

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

Economic growth	Exceed the national economic growth rate within 10 years. (T1.5)
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 4: Fostering Creativity

Commercialisation of research	Increase patent applications to exceed our population share of all Australian applications within 5 years. (T4.2)
Investment in science, research and innovation	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)
Cooperative Research Centres, Centres of Excellence and Major National Research Facilities	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)
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)
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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 (STI¹⁰) – 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 STI¹⁰ 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 STI¹⁰, 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 STI¹⁰, 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' (BAII), 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 BAII 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 STI¹⁰ 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 * Lead – State Government	U/ way	*		4.2 4.6 4.8 4.10
Complete the master plans for: <ul style="list-style-type: none"> ■ the redevelopment of the Frome Road biomedical research precinct (Florey Precinct) ■ the Flinders Precinct ■ the Mawson Precinct ■ the Waite Precinct Lead – State Government, research sector	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 Lead – State Government, research sector	U/ way	*		4.2 4.8 4.10
Establish Marine Innovation SA facilities (MISA) Lead – research sector	U/ way	*		4.6
Establish a science media centre Lead – State Government	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 Lead – State Government	U/ way	*		1.5
Establish an ancient-DNA laboratory Lead – research sector	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 Lead – State Government, research and private sectors	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: <ul style="list-style-type: none"> ■ building new facilities to house the major R&D players in the wine industry in the one location ■ establishing an incubator to provide laboratory and office space and specialist facilities for early stage agriculture and wine firms with potential for high growth ■ co-locating natural resource management and climate assessment activities in a new cluster at the Waite 	2	*		4.6 4.10
	2		*	4.2 4.10
	3		*	4.10
Lead – State Government, research and private sectors				
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
Lead – State Government, research and private sectors				
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
Lead – State Government				
Establish a Public Science and Technology Centre to focus on community and outreach activities (building on the Project Catalyst initiative)	2		*	4.10
Lead – State Government, private sector				
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
Lead – State Government, private sector				