

# Strategic Infrastructure Plan for South Australia

2005/6 - 2014/15



**BUILDING**  
South Australia



Government  
of South Australia



## Foreword

### The Strategic Infrastructure Plan for South Australia

#### *Believing in our State - Investing in its Future*

As a migrant to Australia at the age of seven, I grew up here with an abiding sense of my good fortune at being able to live in South Australia. South Australia was a place of outstanding quality of life and great opportunity and to this day I still believe that our state is the best place on earth in which to live and raise a family.

For much of the 90s, however, South Australia seemed the poor cousin in mainland Australia's economic development. South Australia became used to doing not quite as well in key economic indicators as other states. While economic indicators have improved dramatically, this past economic performance had consequences for the level of services and infrastructure development that could be provided by successive state governments.

The Economic Development Board (EDB), established in 2002, is made up of outstanding individuals from diverse backgrounds, but each has two things in common: success in his or her field and a belief that South Australia can and will have a much better future.

A key recommendation of the EDB, South Australia's Strategic Plan, is a comprehensive statement of what that future can be. Its targets amount to a growing and sustainable economy and a strong social fabric.

Already we are seeing significant strengthening in economic indicators, in some cases the strongest since records have been kept. Importantly, confidence is dramatically improved.

South Australia's Strategic Plan, however, demands more than these successes. It targets not simply a period of economic success, but a transformation of our future. Investment in infrastructure is vital to creating that future.

The Strategic Infrastructure Plan, of which this document represents phase one, is the necessary child of South Australia's Strategic Plan. It is about creating our future by investing in it. Only investment will translate ambition into reality.

The Rann Government has worked hard for the last three years to put the state in a position to be able to make the necessary investment. The return of the AAA rating signals our underlying strength. Vivaly, the commitment to continuing budgetary discipline, ensuring that recurrent expenditure is balanced against income, creates the framework for responsible investment.

As phase one of the Strategic Infrastructure Plan, this document identifies the range of opportunities for infrastructure development that will allow us to meet our goals, as well as setting out a new strategic approach to infrastructure decisions.

Some of these opportunities have been prioritised already, with several key announcements delivered at the same time as this document.

Phase two, prioritisation and implementation, is a shared responsibility. The government for its part will, in the coming months, extract from this document further priority investment decisions for the next five and 10 years as a committed programme of projects.

From the Government's point of view, this plan will involve higher levels of investment in infrastructure than has been seen for many years. Importantly, where infrastructure projects are of sufficient merit to warrant it, responsible levels of borrowing for investment will be part of the equation.

The plan also contains opportunities and responsibilities for local government, the Australian Government and the private sector to engage with the South Australian Government to develop South Australia's infrastructure. We will only realise all of our necessary infrastructure investment if every sector of the community is involved.

The coming months will provide an opportunity for all interested parties to engage with the government and put forward their views, firstly on the validity of the priorities set out during phase two and, secondly, on how they might participate in infrastructure development. Much of this engagement has already occurred.

This government has demonstrated a willingness to work with any person, party, group, business or government that believes in this state and is willing to build it.

This plan constitutes a significant body of work, involving people from every corner of South Australia all focused on providing the information needed to identify the best investment decisions for our state. But it is also an invitation to everyone who believes in South Australia to engage, to participate and to transform our future.



**HON. PATRICK CONLON MP**  
**MINISTER FOR INFRASTRUCTURE**

APRIL 2005



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## Overview

The Strategic Infrastructure Plan for South Australia (the plan) is about meeting South Australia's future needs.

Infrastructure is everywhere in the daily lives of South Australians. It is the state's roads and rail, the hospitals, schools and sports fields, the ports and parks, the water and waste management systems. It enables the state's economic and social systems to work well.

Infrastructure is expensive to build, operate and maintain. But it is long-lived and delivers benefits across generations. Today's South Australians are reaping the benefits of infrastructure investments provided by their parents and grandparents. The plan outlines what South Australians now need to do to build new infrastructure, overhaul and update existing infrastructure and avoid bottlenecks so that the state is left in good order for future generations.

This is a plan to take South Australia through the coming decade and beyond. It covers all aspects of the state's infrastructure – physical built assets, delivery of infrastructure for social services and natural heritage.

The plan sets both broad and specific priorities and marks the government's resolve to meet them, but it is not chiselled in stone. It is rather a living, unfolding plan that will grow and change over time to meet new challenges and take up new opportunities.

South Australia must invest in its infrastructure. That investment must come from the public and private sectors. There is no time to waste.

This plan sets out the state's infrastructure priorities – they are summarised below, and the details are to be found in the text of the main document.

## Infrastructure Priorities

### **Invest in transport infrastructure**

1. Develop and deepen Outer Harbor and substantially improve infrastructure at the Port of Adelaide
2. Improve the north-south transport corridor
3. Develop and maintain regional freight networks
4. Increase use of public transport

### **Invest in advanced technologies**

1. Develop defence precincts
2. Extend South Australia's ICT capability

### **Invest in skills and innovation**

1. Integrate and overhaul our education and training facilities
2. Build precincts for research and innovation

### **Manage our built assets well**

1. Ensure efficient use of all public built assets
2. Invest in maintenance of our assets

### **Match our health and social services to community needs**

1. Take primary health care into the community
2. Maintain technological excellence in our hospitals
3. Address social disadvantage

### **Ensure our energy, water and land supplies are sustainable**

1. Better manage our water resources, including stormwater
2. Care for the Murray and reduce salinity
3. Supply affordable and reliable energy
4. Be energy efficient and reduce greenhouse gas emissions
5. Care for our land and protect our coastline

## Context for the Strategic Infrastructure Plan

The need for this plan was recognised in South Australia’s Strategic Plan (SASP). Released in March 2004, the SASP called for the identification of infrastructure priorities over five and 10-year time frames to focus both government and business investment.

The SASP encompasses almost every facet of life in South Australia. It sets a pathway to a stronger economy and a more prosperous sustainable community. It embraces change and seeks to find ways to do things better – to create and seize new opportunities.

The SASP widens opportunities by focusing on six integrated objectives:

- growing prosperity
- improving wellbeing
- attaining sustainability
- fostering creativity
- building communities
- expanding opportunity.

The effective and efficient provision of infrastructure is a key to sustaining high rates of economic growth and productivity improvement. It is critical to achieving the central economic target of the SASP, which is to treble exports by 2013.

Equally important are those infrastructure investments that extend opportunity to all South Australians and create a stronger and fairer community.

South Australia must be well connected – through transport, information technology and communications – both nationally and globally. The availability of reliable and affordable energy and water supplies must be assured, as must access for all South Australians to education, health, housing and other social services. The state’s cultural and heritage assets must be protected and its natural assets conserved.

Because infrastructure assets have long lives and are expensive, it is important to plan, finance, deliver, manage and use them as efficiently and effectively as possible. Modern infrastructure will underpin the state’s progress by increasing its attractiveness and competitiveness as a place to do business and in which to live, work and to visit.

Strong economic growth without compromising the environment or quality of life is a key plank of the SASP. Everything South Australians do must be sustainable – socially, environmentally and economically. In supporting this, the Strategic Infrastructure Plan sets out new long-term strategic approaches to infrastructure to be pursued by government, industry and the broader community.

### Infrastructure Priorities to support South Australia’s Strategic Plan

SASP Objectives		Growing prosperity	Improving wellbeing	Attaining sustainability	Fostering creativity	Building communities	Expanding opportunity
<b>Infrastructure priorities</b>							
Invest in transport infrastructure	1 Outer Harbor & the Pt of Adel.						
	2 North-south corridor						
	3 Regional freight networks						
	4 Public transport						
Invest in advanced technology	1 Defence precincts						
	2 ICT capability						
Invest in skills and innovation	1 Education & training						
	2 Research & innovation						
Manage our built assets well	1 Efficient use of assets						
	2 Maintenance of assets						
Match our health and social services to community needs	1 Primary health care						
	2 Maintain hospitals						
	3 Social disadvantage						
Ensure our energy, water and land supplies are sustainable	1 Manage water resources						
	2 River Murray						
	3 Affordable & reliable energy						
	4 Energy efficiency & emissions						
	5 Land and coastal waters						

## Purpose of the Strategic Infrastructure Plan

The principal purpose of the plan is to guide new infrastructure investment by government and the private sector over the next five and 10 years and improve the management and use of the state's existing infrastructure assets.

The plan incorporates four broad strategies.

First, to **coordinate** infrastructure planning and construction across the state. This involves integrating infrastructure planning decisions for a growing and ageing population, and close collaboration between agencies and spheres of government on the management, use and co-location of assets. It requires strong participation in national programs to ensure that South Australia receives a fair share of Australian Government funding. Aggregation of demand at regional levels, and partnerships between infrastructure providers will help to bring forward infrastructure investment on a commercial scale.

Second, to pursue more **efficient** and competitive infrastructure systems. This requires timely investment in new capacity that is affordable and fit-for-purpose. It also requires South Australians to develop, promote and use measures to manage peak demands and congestion in water, energy and transport systems. Promoting shared and multiple uses of assets through co-location by agencies and governments has a clear role in this regard. Assuring appropriate and timely maintenance of existing strategic assets is essential.

Third, to pursue and promote **sustainable** development through sound planning and use of infrastructure. Effective governance arrangements for asset management and associated service delivery are critical, and a full lifecycle approach to asset development, management and maintenance is essential. The state also needs to protect and conserve its natural assets and protect and sustain its critical infrastructure facilities.

Fourth, to meet future demands in a timely and **innovative** manner. This requires management of facilities across the state to accommodate geographical shifts in population and industry and greater uptake of information and communication technologies to improve access to and lower the cost of delivering services. It involves exploring options for redevelopment and alternative uses for existing assets and design of adaptable multi-purpose facilities for shared use. It means utilising the full range of funding options, and employing advances in technology that offer innovative infrastructure solutions or new supply sources, e.g. in the case of energy and water.

## The Planning Horizon

The plan incorporates a five and 10-year planning horizon. Over the planning period and beyond, the South Australian population is expected to increase and the profile of the population will continue to change in terms of family structure and the way people live, recreate and work. Families are getting smaller, and people are living longer and staying in their own homes longer than ever before. The needs and expectations of the rising proportion of older people will create new and additional demands on our society.

As the population ages, the proportion that is of working age will shrink. To meet the challenges of the future, maintain our quality of life and achieve the economic outcomes foreshadowed in the SASP, higher levels of workforce participation will be required. The state will need to be able to achieve higher levels of productivity from its human and physical resource base to deliver services more efficiently and effectively than at any time in the past.

The overall shift in the population towards coastal towns and major regional centres will continue. Technological advances and long-term changes in global markets will bring about structural changes in our industries as well as in the way businesses operate. The growing scarcity of resources, competing demands for land and projected impacts of climate change are just some of the additional pressures that will force us to look beyond traditional infrastructure responses and find innovative and sustainable alternatives.

Despite recent improvements in the state's economic indicators, a number of economic forecasters expect South Australia to record real Gross State Product (GSP) growth averaging just over 3% per annum over the first half of the planning period, slightly lower than the expected national growth rate. Current long-term trends in the pattern of industry growth are forecast to continue, with services industries experiencing above average growth rates and primary and secondary production recording slower than average growth.

Achievement of the SASP targets, however, will see South Australia record a rate and pattern of growth that exceeds many of the current economic forecasts. **In the SASP, GSP growth is targeted to exceed the national average within 10 years and exports are targeted to treble in value by 2013.** In particular, the plan targets growth in exports of minerals, food, wine, motor vehicles, defence and elaborately transformed manufactured goods and in services such as tourism and education.

This growth will give rise to new demands on the state's economic infrastructure, including energy, water, transport and communications services.

## The Role of Government

The role of government in infrastructure provision has changed significantly following the micro economic reforms and privatisation of the last two decades. Social infrastructure continues to be delivered primarily by the government. Economic infrastructure today is often delivered through private providers operating in competitive markets and responding to consumer and shareholder interests.

While private infrastructure providers respond to commercial interests and seek to maximise private returns, government is responsive to community interests and seeks to maximise public returns. Accordingly, the government plays an important role as facilitator, coordinator and regulator of private industry involved in the provision of economic infrastructure. This involves the government working with industry to accommodate community interests and to secure broader community benefits from private sector infrastructure investment wherever possible.

The State Government also works in close partnership with other spheres of government where they have infrastructure responsibilities, to achieve the best possible outcomes in terms of access to essential infrastructure and high service standards.

Owners and operators of critical infrastructure (e.g. energy, water, telecommunications, hospitals) are working collaboratively with government to ensure the protection of infrastructure in the face of a range of potential natural and other hazards or threats. This includes the establishment of robust risk management standards and plans as well as emergency responses and rapid recovery arrangements supported by appropriate training and strong communication links.

The success of the plan over the next five and 10 years will rely on very close cooperation between the State Government, business and other levels of government. The Strategic Infrastructure Plan is a plan for the whole of South Australia, not just metropolitan Adelaide, and encourages a partnership of all players.

The government intends to work more closely with private infrastructure providers and local government to gather and disseminate information on the condition and use of infrastructure assets. This information will then be used to encourage growth where infrastructure needs are greatest and to identify and address, in a coordinated manner, potential infrastructure-related bottlenecks to growth.

Government processes will be changed to allow this cooperation to take place and to optimise private sector involvement. This involves significant changes to the way in which the state's infrastructure asset base is managed and

developed, particularly in relation to the State Government's capital investment process.

Importantly, this includes adoption of an integrated and more rigorous whole-of-government and whole-of-state approach to identifying and prioritising infrastructure requirements. This involves moving the State Government's approach to capital planning away from the annual bidding process by individual agencies. A culture of managing across rather than within portfolio structures will be fostered to support better outcomes for the state in a more strategic way.

The new approach, following acceptance by government of the advice of the Economic Development Board, will require the staged identification and appraisal of a proposal before decisions are made on funding. Various funding options will be considered, ranging from State Government appropriation and Australian Government funding through to alternative private sector arrangements.

### **A five-step planning and delivery framework is proposed:**

#### **Step 1: Strategic analysis and identification of infrastructure needs**

Infrastructure priorities will be identified through an ongoing planning process, focusing on five and 10-year timeframes and responding to the objectives of SASP. This process begins with the preparation of the Strategic Infrastructure Plan and will be supplemented from time-to-time by a series of individual agency plans to be approved by the government.

#### **Step 2: Project definition**

This step involves the definition of the required services and initial scoping of a project, if appropriate, to meet service delivery objectives, including an analysis of the associated asset management implications.

#### **Step 3: Business case**

This step involves the development of a full business case, or justification of the project, considering whole-of-life costs, sustainability targets, the role of government and financing and procurement options.

#### **Step 4: Funding method and resource allocation**

This step leads to a decision on the funding method, which may involve an allocation of state capital funds or opportunities for private participation.

#### **Step 5: Delivery of the project**

This step is the detailed design and procurement stage for the project.

Once priority projects have been properly scoped and substantiated, the planning and delivery framework advocates consideration of a full range of public and private sector delivery options, capitalising on the strengths of the respective sectors.

Barriers to private sector investment will be removed where possible and appropriate. Projects will be properly structured to ensure best outcomes for the state. Processes will aim to minimise transaction costs for the private sector, consistent with the need for attention to be given to requirements for competition, regulation or service standards.

A fresh and more flexible approach is needed to the way government does business with business. South Australia must be truly 'open for business' to meet the state's infrastructure requirements. For this to occur, the government must have the capacity to consider unsolicited bids. Where a private firm perceives a commercial opportunity in solving a public infrastructure need, it may require assurances concerning protection of its intellectual property. In such circumstances, government should be able to provide them. It should also have the capacity to strike sensible, open and transparent deals involving a contracted lump-sum price, provided the public interest is protected by ensuring that the price agreed to is fair. This can be achieved where the public sector has independent data on costs of delivery, which can be obtained through market testing and a range of other approaches.

Another important factor is balancing of cost against risk. Where the private sector genuinely assumes a substantial set of risks with respect to the provision of an item of infrastructure, and is able to back those risks with a strong balance sheet, this will be traded off in the price charged to the public sector. This arrangement may represent 'value for money' to the taxpayer, depending on the assessment of costs and benefits.

Risk and cost of each case must be assessed on its particular circumstances and merits. The government must weigh up a range of factors when considering the best way to deliver major projects efficiently and in the public interest, ensuring always that arrangements satisfy rigorous standards of probity and propriety.

A more rigorous assessment process for identifying and analysing triple bottom-line considerations and for prioritising strategic infrastructure proposals will support the infrastructure planning and delivery framework.

Decisions between competing project priorities are ultimately the responsibility of government. The government will resolve these priorities and continue to identify and address new infrastructure issues as they arise.

The Strategic Infrastructure Plan for South Australia is the first major step forward in developing a more coordinated, efficient, sustainable and innovative approach to infrastructure provision. It provides leadership for other spheres of government and the private sector on the government's priorities for South Australia. It also provides a framework to guide more detailed infrastructure planning by state agencies.

Disciplined budget management in recent years has cut state debt by nearly a third to less than 5% of GSP, without resort to privatisation. Ratings agencies have restored the state's AAA credit rating. This provides scope and flexibility for judicious and responsible infrastructure investment by the public sector.

The state's balance sheet can accommodate quality investment in infrastructure that will lift the productivity and growth performance of the economy. An expert Infrastructure Finance Group chaired by Dr Barry Hughes, Chief Economist at Credit Suisse Asset Management, reached this conclusion. Its principal conclusions are reflected in the plan. Today, there is a broad range of options available for financing investment in public infrastructure. However projects will only be funded once their merits have been clearly established.

Regardless of the financial position of the government, only projects that satisfy cost - benefit and other project appraisal criteria should be considered for funding.

The government invites input on the proposals in this plan from all users and providers of infrastructure. Additional information on the plan can be obtained from [www.infrastructure.sa.gov.au](http://www.infrastructure.sa.gov.au).

Progress in implementing the priority initiatives in the plan will be monitored closely. Additionally, the plan will be revised to incorporate new priorities as they emerge.

## Infrastructure Sectors

The Strategic Infrastructure Plan presents strategies for 14 infrastructure sectors. The challenges, issues and opportunities currently faced in each of these sectors are discussed, as are the strategic directions and a number of potential projects to be pursued over the next five and 10 years.

Summary statements for each of the 14 infrastructure sectors follow. For a more detailed discussion on each of the sectors refer to the relevant section of the full plan.

## Transport

### Where we are now

Major improvements have been made to the State's transport infrastructure in recent years. Construction of the Adelaide-Darwin rail link – one of the largest infrastructure projects undertaken in Australia – was completed in late 2003. Construction of the new Adelaide Airport is on schedule for completion in October 2005. Nine new trams are being purchased and the Glenelg tram line will be upgraded by September 2005. The Port River Expressway Stage One, incorporating two new overpasses, is nearing completion. The City West Connector has been opened.

The government recognises the importance of regional highways and works have begun on the Sturt Highway, the Port Wakefield to Port Augusta Road, the Victor Harbor Road and Dukes Highway between Bordertown and the Victorian border. The new bus interchange at Reynella has opened and construction of the Mawson Interchange has started. The River Murray ferry replacement program is nearly complete and a new grain berth is being constructed at Outer Harbor.

Notwithstanding these achievements, passenger and freight transport loads on roads are rapidly increasing, adding to congestion. The freight load is predicted to double over a 20-year period and congestion is causing increasing delays on Adelaide roads. There is also an ongoing requirement for network maintenance throughout the state.

The state has four public transport modes: bus, heavy rail, light rail and O'Bahn. Patronage overall is low, as is the use of rail on long-haul routes.

Marine facilities at Outer Harbor are not able to accommodate new larger vessels. Around the state expanding fishing fleets exceed current wharf capacity, while access to regional ports does not support efficient export logistics.

### Where we want to be in 2015

South Australia will have a sustainable transport system; one that is integrated, coordinated, affordable, efficient and safe, meeting the accessibility needs of all South Australians. Congestion on transport routes will be managed by a range of capital works projects and there will have been a shift to greater public transport use for peak-hour travel. A major improvement in freight movements will have occurred through greater use of rail. Gateways to the state will reflect vibrancy and be welcoming to visitors.

Land at Outer Harbor and Osborne will be developed for a range of export, defence and maritime services industries. The Port of Adelaide will be a busy import/export port for the state as a result of improved services to ensure the efficient transport of goods and passengers, while other regional ports will have the capacity to support expanded export

aquaculture and fishing industries. Efficient transport logistics will support the movement of grain from farm to port around the state and the transport of timber from the South East to the port of Portland.

### How we will get there

Priorities for the road network include the completion of the link from the Sturt Highway to Outer Harbor, including the Port River Expressway and the upgrade of Port Wakefield Road to expressway standard and the upgrade of the north-south corridor through metropolitan Adelaide. Initial work on the north-south corridor will include upgrades to South Road between Port Road and Torrens Road, the construction of an underpass on South Road at Anzac Highway and tunnels under the Grange and Port Road intersections.

Other road improvement projects, such as the upgrade of the Britannia roundabout and replacement of the Bakewell Bridge, will be completed.

More emphasis will be placed on maintaining existing road assets rather than extending the network. Priority will be given to safety related maintenance and upgrades on roads with high crash rates.

Redevelopment of the state's ports will be advanced to ensure more efficient access to international markets. The channel to Outer Harbor will be deepened and priority will be given to completing development of the deep-sea grain port and associated terminal at Outer Harbor.

Appropriately located wharfing and associated facilities will be developed and maintained to support growth in the tourism, fishing and aquaculture industries.

The development of more efficient land-based freight transport links to overseas markets is critical. Priorities are the improvement to the Eyre Peninsula grain transport system, completion of the Port River Expressway rail link and upgrade of the Le Fevre Peninsula rail corridor. Consideration will be given to the standardisation and/or upgrade of our rail network through Adelaide and the Mid North.

A shift to rail transport for passenger and freight movements will be encouraged where it offers environmental and economic benefits. Adelaide's urban passenger transport system will continue to be a cost-effective, environmentally friendly and modern metropolitan network. An extension of the Noarlunga rail line to Seaford will be investigated. Selected transport interchange facilities will be developed at strategic sites, e.g. Marion shopping centre (Oaklands Park). The Glenelg tram network will be upgraded by the purchase of new trams and track refurbishment. The tram line will be extended to North Terrace to provide a link to the Adelaide railway station. Further extensions of the tram line will be considered.

## Land

### Where we are now

The public and private sectors both play significant roles in the release and development of industrial and residential land throughout the state. The majority of residential land development projects are undertaken by the private sector. Government, in some instances, undertakes joint-venture activities with the private sector to facilitate social and environmental outcomes that are considered important for the wider community.

Recent government initiatives to promote the development of land for either industrial, commercial or residential purposes include the agreement for the Port Waterfront Redevelopment, continued development at Holdfast Shores, City Central, Mawson Lakes, Edinburgh Parks and a number of urban regeneration projects north and south of the city. A number of major residential developments led by the private sector are planned or in progress, including several high-rise developments in the CBD and near city locations.

Industrial estates have been developed in several regional centres to support industry growth, particularly in value-adding to primary production.

Initial work has been undertaken to secure a sufficient long-term supply of industrial land and to integrate land and infrastructure development. Key precincts for future industrial growth will include Le Fevre/Pelican Point, Dry Creek and Edinburgh Parks.

### Where we want to be in 2015

The state will have ensured the timely release of a well-located supply of industrial and residential land to the market. Adequate supplies of land inside the urban boundary will have been made available as required for development. Infrastructure will be provided in an integrated and timely manner to support existing and proposed developments.

Legislative changes will have brought about reform of the planning system, and timelines for approvals will be reduced. Other processes affecting development will be streamlined and transparent and provide a high level of certainty for developers.

### How we will get there

A strategy to identify, protect and facilitate the development of a 15 to 20-year supply of suitable industrial land will be developed. Provision of suitable sites for the state's strategic industries that have site-specific requirements will be essential.

The staged development and release of strategic parcels of industrial land at the Port Adelaide/Dry Creek/Wingfield EcoIndustrial Precinct, Le Fevre Peninsula and Edinburgh Parks and the planned establishment of the Osborne maritime precinct for construction of naval vessels will help the expansion of key export industries.

The development of industrial precincts close to existing infrastructure networks will be encouraged e.g. Technology Park, the Cast Metals Precinct, Lonsdale and Seaford Industry Park. The government will negotiate access to surplus Port Stanvac land for industrial use and investigate other investment opportunities for industrial sites in the south. Industrial estates to support value-adding activities in regional centres, including Kingsford Estate (Gawler), Mount Barker, Strathalbyn and other regional centres, will also be developed.

Infrastructure audits will be conducted in areas being considered for infill housing or industrial use to ensure infrastructure is provided in an integrated and timely manner to support land developments.

To ensure that residential land supply is sufficient to meet the needs of the market, greater consideration of demographic changes will be required in residential land supply planning. Planning for residential developments will be more closely integrated with infrastructure planning.

State and local government will jointly identify options for more strategic use of public land to deliver community services more efficiently. Work to improve the efficiency of the planning system will continue to receive high priority to provide a competitive business climate for investment in the state. These improvements will ensure the timely release and development of industrial and residential land throughout the state by the development industry

## Information and Communications Technology

### Where we are now

The rapid development of computer and telecommunications technologies has brought about major changes in the way we live, learn and work. Information and communications technology (ICT) infrastructure is essential for the delivery of modern digital services, ranging from telephone calls to super computing.

The State Government is dependent on ICT for its day-to-day operations and to deliver services to businesses and the community. The government has made a substantial investment over time in ICT infrastructure and equipment and is currently moving into a multi-provider environment for delivery of ICT services to government.

Recent improvements to the state's ICT capabilities include construction of the SABRENet broadband network connecting research and education sites, upgrade to the state's advanced computing capability, establishment of the Broadband Development Fund for new broadband in regions, the EduConnect project to increase broadband in schools, the CineNet broadband network for the film and multi-media industry and the \$5m Optus cable rollout.

Most legislative and regulatory powers for communications rest with the Australian Government. The market has been progressively deregulated since the late 1990s and there are more than 100 licensed carriers, although Telstra is still by far the largest and dominant player in most market segments, particularly in regional areas.

South Australia presents a relatively small market to telecommunications carriers and is often placed toward the end of national telecommunications product rollouts. While a number of national carriers have a presence in the state, their networks are generally concentrated in major population centres where there is sufficient traffic to justify investment.

### Where we want to be in 2015

The overwhelming majority of South Australians will have access to online ICT services provided by a range of carriers in a competitive market environment. Technological advances will have brought about a fall in price and significant improvement in the range and quality of services. The purchasing power of state and local governments will have been leveraged to the benefit of all South Australians. The community will have convenient access to government, research and educational information programs. State Government operations will be fully interconnected within and across agencies and regions, enabling the government to extend and improve access to services. The state will have world-class connectivity to the international advanced computing and telecommunications network.

### How we will get there

The State Government will work to influence developments in national telecommunications policy and regulatory arrangements for the industry in the interests of South Australia, and will work to ensure that the state receives its fair share of Australian Government funding for telecommunications facilities.

The State Government's own ICT infrastructure will be upgraded regularly to facilitate effective and efficient delivery of government services. Maintenance of appropriate capacity and security of the State Government's telephony, critical data networking and other shared ICT infrastructure and radio networks will be essential to service government and public communications requirements.

The government's purchasing power will be used to stimulate investment in broadband infrastructure and facilitate delivery of competitive broadband services by the private sector. The government will implement an ICT purchasing policy requiring collaboration and regional demand aggregation by government agencies to leverage opportunities for infrastructure development, particularly in regional South Australia.

Aggregation of demand by private users will also be an important means of encouraging commercial investment in ICT infrastructure, particularly in rural areas. The private sector and local government have an important ongoing role in progressing the rollout of broadband to strengthen the state's ICT capabilities.

The deployment and use of ICT infrastructure, including broadband, will be coordinated more effectively with the state's other physical infrastructure priorities, including transport, new housing and industrial developments and other built infrastructure.

## Education and Training

### Where we are now

South Australia's future depends on its capacity to participate in the 'knowledge economy'. Education and training is fundamental to building a stronger community and economy.

The government has invested heavily in the state's education assets in recent years to improve the condition of schools and pre-schools, following years of neglect. Over \$150 million has been allocated to major capital projects since 2002. There has also been an increased focus on maintenance works with an injection of \$25 million through the School Pride Program to supplement the annual \$40 million program.

Nevertheless, the majority of public schools are between 25 and 50 years old and some are not well suited to support the most advanced learning and teaching methods. Some of the existing infrastructure is under-utilised and poorly located in relation to areas of current and future need.

Recent initiatives in the area of post-secondary education include action to increase the accessibility of vocational education by upgrading bandwidth across most TAFE campuses in regional South Australia and the purchase of an online education system that supports e-learning across the state. The government has also committed to a program of investing in TAFE infrastructure, which includes the renewal and upgrade of the TAFE video conferencing network as well as computing equipment and other building support systems in key campuses.

Some TAFE facilities in regional areas need improvement, but metropolitan assets are generally good. The wide dispersal of TAFE sites opens up the potential for an increase in shared use with other sectors.

Support has been provided to the state's universities, especially in areas of research. This includes the Australian Centre for Plant Functional Genomics at the Waite Campus and facilities such as Glenthorne, which has been made available to the University of Adelaide.

The state has three well-established universities with a fourth, Carnegie Mellon, due to be opened in 2006. Full fee-paying international students are becoming more numerous, creating increased demand for accommodation.

### Where we want to be in 2015

Childcare, preschool, primary and secondary learning will embrace a more integrated approach to service delivery through, co-location of early childhood and education services, greater integration of information technology, more networking among campuses, access on a seven-day a week basis and self-paced learning, a move to specialist schools and curricula, and the forging of closer links between schools and communities.

South Australians will have improved their overall level of educational attainment and a culture of lifelong learning will be developing. More students will be completing Year 12 or its equivalent and hold post-secondary school qualifications. The state's excellence in education provision will be reflected in a doubling of its share of overseas students making South Australia their destination of choice. A management program will have ensured that educational assets will be better located, maintained, used and integrated with other forms of complementary community use. More interstate or overseas universities will have established branches in South Australia.

### How we will get there

An holistic approach to infrastructure planning will be instrumental in improving future education outcomes for the state. All education and children's services providers will adopt a coordinated approach to asset provision. Innovative approaches will be used to plan, build and use multi-purpose facilities incorporating educational and related or complementary public services. Opportunities to offer a continuum of services from childcare to high school, on a single campus, will be pursued while building closer links with TAFE and universities.

The focus of activity for vocational training will be to develop and implement an infrastructure model that supports shared use of multi-purpose facilities across a broad spectrum of campuses, while consolidating more specialised activities on lead campuses to improve asset performance and strengthen the TAFE link to growing industry clusters. A stronger link between the senior secondary school system and the vocational education and training sector will be established to drive coordinated outcomes.

TAFE campuses at Elizabeth and Nuriootpa will be upgraded, a centre for veterinary and applied science will be developed at the Gilles Plains campus, the consolidation of building and furnishing trades at Marleston will be completed and facilities for hospitality training in the metropolitan area will be further enhanced. Aquaculture and wine-related training capabilities will be strengthened, in the case of aquaculture through the Marine Innovation SA initiative.

Priority will be given to the upgrade and renewal of the TAFE ICT systems and the provision of sufficient broadband capability, particularly in regional areas.

Adelaide's international student numbers will increase as a result of improved school facilities and teaching and research facilities in high-demand university courses such as business, information technology and engineering, supported by dedicated accommodation services. Flinders University will advance plans to establish a pre-university teaching centre for international students. Developing the opportunity for a prestigious fourth university in Adelaide will also add to the badging of Adelaide as an excellent destination for international students.

## Science, Technology and Innovation

### Where we are now

Science, technology and creativity are critical elements in fostering economic growth and prosperity. The government's 10-year vision for science technology and innovation, STI<sup>10</sup>, provides a framework for strengthening the state's research and development (R&D) and innovation performance.

Initiatives already transforming STI in the state include the newly-built Australian Centre for Plant Functional Genomics facilities at the Waite Campus, an incubator project at the expanded Thebarton Bioscience Precinct to accelerate biotechnology business development and the ICT initiatives discussed earlier. The Australian Government has recently provided funding for Cooperative Research Centres (CRCs) in automotive manufacturing, environmental, water and agribusiness R&D.

The Government has invested in the establishment of the Centre for Excellence in Defence Industry Systems Capability to research new systems-integration technologies for the defence industry, and help small-to-medium companies do more in systems and software engineering. This is part of the Government's push to further develop Adelaide as the defence capital of Australia.

Critical to realising the government's STI<sup>10</sup> vision is building STI-related infrastructure, including buildings, facilities and major equipment that support organised research.

A series of initiatives from Thinker in Residence, Baroness Professor Susan Greenfield, including the National Science Media Centre, are being considered.

### Where we want to be in 2015

South Australia will have an STI system that exceeds international standards. Cooperative investment and practices between business, the education and training sectors and government will have created a vibrant knowledge-based community. The state will have attracted high-calibre researchers and other STI professionals.

The Adelaide Innovation Constellation as described in STI<sup>10</sup> will have taken shape. Public and private business partnerships and investments in world-competitive STI infrastructure will boost the state's economy and exports as well as help remediate its inland water, land and coasts.

Many more of the state's enterprises will be knowledge-based exporters. Industry associations and industry-led clusters in areas such as water, defence, environment and health will thrive, supported by precincts that act as communication networks and market channels for business people and academics alike.

### How we will get there

Anchored on the high-speed broadband connections provided by SABRENet, the innovation, education and training precincts forming the Adelaide Innovation Constellation will be established. This will be facilitated by securing maximum possible funding for STI infrastructure from the Australian Government over the next five years.

The development of collaborative approaches by research organisations, industry and government to the building and use of STI infrastructure will be critical. Priorities for STI infrastructure development will be identified, consistent with the STI<sup>10</sup> vision, following the completion of an audit of existing infrastructure.

Master plans for the development of each of the precincts will be completed and priority projects selected.

The building of new facilities at the Waite precinct to house the major R&D players in the wine industry in the one location is a high priority to support the growth of this key export industry.

The state's fishing and aquaculture industries will also be supported through the establishment of the Marine Innovation SA facilities.

Incubator facilities planned for the Mawson and Waite precincts will provide laboratory and office space for early stage defence, agriculture and wine firms.

A Southern Innovation and Technology Transfer Centre will be investigated for the Flinders Precinct to stimulate the development of new technology industries in southern Adelaide.

Co-location of manufacturing R&D activities will be pursued, including those of the CSIRO Division of Manufacturing and Infrastructure Technology and the University of South Australia, to form a new SA Mawson Centre for Advanced Manufacturing. A complementary proposal for the establishment of a Centre for Innovation to accelerate industry take up of emerging advanced manufacturing technologies will also be developed, with this capability networked across all precincts.

## Justice and Emergency Services

### Where we are now

Significant improvements to the state's justice and emergency services infrastructure have been made in recent years. Recent government initiatives include provision of a new court complex at Port Augusta; replacement police stations and courthouses at Victor Harbor, Berri and Port Lincoln, new police stations at Gawler, Golden Grove, Mount Barker and Aldinga, and a courthouse at Port Pirie. The government has supported improvements to prison infrastructure by approving additional capacity and support facilities at Mobilong Prison and funding projects designed to upgrade safety, security and building-code compliance.

Substantial investment has been made in ongoing replacement programs for fire appliances, equipment and buildings, including major Metropolitan Fire Service (MFS) facilities at Elizabeth and Golden Grove. In particular, significant support has been provided for the development of improved radio and data communications systems, including audio management and computer-aided dispatch systems designed to streamline emergency response capability.

### Where we want to be in 2015

The provision of the necessary building and ICT infrastructure will help the police to provide greater security to the community, particularly in rural and remote areas, and enable the courts to operate more effectively. The operations of prisons will have improved to meet demand more effectively and provide a cost-effective prison system. Provision of appropriate appliances, equipment, stations and training will enable fire and emergency services to have a greater capacity to provide for a safer community.

### How we will get there

Crime and disorder will be dealt with effectively in the state through the provision of an appropriate level of fit-for-purpose court, prison and police facilities, incorporating modern ICT systems.

There is a need to review the operations of the Supreme Court building.

The government will consider options for reconfiguring the prison system to achieve more cost efficient arrangements and a safer community through better rehabilitation outcomes.

Training infrastructure is critical to support the provision of efficient and effective police and emergency services. Options for the upgrade and integration of training facilities will be developed.

An ongoing program to upgrade ICT equipment and software for all justice and emergency services will be implemented.

Upgrades to a number of fire and emergency services stations are proposed across the state. In addition, ongoing upgrade and replacement of emergency services equipment will be required to maintain appropriate service standards.

## Recreation and Sport

### Where we are now

The government has recently developed a state-level Sporting Facilities Strategic Plan to help guide future infrastructure investment decisions. Other recent initiatives include an upgrade to the external netball courts at ETSA Park, construction of new safety baffles at State Shooting Park and installation of a new scoreboard and timing system at Adelaide Super-Drome.

Ageing infrastructure, increasing maintenance requirements and user expectations must be addressed if the state's sports and recreation facilities are to be maintained as fit for purpose and meet the needs of the community.

Infrastructure gaps in some communities include inadequate pool facilities, an inequitable distribution of indoor recreation and sport centres and a need for more developed walking trails to support recreational and tourism activity.

### Where we want to be in 2015

Programs will have been implemented to increase the use and improve the quality of existing facilities, and to develop new infrastructure to meet needs and maximise opportunities. Expansion and greater use of key sporting hubs will have addressed the current gaps in elite and community-level sporting facilities. There will be increased use of government land and buildings, particularly education facilities, which will help meet community recreation and sporting needs.

### How we will get there

A new approach to providing recreation and sporting facilities over the next five and 10 years will focus on the design, provision and distribution of fit-for-purpose facilities throughout the state to improve access and use at the community level. Coordinated action by State and local governments and the private sector will be used to develop sustainable, multi-use and adaptable facilities to meet changing community needs.

The government will work with the sports industry to attract and retain major sporting events. Partnership arrangements will be utilised to ensure facilities are developed that are capable of hosting international and national events and accommodating competitors and spectators.

Specific potential projects include a state aquatic centre, a permanent criterium cycling track and shelters for external courts at ETSA Park. The feasibility of South Australian Sports Institute's elite sporting facilities being redeveloped within a strategically located sports precinct will be investigated.

Cross-government policy and design guidelines to ensure local school sport facilities maximise school and community use will be developed. The shared use and take up of other publicly-owned sporting infrastructure through partnership opportunities between State and local government will be explored.

The focus of community-level funding should be towards areas with demonstrated needs and identified infrastructure priorities e.g. community-level swimming pools, indoor courts, recreational trails and soccer pitches.

Strategic plans for recreational and sporting infrastructure are being prepared, including a recreational trails strategy and a state sports park strategic plan. The recommendations in these plans will be prioritised and implemented as appropriate. In addition, local and regional recreation and sport and open space strategies will be developed and implemented.

## Arts, Culture and Heritage

### Where we are now

South Australia has a major investment in its arts and cultural infrastructure, which includes assets such as heritage buildings, entertainment venues, the nationally recognised collections at the Art Gallery of South Australia, South Australian Museum, State Library of South Australia, History Trust of South Australia museums and Tandanya. These assets together with organisations such as the Adelaide Festival Centre, Adelaide Entertainment Centre, South Australian Film Corporation and events such as the Adelaide Festival, Adelaide Film Festival, Fringe Festival and Womad will enable South Australia to initiate and promote major art works, a diversity of live performance and a series of world-class collections.

The state's achievements on the stage and its critically acclaimed festivals and events are supported by an ongoing program to manage and improve the state's arts and cultural infrastructure. The master plan for the Adelaide Botanic Gardens and Mount Lofty Botanic Gardens is being implemented. The upgrade and heritage refurbishment of the State Library of SA has been completed and a partnership with Adelaide City Council to redevelop the public realm of North Terrace is underway.

South Australia has some of the nation's best arts collections, heritage items, galleries and museums. Preserving, enhancing and showcasing these valuable assets requires significant ongoing investment.

### Where we want to be in 2015

South Australia will have implemented a coordinated strategy to manage, preserve and add value to its heritage buildings, items and places. The condition of the state's art, cultural collections and public spaces will have been maintained and enhanced as a legacy for future generations. In addition, innovative ways will have been found to display and make art and cultural collections accessible to the South Australian community and international audiences. The capacity and output of South Australia's film and creative industries will have provided the state with a higher international profile, making a significant contribution to the economy.

### How we will get there

Improved conservation and management strategies are needed to maximise the economic and social benefits of the state's heritage assets. A 10-year management plan will be developed to ensure best-practice conservation and maintenance of the state's heritage and cultural assets under the control of the State Government. Priority will be given to developing a strategy to bring heritage buildings to an acceptable standard for disability access. Plans to upgrade the Old Adelaide Gaol, the Thebarton Police Barracks, the Migration Museum and parts of the South Australian Museum will also be considered.

More than 90% of the state's art and cultural collections are currently stored away from public view. A strategy will be developed to improve storage facilities and develop new opportunities for displaying these collections more effectively and using more of them for improved tourism, educational and research outcomes.

Redevelopment of the Adelaide Botanic Gardens and Mount Lofty Botanic Gardens will be completed. Work with the Adelaide City Council to upgrade North Terrace will be completed.

To ensure ongoing public access to performing arts companies, the upgrade and refurbishment of the Adelaide Festival Centre and environs will be completed, as will the upgrade of the Adelaide Entertainment Centre and the state's regional theatres in Whyalla, Mount Gambier, Port Pirie and Renmark. High priority will be given to finding a new base for the South Australian Film Corporation.

## Health

### Where we are now

Responsibility for the health system in South Australia is distributed across three levels of government and the private sector, comprising a mix of public, private and not-for-profit service models.

The State Government has undertaken extensive redevelopment programs over recent years at the Lyell McEwin Hospital, the Queen Elizabeth Hospital and the Royal Adelaide Hospital, with further work being considered at the Repatriation General Hospital and the Women's and Children's Hospital. Redevelopment works and facility upgrades have also been undertaken at country hospitals and new aged care facilities have been constructed.

In the last three years the government has made a significant commitment to building the foundation for a modern mental health system through considerable investment in new acute services in mainstream hospitals, and has begun to build the capacity of community-based services.

The State's health infrastructure includes hospitals, emergency transport and retrieval services, the Institute of Medical and Veterinary Science, general practices, community health centres and clinics, mobile health clinics and a range of specialised facilities.

The health system is under pressure to contain costs in the face of rising demand due to population ageing, other demographic changes and technological advances.

### Where we want to be in 2015

The health system will deliver more integrated, coordinated and localised services to meet the needs of an ageing population more effectively. The enhanced focus on primary health care, including better early intervention, prevention and management of chronic disease will begin to show in improvements in the health and well-being indicators for all South Australians. The state's economy will be stronger as a result of improved quality of life and better health outcomes. South Australia will be at the forefront in health service delivery, research, use of ICT and new treatment techniques, which are more accessible to the public through community-based health care services.

### How we will get there

The initial focus of change is to reorient the health system by moving the emphasis to early intervention through primary health care centres while maintaining acute care capability. This will require the upgrade and expansion of infrastructure to enable integrated provision of community-based health services by government, private and not-for-profit service providers. The aim will be to maximise the use of existing infrastructure, minimise duplication and integrate the provision of services e.g. by establishing primary health care facilities in selected sites across the state close to transport links, schools and shopping centres.

In parallel with the development of primary health care networks, the quality and safety of hospital services will be maintained through redevelopment and major equipment repair and replacement. State-wide hospital infrastructure and equipment replacement and development programs will be implemented.

The government plans to create culturally appropriate primary health care facilities for Aboriginal people that include supported accommodation services for people in crisis or requiring support after periods of hospitalisation. New local primary health care facilities, child development and mental health community rehabilitation centres will be established.

To support the shift to primary health care, collaborative approaches to the provision of transport and health services will be developed to provide better access to health services throughout the state.

Better health connectivity through the use of improved ICT systems will be critical to the success of the shift toward primary health care. Use of more advanced systems will improve access to information needed for better clinical and consumer decision-making, as well as planning for future service delivery.

Redevelopment of infrastructure will be required to support medical and population health research, commercialisation and technology transfer in both the public and private sectors.

## Community Services and Housing

### Where we are now

The State Government is committed to the reform and renewal of the child protection system and there has been unprecedented collaboration and cooperation to improve and strengthen this system for children and their families. Additional housing has been purchased to provide transitional accommodation services and emergency care to children and young people. Extra houses for women and children fleeing domestic violence were obtained in June 2004.

Despite recent improvements, the state faces major challenges in addressing the needs of vulnerable children and families, people with disabilities and indigenous people, particularly in remote communities.

South Australia has a strong and efficient housing industry that works in partnership with government to provide high quality and affordable housing. South Australia has led the country in the creation of public housing, Aboriginal housing, community housing and home ownership programs. It has recognised the benefits of using land supply, planning policies and urban renewal to create an enviable lifestyle and to drive economic growth.

However, the state's housing system faces challenges arising from changing community needs and expectations and structural changes in the market. These include a targeted population growth of two million by 2050 combined with urban containment strategies, which will lead to higher residential densities in some areas; increased pressure on fringe areas and locations with limited infrastructure and services; the continued move to de-institutionalisation; and population ageing and the increase in the percentage of smaller households.

Historically, a significant proportion of public housing stock has been developed in high concentrations and in ways that do not meet modern needs. The government's capacity to continue to deliver public, community and Aboriginal housing services is constrained by declining Australian Government support, and increased costs associated with an ageing asset base and accumulated debt.

### Where we want to be in 2015

South Australia will have strengthened its role as the provider of high need housing services through its social housing agencies. It will also be a leader in affordable housing innovation and a partner in providing and developing affordable housing in our community. Particular emphasis will have been given to improved services in the APY Lands. Innovative new approaches to improve the supply of affordable and high-need housing will be in operation. Accelerated urban regeneration projects in disadvantaged areas will have contributed to the achievement of SASP targets in education, employment, crime reduction and health. There will be increased attention to ecological sustainable development (ESD) principles in residential and urban design. Improved accommodation options will be available for seniors and people with disabilities, including adequate supported accommodation facilities.

### How we will get there

The recently released Housing Plan for South Australia will provide the overarching direction for social and affordable housing initiatives in South Australia over the coming years.

It is critical that the supported accommodation needs of the homeless, people with disabilities and other high-needs groups be addressed. The supply of transitional and long-term housing options for Aboriginal people moving from rural areas and into regional centres will be expanded and coordination of infrastructure for essential services in Aboriginal communities improved. The Government's capacity to respond to the needs of homeless people will also be improved through the development of increased transitional, crisis and supported accommodation options. Innovative accommodation and support for people requiring assistance to maintain successful independent living in the community will be developed.

It will also be a leader in affordable housing innovation and a partner in providing and developing affordable housing in our community.

There will be increased support for ageing in the home and community-based accommodation options for people with a disability as an alternative to institutional care. Completion of the transition from institutional to community-based housing in the disability sector is a high priority.

The government will progress opportunities for the co-location of health, education and community services to achieve greater integration between agencies responsible for providing services to children. Coordination of infrastructure provision to support delivery of essential services in the APY Lands will be improved.

The State Government aims to use its housing assets and support services and infrastructure to improve the sustainability of communities and the quality and affordability of housing. Location, access to transport and services, community support and employment are crucial aspects of a healthy community.

The government aims to establish new joint-ventures between government, not-for-profit organisations, the private sector and local government to develop new affordable and high-needs housing and to support community aspirations for home ownership. In addition, affordability objectives will be incorporated in the planning system.

The government will work with local government and the private sector to stimulate market led responses to housing supply linked to rapid regional industry expansion and associated seasonal worker accommodation needs.

Urban regeneration in areas of disadvantage, including the Parks, Salisbury North and Playford North, will be accelerated to improve amenity for tenants and expand housing choice. Higher-density residential development near activity centres and transport nodes will be encouraged with support for more intensive infill redevelopment in appropriate urban areas through planning for land use and infrastructure augmentation. The greater uptake of ESD technologies in new residential developments will be encouraged.

## Energy

### Where we are now

The commencement of national energy markets and the privatisation of the South Australian energy industry have seen responsibility for energy supply transferred from government to the private sector. Under public ownership, supply augmentation costs were funded mainly by the community, partly through non-transparent cross-subsidies and/or long amortisation periods. Under private ownership, augmentation decisions are made on the basis of returns to shareholders and generally involve shorter payback periods. Electricity customers have experienced significant price rises following privatisation.

Although private companies now operate the electricity industry, the government has acted to reclaim a significant role in protecting the interests of the public.

The Essential Services Commission of South Australia (ESCOSA) has been established as a powerful regulator with a key objective of protecting the long-term interests of small energy customers. The government has also legislated for penalties of up to \$1 million for companies that breach licence conditions, and negotiated an agreement with the other states to support harsher penalties of up to \$1 million for electricity generators that spike prices in the electricity market by using inappropriate rebidding strategies.

The demand for electricity peaks on hot summer days primarily as a result of the increased use of air conditioning. The very high cost of meeting peak electricity demand increases the annual cost of supply to all consumers. Other states are also experiencing this peak-demand situation.

As a participant in the national electricity market (NEM), South Australia is supplied by a combination of local generation and energy imported from other states via the Murraylink and Heywood interconnectors. Forecast growth in demand for electricity shows that the state will need additional supply capacity toward the end of this decade. There are a number of options ranging from investment in new base-load generation or interconnector capacity through to increased use of renewable energy sources.

South Australia is highly dependent on gas for electricity generation and industrial use. The gas basins supplying the state are slowly depleting, signalling the future need for pipeline connections to new more distant basins.

The government worked with energy companies to ensure the completion of the SEA Gas pipeline from Victoria. The new pipeline has increased competition in the gas and electricity markets and improved security of supply.

The SASP targets an increase in the use of renewable energy to 15% within 10 years. South Australia leads the nation in wind capacity with nearly 500MW under construction or installed by 2006. The government approved the state's first wind farm at Starfish Hill and the Lake Bonney Stage 1 and Canunda wind farms are already supplying energy into the market. A number of other initiatives will contribute to the target, including a four-year extension to the government's subsidy for solar hot water systems; solar powering 250 schools by 2014; and the progressive installation of solar power in key government buildings, including Parliament House, the Art Gallery of South Australia and the South Australian Museum.

Other recent developments include facilitation of the state's first five-star green and energy-rated office accommodation through a government tenancy commitment, provision of government subsidies to minimise the impact of retail contestability in the gas market, provision of government funds to upgrade reliability of Kangaroo Island power, construction of a peaking plant in the Barossa and refurbishment of Playford power station.

### Where we want to be in 2015

The NEM will have further developed and, as a result, South Australia will have a more reliable and affordable supply of energy to meet the needs of the state. New economic activity will have improved the load factor for base-load electricity generation, and the application of demand-side measures will ensure that the peak load is better managed. In keeping with the SASP target, government will have reduced its energy use by 25% while renewable technologies will be effective contributors to the state's energy supply. Plans will be well advanced to provide South Australia with access to more gas supplies at competitive prices and to position the state in the national gas grid with connections to gas fields to the north of Australia as well as the south and east.

**How we will get there**

The State Government will promote and play its part in the development of an open, efficient and fully competitive national energy market to strengthen investor confidence and improve the overall supply-demand balance for the state. Additional private investment to augment electricity generating capacity in South Australia will be encouraged.

The electricity transmission and distribution network throughout the state will need to be upgraded and expanded to meet growth in industry, residential and commercial demand. The supply-demand balance for electricity will be improved through the adoption of demand-side measures that contribute to more efficient energy use and improved use of existing infrastructure.

Steps to improve the security of South Australia's gas supplies will be achieved, in particular connection of the SEA Gas pipeline to the South East gas system and to the Moomba–Adelaide Pipeline (MAP). In the longer term, further investment in gas infrastructure to connect South Australia, via the Moomba area, to gas basins to the north and north-west will be encouraged.

Research and development into promising renewable technologies will be encouraged including support for investigations for geothermal power opportunities currently being evaluated in northern South Australia

The government is committed to reducing greenhouse gas emissions and will work with the Australian and other state governments and industry to grow the renewable energy sector.

## Water

### Where we are now

The South Australian Government has introduced a range of measures to improve the management of water resources. The government was the first to establish a designated Minister for the River Murray and enact specific legislation, the *River Murray Act 2003*, to protect, restore and enhance the River Murray. Further, the South Australian Government played a key role in securing a national agreement to return 500 gigalitres per annum of environmental flow to the river. Significant funds have been allocated to a River Murray rescue package to undertake environmental works and other measures along the river.

Decisive action has been taken by the government to protect the water resources of the Mount Lofty Ranges. Significant progress has also been made in improving the management of the waters of the Lake Eyre Basin, Great Artesian Basin, Eyre Peninsula and the South East.

Permanent water conservation measures introduced for all SA Water customers are helping to reduce per capita consumption. Several recycling water schemes, stormwater and wastewater re-use schemes have been implemented to reduce stress on the state's freshwater resources.

There is increasing pressure on the long-term viability and sustainability of South Australia's water sources as a result of past poor land and water management practices, which will be strained further by population increases and a projected reduction in rainfall as a result of climate change. For South Australia, the health of the Murray-Darling river system is a top priority.

Past stormwater management practices and a poorly maintained network of stormwater drains have left some areas of Adelaide and other regional centres vulnerable to flooding.

While significant advances have been made in the re-use of treated wastewater in the Northern Adelaide Plains and the Willunga Basin, reducing the discharge of treated effluent into the sea, many parts of regional South Australia require improved wastewater disposal systems.

Action has also been taken over recent years to place water within the wider context of natural resources management. Under the *Natural Resources Management Act 2004* water resource management is now being integrated with other issues, such as dryland salinity and wetland ecology, as well as soil conservation and pest plant and animal control.

### Where we want to be in 2015

Sustainability of the state's water supplies will have been enhanced through substantial progress toward an additional 1500 GL of environmental flow for the River Murray and the

effective management of the impact of saline water on the river system, as well as the successful management of the state's other water resources. The National Water Initiative will have been implemented and the pricing of urban and irrigation water addressed. Water will be allocated toward uses of greatest benefit to the state. Improved water-use efficiencies will have been achieved among all water users, particularly water-intensive primary industries. Metropolitan Adelaide stormwater systems will have been upgraded through our water proofing Adelaide initiative with greater beneficial re-use of stormwater and wastewater. The impact of coastal sewage treatment plants on adjacent environments will be reduced. Wastewater will be managed effectively throughout South Australia.

### How we will get there

High priority will be given to the sustainable use of the River Murray by targeting future irrigation developments away from the river basin or to low salt impact areas, and developing further salt interception schemes. Barriers to water trade will be progressively removed through the National Water Initiative.

Sustainable use of the Mount Lofty Ranges Water Catchment will be achieved by allowing only land uses that have beneficial or neutral impacts on the quality of water harvested from the catchment. The government's Water Proofing Adelaide strategy and urban stormwater initiative will improve water management in urban environments.

The State Government, working closely with local government, will develop a program of priority stormwater works, based on appropriate flood management standards, to reduce flood risk and improve the quality of stormwater discharged to the environment as well as promoting cost-effective stormwater re-use opportunities. Improvements will be made to the management and operation of the Patawalonga and the Barcoo Outlet.

Joint State and local government action will be taken to reform the septic tank effluent disposal scheme (STEDS), including the establishment of works priorities, funding options and innovative management arrangements to improve its performance.

Opportunities for further re-use of wastewater from Bolivar, Glenelg, Christies Beach and other wastewater treatment plants will also be examined.

The development and evaluation of options, including desalination, to augment water supplies in regional and remote areas will be pursued.

Ongoing investment in refurbishing and upgrading the state's water infrastructure, including reservoirs, dams, water and wastewater networks will improve operational efficiency and service quality.

## Natural Assets

### Where we are now

Sustainable use of natural assets is vital for South Australia's future development. The 2003 State of the Environment Report provides an assessment of the condition of the state's natural assets, the pressures on them and current responses to these pressures.

The recent introduction of the *River Murray Act 2003* and the *Natural Resource Management Act 2004* provide the basis for major reform of the way the state develops its natural assets. Under this natural resource management framework, new management practices and investment strategies will enable long-term improvements to natural assets and provide a sound basis for a sustainable future.

More than 20% or 20 million hectares of South Australia has been set aside for conservation under the parks system and a further half a million hectares are protected by voluntary heritage agreements, largely as a result of South Australia's landmark vegetation laws. Improved land management practices have helped reduce soil loss and better irrigation techniques have increased the efficiency of water use. The declining health of the River Murray is now high on the public agenda and the recovery of a number of threatened species, including the Yellow-footed Rock-wallaby, Glossy Black Cockatoo, Tamar Wallaby and the Brushtailed Bettong have been success stories.

### Where we want to be in 2015

South Australia will have made significant progress in conserving and replenishing its natural assets, regardless of ownership. Public lands across the state will showcase nature conservation and attract widespread visitor interest. Regional natural resource management boards together with government agencies will be delivering management programs and investment strategies that improve the condition of natural assets. Consideration of the long-term effects on the state's natural assets and sustainability principles will be integrated into daily decision-making.

### How we will get there

It is necessary to develop and implement long-term plans for the conservation of key environmental areas. The government will establish five biodiversity corridors linking public and private lands and implement regional natural resource management strategies for the conservation and sustainable use of natural assets across the state.

The state's natural assets will be managed by both public and private landholders, and success will depend on the development of strong partnerships between the community and all spheres of government.

The drainage program in the upper South East and the salt interception schemes along the River Murray will be completed.

Infrastructure will be developed to protect and conserve parks and reserves and to maximise the benefits from increased tourism. An extensive redevelopment of Belair National Park to preserve its heritage values and improve visitor facilities has already begun. Tourism activity will be encouraged through the establishment of iconic sites for promoting the conservation of natural and cultural heritage. Investment in tourism accommodation in regional areas will be promoted to facilitate access to strategic tourism assets.

The Heysen Trail will be upgraded as an internationally renowned walking trail. Improved environmental and planning frameworks will be established to manage the increasing and often competing demands on coastal, estuarine and marine assets. This will be critical to the successful implementation of the Living Coast Strategy.

## Waste Management

### Where we are now

Measures taken by the South Australian Government were successful in ensuring that the state did not become a radioactive waste dump for the rest of Australia. South Australians are now leading the way in efforts to manage the state's waste responsibly. The state's first comprehensive waste plan is being developed to improve practices further.

The State Government is also working closely with local government to support the development of regional waste management plans, which will address waste infrastructure issues.

At present, metropolitan and regional communities rely on landfills to dispose of household and business waste. This practice is not sustainable. Waste disposal in landfills creates greenhouse gas emissions and other adverse environmental impacts, as well as removing the potential to derive higher value from materials through resource recovery and recycling.

Currently, about 65% of all recyclable materials are diverted from landfill, placing South Australia at the forefront of waste recycling in Australia. Approximately 88% of South Australian councils provide a kerbside recycling collection service and/or a drop-off recycling centre.

### Where we want to be in 2015

Metropolitan Adelaide and regional South Australia will have integrated waste management partnerships and facilities in place that minimise waste destined for landfills and maximise recycling opportunities. South Australia will also showcase best-practice ecological industrial precincts with supportive planning policies and infrastructure, encouraging operators to extract and convert waste into valuable resources for domestic and export markets.

### How we will get there

The state waste strategy will provide direction on the management of waste, including the planning and coordination of the supply of appropriately zoned, located and serviced land to accommodate waste recovery and recycling infrastructure.

The maintenance of an appropriate range of high-quality private sector waste material recovery, recycling, treatment and disposal facilities will be encouraged. Additional enclosed organic processing facilities will be required in the northern and southern metropolitan area, as well as additional domestic and industrial material recovery and recycling facilities to complement existing operations. New open windrow-composting facilities to service the metropolitan area and nearby rural communities will also be developed.

Approvals for new landfills to service metropolitan Adelaide will be discouraged while investigations into opportunities for alternative waste treatment and processing technologies to replace landfills are undertaken. Investigations and planning for the release of land at the EcoIndustrial Precinct will be completed.

Collaborative regional waste management strategies involving local councils and industry will need to be developed. Partnerships with the transport industry and new transport opportunities to encourage and increase the level of resource recovery and recycling in regional areas will be explored.

The government will promote the maintenance of an appropriate range of high-quality private sector recycling, treatment and disposal facilities for hazardous waste and will take steps to implement Environmental Protection Authority (EPA) recommendations to ensure appropriate management of radioactive material.

## Context for the planning period 2005/6–2014/15

### Population

Projections of population numbers, the rate of household formation, the age profile and geographical distribution of population, work patterns and lifestyle expectations all have implications for the future demand for infrastructure and services.

Like many other industrialised countries, Australia faces slow population growth and an ageing population as a result of declining fertility and mortality rates. Australian Bureau of Statistics (ABS) series B population projections suggest that the State's population will increase from around 1.54 million in 2005 to 1.58 million in 2015.

However, the ABS Series B population projections are very low as are its assumed future gains in the longevity of older people. Preliminary 'All of State' projections by Planning SA show that, given a more realistic 'medium scenario', population will increase to 1.62 million in 2015.

The changing age profile and location of population also have important implications for infrastructure.

While medium to longer-term projections of population growth are subject to a degree of uncertainty, on any set of plausible projections the South Australian (and national) population will progressively age over coming decades.

According to ABS projections, the proportion of South Australia's population aged 65 and over will more than double over the next 50 years – from around 15% currently to 31% in the middle of the century. Under the Planning SA medium scenario the proportion of the population aged 65 and over will increase from 15% to 29% over a similar period of time, but the absolute numbers are projected to more than double to 516,000 in 2050.

Over the period of the plan, the proportion of the population aged over 65 is projected by the ABS to increase by about 30%, compared to 28% under the Planning SA medium scenario. This will have a significant impact on demand for health services and for aged-care and residential services in all regions of the State. Similarly, the expected decline in the school age population will further increase unused capacity in schools, providing an opportunity to consider alternative uses for school assets. This effect will not be uniform. Areas with no new housing development may experience further declines in enrolments. However, areas with high levels of new housing development are likely to see an increase in enrolments.

The overall ageing of the population will increase the importance of both productivity growth and increased workforce participation in driving future increases in living standards. This makes access to modern and efficient infrastructure even more important to growing prosperity.

Over the next 15 years, population growth is expected to be strongest on the fringe of the Adelaide metropolitan area, the peri-urban areas around Adelaide (e.g. Mount Barker), places within commuting distance of Adelaide (e.g. Victor Harbor, Murray Bridge, Barossa Valley) and major regional centres servicing agricultural, aquaculture/seafood and mining industries. The general shift of population towards Adelaide and fast growing coastal towns is expected to continue. In contrast, some Upper Spencer Gulf cities and non-coastal grazing and grain growing regions will experience declines in population numbers.

Other trends that need to be considered in the context of infrastructure planning include the:

- increasing participation of women with children in the labour force
- growth in part-time and casual employment and the trend to combine study and part-time work
- growth in home-based care for the aged and those with disabilities
- trend to defer home ownership, marriage and child-bearing
- trend toward smaller average household sizes, with growth in household formation exceeding population growth.

The State's Population Policy aims to increase the rate of growth of South Australia's population to reach two million by 2050, by expanding the state's share of the national migration intake, increasing the number of expatriate and potential interstate migrants returning or relocating to the state and reducing the net outflow of young and skilled people.

Preliminary projections prepared for the State Government indicate that under a scenario where the targets of the population policy are achieved the State's population will grow to around 1.65 million by 2015. The following trends would also be observed:

- The population will still be growing in 2050, compared to the population declining from as early as 2028 under ABS projections.
- a significant increase in the working-age population to a stable figure of around 1.16 million by 2051, compared to a substantial decrease under ABS projections.
- a large increase in the absolute size of the elderly population as the large immigrant intakes age, with the proportion of the population aged over 65 years being approximately 27%.
- the number of children aged less than 15 years eventually stabilising by 2050 at little more than current levels, compared to a continuous fall in their numbers under ABS projections.

By 2015, the two million by 2050 scenario will result in growth rather than decline in the working-age population and a smaller decline in the school-age population, but no significant difference in the growth of the elderly population, compared to ABS projections.

Global competition for skilled labour and business entrepreneurs has elevated the importance of factors such as cultural vibrancy; political freedom and personal security; the quality of education, health and other social services and environmental quality; and modern and sophisticated infrastructure in influencing choice of migration destination. Infrastructure priorities identified in the plan will reflect the need to ensure that Adelaide and regional South Australia offer infrastructure and services to attract and support a growing population.

Skilled working-age migrants are most likely to settle where industry growth offers employment opportunities – Adelaide, outer Adelaide and major regional centres servicing value adding to primary production.

Progress toward the population target of two million by 2050, combined with the trend to smaller average households, will generate growth in demand for housing and related services. In the Adelaide metropolitan area, the urban growth boundary is expected to encourage increases in residential densities and infill housing, particularly in the inner and middle-ring suburbs. Higher densities could put pressure on the capacity of existing infrastructure in some of these suburbs.

## The Economy

Infrastructure planning needs to occur in the context of national and global economic trends. Falling trade barriers, rapid advances in communications technologies and cheaper and more reliable transport have led to the globalisation of markets. In addition global competition – for export markets, business investment and skilled labour – is expected to intensify. Infrastructure renewal will play a key role in strengthening the state's global ranking as accessible, well connected, affordable and an attractive place to live, work and do business.

South Australia's future growth will be shaped by trade developments, including new export opportunities created by multi-lateral and bilateral trade agreements and the emergence of new export markets in such countries as Korea, China and India. South Australian industry will require support infrastructure to take advantage of these new export opportunities and grow.

Australia is anticipated to continue to exhibit growth above the Organisation for Economic Cooperation and Development (OECD) average during the first half of the planning period, largely as a consequence of the continued weakness of European economies and growing linkages to rapidly growing Asian economies. According to forecasts by Econtech, South Australia is expected to record real Gross State Product (GSP) growth averaging just over 3% per annum until 2010–11, slightly lower than the expected national growth rate.

Forecasters also anticipate that current long-term trends in terms of the pattern of industry growth will continue, with services industries experiencing above average growth rates and primary and secondary production recording slower than average growth.

Providers of infrastructure and related services can be expected to have investment plans based on demand projections according to currently available forecasts of economic and population growth, rather than the targets set by South Australia's Strategic Plan. Under the plan, GSP growth is targeted to exceed the national average within 10 years and exports targeted to treble in value by 2013. In particular, the plan targets growth in exports of minerals, food, wine, motor vehicles, defence and manufactures and services such as tourism and education.

By attaining the targets in South Australia's Strategic Plan, the state will record a rate and pattern of growth above those in many economic forecasts. This growth will give rise to new demands on the state's infrastructure and, in particular, demand for energy, water, transport and communications services. The implications of these economic growth targets for infrastructure planning are discussed in more detail later in the section Industry Development Implications.

## Technology

Developments in technology during the period of the plan will influence infrastructure demands and also open up new opportunities and solutions to infrastructure issues. Technological advances that make possible provision of traditional infrastructure at lower cost or smaller scale can also be expected.

The volume of freight transported around Australia is expected to double in the next 10 to 15 years. Changes in transport and logistics systems to support moves toward 24 hours 7 days a week operations, and moves toward the use of larger-scale operations in areas such as warehousing and shipping, will have important implications for transport and land-use planning.

Continued growth in the power and range of applications for information and telecommunications technologies will have a significant impact on the way in which all sections of the community communicate, transact business and access services. These developments will generate new opportunities for investment in information and communications technology (ICT) infrastructure.

Broadband communication offers significant potential to improve delivery of a range of services, including health and education; increase business access to regional, interstate and foreign markets; and generally advance the capacity of South Australians to communicate with each other and the rest of the world.

Applications for mobile technology will also continue to grow in prominence as technologies such as 3G and wireless internet are implemented on a wider scale. South Australia is currently highly dependent on non-renewable energy. The long-term outlook is for a continued rise in the price of fossil fuels, which will put upward pressure on the cost of transport and electricity generation. While renewable energy sources are generally not currently cost competitive, ongoing development of technologies, in particular wind, solar and geothermal, offer the prospect of improved commercial outcomes and a rise in the proportion of energy supplied from renewable sources in the long term.

Population and economic growth will increase demand for water for residential and business use. Developments in water infrastructure to assist in the more efficient use of this finite resource, and to protect existing and develop new water sources need to be encouraged. Technological advances may be achieved in the life of the plan to improve the viability of recycling wastewater, harvesting stormwater and desalinating seawater or saline groundwater.

## The Environment

Planning for infrastructure must be based on the recognition that the economy, society and the environment are integrated. It is acknowledged that practices need to change to improve sustainability. Infrastructure developments to support targeted population and economic growth must be sustainable, promoting improved resource management practices and reducing reliance on non-renewable resources.

Australian cities emit relatively large amounts of greenhouse gases per capita. In this respect, South Australia is fortunate in having a relatively low reliance on coal as an energy source. The desire by Australians to reduce growth in greenhouse gas emissions, if translated into a national policy by the Australian Government, will encourage an increase in demand for gas relative to coal-fired electricity, as well as stronger growth in the use of renewable energy.

Transport is the greatest user of energy. The development of new fuels (e.g. biodiesel, hydrogen), smart technology in logistics and traffic management systems along with new vehicles (e.g. SmartCars, hybrid vehicles) could significantly reduce emissions. Modal shifts to rail for freight and to public transport for people in the metropolitan area also offer potentially significant greenhouse benefits.

Projections of climate change in South Australia from 2030 to 2070 are expected to reinforce existing trends<sup>5</sup>. Average temperatures and evaporation rates are predicted to rise and average rainfall to fall, with rising sea levels and an increase in the frequency of droughts and severe rainfall expected. While the predicted impacts of climate change accumulate slowly, reversing the effects takes even longer. Climate change will have potentially significant implications for land use and water infrastructure planning.

South Australia faces significant issues with respect to the sustainability of current water management practices in the Murray-Darling Basin, over-use of surface water in the Mount Lofty Ranges and of groundwater in the Northern Adelaide Plains and parts of the South East. The use of new wastewater management practices also offer opportunities for investment in new infrastructure to accommodate growth and development and reduce potential for further environmental degradation.

Continued growth in solid wastes generated by households and industry requires the development of innovative disposal or recycling solutions. Further developments in commercial technologies for resource recovery and re-use are expected to stimulate investment in well-located waste recovery and recycling infrastructure, which will lead to an increase in the proportion of waste diverted from landfills.

Infrastructure planning must also have regard to the need to protect and conserve South Australia's wealth of natural assets and biodiversity, reserves, coasts and cultural heritage assets.

## Industry Development Implications

South Australian industry is a major user of infrastructure, in particular transport and telecommunications services, serviced land, and energy and water. A sound infrastructure base is essential to achieving the state's growth targets by increasing its attractiveness as a location for investment and the competitiveness of industry in global markets.

South Australia's Strategic Plan provides clear direction on the state's industry development priorities, to guide infrastructure investment decisions.

The broad infrastructure priorities for key sectors over the planning period follow. A more detailed discussion of specific infrastructure issues related to particular industries in specific regions of the state is provided in the regional section of the plan.

### Minerals

South Australia offers significant potential for growth in minerals production. The most prospective areas are located in the far north of the state: the Musgrave Block, Gawler Craton and Curnamona Province.

Historically, the mining industry has been the principal provider of its built infrastructure required for resource developments, which are often at remote locations. New resource developments typically have requirements for power, transport and water. World Trade Organisation (WTO) obligations prevent governments from providing financial assistance for developments outside of public multi-user infrastructure.

The mining (and subsequent processing) industry has a particular need for coordination across the public and private sectors to deal with infrastructure issues associated with major resource development projects. Current examples include the State Government-led teams established for the expansion of Olympic Dam and OneSteel.

High priority infrastructure developments to facilitate future mining industry growth are:

- to confirm energy, water and transport access to support the proposed expansion of Olympic Dam and other mining developments at remote locations.

### Agri-food

Growth in grain and meat and horticultural production to achieve SASP targets will place additional demands on infrastructure in those parts of the State where the industries are concentrated. High-priority infrastructure developments to support export led growth are:

- efficient transport networks providing access to export markets
- an efficient water trading market and water distribution network
- energy supplies to support increased value-adding activities
- waste management and composting facilities.

Abattoir and meat processing capacity is expected to expand, particularly to the north of Adelaide, in the Riverland and the South East. Growth in grain production and value-adding will be wide-spread across the state. Growth in horticulture is expected in such regions as the Riverland, Adelaide plains and mallee, stimulated through innovations in packaging and processing, while the focus for growth of the dairy industry will be the South East. This growth will increase demands in these regions for water and energy, particularly to support additional processing activity. Road and rail networks and port facilities will need to accommodate additional freight activity. The major regional centres servicing these industries will see an increase in demand for social infrastructure.

### Wine

Significant expansion of viticulture plantings is planned to support the achievement of growth targets for the wine industry, and will require additional supplies of water. Possible future sources include reallocation through national water trading, efficiency gains and greater use of treated wastewater.

To achieve targeted growth of the wine industry, other high priority infrastructure developments are:

- transport and logistics systems for efficient movement of export product
- upgrade to and consolidation of wine research capabilities.

### Aquaculture and Fishing

The most significant infrastructure requirement to support expansion of the aquaculture and fishing industries is new or upgraded wharfing facilities, at selected points around the coast, to enable vessel berthing and offloading of catch and equipment. Additional demands for water, energy and waste infrastructure are also expected. The establishment of enhanced research and development capabilities will be important to ensure that the industry remains on a sustainable long term growth path.

### Bioscience

South Australia's bioscience industry has recently experienced rapid growth. The industry requires access to advanced computing and information infrastructure capabilities and specialised laboratory and other facilities. The Thebarton Bioscience Precinct has successfully facilitated the establishment of and growth in a number of start-up companies through the provision of such facilities.

Establishment of business incubators and further development of specialised laboratory and other facilities is planned to support expansion in bioscience activity at Thebarton, the Florey Precinct and the Waite campus of the University of Adelaide.

### Defence

Port Adelaide offers an attractive strategic site for the construction and fit-out of large surface vessels for the Royal Australian Navy. According to the master plan for the proposed Osborne Maritime Precinct, the key infrastructure requirements are:

- sixty hectares of land dedicated to naval shipbuilding and supporting industry
- a new shiplift, transfer system and multi-user wharf and fit-out sheds
- dredging to enable berthing of large vessels.

The Australian Defence Force is considering more intensive use of the Cultana Training Area between Port Augusta and Whyalla. This activity would require upgrades to local transport infrastructure.

There is potential for the Australian army to increase its full-time presence in South Australia. Depending on the selected location and the additional numbers to be accommodated, this may generate demand for new barracks, housing and community facilities to support the needs of families relocating to the state.

There is a potential to significantly increase use of the Woomera Test Range by international clients and the Department of Defence. This will require an upgrade to Woomera's ICT capabilities to improve its capacity to capture, record and transmit high volumes of data.

The Department of Defence is considering the establishment of an air warfare destroyer combat systems centre at Technology Park, Mawson Lakes. This will require accommodation for an estimated 300 people.

### Automotive

The automotive industry is a significant contributor to South Australia's economic prosperity. High-priority infrastructure developments to facilitate industry growth include:

- Access to quality serviced industrial land located close to major freight routes and ports or intermodal facilities.
- Modern transport and logistics networks to support the just-in-time delivery of components to assembly lines and timely and efficient movement of exports.
- A competitive and reliable supply of energy.
- Broadband capacity to enable secure high speed communications along the supply chain.
- Modern education and research infrastructure to support the development of a skilled workforce, and to accelerate the commercialisation and take up of new technologies.

These developments will also support growth in general manufacturing.

### Tourism

Growth in tourism activity is expected to centre on a number of attractions unique to South Australia with their related accommodation and retail facilities. Provision of support infrastructure in a coordinated manner is required.

High-priority infrastructure developments to facilitate growth in tourism are:

- upgrade of major transport gateways
- fit-for-purpose road networks to key attractions
- increased air services to and within the state
- improved road and tourism signage
- additional thematic accommodation and day-visitor facilities at key locations.

### Construction

The construction and related industries play a key role in building, maintaining and upgrading the state's built infrastructure. It is important to maintain a viable local industry with the key capabilities required for complex major infrastructure projects.

The State Government is committed to the National Framework on Australian industry participation in major projects.

The government is also developing a policy to encourage increased involvement of South Australian small and medium enterprises (SMEs) in public sector major projects and contracts.

The new policy will provide a framework to guide government agencies in maximising opportunities for the involvement of SMEs in procurement. The revamped Industrial Supplies Office, renamed the Industry Capability Network South Australia (ICNSA) will be actively involved in supporting implementation of this policy.

## Delivering The Plan

### Changing the Way We Do Things

Effective implementation of the Strategic Infrastructure Plan requires fundamental changes to the way infrastructure is currently planned and delivered.

The government's role in infrastructure today is different to that of 10 years ago. It continues to have a significant role providing the infrastructure that underpins the delivery of key community services, such as health and education. But the government is no longer the sole provider of economic infrastructure, with delivery of services such as energy, some transport and water now either outsourced or owned by the private sector.

The foundation for infrastructure planning is provided by South Australia's Strategic Plan, which establishes the broad long-term priorities for the state (see Appendix 1). This will continue to guide the development of strategic infrastructure priorities that best meet the government's objectives.

The Strategic Infrastructure Plan calls for a coordinated, efficient, sustainable and innovative approach to infrastructure provision to improve the state's position for the future. It will also identify the state as a place that is willing to tackle and progress hard issues to improve the living standards of all South Australians. This requires a major shift in the way government and private sector providers plan for, deliver and manage infrastructure.

Government processes will have to change. This involves moving the State Government's approach to capital planning away from the annual competitive bidding process by individual agencies. A culture of managing across portfolios rather than within portfolios will be fostered. The emphasis will be on meeting prioritised needs and adopting the most appropriate funding method for each project.

The success of the Strategic Infrastructure Plan over the next ten years will rely upon very close cooperation between the State Government and business and other levels of government. The Strategic Infrastructure Plan is a plan for the whole of government and for the whole of South Australia to guide investment in new infrastructure and the use of existing infrastructure.

The plan, which enables business and other levels of government to be aware of the State's infrastructure priorities over the next ten years, is intended to support a partnership of all the players, which is central to its success.

### Strategic Priorities

- Foster a culture of managing across rather than within government portfolio structures, driven by South Australia's Strategic Plan to support better outcomes.
- Develop an integrated and more rigorous whole-of-government and whole-of-state approach to identifying and prioritising infrastructure requirements.

## Working with the Private Sector

Microeconomic reforms over the past decade and privatisation of traditional government infrastructure provision means that the government is no longer the main decision maker in many infrastructure sectors. Nevertheless the government has a keen interest in ensuring that private providers deliver an adequate level of service to complement its economic, social and environmental development aspirations for the state.

Regulatory arrangements applying to markets for infrastructure and services may need periodic reform to ensure that there is an appropriate sharing of risks and benefits. Additionally, regulations must provide sufficient incentive for large-scale long-term investments while supporting competition where appropriate.

A fresh approach is needed to the way government does business with the private sector to meet the state's infrastructure requirements in future. An open and transparent partnership between the State Government and business, together with the Australian and local government is essential.

Once priority projects have been properly scoped and substantiated, a full range of public and private sector delivery options will be considered with a view to optimising private sector involvement whilst maintaining the highest standards of integrity and meeting appropriate probity requirements. The emphasis will be on removing barriers to private sector investment and the proper structuring of projects to ensure best practice outcomes for the state. Processes will aim to minimise transaction costs for the private sector, consistent with the need for attention to be given to requirements for competition, regulation or service standards.

Where a company has an innovative and unique proposal that addresses priority needs, it may require assurances concerning protection of its intellectual property. In such circumstances, government should be able to provide them.

The government should also have the capacity to strike sensible, open and transparent deals involving a contracted lump sum price, provided the public interest is protected by assuring it that a fair price has been agreed. This can be achieved where the public sector has independent data on costs of delivery, which can be obtained through market testing and a range of other approaches.

A further factor to be considered is the appropriate balancing of cost against risk. Where the private sector assumes a substantial set of risks, this will be traded off in the price charged to the public sector. This arrangement may represent 'value for money' to the taxpayer, depending on the assessment of costs and benefits. However, where the government and the public pay for risk, it is inappropriate for them to compensate the private provider if things go wrong. This would be akin to paying for something twice.

In deciding on the trade off between risk and cost, each case must be assessed on its particular circumstances and merits. The government must balance the public interest against a range of factors. There is no single best way to deliver major projects efficiently in the public interest. Rather, the government must be flexible and keep all options open to ensure the efficient and effective delivery of the infrastructure, ensuring always that arrangements satisfy rigorous standards of probity and propriety.

### Strategic Priorities

- Implement procurement reforms that preserve high levels of probity but allow the state to capture the benefits of innovation by the private sector.
- Improve coordination between government and private sector infrastructure providers in the project development and scoping stages.
- Ensure streamlined approvals processes are in place to support the delivery of innovative, fit-for-purpose infrastructure solutions.
- Ensure that government procurement processes maximise opportunities for local industry participation in infrastructure projects.

## Priorities

The plan presents an overarching strategic framework to guide infrastructure planning by public and private sector infrastructure providers over the coming five and 10 years. It nominates proposed strategic infrastructure priorities from a whole-of-state perspective and specific initiatives, with associated timeframes, to address infrastructure needs. These initiatives include new investment opportunities, ways to make better use of existing assets and options for deferring costly capital expenditure by better managing demand.

For the purposes of this plan the initiatives within each of the 14 infrastructure sectors have been assessed according to their state-wide significance and assigned a preliminary ranking of 1, 2 or 3. The rankings do not reflect any final government commitment and should not be used for comparing the significance of projects between sectors or regions. Rankings have been determined by looking at whether the initiative:

- makes a positive and sustainable contribution toward the achievement of one or more targets in the SASP
- builds on existing state strengths or addresses weaknesses with respect to economic, social or environmental development
- takes account of the advice of key public and private sector stakeholders
- directly addresses an infrastructure-related constraint to sustainable development and improved living standards for the state
- improves performance of the state's asset base.

There are targets not only for the State Government but local government, the Australian Government and private investors. It should be noted that priorities have been attached to projects that are the responsibility of stakeholders outside of the State Government. This is in recognition that the challenge to provide infrastructure in the new century will require unprecedented levels of coordination between the State Government, private investors, the Australian Government and local government. Not all priority projects can, should or will be funded by the State Government.

The identification and initial prioritisation of strategic initiatives completes the first step in a new approach to infrastructure planning and delivery. A staged process will follow, discussed in more detail below, of developing, assessing and refining project proposals to address the identified needs and priorities. In most cases, the initiatives proposed in this plan are yet to undergo this process of more rigorous evaluation. Project proposals that successfully pass this appraisal process will then compete for available private or public funding.

Along with the rankings, a sphere of government or the private sector is identified as having lead responsibility for further development of each infrastructure initiative and completion of a project appraisal process. The project rankings proposed in the plan may be modified as a result of this process.

In those areas where the State Government has a funding role, it is anticipated that projects ranked '1' will receive first consideration. However, decisions on projects to receive funding and the timing of such funding will depend on the outcome of the full project appraisal process discussed below.

## The New Planning and Delivery Framework

South Australia's Strategic Plan targets increased investment in infrastructure. This is an investment in the future of the state and a fundamental tenet of intergenerational equity and prosperity.

In its May 2003 framework report, the Economic Development Board (EDB) recommended that the government adopt a strategic capital investment approach that is consistent with the priorities in South Australia's Strategic Plan (Recommendation 18). The Board has also called for a two-stage process where the business case is developed and approved before approval of the funding method (Recommendation 61).

Annual agency-by-agency bidding for capital funds is not always conducive to delivering the desired strategic outcomes. Decisions on capital priorities may be influenced more by the level of funds traditionally allocated to an agency, rather than the strategic priority of the particular proposal.

The current process often assumes that the project will either proceed as a capital funded project or not at all. As a result, opportunities for better asset management, redevelopment initiatives or private sector participation may not be fully explored.

An increasing number of projects require negotiations with private operators or users for a cost sharing or financing arrangement. Changes to the budget process are required to assist the government to successfully conclude such negotiations.

There is a clear need for the development of appropriate business cases and project plans, including the full exploration of opportunities for better asset management, redevelopment initiatives or private sector participation, before a budget allocation is made to a project. Too often the lack of such preparatory work has resulted in a need to revise the budget or, alternatively, tailor the project to meet the budget, sometimes at the expense of project objectives. The development of the Strategic Infrastructure Plan marks a shift toward a more strategic and holistic approach to investment in infrastructure.

A new five-step approach to developing and funding infrastructure projects is presented below.

## Strategic Level

### 1. Identify the Service Need

Step 1 is the identification of the state's infrastructure priorities in this Strategic Infrastructure Plan. These will be further evaluated and/or refined by the government through an ongoing strategic infrastructure planning process focusing on a five and 10 year timeframe and responding to the objectives of South Australia's Strategic Plan.

This new approach has commenced with the preparation of the Strategic Infrastructure Plan, which provides overall direction on strategic infrastructure priorities to guide the preparation of individual agency forward plans.

The guiding principle for agencies is whether the project is consistent with South Australia's Strategic Plan, the Strategic Infrastructure Plan and other agency plans and specific infrastructure priorities as determined by Cabinet.

### 2. Outline the Case for Change and Define the Services Required

Step 2 is the definition by agencies, in association with the Office for Infrastructure Development and the Department of Treasury and Finance, of the required services and the scope of projects that will address the state's strategic infrastructure priorities. Agencies at this stage will apply a whole-of-government approach to the development of an outline case for each project, showing:

- required services to be delivered
- preliminary costs and timeframes
- a review of the existing asset base to identify opportunities for redevelopment or disposal of assets
- a well-argued case for the project, clarifying its objectives, in view of competing priorities
- initial analysis of affordability, funding method and budget impact
- the results of initial consultation with key government agencies to ensure alignment of potentially conflicting policy objectives, and the possible inclusion of additional supporting agencies

This process essentially leads to a short list of projects that have been adequately scoped and are then approved by the government for further detailed analysis.

## Project Level

### 3. Substantiate and Assess the Project

Step 3 involves the development of a full business case or justification for the project, through the following series of parallel processes:

- presentation of reasons for the project
- design development for the project
- identification of sustainability targets for the development.
- development of whole-of-life project costs and benefits, including a triple bottom-line assessment
- consideration of hurdle rate of return concepts, where relevant
- identification of financing options, including budget impact, if any
- discussion of procurement options
- advice on development consents required
- the results of more detailed consultation with government agencies
- discussion of the government's role
- recommendations.

Agencies may need to be granted an allocation of funds to support the development of the full business case.

A structured and well-rounded process will be applied to all projects to evaluate their economic, social and environmental impacts, both positive and negative. Other factors influencing the strategic priority of projects will also be considered, to derive their score or ranking within infrastructure sectors.

At this stage the project is ready to be endorsed by Cabinet as meeting the criteria for project approval.

#### 4. Determine the Funding Method and Resource Allocation

Step 4 involves determining the funding method, which may include an allocation of state capital funds that may need to be drawn down for the project. A state capital allocation may be submitted as a budget bid, or Cabinet could be asked to approve a draw down of funds as the need is established from an earlier budget allocation.

Consideration is also given to opportunities for private provision and/or funding of the project, as well as local or Australian Government participation.

Opportunities for private sector participation in the project will be reviewed, according to key criteria established in the Partnerships SA document, 'Private Sector Participation in the Provision of Public Services – Guidelines for the Public Sector'.

At this point, Cabinet is able to approve the funding method for the project and any appropriations that are required.

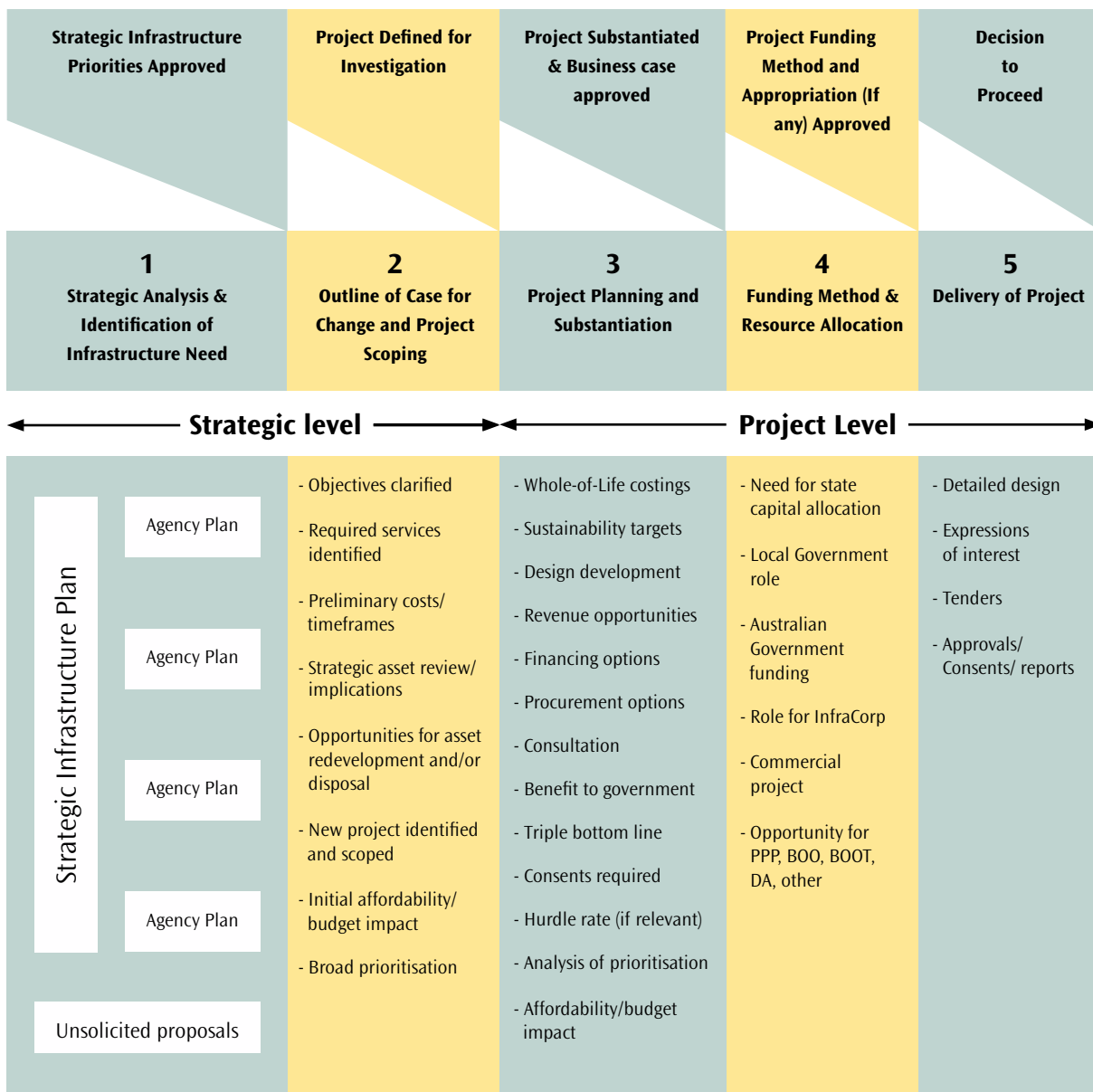
#### 5. Deliver the Project

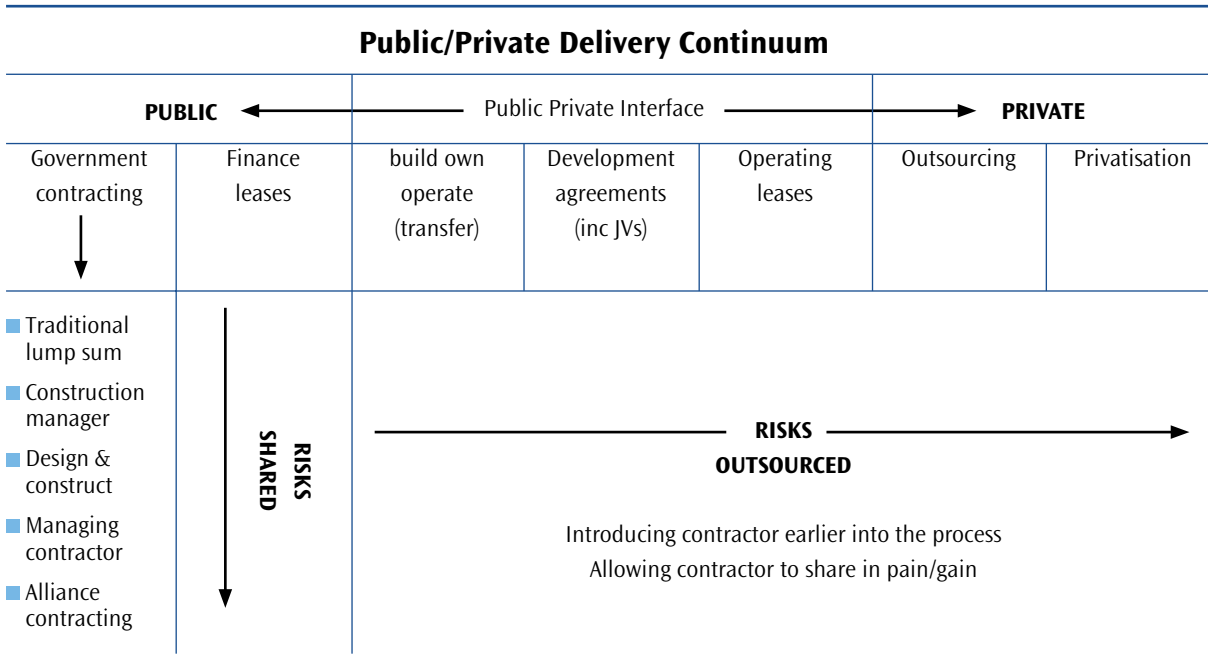
Step 5 is the detailed design and procurement stage for the project and may involve:

- determination of the best forms of contracting
- implementation of expression of interest and tendering processes
- negotiation of contracts and development agreements
- compliance with all government probity and other policy requirements.

This process is illustrated on the following chart.

### Proposed Infrastructure Planning And Delivery Framework





The process advocates consideration of a full range of public and private sector delivery and funding options. Although not exhaustive, possibilities are illustrated on the diagram above and will be subject to current government policy commitments on private sector delivery of ‘core’ services.

Objective identification of infrastructure needs to support South Australia’s Strategic Plan (Step 1 above) does not imply any delivery commitment from either government or the private sector, or funding obligations, which will be the result of separate decisions. The important objective is to present a true representation of overall infrastructure needs to meet the functional needs of the state and from this point, decisions on matters such as priority, delivery and funding can be made by the State Government or other appropriate authorities.

Disciplined budget management in recent years has cut state debt by nearly a third to less than 5 percent of GSP, without resort to privatisation. Ratings agencies have restored the state’s AAA credit rating. This provides scope and flexibility for judicious and responsible infrastructure investment by the public sector.

The state’s balance sheet can accommodate quality investment in infrastructure that will lift the productivity and growth performance of the economy. This conclusion was reached by an expert Infrastructure Finance Group chaired by Dr Barry Hughes, Chief Economist at Credit Suisse Asset Management. Its principal conclusions are reflected in the plan.

Today, there is a broad range of options available for financing investment in public infrastructure. However, projects will only be funded once their merits have been established clearly.

The extent to which State or local government can access Australian Government grant programs will be reviewed. State/federal funding agreements for health, housing and education will also be scrutinised. Innovative approaches to service delivery having national significance may also attract funding.

### Strategic Priorities

- Ensure all funding and procurement options are considered for projects identified as of high strategic priority for the state, including debt, Australian Government funding, and a full range of public sector contracting and private sector delivery options.
- Develop a more strategic and integrated approach to influencing Australian Government policy and accessing Australian Government program funding.

## Management of Government Assets

Improving the current approach to asset management will provide many opportunities for the state to achieve better outcomes for the provision of infrastructure.

There is a general overcapacity of built assets across government, but it is more often reflected in under-used and poorly maintained buildings and sites than vacant facilities.

Traditionally, all three spheres of government have thought independently about their built assets consistent with the historical division of responsibilities. However, significant progress has been made in recent times towards the use of collaborative state-local government approaches to address a range of infrastructure issues. There is the potential for greater coordination and cooperation between the spheres, which will deliver better service outcomes and value.

Opportunities for better use of public assets have been outlined in various sections of the plan. Over time, the shared use of better located facilities will help to improve the efficiency and effectiveness of a wide range of services.

Decisions on retention or replacement versus disposal of assets must be considered in the same whole-of-government context required for decisions on new investments. Optimisation of the whole-of-government asset base is expected to provide better outcomes for the state than optimisation on an individual agency basis.

The identification of priorities for investment, redevelopment or changes in use of government infrastructure, requires sound up-to-date knowledge of the condition, use and performance of existing built assets. Such strategic planning in government has been hampered by the lack of consistent and comprehensive information on both assets and their service delivery capabilities.

The government's Strategic Asset Management Information System (SAMIS) will give all government agencies that rely on a significant built asset portfolio to deliver services, the capability to systematically and objectively prioritise works to remedy deficiencies with regard to asset capacity, suitability and condition. The system can also be used to support a broader whole-of-government approach to asset management. Once fully operational, SAMIS will help in the prioritisation of works programs in health, education and training, recreation and sport, justice, and the arts.

Work has also begun on establishing a broader database of information on all areas of infrastructure covered by the plan. Improved access to such information will help infrastructure providers to make investment decisions and families and businesses to make decisions about where to live or start a business respectively.

The adoption of proper asset management practices is critical to ensuring that the whole-of-life cost of the state's asset base is minimised. This includes analysis of appropriate data to understand how built assets perform over their design life to inform future capital works decisions and ongoing asset management.

### Strategic Priorities

- Ensure that systems and processes are in place to monitor the condition and use of government-owned assets, so as to minimise their whole-of-life costs and so that accurate and timely decisions can be made about their repair and maintenance, replacement, redevelopment or disposal.
- Develop and promote more collaborative approaches both within and between spheres of government for the management and use of infrastructure assets.
- Develop strategies to improve knowledge about assets and support the adoption of sound asset management practices by infrastructure providers.

## Critical Infrastructure Protection

The State Government has established a partnership with industry and other Australian governments to implement nationally consistent arrangements for the protection and resilience of infrastructure in the face of a range of natural and other hazards. Infrastructure identified as critical to economic and community wellbeing includes some key electricity generation facilities, gas supply systems, water storage and distribution assets, telecommunication and data networks and a number of major hospitals.

Owners and operators of critical infrastructure are expected to have robust risk management strategies in place, to ensure adequate levels of asset protection, minimum points of failure, appropriate emergency responses and rapid recovery arrangements. Major interdependencies between items of critical infrastructure also need to be understood and taken into account in plans and redundancy arrangements. Strong communication links have been established to ensure timely warning, transfer of intelligence and security information and collaboration in emergency planning.

The government will support consultation, education and training opportunities for owners and operators of critical infrastructure in risk management and protective security, and will encourage them to participate with governments in any exercises to test plans and response, recovery and redundancy arrangements.

The likelihood of more extreme events (e.g. fire and floods) arising from climate change and sea-level rise will require new approaches to risk management to be factored into infrastructure investment, particularly for coastal and stormwater infrastructure.

### Strategic priority

- Ensure that infrastructure owners and operators throughout the state have appropriate risk management plans and business continuity and redundancy arrangements in place for all critical infrastructure.

## Implementation of the Plan

The Strategic Infrastructure Plan for South Australia is the first major step forward in developing a more coordinated, efficient, sustainable and innovative approach to infrastructure provision. It provides direction to other spheres of government and the private sector on the government's priorities for South Australia. It also provides a framework to guide more detailed infrastructure planning by state agencies.

The plan proposes action, in response to the preliminary priorities identified, by the various entities listed as having lead responsibilities. The State Government seeks the support of these entities to work collaboratively to verify and confirm the infrastructure issues in the plan and to scope out and develop business cases for projects to address them.

Preparation of the plan gives effect to Step 1 of the new approach to infrastructure provision described above. The selection of issues and projects for inclusion in the plan has been driven by their strategic fit with South Australia's Strategic Plan and their potential to underpin the state's progress toward a stronger economy and community. Further development and assessment of potential solutions or projects, along the lines described in Steps 2 and 3, is the first task in implementing the plan.

Success in delivering the plan will be demonstrated by the provision of more accessible, reliable and affordable infrastructure-based services, improved connectivity between South Australia and the rest of Australia and the world and a strengthening of the state's 'clean and green' credentials through integration of sustainability objectives in infrastructure decision making.

The government invites all providers and users of infrastructure throughout the state to contribute to the task of implementing and refining the plan.

While comprehensive, it is acknowledged that the plan may not have captured all infrastructure issues that South Australians regard as important to the development of this state. The government is keen to receive information and advice from business and community groups on infrastructure issues of strategic significance. Proposals for innovative infrastructure projects which will contribute directly toward the achievement of South Australia's Strategic Plan objectives and targets are welcome.

The government also intends to seek expert advice from key infrastructure providers on the implementation of the plan.

The plan will be updated to incorporate new infrastructure priorities as they emerge.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Further develop and refine assessment tools for prioritising infrastructure proposals <b>*Lead – State Government</b>	U/way	*		1.16 5.11
Work with other jurisdictions to harmonise procedures and identify ways to decrease bid costs for private sector involvement in infrastructure development <b>Lead – State Government</b>	U/way	*		1.18
Complete the roll-out of the Strategic Asset Management Information System (SAMIS) to improve the overall level of information on government built assets and their performance <b>Lead – State Government</b>	U/way	*		1.18
Undertake the planning, standard setting, training and consultation necessary to protect critical infrastructure <b>Lead – State Government, private sector</b>	1	*		1.16
Implement the strategic five step approach to investment in infrastructure <b>Lead – State Government</b>	1	*		1.16 5.11
Reform public procurement processes to enable more innovative approaches to delivery and funding of infrastructure investment while maintaining high standards of probity <b>Lead – State Government</b>	1	*		1.18 1.6
Build public sector skills in procurement, contract management and asset management <b>Lead – State Government</b>	2	*		1.18
Monitor and report on progress in implementing the plan's priority initiatives <b>Lead – State Government</b>	2	*	*	1.18
Establish more rigorous reporting requirements for government agencies with respect to asset condition, use and performance <b>Lead – State Government</b>	3	*		1.18

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



# Delivering The Plan



## State Challenges and Opportunities Contents

Transport

Land

Information and Communications Technology

Education and Training

Science, Technology and Innovation

Justice and Emergency Services

Recreation and Sport

Arts, Culture and Heritage

Health

Community Services and Housing

Energy

Water

Natural Assets

Waste Management

## Link to South Australia's Strategic Plan Objectives

The development of an efficient, affordable and safe transport system throughout South Australia will contribute toward the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Business climate</b>	Maintain Adelaide's rating as the least costly place to set up and do business in Australia and continue to improve our position internationally. (T 1.4)
<b>Exports</b>	Treble the value of South Australia's export income to \$25 billion by 2013. (T1.12)
<b>Tourism industry</b>	Increase visitor expenditure in South Australia's tourism industry from \$3.4 billion in 2001 to \$5 billion by 2008 by increasing visitor numbers and length of stay and, more importantly, by increasing tourist spending. (T1.13)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 2: Improving Wellbeing

<b>Road safety</b>	Reduce road fatalities by 40% by 2010, with an ongoing focus on reductions in fatalities and serious injuries across all modes. (T2.9)
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### Objective 3: Attaining Sustainability

<b>Use of public transport</b>	Double the use of public transport to 10% of weekday travel by 2018. (T3.9)
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### Objective 5: Building Communities

<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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## Background

The transport network is financed, owned and operated by a large number of public (Australian, State and local government) and private organisations. The State Government is responsible for the provision, operation and maintenance primarily of roads and has a role in other components including rail lines, ports, jetties, ferries and aerodromes. The users of the transport network are primarily private sector people and organisations that pay infrastructure owners access fees either via direct access charges or indirectly through registration/licensing fees and fuel excise.

The Australian Government AusLink Green Paper indicated that the current approach to planning, developing and funding our national land transport network will not meet the challenges of supporting economic growth, social development or personal mobility. 'Without major reform now, Australians over the next twenty years will have a transport system that increasingly fails to meet their needs.

Nationally, the majority of domestic freight, measured by tonnage and value, is moved by road (72%), followed by rail, sea and air. However, when distance carried is taken into account (by assessing tonne kilometres), road, rail and sea have very similar use (37%, 35% and 28% respectively).

There are almost 97,000 km of road in South Australia, including 75,000 km of local government roads (80% of which are unsealed) plus 10,000 km of unsealed roads out of council boundaries. The replacement value exceeds \$13,000 million. The current maintenance program for State Government roads is extensive, with local governments facing a similar requirement. Continuing traffic growth, in particular freight, will increase the rate of wear and tear on transport infrastructure.

The quantity of freight moved has increased by 70% during the past two decades and is anticipated to double again from 2002 to 2020. If the proportion carried on roads is maintained, it will have a major impact on urban congestion, pollution, energy depletion and safety. While metropolitan Adelaide has a fully developed arterial road network, there are bottlenecks on some of the identified freight roads through the city that can be removed by well-targeted investment in road and intersection upgrades. In regional areas the network in many places is underutilised; however, hot spots have developed, particularly where industry has outgrown the existing infrastructure, e.g. such as the Barossa.

Marine assets in South Australia range from major ports to jetties, boat ramps and marinas, navigation aids and breakwaters. The major ports (with the exception of those that service Kangaroo Island) are privately owned or controlled by Flinders Ports under Government administered 'port operating agreements'.

In 2001, Port Adelaide (including Outer Harbor) was the sixth ranked port in Australia in value of goods moved (\$5,900 million) and moved 34% more TEUs of containers in 2002 than in 1998. Other export ports include Thevenard, Port Lincoln, Whyalla, Port Pirie, Wallaroo and Port Giles, primarily concentrating on grain exports and farm inputs, such as fertilizers.

There are about 5,000 km of rail line in South Australia, including 240 track-kilometres for the metropolitan train and tram system. The Australian Government's Australian Rail Track Corporation manages 40% of the network and private companies own or lease half of the system. The State Government manages the remainder of the network, which includes the metropolitan, South East and heritage lines. The network is a mix of narrow, standard and broad-gauge track.

Adelaide is connected to all mainland capital cities including Darwin via the recently completed \$1.4bn Adelaide to Darwin rail project.

There are 400 airports, aerodromes and airstrips in South Australia. Of these, 46 are owned by local governments, 14 by the State Government, 6 by the Australian Government and the remainder by community and private interests.

The State's main air freight and passenger gateway is Adelaide Airport, with its recently completed runway extension. A new state-of-the-art international and domestic terminal will provide quality passenger and freight facilities and services for the foreseeable future. Both freight and passenger movements are expected to grow. Adelaide's other airport, Parafield, houses the State's primary civilian flight training centre and small craft airport.

## Challenges and Opportunities

### Road

The Bureau of Transport and Regional Economics has estimated that the cost of congestion on Adelaide roads in 1995 was \$0.8 billion and will grow to \$1.5 billion by 2015. While this is significantly lower than the congestion cost in any other mainland state capital city, decreases in these costs will have a positive impact on the economy of the state. Reduction in congestion levels will be more efficiently achieved by changes in network user decisions (e.g. greater use of rail for freight and public transport for passengers); however, strategic infrastructure developments such as the Port River Expressway (PRExy), establishment of dedicated freight routes and the construction of passing lanes will also have an impact.

To this end the State Government has pledged to build a 600m tunnel on South Road under Grange Road, Port Road and the Outer Harbor to Adelaide passenger rail line. An underpass at the South Road-Anzac Highway intersection will also be built. The tunnel and underpass will improve the flow of traffic at two of the states most congested bottlenecks.

Most of the road network in regional South Australia was laid out a century ago to connect town centres. The heavy freight traffic passing through these towns may conflict with the retail, commercial and tourism activities and the social hearts of these communities.

Road freight companies have been moving to larger vehicles. These vehicles have improved transport efficiency. Some of the older industrial estates do not permit approved B-double access. Rail operators are increasingly prohibiting the use of B-doubles and other over-dimensional vehicles on routes that cross rail lines.

These impacts can be contained in metropolitan and regional areas by the identification and protection of designated freight routes. Movement of freight along these designated freight routes should be facilitated by the use of extended time clearways, traffic signal coordination matched to truck speeds, and road surface treatments that minimise road noise.

The location of major metropolitan industrial areas in a broadly north-south alignment to the west of the city centre results in substantial and growing demand for freight movement along this axis, to take freight to and from the port, out of Adelaide to the North and to distribute it within the metropolitan area. A series of strategic upgrades along the existing South Road and consideration of the corridors (rail and road) will greatly increase the capacity of this axis. It will also support the development of new industries in the southern suburbs.

### Strategic priorities

- Improve the State's competitiveness through efficient freight transport networks and improved international links.
- Minimise the impact of freight vehicle movement on the community and environment by appropriately locating and protecting freight routes.
- Concentrate resources on maintaining and improving existing assets rather than extending the network.

### Marine Assets

International shipping is moving to increase efficiency by using larger panamax and post-panamax class vessels requiring more than 14 m water depth. Deepening all of the state's harbours to accommodate these vessels is not commercially viable.

In March 2005 the South Australian Government announced it would increase to \$30m the amount of government money committed to the \$45m deepening of Outer Harbor due to be completed in 2007.

The export ports, along with many smaller harbours around the coast, provide facilities to the fishing/aquaculture industries and recreational fleets. At some locations such as Port Lincoln export vessels and fishing fleets are competing for space on wharfs. Depending on the growth of the fishing and agriculture industry, improved facilities may be required in the South East, Port Adelaide, eastern and western Yorke Peninsula, Whyalla district, Arno/Lucky Bay, Port Lincoln, Elliston and Ceduna.

Ferries carry the majority of freight and passengers to and from Kangaroo Island. Three mainland and five Island harbours serve various parts of the regional economy. The social and economic viability of Kangaroo Island depends on maintaining competitively priced services and sufficient fit-for-purpose harbours to meet Islander needs.

River Murray ferries provide the primary cross-river access in several locations supporting communities and visitor activities.

The number of cruise ships calling into Adelaide is increasing and this trend is expected to continue.

### Strategic Priorities

- Facilitate the redevelopment of the State's export and import harbours to ensure the most efficient access to international markets.
- Ensure any changes in land use on or near ports and harbours do not preclude current or future transport and harbour activities.
- Ensure owner/operators develop and maintain appropriately located wharfing and associated facilities to support tourism, fishing and aquaculture industries.

### Rail Network

The use of rail for freight and passenger transport has the potential to reduce road congestion, improve safety and reduce environmental impacts from road vehicles. This is especially the case for bulky goods on long haul. There are, however, a number of infrastructure challenges to increasing the role of rail:

- the existence of several non linked gauges
- diverse management of rail lines
- few intermodal facilities feeding the standard gauge network

While the existing rail network has a large reserve capacity that could be exploited at relatively low incremental cost, upgrades will reduce running costs and improve efficiencies. The long-term strategic aim for rail is to develop a connected metropolitan, regional and interstate standard-gauge network, capable of supporting the axle weights and lengths of modern freight trains. The network should be serviced by intermodal terminals that facilitate rapid transshipment between road and rail.

Real freight rates have fallen during the past 35 years by 50% for road, 70% for rail and 40% for shipping; this reduction is expected to continue at 0.5% per annum. In some regions prices have approached the marginal cost of providing the service and do not provide for any reinvestment in infrastructure, whether road or rail.

In regional South Australia, the rail network is a significant carrier of grain, both intrastate and interstate. With grain freight expected to grow by 30% to 2030, it is in the interests of the farming and grain handling organisations to ensure decisions on logistic maintenance and upgrades of the rail system are based on comparisons of the full costs of alternatives.

### Strategic Priority

- Encourage the shift to rail transport for passenger and freight movements where justified by environmental, economic or social imperatives.

### Aviation

Owners of aviation assets are trying to maximise their return by using the large tracts of land for commercial purposes. Increased road traffic in and around airports is being addressed.

Parafield Airport is surrounded by residential developments with additional residential growth planned as part of the Mawson Lakes development. Noise complaints about training flights are increasing; further residential growth may add to the pressure on the airport.

Air freight is crucial for the transport of time-critical high-value products. Adelaide Airport is the State's only international export airport; however, several regional centres are looking at extension of facilities to allow direct export to international markets. At present no regional commodity has sufficient regular freight quantities to justify the upgrading of regional facilities, but if a commodity and carrier are identified this could be considered, e.g. seafood from Eyre Peninsula.

Sustaining infrastructure at most local airports is a challenge because low traffic levels do not produce sufficient income to meet maintenance needs. Only eight regional airports (Ceduna, Port Lincoln, Kingscote, Whyalla, Port Augusta, Roxby Downs, Coober Pedy and Mount Gambier) have scheduled passenger and freight services. Extension and expansion of these airports to cater for larger passenger craft may be required as tourism or freight transport grows.

### Strategic Priorities

- Maintain an efficient transport network to Adelaide Airport to support anticipated passenger and freight movements.
- Ensure any change in land use on or adjacent to export airports does not preclude future transport development.
- Provide for the orderly expansion of facilities at regional airports to meet growing visitor and freight activities.

### People Movement

Cars are the primary mode of transport for people throughout South Australia, with 80% of CBD trips made by car, higher percentages in suburban areas and close to 100% in regional areas. The long-term forecast is for fuel prices to continue to rise, which will impact on people's choice of transport mode, particularly in metropolitan Adelaide where alternatives exist. However, cars will continue to be the principal mode of transport for people in South Australia well past the life of this plan.

Roads are not the sole province of motorised vehicles. Realising South Australia's potential as a leading cycling destination will generate increased tourism, improved levels of health and contribute to the state's environmental standing.

Traffic congestion in Adelaide has not reached the levels in the eastern seaboard or overseas but should be addressed before serious problems arise. Simply increasing the capacity of the roads is not the answer as experience elsewhere shows that traffic volumes expand to fill the capacity.

This is not to say that travel times for motorists should not and cannot be reduced. More attention will be given to selected effective interventions, such as tunnels, bridges or underpasses at key intersections, redesign of other congested intersections, better sequencing of traffic signals and more flexible operation of the road system. Travel times will also be improved by better road maintenance.

The number of fatalities on South Australian roads has dropped 64% from a peak in 1974 to 139 in 2004. This decrease, however, still leaves South Australia 24% above the national average. In infrastructure terms, the primary response is to ensure the engineering of the State's roads meet appropriate standards for the various classes of roads. However, even the best roads cannot prevent accidents.

The government aims to support public transport as a significant mode of metropolitan/CBD travel, because of the substantial community and environmental benefits that can be gained from replacing private motor vehicle trips with public transport trips. The Mawson Lakes interchange, the Glenelg tram replacement and new tram line extension represent the first major discretionary investments in the system since 1988.

At a replacement value of \$1,350 million, the utilisation and efficiency of the metropolitan public transport system must be maximised through further targeted investments such as these.

The Glenelg tram line will be upgraded and extended to the railway station on North Terrace. Electrification and strategic extensions of the metropolitan heavy rail network to the north and south of the city, are possible options for improving the efficiency of service.

An efficient passenger network is also essential to the tourism industry in South Australia, with the majority of visitors carried to their destinations across the road network. The tourism industry needs a road network that provides affordable, well sign-posted access to attractions/destinations.

The government has a high level strategy for achieving South Australia's Strategic Plan target of greater use of public transport, including development of an Adelaide rapid transit system. The strategy is based on maximising the use of the north-south heavy rail spine with new and upgraded interchanges providing bus links and car parking facilities.

Recent terrorist attacks have placed the issue of transport security at the forefront of transport policy in South Australia. The State Government is taking a leadership role in ensuring an appropriate level of counter terrorism preparedness in collaboration with the Australian Government and other states and territories. Preventative security projects will be a key feature and will include a variety of measures from security cameras on buses and at public transport interchanges, to the protection of potential targets. These terrorism driven interventions will also provide a broader level of personal safety across the entire public transport system. Given the importance of personal safety it is anticipated that increases in the public transport patronage will emerge from this approach.

The State Government will address a range of infrastructure issues across the public transport system to make it more accessible to people with disabilities and ensure compliance with the *Disability Discrimination Act, 1992* (DDA). This will include the provision of access paths, ramps and tactile indicators for people with sight impairment, through to major alterations to levels of lighting at public transport interchanges and stations.

## Strategic priorities

- Coordinate public transport networks and facilities to maximise access to social services.
- Transform Adelaide's urban passenger transport system into a cost-effective, environmentally friendly and modern metropolitan network.
- Reduce the impact of passenger transport on the environment by supporting the utilisation of environmentally friendly fuels and transport modes.
- Coordinate the development of urban planning and transport systems to maximise the economic, social and environmental benefits.
- Reduce injuries and fatalities from transport related accidents.
- Ensure necessary counter terrorism measures are undertaken.
- Deliver a more accessible public transport system in line with DDA requirements.

## Access to Australian Government Funding

South Australia's share of AusLink funding is not commensurate with either the state's population or the length of national highways South Australia has to manage. Despite strong representations to the Australian Government during the formulation of the AusLink program, South Australia continues to be left behind.

## Strategic priority

- Ensure South Australia receives a fair share of Australian Government funding commensurate with our population and transport network responsibilities.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Road</b>				
Address priorities for safety related maintenance and upgrades on roads with high crash rates (including the Black Spot Program) <b>Lead – State Government</b>	U/way	*	*	2.9
Implement endorsed improvements to the metropolitan road network e.g. Bakewell Bridge replacement, Britannia roundabout upgrade <b>Lead – State Government</b>	U/way	*		1.16
Explore options for a bypass of Gawler to manage increasing traffic, including the option of a north-east bypass <b>Lead - State and local government</b>	U/way	*		1.13 2.9
Develop reliable and efficient transport links for the north-south corridor through Adelaide focusing on the upgrade of South Road: ■ construct an underpass at Anzac Highway and a tunnel under Port and Grange Roads and the Adelaide - Outer Harbor train line and upgrade South Road between Port and Torrens Roads ■ undertake further improvements to South Road traffic flow <b>Lead – State Government</b>	1  1	*	*	1.16
Complete the link from Sturt Highway to the Port River Expressway (PRExy) and upgrade of Port Wakefield Road to freeway standard. <b>* Lead – State Government</b>	1	*	*	1.16
Construct opening road and rail bridges over Port River and complete the road and rail link to Outer Harbor	1	*		1.16
Enhance existing priority strategic freight routes throughout the state in order to minimise community impacts of road freight <b>Lead – State Government</b>	1	*	*	1.12
Improve travel times throughout metropolitan Adelaide by upgrading selected intersections and major routes and coordinating traffic signalling <b>Lead – State Government</b>	1	*	*	2.9
Implement the strategic town bypass policy <b>Lead – State Government</b>	2		*	1.16 2.9 5.11

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Marine</b>				
Complete development of deep sea grain port at Outer Harbor <b>Lead – private sector</b>	U/way	*		1.16
Complete River Murray ferry refurbishment program <b>Lead – State Government</b>	U/way	*		5.11
Deepen the channel to Outer Harbor <b>Lead – private sector</b>	1	*		1.16
Develop marine facilities to support the fishing/aquaculture industries <b>Lead – private sector</b>	2	*	*	1.12
On Kangaroo Island, designate Penneshaw as the primary freight and passenger ferry harbour. <b>Lead – State Government, private sector</b>	2	*	*	5.11
<b>Rail</b>				
Complete the Port River Expressway rail link and upgrade Le Fevre Peninsula rail corridor <b>Lead – State Government</b>	1	*		1.16
Develop intermodal facilities in northern Adelaide and the Barossa Valley and consider intermodal developments at Port Augusta, Riverland and Port Stanvac <b>Lead – private sector</b>	1	*	*	1.16
Optimise the Eyre Peninsula grain transport system <b>Lead – Australian and State Governments, private sector</b>	1	*	*	1.16
Standardise and upgrade the state rail network where it has connectivity to the interstate main line. <b>Lead – Australian Government, private sector</b>	3		*	1.12

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Aviation</b>				
Redevelop Adelaide Airport <b>Lead – private sector, State government</b>	U/way	*		1.16
Extend runways and upgrade terminals at Port Lincoln and upgrade Whyalla and Kingscote airfields when justified by growth in demand for services <b>Lead – local government</b>	2	*	*	5.11 1.13
Upgrade intersection of Sir Richard Williams and Sir Donald Bradman Drives an corridors to the city <b>Lead – State and Australian Governments</b>	3		*	1.16
<b>People movement</b>				
Redevelop Adelaide Airport <b>Lead – private sector, State Government</b>	U/way	*		1.16
Implement an ongoing program for the replacement or refurbishment of the bus fleet to ensure the South Australian fleet remains the cleanest in Australia through increasing use of bio-diesel fuel <b>Lead – State Government</b>	U/way	*	*	3.9
Implement tram replacement program and upgrade the Glenelg light rail line <b>Lead – State Government</b>	U/way	*		3.9
Implement a range of measures on the public transport system commensurate with national terrorism alert levels <b>Lead – State and Australian Governments</b>	U/way	*		1.16
Provide a more accessible public transport system, in line with requirements of the <i>Disability Discrimination Act, 1992</i> <b>Lead – State Government</b>	U/way	*		3.9
Extending the light rail network to North Terrace <b>Lead – State Government</b>	1	*		3.9
Develop urban passenger infrastructure to support growth in train and bus services and patronage by: <ul style="list-style-type: none"> <li>■ developing key train/bus interchanges, with a focus on the Marion shopping centre interchange</li> <li>■ upgrading stations and stops to improve safety</li> </ul> <b>Lead – State Government</b>	1 1	* *	*	3.9
Develop and implement walking and cycling plans to create a connected network <b>Lead – State Government, local government</b>	1	*	*	3.9
Investigate extension of the Noarlunga rail corridor to Seaford including new stations at Seaford and Seaford Meadows <b>Lead – State Government</b>	1	*		3.9
Investigate the electrification of the metropolitan heavy rail network <b>Lead – State Government</b>	3		*	3.9



# Transport

## Link to South Australia's Strategic Plan Objectives

The timely provision of adequately serviced, affordable, and appropriately located industrial and residential land will contribute to the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Competitive business climate</b>	Maintain Adelaide's rating as the least costly place to set up and do business in Australia and continue to improve our position internationally. (T1.4)
<b>Investment</b>	Match or exceed Australia's ratio of business investment as a percentage of the economy within 10 years. (T1.6)
<b>Exports</b>	Treble the value of South Australia's export income to \$25 billion by 2013. (T1.12)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 5: Building Communities

<b>State and local Government</b>	Align State and Local Strategic Plans within 12 months of the release of South Australia's Strategic Plan and agree joint initiatives from them. (T5.7)
<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

### Objective 6: Expanding Opportunities

<b>Housing</b>	Encourage the provision of affordable housing in the community. (T6.6)
	Halve the number of South Australians experiencing housing stress (people paying more than 25% of their income on rent) within 10 years. (T6.7)

## Background

South Australia must continue to hold a competitive advantage for investment in land and development through a planned supply of well-located, affordable and serviced land.

The public and private sectors both play significant roles in the release and development of industrial and residential land throughout the state. The majority of residential land development projects are undertaken by the private sector development industry, supported by a highly efficient project housing sector. The government, in some instances, undertakes joint venture activities with the private sector to facilitate economic, social and environmental outcomes that are considered important for the wider community.

The government monitors the supply and demand of residential, commercial and industrial land in conjunction with the property development industry to ensure continued availability of broad hectare land and infill sites that are adequately serviced by essential infrastructure and facilities.

The Land Management Corporation (LMC) is responsible for managing, releasing and developing State Government-owned land in the metropolitan area for residential, commercial and industrial use, often in joint ventures with the private sector. The total amount of land released by LMC over the last six years was around 700 ha, which accounts for most of the major housing estate developments in Adelaide over that period.

As at June 2003, of the total vacant broad hectare residential land holdings in metropolitan Adelaide (Adelaide Statistical Division), the private sector owns 61%, LMC owns 35% , other government agencies 1% and associations 3%.

Vacant industrial and commercial land in metropolitan Adelaide is owned approximately 55% by the private sector and 45% by the State Government. The majority of vacant industrial and commercial land in rural South Australia is held under private ownership.

It is important that the planning system facilitates market delivery of suitable sites to support commercial sector developments. There is renewed market interest in quality office accommodation, with new buildings under construction in a number of CBD and fringe locations, including the City Central development, the Flinders Link project and Admiral House.

#### **Policy Parameters**

Several policy documents set the parameters for the State Government's land release program. These include the National Charter of Integrated Land Use and Transport Planning; the Planning Strategy and the Residential Metropolitan Development Program (RMDP).

The Planning Strategy states that sufficient land must be made available for economic activity and that this land must be supported by the required infrastructure, particularly in those areas preferred by industry (e.g. north-west Adelaide). Furthermore, existing and future industries must be protected from encroachment by incompatible land uses.

Local governments are required to update their development plans every five years to reflect the objectives of the Planning Strategy.

The Planning Strategy also introduced the concept of a metropolitan Urban Boundary (UB). The principal role of the UB is to delineate the outer limit of the forecasted 10 to 15 years of urban growth and to protect valuable agricultural areas and water catchments, open space and conservation zones from urban development, to limit urban sprawl and facilitate efficient provision and use of infrastructure.

The government recognises the importance of better integrating land use planning, guided by the State Planning Strategy, and strategic infrastructure planning. Better planning will ensure that future industrial and residential developments make more efficient use of existing infrastructure capacity and that investment in new infrastructure capacity proceeds in a timely and economically and ecologically sustainable manner. Greater consultation with the private sector is required to ensure that land use and infrastructure planning and decision making occurs within a whole-of-state perspective.

## Challenges and Opportunities

### Industrial Land

The supply of industrial land has come under increasing pressure from competing uses, constraints on land use, rising land values and developer speculation, particularly in the rapidly growing areas in and around metropolitan Adelaide.

Analysis of the historical supply of and demand for industrial land shows that there are approximately 800 ha of suitable land in or near metropolitan Adelaide that could be readily developed, including brownfield sites. There is a shortage of land between Gepps Cross and Darlington (as residential uses encroach on previous industrial land) and across the state more generally for large vacant sites (larger than 5 ha).

This industrial land supply shortage is partly due to the state having a greater amount of land zoned as industrial than is readily available for use. Some land requires capital investments, such as provision of services, filling or remediation before it is suitable for use. Other parcels are not suitable for industrial development because the terrain is steep, the sites are unserviceable or constrained by adjoining land uses, or are disconnected from the supply chain.

Due to changing industrial practices, some older industrial areas are becoming obsolete. Connections to the transport network, for example, cannot handle large trucks and the required large lot sizes for new distribution facilities are not available.

To accommodate these changes, future large industrial estates will need to cater for medium to large allotment sizes (>5000 sq.m) and preclude the development of small industrial allotments (<2500 sq.m).

It is likely that Adelaide's transport, storage and logistics industries will undergo significant change in the coming years. Growth in e-commerce and e-business is expected to have a significant impact on warehousing and distribution in Adelaide. The transport and logistics industry is expected to be a major user of industrial land.

If the state is to meet the growth targets in South Australia's Strategic Plan, an adequate supply of suitably located and serviced land is required, particularly in the northern Adelaide region, where there is good access to the existing transport and utility infrastructure.

Releasing the right amount of industrial land to the market at the right time is crucial to encouraging a competitive business climate and maintaining a high level of investment. Analysis of the state's land holdings has commenced and further work must be undertaken to enable strategic mapping of future land disposals and acquisitions. This work must include reviewing government policy relating to land disposal and acquisition, and greater consultation with the private sector and other stakeholders on future land needs.

The future supply and location of industrial land and the provision of infrastructure will need to be tailored to suit sector requirements relating to transport intermodal facilities, supply chains, clean locations, allotment sizes, cluster opportunities, sector growth forecasts, access to labour and buffer zones.

### Industrial Precincts/Zones

Further establishment and maintenance of precincts with complementary uses will help industry to invest in and develop appropriate sites.

Key precincts for future industrial growth will include Le Fevre Peninsula/Pelican Point, Gillman/Dry Creek, Edinburgh Parks/Burton and Seaford. These precincts will require prioritised investment to ensure continuity of land supply and orderly development.

More coordination between the private sector and all spheres of government is required to ensure targeted growth in South Australia's defence and technology clusters at Technology Park and Edinburgh Parks and to establish the proposed defence precinct at Osborne. Infrastructure upgrades to Edinburgh Parks will be required to support increasing uptake of this land.

The Osborne maritime precinct master plan features 60 ha of land dedicated to naval shipbuilding and supporting industry, a new ship lift, dredging to berth large vessels and provision of supporting infrastructure services. Realising the potential of this precinct to boost the economic growth of the state will be a high priority for the government over the coming years.

Established industrial sites and precincts such as these are generally well serviced by surrounding infrastructure and will continue to be marketed to industry to ensure the best possible economic returns for the state.

Primary and rural industries have location specific requirements, for example, mines to the mineral deposits, vineyards to suitable soils, intensive animal keeping to areas with suitable separation distances and wind farms to areas of sufficient reliable wind. Primary industry zones and other strategically important sites need to be protected from encroachment by sensitive uses or alienation.

Value adding of locally produced primary products is one of the strategies being used to increase local economic return (e.g. wineries, timber mills, cheese factories, animal processing facilities). Suitable land is required that does not conflict with other economic or social interests, such as tourism, nor alienate high quality rural land.

Examples of significant regional developments include the Amcor bottle manufacturing plant at Kingsford Estate and the Berringer Blass bottling facility at Nuriootpa. In addition, mixed-use land developments support major regional industries, such as the proposed Ceduna and Cape Jaffa marinas, which will be used by the fishing and aquaculture industries.

The development of such land for industrial purposes requires the timely provision of adequate support infrastructure, in particular, energy, water, transport and communications.

#### **Industrial land Supply and Development Opportunities**

The most significant areas of vacant land are located at Edinburgh Parks (520 ha), Le Fevre Peninsula (200 ha), Port Adelaide (80 ha), Gillman (95 ha), Dry Creek (190 ha), Wingfield (72 ha), Lonsdale (167 ha), Burton (89 ha), Parafield Airport (100 ha), Adelaide Airport (60 ha), Port Stanvac, Gawler (Kingsford Estate) and several other regional locations. Not all of this land is in the locations preferred by industry, some sites have significant constraints or have been earmarked for particular developments and will need work to bring online. For example, Dry Creek and portions of Gillman will require significant remedial works.

There is a need to reserve land at Port Stanvac for future industrial development, once ownership and other matters have been resolved with Mobil. There is an increasing need for more industrial land to the south of Adelaide and this needs to be identified and prepared for suitable industrial development.

A number of large companies are seeking to be located in 'super regional' distribution facilities that are replacing a number of smaller facilities within cities. Super regional facilities are often built on the fringe of the urban area, for example at Direk or Monarto near Murray Bridge. These projects are usually one-off developments and can be catered for within special project planning processes.

Initial work has been undertaken to establish a 15 to 20-year supply of industrial land. This would be sufficient to satisfy short, medium and longer-term market needs, thereby helping to maintain competitive industrial land prices. This timeframe recognises the required lead times for land use policy change and infrastructure sequencing, and provides certainty of future industrial land supplies relative to other land uses (such as residential). Further work on this project will be undertaken by the government in consultation with industry.

Industries are increasingly operating with improved environmental performance in order to satisfy global supply chains and community expectations and to manage risks and costs. South Australia's desire to be clean and green and a competitive investment destination may require concepts of 'industrial ecology' to be increasingly incorporated into future industrial design. Such measures will facilitate achievement of the sustainability targets of South Australia's Strategic Plan.

Industrial investment and development in South Australia will increasingly need to incorporate principles of sustainable development, not only to meet Environment Protection Authority (EPA) requirements but also to improve business operations and minimise environmental impacts.

#### **Strategic Priorities**

- Identify, protect and facilitate the development of a 15 to 20-year supply of suitable industrial land to meet demand.
- Ensure infrastructure is provided in an integrated and timely manner to support existing and proposed industrial land developments (e.g. transport corridors, inter-modal site developments, etc.).
- Planning of industrial estates should encourage sustainable industrial practices.
- Ensure suitable sites are available for industries that are strategic to the state's economy and have site-specific requirements.
- Identify land suitable for industrial sites in southern Adelaide.

## Residential Land

State Government data indicates that there is an adequate supply of residential land to meet projected demands in the metropolitan area for about 10 to 15 years.

The key issues affecting residential land in metropolitan Adelaide include:

- the rate of increase in total households continuing to exceed the increase in population
- the government's aim to increase the population to 2 million by 2050
- the expected long-term decrease in dwelling occupancy rates (e.g. single person households will be the fastest growing household type, followed by couple households). This trend is predominantly due to the ageing of the population
- the need to maintain a sufficient supply of residential allotments to facilitate an adequate supply of affordable housing for purchase or rental by low income earners.

Residential developments are delivered by a range of means, including broad hectare developments, existing vacant allotments, demolition of existing dwellings and redevelopment of the sites, creation of additional sites by subdividing existing house lots, construction of high-density housing, and use of airspace above existing developments such as commercial premises. There is growing interest in establishing residential developments in association with marinas.

In regional areas, the highest population growth has been recorded in the peri-urban centres around Adelaide (e.g. Mount Barker and Victor Harbor) and coastal cities (e.g. Port Lincoln and Mount Gambier). This growth has been attributed to the movement of retirees and increased growth from specific industries (e.g. wine and aquaculture) in these centres. The success of the state's population growth initiative in attracting people to rural South Australia will need to be considered in planning for the provision of serviced residential land in regional towns.

An important consideration in new residential developments is ensuring access to adequate infrastructure, including transport. Planning and approval processes should more formally recognise infrastructure needs. This could be achieved through more formalised and comprehensive infrastructure audits, conducted during the early planning stages. This will boost investment confidence and contribute to meeting the investment target in South Australia's Strategic Plan.

There are several significant residential land development projects currently in their early stages in metropolitan Adelaide, including the Port Waterfront Redevelopment, Northgate Stage 3 and the Lochiel Park 'green village'. These projects are on sites that have good access to essential infrastructure and will have greater emphasis on higher housing densities and the application of ecologically sustainable development principles than past projects.

Significant residential developments led by the private sector, planned or in progress, include those at Brompton, the former Underdale Campus, Westwood, Sheidow Park, Seaford, Aldinga, Sellicks Beach, Burton, Andrews Farm, Craigmore and Mawson Lakes. Several high-rise residential developments are also occurring or are planned within the CBD such as the Domain apartments and the RAA site at Hindmarsh Square, and near city locations such as Air on Greenhill Road and Holdfast Shores at Glenelg.

There is also scope in regional areas for the government to engage with regional development boards and councils to pursue residential development opportunities. Collaboration between these bodies has the potential to address market failure in regional housing.

The government will continue to review the land holdings of its agencies to identify surplus sites that can be made available for development. The process by which surplus land is disposed of will be reviewed to ensure the best possible economic outcomes for the state are achievable, with due consideration to probity requirements.

The government will also continue to monitor the supply and demand of residential land and associated infrastructure implications through the RMDP.

## Strategic Priorities

- Review processes for disposal of surplus government land.
- Ensure residential land supply is available when needed to meet market demand.
- Give greater consideration to population data and changing demographics in residential land supply planning.
- Ensure that planning for residential developments is more closely integrated with infrastructure and transport planning.

### Land Administration

There is an increasing reliance on ICT applications for business operations in land management.

The Automated Torrens Land Administration System (ATLAS) program of business reform is designed to improve land administration (and upgrade systems) in South Australia over the long term for the benefit of industry, community and the government.

The three main themes of the ATLAS program are:

- economic development through the more productive use of land assets and greater efficiency in land-related dealings (digital conveyancing, division reform)
- protection of the state's revenue base by providing reliable and sustainable data upon which various state taxes are calculated (valuation reform)
- risk mitigation of the foundation land titles database system (IT infrastructure project).

The ATLAS program will consolidate a range of land-related information held across government and provide better access to this information by industry and the community.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
Identify options for more strategic use of public land to provide more efficient delivery of community services <b>* Lead – State Government, local government</b>	U/way	*		5.7
<b>Industrial Land</b>				
Continue to develop industrial precincts close to infrastructure networks to ensure the best economic and investment outcomes are secured. Precincts include: <ul style="list-style-type: none"> <li>■ Technology Park</li> <li>■ Seaford Industry Park</li> <li>■ Wingfield Cast Metals Precinct</li> </ul> <b>Lead – State Government, private sector</b>	U/way	*		1.4 1.6
Prioritise the development and staged release of strategic parcels of land such as: <ul style="list-style-type: none"> <li>■ Port Adelaide/Dry Creek/Wingfield EcoIndustrial Precinct (437 ha)</li> <li>■ Le Fevre Peninsula (200 ha)</li> <li>■ Edinburgh Parks – automotive and defence (520 ha)</li> </ul> <b>Lead – State Government, private sector</b>	1	*	*	1.4 1.6 1.12
Establish the Osborne maritime precinct for construction and maintenance of surface and sub-surface naval vessels including, if successful, the shiplift for the air warfare destroyers <b>Lead – State Government</b>	1	*		1.4 1.6 1.12
Identify and preserve additional land suitable for industrial sites and, when appropriate, develop industrial estates: Progress investment opportunities for industrial sites in the south of Adelaide <b>Lead – private sector, State Government</b>	1	*	*	1.6
Pursue alternative uses of Port Stanvac land <b>Lead – State Government, local government</b>	1	*	*	1.6
Develop industrial estates in regional centres, including Kingsford Estate (Gawler), Mount Barker, Whyalla, Mount Gambier and Strathalbyn <b>Lead – private sector, local government</b>	2	*		1.6 5.11

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Residential Land</b>				
Progress major development projects including the Port Waterfront Redevelopment Holdfast Shores, Mawson Lakes and Northgate Stage 3 <b>Lead – private sector, State Government</b>	U/way	*	*	6.6
Progress the Lochiel Park model 'green village' development <b>Lead – State Government</b>	U/way	*		6.6
Prepare marina development policies to ensure the environmental, economic and social costs and benefits of marinas are transparent in decision making <b>Lead – State Government</b>	U/way	*		5.7
Implement the ATLAS program reforms to land administration to ensure South Australia is able to provide existing land administration services more effectively <b>Lead – State Government</b>	U/way	*		1.4 1.18
Undertake urban regeneration activities at Playford North <b>Lead – State Government, local government</b>	1	*	*	6.6
Make changes to the state's planning system to increase housing densities in strategic locations and to increase the supply of affordable housing in locations that have access to infrastructure and services <b>Lead – State Government</b>	1	*		6.6 6.7

## Link to South Australia's Strategic Plan Objectives

Improved access throughout the state to reliable, high-speed telecommunications infrastructure will contribute to the achievement of the following targets:

### Objective 1: Growing Prosperity

**Strategic Infrastructure** Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

**Performance improvement in the South Australian public services - productivity** Lead the nation in cost effectiveness of government services within 5 years. (T1.18)

### Objective 4: Fostering Creativity

**Creativity** Achieve a ranking in the top 3 regions of Australia in Richard Florida's Creativity Index within 10 years. (T4.1)

**Internet usage** Increase the level of internet use in metropolitan and regional South Australia by 20% within 10 years. (T4.7)

**Creative education** Improve the connections between educational institutions and industry to enhance creativity and innovation. (T4.10)

### Objective 5: Building Communities

**Regional Infrastructure:** Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

## Background

The accelerating power and convergence of computer and telecommunications technologies since the mid-1990s has brought about major changes in the way people live, learn, work and operate their business. Information and communications technology (ICT) infrastructure is essential for the delivery of modern digital services of all kinds, from simple telephone calls to supercomputing. Infrastructure developments that support the adoption of wireless computing and new mobile telephone services are also important.

Most legislative and regulatory powers regarding communications rest with the Australian Government. The market has been progressively deregulated since the late 1990s and there are more than 100 licensed carriers, although Telstra is still by far the largest and dominant player in most market segments, especially in regional areas. Market forces and commercial imperatives largely determine decisions governing the building of new infrastructure. Given the current rate of technological change in the industry, services can be expected to continue to improve in quality and fall in price.

While the national legislative framework has aimed to promote competition, limited competition has developed in the local access market (the so-called 'last mile' connection into homes and businesses).

South Australia presents a relatively small market to telecommunications carriers. While a number of national carriers have a presence in the state, their networks are generally concentrated in major population centres where there is sufficient traffic to justify infrastructure investment.

South Australia's ICT industry comprises manufacturers and service providers in the fields of IT, telecommunications and electronics. According to a 2004 report by the South Australian Centre for Economic Studies, the state's ICT industry (excluding retailing) employs more than 17,500 people and generates some \$850 million in exports annually. The future growth and development of this industry will contribute significantly to a further strengthening of the state's ICT capabilities.

The South Australian Government has, over time, made a significant investment in ICT infrastructure in Adelaide and regional areas. The major elements include computing hardware and software, telecommunications, internet-based technologies and the applications that process the government's business and its delivery of services. ICT is now permanently woven into the fabric of government service delivery and requires a long-term approach to investment.

The South Australian Government is a dominant user of ICT infrastructure and services in the state and can use its market power to influence the provision of best practice ICT infrastructure for the benefit of industry and the community. The government has taken a number of steps to improve access to telecommunications infrastructure and to promote the uptake of telecommunications services in key regions and sectors.

#### **Recent State Investments in ICT Infrastructure**

##### **Broadband Development Fund**

The Broadband Development Fund (BDF) provides \$7 million in 2003–07 to fund new broadband infrastructure in regions and metropolitan 'black spots', focusing on 'last mile' projects that deliver economic benefits to the state. This \$7 million will leverage funding from the Australian Government and the private sector.

##### **SABRENet**

The South Australian Broadband Research and Education Network (SABRENet) is a joint venture of the State Government, the three South Australian universities, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Defence Science and Technology Organisation (DSTO) to construct a fibre optic broadband network linking Adelaide's major research sites to the national and global research network. The network will also be available for government and educational use.

##### **EduConnect**

The State Government has just completed a major procurement to upgrade broadband services to schools, which will provide significant increases in bandwidth to all schools. The government's expenditure also attracted a significant new second tier telecommunications carrier (Soul Pattinson Telecommunications) into the South Australian market.

##### **CineNet**

The government provided financial assistance toward the establishment of a privately operated broadband network, CineNet Systems, which is used by the growing film post-production and multimedia industry. It is planned to make the commercially funded stage two of the network available to other industries.

##### **Advanced Computing**

The State Government provided financial assistance to the South Australian Partnership for Advanced Computing to upgrade the state's advanced computing capability, centred on the purchase of a new Silicon Graphics Altix supercomputer ('Aquila'). The state assistance package also provided for technology transfer and skills development programs, and a major broadband upgrade, aligned to SABRENet, which will ensure world-class connectivity to the international advanced computing network.

##### **Fibre optic Cable Rollout**

Optus has commenced a \$5 million rollout of fibre optic cable in Adelaide, which will promote the development of competitive broadband services for business in the metropolitan area.

## Challenges and Opportunities

### Technological Change

From an overall state infrastructure perspective, some of the greatest ICT challenges and opportunities are in the area of telecommunications, and in particular, broadband. Broadband is a naturally shareable resource. A single broadband link can support many users simultaneously. The number of users is limited only by the transmission speed (or 'bandwidth') of a broadband link. Today's high-speed inter-capital links can support millions of simultaneous users.

Until comparatively recently, the telecommunications industry has comprised two distinct elements: voice telephony and broadband data services. By far the greatest share of telecommunications traffic and revenue has been, and remains, voice telephony, with the majority delivered to end-users in the form of analogue (i.e. not digital) telephone lines. Even conventional (non-broadband) home and small-business internet access works by converting digital signals into voice-like sounds transmitted across telephone infrastructure. However, the continually falling price-performance ratio of digital technology makes it increasingly attractive for telecommunications carriers to convert ('digitise') voice signals into digital data, which can then be transmitted across data networks like any other, removing the need to build and maintain separate voice and data infrastructure. Telecommunications carriers around the world, including Telstra, have begun the task of converting their entire networks to broadband data networks.

In the long-term, all telecommunications networks will be broadband. This 'convergence' of voice and data is not yet complete, however, and carriers must balance current revenues derived from voice infrastructure against the future benefits to be gained from investment in a single converged network. In the meantime, the world's telecommunications markets are likely to be characterised by dramatic technological change and shifting market dynamics.

### Industry Structure

Telstra is dominant in most segments of the Australian telecommunications market. South Australia is home to several successful medium-sized telecommunications carriers, which are active nationally. Nonetheless, the focus of industry investment remains firmly concentrated on the Eastern seaboard. Consequently, South Australia consistently lags the Eastern States in the deployment of new (that is, cheaper and faster) technologies, which is in turn reflected in generally lower usage and adoption rates.

Telstra owns essentially the entire customer access network linking customer premises to telephone exchanges. About 30% of Australian residential broadband customers subscribe to Telstra's BigPond service. Furthermore, Telstra is required by law to allow its retail competitors wholesale access to Telstra infrastructure, with the result that nearly all of Telstra's retail competition actually arises through resale of Telstra's own wholesale services. Widespread infrastructure-based competition to Telstra exists only in the mobile telephone market, where Telstra services 45% of the market, and, to a lesser extent, in the provision of corporate data services in and between the major capital cities.

Pricing for telecommunications services is often structured around the technical limitations and assumptions of Telstra's pre-internet switched telephone network, despite the fact that much of this infrastructure has long since been replaced. As a result, Telstra's pricing in regional areas, for example, often reflects distance and administrative boundaries that no longer have a corresponding effect on Telstra's actual costs.

### Basic Telephone Services

A telecommunications 'safety net' exists to ensure that all Australians have access to a basic, utility telephone service. The universal service obligation (USO) is the obligation placed on universal service providers to ensure that standard telephone services, payphones and prescribed carriage services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business. Telstra is currently the nominated universal service provider (USP). A central object of the USO regime is that the losses that result from supplying loss-making services in the course of fulfilling the USO are to be shared among carriers. It is important to note that the USO does not, at present, include mobile telephony, broadband internet access or other advanced services.

In recent years there have been two major Australian Government inquiries conducted into the telecommunications industry and the state of telecommunications services. The Australian Government has responded to these inquiries by directing significant funding to programs to improve services, especially in rural areas.

In most areas of South Australia, the quality of telecommunications, except for broadband access, is reasonable. In general, the telecommunications infrastructure in South Australia is sufficient to meet most everyday needs, aside from broadband, for most of the populated centres.

### Mobile Telephony

Mobile phone coverage has improved markedly in the last few years, due in part to heavily Australian Government-subsidised deployment of mobile phone base stations. All South Australian towns above 500 people now have Code Division Multiple Access (CDMA) mobile coverage and continuous coverage now exists along most of the major highways in the state.

### Strategic Priorities

- Seek to influence developments in national telecommunications policy and regulatory arrangements in the interests of South Australian consumers.
- Ensure that South Australia receives its fair share of funding for telecommunications facilities under Australian Government programs, which appropriately reflects the state's size and population distribution.

### Broadband

The next major telecommunications development will be the widespread delivery and use of services requiring access to broadband infrastructure.

'Broadband infrastructure' is the equipment needed for high speed transmission of digital information either through the air (e.g. satellite, terrestrial radio) or along a physical carriage medium (e.g. optical fibre, copper wire), and includes both the transmission equipment and the carriage medium (e.g. cables). Licensed radio spectrum may also be considered as broadband infrastructure.

Australia ranks poorly among developed nations (22nd out of 31 countries) in terms of the uptake and use of broadband and the cost of broadband services. This comparatively poor performance is often attributed to the structure and regulation of the Australian telecommunications industry.

On a state basis, accurate and up-to-date figures are not available; however, in line with national trends in the general uptake of the internet, it follows that South Australia is likely to be at the tail end of the states and territories in broadband use.

There are still major cost and infrastructure barriers to the delivery of broadband services, particularly in much of regional South Australia, which is limiting the take up of these services. Fewer than 20% of households outside of metropolitan Adelaide have access to Asymmetric Digital Subscriber Line (ADSL) broadband services of the type available in the metropolitan area. Broadband capability is generally lacking in all but the major regional centres and while optical fibre now connects most of the populated centres, access to affordable broadband services by business and residential users outside of these towns is currently inhibited. This is due to inadequate infrastructure deployment and lack of a commercially viable level of demand, except for relatively costly satellite connections. Significant 'black spots' also exist throughout metropolitan Adelaide, particularly in new housing and business developments.

### Satellite

In principle, broadband and mobile telephony is available everywhere in Australia using geostationary satellite technology. However, satellite equipment is more expensive than terrestrial equivalents. As well, the quality of both voice and data services is generally lower, largely because of the 'latency effects' of signals having to travel hundreds of kilometres up to a satellite and back again.

Nonetheless, satellite is often the only viable solution in the more remote parts of Australia and thus plays an important part in the overall telecommunications environment.

Whereas satellite services have been successfully deployed in the more populous parts of the state (including metropolitan Adelaide), it is unlikely that satellite technology will play more than a niche role.

### Wireless broadband

Broadband transmission through the air by means of radio waves is known as 'wireless broadband', and falls into two broad categories:

- Mobile broadband services, such as 3G using wideband CDMA technology
- Fixed wireless broadband (FWB) services that serve essentially the same function as a physical cable, transmitting data from one point to another ('point-to-point' or 'point-to-multipoint').

Mobile broadband services are today slower and more expensive than either fixed wireless or conventional cable-based broadband. Users pay a premium price for mobility and applications that exploit it.

The next stage in the evolution of mobile communications will be the continued emergence of 'rich media' services capable of delivering music, images and video to advanced mobile phones and other devices. The Adelaide based m.Net industry consortium is seeking, with Australian and State Government support, to develop Australia's mobile broadband content and services industry, servicing national and overseas markets.

Fixed wireless broadband (FWB) services, on the other hand, offer genuine alternatives to ADSL and other forms of cable-based broadband infrastructure. However, the current problem is that it offers too many alternatives—today's FWB market presents a daunting array of competing proprietary products and conflicting standards, which drives up prices and adds risk to investment decisions.

### Strategic Priorities

- Implement South Australia's Broadband Strategy to support development and use of broadband services.
- Coordinate deployment and use of ICT infrastructure, including broadband, with the state's physical infrastructure priorities, including transport, new housing and industrial developments and other built infrastructure.
- Make maximum use of the opportunities presented by the State Government's purchasing of broadband services to stimulate investment in broadband infrastructure and take-up rates across the broader community.

### Advanced Computing

The government has made significant investments in developing a highly advanced ICT infrastructure capacity within the state. (The most prominent examples to date are SABRENet and advanced computing investments.) While this has been driven in the first instance by the needs of the research sector, forward planning anticipates broader use by industry and the education sector. Examples of this broader use include modelling complex manufacturing processes, genomics and large-scale investigation of data.

### Government Communications Networks

ICT in government comprises telecommunications infrastructure (optic fibre, telephone cables, mobile phone towers etc.), internet (web) infrastructure (internet search engines, web sites/portals etc.), telecommunications and computing hardware (PABXs, telephones, PCs etc.), software (operating systems, databases etc.) and applications (email, word processing, registration systems, justice systems, health systems). This infrastructure features a high degree of consolidation and standardisation.

The redevelopment of a number of government websites, including SA Central and Bizgate has enabled the government to extend and improve access to services to cater for changing community expectations.

The South Australian 'Generational Health Review' highlighted the need for systemic reform. Achievement of this reform requires support from modern ICT systems and practices. ICT connectivity and use of central applications are essential for schools and pre-schools to achieve educational outcomes. ICT connectivity also plays a fundamental role in the state's law and order and emergency services.

The government's plan for use of ICT in the public sector, 'ICT Directions', focuses on managing ICT across government as a strategic asset for the delivery of services to the community.

### PABX Network

South Australia has an extensive shared telephony and PABX infrastructure underlying the operation of government and delivery of services. Historically, the state has owned and operated its own PABX network, comprising in excess of 100 PABX systems and more than 28,000 telephone handsets. This has resulted in economies of scale that rival any other state government.

### StateNet Data Network

The government StateNet Data network consists of a core network and associated agency access networks which underpin the government's daily operation and delivery of services. StateNet's data networking environment provides government agencies with secure, reliable and cost effective access to critical business systems, other central data processing environments, messaging services (via SAGEMS), shared directory services and the State Government's shared internet gateway.

### E-Government Integrated Service Delivery

Electronic service delivery assists in meeting community expectations for convenient access to services and information outside of normal office hours and from remote or isolated situations. It also allows for a seamless and transparent integration of government services across agency and government boundaries.

There will be an increased demand for e-government services over the next 10 years. The underlying infrastructure will need to offer a high level of redundancy, availability, scalability, capacity and security to meet these requirements.

### Government Radio Network

The Government radio network incorporates around 180 dedicated transmitting sites state-wide that provide mobile, hand portable, and paging services to government emergency services personnel. The network is designed to support around 12,000 mobile and portable radio users and up to 50,000 paging devices. A dedicated independent data network is also operated from the state radio network transmitting sites that bound the Adelaide CBD and extended metropolitan areas.

### Future ICT

The Future ICT Service Arrangements program relates to the strategic procurement of ICT equipment and services for State Government agencies. The aim is to establish strategic approaches to ensure value-for-money for government, which will also create opportunities to improve broader state-wide access to telecommunications services.

The future service arrangements will replace current across-government contracts, which are due to expire in the next one-to-two years.

### Strategic Priorities

- Institute a purchasing policy requiring aggregation of demand by government agencies to leverage opportunities for infrastructure development, particularly in regional South Australia.
- Establish enhanced governance arrangements to ensure strategic and coordinated management of the State Government's ICT assets.
- Ensure the State Government's ICT infrastructure supports improved access and efficiency in the delivery of government services.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
Construct the SABRENet 80+km fibre-optic research and education broadband network in metropolitan Adelaide * <b>Lead – research sector, State Government</b>	U/way	*		4.10
Support customer-driven broadband infrastructure development through the state's Broadband Development Fund and targeted project development support <b>Lead – State Government, local government, private sector</b>	U/way	*		4.7
Rollout fibre optic cable to encourage competitive broadband services for businesses in metropolitan Adelaide <b>Lead – private sector</b>	U/way	*		4.7
Progress major ICT procurement across government to deliver improved public services <b>Lead – State Government</b>	1	*	*	1.18

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



# Information And Communications Technology

## Link to South Australia's Strategic Plan Objectives

Innovative management and increased utilisation of the State's education assets, across all sectors of education, will contribute to the achievement of the following targets.

### Objective 1: Growing Prosperity

<b>Share of overseas students</b>	Double South Australia's share of overseas students within 10 years. (T1.14)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)
<b>Performance improvement in the South Australian public sector – productivity</b>	Lead the nation in cost effectiveness of government services within 5 years. (T1.18)

### Objective 5: Building Communities

<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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### Objective 6: Expanding Opportunities

<b>Aboriginal wellbeing</b>	Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention and imprisonment. (T6.1)
<b>Junior primary class sizes</b>	Continue to reduce junior primary class sizes. (T6.8).
<b>Senior secondary schooling</b>	Increase the leaving age to 17 years by 2010 to ensure that young people are either in school, employed or in structured training. (T6.12).
<b>Senior secondary schooling</b>	Increase the percentage of students completing Year 12 or its equivalent to 90% within 10 years. (T6.13).
<b>Regional education</b>	Achieve a marked improvement in the percentage of regionally based students completing SACE or equivalent, by 2010. (T6.14).
<b>Non-school qualifications</b>	Increase the proportion of the South Australian labour force with non-school qualifications from 50.7% in 2002 to 55% within 10 years. (T6.15).
<b>University participation</b>	Exceed the national average in university participation within 10 years. (T6.16).
<b>TAFE participation</b>	Continue to exceed the national average in TAFE participation. (T6.17).

## Background

The Australian Government provides funding for non-government and government schools, universities, assistance for students and about 20% of funds for the delivery of vocational education and training (VET) programs.

State and Territory Governments' roles and responsibilities in providing education services include responsibility for schooling all children of school age; financial responsibility for government school education; contributing funds to non-government schools; developing curricula; administering, funding and regulating VET including administering and funding Technical and Further Education (TAFE) institutes; delivering VET programs through TAFE Institutes and schools; and legislating for the establishment of universities and other higher education providers.

The State Government provides a universal preschool program for children the year before they go to school and a range of other childcare services that contribute to better educational outcomes.

Education and training is a major area of expenditure and activity for the Australian and State and Territory governments, with government operating expenses for all governments for the three education and training sectors (school education, VET and higher education) totaling \$37.5 billion in 2001–02, or 5.2% of gross domestic product (GDP).

For primary and secondary schooling, the share of enrolments in non-government schools is increasing, particularly in the Reception to Year 7 category.

Participation rates in the final years of schooling are a determinant of employment status later in life. The State Government recently raised the minimum school leaving age to 16 concurrent with the Futures Connect initiative. By 2010, it will raise the school leaving age to 17.

The school system has also been identified as a potential growth opportunity for primary and high school international students. In 2003, there were 1738 international students in local primary and high schools.

In 2003 there were an estimated 122,500 persons enrolled in VET training in South Australia, or around 11% of the state's adult population, a proportion higher than the national average. Of these, about 9800 were enrolled at schools. A further 14,000 school students undertook VET in school programs independently of TAFE.

Non-university tertiary education providers are established under the *Training and Skills Development Act 2003* and are regulated by the Training and Skills Commission.

South Australia's three existing universities are established by Acts of the State Parliament. While state legislation empowers the universities to operate as autonomous corporate bodies, with powers to grant degrees and self-accredit courses, most university activity has been controlled by Commonwealth legislation since the states ceded funding responsibility to the Australian Government in 1990.

The Australian Government provides about 40% of university income with the rest coming from student fees, including Higher Education Contribution Scheme (HECS), consultancies and investments. Public investment as a proportion of total income has been falling steadily for the past 15 years. The State Government provides approximately 2.5% of university income, mainly for research activities. Universities have deliberately diversified their income sources and are increasingly engaging in commercial activity. Expanding fee-paying places for overseas students is a critical part of this strategy.

Enrolments in higher education in South Australia have been growing steadily, rising by more than 50% from 39,900 in 1990 to 63,000 in 2003.

The income stream from international students has been particularly important to support infrastructure development and in the case of the University of South Australia, is the principal source of income to service loans as part of a current \$100 million building program. International student numbers at South Australian universities have increased five-fold from 3,000 in 1995 to almost 15,000 in 2003 (including offshore students).

## Challenges and Opportunities

Management of education infrastructure needs to be innovative and flexible to adapt to emerging demographic trends, residential developments and changes in the structure of employment. Much of Adelaide's education and care infrastructure has been historically located in the inner and middle ring suburbs. The shift in the school-age population away from these suburbs to the urban fringe and certain regional centres poses two challenges:

- efficient utilisation of existing spare capacity in school and care facilities in the inner and middle ring suburbs
- the need to meet demand for new infrastructure in areas experiencing population growth.

Planning for new and existing schools also needs to take into account the changing social and educational needs of children and families and respond to changes in their local communities. This can include the demand for multi-campus facilities, or increased specialisation to meet the changing needs of children and students.

The following trends will need to be considered in infrastructure planning for improved service delivery:

- greater emphasis on virtual and online learning and the need for increased IT capacity and access to broadband
- integration of new technologies into service delivery programs (i.e. computers in every classroom, or common shared areas, or use at any location on or off campus)
- self-paced learning for senior years off-site
- integration of services (i.e. health, family and youth services, etc.), especially for children from birth to eight years old
- pathways models for senior years linking school, business, TAFE and university (including extending the hours of operation to accommodate changes in working life and the increasing numbers of students studying part-time)
- expanded hours of operation of school sites
- promoting schools as a community-based resource used to develop community capacity, not just student capacity.

The diversity of these trends points to the need to develop a flexible operating model that can accommodate learning and service delivery, not just in the next five to 10 years, but beyond.

Research, conducted both locally and overseas, shows that there are significant changes emerging in the way learning occurs and the environment in which it occurs. Government has the opportunity to reassess how it should deliver quality services in the future in order to improve both learning outcomes and life choices.

Building Type	Valuation (\$ billion)	Area (m <sup>2</sup> )
Fixed Solid	2.37	1,600,394
Timber Transportable	0.25	217,839
SAMCON	0.18	88,336
DEMAC	0.13	87,355
Fixed non-solid	0.11	67,013
Metal transportable	0.08	68,481
<b>Total</b>	<b>3.12</b>	<b>2,129,418</b>

The Department of Education and Children's Services (DECS) currently has over 2 million m<sup>2</sup> of accommodation, with a current replacement cost of approximately \$3.12 billion and a written-down value of \$1.6 billion.

Infrastructure projects over the next five years primarily focus on maintenance and upgrades, and new building works, prioritised around the following principles:

- applying maintenance expenditure to the highest priority tasks
- refreshing school infrastructure where the need arises, within funding parameters, due to changing school populations
- replacing ageing relocatable infrastructure with modern facilities

### **Innovative Approaches to the Provision of Education Assets**

Information technology and broadband capability linking sites and services are critical components in tracking and managing students, and gaining the full benefits of integrated services. This may be supplemented with unique identifiers to help student management.

Future service provision will also need to be coordinated with the changes likely to take place as a result of the Australian Government's policy to establish technical colleges, so that the two systems complement each other.

### **Integration of Education with other Services**

The Generational Health Review focused on the community benefits from a greater emphasis on primary health care rather than acute care hospitals. The potential to connect primary health care service delivery with other services increases health care coverage and effectiveness. Primary schools provide a potential access point for some aspects of primary health care. Families would be able to go to integrated childcare, preschool and school services, as their children move through early childhood and other levels of schooling.

The Early Childhood Services Inquiry investigated improved social outcomes for children and parents from the co-location and integration of family and health services with schooling. The government will investigate opportunities for co-location of health, education and community services to achieve greater integration between agencies responsible for provision of services to children.

The State Government is undertaking work on the identification of pilot school sites for co-location or integration of services, focusing primarily on birth to eight years.

It is expected these pilots will deliver a variety of adult and child-oriented activities, including:

- universal parenting, child development and early learning programs
- targeted programs directed towards those identified as at-risk with high clinical and therapeutic needs
- services that are available during the very early years
- parent support programs that are accessible and welcoming
- help for families to liaise with other support services.

### **Pathways and Retention**

The lives of young people are increasingly demanding and complex. Growing numbers of students are at school part-time and at work part-time. Today a student can be engaged successfully in a combination of TAFE and school learning. Flexible education provision and school choice that matches young people's learning styles needs to be fostered. To illustrate the blurring of traditional educational boundaries, the senior secondary school curriculum now includes subject choices from standard TAFE/VET training modules.

An example of this in South Australia is the Urbrae educational facility where the Urbrae Agricultural School has been combined with a TAFE component to provide a complementary range of services.

Several examples of flexible approaches to education facility provision exist (e.g. Enfield Primary School, Hewett Primary School) and show the opportunities that can be developed to improve asset utilisation and service delivery across sectors.

## **Strategic Priorities**

- Undertake gap analysis of the existing capability and capacity of school assets to deliver future needs (e.g. co-location to improve service delivery) and determine required infrastructure capabilities.
- Develop and implement strategies to increase use of the state's education assets to improve children's services, schooling, and integrated service provision, including health and family services.
- Adopt a coordinated approach to future education asset provision, using innovative approaches to provide multi-purpose facilities that incorporate more than just educational uses.
- Integrate planning for provision of education with provision of related or complementary public services.

### Education Exports

The education export industry operates at all levels of education and training, from primary to higher education, and involves both private and public-sector institutions. It is governed by both Australian and State Government legislation and regulations.

Education is a significant direct export earner for South Australia. It also contributes to tourism export earnings, since parents of overseas students generally visit their children studying long-term (over six months) once a year. In 2003 this contribution was estimated at \$350 million. Asia is the main source of students (over 75%).

In 2003 there were 13,467 overseas students studying on-shore in South Australia, in all education sectors representing 5.7% of the national total. This number is projected to rise to nearly 39,000 by 2015, consistent with the SASP target of doubling South Australia's share of overseas students.

The state's education sector has the physical infrastructure capacity to achieve this target.

Strategic infrastructure planning is being undertaken in the context of organisational changes that have seen three institutes formed from the previous eight from 1 January, 2005 and the introduction of a system of program leadership. These changes will enable a system-wide perspective to be taken in maintaining the existing capital stock and prioritising investments in upgraded or new infrastructure. This will assist in ensuring effective infrastructure support for the wide and changing range of areas in which training is required to support skill requirements.

Long-term infrastructure planning will also take account of changes over time in training delivery methods and technologies.

### Strategic Priority

- Ensure infrastructure capacity keeps pace with growth in the number of international students, including capital facilities in schools and teaching and research facilities in high-demand university courses such as business, IT and engineering.

### Vocational Education and Training (VET)

The Government's major VET infrastructure commitment is to the TAFE system. This is distributed across 63 sites in metropolitan and rural South Australia. The system provides an important community resource that, by virtue of the state-wide spread of facilities, is accessible to local communities and small and large industry sectors.

### Planning Framework and Context

Long-term infrastructure plans are being developed for TAFE based on the objective that its infrastructure needs to be flexible, effective, efficient and sustainable in accommodating VET programs.

In accordance with the recommendations of the Skills for the Future Inquiry, infrastructure decisions will be guided by the dual approach of pursuing access and equity in tandem with economic objectives.

The access and equity objective is supported by an infrastructure model that provides multi-purpose basic facilities across the state.

### Existing Asset Base

The Australian Government has in the past, and continues to provide the majority of the capital funding for TAFE. Under current arrangements, the Australian Government provides approximately two-thirds of the annual capital program. It is unclear at this stage whether these arrangements will be affected by the changes to national VET administration recently announced by the Australian Government, including the disbanding of ANTA.

Some assets are under utilised at present and in future years there should be an exploration of shared use opportunities to increase utilisation rates.

The relatively wide dispersion of TAFE sites opens up the potential for an increase in shared use with other government organisations, universities and community organisations. There are some precedents for this as a strategy for improving asset utilisation and encouraging cross-government and sector collaboration, particularly for the delivery of higher education in rural and regional areas.

In South Australia there are 257 non-government registered training providers that deliver VET out of premises not owned by the State Government. In addition there are 12 industry skill centres, most of which operate from sites owned by incorporated bodies (initially funded by the Australian Government). There are also 10 school skill centres.

### Information and Communication Technology (ICT)

Key information systems that are central to the effective operation of the TAFE system are ageing and are in need of upgrade or replacement.

## Strategic Priorities

- Improve levels of utilisation of key TAFE sites through various strategies including shared use with other educational organisations.
- Implement a systematic management program for TAFE assets that is predicated on investment and reinvestment in new infrastructure that matches the changing needs of the community and industry.
- Develop and implement an infrastructure model that supports the achievement of equity and economic objectives through: (1) the provision of multi-purpose basic facilities across a broad spectrum of campuses to support the equity and community-based objective; (2) the consolidation of more specialised activities on lead campuses to strengthen the TAFE link to growing industry clusters and improve asset performance.
- Ensure that investments in training infrastructure to support training in particular market segments (e.g. international students) or geographic areas take account of broader requirements for student accommodation and related services.
- Develop ICT infrastructure to support better administration and delivery of VET.
- Upgrade and renew ICT systems that support the effective administration of the TAFE system.

**Higher Education**

Development of the higher education sector is a priority for the State Government. Higher education is a key driver of economic and social development in the state, and a major industry in its own right. For Adelaide to become recognised as an education city and a destination of choice for both international and domestic students, maintenance and enhancement of the higher education infrastructure is essential. The sources of funding for infrastructure are the Australian Government and revenue generated by the universities.

The state must be able to respond in a timely manner to changing research priorities, student demand and workforce needs. To this end, the government established the Higher Education Council in 2002 to better align government and university objectives.

The strengthened role of the Higher Education Council and an improved focus on resourcing were key recommendations of the Economic Development Board.

The sector will be strengthened by further development of non-university higher education providers and the establishment of a fourth, private, US-affiliated university in South Australia.

The new university will be developed in association with Carnegie Mellon University (US). It is envisaged that US postgraduate degrees would be offered in a range of disciplines including public administration and public policy, information and computer science and business management. These programs will complement the offerings of the state's existing universities while increasing student choices and attracting a greater number of overseas students to South Australia.

To support South Australia's expanding higher education sector, it is clear that existing infrastructure, both physical and human, must be maintained and augmented.

The requirements for research infrastructure in universities and other research centres are detailed in the STI<sup>10</sup> plan for science, technology and innovation and in the STI section of this plan. In addition, significant investments in student accommodation, libraries, information systems, and pre-university English language and foundation studies courses for international students are required, together with incentives to attract and retain the excellent academic and support staff who are essential to the operation of quality higher education institutions.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
<b>Children's Services</b>				
Investigate the infrastructure required to support the integration of services and to meet the future care and education needs of children <b>* Lead – State Government</b>	1	*	*	2.2 6.1
Redevelop preschool/childcare facilities to provide full day care options for families <b>Lead – State Government, private sector</b>	2	*	*	2.3 6.1
Establish Child and Family Centres through the extension of school/childcare sites to accommodate health and family and community services <b>Lead – State Government</b>	2	*	*	2.2 2.3 6.1
<b>Schools</b>				
Invest in high speed broadband technology for schools <b>Lead – State Government</b>	U/way	*	*	6.13
Investigate the reconfiguration of physical infrastructure to deliver future education and childhood care services <b>Lead – State Government, private sector</b>	1	*	*	6.8 6.12 6.13 6.14
<b>Vocational Education and Training</b>				
Maintain, upgrade and improve utilisation of existing TAFE facilities and equipment to support broad accessibility of training <b>Lead – State Government</b>	U/way	*	*	1.18 6.15 6.17
Provide sufficient broadband capability, particularly in regional areas, to enable the delivery of an up-to-date curriculum <b>Lead – State Government</b>	U/way	*		5.11 6.15 6.17
Continue to invest in VET teaching and learning technologies to enhance the delivery of online learning and training services <b>Lead – State Government</b>	1	*		6.15 6.17

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Establish a maritime skills centre at the Osborne maritime precinct to support the skill development needs of the proposed naval ship building program <b>Lead – State Government</b>	1	*		6.15 6.17
Undertake Stage 1 redevelopment of the Marlestone campus to support a centre of excellence in the building trades (to be done in a number of stages, Stage 1 being building and furnishing) <b>Lead – State Government</b>	1	*		6.15 6.17
Further develop facilities in the metropolitan area for hospitality training, and associated student accommodation and retailing <b>Lead – private sector</b>	1	*		6.15 6.17
Develop a centre for veterinary and applied science (VASC) at Gilles Plains campus <b>Lead – State Government</b>	1	*		6.15 6.17
Upgrade and reconfigure Elizabeth TAFE campus <b>Lead – State Government</b>	2		*	6.15 6.17
Upgrade and reconfigure Noarlunga TAFE campus <b>Lead – State Government</b>	2		*	6.15 6.17
Establish a new TAFE campus in the southern metropolitan area <b>Lead – State Government</b>	2		*	6.15 6.17
Expand student accommodation and facilities to match demand <b>Lead – private sector</b>	2	*	*	1.14
Ensure that future infrastructure requirements of TAFE in regional South Australia support the expected growth in the primary and allied industries e.g. in Port Lincoln, Barossa, Clare and the Riverland <b>Lead – State Government</b>	2	*	*	5.11 6.15 6.17
Undertake Stages 2 and 3 redevelopment of the Marlestone campus <b>Lead – State Government</b>	2		*	6.15 6.17
Develop a centre of excellence in engineering at Regency Park similar to the models currently being planned for VASC and the building trades at Marlestone <b>Lead – State Government</b>	2		*	6.15 6.17
Develop study centres in regional areas in partnership with universities <b>Lead – State Government, university sector</b>	2		*	5.11 6.16
Develop two Australian technical colleges <b>Lead – Australian Government</b>	2	*		6.16

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Higher Education</b>				
Develop the City West campus of the University of South Australia as a centre for arts, business and indigenous teaching and research <b>Lead – university sector</b>	U/way	*		6.1 6.16
Continue to develop educational and supporting infrastructure to keep pace with growth in international student demand <b>Lead – university sector, State Government</b>	U/way	*		1.14
Construct a pre-university teaching centre for international students at Flinders University <b>Lead – university sector</b>	1	*		1.14 6.14 6.16
Establish facilities for the new fourth university (Carnegie Mellon) <b>Lead – university sector, State Government</b>	1	*		4.10 6.16
Contribute to the provision of infrastructure required to expand the development of partnerships between the University of Adelaide, TAFE, secondary schools and agribusiness on the Roseworthy campus <b>Lead – university sector, State and Australian Governments</b>	2	*		4.6 4.10 6.16



# Education And Training

## Link to South Australia's Strategic Plan Objectives

Building on the existing capabilities and infrastructure of the state's five innovation precincts will contribute toward the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Economic growth</b>	Exceed the national economic growth rate within 10 years. (T1.5)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 4: Fostering Creativity

<b>Commercialisation of research</b>	Increase patent applications to exceed our population share of all Australian applications within 5 years. (T4.2)
<b>Investment in science, research and innovation</b>	Exceed the national average of business expenditure on research and development (as a percentage of GSP) and approach the OECD average within 10 years. (T4.6)
<b>Cooperative Research Centres, Centres of Excellence and Major National Research Facilities</b>	Have based in South Australia either the headquarters or major node of at least 40% of all existing CRCs, Major National Research Facilities and Centres of Excellence within 5 years. (T4.8)
<b>Creative Education</b>	Improve the connections between educational institutions and industry to enhance creativity and innovation. (T4.10)

### Objective 5: Building Communities

<b>Regional Infrastructure:</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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## Background

The major research-intensive organisations in South Australia (being either public sector or linked to public sector) are:

- The state's three universities – the University of Adelaide, Flinders University of South Australia and the University of South Australia, including their associated research institutes/centres spread across various campuses
- Dedicated research and development (R&D) centres of excellence, including the Australian Genome Research Facility, Airborne Research Australia, Australian Wine Research Institute, Australian Centre for Plant Functional Genomics and approximately 20 headquarters or nodes of Cooperative Research Centres
- The Commonwealth Scientific and Industrial Research Organisation (CSIRO), supporting mostly agribusiness, natural resource management and manufacturing R&D
- The South Australian Research and Development Institute (SARDI), specialising in agricultural, aquatic, environmental and biodiversity sciences
- The Defence Science and Technology Organisation (DSTO), providing a large concentration of defence and related research linked to the state's universities, which attracts defence and related ICT companies to the state
- Hospitals and medical research institutes and the Department of Human Services, undertaking health and medical R&D across diverse locations e.g. along Frome Road, and at North Adelaide, Flinders and Woodville

In addition, TAFE and other vocational education and training organisations contribute significantly to the innovation process through their expertise in converting ideas into practice and accelerating the commercialisation process.

The South Australian Government has identified science, technology and innovation (STI) as a major contributor to future economic growth, with the release of the 10-year vision for STI (STI<sup>10</sup>) – which provides a framework for the development of the five precincts across the Adelaide Innovation Constellation. These precincts are all associated with a university or public-sector research institution as well as industry contributors.

A key strategy in the implementation of STI<sup>10</sup> is building capability and infrastructure across all precincts. STI-related infrastructure includes the buildings, research facilities and equipment that support organised research.

The quality of the STI built environment is inextricably linked to the human, social and structural capital it supports. High-quality infrastructure attracts the elite scientists, engineers, entrepreneurs, and industrialists who are core to collaborative networks. These networks then attract clusters of innovative industrial capability leading to significant business investment in R&D and economic development.

### Recent State Investments in STI Capability and Infrastructure

In recent years the state has made some valued infrastructure investments in general support of STI<sup>10</sup>, including:

- ACPEG - The now completed Plant Genomics Centre which houses the \$30 million Australian Centre for Plant Functional Genomics Pty Ltd (ACPGF) at the Waite Agricultural Research Institute. This infrastructure investment has created a centre of excellence that is performing beyond initial expectations in attracting students and funding in an area of strategic importance for the state.
- SABRENet - This \$9.2 million project is to construct a large-scale broadband network connecting research and education sites within the larger metropolitan Adelaide region, linked to the national research network. The partnership includes the three South Australian universities, CSIRO and DSTO with co-funding from the Australian Government.
- SACITT - SABRENet is linked with the state's investment in high-performance computing (\$3.135 million state funding investment in 2003/04) involving the South Australian Consortium on Information Technology and Telecommunications (SACITT). This includes bioinformatics/population health informatics programs.
- CRCs - Increased support for the Cooperative Research Centres ninth round bids (forward commitment of \$4.2 million over seven years from 1 July 2005), which resulted in the state winning new funding for CRCs in automotive manufacturing, environment, water and agribusiness late in 2004.
- Bioscience incubator - Support for the development of a new \$9 million bioscience incubator at the Thebarton Bioscience Precinct to help technology-based business development, plus an additional \$2.4 million over four years to support rental subsidies for start-up companies operating from this incubator.
- MISA - A \$12.9 million investment to support the expansion of ecologically sustainable development of South Australian fisheries, aquaculture and marine eco-tourism through the Marine Innovation SA (MISA) initiative. This initiative led by the South Australian Research and Development Institute (SARDI), targets the aquaculture industry in R&D, technology transfer and education.

## Challenges and Opportunities

### State STI Infrastructure

The state's level of business expenditure on R&D is now greater than other states on a Gross State Product (GSP) basis (1.08% of GSP – 2002/03 – and has increased in dollar value over the past five years). Built infrastructure and shared facilities are essential elements through which academe and industry engage and work together in cooperative networks.

There is a strong and growing national trend towards funding of large teams of researchers in major centres or institutes. Australian Government funds are increasingly directed to investment in incorporated R&D structures. In particular, funding is directed towards proposals that include several research organisations, often from more than one state, as well as industry participants, TAFEs and State Government departments.

The state therefore needs to make more strategic investments such as that made in the Australian Centre for Plant Functional Genomics. Such large-scale STI infrastructure projects in joint ventures between industry, university and governments are a recurring feature of major interstate developments in recent years.

The existing elements along with a number of new initiatives need to be drawn together as recognisable precincts that deliver research, education, training and commercialisation that collectively boost the state's economic performance.

### Adelaide Innovation Constellation

The Adelaide Innovation Constellation concept outlined in STI<sup>10</sup>, consists of at least five 'precincts' of intensive R&D activity and innovation, each specialising in a particular field that aligns with South Australia's industry strengths and/or areas of opportunity.

The precincts will be based around existing research and development infrastructure, but each will develop to include additional features, such as community forums, schools, TAFEs, business (from micro to multinational) and incubator facilities. These will include both business and technology to promote and exploit research opportunities.

Facilities will be designed to promote effective interaction within and across disciplines and include office space for visitors (scientific and business) from other precincts, and from around Australia and overseas.

Self-funded industry associations and industry-led 'clusters' in such areas as water, defence, environment and health will provide primary communication networks and market channels, for business people and academics alike, across the precincts and the state.

The precincts will be nationally and internationally recognised as the reference points for any contact with the knowledge base for which each precinct specialises. Each precinct will have a recognisable geographical focal point but may also include a number of related sites, local or further afield, which are linked by collaboration and technical association. These linkages will ensure that regional areas are included in the expansion of South Australia's R&D, education and industry capacity.

The Adelaide Innovation Constellation will be marketed as an international brand, to enhance the reputation of the Waite, Mawson Lakes/Edinburgh, Flinders, Thebarton and Florey precincts. The existing and distinctive capabilities of each precinct will be strongly promoted nationally and internationally e.g. in agribusiness, bioscience, ICT/electronics, defence, marine, environment and medical.

### Australian Government Initiatives

In 2001 the Australian Government launched 'Backing Australia's Ability'—an investment in research and innovation of \$3 billion over five years to 2005–06.

In May 2004, the National Collaborative Research Infrastructure Strategy (NCRIS) was announced as part of 'Backing Australia's Ability II' (BAAIL), with funding of \$5.3 billion from 2005/06–2011/12.

NCRIS will provide more than \$542 million nationally, from 2006/07 – 2010/11, to establish major research facilities, supporting infrastructure and networks necessary for world-class research. South Australia will target up to 15 % of the NCRIS pool of funds (between \$60 and \$80 million), which will require a state outlay of approximately \$10 to \$15 million. The state needs to cooperate with other Australian governments on major projects and where shared capabilities extend across different states.

Investments would need to be aligned with established industry strengths e.g. in food, wine, automotive and defence, or address identified gaps in R&D capability important to the state's social and economic development.

The BAAIL package also provides \$305 million over the next seven years to the CSIRO to enable the development of its flagship programs. The state and the CSIRO have jointly completed a detailed mapping study of their relationship and identified a number of important collaborative opportunities.

### Strategic Priorities

- Identify priorities for STI infrastructure development consistent with state development objectives and the STI<sup>10</sup> vision to deliver joint investment by industry, research institutions and government.
- Establish the innovation, education and training precincts to form the Adelaide Innovation Constellation.
- Maximise opportunities to secure Australian Government funding for STI infrastructure via NCRIS and other sources.
- Promote the development of collaborative approaches by research organisations, industry and government to build and use STI infrastructure.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Develop the framework for evaluation of R&D infrastructure proposals and complete the innovation audit to map existing STI infrastructure, including identification of unmet demand <b>* Lead – State Government</b>	U/ way	*		4.2 4.6 4.8 4.10
Complete the master plans for: <ul style="list-style-type: none"> <li>■ the redevelopment of the Frome Road biomedical research precinct (Florey Precinct)</li> <li>■ the Flinders Precinct</li> <li>■ the Mawson Precinct</li> <li>■ the Waite Precinct</li> </ul> <b>Lead – State Government, research sector</b>	U/ way	*		4.2 4.8 4.10
Complete the Thebarton Precinct planning process and build additional specialist facilities to complete development of the Thebarton bioscience hub <b>Lead – State Government, research sector</b>	U/ way	*		4.2 4.8 4.10
Establish Marine Innovation SA facilities (MISA) <b>Lead – research sector</b>	U/ way	*		4.6
Establish a science media centre <b>Lead – State Government</b>	U/ way	*		4.10
Develop a proposal for the establishment of a Centre for Innovation to accelerate industry take-up of emerging advanced manufacturing technologies <b>Lead – State Government</b>	U/ way	*		1.5
Establish an ancient-DNA laboratory <b>Lead – research sector</b>	U/ way	*		4.6
Co-locate manufacturing research activities including the CSIRO Division of Manufacturing and Infrastructure Technology, the University of South Australia's Advanced Manufacturing Centre of Excellence and the Centre for Advanced Manufacturing Research in a new SA Mawson Centre for Advanced Manufacturing <b>Lead – State Government, research and private sectors</b>	2	*		4.6 4.10

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
Strengthen the capabilities of the Waite Precinct by:				
■ building new facilities to house the major R&D players in the wine industry in the one location	2	*		4.6 4.10
■ establishing an incubator to provide laboratory and office space and specialist facilities for early stage agriculture and wine firms with potential for high growth	2		*	4.2 4.10
■ co-locating natural resource management and climate assessment activities in a new cluster at the Waite	3		*	4.10
<b>Lead – State Government, research and private sectors</b>				
Implement the Florey Precinct master plan, with the building of the new National Centre for Intergenerational Health as a priority	2		*	2.2 4.8 4.10
<b>Lead – State Government, research and private sectors</b>				
Establish an incubator at the Mawson Precinct to provide laboratory and office space for early stage defence, ICT and materials science firms with potential for high growth	2		*	4.2 4.10
<b>Lead – State Government</b>				
Establish a Public Science and Technology Centre to focus on community and outreach activities (building on the Project Catalyst initiative)	2		*	4.10
<b>Lead – State Government, private sector</b>				
Establish an ICT Centre of Excellence to include expertise in wireless and antennas, intelligent transport systems, energy supply and distribution, data and health informatics, high performance networks and defence systems integration	3		*	1.5 4.10
<b>Lead – State Government, private sector</b>				

## Link to South Australia's Strategic Plan Objectives

Strengthening the capacity of the justice system to achieve a safer community will contribute toward the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)
<b>Performance involvement in the South Australian public sector – productivity</b>	Lead the nation in cost effectiveness of government services within 5 years. (T1.18)

### Objective 2: Improving Wellbeing

<b>Quality of life</b>	Improve Adelaide's quality of life ranking on the William M. Mercer Quality of Life index to be in the top 20 cities in the world within 10 years. (T2.1)
<b>Crime rates</b>	Reduce crime rates to the lowest in Australia within 10 years. (T2.8)

### Objective 5: Building Communities

<b>Regional crime rates</b>	Reduce the level of crime in South Australia's regions by 10 per cent within 10 years. (T5.10)
<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

### Objective 6: Expanding Opportunity

<b>Aboriginal wellbeing</b>	Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention rates and imprisonment. (T6.1)
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## Background

The South Australian Government is responsible for providing civil justice, criminal justice and emergency services across South Australia.

Shifting demographics in South Australia demand changes to the way services are provided. These changes present many challenges, in particular dealing with fear of crime, especially among elderly residents; reducing the high representation of Aboriginal youth coming into contact with the criminal justice system; and managing community perceptions about the safety and reliability of the justice system.

## Challenges and Opportunities

### Capacity of the Courts System

The Courts Administration Authority (CAA) makes extensive use of computer applications, with its civil and criminal case management systems being the core operational systems. Redevelopment of ICT systems would overcome the risk of system failure from current ageing applications and software as well as provide a combined civil and criminal case management system with enhanced e-business capability. Other expected benefits of this project include increased efficiencies through digital recording of cases and faster reporting of outcomes.

A number of courthouses in regional areas require redevelopment. The courthouses at Berri, Port Lincoln and Port Pirie no longer have the capacity to hear the volume of cases being generated and are deficient in terms of security and safety. The redevelopment of these court houses is a priority for the government.

### Strategic Priority

- Ensure an appropriate level of fit-for-service court facilities and associated technology to support a democratic and fair justice system.

### Integrated Justice Program

There are significant and growing problems with the current ICT systems, which provide the backbone for information management across much of the justice system. The systems were built using 1980s technology.

The replacement of these systems is best undertaken with a planned and progressive approach spread over a 15-year period.

The Integrated Justice Program (IJP) is a vehicle to improve business processes and services, while providing a low-risk and incremental approach to replacing ageing ICT systems.

The planned process improvements in the criminal justice system will result in:

- more effective prosecution of offenders
- improved use of information as a tool to reduce crime
- faster finalisation of matters from initial incident to court outcome
- reduced clerical effort and improved productivity, freeing up police and administrative resources from unnecessary paperwork
- reduced pressure on correctional 'remand' facilities due to faster throughput of cases, and a reduction in crime and recidivism
- improved services to victims of crime.

IJP covers the major case management systems in each of the criminal justice agencies, apart from the South Australia Police (SAPOL). Consistent with the approach undertaken by many jurisdictions across the world (e.g. Ontario, Canada and Victoria, Australia), IJP will implement a common and shared infrastructure for data exchange across criminal justice agencies.

### Strategic Priority

- Ensure that crime and disorder are dealt with effectively in our state through the application of modern ICT systems.

### Police Facilities

#### CBD Police Accommodation

The Adelaide central business district currently contains a number of different police buildings that require improvements for operational and security reasons. A police CBD accommodation strategy has been developed to address these issues, with the focus being SAPOL's state headquarters and Adelaide local service area headquarters.

### Strategic Priority

- Progress a police CBD accommodation strategy.

**Police Operational Facilities**

SAPOL operates police stations in 130 locations state-wide and the facilities range from large, modern, recently constructed facilities to small facilities constructed in the late 1800s. A continuous upgrade and replacement program is required to ensure SAPOL’s operational facilities effectively support policing objectives, comply with current standards and are cost-effective to operate.

A number of upgrade/replacement projects are planned over the next decade to achieve an appropriate level of accommodation to support SAPOL’s objectives.

*Mount Barker, Port Lincoln, Victor Harbor, Gawler and Berri Police Stations*

Redevelopment of these facilities will be undertaken through a private public partnership (PPP) arrangement, with work to commence following the appointment of a PPP provider in 2005.

*Northeastern Suburbs and South Coast*

New police stations at locations such as Golden Grove, Para Hills and Aldinga are high priorities to ensure the delivery of police services to growing communities.

**Information Systems and Technology**

SAPOL has a large installed base of technology and applications that underpin and support policing. These ageing assets must be replaced to meet the demands of policing in a high-technology world.

Areas identified for further development include:

- criminal intelligence capability
- crime reporting and criminal justice processes
- traffic management and road safety
- counter-terrorism and national information exchange
- e-crime.

**Capacity of the Prison System**

Currently the South Australia prison system is based on nine relatively small prisons spread across the state.

Reconfiguration of the prison system will result in a more cost-efficient prison system and a safer community through better rehabilitation outcomes. It would also enable a range of significant operational risks to be better addressed.

**Emergency Services**

**Integrated Emergency Service Training Facility**

Operational training of fire fighters in the South Australian Metropolitan Fire Service (SAMFS) and South Australian Country Fire Service (SACFS) is conducted at facilities at Angle Park and Brukunga. There is a demand for initial and ongoing training including specialist training in Urban Search and Response (USAR), handling of hazardous materials (HAZMAT), Chemical Biological Radioactive Response (CBR) and the consequences of terrorist attack.

The development of the Fire and Emergency Services Commission will enable more effective and comprehensive training and economies of scale by integrating the training services and facilities.

A world-class facility providing learning opportunities and skills accreditation for emergency service staff and volunteers will support government public safety priorities.

**Strategic Priority**

- Ensure that training, accommodation and ICT infrastructure support efficient and effective policing.

### Co-location of Emergency Services Headquarters

The SACFS and the State Emergency Service South Australia (SESSA) both have headquarters and state operations in buildings unsuited to future operational needs.

The development of the Fire and Emergency Services Commission seeks to improve collaboration between all emergency service organisations and to implement new corporate governance arrangements. Operational and cost benefits from this change will be realised when SACFS, SESSA, SAMFS and the Commission are co-located.

Co-location of communication and operations centres is planned to improve efficiencies and achieve economic benefits.

Analysis of emergency service delivery and volunteer needs will continue until all three services have accommodation needs that meet service demands.

### Strategic Priority

- Consolidate and co-locate emergency services activities.

### Rural Property Addressing System

The implementation of a rural property addressing system will greatly assist emergency services work in South Australia. In some rural areas a map reference system (RAPID) has been implemented by local emergency services groups, but RAPID is not an addressing system, does not have universal coverage and relies on the user having access to maps or positioning technology.

Implementation of a standard rural property addressing system across the state will result in all occupied rural properties being allocated a single easy-to-use address, which will facilitate delivery of emergency services.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Courts Administration Authority</b>				
Redevelop courthouses in Berri, Port Lincoln, Port Augusta and Port Pirie and refurbish the Victor Harbor courthouse * <b>Lead – State Government</b>	U/way	*		2.8 5.10
Review operations of the Supreme Court building <b>Lead – State Government</b>	2		*	2.8 5.10
Develop progressively information technology infrastructure and case management systems to support the court system <b>Lead – State Government</b>	3	*	*	2.8 5.10
<b>Attorney-General's Department</b>				
Enhance police and emergency service response time by: ■ Completing the audio management system project ■ Implementing the SA Computer Aided Dispatch project <b>Lead – State Government</b>	U/way 1	*	*	2.8 5.10
Implement the Integrated Justice Program to replace the ageing ICT system <b>Lead – State Government</b>	U/way	*		2.8 5.10
<b>SA Police</b>				
Install mobile data terminals in all police vehicles <b>Lead – State Government</b>	U/way	*		2.8 5.10
Develop new police facilities at Port Lincoln, Mount Barker, Gawler and Victor Harbor, and extend the existing facilities at Berri <b>Lead – State Government</b>	U/way	*		2.8 5.10
Construct new police stations in the north-eastern suburbs <b>Lead – State Government</b>	1	*		2.8 5.10
Construct new police station at Aldinga <b>Lead – State Government</b>	1	*		2.8 5.10

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Projects

Project	Priority	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Correctional Services</b>				
Undertake extensions to the Mobilong Prison <b>Lead – State Government</b>	U/way	*		2.8
Reconfigure the prison system <b>Lead – State Government</b>	2	*	*	2.8 5.10
Establish a low-security correctional facility for Aboriginal offenders from APY Lands <b>Lead – State Government</b>	2	*	*	6.1 5.10
Replace cell block at Cadell Training Centre <b>Lead – State Government</b>	3		*	2.8 5.10
<b>Emergency Services</b>				
Accelerate appliance replacement and station upgrades <b>Lead – State Government</b>	1	*	*	2.1
Construct and equip a number of fire stations in metropolitan and rural areas <b>Lead – State Government</b>	2	*	*	2.1 5.11
Establish an integrated emergency services training facility as a centre of excellence in firefighting, various rescue types, USAR, CBR and HAZMAT <b>Lead – State Government</b>	3		*	2.1

## Link to South Australia's **Strategic Plan Objectives**

Increased use and ongoing development of 'fit-for-purpose', accessible recreation and sport facilities will contribute to the following targets:

### Objective 1: Growing Prosperity

<b>Tourism industry</b>	Increase visitor expenditure in South Australia's tourism industry from \$3.4 billion in 2001 to \$5.0 billion by 2008 by increasing visitor numbers and length of stay and, more importantly, by increasing tourist spending. (T1.13)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 2: Improving Wellbeing

<b>Healthy South Australians</b>	Increase healthy life expectancy of South Australians to lead the nation within 10 years. (T2.2)
<b>Overweight</b>	Reduce the percentage of South Australians who are overweight or obese by 10% within 10 years. (T2.6)
<b>Sport and recreation</b>	Exceed the Australian average for participation in sport and physical activity within 10 years. (T2.7)

### Objective 5: Building Communities

<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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### Objective 6: Expanding Opportunity

<b>Aboriginal wellbeing</b>	Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention rates and imprisonment. (T6.1)
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## Background

### Provision of facilities and funding

Recreation and sport providers include the three levels of government and a range of community and private sector organisations. The majority of recreation and sport facilities are provided and maintained by State and local government (approximately 40% state and 50% local). Australian Government funding for facility development is minimal in comparison, and declining.

The State Government is responsible for the management and operation of 10 significant level recreation and sports facilities. The State Government supports elite sport through the South Australian Sports Institute (SASI) and other government funding programs and services.

Private sector support is predominantly in the areas of fitness, learn to swim and alternative sports, but remains relatively minor in terms of facility provision. The majority of this support is sponsorship and focuses on the management and marketing of elite sport.

### Current infrastructure

South Australia has 308 facilities catering for international, national, state and regional level sporting competitions, events and training for 87 different sports. Of these, 225 are classified as being of regional level. The users of these facilities come from a wide catchment.

Most international, national and state standard facilities are located in the metropolitan area. There are many more local level facilities throughout the state such as school courts, local ovals, community sports fields and recreation centres.

### Community trends and expectations

South Australia aims to exceed the Australian average for participation rates in sport and physical activity. Currently almost half of the adults in South Australia are not being active enough to gain health benefits.

More than 40% of Australian adults are overweight or obese, and national trends indicate that these conditions are on the increase. Obesity among children and across all age groups of the Indigenous population is of increasing prevalence and concern. Improving the level of physical activity through sport and recreation is one way to overcome this problem.

Modern lifestyles have resulted in a trend away from team sports to individual sports and unstructured physical activities. The most popular are walking, aerobics/fitness, cycling, swimming, golf, tennis and running. The number of spectators at elite sports events is on the rise, but attendances at 'week-to-week' sporting competitions in which the elite players are not involved are decreasing.

Sports clubs and associations and participants in sport at a local level have an expectation that facilities will be developed and equipped to a reasonably high quality, and expectations are growing. Standards for international and national level facilities are consistently improving to assist elite sport development and performance.

## Challenges and Opportunities

### Asset Management and Maintenance

Ageing infrastructure, increasing maintenance requirements and development expectations will need to be addressed if the state's sports and recreation facilities are to be maintained as 'fit for purpose', and to meet both the changing needs of the community and legislative requirements.

The burgeoning participation in unstructured recreational pursuits, particularly among young people, is placing additional demands on community facilities to become multi-purpose.

To be sustainable, facilities should be accessible, flexible and multi-use and be capable of being used day and night and in adverse weather conditions. Consideration in this context must also be given to the diversity of the population, including issues associated with obesity and ageing, and the needs of Indigenous people, migrants and people with disabilities.

### Strategic Priorities

- Refocus the design, provision and distribution of appropriate recreation and sporting facilities throughout the state to improve access to and use of them at the community level.
- Achieve greater coordination between State and local governments and the private sector to develop sustainable, multi-use and adaptable facilities to meet changing community needs.

### National and International Events

The state has a contractual commitment to host the 2007 World Police and Fire Games. South Australia has also secured a number of additional national and international sporting events in the next three years (e.g. track cycling, rowing and the Oceanic championships) and is pursuing a number of others (e.g. golf, BMX, table tennis, rugby union and league, hockey and lacrosse).

South Australia can build upon the success and reputation of successful major sporting events, e.g. the Tour Down Under and National Track Cycling Championships. Additional facilities for criterium racing and mountain-bike riding, and ongoing development of the Superdrome will help position Adelaide as Australia's premier cycling destination.

### Strategic Priorities

- Ensure South Australia has sporting facilities capable of hosting international and national events.
- Improve coordination between State Government agencies and the sports industry to attract and retain major sporting events.

### Community Level Recreation and Sports

The following infrastructure needs have been identified in community level facilities:

- Pool facilities – there are three indoor pools in the metropolitan area and an inequitable distribution of 50-metre indoor pools in the state. Within metropolitan Adelaide, some areas lack 25-metre indoor pools while other areas experience some duplication.
- Indoor courts – there is an inequitable distribution of indoor courts for community use (e.g. suitable for basketball, netball and badminton). Some areas lack such facilities; others have an oversupply, which makes maintaining quality a challenge. New courts developed for schools are often three-quarter size, making them unsuitable for use by the broader community.
- Recreational trails – continued sustainable development of the state recreational trails network is required to meet the growing demand for unstructured recreation, particularly walking and cycling, and to support tourism initiatives.
- Soccer pitches – an increase in the popularity of soccer, particularly among girls, has resulted in a deficiency of pitches in the metropolitan area.

There are also opportunities to increase use of the state's existing facilities including the expansion and greater use of key sporting hubs to meet the needs for elite level sporting facilities e.g. State Sports Park, ETSA Park and Santos Stadium.

The increased use of government land and buildings, particularly education facilities, will help meet community recreation and sport needs. This can be facilitated by improved partnerships between State and local governments and community organisations.

South Australia is well placed to capture the growth in popularity of unstructured recreational activities (predominantly walking and cycling) through the state trails network e.g. Mawson Trail, Riesling Trail, Coast Park, River Torrens Linear Park, Heysen Trail and Yurrebilla Trail.

### Strategic Priorities

- Develop cross-government policy and design guidelines to ensure local school sport facilities maximise school and community use.
- Promote the shared use and take up of existing publicly-owned sporting infrastructure through partnership opportunities between state and local government.
- Support the development of local and regional recreation and sport and open space strategies.
- Focus community level funding towards areas with demonstrated needs and identified infrastructure priorities e.g. community level swimming pools, indoor courts, recreational trails and soccer pitches.
- Review the provision and distribution of public pools and indoor recreation and sport centres.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Increase the capacity and quality of government facilities</b>				
Redevelop SASI's elite sporting facilities within a strategically located sports precinct <b>* Lead – State Government</b>	2		*	2.2 2.7
Continue development of Eagle Mountain Bike Park to provide for public use, state and national competition <b>Lead – State Government</b>	2	*		2.2 2.7
Develop the state's recreational trails network <b>Lead – State Government</b>	3	*	*	1.13 2.2 2.7
Provide accommodation in association with major sporting hubs (e.g. State Sports Park) <b>Lead – private sector</b>	3		*	1.13 2.2 2.7
<b>Improve existing facilities</b>				
Facilitate greater use of public school facilities by community sporting groups <b>Lead – State Government</b>	1	*	*	2.2 2.6 2.7
Facilitate the maintenance of and improvements to existing outdoor pools <b>Lead – local government</b>	2	*	*	2.2 2.7
Redevelop the western grandstand facilities at Adelaide Oval <b>Lead – community sector</b>	3		*	2.2 2.7
<b>Develop new infrastructure</b>				
Develop a State Aquatic Centre at Marion for international and national competition <b>Lead – Australian Government, State Government, local government. (subject to funding commitment)</b>	1	*		1.13 2.7
Provide a permanent criterium cycling track for international, national and state competition <b>Lead – State Government</b>	2		*	1.13 2.2 2.7

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



# Recreation And Sport

## Link to South Australia's **Strategic Plan Objectives**

**Improved management and use of arts, culture and heritage assets will contribute towards the achievement of the following targets:**

### Objective 1: Growing Prosperity

<b>Tourism industry</b>	Increase visitor expenditure in South Australia's tourism industry from \$3.4 billion in 2001 to \$5.0 billion by 2008. (T1.13)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 2: Improving Wellbeing

<b>Quality of life</b>	Improve Adelaide's quality of life ranking on the William M. Mercer Quality of Life index to be in the top 20 cities in the world within 10 years. (T2.1)
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### Objective 4: Fostering Creativity

<b>Creativity</b>	Achieve a ranking in the top 3 regions of Australia in Richard Florida's Creativity Index within 10 years. (T4.1)
<b>Film, television, audiovisual and digital content</b>	Significantly grow and expand South Australia's share of the national feature film industry to match our population share. (T4.3)
<b>Creative education</b>	Improve learning outcomes in the arts and other curriculum areas that utilise enterprise education. (T4.9)

### Objective 5: Building Communities

<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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## Background

Arts, culture and heritage play a significant role in expressing the state's character; cultural richness; and the attributes South Australians have in common – ideas, values, sentiments and traditions.

The arts and cultural industries in South Australia include: film, television and multimedia production; radio broadcasting; recording; film distribution and exhibition; dance, music, opera and theatre; museums and galleries; design; visual arts and crafts; writing; journalism; publishing; community arts; libraries; public art; heritage conservation services and built heritage.

Over many decades, South Australia has been at the forefront in the arts and been renowned for the calibre of its artists, the excellence of their work, the quality of the arts infrastructure and dynamic events.

The physical infrastructure that underpins arts and cultural activity in South Australia includes a wide variety of buildings, spaces and venues; equipment; museum collections and their heritage buildings, which are some of South Australia's most valuable assets.

The combined value of the collections housed in the Art Gallery of South Australia, the South Australian Museum and the State Library alone is approximately \$689 million.

Visitor numbers to these cultural institutions are increasing. The redeveloped State Library has had more than one million visitors since reopening in October 2003, and approximately one million visitors per annum visit the museum and art gallery.

Tourism statistics show that mature age visitor growth in South Australia over the next 30 years will double from 5.5 million in 2001 to more than 10 million by 2031. Cultural events are of strong interest to this mature-age growth market.

South Australia has a major investment in its cultural infrastructure, which includes assets such as the nationally recognised collections at the Art Gallery of South Australia, South Australian Museum, State Library, Artlab facilities, History Trust museums, Tandanya, South Australian Film Corporation and the colonial building stock.

These assets together with organisations such as Arts SA, Adelaide Festival Centre, Country Arts SA, Australian String Quartet, Heritage SA and many others enable South Australia to:

- Initiate and present major events, such as the Adelaide Festival of Ideas, the Adelaide Film Festival, the *Ring Cycle*, WOMAD and Adelaide Festival of Arts.
- Provide free access to world-class art, natural history, ethnographic, social history and reference collections.
- Present a diversity of live performance – in music, dance and drama.
- Provide heritage conservation services nationally and internationally.

## Challenges and Opportunities

### Adelaide Botanic Gardens

Botanic gardens have a long history of aesthetic, economic, scientific and educational contribution to society. The Adelaide Botanic Gardens is no exception – its extensive living and herbarium collection makes it one of the most visited cultural attractions in the state, with more than a million visitors each year.

Founded in 1855 as an expression of the era, the Adelaide Botanic Gardens' development occurred during the settlement of the state, when there was a prime focus on evaluating plants of economic and ornamental benefit. A new vision is now being developed for the gardens in response to changes in society and the changing role of botanic gardens in general. This vision is expressed in a Site Master Plan developed for the Adelaide Botanic Gardens and the Mount Lofty Botanic Gardens. While the objectives remain centred on education, research and recreation, the focus is now on plant conservation and sustainability. The gardens also contribute to research and education through the living and herbarium collections.

The implementation of the Site Master Plan will require the redevelopment and reinvigoration of the cultural and heritage assets within the Adelaide Botanic Gardens. In addition, there will need to be a focus on new ways of managing its assets and researching and interpreting collections.

### Strategic Priority

- Achieve the vision for the Adelaide and Mount Lofty Botanic Gardens.

### Managing and Making the Best Use of Heritage Assets

In total, there are more than 300 government-owned heritage places in the State Heritage Register, spread across South Australia and managed by various state agencies.

'Heritage directions: a future for built heritage in South Australia identified a number of issues in maintaining and capitalising on these heritage assets. In particular, the report advocated a review, of the 'best long-term management strategies for state-owned heritage buildings'.

The report also suggested that significant government-owned heritage places (e.g. the Old Adelaide Gaol, Carrick Hill, Ayers House and Martindale Hall) be managed and operated by a single organisation. This would allow South Australia to realise the full potential of these places as major tourism attractions.

In addition, the tourism industry could leverage the state's heritage assets through the development of a cultural and natural heritage tourism identity that provides interpretation and visitor experiences for interstate and international tourists.

Proper conservation and management of Adelaide's heritage assets will also contribute to the city's liveability and quality of life – its vibrancy, aesthetic beauty and reputation as a centre for the arts.

### Strategic Priorities

- Maximise economic and social benefits through improved conservation and management strategies for the state's heritage assets.
- Develop a 10-year management plan to ensure the best practice conservation and maintenance of the state's heritage and cultural assets under the control of Arts SA

### Collection Storage Facilities

Only a small percentage of South Australia's art and cultural collections are on public display. Appropriate storage that will ensure the preservation of the cultural material has been identified by all arts collecting institutions, as a business sustainability issue. Currently these storage facilities are provided through a mix of leased and owned premises, some of which do not provide the environmental controls to conserve the collections. As well, there is insufficient space to adequately store the collections and to absorb future growth.

### Strategic Priority

- Develop a strategy to identify options for improving storage facilities and opportunities to better display and use art and culture collections for improved tourism and educational/research outcomes.

### Regional Theatres

Country Arts SA has embarked on a strategic plan to upgrade the existing regional theatres in Whyalla, Mt Gambier and Renmark. These theatres are important venues for recreational and cultural activities for young people and families in these regions; they provide venues for live touring performances and create opportunities to develop community-based cultural activities. The existing infrastructure was constructed about 20 years ago which is why the current upgrades are important.

### Digital Infrastructure

Digital media is increasingly being used by artists; the creative industries, such as film and new media, design, publishing, broadcasting; cultural institutions, to provide online access to collections; and providers and users of information technology.

The potential of the creative industries to contribute to economic growth is the subject of a separate study by the State Government.

To maintain their competitive edge and use emerging technologies, the creative industries need to have reliable and widespread broadband coverage throughout the state.

The issue of access to collections could be addressed by establishing a virtual online platform to link and enhance access to the entire collections (including the world's largest and most significant collection of Australian Indigenous artefacts; major collections of Australian, British and Asian art; and the general and specialist reference collections of the State Library) of the three major cultural institutions on North Terrace. Online access to collections and databases is one of the main issues for all of Australia's cultural institutions and is being variously addressed.

### South Australian Film Industry

South Australia has highly regarded film, television and new media industries. While its share of national industry income and employment is small, it has a strong track record for creativity and independent film making.

The South Australian Film Corporation (SAFC), currently housed at leased premises at Hendon, is reviewing its accommodation needs.

The digital media industries are emerging as a sector with considerable potential. Arts SA is undertaking a mapping and audit of the creative and cultural industries in order to identify how these industries can best be supported, through private and public resources, to realise their potential. It is also considered that there are benefits in the development of industry clusters.

### Public Art

Public art enhances the quality and visual appeal of South Australia's urban and regional environments. It builds community pride and creates positive and interesting experiences for visitors, tourists, business travellers and residents. For Adelaide, it can enhance its reputation as a sophisticated, creative and welcoming city.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Implement the site master plan for the Adelaide Botanic Gardens and Mount Lofty Botanic Gardens <b>* Lead – State Government</b>	U/way	*		1.13
Develop a new cultural and visitor heart within the Adelaide Botanic Gardens, as a premier scientific institution and tourist attraction <b>Lead – State Government</b>	U/way	*		1.13
Continue to upgrade North Terrace (including solar power developments) and Riverbank precincts and undertake other projects to enhance public spaces, e.g. lighting, signage <b>Lead – State Government, local government</b>	U/way	*		1.13
Upgrade the state's regional theatres in Whyalla, Mt Gambier, Port Pirie and Renmark <b>Lead – State Government</b>	U/way	*		4.1
Upgrade and refurbish the Adelaide Festival Centre: ■ Stage 1 - Dunstan Playhouse ■ Stages 2 and 3 – theatre and catering facilities <b>Lead – State Government</b>	1 2	*	*	4.1 4.1
Upgrade South Australian Museum public galleries <b>Lead – State Government</b>	2	*		1.13
Upgrade the Entertainment Centre <b>Lead - State Government</b>	2	*	*	4.1
Upgrade Migration Museum <b>Lead – State Government</b>	2		*	1.13
Upgrade Old Adelaide Gaol and Thebarton Police Barracks. <b>Lead – State Government, local government</b>	2		*	1.13
Construct a multimedia arts facility at Flinders University to provide an incubator for research, development and teaching in creative arts technologies <b>Lead – university sector</b>	3		*	4.1 4.9 4.10

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



# Arts, Culture And Heritage

## Link to South Australia's Strategic Plan Objectives

Strengthening the capacity of the health system's essential infrastructure to achieve improved health and wellbeing for all South Australians will contribute to the achievement of the following targets:

### Objective 1: Growing Prosperity

**Strategic infrastructure** Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 2: Improving Wellbeing

**Quality of life** Improve Adelaide's quality of life ranking on the William M Mercer Quality of Life Index to be in the top 20 cities in the world within 10 years. (T2.1)

**Healthy South Australians** Increase healthy life expectancy of South Australians to lead the nation within 10 years. (T2.2)

**Infant mortality** Continue to be the best performing state in Australia. (T2.3)

**Psychological distress** Equal or lower than the Australian average within 10 years. (T2.4)

**Overweight** Reduce the percentage of South Australians who are overweight or obese by 10% within 10 years. (T2.6)

### Objective 4: Fostering Creativity

**Internet usage** Increase the level of internet use in metropolitan and regional South Australia by 20% within 10 years. (T4.7)

**Cooperative Research Centres** Have based in South Australia either the headquarters or a major node of at least 40% of all existing CRCs, Major National Research Facilities and Centres of Excellence within 5 years. (T4.8)

### Objective 5: Building Communities

**Regional infrastructure** Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

### Objective 6: Expanding Opportunity

**Aboriginal wellbeing** Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention rates and imprisonment. (T6.1)

Increase the percentage of the Aboriginal population in the South Australian public sector from 1.2% to 2% within 5 years. (T6.2)

## Background

The South Australian health system is complex. It is distributed across three levels of government and the private sector, and directly involves over 30,000 workers with varying professional backgrounds working in many different service delivery sites. The system is a mixed public, private and not-for-profit service model. The current value of SA Government owned health built assets is \$2.4 billion, and \$337 million for biomedical equipment.

There are 134 hospitals located in South Australia, of which 82 are public. Health infrastructure, however, is much more than hospitals and includes general practices and community health centres and clinics, sports medicine centres, mobile health clinics, specialised facilities, emergency vehicles and home provided services.

Essential health infrastructure includes major metropolitan hospitals, country regional hospitals, emergency transport and retrieval services, the Institute of Medical and Veterinary Science and major hospital accident and emergency rooms. It is essential that these services function effectively at all times, including post-disaster, both as stand-alone units and in a coordinated way.

Health services, together with schools, form the backbone of infrastructure in communities, particularly in rural and remote areas. Health services are often the major employer in rural communities (not just for the town in which they are located but more widely) and are a major purchaser and user of supplies – both locally and regionally.

The Generational Health Review (GHR) proposed substantial reform of the South Australian health system. The focus of the South Australian health reform agenda is to reorientate the health system to a population health approach, achieving gains in population health outcomes and improving health status by moving emphasis to early intervention and prevention and thus better management of chronic disease, the provision of community-based services and the refocusing of the acute care system. This requires new more localised primary health care facilities that can deliver a range of services, from less complex clinical procedures to health promotion and advice.

## Challenges and Opportunities

To achieve the government's health reform agenda and South Australia's Strategic Plan targets over the next 10-15 years, the overarching priorities in health infrastructure are:

- sustain and reconstruct health infrastructure
- establish primary health care centres
- improve health connectivity and introduce new technology
- build and improve facilities to enhance health education, training and research.

### **Sustaining and Reconstructing Health Infrastructure**

Health reform requires government to maintain the current system while reforming and reinvigorating it. Experience in rolling out major health system reform, nationally and internationally, demonstrates that this requires building capacity for reform in parallel with the maintenance and reconstruction of the existing system.

Investment in health infrastructure has not always kept pace with its level of usage and continually growing demand. Investment is needed, to sustain the safety and quality of our health services. While the introduction of innovative solutions for health services is also needed, sustaining existing infrastructure, particularly hospitals, will continue to be a focus for investment to ensure quality and safety of services.

### **Strategic Priority**

- Ensure continued quality and safety of health services through redevelopment of built infrastructure and major equipment repair and replacement (including the adoption of new technology), while maximising opportunities to move outpatient services, chronic disease prevention and management into primary health care settings.

Effective and efficient infrastructure can only be developed if there is a very clear picture of how the health system plans to deliver its services. The state's existing health infrastructure is not easily adaptable to the changing demands on the health system. These demands include:

- changing population profiles and redistribution, where the ratio of old to young is increasing and life expectancy is rising. Population movement, from inner to outer metropolitan areas coupled with redistribution in country regions is also a significant factor
- the changing types of disease burden with increases in mental illness, heart disease, cancer, chronic respiratory failure and Alzheimer's disease, many of which are associated with ageing and would be preventable through better health practices when young, but most of which are characterised by much higher costs than the disease burden of past decades
- an imbalance in the mix and distribution of health services as a result of historical practices.

There is a growing requirement for provision of aged care residential accommodation due to the ageing demographic profile of South Australians. The Australian Government has primary responsibility for funding infrastructure for public aged care and for setting the standards for all aged care provision.

The public health system has become the aged care provider of last resort in South Australia. Hospitals, both country and metropolitan, are providing aged care accommodation for people with non-acute clinical requirements. Hospital accommodation is expensive and does not meet Australian standards for aged care accommodation. There is a growing need to build new aged care facilities or convert existing facilities.

In reforming the health system, there is a need to plan and define new approaches to providing health care. This is especially the case in areas requiring rebuilding or redevelopment where infrastructure is aged and where services can be more effectively delivered from primary health care facilities.

### Strategic Priority

- Develop service models that better integrate hospital and primary health services; coordinate the safe delivery of services; and increase and improve access, particularly for vulnerable people. Use of existing infrastructure will be maximised and duplication reduced.

#### Primary Health Care

The Government has committed to work towards the provision of a South Australian health system with a better coordinated range of services, provided where possible at a more local level.

Opportunities for health infrastructure that can be linked in a coordinated, whole-of-government approach include the development of public spaces that provide physical and mental wellbeing, and better access to local primary health care services such as co-located private facilities integrated with transport networks. There is a need for more integrated planning (and funding) in concert with the Australian Government, the private and not-for-profit sectors and other state departments such as education, justice, transport, recreation and sport, and arts. Examples include active ageing programs and healthy weight initiatives in communities.

The government will investigate opportunities for co-location of health, education and community services to achieve greater integration between agencies responsible for provision of services to children. (See Community Services and Housing section.)

Creation of primary health care infrastructure will enable better provision of health care services at more accessible points throughout the state. This will usually entail a refit/upgrading or extension of hospitals or other existing government facilities to provide a central focus for primary health care, rather than building new infrastructure. It will also require the provision of appropriate medical centres/consulting rooms in other rural and remote centres. In the metropolitan area the aim would be to have one primary health care facility (a 'Primary Health Care Centre'), per 100,000 people.

A new focus will be to work more closely with private health providers and funders, e.g. the Australian Government, general practitioners, pharmacists and allied health professionals as service providers which are an essential part of primary health care networks.

In addition, localising primary health care services, including more delivery of services directly into homes will require the use of mobile technology and facilities to support workers in the community, rather than just the construction/refit of fixed assets.

### Strategic Priorities

- Upgrade and expand primary health care infrastructure, both mobile and fixed, to enable integrated provision of primary and allied health services, in collaboration with government, private and not-for-profit service providers, to minimise duplication of infrastructure.
- Coordinate development of transport and health services to improve transport access to health facilities throughout the state.

Development, learning capacity, behaviour and health in early childhood are strongly linked to lifelong wellbeing of individuals. There is overwhelming evidence that the early years, from pre-natal to age eight, provide the foundation for competence and coping skills that will affect learning, behaviour and health throughout life.

Co-location of primary health care support services for families and young children within existing primary schools is proposed as a way of maximising infrastructure use and successful program outcomes based on international best practice models. This involves some relocation of health and family support services and the refurbishment of existing primary schools at selected locations throughout the state. The Departments of Education and Children's Services, Health and Families and Communities will investigate the establishment of child and family centres. (See Education and Training section.)

### Strategic Priority

- Investigate developing primary health care infrastructure in schools to enable integrated provision of services to families and children.

Evidence indicates that primary health care is crucial to wellbeing throughout life, particularly in old age, and to keep people out of acute care and residential aged care for as long as possible. This requires good home support programs. Strategies for minimising overall costs and infrastructure costs for aged care will therefore be developed in conjunction with primary and home care programs.

Opportunities for collaborative urban design and planning with other sectors, with infrastructure initiatives such as locating retirement villages and schools in close proximity, sharing common spaces and facilities (e.g. gardens and meeting places) will continue to be explored.

In the last three years the government has made a significant commitment to building the foundation for a modern mental health system through considerable investment in new acute services in mainstream hospitals, and has begun to build the capacity of community-based services. The sustainability of the system is now dependent upon the capacity of those community services that provide various packages of support including, for example, respite and rehabilitation programs, as well as the building of new community based mental health rehabilitation centres.

Aboriginal people fare worse than non-Aboriginal South Australians on major indicators such as income levels, unemployment and labour force participation, education, life expectancy and health risks. The health and wellbeing of Aboriginal South Australians is also more likely to be affected by exposure to a range of environmental risk factors.

For many Aboriginal people, particularly those in more remote communities, health infrastructure requirements are significantly different from those of the rest of the population. In addition to clinical services they include public health issues such as safe food storage and food transport, access to and the storage of clean drinking water, and dust and pollution control. These are basic health needs required to achieve the state's targets of improving quality of life and life expectancy. The concept of Aboriginal Wellbeing Centres, with services delivered primarily by Aboriginal people, will be investigated.

### Strategic Priority

- Progress the improvement of Aboriginal health services and supported accommodation services for people in crisis or requiring support after periods of hospitalisation or to avoid hospital admissions.

### Health Connectivity

Achieving connectivity of the entire health care system will improve the quality and safety of health services, help to ensure that appropriate care is delivered and support a stronger customer focus. Health connectivity will also contribute to improved planning and resource utilisation and, through the provision of population data, help measure progress of the implementation of the government's health reform agenda.

South Australia is in a prime position to lead the nation in establishing infrastructure to support the linking of existing patient information, enabling a patient's history to be contained in integrated electronic health records. The continued rollout of the clinical information system OACIS is fundamental to achieving this goal.

Connectivity of the whole health system based on upgraded communications capacity is projected to provide:

- system-wide benefits, assisting service design and delivery and improving capacity for population health research, measuring and monitoring
- improvements in safety performance and a reduction in errors and adverse events
- the realisation of other key SA reform initiatives, such as clinical and primary health care networks and efficiencies in the management and treatment of chronic disease
- more coordinated services in areas such as psychiatry and mental health, and support for other state-wide health management systems
- the successful integration of key health information, leading directly to improvements in efficiency and standards of patient care and safety
- the further development of telemedicine to support rural clinical networks and provide improved communications with and between tertiary health sites in Adelaide.

The Australian Government's Broadband for Health Program, which is aimed at encouraging high bandwidth broadband connection for Australia's general practitioners and Aboriginal Community Controlled Health Services, will continue over the next 3 years. Improved broadband access will support the Australian Government's national investment from 2004 to 2008 to implement some of the recommendations of the National Health Records Taskforce, known as *HealthConnect*.

*HealthConnect* will lead to the collection of health-related information about patients in a standard form, accessible at any point in the health system. This will enable swifter and better informed medical decisions. South Australia will be one of the trial states for *HealthConnect*.

### Strategic Priority

- Further develop a connected system, integrating new technology and supporting an integrated, localised response, to enable better clinical and consumer decision-making and provide data and intelligence to inform planning and efficient resource use.

### Health Workforce, and Health Education, Training and Research

Apart from built infrastructure, the health system is reliant on a highly skilled and educated workforce. Within the next 10 to 15 years we face a decline in the health workforce. Innovative infrastructure solutions in rural and remote areas to recruit and retain a skilled health workforce are now urgent to provide accessible, safe and affordable accommodation. In addition, there is a need to provide infrastructure to support local education and training.

For rural and remote communities, particularly for Aboriginal people, it is important that training and education be delivered as close as possible to communities to maximise the success of local recruitment. This minimises the loss of people from those communities. Infrastructure requirements include distance learning capacity that also supports ongoing professional development.

### Strategic Priority

- Attract, retain and increase a skilled health workforce, especially in rural and remote areas, through the creation of accommodation infrastructure and local education and training facilities.

The state's health research capacity is a powerful magnet for all health professionals. New infrastructure to enable health and medical research can assist in reducing the loss of health professionals, both from the state's regional areas to urban areas, and to other states or overseas.

The development of programs that facilitate and support medical research offers strategic opportunities for the state, with benefits in the areas of health innovation and learning, and the commercial spin-offs that can result from success in these areas. It also provides an added incentive for health professionals to locate in South Australia. Opportunities to work closely with education and research organisations will require the development and integration of health-related infrastructure (e.g. laboratory facilities). Infrastructure projects to support this priority may include the redevelopment of facilities in the Frome Road medical research precinct to create the proposed 'National Centre for InterGenerational Health', including an Institute of Population Health. (See Science, Technology and Innovation section.)

### Strategic Priority

- Redevelop and expand infrastructure to support medical and population health research, commercialisation and technology transfer in both the public and private sectors.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Sustaining and Reconstructing Health Infrastructure</b>				
Continue to redevelop metropolitan and regional hospitals and other health facilities, including maintenance and replacement of equipment, sustainment and compliance programs at: <ul style="list-style-type: none"> <li>■ Royal Adelaide Hospital (stages 2 to 5), Women and Children’s Hospital, Queen Elizabeth Hospital (stages 2 &amp; 3), Lyell McEwin Hospital, Modbury Hospital, Repatriation General Hospital and Flinders Medical Centre</li> <li>■ country hospitals and aged care accommodation and rehabilitation facilities</li> <li>■ mental health units</li> <li>■ ambulance service buildings</li> </ul> <p><b>* Lead – State Government</b></p>	U/way	*	*	1.16 2.2 5.11
Replace major medical and ICT equipment and ambulances <b>Lead – State Government</b>	U/way	*	*	1.16 2.2 5.11
<b>Primary Health Care</b>				
Create three new community mental health rehabilitation centres (southern, central and northern metropolitan Adelaide) <b>Lead – State Government</b>	U/way	*		2.1 2.4 6.1
Establish new Primary Health Care Centres (PHCC) throughout the State <b>Lead – State Government, local government, private sector</b>	2	*	*	2.2 2.3 2.6 6.1
Establish Aboriginal Wellbeing Centres in conjunction with PHCCs across the State <b>Lead – Australian Government, State Government</b>	2	*	*	5.11 6.1 6.2
Redevelop and build Aboriginal health accommodation, health clinics and step-down facilities across the State <b>Lead – Australian Government, State Government</b>	2	*	*	5.11 6.1 6.2

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Health Connectivity and New Technology</b>				
Expand the HealthConnect medical broadband project for general practitioners and Aboriginal health services as part of the foundation for establishing the electronic patient health record system <b>Lead – Australian Government</b>	U/way	*		4.7 5.11
Expand the capacity of OACIS (Open Architecture Clinical Information System) to electronically transfer clinical information (e.g. test results) between hospitals and general practitioners <b>Lead – State Government</b>	U/way	*	*	4.7 5.11
Establish a health call centre, subject to Australian Government funding <b>Lead – Australian Government, State Government</b>	2	*		2.2 6.1
<b>Workforce, Education, Training and Research</b>				
Establish the Cancer Innovation Centre at Flinders Medical Centre <b>Lead – State Government, charitable sector</b>	1	*		4.8 6.2
Build a new Royal District Nursing Service major facility (to house education, research, customer contact centre, nursing division, Advanced Community Care SA) <b>Lead – non-government sector</b>	2	*		4.8 6.2
Provide additional rural and remote workforce accommodation <b>Lead – State Government</b>	2	*	*	5.11 6.2



## Link to South Australia's Strategic Plan Objectives

Improved access to community services and affordable and appropriate housing, particularly for high and special needs sections of the community, will contribute toward the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)
<b>Performance improvement in the South Australian public sector – productivity</b>	Lead the nation in cost effectiveness of government services within 5 years. (T1.18)

### Objective 2: Improving Wellbeing

<b>Quality of life</b>	Improve Adelaide's quality of life ranking on the William M Mercer Quality of Life index to be in the top 20 cities in the world within 10 years. (T2.1)
<b>Crime rates</b>	Reduce crime rates to the lowest in Australia within 10 years. (T2.8)

### Objective 5: Building Communities

<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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### Objective 6: Expanding Opportunity

<b>Aboriginal wellbeing</b>	Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention rates and imprisonment. (T6.1)
<b>Homelessness</b>	Halve the number of rough sleepers in South Australia by 2010. (T6.4)
<b>Disability</b>	Increase the number of community-based accommodation options. (T6.5)
<b>Housing</b>	Encourage the provision of affordable housing in the community. (T6.6)
	Halve the number of South Australians experiencing housing stress (people paying more than 25% of their income on rent) within 10 years. (T6.7)

## Background

The State Government is responsible for a wide range of housing and community infrastructure, which contributes to the wellbeing of the community. The government faces major challenges in addressing the needs of vulnerable children and families, people with disabilities and indigenous people, particularly those living in remote communities.

The State Government delivers housing assistance through the South Australian Housing Trust (SAHT) – public housing and private rental assistance; SA Community Housing Authority (SACHA) – community housing; Aboriginal Housing Authority (AHA) – Aboriginal housing and private rental assistance; the Crisis Accommodation Program; the Supported Accommodation Assistance Program – crisis accommodation; and Homestart Finance – home purchase finance for low-income households.

The Australian Government provides capital funding through the Commonwealth State Housing Agreement, rent-related income assistance through Commonwealth Rent Assistance, funding through the Supported Accommodation Assistance Program and the First Home Owners' Grant, and indirect assistance through the taxation system (e.g. exemption for capital gains tax for homeowners).

Key features and recent trends of the South Australian market for accommodation are:

- Following significant growth in land and house prices, housing affordability for first home buyers is at a 13-year low, despite low interest rates. Relative to other states, however, South Australia remains more affordable.
- There has been a long-term decline in the stock of low-cost rental accommodation and vacancy rates have been low, particularly at the low-cost end of the market.
- The stock of social housing has fallen from a peak of 64,549 in 1993 to 53,579 in 2004. Social housing services have increasingly targeted those in need, with a high percentage of social housing tenants requiring support and assistance to maintain their tenancies.
- An estimated 7586 people are homeless in South Australia.
- In 2001, 10,051 (or 45%) of low-income home buyers and 27,966 (or 83%) of low income private renters were in housing stress, paying an unaffordable amount of their income on rent. Approximately 12,000 households on social housing waiting lists have special needs, reducing their access to private-rental housing.
- There has been a decline in the supported residential facility and boarding house sectors and the viability of the privately-provided supported accommodation sector is under threat. Additionally, the needs of residents have become increasingly complex.

The South Australian Government works collaboratively with the Australian Government, other state and non-government agencies to explore the potential for the co-location and integration of services to improve access and service outcomes. Such opportunities include the development of prevention and early intervention services, community facilities integrated with transport networks, and coordinated provision of health and community services.

## Challenges and Opportunities

### Integration of Services

The Department for Families and Communities (DFC), the Departments of Health (DH) and Education and Children's Services (DECS) will work together to better utilise government infrastructure assets. Opportunities for co-location of government facilities will be investigated.

The move towards integration of DFC agencies such as the SAHT, SACHA, AHA, Disability Services and Children, Youth and Family Services (CYFS) will also be considered in future infrastructure investment in regional and metropolitan Adelaide locations.

There is significant value in building the capacity of the community to respond effectively to local need. The State Government aims to use its housing assets and support services and infrastructure to improve the sustainability of communities and the quality and affordability of housing.

The Department for Families and Communities is working closely with the Department of Transport and Urban Planning (DTUP) to develop integrated transport service models, which will provide more user-friendly and readily accessible transport options for vulnerable members of the community.

### Strategic Priorities

- Improve community access and amenity by better linking housing to transport infrastructure and services.
- Develop innovative and integrated accommodation and support services for those people requiring assistance to maintain successful independent living in the community.

### Housing

The South Australian housing system faces a number of challenges arising from demographic changes, changing community needs and expectations and structural changes in the housing market:

- Targeted population growth to two million by 2050 combined with urban containment strategies will lead to higher residential densities in some urban areas.
- As low income households concentrate in more affordable areas there will be increased pressure on fringe areas and locations with limited infrastructure and services.
- High population/economic growth regions may experience housing shortages while regions in decline will have an oversupply.
- The continued move to deinstitutionalisation.
- Population ageing and the increase in the percentage of single and smaller households.
- An increase in the extent of casual and part-time work and increased workforce mobility.
- Rising community interest in environmentally sustainable housing.

Historically, the State Government has played a significant role in facilitating access to affordable housing, particularly high need housing for disadvantaged groups and people with special needs.

The state's capacity to continue to deliver direct public, community and Aboriginal housing services is constrained by declining Australian Government capital funding, decreasing rental income and increased costs associated with an ageing asset base and accumulation of debt.

A significant proportion of older public housing stock was developed in high concentrations in various metropolitan and regional locations, and limited to a small range of house types now regarded as unsuitable.

The recently released Housing Plan for South Australia seeks to place public housing on a more sustainable footing and to adequately meet the growth in housing need, involving substantial changes to the State Government's role in housing. The government intends engaging the private sector in the development of responses and solutions that increase the supply of affordable housing and high need housing for low-income households. The Australian Government has an important role as a partner to the State Government in this endeavour.

Urban regeneration is a means of addressing adverse socioeconomic outcomes associated with high concentrations of public housing stock in particular areas. However, experience indicates a limited likelihood of market-led regeneration and renewal.

The rate at which large-scale urban renewal can be achieved is constrained by two key factors: the degree to which housing funds are required for non-housing expenditure, such as physical infrastructure and/or infrastructure augmentation (roads, stormwater systems, public service utilities, public open space provision and maintenance); and the costs associated with providing timely, alternative accommodation to relocate existing tenants.

As the social housing system tightens its eligibility to those in need, the acceleration of renewal projects is essential. The increased presence of tenants with complex and high needs will contribute to lower levels of community sustainability and wellbeing (as is already evident in many areas).

Average investment in urban regeneration projects by the SAHT is in the order of \$25 million per annum, and timelines for large-scale urban renewal projects of between 10 and 15 years reflect this relatively modest rate of investment. It is estimated that up to 50% of urban renewal project budgets are committed to land development costs (i.e. civil engineering and physical infrastructure).

Key areas of disadvantage are considered priority areas for coordinated and well-planned infrastructure investment that enables urban renewal to occur.

There is increasing recognition of the need to make future housing and urban design more responsive to changing community preferences and demographic trends including disability access and environmental sustainability design principles. The government is committed to encouraging greater energy and water efficiency, recycling initiatives and other ecologically sustainable development (ESD) technologies. The Lochiel Park model 'green village' will showcase ESD technologies in urban design. By encouraging the greater uptake of ESD principles in residential developments by the private sector, the government will be helping to achieve the sustainability targets of South Australia's Strategic Plan (SASP).

In regions experiencing rapid industry growth difficulties are sometimes encountered in accommodating additional seasonal workers. The State Government will work with the private sector to identify market led responses to seasonal worker accommodation demand.

## Strategic Priorities

- Increase housing options and the level of social housing stock available for high need or homeless people, including the development of long-term and transitional accommodation.
- Develop the capacity for new joint ventures between the government, not-for-profit organisations, the private sector and local government to develop new, affordable and high-needs housing and support community aspirations for home ownership.
- Incorporate affordability objectives within the planning system so that the development approval process supports an appropriate supply of affordable and high need housing.
- Accelerate urban regeneration in areas of disadvantage to improve amenity for tenants and expand housing choice.
- Encourage higher-density residential development in appropriate urban areas through planning for land use and infrastructure augmentation.
- Support ageing at home and community-based accommodation options as an alternative to institutional care.
- Promote the development of accessible and adaptable housing that is suitable for seniors and people with disabilities.
- Promote energy efficiency and environmental sustainability in new residential developments.
- Stimulate market responses to housing supply linked to regional industry expansion and seasonal worker accommodation needs.

## Disability

One of the main strategic directions of the disability sector is deinstitutionalisation, and with more than 900 people in institutions in this state it will take several years to complete the transition from institutions to community housing.

One of the first major projects, the Strathmont redevelopment project, will move 150 people from the institution into 30 community houses, for a capital investment of \$18.4 million and \$5.3 million recurrent over the next four years.

Minda and Julia Farr Services are both in the process of planning major projects to drastically increase community-based living options.

## Strategic Priority

- Complete the transition from institutional to community-based housing facilities providing residential care for people with mental illness and disabilities.

## Supported Accommodation

Many people have a compromised capacity for independent living or need support to successfully maintain housing. This is due to a range of factors, but most notably intellectual or physical disability, age-related disability or frailty, mental health conditions, challenging behaviours and complex life problems. These conditions are often found in combination.

The move toward deinstitutionalisation and the growth in supported housing programs has led to an increased demand for individual housing. There are long waiting lists for supported accommodation for people with physical or intellectual disabilities. A comprehensive system of accommodation and support is required that has the capacity to respond to functional need ranging from low to very high, and that provides a variety of appropriate service models. Long-term accommodation and support programs are required to meet government priorities of preventing and reducing homelessness and institutionalisation, improving care to young people under the Guardianship of the Minister for Families and Communities, and preventing the re-entry of offenders into the criminal justice system. Programs include group homes with 24 hour intensive support, individual accommodation with intensive support, individual in-home support and residential aged-care.

## Strategic Priority

- Develop innovative and coordinated approaches to address the supported accommodation needs of the homeless, people with disabilities and other high-need groups.

**Children, Youth And Family Services (CYFS)**

CYFS is undertaking the secure care redevelopment project, which is to review how all secure care services are provided. Options for the replacement of the Magill Training Centre will be investigated. The replacement and/or redevelopment of Cavan Training Centre will be considered in the context of the overall development requirements for secure facilities state-wide.

The model for service delivery will evolve over this planning cycle, and issues relating to agency co-location and the integration of service delivery methods will become more critical. This will have an impact on the nature of the physical requirements of both CYFS and of other human service agencies. Considerable work has been undertaken in the Elizabeth and Noarlunga areas focusing on opportunities for the co-location of services, and different models of service integration to support a quality service system, particularly for vulnerable people.

**Strategic Priority**

- Develop service models that incorporate principles of service integration, increased and improved access and a collaborative approach amongst all service providers.

**Aboriginal Lands**

Particular emphasis has been placed on the needs of Aboriginal Lands, and the Aboriginal Lands Task Force has been established to increase health and welfare services in all communities, and improve employment, education and training outcomes and infrastructure related to essential services.

The AHA will provide stronger management support to lengthen the life cycle of existing housing to greater than 10 years, to better address housing needs over the next five years.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
<b>Housing</b>				
Expand the supply of transitional and long-term housing options for homeless people and Aboriginal people moving between rural areas and regional centres <b>* Lead – State Government</b>	U/way	*		6.1 6.4
Continue to expand Aboriginal housing programs throughout the state through stock acquisition and development <b>Lead – State Government</b>	U/way	*	*	6.1 6.4
Accelerate urban regeneration activities in disadvantaged areas, in particular, at: ■ The Parks (Westwood) ■ Salisbury North (Hawksbury Park) <b>Lead – State Government, private sector</b>	U/way	*	*	6.5 6.6 6.7
Continue investment in the regeneration of areas of high concentration of social housing in metropolitan (e.g. Kilburn South and Gilles Plains) and country locations (e.g. Risdon Grove, Port Pirie and Myall Place, Whyalla) <b>Lead – State Government, private sector</b>	U/way	*		6.4 6.5 6.6 6.7
Acquire housing and land for affordable housing and redevelop social housing assets to better match profile and design to the emerging needs of the community <b>Lead – State Government, private sector</b>	1	*	*	6.4 6.5 6.6 6.7
Undertake urban regeneration activities at Playford North <b>Lead – State Government, private sector</b>	1	*	*	6.5 6.6 6.7
Ensure an adequate supply of appropriate housing to meet the needs of the aged <b>Lead – private sector</b>	1	*	*	6.6
<b>Disability Services</b>				
Develop community accommodation for people with disabilities leaving institutional settings <b>Lead – State Government</b>	U/way	*		6.5
Redevelop Strathmont Centre <b>Lead – State Government</b>	1	*		6.5

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Supported Accommodation System</b>				
Investigate a replacement facility for Magill Training Centre <b>Lead – State Government</b>	2	*	*	2.8 6.1 6.4
Progress opportunities for co-location of health, education and community services to achieve greater integration between agencies responsible for providing services to children <b>Lead – State Government</b>	2	*	*	1.18
Establish group homes with 24-hour intensive support <b>Lead – State Government</b>	2	*	*	6.5
Establish individual accommodation with intensive support including cluster units and secure accommodation <b>Lead – State Government</b>	2	*	*	6.5
Redevelop the Cavan Training Centre <b>Lead – State Government</b>	2		*	2.8 6.1 6.4
<b>APY Lands</b>				
Develop an infrastructure plan for the APY Lands <b>Lead – State Government, Australian Government</b>	U/way	*		6.1

## Link to South Australia's **Strategic Plan Objectives**

**Provision of a reliable and affordable supply of energy through timely investment in new electricity generation capacity, alternative energy sources and augmentation of supply networks (gas and electricity), combined with measures to manage growth in peak demand, will contribute toward the achievement of the following targets:**

### Objective 1: Growing Prosperity

<b>Competitive business climate</b>	Maintain Adelaide's rating as the least costly place to set up and do business in Australia (KPMG Competitive Alternatives study) and continue to improve our position internationally. (T1.4)
<b>Investment</b>	Match or exceed Australia's ratio of business investment as a percentage of the economy within 10 years. (T1.6)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 3: Attaining Sustainability

<b>Energy consumption - government</b>	Reduce energy consumption in government buildings by 25% within 10 years and lead Australia in wind and solar power generation within 10 years. (T3.2)
<b>Greenhouse emissions:</b>	Achieve the Kyoto target during the first commitment period (2008–12). (T3.3)
<b>Ecological footprint</b>	Reduce our ecological footprint to reduce the impact of human settlements and activities within 10 years. Actions will include: <ul style="list-style-type: none"> <li>■ increasing the use of renewable electricity so that it comprises 15% of total electricity consumption within 10 years</li> <li>■ extending the existing Solar Schools Program so that at least 250 schools have solar power within 10 years</li> <li>■ increasing energy efficiency of dwellings by 10% within 10 years, by such means as the introduction of a five-star energy requirement for new houses by May 2006. (T3.10)</li> </ul>

### Objective 5: Building Communities

<b>Regional infrastructure:</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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## Background

The implementation of national energy markets and the former government's privatisation of the South Australian energy supply industry, have seen a fundamental change in the role of both industry and government. Responsibility for funding energy infrastructure investments has been transferred to the private owners of the assets. The monopoly electricity transmission and distribution network businesses earn revenue controlled by independent economic regulators.

The privatisation of South Australia's electricity system has resulted in increased prices charged to business and household consumers. Augmentation of the system to meet increased demand has been made more difficult by privatisation. In public ownership, augmentation of the system proceeded somewhat in advance of demand and associated costs were amortised over a long period of time. By contrast, private owners require a shorter period of time for repayment of the costs of investment, with returns to shareholders the key criterion for investment decisions.

While responsibility for financing investment in assets has been transferred to the private sector, the government still has a key role to play in ensuring that the interests of consumers are protected through appropriate regulatory arrangements and that the private sector delivers investment in a timely manner. Importantly, the government is responsible for ensuring that the legislative and institutional framework for energy markets addresses market failures and protects consumers. This is demonstrated by the significant reforms of market institutions and regulatory processes currently being undertaken in the National Electricity Market (NEM) by the Ministerial Council on Energy (MCE).

The new NEM objective will be focused on promoting efficient investment in and use of electricity services for the long-term interests of consumers with respect to price, quality, reliability, safety and the security of the national electricity system. This will be achieved through: open access, no discrimination between fuel sources, incentives to promote economic efficiency, effective signals to markets to stimulate appropriate investment, sustainable competitive prices over the long term, improved security of supply and the maximisation of consumer choice.

### Electricity Generation and the Supply/Demand Balance

As a participant in the National Electricity Market (NEM), with connections to Victoria via the Murraylink and Heywood interconnectors, electricity demand in South Australia is supplied by a combination of local generation and energy from the other states.

The South Australian Electricity Supply Industry Planning Council (ESIPC) plays an important role in providing information to markets to ensure appropriate investment. ESIPC independently develops and reports on electricity load forecasts, the performance of the state's power system and matters relating to future capacity and reliability. It also publishes an annual review of the performance, capability and reliability of the South Australian power system – an Annual Planning Report. That report contains a full description of South Australia's current energy infrastructure. (<http://www.esipc.sa.gov.au/site/page.cfm>).

ESIPC has forecast that customer demand for electricity in South Australia will continue to grow in line with economic growth, at approximately 2.1% a year. Peak demand is expected to grow by 2.5% (100 MW) a year. Investment in new generation capacity, new interconnectors and/or a reduction in electricity consumption via demand side measures will be required on an ongoing basis.

South Australia can produce enough electricity to meet its peak power demand. Due to privatisation the decisions on further investment in electricity generation are made by private companies. Proposed expansion of the State's power plants includes Hallett, Quarantine, Pelican Point and Osborne.

ESIPC will be reviewing the market mechanisms and signals for new investment to consider their adequacy in promoting timely investment in new capacity. The National Electricity Market Management Company (NEMMCO) will explore avenues for demand and/or supply side solutions to reserve shortfalls.

South Australian energy infrastructure requirements and costs are largely determined by growth in peak demand that occurs on hot summer days as air conditioning use increases. The high cost of providing for peak demand influences the overall cost of energy to consumers.

The State Government's Remote Areas Energy Supplies Scheme (RAES) supports the provision of electricity to remote communities. There are currently 13 such sites in the remote northern parts of the state. The government is also currently managing the contract for the generation and distribution of electricity supplies to Aboriginal communities located in the Anangu Pitjantjatjara Lands, Maralinga Tjarutja Lands and the Aboriginal Lands Trust. The immediate future focus is on improved operations, lower costs, and improved efficiency in both generation and end-use.

#### **Electricity Transmission and Distribution Networks**

Transmission and distribution networks connect generators with consumers. The high-voltage transmission network is owned and managed by ElectraNet SA, and the low-voltage transmission network by ETSA Utilities. They are private sector monopolies, regulated by the Australian Competition and Consumer Commission (ACCC) and the Essential Services Commission of South Australian (ESCOSA) respectively.

In its 2004 Annual Planning Report, ESIPC concluded that there were constraints in the southern transmission system between Adelaide and the South East, which includes the Heywood Interconnector. It found that in some situations the transmission network does not have capacity to transport the combined output of present power stations located in the lower south-east of the state and Heywood interconnector imports.

ESIPC and ElectraNet SA will continue to investigate the various options to remove this constraint.

As part of the MCE reform process, NEMMCO produced the first Annual Transmission Statement (ANTS) in July 2004. The ANTS provides important national information to improve transmission planning for each transmission network. The ANTS identified upgrades of four flowpaths in the national market as being potentially attractive, including the Victoria to South Australia interconnector. The Interregional Planning Committee published a broad analysis of augmentation opportunities and their likely cost in January 2005. Options to upgrade the Victoria to South Australia interconnector will be reviewed by ESIPC, ElectraNet SA and VENCORP as part of the annual planning process. An upgrade could be expected to proceed over the medium-term, depending upon investment by market participants in generation within South Australia over that period.

Historically concerns have been expressed over aspects of the charging system for connection and augmentation of the electricity distribution system. Concerns related to the basis of estimating costs, transparency of the formula applied and delays in receiving firm cost quotations.

ESCOSA reviewed relevant provisions of the electricity distribution code and introduced a new approach that will apply from 1 July 2005. The most significant changes implemented were:

- establishing a timeframe in which ETSA Utilities must give quotations, including their basis and validity period
- the use of pre-determined unit augmentation costs for most customers that are required to make a contribution
- more transparent criteria for assessing augmentation contributions for significant projects.

### Gas Demand and Supply Balance

One of the first actions of the state Labor Government was to negotiate a doubling of the capacity of the Sea Gas pipeline. The pipeline provided an essential lifeline for the State in January 2004 following the explosion at Moomba and interruptions to supply.

Gas supplies three distinct markets in South Australia: electricity generation; industrial, commercial and domestic sales; and liquefied petroleum gas (LPG) markets for autogas and heating and/or cooking at locations that the existing sales gas reticulation grid does not reach. Historically, between 50% and 60% of total sales gas production in South Australia has been used for electricity generation. The sales gas market depends on gas plant and pipelines and reticulation infrastructure for delivery to customers. The LPG market not only depends on gas plant and pipelines, but also trucking for delivery to customers.

The total South Australian sales gas market is approximately 110 petajoules (PJ) per year. Estimates of demand growth predict moderate growth to around 150 PJ per year by 2015 (i.e. average 3% per annum). The total South Australian LPG autogas market is approximately 500 tonnes per day, and the heating gas market some 350 tonnes per day.

Existing sales gas production contracts and commitments are sufficient to meet South Australian gas demand until the end of 2012. Beyond this, existing uncontracted reserves in the Cooper, Otway and Gippsland basins have the potential to meet demand until around 2016. Future discoveries in these basins have further potential to extend supply beyond this date.

Pending a change in energy supplies, such as commercialisation of large portions of coal seam methane and/or geothermal (hot rocks) energy, it is reasonable to expect gas from the Timor Sea, North West Shelf or PNG being required within the next 15 years. Reserves in the northern fields are sufficient to meet Australia's needs well beyond the middle of the century.

### Gas Transmission and Distribution Networks

With the construction of the SEA Gas pipeline, and the planned commissioning of the SESA pipeline (connecting the SEA Gas pipeline to Katnook), gas transmission infrastructure will meet market growth requirements for the foreseeable future. It is the final link in a system connecting all major gas production facilities with the south-eastern Australian market except perhaps for a sales gas line from Queensland to the Moomba pipelines. The physical capacity of the Moomba to Adelaide pipeline (MAP) and SEA Gas pipeline combined exceeds the projected medium term future demand. However much if not all this capacity is currently under contract.

Based on projected Queensland and northern South Australian demand, proponents of the PNG gas supply scheme anticipate that a new north-south pipeline could be built as early as 2009–10.

### Liquid Fuels

Supply and demand for petrol, diesel and LPG are currently in balance in South Australia. Since closure of the Port Stanvac Oil Refinery, South Australia has depended on interstate and overseas oil refineries for all its petrol and diesel requirements. This has increased the supply time to between six and eight weeks.

Since the closure of Port Stanvac the only SA source of LPG is via trucking from interstate and via a pipeline from Moomba to Port Bonython, where the major storage facility is also located. Port Bonython is dependent on the Moomba processing plant for its feedstock. The January 2004 Moomba fire demonstrated the critical nature of the current supply chain. South Australia's LPG requirements in early 2004 were adequately met with LPG trucked from Victoria.

The existing unloading and storage facilities at Port Adelaide limit the size of tankers that can be discharged. The road tanker distribution system may need to be reviewed to allow for greater flexibility to meet surge demand during peak agricultural periods, holidays and the like. Redevelopment of regional storage facilities in country areas may also need to be considered.

## Challenges and Opportunities

### Development of a State Energy Plan

South Australia is not immune from the environmental, equity and energy supply-chain security stresses and risks brought on by economic growth and increasing energy demand. The government's energy policy objectives are therefore to:

- maintain secure and reliable supplies of energy
- promote competitive markets, help raise the rate of sustainable economic growth, improve productivity and deliver essential infrastructure
- improve access to and affordability of energy for all South Australians
- reduce greenhouse gas emissions.

The government is preparing an energy plan for South Australia that will provide direction for future energy infrastructure investment to meet growth in demand.

The government's energy plan will set out clear guidelines in this new environment that will provide industry with the confidence to plan for needed infrastructure investment in the state and to capture opportunities that will emerge.

### Strategic Priorities

- Remove barriers to competition and establish a transparent regulatory regime that provides certainty to businesses and encourages investment in the energy industry.
- Ensure the market operates in the public interest by providing reliable and affordable sources of energy.
- Encourage and align private investment with business and community demands.
- Foster innovation and fast take-up of technological advances in energy supply and use.

### Gas

A gas pipeline connection between Moomba and Ballera in south-west Queensland would improve supply security. Origin has committed to build the SESA pipeline to link Katnook with the SEA Gas pipeline. SESA pipeline commissioning is expected in the middle of 2005, which will improve longer-term security of supply in the region. The proposed expansion of WMC Resources' Roxby Downs mine, with its possible on-site gas fuelled generation with gas sourced from Papua New Guinea (or another northern source) via the Moomba area may, in due course, provide an appropriate commercial driver for this project.

Opportunities for the construction of a number of gas lateral pipelines to regional centres from the SEA Gas pipeline, including the Adelaide Hills, are dependent on sufficient demand being established to support the commercial viability of the projects. A connection between the MAP and SEA Gas pipeline would also strengthen the security of South Australian gas supplies.

### Strategic Priority

- Facilitate greater inter-connectivity of state gas transmission pipelines and additional gas field connectivity to ensure that South Australia has access to multiple gas supplies at competitive prices.

**Liquid Fuels**

Since the decommissioning of the Port Stanvac refinery and storage facility, the state is now more dependent upon the operation of the Birkenhead tank farm. Opportunities to improve the operation of the fuel supply chain in the state and to make the available assets work more effectively to meet the needs of participants need to be explored. Recent changes to regulations allow the blending of biodiesel and conventional diesel in South Australia. Biofuels use is forecast to increase in South Australia.

**Strategic Priority**

- Facilitate improvements in fuel supply chain and storage facilities to ensure sufficient capacity to meet demand for fuel.

**Greenhouse and Energy Industry Investment**

In the short term, the uncertainties for energy industry investors associated with a carbon constrained world carry market risks. Notwithstanding the environmental benefits of renewable energy, the rapid growth in wind farm capacity and its intermittency of supply may have implications for investment in more conventional generating plant, and the supply-demand balance. While investors in the energy market can make their own judgments about pool prices and trading risks, it is now difficult for them to adequately factor in premiums for risk considerations associated with future government policy on greenhouse gas abatement. The failure of the Australian Government to formulate a coherent greenhouse policy has not helped in resolving this problem. The future direction and pace of local and global greenhouse gas abatement credits and markets remain uncertain.

Greenhouse gas concerns also have implications for the longer-term requirement for new energy infrastructure investment to keep pace with economic growth. In the near to medium-term, State Government policies will aim to reduce uncertainties associated with attracting necessary investment into the state's energy systems to ensure demand is met. Following the privatisation of the state's power assets, the influence of the government on investment decisions has been substantially reduced. The South Australian energy and greenhouse plans and sustainable energy policy will complement and influence inter-jurisdictional initiatives and thus reduce uncertainty for investors in the energy industry. The energy plan will consider these issues in more detail, as well as more clearly identifying future opportunities for both investment in new capacity and demand-side management.

**Strategic Priority**

- Promote the development of market and regulatory arrangements that encourage energy industry developments that minimise growth in greenhouse gas emissions.

### Renewable and Distributed Energy Generation

The most promising renewables of interest to South Australia, based on regional comparative advantages, are wind, solar and geothermal energy. The state's biomass resources, particularly in the South East, can also be exploited. The achievement of South Australia's Strategic Plan target for renewable energy consumption will focus on:

- leveraging investor interest in wind farms, geothermal energy and biomass plants
- increasing the penetration rates of solar hot water heaters and photovoltaics (PV)
- active programs of research and development, particularly in solar PV and geothermal energy and the complexities of managing significant quantities of intermittent wind generation in conventional networks.

Successful use of additional wind energy will depend on connection and performance standards for wind farms; the ability to export wind energy to and balance imports from the eastern states via interconnectors; the use of demand-side measures or additional flexible generation, as well as the development of improved forecasting and data systems. ESIPC has undertaken preliminary work on these issues, which will guide subsequent activities to be considered in detail in the Energy Plan.

Biofuels have the potential to reduce greenhouse and other emissions if used for transport. In South Australia two groups are proposing to build biodiesel plants. South Australian Farmers Fuel is proposing to reinstate a canola oil plant at Millicent in 2005. Australian Renewable Fuels has secured a \$7.15 million capital grant from the Federal Government to build a biodiesel plant at Port Adelaide. While they only have the capacity to supply a small percentage of the diesel market, the potential exists to expand production should they be successful. For example 60% of the metropolitan bus fleet has been converted to bio diesel with the rest operating on natural gas.

To encourage the development and growth of the biofuels industries, the Australian Government has decided that biofuels will remain excise free until 1 July 2011. After this, excise will gradually be raised over a five-year period to about half the rate applying to conventional crude oil derived fuels.

South Australia also has a geothermal resource comparative advantage and has attracted geothermal exploration investment. Geothermal energy, produced by pumping fluid through wells drilled into naturally occurring 'hot dry rocks' (HDR), has the potential to provide a major Australian and regionally significant sustainable energy supply source. While HDR technology is commercially unproven, a significant number of geothermal exploration licences have recently been granted, or are being processed, leading to a forecast \$320 million work program investment over the next five years.

### Strategic Priority

- Support research and development in renewable technologies, particularly wind, solar PV and geothermal energy, to enhance their technical and economic viability.

### Managing Peak Demand

The increased use of air conditioning in the community means 33% of the state's gas and electricity infrastructure is required for only 5% of the time.

Providing for the growth in peak demand has historically been achieved via supply-side investment in generating plant, interconnectors that take advantage of diversity in energy demand profiles between South Australia and Victoria and the rest of the NEM, and augmentation to network infrastructure. In recent times, the investment responsibility has passed to the private sector, the signals for which in the NEM are intended to be provided by prices in the wholesale market, as well as financial products purchased by participants to manage risks associated with operating in the wholesale market with a high price cap.

The Electricity Demand-Side Measures Task Force, in its June 2002 Final Report, noted that 'the need to supply large quantities of electricity for short periods of time, largely to meet summer air-conditioning requirements, is leading to an unsustainable investment in peaking generation that will lead to increasingly higher costs for South Australian consumers. Peak energy demand continues to grow at a faster rate than total electricity sales.

Demand-side management (DSM) measures, such as improvements in the efficiency of energy use, peak load management and embedded generation, can play a role in addressing growth in peak demand and consequently greenhouse gas emissions. Targeted DSM can provide a cost-effective alternative to infrastructure investment that otherwise may have poor capital use. By reducing the need for new generation and network infrastructure, such measures can contain consumer price increases.

The Australian Government has committed to fast-tracking an Adelaide Solar City trial as the first of several around the country, under a new \$75 million, five-year program aimed at demonstrating what a future sustainable (energy) urban environment would look like. The trials are aimed primarily at providing a 'living model' of how peak demand management technologies and market signals, with embedded generation technologies (including solar energy), can deliver economic and environmental benefits. The project also supports the government's commitment to promoting Adelaide as a 'green' city.

The development of various measures to manage peak demand and improve energy efficiency is the focus of considerable work at state and national levels, and will require active programs of research and development, including consideration of how DSM can be incorporated within the NEM. The results of this work will be reflected in the State Energy Plan. Recent developments are outlined below:

### Demand Management and Electricity Distribution Network

ESCOSA will provide \$20 million for DSM initiatives by ETSA Utilities over the five-year regulatory period, beginning July 2005. The initiatives include:

- pilot programs for power factor correction for large customers
- standby generation, direct load control of residential airconditioning and other residential systems
- critical peak pricing for customers with interval meters already installed
- investigation of opportunities for curtailable load control and voluntary load control initiatives
- review of the opportunities for ETSA Utilities to act as a demand management aggregator
- establishment of demand management capabilities within ETSA Utilities.

ETSA Utilities is required to submit a proposed program for implementation of these DSM initiatives to ESCOSA for approval.

### Energy Efficiency Action Plan

The Energy Efficiency Action Plan (EEAP) is a whole-of-government energy management program that targets a reduction in energy use in government buildings of 25% by 2014, with an interim reduction of 15% expected by 2010.

### Commercial Building Energy Performance Standards

The government is driving energy efficiency in the commercial building sector by stating that effective from July 2006, it will give preference to leasing office space in five-star energy rated buildings. The government has also kick-started the \$600 million City Central redevelopment by signing up for 10,000 m<sup>2</sup> of office space, which will be Adelaide's first office building to achieve a five-star green and energy building rating.

### National Framework for Energy Efficiency

In November 2002, the MCE endorsed a proposal for the development of a National Framework for Energy Efficiency (NFEF) to define future directions for energy efficiency policy and programs in Australia. The purpose of the NFEF is to unlock the significant but untapped economic potential associated with increased implementation of energy efficient technologies and processes to significantly improve Australia's energy efficiency performance.

On 27 August 2004, the MCE approved a set of interconnected policy packages that form Stage 1 of the NFEF. The policy packages cover buildings, commercial and industrial energy efficiency, appliances and equipment, government operations, trade and professional training and accreditation, general consumer capacity building and financial sector awareness.

The implementation of Stage 1 NFEF measures has the potential to save around 50 PJ of energy nationally by 2015, and provide Gross Domestic Product (GDP) gains of up to \$400 million pa.

The Stage 1 NFEF presents opportunities to form greater links between energy efficiency and peak demand management, including:

- investigating the use of building energy performance rating tools and standards as a means of improving building performance during times of peak demand
- incorporating peak-demand performance in government considerations in choosing office accommodation
- considering peak-demand benefits in developing minimum energy performance standards for appliances.

### Strategic Priority

- Promote the adoption of demand-side measures that contribute to more efficient energy use and improved use of existing infrastructure.

### Energy Market Development and Reform

The state's energy plan will recognise the importance of the marketplace to drive infrastructure investment and innovation. The investment response to the hot summer of 2000/2001 (the Quarantine, Hallett and Lonsdale power stations in South Australia, and the Somerton and Valley Power investments in Victoria) suggests that the NEM is capable of bringing forward generation investment, although private investment timing is cyclical with large, infrequent increments of capacity being added only when strong price signals emerge and economies of scale can be achieved.

Energy markets are complex with investment impediments that include uncertain returns and regulatory hurdles and imposts. While the energy market in Australia is in the process of maturing, competition in some segments of the NEM is not yet fully developed (e.g. the retail market for small customers in South Australia, or the extent and diversity of generation capacity in certain regions). In addition the NEM has been less effective in ensuring that demand-side management capacity is fully developed to compete with generation capacity.

A proposal for a national Emissions Trading Regime (ETR) within the electricity sector is presently being examined by the states and territories. Such a scheme is a market-based approach that has the potential to offer a mechanism to cost environmental impacts and to develop cost-effective options to meet Australia's greenhouse targets. The government will carefully evaluate the ETR proposal to determine its nature, how it will impact on South Australia and whether it will be compatible with international schemes.

The need to encourage greater investment in gas infrastructure is also being addressed by the MCE, which has directed that a high-level policy review be undertaken on the fundamental principles and design concepts for a future gas market. It would aim to encourage transparency, new market entrants, further efficient investment in gas infrastructure such as storage facilities, and a market mechanism to assist in managing supply and demand interruptions. The long-term security of gas supply, against a background of increasing demand for direct access to gas resources, will also be investigated.

The Productivity Commission is also currently reviewing the gas access regime and is investigating its impact on investment. The recent Council of Australian Governments (COAG) Energy Market Review found that there was scope for further market development by increasing competition in upstream markets and reducing regulatory uncertainty. The findings of the review will be considered as part of the current program for energy market reforms.

Many of these issues will be considered in more detail in the state energy plan which will, as part of the energy planning process seek to reduce information gaps and hence address potential risks of market failure for future commercial investment.

### Strategic Priorities

- Promote the development of national policy and regulatory arrangements for energy markets that ensure that South Australia secures access to reliable, sustainable and affordable supplies of energy.
- Promote the integration of sustainable development concepts into market decision-making so that non-market costs and benefits are included in investment considerations.

## Projects

Project	Priority #	2005/6–2009/10	2010/11–2014/15	SASP Targets
<b>Electricity generation</b>				
Facilitate private investment in conventional generation capacity, including Hallett, Quarantine, Pelican Point and Osborne in South Australia <b>* Lead – private sector</b>	1	*	*	1.6 1.16
<b>Renewable energy</b>				
Encourage the uptake of solar water heaters <b>Lead – State Government</b>	U/way	*		3.3
Promote the development of geothermal power <b>Lead – private sector</b>	U/way	*	*	3.2 3.3
Construct licensed wind farms, commensurate with market and network stability <b>Lead – private sector</b>	1	*	*	3.2 3.3 3.10
Continue to investigate the commercial viability of biomass power stations in the South East <b>Lead – private sector</b>	1	*		3.3 3.10
Expand bio-diesel production facilities to provide fuel for transport and electricity generation <b>Lead – private sector</b>	2	*		3.3 3.10
<b>Electricity transmission and distribution</b>				
Expand the electricity distribution network to meet industry, residential and commercial demand <b>Lead – private sector</b>	1	*	*	1.4 1.16 5.11
Remove the constraint in the transmission system between Adelaide and the South East when the ongoing planning process demonstrates its economic feasibility <b>Lead – private sector</b>	1		*	5.11
<b>Gas</b>				
Increase the security of South Australia's gas supplies by:				
■ connecting the SEA Gas pipeline to the South East gas system	U/way	*		5.11
■ connecting the SEA Gas pipeline to the MAP	1	*		1.16
■ constructing an additional Ballera to Moomba pipeline	2		*	1.16
<b>Lead – private sector</b>				

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Encourage further investment in gas infrastructure to connect South Australia, via the Moomba area, to gas basins to the north and north-west <b>Lead – private sector</b>	1	*	*	1.16 5.11
Promote regional aggregation of demand to encourage expansion of the gas distribution network <b>Lead – private sector</b>	2	*	*	1.6
<b>Liquid Fuels</b>				
Ensure that ‘M’ berth at Birkenhead and the associated tank storage site are able to function effectively as the major delivery and storage point for bulk fuel <b>Lead – private sector</b>	1	*	*	1.16
Improve management of regional unloading and storage facilities for liquid fuels to provide capacity to meet peak demands <b>Lead – private sector</b>	1	*	*	5.11
<b>Demand-side Management</b>				
Increase the government’s stock of office accommodation that meets five-star energy rating <b>Lead – State Government</b>	U/way	*	*	3.2 3.3
Improve energy efficiency of buildings, appliances and large businesses through implementing the NFEE Stage 1 measures <b>Lead – State Government</b>	U/way	*	*	3.2 3.3
Trial innovative methods to reduce peak demand, including through the ETSA demand management program <b>Lead – private sector</b>	1	*		3.2 3.3
Implement the South Australian component of the national solar city initiative <b>Lead – private sector, Australian Government</b>	1	*	*	3.2 3.3

## Link to South Australia's Strategic Plan Objectives

Investment in infrastructure to support the sustainable use of existing water supplies and to develop alternative supplies will contribute to the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Exports</b>	Treble the value of South Australia's export income to \$25 billion by 2013. (T1.12)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 3: Attaining Sustainability

<b>The River Murray</b>	Increase environmental flows by 500 GL per annum in the Murray-Darling and major tributaries by 2008 as a first step towards improving sustainability in the Murray-Darling Basin, with a longer-term target to reach 1500 GL by 2018. (T3.1)
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### Objective 5: Building Communities

<b>State and local Government</b>	Align State and Local Strategic Plans within 12 months of the release of South Australia's Strategic Plan and agree joint initiatives from them. (T5.7)
<b>Regional infrastructure</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

## Background

The main participants in water management and delivery in the State are:

- Department of Water, Land and Biodiversity Conservation (DWLBC), primarily a regulatory and policy development agency
- SA Water, a public non-financial corporation delivering water and sewerage services under a commercial charter
- natural resources management boards
- local government
- the EPA, which regulates environmental aspects of water quality
- Department of Health, which regulates health aspects of water quality.

Operations and maintenance management of SA Water's water and sewerage service delivery has been contracted to United Water (for the operation of metropolitan Adelaide water and sewerage services), and United Utilities (for the operation of 12 country-based water filtration plants).

### The Physical System of Water Supply

South Australia's drinkable water supply strategy has, in the main, been developed with a policy of connectivity through three major transmission pipelines to the River Murray. The nearby metropolitan Adelaide water catchments and dams act as yearly storages for both the pumped River Murray supply and natural run-off.

Apart from the River Murray, some drinkable water comes from local groundwater in the South East and Eyre Peninsula, the latter requiring augmentation.

In the remote northern areas of the state water is generally sourced through access to low quality groundwater. Coober Pedy has adopted desalination technology to overcome this issue. Potential exists to enhance the use of water from the Great Artesian Basin, however this would need to be carefully managed to ensure that the sensitive dependent ecosystems are not compromised.

Approximately 2 Gigalitres (GL) per annum of stormwater and 18 GL per annum of wastewater are harvested across the state for non-drinkable use.

These systems provide South Australia with a reliable water supply. Of all water used in the state, SA Water customers account for approximately 220 GL per year.

Irrigation based on surface water and groundwater plays a significant role in South Australia's economy and represents 80% of all water used in the State. The main irrigation districts are in the Riverland, Lower Murray, Clare, Barossa, Adelaide Hills, Northern Adelaide Plains, Southern Vales, Mallee, Upper South East and the Lower South East.

Subject to the sustainable limits of a water resource, opportunities exist to improve the management and utilisation of available water resources through:

- the trade of River Murray and other water allocations between existing users both in South Australia and interstate
- more efficient use of the River Murray and Mount Lofty Ranges waters and lake storage, in conjunction with groundwater, to expand existing or develop new irrigation areas

- use of treated wastewater and effluent water
- harvesting of surface water in higher rainfall districts
- improved use of groundwater
- using SA Water's pipeline infrastructure as a water transport mechanism, subject to water quality considerations.

The South East of the state was historically characterised by land inundated with surface water. A system of surface water drainage was constructed to drain this land to make it productive. While this drainage system has not traditionally been seen as a source of water, this may change as awareness of the value of water grows. The State Government controls a strategically important and currently under-utilised reserve of water in the South East following proclamation of this resource. The application of the resource will be consistent with its highest and best use. It is likely that it will be used in secondary rather than primary production, in order to leverage regional economic development outcomes.

### The Legislative and Policy Context

Some of the most important water resources for South Australia are managed in collaboration with other jurisdictions through the Murray-Darling Basin Agreement and the more recent Council of Australian Governments (COAG) and National Water Initiative developments. It is therefore vital that South Australia continues to show strong leadership in this important area.

The Murray-Darling Basin Agreement sets out collaborative arrangements between the Australian, Queensland, New South Wales, ACT, Victorian and South Australian governments for the regulation and sharing of water within the Murray-Darling Basin. These arrangements have existed since 1914.

In 1994, COAG agreed upon a legal and administrative reform framework for rights to trade, access and use water resources. The National Competition Policy (NCP) package of water reforms, aimed at achieving environmentally sustainable and economically viable water use and management, has been substantially implemented.

An intergovernmental agreement to give effect to the National Water Initiative (NWI) was signed at the June 2004 COAG meeting. The NWI extends and builds on the 1994 national water reforms, including the progressive removal of barriers to water trade. The newly established National Water Commission will now monitor progress on both NWI and COAG water reforms.

The management of other significant water resources, for example the Lake Eyre Basin, the Great Artesian Basin and groundwater and surface water shared with Victoria, are subject to intergovernment agreements.

There are also state-based legislative frameworks that influence water resources management, with the key ones being the *Natural Resources Management Act 2004*, the *Waterworks Act 1932* and the *South Australian Water Corporation Act 1994 and the River Murray Act 2003*.

## Challenges and Opportunities

### Water Resource Management

South Australia is highly dependent on water resources from the River Murray and the Mount Lofty Ranges. Given this, the State Government has almost completed the Water Proofing Adelaide strategy to provide a blueprint for the management, conservation and development of Adelaide's water resources to 2025. There are three central themes to the Water Proofing Adelaide work: sound management of existing resources; responsible water use; and a framework for considering water augmentation options where they are required.

In terms of the River Murray, the sustainability of current water diversion practices across the whole Murray-Darling Basin is an issue. Increased withdrawal of irrigation water in other states, particularly over the last 20 years, has reduced the dilution of natural salt inputs. South Australia is committed to the Murray-Darling Basin Commission (MDBC) Salinity Management Strategy and the target of <800 EC units measured at Morgan 95% of the time. This means that further irrigation development in the state that impacts on the River Murray must be supported by salt interception schemes to generate the required salt credits. Reduced summer river flow is a contributor to toxic algae blooms.

The State Government will provide assistance packages to farmers in the Lower Murray Irrigation Areas that enable rehabilitation leading to improved water quality.

There is a clear need to determine the sustainable yield of water from the Murray-Darling Basin and then, from this point, ensure that Murray-Darling Basin diversions are reduced to this sustainable level. Market forces could then operate, in accordance with the highest and best use of the available water.

Consistent with restoring a sustainable system of water diversion from the Murray-Darling Basin, the COAG meeting of the 25 June 2004 resolved to support an additional 500 GL per annum environmental flow and has set aside \$500 million to support works to recover this volume of flow. While South Australia is a party to this agreement, it considers the 500 GL per annum the first step only. The state's commitment to improving the ecological sustainability of the River Murray has been further strengthened through the Living Murray Initiative, which makes a firm commitment to seeking a total of 1500 GL per annum environmental flow by 2018.

The current use cap and use of River Murray water in South Australia, through the Murray-Darling Basin Agreement is set out in Table 22 of the State Water Plan (Vol 2) and summarised in the following table.

<b>Water Supply</b>	<b>Use limit (cap) (GL per annum)</b>	<b>Average diversion use or loss (GL per annum)</b>
Metropolitan Adelaide	130	100
Country towns	50	40
Irrigation	524	452
<b>Total diversions</b>	<b>704</b>	<b>592</b>
Evaporation losses	N/A	880
<b>Total diversions plus evaporation</b>	<b>704</b>	<b>1472</b>
Entitlement flow to South Australia	1850	6900
<b>Available for the environment</b>	<b>N/A</b>	<b>5428</b>

With the support of the community, local government, and industry, the government will continue to implement programs aimed at reducing annual mains water demand so that by 2025 consumption will be about 35,000 Megalitres (ML) lower than it otherwise would have been. Already the government has adopted permanent conservation measures to support this target but additional measures, including support for a national water efficiency labelling program and voluntary water audits for all water users, will be adopted.

Metropolitan and town use of water is limited by the use limit (cap). This raises the question of future augmentation sources for this water supply. In considering any augmentation path for water supply, it is necessary to have regard to:

- the lowest costing augmentation method, taking account of the true cost of the water delivered (i.e. including environmental costs of water use etc.)
- the technical feasibility of the augmentation strategy, including its overall sustainability.

Alternative sources for augmentation of water supply include additional sewage water reuse or beneficial harvesting of stormwater for use on public parks and in industrial processes. The government, in conjunction with homeowners, local government and community groups, will strive to protect coastal waters and reduce demand on the mains water system by increasing rainwater and stormwater use for non-drinking purposes from an estimated 2 GL per annum in 2002 to 20 GL per annum by 2025 – a 900% increase.

The Mount Lofty Ranges is an open water catchment, meaning that urban and rural development is allowed in the catchment. As a result, the Mount Lofty Ranges watershed faces pollution risks from the various land uses within the catchment, including residential sewage treatment via septic tank effluent disposal systems, animal keeping and various other forms of land use. Overall water quality from run-off in the catchment has also been affected by development in the watershed. These activities have reduced the overall level of run-off, leading to reduced environmental flows through streams. The groundwater resource in the Mount Lofty Ranges watershed and Adelaide (i.e. particularly where there is high-value viticultural or horticultural crop activity) is highly utilised and in some cases fully committed. Metropolitan estuaries and coastal marine environments have also been impacted by polluted stormwater and effluent discharges. As for the River Murray, options for restoring environmental flow in the creek and river systems of the Mount Lofty Ranges will be evaluated.

The government has issued a Notice of Intent to Prescribe the Western Mount Lofty Ranges and has put in place a temporary moratorium on new uses. This approach prevents significant increases in the pressure on the region's water resources while public consultation occurs on whether prescription should occur and if so to what extent. If implemented, prescription would provide a mechanism for sustainable water resources planning and management, including more equitable and secure allocation of water resources. In addition, planning and environmental controls will reduce the run-off of pollutants into creeks, streams and water storages.

## Strategic Priorities

- Ensure that future irrigation developments offset their salinity impact or are located in low salinity impact areas to reduce the incremental salt effects of further irrigation development along the River Murray.
- Identify further salt interception schemes ranked by area of most effectiveness in reducing saline water flows into the River Murray.
- Educate irrigators on the highest and best use of water, identifying crop types and efficient applications of irrigation water to reduce the level of irrigation drainage water returning to the River Murray.
- Implement the Water Proofing Adelaide Strategy.
- Implement water efficiency programs for all users of water, prioritising uses that can yield the greatest savings in water for the money spent on the water use program.
- Support the return of environmental flows to the River Murray by targeting 1500 GL per annum by 2018
- Through the Murray-Darling Basin Commission, support information gathering on the management of environmental flows and how they can most economically be sourced to gain the best outcomes for the River Murray through innovative management of water flows.
- Through the Planning Strategy and associated Development Plans, in future allow only land uses in the Mount Lofty Ranges Water Catchment that have beneficial or neutral impacts upon the quality of water harvested from the catchment.
- Educate land users in the Mount Lofty Ranges water catchment on land use practices to improve water quality from the catchment, supported by regulatory intervention where necessary.
- Ensure efficient use of water in the Mount Lofty Ranges water catchment.

### Water for New Economic Activity

For a number of current areas of economic activity in the state, future growth is planned to achieve South Australia's Strategic Plan export target. Additional water supply at an appropriate cost will be needed to achieve this growth in some sectors. For example, the possible expansion of WMC's Olympic Dam mine and other mineral developments, and possible expansion of dairy production, horticulture and viticulture.

Additional water use in these sectors will need to be secured within a market context, supported by the normal assessment processes including the long-term sustainability of any use. In some areas, innovative harvesting and more efficient use of water will be key, while in others, greater reuse of wastewater flows will provide the solution.

The expansion of permanent trade in water will be achieved through implementation of the National Water Initiative. Water trading across the Murray-Darling Basin will enable South Australia to access water that is currently used for lower-value production, such as pasture, rice and cotton. This will enable water to be used in South Australia for both higher-value production and for environmental purposes.

Infrastructure will play an important role in water supply for expansion of these sectors. In some cases water may be harvested in a locality adjacent to the point of use, but in others the water may require storage or transport over some distance. Depending on the quality of storage or water required for its intended end use, pre-treatment of the raw water may be required to make it suitable. Finally, drainage management strategies for the actual use of any water will be required to be consistent with the theme of long-term sustainable use, particularly in an irrigation setting. All may require investment in new infrastructure during the planning period.

### Strategic Priorities

- Through the National Water Initiative, ensure that barriers to water trade in the Murray-Darling Basin are progressively removed.
- Assess the feasibility of aquifer storage and recovery to support reuse.

### Stormwater

Local government has responsibility for managing drainage and flood-related stormwater. The State Government provides subsidy funding for any necessary works where the catchment area exceeds 40 hectares. The nature and extent of works required are normally determined by studies on the catchment concerned, the recommendations of which have to be agreed to by both the council(s) concerned and the State Government.

State and local government have identified significant works needed to manage flooding risks from stormwater in some parts of the Adelaide metropolitan area and other areas in the state. The State Government is working with local government to develop more appropriate policies and governance arrangements for the management of stormwater, particularly where stormwater issues cross council boundaries.

Increasingly, appropriate management of stormwater is seen as an opportunity to improve amenity in new land developments through the creation of water features and water sensitive urban design (WSUD) and where the topographical features permit, to encourage the economic harvesting of the stormwater for public parks watering,

recycling within the development for non-drinkable domestic use or as a source of water for industrial purposes. Harvesting of stormwater from existing developed areas is also possible but is normally only viable on a larger scale where there is land available (for cleansing purposes) and significant demand for non-drinkable water. Where these outcomes can be economically achieved they should be encouraged.

The potential for stormwater flows to be captured in basins, allowing settlement of pollutant load for treatment in natural eco-systems, is limited by the land area required and the historic design of stormwater discharge systems. This is particularly so in the older suburbs. In some catchments, it may be possible to replicate this treatment system through use of parklands, the land adjacent the Adelaide Airport (subject to the satisfactory management of birds) and in the lower reaches of the River Torrens. Opportunities for each stormwater catchment need to be well researched; some work has been done on these locations.

The flooding of the Glenelg North area and the fish kill in the Patawalonga Lake demonstrate the need for improvements to be made to the Patawalonga system. The government believes the most significant gains will be made by improving the management of stormwater throughout the catchment, from Heathfield in the east to Glenelg in the west. While of lesser magnitude, improvements can also be made through the enhancement of infrastructure at the tail end of the system.

CSIRO climate change projections predict less total rainfall, but more intense storm rainfall for southern Australia in the future. This implies less yield but higher peak flows in stormwater systems in the future, particularly in northern areas of the state.

### Strategic Priorities

- Continue to support the program of comprehensive floodplain mapping along the natural watercourses that transverse the Adelaide metropolitan area and other significant towns in the state.
- Determine appropriate flood management standards, based on the results of comprehensive floodplain mapping and appropriate mitigation studies where the costs and benefits (damage avoided) are adequately calculated.
- The State Government, working closely with local government, is to prioritise a future work program including accounting for emerging trends of urban consolidation, and achieving improved quality of stormwater discharged to the environment supported by appropriate harvesting of stormwater flows for urban amenity or beneficial reuse, where economically feasible.

**Effluent Disposal**

In most densely populated areas of the state, sewage collection is operated by SA Water (linked to treatment of the waste stream), licensed by the Environment Protection Authority (EPA).

In recent years SA Water has undertaken a \$240 million program to upgrade the major wastewater treatment plants in order to reduce the environmental impact from discharges of treated effluent to the marine environment. Further investment is planned over the next five years to complete this work and for other environmental improvements to the plants and to commence a program to reduce wastewater overflows.

Smaller population centres, typically non-metropolitan, rely on either a stand-alone septic tank or a local government operated Septic Tank Effluent Disposal Scheme (STEDS) with a centralised water treatment pond.

**Strategic Priorities**

- Support joint State/local government action to advise on reform of STEDS, including the methodology for establishing STEDS works priorities, funding options and innovative management arrangements to improve the performance of STEDS.
- Examine further cost-effective opportunities to reuse wastewater and reduce the impact of coastal sewage treatment plants on adjacent environments.

**Desalination**

While South Australia has limited freshwater resources, it does have an extensive coastline and significant saline groundwater resources. The issue is quality of the available water and its suitability for its intended use.

Opportunities may exist, as technology develops, to construct additional desalination plants strategically around the state. These could be developed to treat water sourced from river systems, groundwater or coastal environments, where desalination represents an appropriate water augmentation option.

**Strategic Priority**

- Support further developments in desalination plants where economically feasible.

**Water Infrastructure and Population Change**

In the context of historical changes to the spatial distribution and make-up of the current population and the state objective of increasing the population, there are potential implications for the way water resources and delivery systems are managed.

In some areas of the state the constructed water (and sewerage) systems are likely to be under-utilised relative to their design capacity, due to declining populations.

Within metropolitan Adelaide, areas of urban consolidation have already occurred and the water (and sewerage) systems have generally been able to deal with this. On the water side, urban consolidation has meant smaller garden areas (traditionally a significant user of water), so more houses can be accommodated within a given water system. On the sewerage side, the trend to smaller average households has meant that although there may be denser housing development, total population has not significantly changed, which is the determinant of sewerage flow. Hence existing sewage systems have also been able to generally cope with denser development.

Urban consolidation, however, has increased the peaks of stormwater events due to denser development patterns and hence roof areas from which stormwater is rapidly discharged. It is likely that pressure for urban consolidation will increase to maintain affordable housing standards. The capacity of existing wastewater infrastructure to accommodate further urban consolidation will be monitored.

As the existing SA Water infrastructure ages there will be a need for increasing investment in asset replacement and refurbishment. In line with this SA Water is undertaking work to improve safety at its dams

There is also now an increased awareness of the importance of the security of South Australia's infrastructure assets. SA Water's forward plans include enhancements to the security of critical water and wastewater assets.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Continue to implement the MDBC infrastructure program including along the River Murray for example: <ul style="list-style-type: none"> <li>■ sand dredging of the Murray Mouth</li> <li>■ operational improvement in the Murray Mouth barrages</li> <li>■ salt interception scheme construction</li> </ul> <b>* Lead – State Government</b>	U/way	*	*	3.1 5.11
Continue to enhance water management throughout the Patawalonga catchment – ‘the Pat fights back’ <b>Lead – State Government</b>	U/way	*		1.16 2.1
Evaluate options, to augment water supplies in regional and remote areas <b>Lead – State Government, private sector</b>	U/way	*	*	1.16 5.11
Consider economic opportunities for further reuse of treated wastewater from Bolivar, Glenelg, Christies Beach and other wastewater treatment plants <b>Lead – State Government</b>	U/way	*	*	1.16 3.1
Implement key priorities identified in Water Proofing Adelaide <b>Lead – State Government</b>	1	*	*	1.16
Prioritise and implement high priority works arising out of the Urban Stormwater Initiative (which includes the Metropolitan Adelaide Stormwater Management Study) <b>Lead – State Government, local government</b>	1	*	*	1.16 5.7
Develop water supply options to support mining developments in remote areas and implement preferred options <b>Lead – private sector</b>	1	*	*	1.12
Implement priority regional STEDS upgrades <b>Lead – local government</b>	1	*	*	5.11
Improve and extend water and sewerage services including: <ul style="list-style-type: none"> <li>■ water quality improvement initiatives</li> <li>■ augmentation of the sewerage program in the Adelaide Hills</li> <li>■ augmentation of the Eyre Peninsula water supply</li> <li>■ capacity upgrades to various wastewater treatment plants</li> <li>■ network upgrades, extensions and connection</li> </ul> <b>Lead – State Government</b>	2	*	*	1.16 5.11

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.

## Link to South Australia's Strategic Plan Objectives

Proper management of the state's natural assets will strengthen South Australia's reputation for being clean, green and sustainable, and contribute towards the achievement of the following targets:

### Objective 1: Growing Prosperity

<b>Tourism industry</b>	Increase visitor expenditure in South Australia's tourism industry from \$3.4 billion in 2001 to \$5.0 billion by 2008 by increasing visitor numbers and length of stay and, more importantly, by increasing tourist spending. (T1.13)
<b>Strategic infrastructure</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 2: Improving Wellbeing

<b>Quality of life</b>	Improve Adelaide's quality of life ranking on the William M. Mercer Quality of Life index to be in the top 20 cities in the world within 10 years. (T2.1)
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### Objective 3: Attaining Sustainability

<b>The River Murray</b>	Increase environmental flows by 500 GL in the Murray-Darling and major tributaries by 2008 as a first step towards improving sustainability in the Murray-Darling Basin, with a longer-term target to reach 1500 GL by 2018. (T3.1)
<b>Land biodiversity</b>	Have five well-established biodiversity corridors linking public and private lands across the state by 2010. (T3.4)
<b>Marine biodiversity</b>	Create 19 Marine Protected Areas by 2010. (T3.5)
<b>Native vegetation</b>	Any clearance of native vegetation being offset by significant biodiversity benefit by 2005. (T3.6)
	Integrate native vegetation/biodiversity management in South Australia's eight Natural Resource Management regional plans by 2010. (T3.7)
	Lose no species. (T3.8)

### Objective 5: Building Communities

<b>Regional Infrastructure:</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)
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## Background

South Australia's natural assets underpin quality of life by providing clean air, water and arable land. They generate income and support pastoralism, agriculture, large commercial and recreational fisheries, aquaculture, tourism and human settlements. The state's native flora and fauna is among the most diverse and unique in the world.

The State Government's responsibilities for natural assets encompass managing the state's public lands, including most of its coastline and river banks and reserves; providing leadership in legislation, policy and programs to protect, manage and use natural assets and developing and implementing interstate and national agreements on natural assets.

More than 20% of the state has been set aside primarily for conservation. Twenty million hectares are now protected in the reserve system and a further half a million hectares are protected by over 1200 voluntary heritage agreements with private landowners. A network of marine protected areas is under development.

The level of soil loss to wind erosion has significantly declined due to changed farming practices and land rehabilitation schemes. A healthy River Murray is essential to the future viability of the state and the river now has greater protection thanks to the *River Murray Act 2003*. Many government policies and programs now focus on the water requirements of rivers, streams and wetlands and partnership programs have been established between the three spheres of government and the community to lead towards sustainable use and development of natural resources.

*The Natural Resources Management Act 2004* (NRM Act) sets up an integrated scheme for administering the use and management of natural resources across South Australia. The integrated administrative arrangements under the Act replace, in a staged process, the currently separate arrangements that are in place for water, soil, and animal and plant control. This integrated system continues to provide for community participation with the State Government as well as the local government sector and the Australian Government.

## Challenges and Opportunities

### Overview

There are significant issues and challenges confronting communities, industry and governments that, unless met, will diminish the condition of the state's natural physical assets, productivity and quality of life. These include:

- salinity levels in the River Murray
- soil productivity and soil loss that still occur during extreme weather events
- increasing development along the coastline and semi-urban regions
- impacts of climate change on biodiversity
- water use and quality issues
- increasing land use intensity
- dryland salinity

Management of natural assets requires a long-term view as many of the problems faced today were set in train by historical land management decisions and actions, and are exacerbated by some current management practices.

### Natural Resources Management

The provision of areas of appropriate quality habitat provides the basis for healthy, functioning ecosystems. Native habitat also provides a source of unique genetic material that has as yet untapped potential for future innovation and development.

The Upper South East Dryland Salinity and Flood Management Program was developed in the early 1990's to address community concerns about dryland salinity, waterlogging and ecosystem fragmentation and degradation. Measures adopted to address these concerns include drainage, saltland agronomy, revegetation and wetland management.

The Mount Lofty Ranges are one of the state's most important natural, social and economic regions; supplying over 60% of Adelaide's water, producing over \$240 million pa of farm gate value in agricultural produce, housing 85,000 people and containing considerable areas of diverse vegetation with many threatened plants and animals. The special natural features of the region, and the many activities in the area have created a complex environment with a large range of conflicting land uses and development pressure, that needs careful management.

The South Australian Government recognises that economic development needs to be sustainable.

Regional NRM investment strategies will identify specific projects and relevant funding sources to address issues at the local level, within a framework for ensuring that local decisions are consistent with state-wide and national priorities and policies.

### Strategic Priorities

- Implement the new integrated NRM Framework.
- Develop an integrated spatial system to provide an information/knowledge database on natural resources, including soil, water and vegetation.
- Ensure the restoration and sustainable management of the Mount Lofty Ranges.

#### Parks, Gardens and Tourism

South Australia's unique natural and cultural assets underpin much of the state's economic success. The natural and cultural environment is a key motivation for travel and tourism and makes a substantial contribution to some local economies by providing income and employment (including youth and Aboriginal employment). Many of South Australia's major nature-based tourism attributes are to be found in national parks and reserves. Research consistently shows visiting national parks is one of the major activities undertaken by holiday travellers.

There were approximately six million visits to South Australia (domestic, overnight and international for the 12 months ended September 2003), including more than 300,000 international visitors. South Australia's national parks and reserves attracted approximately 3.8 million visitors. Surveys show more than one third of all international visitors have a strong interest in and desire to experience our unique nature, landscapes and wildlife, particularly in its natural habitat, and 42% will visit a national park during their stay. International visitors participating in nature-based activities or who visit natural places, also spend more than the average for all visitors.

Some of Adelaide's significant tourism and recreational assets are the Adelaide, Mount Lofty and Wittunga Botanic Gardens. Tourism has become an economic mainstay in regional areas, such as Kangaroo Island (KI), the Flinders Ranges, Fleurieu Peninsula, Yorke Peninsula and Eyre Peninsula, where there are unique natural and cultural attractions.

Another significant tourism and recreational asset is the Heysen Trail. The Heysen Trail is the state's premier long-distance walking trail stretching 1200km over some of its best landscape from Cape Jervis to the heart of the Flinders Ranges. The trail gives people an insight into the diverse heritage, development and beauty of the state's many varied landscapes.

The protection of the environment is vital to the ongoing sustainability of the tourism industry and parks are the key to building sustainable nature-based tourism experiences. The challenge is to manage visitation in a manner that enables people to have a memorable and authentic experience. Quality visitor infrastructure such as roads, walking trails, car parks, campgrounds, accommodation, stairs and boardwalks are required to manage and develop the visitor potential of natural areas, while also managing the environmental impacts.

### Strategic Priorities

- Develop innovative and environmentally friendly infrastructure solutions in parks and reserves to maximise the benefits from increased tourism.
- Establish iconic sites for promoting and interpreting the conservation of natural and cultural heritage.
- Improve capacity to manage the state's network of parks and reserves in a sustainable way.

#### Biodiversity Corridors

The SASP proposes that five biodiversity corridors linking public and private lands be established across the state by 2010. The State Government is working with regional communities to establish the corridors and integrate biodiversity conservation with other natural resource management. Infrastructure investment associated with the establishment and future management of the corridors will be required. Three corridors have been identified to date:

- 'East meets West' – integrated biodiversity management across land and sea from Eyre Peninsula through the Great Victoria Desert and Nullarbor Plain to Western Australia
- 'Bounceback Extension' – an extension of the successful ecological restoration project to encompass biodiversity conservation on and off reserves from the Southern Flinders Ranges to the Gammon Ranges

- 'Cape Borda to Barossa' – integrated biodiversity management across Kangaroo Island, Backstairs Passage and the Mount Lofty Ranges.

### Strategic Priorities

- Attain sustainability and protect our natural environment through partnerships between the public and private sectors.
- Establish and maintain five biodiversity corridors.

#### Living Coast Strategy

Some of South Australia's unique and precious resources are its coastal, estuarine and marine environments. These marine and estuarine waters are some of the most biologically diverse in the world and are also highly valuable resources supporting an array of activities from fisheries and aquaculture to shipping and mining.

There is a need for adequate environmental and planning frameworks to manage the increasing and often competing demands on the coastal, estuarine and marine environments arising from development and use.

The Living Coast Strategy addresses the government's environmental policy commitments for coastal, estuarine and marine environments. It sets out the policy directions and framework that the State Government will be taking in the next five years to help protect and manage South Australia's coastal, estuarine and marine areas for their conservation and sustainable use.

### Strategic Priority

- Implement the Living Coast Strategy to ensure the sustainable management of the state's coastal assets.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
Complete the drainage program in the Upper South East and the salt interception schemes along the River Murray (Loxton and Bookpurnong) <b>* Lead – State Government</b>	U/way	*		3.1
Develop and upgrade the state's key parks and public spaces through targeted investment in visitor infrastructure to promote and support tourism and recreation, while promoting sustainability objectives <b>Lead – State Government, local government</b>	U/way	*	*	1.13 6.2
Develop an integrated package of works to improve biodiversity and land management on lower Eyre Peninsula <b>Lead – State Government</b>	U/way	*		3.6
Implement the Living Coast Strategy including the metropolitan beach sand management plan <b>Lead - State Government, local government</b>	U/way	*	*	1.16
Develop appropriate infrastructure to protect and conserve five biodiversity corridors linking public and private lands across the state <b>Lead - State Government</b>	U/way	*	*	3.4 3.8
Upgrade roads and day visitor facilities to support sustainable touring in South Australia's outback and regional parks <b>Lead – State Government</b>	2	*	*	1.13
Promote development of tourism accommodation in regional areas to facilitate access to strategic tourism assets <b>Lead – private sector</b>	2	*	*	1.13

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



# Natural Assets

## Link to South Australia's Strategic Plan Objectives

Provision of appropriate waste recovery and recycling infrastructure will contribute to the achievement of the following targets:

### Objective 1: Growing Prosperity

**Strategic infrastructure:** Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)

### Objective 3: Attaining Sustainability

**Zero waste:** Reduce waste to landfill by 25% within 10 years. (T3.11)

### Objective 5: Building Communities

**Regional Infrastructure:** Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

## Background

State and local government and the private sector are all participants in the waste management industry in South Australia. Waste depots, including resource recovery centres, transfer stations and landfills, are owned and/or operated by a mixture of local government and private sector waste management companies.

Local government assumes responsibility for the planning and management of municipal solid waste, including operation of systems for solid waste, recyclables, green organics and transfer stations. This incorporates a key role in planning for infrastructure needs for waste, including consideration of needs for commercial and industrial waste where facilities are used for both waste streams. However, the collection and management of industrial and commercial waste is mostly managed by the private sector in the metropolitan area.

The establishment of Zero Waste SA (ZWSA) is part of a new legislative framework to drive an integrated strategy for waste avoidance and reduction, waste minimisation, recycling and waste disposal. Work on a new state waste strategy has begun, aimed at progressing towards zero waste. The state waste strategy is due for completion.

Waste management in South Australia is reliant on the need to dispose of domestic and commercial waste in engineered landfills. As a result, resource recovery and recycling programs often struggle to make a significant impact or be viable.

Waste disposal removes the potential to derive a higher resource value from the materials through re-use, recycling and resource recovery.

### Recycling

A study commissioned by ZWSA in 2004, indicates that South Australia is achieving very high recycling rates. In 2003, more than 2.1 million tonnes of material ranging from asphalt to textiles was recycled in South Australia. This result shows that recycling volumes outstrip the volume of material sent to landfill, which was over 1,300,000 tonnes in 2001/02. This gives a total diversion rate of 62%.

The study also found there was a broad range of opportunities to reduce waste levels through expanding recycling activity and other waste minimisation efforts. The study also identified priorities for improving waste diversion in the short and medium-term.

Technologies for the recovery of energy from waste provide additional potential opportunities for the management of industrial, commercial and municipal waste. However, there remains a strong need to investigate and evaluate the viability of these new technologies against other beneficial uses for waste materials to ensure sustainable outcomes.

In landfills, the decomposition of waste leads to greenhouse gas emissions and leaching of heavy metals, chemicals and other substances.

Modern landfills in South Australia are required to be lined and to treat leachates and burn (or flare) or capture for energy the landfill gases emitted from the sites.

In the Adelaide metropolitan area, existing waste management and resource recovery infrastructure includes landfills, facilities for material recycling, composting, and building waste recycling and Container Deposit Legislation (CDL) depots. All metropolitan councils also provide kerbside waste and recycling services to domestic residents.

Two-thirds of the waste disposed to landfill originates from the business sector. Despite strong efforts directed to resource recovery and recycling, significant tonnages still go to landfill (50%), resulting in cost to business and loss of valuable resources.

The waste management issues facing rural South Australia are significantly different to those encountered in metropolitan Adelaide. To achieve sustainable waste management practices in rural areas, practical options need to be identified (such as improving transport logistics and costs and aggregating materials to form viable economies of scale) and implemented at a local level.

Most non-metropolitan councils are considering a regional approach to the management of infrastructure, such as the rationalisation and upgrading of landfills. It is often too expensive for small landfills to address the environmental issues of odour, leaching, landfill gas, and surface and groundwater management.

The waste depot levy (landfill levy) is collected under the Fees and Levies regulations of the *Environment Protection Act 1993*. The levy is collected by the Environment Protection Authority (EPA) and is designed to reduce the environmental impacts associated with disposal of waste to landfill, and generate funds for waste recycling programs and activities.

## Challenges and Opportunities

### Metropolitan Area

The provision of appropriate waste management collection and processing infrastructure is an essential prerequisite to the diversion of more waste from landfill.

The limited capacity and lack of recycling and resource recovery infrastructure is an issue for both local government and the business sector.

Some of the major issues include:

- Metropolitan-generated waste should be processed through a transfer station, material recovery facility, resource recovery facility or equivalent process and not disposed of directly to landfill. At least two landfills receiving metropolitan-generated waste are permitted to receive waste directly to the landfill disposal site, whereas the new landfills to the north of Adelaide are not.
- The closure of one major landfill (at Wingfield) and the approval of three replacement landfills, and expansion of the Nuriootpa landfill, have created around 50 years of capacity of metropolitan landfill space.
- Low-cost landfill makes recycling/composting treatment options economically uncompetitive.

### Strategic Priorities

- Plan, coordinate and make available appropriately zoned, located and serviced land to accommodate waste recovery and recycling infrastructure.
- Encourage recycling.

### Rural Areas

While the regionalisation of rural landfills presents an opportunity to lower operating costs, improve waste management practices and encourage resource recovery, there are a number of issues associated with this strategy, such as:

- the distance and hence transport costs to markets, which are largely metropolitan or interstate based
- the costs associated with storage and warehousing, handling and transport
- the capital investment required for reprocessing plant, which dictates a need for consistent volumes of material to achieve economies of scale

There is a range of costs to councils associated with providing waste and recycling services. However, significant Australian studies have concluded that when the environmental impacts of landfill disposal versus recycling are compared, there is an overall benefit from recycling.

### Strategic Priorities

- Develop partnerships with the transport industry and identify new transport opportunities to encourage and increase the level of resource recovery and recycling in regional areas.
- Promote regional-based infrastructure and approaches for local and regionally generated waste/recycling materials.
- Promote the maintenance of an appropriate range of high-quality private sector waste recycling, treatment and disposal facilities.

### Hazardous Wastes

Hazardous wastes are substances that pose a risk to human and environmental health and require special disposal techniques and infrastructure to make them harmless or less dangerous. They include inorganic chemicals, paints, resins, inks and dyes, organic solvents, pesticides, asbestos and clinical and pharmaceutical wastes. Hazardous wastes are generated mainly by the commercial, industrial and trade sectors.

It is important to ensure that community safety is protected by applying appropriate handling and disposal of hazardous waste.

### Strategic Priority

- Promote the maintenance of an appropriate range of high-quality private sector recycling, treatment and disposal facilities for hazardous waste.

### Radioactive Wastes

Radioactive materials are used extensively in South Australia – in medicine for the diagnosis of diseases and the treatment of some forms of cancer, in industry in research, and in education. Many of these activities generate radioactive wastes requiring safe and secure storage or disposal.

The control of radioactive waste in South Australia falls under the *Radiation Protection and Control Act 1982* and is administered by the Radiation Protection Division of the EPA. In 2003, the EPA conducted an audit of radioactive material in South Australia, including wastes (22m<sup>3</sup> of low and intermediate level waste, including smoke detectors, were identified).

The audit report recommended that the government investigate the feasibility of establishing a facility for the safe handling, packaging and interim storage of South Australia's waste pending the establishment of appropriate facilities for long-term management.

## Projects

Project	Priority #	2005/6– 2009/10	2010/11– 2014/15	SASP Targets
<b>Domestic, Industrial and Commercial Waste</b>				
Develop collaborative arrangements with regional councils and industry to establish regional waste management strategies <b>* Lead – State Government</b>	U/way	*	*	3.11
Establish integrated waste management facilities, including enclosed organic processing, in the northern and southern metropolitan area <b>Lead – private sector, local government</b>	1	*		3.11
Establish additional waste material recovery and recycling facilities to complement existing operations <b>Lead – private sector</b>	1	*		3.11
Establish open windrow-composting facilities (in addition to the Buckland Park facility) to service the metropolitan area and nearby rural communities <b>Lead – private sector</b>	1	*		3.11
Investigate opportunities for alternative waste treatment and processing technologies to replace landfills <b>Lead – private sector</b>	2	*	*	3.11
<b>Hazardous and Radioactive Waste</b>				
Act on the key recommendations of the EPA's 2003 audit of radioactive material to ensure appropriate management of this material <b>Lead – State Government</b>	U/way	*	*	3.11
Upgrade hazardous waste incinerators to appropriate EPA gas emission standards <b>Lead – private sector</b>	2	*		3.11

\* Lead – lead responsibility for promoting, developing and evaluating the project.

# Priority – preliminary rankings. Priority numbers do not represent a final commitment by the State Government or other lead entities. See the Delivering the Plan section for further details.



## Bibliography

- Aboriginal and Torres Strait Islander Commission, Review of Essential and Municipal Infrastructure Service Provision to Indigenous Communities in Australia, MLCS Corporate, 2002
- Access Economics, *Business Outlook: Five Year Forecasts for Business Planners*, Access Economics, 2003
- Adelaide Airport Ltd, *Adelaide Airport Preliminary Draft Master Plan*, Adelaide Airport Ltd, 2004
- Adelaide City Council, *City Arts & Living Culture Strategy 2003-2007: City Strategies*, Adelaide City Council, 2004
- Arts SA, *Arts – The Heart of South Australia*, Government of South Australia, 2003
- Attorney-General's Department, *Critical Infrastructure Protection National Strategy*, Australian Government, 2004
- Australian Bureau of Statistics, *National Regional Profiles*, Australian Government, 2004
- Australian Bureau of Statistics, *Research and Experimental Development: Businesses (Category 8104.0)*, Australian Government, 2004
- Australian Bureau of Statistics, *SA Office Agricultural Census, 2000-2001 Value of Product Australia*, Australian Government, 2001
- Australian Indigenous HealthInfoNet, *Overview of Indigenous Health January 2004*, [http://www.healthinfonet.ecu.edu.au/html/html\\_keyfacts/keyfacts\\_overviews.htm](http://www.healthinfonet.ecu.edu.au/html/html_keyfacts/keyfacts_overviews.htm)
- B Burgan, Prof. T Mules and Hudson Howells Consulting, *Assessment of the Economic Impacts of the Protected Areas of Kangaroo Island: Final Report*, 2002
- Bureau of Transport and Regional Economics, *Australian Transport Statistics*, Australian Government, 2003
- Central Local Government Region of SA Inc, *Regional Transport Strategy Study: Final Report*, Central Local Government Region of SA Inc, 2003
- Climate Impact Group, CSIRO, *Climate Change in South Australia: Report on Assessment of climate change, impacts and possible adaptation strategies relevant to South Australia*, Australian Government, 2003
- Connell Wagner, *Murray & Mallee Regional Transport Strategy*, Murray & Mallee Local Government Association, 2004
- Dairy Industry Development Board, *SA Dairy Industry Strategic Plan 2010*, Dairy Industry Development Board, 2002
- Department for Environment and Heritage, *Living Coast Strategy for South Australia*, Government of South Australia, 2004
- Department of Environment and Heritage, *Heritage Directions: a Future for Built Heritage in South Australia*, Government of South Australia, 2003
- Department of Further Education Employment Science and Technology, *Annual Report 2002*, Government of South Australia, 2002

- Department of Further Education Employment Science and Technology, *Shaping the Future, ST110 a 10-year Vision for Science, Technology and Innovation in South Australia*, Government of South Australia, 2004
- Department of Human Services, *First Steps Forward: South Australian Health Reform*, Government of South Australia, 2003
- Department of Industry and Trade/South East Local Government Association, *Workforce Accommodation*, Hassell's, 2002
- Department of the Prime Minister and Cabinet, *Securing Australia's Energy Future*, Australian Government, Canberra, 2004
- Department of Trade and Economic Development, *Choose Adelaide*, Government of South Australia, 2004
- Department of Transport and Regional Services, *Auslink Fact Sheet Green Paper*, Australian Government, 2002
- Department of Transport and Regional Services, *Auslink Green Paper: Towards the National Land Transport Plan*, Australian Government, 2002
- Department of Transport and Urban Planning, 'Draft SA Transport Plan', Government of South Australia, 2004
- Department of Transport and Urban Planning, *Planning Strategy for Regional SA*, Government of South Australia, 2003
- Department of Transport and Urban Planning, *South East Rail - Mount Gambier Intermodal Facility: Summary of Initial Planning and Estimating*, Government of South Australia, 2003
- Department for Transport and Urban Planning, *Draft Inner Region Planning Strategy*, Government of South Australia, 2004
- Department for Transport and Urban Planning, *Planning Strategy for Regional SA*, Government of South Australia, 2003
- Department of Water, Land and Biodiversity Conservation *Managing Salinity in the River Murray in South Australia*, Government of South Australia, 2004
- Department of Water, Land and Biodiversity Conservation, *Regional Impact Assessment, River Murray Salinity Impact Zoning, Consultation Draft*, Government of South Australia, 2004
- Department for Water Resources, *State Water Plan 2000*, Vol. 1 & 2, Government of South Australia, 2000
- Economic Development Board, *A Framework for Economic Development in SA*, Economic Development Board, 2003
- Economic Development Board, *The State of the State - Key Issues facing South Australia - Higher Education*, Government of South Australia, 2002
- Econtech, *Australian State and Industry Outlook, Econtech*, 2004
- ElectraNet SA, *ElectraNet - Investing in the South East Annual Report 2003*, ElectraNet SA, 2004
- Electricity Supply Industry Planning Council, *Annual Planning Report 2004*, ESIPC, 2004
- Environment Protection Authority, *State of the Environment Report for South Australia 2003*, Government of South Australia, 2003
- Essential Services Commission of South Australia, *Distribution Price Review: Service Standard Framework, Working Conclusions*, Government of South Australia, 2004

- Essential Services Commission of South Australia, *Electricity Distribution Code Chapter 3: Connections Requiring Network Extension and/or Augmentation, Final Determination*, Government of South Australia, 2003
- Essential Services Commission of South Australia, *Reliability Performance: Changes to Distribution Code Standards Final Decision*, Government of South Australia, 2003
- Essential Supply Industry Planning Council, *SETS Development Plan 2002*, ESIPC, 2002
- ETSA Utilities, *Electricity System Development Plan 2004*, ETSA Utilities, 2004
- ETSA Utilities, *Infrastructure Development Plan*, ETSA Utilities, 2003
- Government of South Australia, *Better Choices, Better Health: Final Report of the South Australian Generational Health Review April 2003*, Government of South Australia, 2003
- Government of South Australia, *Electricity Demand Side Measures Task Force Final Report*, Government of South Australia, 2003
- Government of South Australia, *Water Proofing Adelaide: A Thirst for Change: The Water Proofing Adelaide Draft Strategy*, Government of South Australia, 2004
- Hudson Howells, *Infrastructure Survey Assessment*, SA Aquaculture Council, 2004
- Invest Australia, *'Making a case – Investment Potential in the Upper Spencer Gulf' Preliminary Report presented to the Upper Spencer Gulf Common Purposes Group*, Australian Government 2000
- Lamb and McKenzie, 'Longitudinal Surveys of Australian Youth: Patterns of Success and Failure in the Transition from School to Work in Australia', Australian Council for Education Research, 2001
- Landry C, *Rethinking Adelaide: Capturing imagination*, Thinkers in Residence, Government of South Australia, 2003
- Local Government Association, *Metropolitan Adelaide Stormwater Management Study*, Local Government Association, 2004
- Maunsell Australia Pty Ltd for Eyre Peninsula Local Government Association, *Eyre Peninsula Road and Transport Strategy*, Maunsell Australia Pty Ltd, 2003
- Maunsell Australia Pty Ltd, *Border Road Feasibility Study*, Auspine Ltd, 2001
- Maunsell McIntyre, *South East 2020 Transport Strategy*, South East Local Government Association, 2000
- McInnes, K.L. et al., *Climate Change in South Australia: Assessment of climate change, impacts and possible adaptation strategies relevant to South Australia*, Government of South Australia, 2003
- Meyrick, *Impact of Channel Deepening on Container Trade through the Port of Adelaide*, Government of South Australia, 2002
- Monash Centre For Policy Studies, *Bi-Annual Labour Market Briefing 2004*, Extract provided by Department of Further Education, Employment, Science and Technology, 2004
- Murray & Mallee Local Government Association, *Strategic Regional Priorities*, Murray & Mallee Local Government Association, 2004

- Murraylands Regional Development Board Inc, *Strategic Plan 2003/08*, Murraylands Regional Development Board, 2003
- Murraylands Regional Development Board, *Infrastructure Report 2002*, Murraylands Regional Development Board, 2002
- Mustard, J. 'Does Early Childhood Matter for Human Development and Health?', Literary Review, Canada, 2000
- Nordhaus, W. *The Health of Nations: The Contribution of Improved Health Standards*, sourced [www.laskerfaoundation.org/reports/reports.html](http://www.laskerfaoundation.org/reports/reports.html), 1999,
- OECD - Telecommunications and Internet Policy; <http://www.oecd.org/sti/telecom>
- Phylloxera & Grape Industry Board of SA, *Wine Grape Utilisation and Pricing Survey*, Phylloxera & Grape Industry Board of SA, 2003
- Planning SA, *Draft Metropolitan Adelaide Planning Strategy*, Government of South Australia, 2004
- Productivity Commission Inquiry Report, *First Home Ownership* Report no. 28, Australian Government, 2004
- Prof. R. Blandy, Rural South Australia Policy for the Future: *A Triple Bottom Line for the Bush*, South Australian Farmers Federation, 2004
- QED Pty Ltd, *Desk Top Study – Freight Corridors Final Report*, South Australian Freight Council, 2004
- Riverland Development Corporation, *Regional Development Strategic Plan 2003-2008*, Riverland Development Corporation, 2003
- SA Water, *Sustainability Report*, SA Water, 2003
- South Australian Centre for Economic Studies, *South Australian's Information and Communications Technology Sector: Survey and Report*, prepared on behalf of Electronics Industry Association, Playford Capital, Office of Economic Development and Department for Business, Manufacturing and Trade, 2004
- Sinclair Knight Merz, *Water Resource Development Potential of the Eight Mile Creek Catchment*, Limestone Coast Regional Development Board, 2002
- South Australian Tourism Commission, *Clare Valley Regional Profiles*, Government of South Australia, 2004
- South Australian Tourism Commission, *Limestone Coast Regional Profile*, Government of South Australia, 2003
- South Australian Tourism Commission, *South Australian Tourism Trends: 2004*, Government of South Australia, 2004
- South Australian Tourism Commission, *The Eyre Peninsula Regional Profile*, Government of South Australia, 2004
- South Australian Tourism Commission, *The Flinders Ranges & Outback Regional Profile*, Government of South Australia, 2004
- South Australian Tourism Commission, *York Peninsula Regional Profiles*, Government of South Australia, 2004
- South East Catchment Water Management Board, *South East Catchment Water Management Plan 2003-2008*, South East Catchment Water Management Board, 2003
- South East Local Government Association, *Road Transport Infrastructure Needs – South East Region of South Australia: taking into account future expected developments*, South East Local Government Association, 2000
- South East Local Government Association, *South East Waste Management Plan*, South East Local Government Association, 2004

- Steering Committee for the review of Government Service Provision, *Report on Government Services 2004*, Australian Government, 2004
- Strategic Design & Development, *Eyre Peninsula Grain Issues Paper*, Strategic Design & Development, 2004
- Strategic Design & Development, *Eyre Peninsula Grain Transport Integration and Investment Plan*, Strategic Design & Development 2004
- Transport SA, *Eyre Peninsula Grain Issues Paper*, Government of South Australia, 2002
- Tulpule, Dr. A, *Occasional Paper No. 29: Tourism Expenditure by International Visitors in Regional South Australia*, Bureau of Tourism Research, 1999
- Upper Spencer Gulf Common Purposes Group, *Investing in Tourism in the Upper Spencer Gulf*, Upper Spencer Gulf Common Purposes Group, 2004
- Upper Spencer Gulf Common Purposes Group, *The Resourceful Region – Investing in Resource Processing in the Upper Spence Gulf*, Upper Spencer Gulf Common Purposes Group, 2004
- Wakefield Regional Council, *Housing and Industrial Land Feasibility Study: Final Report*, The Wakefield Regional Council, July 2003
- World Health Organisation, *Macroeconomics and Health: Investing in Health for Economic Development. Report of the Commission on Macroeconomics and Health*, World Health Organisation, 2001
- Yorke Regional Development Board, *Yorke Region – South Australia, Socio-Economic and Infrastructure Profile*, Yorke Regional Development Board, 2001

# South Australia's Strategic Plan Summary of Targets

South Australia's Strategic Plan, *Creating Opportunity*, contains 79 targets. They are set out below, with Plan reference numbers (T1.1 etc) in brackets.

## Objective 1: Growing Prosperity

<b>Jobs:</b>	Better the Australian average employment growth rate within 10 years. (T1.1)
<b>Unemployment:</b>	Equal or better the Australian average within 5 years. (T1.2)
<b>Youth unemployment:</b>	Equal or better the Australian average within 5 years. (T1.3)
<b>Competitive business Climate:</b>	Maintain Adelaide's rating as the least costly place to set up and do business in Australia (KPMG Competitive Alternatives study) and continue to improve our position internationally. (T1.4)
<b>Economic growth:</b>	Exceed the national economic growth rate within 10 years. (T1.5)
<b>Investment:</b>	Match or exceed Australia's ratio of business investment as a percentage of the economy within 10 years. (T1.6)
<b>Total population:</b>	Increase South Australia's population to 2 million by 2050, rather than the projected population decline. (T1.7)
<b>Interstate migration:</b>	Reduce net loss to interstate to zero by 2008 with a positive inflow from 2009 (T1.8)
<b>Overseas migration:</b>	Match South Australia's share of international migrants to Australia with the State's share of the overall national population over the next 10 years. (T1.9)
<b>Productivity:</b>	Exceed Australia's average productivity growth within 10 years. (T1.10)
<b>Industrial relations:</b>	Achieve the lowest number of working days lost per thousand employees in Australia within 10 years. (T1.11)
<b>Exports:</b>	Treble the value of South Australia's export income to \$25 billion by 2013, with exporters assisted by the work of the industry-led Export Council which was established in 2004. Industry-agreed sectoral goals that will assist in meeting the overall target include \$7.5 billion by 2013 by the food industry in meeting the Food Plan target, over \$3 billion nationally by the wine industry by 2010, further developing our exports of motor vehicles, increasing the current 20% per annum sales and revenue growth of the electronics industry and further consolidating Adelaide as the defence industry capital of Australia and developing defence industry exports. Minerals will also contribute to the overall target by achieving ambitious exploration and processing targets. We will work to more than double our share of national service exports and increase our exports of elaborately transformed manufactures. (T1.12)
<b>Tourism industry:</b>	Increase visitor expenditure in South Australia's tourism industry from \$3.4 billion in 2001 to \$5.0 billion by 2008 by increasing visitor numbers and length of stay and, more importantly, by increasing tourist spending. (T1.13)
<b>Share of overseas students:</b>	Double South Australia's share of overseas students within 10 years. (T1.14)
<b>Minerals and exploration:</b>	Make South Australia a favoured mineral investment destination for private investment by 2010, with exploration expenditure targeted to almost treble to \$100 million by 2007, and minerals production to reach \$3 billion by 2020, with a further \$1 billion worth of minerals processing by that time. (T1.15)

<b>Strategic infrastructure:</b>	Increase investment in strategic areas of infrastructure, such as transport, ports and energy to support and achieve the targets in South Australia's Strategic Plan. (T1.16)
<b>Credit rating:</b>	Achieve a AAA credit rating, in line with other mainland States, within 3 years. (T1.17)
<b>Performance improvement in the South Australian public sector – productivity:</b>	Lead the nation in cost effectiveness of government services within 5 years. (T1.18)
<b>Performance improvement in the South Australian public sector – quick decision-making:</b>	Lead Australian governments in timely and transparent government decision-making within 5 years. (T1.19)

## Objective 2: Improving Wellbeing

<b>Quality of life:</b>	Improve Adelaide's quality of life ranking on the William M. Mercer Quality of Life index to be in the top 20 cities in the world within 10 years. (T2.1)
<b>Healthy South Australians:</b>	Increase healthy life expectancy of South Australians to lead the nation within 10 years. (T2.2)
<b>Infant mortality:</b>	Continue to be the best performing State in Australia. (T2.3)
<b>Psychological distress:</b>	Equal or lower than the Australian average within 10 years. (T2.4)
<b>Smoking:</b>	Reduce the percentage of young cigarette smokers by 10% within 10 years. (T2.5)
<b>Overweight:</b>	Reduce the percentage of South Australians who are overweight or obese by 10% within 10 years. (T2.6)
<b>Sport and recreation:</b>	Exceed the Australian average for participation in sport and physical activity within 10 years. (T2.7)
<b>Crime rates:</b>	Reduce crime rates to the lowest in Australia within 10 years. (T2.8)
<b>Road safety:</b>	Reduce road fatalities by 40% by 2010, with an ongoing focus on reductions in fatalities and serious injuries across all modes. (T2.9)
<b>Greater safety at work:</b>	Achieve the nationally agreed target of 40% reduction in injury by 2012 ( <i>National OHS Strategy 2002–2012</i> , National Occupational Health and Safety Commission). (T2.10)

## Objective 3: Attaining Sustainability

<b>The River Murray:</b>	Increase environmental flows by 500 GL in the Murray-Darling and major tributaries by 2008 as a first step towards improving sustainability in the Murray-Darling Basin, with a longer-term target to reach 1500 GL by 2018. (T3.1)
<b>Energy consumption – government:</b>	Reduce energy consumption in Government buildings by 25% within 10 years and lead Australia in wind and solar power generation within 10 years. (T3.2)
<b>Greenhouse emissions:</b>	Achieve the Kyoto target during the first commitment period (2008–12). (T3.3)
<b>Land biodiversity:</b>	Have five well-established biodiversity corridors linking public and private lands across the State by 2010. (T3.4)

# South Australia's Strategic Plan Summary of Targets

<b>Marine biodiversity:</b>	Create 19 Marine Protected Areas by 2010. (T3.5)
<b>Native vegetation:</b>	Any clearance of native vegetation being offset by significant biodiversity benefit by 2005 (T3.6) Integrate native vegetation/biodiversity management in South Australia's eight Natural Resource Management regional plans by 2010. (T3.7) Lose no species. (T3.8)
<b>Use of public transport:</b>	Double the use of public transport to 10% of weekday travel by 2018. (T3.9)
<b>Ecological footprint:</b>	Reduce our ecological footprint to reduce the impact of human settlements and activities within 10 years. Actions will include: <ul style="list-style-type: none"> <li>■ increasing the use of renewable electricity so that it comprises 15% of total electricity consumption within 10 years</li> <li>■ extending the existing Solar Schools Program so that at least 250 schools have solar power within 10 years</li> <li>■ extending the One Million Trees program so that 3 million trees will be planted in Adelaide within 10 years</li> <li>■ increasing energy efficiency of dwellings by 10% within 10 years, by such means as the introduction of a five-star energy requirement for new houses by May 2006. (T3.10)</li> </ul>
<b>Zero waste:</b>	Reduce waste to landfill by 25% within 10 years. (T3.11)

## Objective 4: Fostering Creativity

<b>Creativity:</b>	Achieve a ranking in the top 3 regions of Australia in Richard Florida's Creativity Index within 10 years. (T4.1)
<b>Commercialisation of research:</b>	Increase patent applications to exceed our population share of all Australian applications within 5 years. (T4.2)
<b>Film, television, audio visual and digital content:</b>	Significantly grow and expand South Australia's share of the national feature film industry to match our population share. (T4.3) Double our share of television production within 10 years. (T4.4) Match the Australian average rate of growth in the audiovisual sector within 10 years. (T4.5)
<b>Investment in science, research and innovation:</b>	Exceed the national average of business expenditure on research and development (as a percentage of GSP) and approach the OECD average within 10 years. (T4.6)
<b>Internet usage:</b>	Increase the level of internet use in metropolitan and regional South Australia by 20% within 10 years. (T4.7)
<b>Cooperative Research Centres, Centres of Excellence and Major National Research Facilities:</b>	Have based in South Australia either the headquarters or a major node of at least 40% of all existing CRCs, Major National Research Facilities and Centres of Excellence within 5 years. (T4.8)
<b>Creative education:</b>	Improve learning outcomes in the arts and other curriculum areas that utilise enterprise education. (T4.9) Improve the connections between educational institutions and industry to enhance creativity and innovation. (T4.10) Increase the number of families participating in the Learning Together and school-community arts and recreation programs. (T4.11)

## Objective 5: Building Communities

<b>Women in leadership:</b>	Increase the number of women on all State Government boards and committees to 50% on average by 2006. (T5.1) Have 50% on average of State Government boards and committees chaired by women by 2008. (T5.2) Increase the number of female members of Parliament to 50% within 10 years. (T5.3)
<b>Political participation:</b>	Halve the number of informal votes as a percentage of total votes cast in State Government elections over the next 10 years. (T5.4) Increase voter participation in local government elections in South Australia to 50% within 10 years. (T5.5)

<b>Volunteering:</b>	Increase the level of volunteerism in South Australia from 38% in 2000 to 50% within 10 years. (T5.6)
<b>State and local Government:</b>	Align State and Local Government's Strategic Plans within 12 months of the release of South Australia's Strategic Plan and agree joint initiatives with them. (T5.7)
<b>Regional population levels:</b>	Maintain and develop viable regional population levels for sustainable communities. (T5.8)
<b>Regional unemployment:</b>	Reduce regional unemployment rates. (T5.9)
<b>Regional crime rates:</b>	Reduce the level of crime in South Australia's regions by 10 per cent within 10 years. (T5.10)
<b>Regional infrastructure:</b>	Build and maintain infrastructure to develop and support sustainable communities in regions. (T5.11)

## Objective 6: Expanding Opportunity

<b>Aboriginal wellbeing:</b>	Reduce the gap between the outcomes for South Australia's Aboriginal population and those of the rest of South Australia's population, particularly in relation to health, life expectancy, employment, school retention rates and imprisonment. (T6.1) Increase the percentage of the Aboriginal population in the South Australian public sector from 1.2% to 2% within 5 years. (T6.2)
<b>Income inequality:</b>	Raise the lowest incomes of South Australians relative to those of the average South Australian. (T6.3)
<b>Homelessness:</b>	Halve the number of 'rough sleepers' in South Australia by 2010. (T6.4)
<b>Disability:</b>	Increase the number of community-based accommodation options. (T6.5)
<b>Housing:</b>	Encourage the provision of affordable housing in the community. (T6.6) Halve the number of South Australians experiencing housing stress (people paying more than 25% of their income on rent) within 10 years. (T6.7)
<b>Junior primary class sizes:</b>	Continue to reduce junior primary class sizes. (T6.8)
<b>Reading challenge:</b>	Have over 50% of government and non-government schools participating in the Premier's Reading Challenge program by 2006. (T6.9)
<b>Primary education:</b>	Increase Year 3 and 5 student performance in literacy and numeracy to reach or exceed the national average by 2008. (T6.10)
<b>Middle schooling:</b>	Increase Year 7 student performance in literacy and numeracy to reach or exceed the national average by 2008. (T6.11)
<b>Senior secondary schooling:</b>	Increase the leaving age to 17 years by 2010 to ensure that young people are either in school, employed or in structured training. (T6.12) Increase the percentage of students completing Year 12 or its equivalent to 90% within 10 years. (T6.13)
<b>Regional education:</b>	Achieve a marked improvement in the percentage of regionally-based students completing SACE or equivalent, by 2010. (T6.14)
<b>Non-school qualifications:</b>	Increase the proportion of the South Australian labour force with non-school qualifications from 50.7% in 2002 to 55% within 10 years. (T6.15)
<b>University participation:</b>	Exceed the national average within 10 years. (T6.16)
<b>TAFE participation:</b>	Continue to exceed the national average. (T6.17)

South Australia's Strategic Plan is available at [www.stateplan.sa.gov.au](http://www.stateplan.sa.gov.au)



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