the absence of a Regional Plan) at the local level for areas of growth and change, which makes use of a number of other planning tools (including structure plans) as required.
Major Infill	Most of these sites are within transit corridors and key infill precincts, plus the Adelaide Local Government Area (LGA). This includes brownfield development sites (i.e. Bowden and Tonsley), infill broadhectare sites (i.e. Northgate, Mawson Lakes and Cheltenham), strategic developments in corridors and activity centres, apartment and aged care developments.
Master Plan	<p>A master plan is a high-level plan that ensures the effective management of a development outcome within an area or precinct.</p> <p>Master plans should have regard to relevant state and local government policies and be strategically aligned with any overarching structure plans and regional plans such Regional Plans.</p> <p>Master plans provide a more detailed road map about how to take a vision for an area and identify the steps necessary to achieve a broad development outcome. This may also include broad level design guidance and built form objectives, which seek to deliver a unique style or outcome to the development area or precinct.</p>
Minor Infill	These sites are typically less than 4,000m ² and were created by the demolition, resubdivision and redevelopment of existing residential land parcels. Minor infill is an important component of the overall land supply equation and makes a significant contribution (around 30%) to our annual metropolitan housing supply growth.
National Airports Safeguarding Framework	<p>The National Airports Safeguarding Framework (NASF) is a national land use planning framework that aims to:</p> <ul style="list-style-type: none"> • improve community amenity by minimising aircraft noise-sensitive developments near airports; and • improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.²⁰
Net residential site densities	<p>The density of a development site. It is calculated by dividing the total number of dwellings by the area of residential land that they occupy (excludes all other land uses, including roads, open space etc) and is expressed as dwelling units per hectare (du/ha).</p> <ul style="list-style-type: none"> • Low density = fewer than 35 dwelling units per hectare (du/ha) • Medium density = 35 to 70 du/ha • High density = more than 70 du/ha
Planning and Design Code	<p>The State Planning Commission is responsible for preparing and maintaining the Planning and Design Code, which will require a new approach to the drafting, presentation and interpretation of zoning rules.</p> <p>The code will be based on a more design-oriented style of zoning that focuses on built form and mixed use development. The code will set out a comprehensive set of planning rules for development assessment purposes, classified into zones, subzones and overlays.</p> <p>These will be applied in each region in a manner consistent with the relevant regional plan. This will make the code the single point of reference for development assessment.</p>



<p>Planning Strategy</p>	<p>The Planning Strategy outlines the State Government’s direction for land use change and development in South Australia. The strategy has various volumes covering different geographic areas of the state:</p> <ul style="list-style-type: none"> • <i>The 30-Year Plan for Greater Adelaide – 2017 Update</i> • Plans for regional South Australia. <p>Each volume of the strategy is reviewed every five years and can be altered from time to time to align it with legislative requirements or to incorporate policy changes following consultation within government and the community.</p>
<p>Planning, Development and Infrastructure Act (2016)</p>	<p>The <i>Planning, Development and Infrastructure Act 2016</i> was passed by Parliament on 12 April 2016. The Act will come gradually into operation over the next five years (to 2020).</p> <p>The Act places the emphasis on engaging communities early when the rules, such as the state-wide Planning and Design Code and other regulatory instruments are being written, rather than at the later stages of the planning process, when it is too late to influence outcomes.</p>
<p>Public Safety Zone</p>	<p>A Public Safety Zone (PSZ) is a designated area of land at the end of an airport runway within which development may be restricted in order to control the number of people on the ground at risk of injury or death in the event of an aircraft accident on take-off or landing.²¹</p>
<p>Regional Plans</p>	<p>The State Planning Commission (see above) must prepare a regional plan for each planning region. These plans must be consistent with relevant state planning policies and include:</p> <ul style="list-style-type: none"> • a long-term vision (over a 15 to 30-year period) for the region or area, including provisions about the integration of land use, transport infrastructure and the public realm • maps and plans that relate to the long-term vision • contextual information about the region or area, including forward projections and statistical data and analysis as determined by the Commission or required by a practice direction • recommendations about zoning and a framework for development or management of infrastructure and the public realm. <p>Regional plans may be divided into parts relating to sub-regions, and may include structure plans, master plans, concept plans or other similar documents. Regional plans prepared by a joint planning board must comply with any practice direction issued by the Commission.</p>
<p>Site Travel Plan</p>	<p>A Site Travel Plan is a long-term management strategy for an organisation or site that seeks to deliver sustainable transport objectives through action and is articulated in a document that is periodically reviewed and reported upon. It may monitor usage of public transport, walking and cycling, establish car-sharing systems or better manage on-site parking</p>
<p>South Australian Planning Policy Library (SAPPL)</p>	<p>The state's current planning policies are contained in the South Australian Planning Policy Library (SAPPL). The library encourages best practice policy application and a consistent development plan format across the state. The SAPPL are being reviewed for transition into the Planning and Design Code.</p>
<p>State Planning Policies (SPP)</p>	<p>Set out the government’s overarching goals or requirements for the planning system. These policies are to be taken into account when preparing other statutory instruments such as regional plans and design standards. They are not to be taken into account for the purposes of any assessment decision or application.</p>



Structure Plan	<p>A Structure Plan provides a vision and gives a broad spatial expression of the desired development outcomes for an area of change. This can include areas such as a transit corridor, centre, renewal area or greenfield site.</p> <p>Structure Plans can also be used to identify the regional distribution of targets, policies or actions relevant to an area. Structure Plans may also identify infrastructure and governance issues that will require resolution to facilitate the desired development outcomes of a broad spatial area.</p>
Urban Design	<p>Urban design is the collaborative and multi-disciplinary process of shaping the physical setting for life in cities and towns. It involves the design of buildings, groups of buildings, spaces and landscapes, and the establishment of frameworks and processes that facilitate successful development.</p>
Urban Form	<p>Urban form is:</p> <ol style="list-style-type: none">the 'general pattern of building height and development intensity' andthe 'structural elements' that define the city physically, such as natural features, transportation corridors (including the fixed rail/tram transit system), open space, public facilities, as well as activity centres and focal elements.



APPENDICES

Appendix 1: Car Parking Policy Rates

SAPPL Car Parking Rates for Mixed Use and Corridor Zones

Table X/X - Off Street Vehicle Parking Requirements

The following vehicle parking requirements apply to development specifically in **Mixed Use and Corridor Zones**. *(Conversion note: These figures are optional and may be varied based on supporting investigations providing the figures do not undermine the intent of the zones):*

- 1 In mixed use buildings, the provision of vehicle parking may be reduced in number and shared where the operating hours of commercial activities complement the residential use of the site.
- 2 Residential development, in the form of residential flat buildings and residential development in multi-storey buildings should provide vehicle parking in accordance with the following rates:

Location of development within the zone	Number of required vehicle parking spaces	
	Rate for each dwelling based on number of bedrooms per dwelling	Plus number of required visitor parking spaces
Core Area/Whole of the Urban Corridor Zone	0.25 per studio (no separate bedroom) 0.75 per 1 bedroom dwelling 1 per 2 bedroom dwelling 1.25 per 3 + bedroom dwelling	0.25 per dwelling
Transition Area/Any other area not designated within the Urban Core Zone or Suburban Activity Node Zone <i>(Conversion note: The optional car parking requirements specified here for Transition Areas and those areas not designated may be reduced to be consistent with those specified for the Core Areas provided they are justified by any relevant supporting investigations).</i>	0.5 per studio (no separate bedroom) 1 per 1 bedroom dwelling 1.5 per 2 bedroom dwelling 2 per 3 + bedroom dwelling-	0.25 per dwelling

- 3 Row, semi-detached and detached dwellings should provide off-street vehicle parking in accordance with the following rates:

Number of bedrooms, or rooms capable of being used as a bedroom	Number of required vehicle parking spaces
1 or 2 bedrooms	1
3 plus bedrooms	2

- 4 Tourist accommodation should provide off-street vehicle parking in accordance with the following rates:

Minimum number of required vehicle parking spaces	Maximum number of vehicle parking spaces
1 space for every 4 bedrooms up to 100 bedrooms and 1 space for every 5 bedrooms over 100 bedrooms	1 space for every 2 bedrooms up to 100 bedrooms and 1 space for every 4 bedrooms over 100 bedrooms



- 5 Non-residential development excluding tourist accommodation should provide off-street vehicle parking in accordance with the following rates:

Location of development in the zone	Minimum number of required vehicle parking spaces	Maximum number of vehicle parking spaces
Core Area/Whole of the Urban Corridor Zone	3 spaces per 100 square metres of gross leasable floor area	5 spaces per 100 square metres of gross leasable floor area
Transition Area/Any other area not designated within the Urban Core Zone or Suburban Activity Node Zone <i>(Conversion note: The optional car parking requirements specified here for Transition Areas and those areas not designated may be reduced to be consistent with those specified for the Core provided they are justified by any relevant supporting investigations).</i>	4 spaces per 100 square metres of gross leasable floor area	6 spaces per 100 square metres of gross leasable floor area



International Car Parking Rate Comparison

International examples of parking requirements for some general land use types that may be applicable within the Unley Precinct are compiled below. Cities reviewed were Auckland (NZ), Portsmouth (UK) and Vancouver (CA). The land uses reviewed include:

- Residential (higher density areas, such as corridors and centres used where available);
- Office;
- Restaurant; and
- Shop.

It is noted that although inconsistency exists across land use terminology, categorisation and each city's unique context (ie. transport, accessibility, built form, environmental condition etc.) the review indicates that the City of Unley's rates are comparatively high.

Residential:

- **Unley:** 1.5 per apartment / 2 per detached dwelling
- **Auckland, NZ:** 1 per one bedroom dwelling with a maximum of 2 spaces per dwelling
- **Portsmouth, UK:** 1 per one bedroom dwelling with a maximum of 1.5 spaces per dwelling (rounded up)
- **Vancouver, CA:** Min. 0.5 and maximum of 2.2 spaces per dwelling

Shop:

- **Unley:** 7 per 100m²
- **Auckland, NZ:** 4 per 100m²
- **Portsmouth, UK:** site specific as required
- **Vancouver, CA:** 1 per 100m² (up to 300m² + additional space for every 20m² up to 2300m²)

Office:

- **Unley:** 4 per 100m²
- **Auckland, NZ:** 1 per 30m²
- **Portsmouth, UK:** site specific as required
- **Vancouver, CA:** 1 per 100m² (up to 300m² then additional space for every 50m²)

Restaurant:

- **Unley:** 0.33 per seat (additional if incorporates take-away food)
- **Auckland, NZ:** 1 per 25² (ground and mezzanine), 1 per 35m² (above ground)
- **Portsmouth, UK:** site specific as required
- **Vancouver, CA:** 1 per 50m² up to 100m², and 1 for each extra 10m² up to 500m², and 1 per 20m² GFA over 500m²



Appendix 2: Sample off-street parking discount conditions

<i>Discount Condition</i>	<i>Reduction (up to)</i>
South Australian Planning Policy Library	
Amalgamation of two or more allotments to create a minimum allotment size of 2000 square metres and the provision of side or rear vehicle access	10 %
Development which includes more than 15 per cent of dwellings as affordable housing	30 %
Site of development located within 200 metres of a fixed public transport stop	30 %
The development includes undercroft parking with access from a road located to the side or rear of the site	10 %
A building including non-residential development on the ground floor (or first two floors) with residential development on the floors above	10 %
Parking Spaces for Urban Places: Car Parking Study (Aurecon Oct 2013)	
Located within 200m of a dedicated off-road or on-road bicycle path or bicycle lane.	5 %
Development has a shared parking area used by three or more land uses with differing peak parking times	15 %
Where a change of use or a small extension is a development envisaged in the Development Plan and it can be demonstrated that providing the calculated number of parking spaces is physically prohibitive.	10 to 30 %
Other Examples	
Site of development located within 400 meters of an activity centre	20 %
Development includes compatible mixed use development which reduces travel demand (such as residential and retail)	20 %

Source: *Parking Spaces for Urban Places: Car Parking Study (Aurecon, 2013)*



Appendix 3: Sample off-street bicycle parking rates

Mixed Use and Corridor Zones Sample Rates – SAPPL v6

South Australian Planning Policy Library Version 6
Table Section
Table X/X - Off Street Bicycle Parking Requirements

Table X/X - Off Street Bicycle Parking Requirements

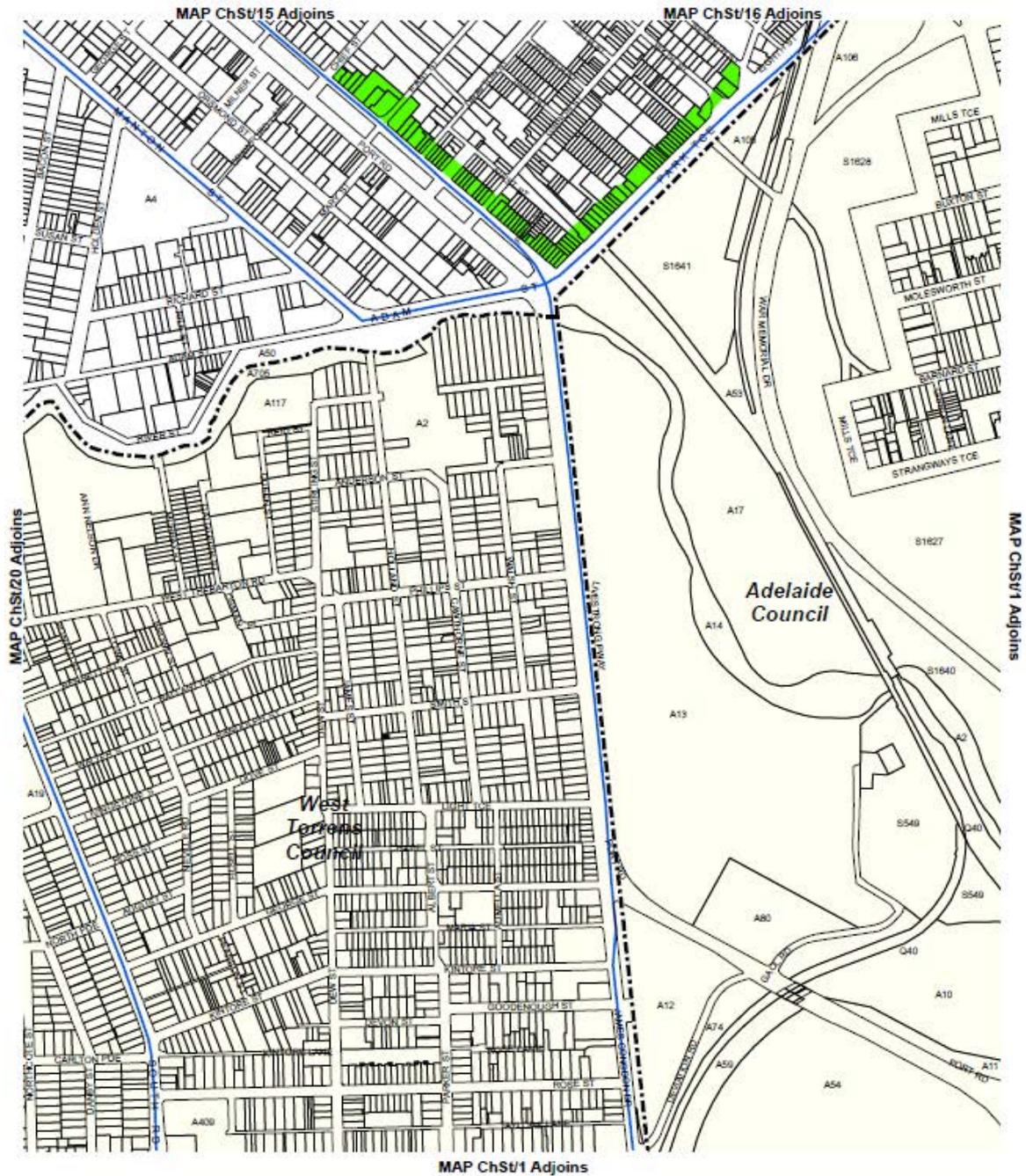
The following bicycle parking requirements apply to development specifically in **Mixed Use** and **Corridor Zones**. *(Conversion note: These figures are optional and may be varied based on supporting investigations providing the figures do not undermine the intent of the zones):*

- 1 In residential and mixed use development, the provision of bicycle parking may be reduced in number and shared where the operating hours of commercial activities complement the residential use of the site.
- 2 Residential and mixed use development, in the form of multi-storey buildings, should provide bicycle parking in accordance with the following rates:

Form of development	Employee/resident (bicycle parking spaces)	Visitor/shopper (bicycle parking spaces)
Residential component of multi-storey building/residential flat building	1 for every 4 dwellings	1 for every 10 dwellings
Office	1 for every 200 square metres of gross leasable floor area	2 plus 1 per 1000 square metres of gross leasable floor area
Shop	1 for every 300 square metres of gross leasable floor area	1 for every 600 square metres of gross leasable floor area
Tourist accommodation	1 for every 20 employees	2 for the first 40 rooms plus 1 for every additional 40 rooms



Appendix 4: Strategic Transport Routes Overlay Example



- Strategic Transport Route
- Strategic Transport Routes Designated Area
- - - - - Development Plan Boundary

Overlay Map ChSt/21 STRATEGIC TRANSPORT ROUTES

CHARLES STURT COUNCIL
Consolidated - 30 January 2018



Appendix 5: Other instruments of the new planning system and their application to Integrated Movement Systems

The Planning, Development and Infrastructure Act 2016

The *Planning, Development and Infrastructure Act 2016* has established requirements supporting integrated planning policy as one of the *Principles of Good Planning*, set out in section 14:

- (g) *integrated delivery principles as follows;*
- (i) *policies, including those arising outside the planning system, should be coordinated to ensure the efficient and effective achievement of planning outcomes;*
 - (ii) *planning, design and development should promote integrated transport connections and ensure equitable access to services and amenities;*
 - (iii) *any upgrade of, or improvement to, infrastructure or public spaces or facilities should be coordinated with related development.*

The act also provides a framework for the structure and content of each of the instruments and tools of the new planning system, including State Planning Policies, Regional Plans and the Planning and Design Code.

Regional Plans

- Policy directions for integrated movement systems will have different permutations for different geographical areas.
- For example, inner-city, outer suburban and regional areas will all have different requirements from what can be achieved by integrating transport and land use.
- Regional Plans will have an important role in exploring and articulating these differences. Future Regional Plans will include recommendations about the application and operation of the Code.
- The plans will also provide a long term vision for a region, including provisions about the integration of land use, transport infrastructure and the public realm.
- Regional Plans provide a spatial representation of state interests and their impact on the regions.

Infrastructure schemes

- The new planning system in South Australia has also introduced both Basic and General Infrastructure Schemes.
- The schemes are an important tool in ensuring that integrated movement systems are achieved (as well as the delivery of other non-transport related infrastructure).
- It is important to note that these Schemes are a planning policy tool which sit outside of the Planning and Design Code, however they are likely to be referenced and referred to in the Code to ensure appropriate applications of the schemes.
- Infrastructure schemes in South Australia come in two forms:

Basic Infrastructure Schemes

- Apply to a defined 'designated growth area'
- Provide mechanism to ensure delivery of infrastructure such as water, sewerage, gas, electricity, telecommunications, roads, bridges and stormwater management – all immediately required to make an area liveable
- Provides transparency and greater certainty to investors and community by setting out the what, when and who of infrastructure provision in an area.



- Ensures infrastructure rollout is in step with the pace of development and delivered when required.
- Particularly useful for coordinated delivery of infrastructure across complex land ownership, thereby precluding the need to use infrastructure deeds.

General Infrastructure Schemes

- Cover health, education, community facilities and infrastructure related to the provision of public transport, police, justice and emergency services facilities.
- Requires a 100 per cent opt-in by landowners within the contribution area.
- Can be used to facilitate partnerships between all levels of government and the private sector.
- A tool which has great potential to unlock development and bring forward infrastructure investment.
- Also has potential to leverage the general infrastructure scheme to attract other funding sources, such as Commonwealth funding, if applicable.



Appendix 6: Relevant draft State Planning Policies

DRAFT State Planning Policy 1: Integrated Planning

Objective

Integrated planning is an essential approach for liveability, growth and economic development, maximising the benefits and positive long-term impacts of development and infrastructure investment.

Policies

1. *Plan growth in areas to ensure they are connected to, and integrated with, existing and proposed transport options, infrastructure, jobs and services.*
2. *Ensure that areas of rural, landscape, environmental or food production significance within Greater Adelaide are protected from urban encroachment as provided for by the Environment and Food Production Areas Acts.*
3. *Provide an adequate supply of land outside the Environment and Food Production Areas that accommodates housing and employment growth over the longer term (at least a 15-year period).*
4. *Manage growth in an orderly sequence to enable the cost-effective and timely delivery of state infrastructure.*
5. *Enable the regeneration and renewal of neighbourhoods to provide diverse, high quality and affordable housing supported by infrastructure, services and facilities.*
6. *Plan and design infrastructure to account for and optimise long-term social, economic and environmental opportunities and benefits.*
7. *Support increased residential densities and mixed-use development around activity centres, public transport nodes and strategic transit corridors in ways that support public transport use.*
8. *Support the development of metropolitan Adelaide as a predominantly low to medium rise city with high-rise focussed in the CBD, parts of the Park Lands Frame, significant urban boulevards and other strategic locations where the interface with lower height buildings can be managed.*
9. *Encourage the development of vibrant employment and residential mixed-use precincts where conflicts between uses can be managed.*



DRAFT State Planning Policy 11: Strategic Transport Infrastructure

Objective

Strategic transport infrastructure is appropriately located and developed to ensure the long-term efficient movement of people and goods.

Policies

1. *Ensure strategic transport infrastructure is safe, accessible, efficient, integrated and sustainable to support the movement of people and goods and provide efficient access to business and community services.*
2. *Ensure land use policy protects the ability of existing transport activity centres and corridors to function and expand.*
3. *Ensure development in proximity to existing transport activity centres and corridors does not constrain their ability to cope with increased and future transport demands.*
4. *Allow for the safe operation of airports that reflects national regulations and considers National Airports Safeguarding Framework (NASF).*
5. *Protect the operation of strategic airports and aviation facilities and enable the growth and development of our aviation industry.*
6. *Encourage compatible land uses along existing corridors to ensure they are appropriately utilised.*



Appendix 7: The 30-Year Plan for Greater Adelaide – 2017 Update relevant policies and actions

Transit corridors, growth areas and activity centres



Relevant policies

- P1. Deliver a more compact urban form by locating the majority of Greater Adelaide's urban growth within existing built-up areas by increasing density at strategic locations close to public transport.
- P2. Increase residential and mixed use development in the walking catchment of:
- strategic activity centres*
 - appropriate transit corridors
 - strategic railway stations.
- P3. Increase average gross densities of development within activity centres and transit corridor catchments from 15 to 25 dwellings per hectare to 35 dwellings per hectare.
- P4. Ensure that the bulk of new residential development in Greater Adelaide is low to medium rise with high rise limited to the CBD, parts of the Park Lands frame, significant urban boulevards, and other strategic locations where the interface with lower rise areas can be managed.
- P5. Encourage medium rise development along key transport corridors, within activity centres and in urban renewal areas that support public transport use.
- P6. Promote urban renewal opportunities and maximise the use of government-owned land to achieve higher densities along transit corridors.
- P7. Focus government services in higher-order activity centres that are well-served by public transport to support viable clusters of activities and minimise car trips.
- P8. Provide retail and other services outside designated activity centres where they will contribute to the principles of accessibility, a transit-focused and connected city, high quality urban design, and economic growth and competitiveness.
- P9. Develop activity centres as vibrant places by focusing on mixed-use activity, main streets and public realm improvements.
- P10. Allow for low-impact employment activities in residential areas, such as small-scale shops, offices and restaurants, where interface issues can be appropriately managed.
- P11. Ensure new urban fringe growth occurs only within designated urban areas and township boundaries and outside the Environment and Food Production Areas.
- P12. Ensure, where possible, that new growth areas on the metropolitan Adelaide fringe and in townships are connected to, and make efficient use of, existing infrastructure, thereby discouraging "leapfrog" urban development.

* In Inner and Middle Metropolitan Adelaide this could include all activity centres well serviced by frequent public transport. In Outer Metropolitan Adelaide this would focus on Regional and District centres serviced by high frequency public transport (Map 2 and Map 15).



Relevant actions

- A1. Develop transitional plans to assist in the establishment of the Planning and Design Code.
- A2. Undertake local area planning for strategic transit corridors, train stations, activity centres and growth areas that implement the strategic directions of this Plan, including:
- identifying how individual areas can contribute to Greater Adelaide's growth scenario
 - identifying opportunities to implement the dwelling density guidelines needed to support the economic viability of public transport, activity centres and walkable neighbourhoods
 - linking development to support infrastructure investment and public realm improvements
 - managing interfaces with existing land uses.
- A3. Prepare an urban renewal policy to be delivered through the new planning system - to ensure infill development is sensitively interfaced with existing suburbs.
- A4. Rezone strategic sites to unlock infill growth opportunities that directly support public transport infrastructure investment.
- A5. Better integrate transport and land-use planning by strategically considering land-use development opportunities from infrastructure investment at the project scoping stage.
- A6. Rezone government-owned land where it implements the strategic directions of this Plan, taking account of public value and economic prosperity.

Housing mix, affordability and competitiveness



Relevant policies

- P36. Increase housing supply near jobs, services and public transport to improve affordability and provide opportunities for people to reduce their transport costs.
- P37. Facilitate a diverse range of housing types and tenures (including affordable housing) through increased policy flexibility in residential and mixed-use areas, including:
- ancillary dwellings such as granny flats, laneway and mews housing
 - dependent accommodation such as nursing homes
 - assisted living accommodation
 - aged-specific accommodation such as retirement villages
 - small lot housing types
 - infill housing and renewal opportunities.
- P39. Promote universal and adaptable housing principles in new housing stock to support changing needs over a lifetime, including the needs of those who are less mobile.
- P40. Use government-owned land and large underdeveloped or vacant sites as catalysts for stimulating higher density development and innovative building forms.
- P41. Renew neighbourhoods that have high concentrations of old public housing to improve housing stock, increase the diversity of housing options and tenures, and catalyse private investment.
- P45. Promote affordable housing in well located areas close to public transport and which offers a housing mix (type and tenure) and quality built form that is well integrated into the community.



- P46. Ensure an adequate land supply is available to accommodate housing and employment growth over the longer term (at least a 15 year supply).

Relevant actions

- A22. Provide mechanisms to support the development of larger sites to regenerate neighbourhoods, including:
- developing a model (in collaboration with councils and developers) for providing incentives for landowners to amalgamate neighbouring sites
 - preparing guidelines on options and incentives for the renewal of larger sites to increase development yield in return for contributions to the local neighbourhood.
- A23. Deliver flagship projects where government leads by example in creating world-class liveable places.
- A24. Report annually on the consumption of residential and employment land use and urban development trends.

Health, wellbeing and inclusion



Relevant policies

- P47. Plan future suburbs and regenerate and renew existing ones to be healthy neighbourhoods that include:
- diverse housing options that support affordability
 - access to local shops, community services and facilities
 - access to fresh food and a range of food services
 - safe cycling and pedestrian-friendly streets that are tree-lined for comfort and amenity
 - diverse areas of quality public open space (including local parks, community gardens and playgrounds)
 - sporting and recreation facilities
 - walkable connections to public transport and community infrastructure.
- P48. Create greenways in transit corridors, along major watercourse linear parks, the coast and other strategic locations to provide walking and cycling linkages.

Relevant actions

- A29. State and local government to develop design standards for public realm and infrastructure to support well-designed, liveable neighbourhoods.
- A30. Investigate the feasibility of having a tailored criteria for walkable neighbourhoods located in outer metropolitan Adelaide.
- A33. Reform policies for the public realm in collaboration with local government, including developing a statewide streetscape framework which outlines the process for identifying and agreeing (using the 'link and place' methodology) on priority projects for streetscape improvements.



The economy and jobs



Relevant policies

- P67. Support and promote defence, science and technology clusters ensuring they are linked by high quality road, rail and telecommunications infrastructure and connect to universities.
- P68. Focus business clusters and manufacturing hubs around key transport infrastructure such as road, air, rail, sea terminals and intermodal facilities to maximise the economic benefits of export infrastructure.
- P73. Provide sufficient strategic employment land options with direct access to major freight routes to support activities that require separation from housing and other sensitive land uses.

Transport



Relevant policies

- P74. Ensure development does not adversely impact the transport function of freight and/or major traffic routes and maintains access to markets.
- P75. Increase the number of neighbourhoods, main streets and activity centres where place is given greater priority than vehicle movement by adopting a 'link and place' approach.
- P76. Improve the amenity and safety of public transport stops, stations and interchanges by improving their connections to adjacent development and encouraging mixed-use development and housing diversity in close proximity.
- P77. Ensure that new housing (and other sensitive land uses) permitted in locations adjacent to airports and under flight paths or near major transport routes (road, rail and tram) mitigates the impact of noise and air emissions.
- P78. Improve, prioritise and extend walking and cycling infrastructure by providing safe, universally accessible and convenient connections to activity centres, open space and public transport.
- P79. Encourage car share schemes and public electric car charge points in transit corridors, activity centres and higher density neighbourhoods through incentives.
- P80. Reduce car parking requirements in mixed-use areas near high frequency public transit services to encourage the use of alternative transport modes.
- P81. Protect current and future road and rail for strategic requirements, such as ensuring adequate access to ports and other major facilities.

Relevant actions

- A42. Review car parking rates in Greater Adelaide and develop policies in the Planning and Design Code that allow a reduced minimum car parking provision for mixed-use development located within easy access to high frequency public transport and for development that demonstrates a reduced reliance on private car use such as student housing.



- A43. Investigate potential funding options (including from the private sector) that can be utilised to fund new mass transit services and enhance the surrounding public realm.
- A44. Investigate the feasibility of collecting travel mode data which allow other trip types besides 'journey to work' to be measured.
- A45. Investigate the impact of driver-less cars on our future urban form (in particular car parking requirements) and develop a policy framework to respond to this technology.
- A46. Pilot a new approach to train station upgrade planning and design that extends beyond the 'end of the platform' to drive more integrated outcomes, including opportunities to work with local communities.

Infrastructure



Relevant policies

- P82. Coordinate and link strategic infrastructure across Greater Adelaide to ensure it meets the needs of a growing population with a changing demographic profile and supports a more productive economy.
- P83. Define and protect strategic infrastructure sites and corridors from inappropriate development to ensure the continued functionality of the services they provide.
- P84. Protect major economic infrastructure such as airports, ports and intermodals from encroachment by incompatible development and facilitate further economic activity in these locations.
- P85. Provide for adequate buffer zones around water and waste treatment plants and identify complementary activities that generate economic or community benefits that can occur in these areas.
- P86. Ensure that new urban infill and fringe and township development are aligned with the provision of appropriate community and green infrastructure, including:
 - walking and cycling paths and facilities
 - local stormwater and food management including water sensitive urban design
 - public open space
 - sports facilities
 - street trees
 - community facilities, such as child care centres, schools, community hubs and libraries.
- P87. Encourage early provision of community infrastructure in fringe and township growth areas to assist in creating a sense of belonging and building community wellbeing.
- P88. Design and locate community infrastructure to ensure safe, inclusive and convenient access for communities and individuals of all demographic groups and levels of ability.
- P89. Integrate and co-locate different community infrastructure and services in community hubs to maximise their use and enhance their economic feasibility.

**Relevant actions**

- A47. Develop guidelines that identify the appropriate thresholds for community infrastructure for new urban infill and growth area developments.
- A48. Pilot infrastructure schemes introduced under the PDI Act that support fair and equitable contributions by developers towards infrastructure requirements for new developments.
- A49. Develop Planning and Design Code policies that protect buffer distances, duplication requirements and operational requirements of strategic infrastructure, such as major ports, mining operations, waste water treatment or waste management facilities.



Appendix 8: Relevant Policies from Regional Plans (existing volumes of the Planning Strategy for South Australia)

Eyre & Western

Principle 4 - Protect and build on the region's strategic infrastructure

Policies

- 4.1 Infrastructure development should be consolidated to limit unnecessary duplication of services and resources and to reduce the impact on the surrounding environment, economy and community.
- 4.2 Ensure Development Plans provide for existing and future strategic infrastructure corridors and assets by:
 - identifying land for expansion
 - protecting corridors and assets from encroachment by incompatible land uses
 - addressing impacts of climate change
 - incorporating flexible policy to accommodate changing operational needs.
- 4.3 Include an overlay map in Development Plans of existing and planned strategic, primary and secondary freight rail and road corridors, major ports and airports and intermodal sites (as detailed in the *Strategic Infrastructure Plan for South Australia*).
- 4.4 Upgrade and protect airfields (airports, aerodromes and airstrips) to support economic, tourism and social development and accommodate medical emergency services such as the Royal Flying Doctor Service (RFDS).
- 4.5 Cluster freight-dependent industries in strategic locations, particularly at key transport nodes (ports, rail, road junctions), to optimise use of existing and planned infrastructure and maximise transport efficiencies.
- 4.6 Provide and maintain quality support infrastructure to enable efficient import/ export activities at Port Lincoln and Thevenard.

Far North

Principle 7 - Protect and build on the region's strategic infrastructure

Policies

- 7.1 Cluster, and provide for the future expansion of, production, processing and storage activities in strategic locations such as key freight transport nodes to maximise transport efficiencies.
- 7.2 Establish appropriate buffers to protect existing strategic infrastructure and sites and corridors identified as potential locations for future infrastructure from encroachment by uses that may compromise their future operation or expansion.
- 7.3 Provide for processing and storage activities on mining tenements to support mining activities.
- 7.4 Provide for development that increases the level of flood immunity for roads in floodprone areas.
- 7.5 Reinforce and protect the roles of airports/aerodromes/ airstrips to support economic and social development and for the Royal Flying Doctor Service. Ensure airports and aerodromes are protected from incompatible development in surrounding areas.
- 7.6 Ensure land uses surrounding airports/aerodromes/airstrips are compatible with and do not detract from their operation.
- 7.7 Identify land suitable for waste management and resource recovery facilities to optimise opportunities for reuse and recycling of waste while maximising economic efficiencies, and protect this land from encroachment by sensitive land uses such as housing.
- 7.8 Protect the transport functionality of road and rail corridors through planning policy in Development Plans
- 7.9 Designate and protect strategic freight corridors.

Kangaroo Island

Principle 5 - Protect and build on the region's strategic infrastructure

Policies



- 5.1 Encourage industry clusters (mining, primary production and aquaculture value-adding processing and storage activities) in strategic locations (such as key freight transport nodes) to maximise transport efficiencies and support industry development.
- 5.2 Establish appropriate buffers to protect existing strategic infrastructure and sites and corridors identified as potential locations for future infrastructure from encroachment by land uses that may compromise their operation or expansion.
- 5.3 Reinforce the role of the Kingscote Airport to support economic and social development and to provide emergency access for the Royal Flying Doctor Service (RFDS), and protect it from incompatible development in the surrounding area.
- 5.4 Ensure land uses surrounding the airport near Cygnet River are compatible with airport operations and do not detract from its intended function.
- 5.5 Identify land suitable for waste management and resource recovery facilities to optimise opportunities for re-use and recycling of waste while maximising economic efficiencies, and protect this land from encroachment by sensitive land uses (such as housing).

Limestone Coast

Principle 5 - Protect and build on the region's strategic infrastructure

Policies

- 5.1 Encourage industry clusters (including mining, primary production and aquaculture value-adding processing and storage activities) in strategic locations such as freight transport nodes to maximise transport efficiencies and support industry development.
- 5.2 Establish appropriate buffers to protect existing strategic infrastructure and sites and corridors identified as potential locations for future infrastructure from encroachment that may compromise their operation or expansion.
- 5.3 Reinforce the role of the region's airport, aerodromes and airstrips to support economic and social development and to provide emergency access for the Royal Flying Doctor Service (RFDS). Facilities include:
 - an airport at Mount Gambier - which should allow for a potential upgrade to accommodate long-term growth in passenger numbers and larger, heavier aircraft
 - sealed airstrips with pilot-activated lights at Naracoorte, Bordertown, Kingston and Millicent
 - used for RFDS, fire fighting, aerial agriculture and charter services
 - aerodrome at Keith – used for aerial agriculture and
 - RFDS
 - aerodromes at Lucindale and Padthaway – used for aerial agriculture and
 - RFDS
 - aerodrome at Penola - used for aerial agriculture and fire fighting
 - aerodrome at Robe – used for general aviation and light aircraft for tourism purposes.
- 5.4 Ensure land uses surrounding the airport, aerodromes and airstrips are compatible with these facilities and do not detract from their operation.
- 5.6 Protect the transport functionality of road and rail corridors through planning policy in Development Plans.
- 5.7 Designate and protect strategic roads and primary/ secondary freight roads as identified on maps C1 and D2.
- 5.8 Protect current and future freight bypasses around towns.

Mid North

Principle 5 - Protect and build on the region's strategic infrastructure

Policies

- 5.1 Encourage industry clusters (mining, primary production and aquaculture value-adding processing and storage activities) in strategic locations (such as freight transport nodes) to maximise transport efficiencies and support industry development.
- 5.2 Establish appropriate buffers to protect existing strategic infrastructure and sites, and corridors identified as potential infrastructure locations from encroachment that may compromise their operation or potential.



- 5.4 Reinforce and protect the role of airports, aerodromes and airstrips to support economic and social development and the Royal Flying Doctor Service, and ensure surrounding land uses are compatible with their operation.
- 5.6 Designate and protect road and rail corridors, including strategic freight corridors as identified on maps C1 and D2, through planning policy in Development Plans.

Murray & Mallee

Principle 5 - Protect and build on the region's strategic infrastructure

Policies

- 5.1 Encourage industry clusters (including mining, primary production and aquaculture value-adding processing and storage activities) in strategic locations such as freight transport nodes to maximise transport efficiencies and support industry development.
- 5.2 Establish appropriate buffers to protect existing strategic infrastructure, as well as sites and corridors identified as potential locations for future infrastructure, from encroachment by uses that may compromise their operation or expansion.
- 5.5 Manage interfaces between infrastructure and residential areas and other sensitive land uses to ensure adequate protection against noise and air pollution.
- 5.6 Reinforce the capability of airports, aerodromes and airstrips to support economic and social development and the Royal Flying Doctor Service, and protect these facilities from incompatible development in surrounding areas by specifying Principles of Development Control for building heights and defining noise zones within which residential development should be avoided.
- 5.7 Ensure land uses surrounding airports, aerodromes and airstrips are compatible with these facilities and do not detract from their operation.

Yorke Peninsula Regional Land Use Framework

Objective 6 - Protect and build on the Region's strategic freight transport, storage and processing infrastructure

Strategies

- 6.1 Cluster primary production, processing and storage activities in strategic locations, particularly key freight transport nodes, to maximise transport efficiencies
- 6.2 Provide for future expansion of industry clusters and establish appropriate buffers to protect strategic infrastructure from encroachment by sensitive uses
- 6.3 Manage interfaces with residential areas and other sensitive uses
- 6.4 Provide for the development of small scale value-adding (processing and storage) activities that complement local agriculture, livestock, aquaculture, fishing, and mining activities



Appendix 9: ITLUP Challenges, Policies and Priorities

Key Challenges

1. Growing the role of public transport in servicing our city and urban and regional centres
2. Providing efficient connections to export/import gateways
3. Prioritising transport infrastructure and services to encourage mixed-use development in inner and middle Adelaide
4. Supporting lively communities by encouraging active travel modes
5. Fine-tuning, maintaining and better utilising our existing transport assets
6. Developing and maintaining a planning system that ensures integrated transport and land use

THE PLAN

Transport networks that connect people to places and businesses to markets

For inner and middle Adelaide

- A sharper focus on inner Adelaide to boost the central city as a creative, lively and energetic area where more people want to live and businesses want to locate.
- Making bold choices – bringing a network of trams back to Adelaide, called AdeLINK and refocusing our transport system to support and actively encourage mixed-use medium density, vibrant communities and business growth in inner and middle urban areas.

For Greater Adelaide

- An increasing focus on major urban centres and accessibility to these centres – building upon the electrification of the north-south backbone of the public transport system, a modernised and redesigned bus network with a focus on major activity centres, and supporting a more active city through better connected walking and cycling networks and walkable environments.
- Giving businesses the efficient, reliable transport connections they need to deliver goods and services around the city and to interstate and international markets – a well-targeted package of investment in the North-South Corridor, Inner and Outer Ring Routes and intersection and road upgrades.

For regional and remote South Australia

- Better connecting regional towns and communities to jobs, services and opportunities - focusing on a high quality, well maintained road network and improving community and passenger transport services.
- Managing the growing volumes of freight moving around the state and making

Priorities for Greater Adelaide

- Continue improvements to the public transport system
Responds to: Key challenges 1, 3, 4
- Bringing trams back to the central business district (CBD), inner and middle Adelaide
Responds to: Key challenges 1, 3, 4, 6
- A redesigned and modernised bus network
Responds to: Key challenges 1, 3, 4
- Integrated planning to support a more compact Adelaide
Responds to: Key challenges 3, 6
- Enhancing vital freight and road traffic corridors
Responds to: Key challenges 2, 6
- Less reliance on cars, and fewer trucks on city streets
Responds to: Key challenges 3, 4



- More travel options and more sustainable and healthier travel choices
Responds to: Key challenges 1, 4

Solutions and Actions

- Continued improvements to the passenger train network.
- Improved O-Bahn access into the CBD.
- Bringing a network of trams, called AdeLINK, back to the CBD, inner and middle Adelaide to the northwest, east, west, north, south and a loop in the CBD.
- A redesigned and modernised bus network.
- Complete the North-South Corridor, upgrade the Inner and Outer Ring Routes, targeted improvements to many intersections and road sections.
- Duplicate Victor Harbor Road (Old Noarlunga to McLaren Vale), provide more overtaking lanes and shoulder sealing to Victor Harbor, and in the longer term, duplicate to Mount Compass.
- Duplicate Main South Road (Seaford to Aldinga), Beach Road and Dyson Road (Noarlunga), Commercial Road (Seaford), Richmond Road (Keswick), West Lakes Boulevard, Churchill Road (Devon Park), Montague Road (Modbury), Elder Smith Road (Mawson Lakes, including extension to Port Wakefield Road), Kings Road (Paralowie), Womma Road, Curtis Road (Munno Para West), Main North Road (Evanston Park), and additional lanes on Main North Road (Parafield).
- In the longer term – a potential underground rail link in the CBD, relocate the interstate passenger rail terminal at Keswick into Adelaide Railway Station, and protect the extension of train lines into growth areas to the north and south.
- Enabling cycling and walking as more sustainable and healthy travel choices.

Priorities for regional South Australia

- Support for regional industry
Responds to: Key challenges 2, 6
- Expanded 'pit to port' capacity
Responds to: Key challenges 2, 6
- Maintaining the liveability and appeal of regional towns
Responds to: Key challenges 1, 4, 6
- Regional passenger transport and aviation
Responds to: Key challenges 1, 2
- Greater freight productivity
Responds to: Key challenge 2

Solutions and Actions

- Seal the Strzelecki Track.
- Duplicate the Dukes Highway to Victoria.
- Targeted road widening, more overtaking lanes and rest areas across the network including the Augusta Highway to Port Augusta, Sturt Highway to the Riverland, Riddoch Highway to the South East, Eyre Highway to the west, Barrier Highway to NSW, Stuart Highway to the Far North, and Lincoln Highway – potential further capacity improvements including duplication of sections of the Augusta and Sturt Highways in the longer term.
- Town bypasses of Penola, Port Wakefield and Truro, and a potential bypass at Renmark and upgrading of Yorkey's Crossing at Port Augusta.
- Expand 'pit to port' capacity for the mining sector.
- Continue improvements to regional passenger transport, aviation and walking/cycling facilities.

Statewide priorities

- Maintaining and making better use of our transport assets



Responds to: Key challenge 5

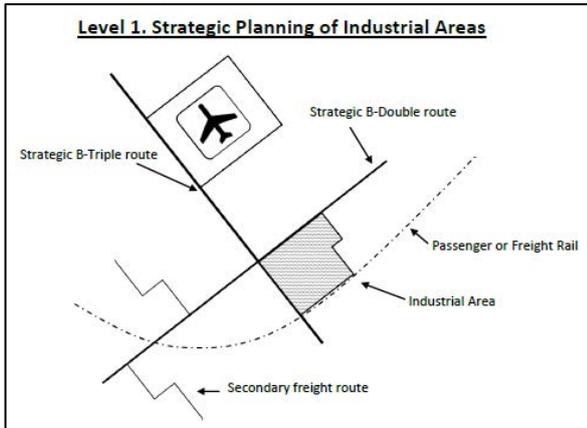
- Protecting freight corridors and facilities
Responds to: Key challenge 2
- Making our transport system safer
Responds to: Key challenges 4, 5
- Better integration of transport and land use planning
Responds to: Key challenge 6
- Managing our impact on the environment
Responds to: Key challenges 1, 3, 5

Solutions and Actions

- Implement the *Regional Mining and Infrastructure Plan* and the *Green Triangle Freight Action Plan*.
- Expand the High Productivity Vehicle network, deliver regulatory reforms for freight transport, upgrade rail freight corridors and intermodal terminals, and improve access to Adelaide Airport.
- Increase maintenance funding to improve and sustain the performance of the transport network and make better use of our transport assets.
- Protect freight corridors and facilities.
- Make our transport system safer and deliver South Australia's Road Safety Strategy.
- Use smart technology to improve transport system outcomes.
- Support for tourism.
- Reduce environmental impacts and car dependency.
- Adapt to climate change and building our resilience to disasters.



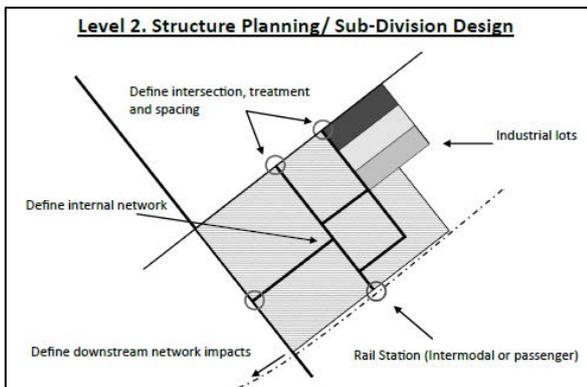
Appendix 10: Employment Area Design Principles



Level 1. Strategic Planning of Industrial Areas

DESIGN PRINCIPLES

- Industrial development on appropriately located land, integrated with transport networks and designed to minimise potential impact on these networks—plus close to sea, air and intermodal facilities.
- Industrially zoned allotments and uses protected from encroachment by adjoining uses that would reduce industrial development or expansion.
- Industrial development occurring without adverse effects on the health and amenity of occupiers of land in adjoining zones.
- Compatibility between industrial, warehouse, storage, commercial and transport distribution uses within industrial zones
- Accessibility to passenger transport, cycling and walking network as well as inter-intrastate transport network (road, rail)
- The network is only as strong as its weakest link and in some cases existing access is limited by road and bridge conditions, pavement and geometry conditions.



Level 2. Structure Planning/ Sub-Division Design

DESIGN PRINCIPLES

- Industrial developments integrated into local communities rather than be segregated from them.
- Adequate on-site buffers to protect/shield adjacent land uses.
- Traffic generation rates and impacts measured based on the final industrial mix and land use scenarios.
- Time of day, week and month distribution of trips as well as number and size of commercial and freight vehicles specified
- The number of junctions and access points governed by the speed of the road, sight distance and length of acceleration and deceleration lanes and right turn storage lanes.
- Intersection design and spacing dictating the internal road network of the estate.
- Intersections spaced and placed so as not to cause traffic and safety impacts on adjacent intersections and land uses/driveways.
- Time of day and down stream network / community effects of the development analysed to determine if this will be a constraint on design and implementation.

Source: InfraPlan



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